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Mr. Tauren Beggs
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Subject: **2014 Expanded Down-Gradient Investigation and Groundwater Monitoring Letter Report**
Former Town of Newton Gravel Pit, 3130 Hecker Road, Manitowoc, Wisconsin
WDNR BRRTS No. 02-36-000268
WDNR FID No. 436104020

Dear Mr. Beggs,

AECOM Technical Services, Inc. (AECOM), on the behalf of the City of Manitowoc, is pleased to submit this 2014 Expanded Down-Gradient Investigation and Groundwater Monitoring Letter Report for the Former Town of Newton Gravel Pit site. The report briefly summarizes site background information, describes the expanded investigation activities, and presents the results of the 2014 annual groundwater sampling. Supporting tables, figures, field forms, and laboratory reports are included as attachments.

A specific Silver Creek surface water sampling event was conducted in September 2014 and reported under a separate cover. The surface water sampling event results have been incorporated into this report for reporting consistency. Additionally, all 2014 quarterly Potable Well Monitoring Letter Reports have been provided under separate covers.

Background Information

The Former Newton Gravel Pit property is owned by the City of Manitowoc, is approximately 58 acres in size, and is located at 3130 Hecker Road in the Town of Newton, Manitowoc County Wisconsin (See Figure 1). Within the 58 acres, approximately one acre along the western property boundary was the location of a disposal pit that received industrial wastes (the Western Source Area).

The land use in the vicinity of the property is rural. Bordering the property to the west is an active gravel pit, to the north is farmland and forest, to the east is farmland and rural residences, and to the south is farmland and an active gravel pit. A small creek, Silver Creek, flows through the property from the north/northwest to the south/southeast. Site features are shown on Figure 2.

The Western Source Area is located on an elevated area of the property. Former gravel pit operations have lowered the ground surface elevation to the west from 15 to 20 feet and to the east approximately 30 feet.

Site investigation activities have been ongoing since 1991. The activities have delineated soil impacts in the Western Source Area, defined a light non-aqueous phased liquid (LNAPL) within the source area, and identified both a shallow groundwater contaminant plume that extends east-southeast to Silver Creek and deeper groundwater impacts continuing to the southeast.

Previous to the current monitoring events, the most recent groundwater monitoring occurred in September 2013[1].

Presented below is the 2014 groundwater monitoring report for the non-potable groundwater monitoring wells associated with the Western Source Area.

Scope of Work

The 2014 approved scope of work included an expanded down gradient investigation with the installation of an additional 15 groundwater monitoring wells. Following the well installations, a complete annual site-wide groundwater monitoring event took place in November 2014. In general, AECOM's scope of services included the following activities:

- Project management, including health and safety management.
- Installation and development of 15 wells: PZ-16A, PZ-16B, PZ-16C, WT-24, PZ-24A, PZ-24B, PZ-24C, WT-25, PZ-25A, PZ-25B, PZ-25C, WT-26, PZ-26A, PZ-26B, and PZ-26C.
- Measurement of groundwater elevations and LNAPL levels in monitoring wells.
- Collection of groundwater samples for volatile organic compound (VOC) laboratory analysis.
- Surveying of newly installed water table wells and piezometers.
- Mapping of groundwater flow in different aquifers of the local and the regional area.
- Creating cross-sections with the boring logs from the newly installed wells, potable wells, and historic boring and wells from the site.
- Calculating the hydraulic gradient across the different aquifers to determine the rate of groundwater flow.
- Preparation of a groundwater monitoring letter report.

Site-specific procedures are described below for the well installation, well development, groundwater sampling, and LNAPL measurements.

[1] Former Town of Newton Gravel Pit 2013 Groundwater Monitoring Letter Report, BRRTS No. 02-36-000268, AECOM Project No: 60135471(82518), May 13, 2014.

Well Installation

The 15 additional water table wells and piezometers (PZ-16A, PZ-16B, PZ-16C, WT-24, PZ-24A, PZ-24B, PZ-24C, WT-25, PZ-25A, PZ-25B, PZ-25C, WT-26, PZ-26A, PZ-26B, and PZ-26C) were installed by Cascade Drilling using a 600T sonic rig. The wells were installed October 27 thru November 4, 2014, and are located as follows.

- The location for PZ-16A, PZ-16B, and PZ-16C were adjacent to existing wells WT-16 and PZ-16.
- Well nest number 24 was located on the property at 3320 Hecker Road, northwest of Silver Creek.
- Well nest number 25 was located on the 3320 Hecker Drive property, southeast of Silver Creek and directly northwest of the property at 3518 Hecker Road.
- Well nest number 26 was located on the Gravel Pit property, 3130 Hecker Road, just south of the intersection of Gravel Pit Road and Hecker Road.

The wells were installed vertically as follows:

- Water table wells (WT-24, WT-25, and WT-26) were installed across the water table.
- A-series piezometers (PZ-16A, PZ-24A, PZ-25A, and PZ-26A) were installed to an approximate elevation of 630 feet above MSL (mean sea level), approximately midway between the ground surface and the bedrock surface.
- B-series piezometers (PZ-16B, PZ-24B, PZ-25B, and PZ-26B) were installed to an approximate elevation of 600 feet above MSL, just above the bedrock surface.
- C-series piezometers (PZ-16C, PZ-24C, PZ-25C, and PZ-26C) were installed approximately 15 feet into the dolostone bedrock.

The location of the wells were chosen because they are down-gradient of the western source area, they are within the historical flow path of the known groundwater plume, and so that the resulting well nests can be used to establish vertical gradients of contaminant transport along with contamination transport in the bedrock. See Figure 2 for well locations.

The wells were constructed as follows:

- The new water table wells were constructed of 2-inch (I.D.), 10-foot long flush-threaded 0.010-inch slot, Schedule 40 PVC screen with Schedule 40 PVC riser.
- The piezometers in the A-series and PZ-16B, PZ-24B, and PZ-25B wells were constructed of 2-inch (I.D.), 5-foot long flush threaded 0.010-inch slot, Schedule 40 PVC screen with Schedule 40 PVC riser.
- The piezometers in the C-series and PZ-26B wells were constructed of 2-inch (I.D.), 5-foot long flush-threaded 0.010-inch slot, Schedule 80 PVC screen with Schedule 80 PVC riser.

Borehole drilling and piezometer installation was conducted consistent with standard field methodologies and Wisconsin Administrative Code (WAC) Chapter NR 141. Soil boring logs (WDNR Form 4400-122) and monitoring well construction forms (WDNR Form 4400-113A) are provided in Attachment A.

Well Development

The monitoring wells and piezometers were developed in accordance with WAC Ch. NR 141. Well development began on October 30, 2015 and concluded on November 11, 2014. Monitoring well development forms (Form 4400-113B) are provided in Attachment A.

Groundwater Monitoring

Groundwater monitoring activities occurred the week of November 12, 2014.

Groundwater monitoring utilized newly installed and existing groundwater monitoring wells and piezometers. Groundwater and/or LNAPL elevations were collected from 45 locations prior to groundwater sampling.

Water levels were measured in-situ using a Heron Instruments electronic water level. NAPL/free product levels were measured in-situ using a Solinist Oil Water Interface Meter Model 122 electronic NAPL/water level indicator. Groundwater and LNAPL measurements were made to the nearest 0.01 foot from the reference points marked on the top of each well casing.

Groundwater field screening measurements used a handheld YSI 556 MPS field meter to obtain dissolved oxygen, pH, conductivity, temperature, and oxidation/reduction (redox) potential measurements. Water was pumped from the wells to a flow-through cell, in which the water quality meter was inserted to contact the water pumped from the wells. Once readings stabilized, measurements of the above parameters were recorded. Samples were collected utilizing a low flow submersible Proactive Hurricane Pump or a peristaltic pump with disposable tubing and transferred to the appropriate laboratory supplied sample containers. Samples were labeled and stored on ice prior to shipment to the laboratory.

Groundwater samples for laboratory analysis were submitted to a WAC Chapter NR 149 certified laboratory (Synergy Environmental Lab, Inc., Appleton, Wisconsin) for analyses of VOCs (EPA Method SW 8260B).

Well purging and sample collection forms are included in Attachment B.

Survey

On November 17, 2014, AECOM surveyed in the location and elevation of 15 new monitoring wells.

The survey results have been incorporated into the groundwater elevation data and the site features mapping.

Monitoring Results

The results for the November 2014 groundwater and September 2014 surface water monitoring events are presented below.

Groundwater Elevation and Flow Direction

All groundwater levels were measured on November 17, 2014.

Water elevations measured in the water table wells ranged between approximately 689 and 682 feet MSL. These data indicate a general groundwater flow direction to the east-southeast within the shallow local groundwater flow system (sand and gravel outwash) that is consistent with previous data. The exception to this generalized flow direction is the area with the Silver Creek meander, where an apparent groundwater divide creates a shallow groundwater flow system towards the creek (See Figure 3).

Groundwater measured in the mid-level A-series piezometers (screened approximately 630 feet MSL within sand and gravel outwash) ranged between approximately 683 and 678 feet MSL. These data indicate groundwater flow within the mid-level unconsolidated aquifer to be east-southeast (See Figure 4).

Groundwater measured in the B-series piezometers (screened approximately 600 MSL primarily within clay till immediately above the top of bedrock) ranged between approximately 682 and 677 feet MSL. These data indicate groundwater flow within the deep unconsolidated aquifer to be east-southeast (See Figure 5).

Groundwater measured in the C-series piezometers (screened in bedrock) ranged between approximately 681 and 671 feet MSL. These data indicate bedrock groundwater flow to the east (See Figure 6).

A summary of groundwater elevations is presented in Table 1 and interpreted groundwater flow maps are presented in Figures 3, through 6.

Hydraulic Gradients

Horizontal and vertical hydraulic gradients were calculated based on groundwater elevation data collected November 17, 2014, as provided in Table 1.

The vertical hydraulic gradients are variably low downward or upward. Downward vertical gradients range between 0.0007 and 0.09 feet/foot. Upward vertical gradients range between 0.005 and 0.03 feet/foot. Vertical gradient calculations are provided in Attachment C.

Average calculated horizontal gradients for the water table and A-series, B-series, and C-series (bedrock) piezometric surfaces were determined from flow lines shown on Figures 3 through 6. As presented in Attachment C, horizontal hydraulic gradients were calculated at 0.005, 0.003, 0.004, and 0.13 feet/foot for the water table, and A-series, B-series, and bedrock piezometric surfaces respectively.

Groundwater Flow Velocity

The average linear groundwater flow velocities for the sand and gravel outwash, glacial till, and bedrock were calculated using a modification of Darcy's Law:

$$V = \frac{KI_h}{n_e}$$

Where: V = average linear velocity
K = horizontal hydraulic conductivity
I_h = horizontal hydraulic gradient
n_e = effective porosity

Groundwater flow velocity calculations and assumptions for water table wells and A-series, B-series, and C-series piezometers are presented in Attachment C. An average linear flow velocity of 0.14 ft/day (52 ft/yr) was calculated for the sand and gravel outwash using the mean hydraulic conductivity of water table wells ($2.5X10^{-3}$ cm/sec), an average horizontal gradient (0.005 feet/foot), and an estimated effective porosity of 0.25.

Similarly, an average linear flow velocity of 0.085 ft/day (31ft/yr) was calculated for the sand and gravel outwash using the mean hydraulic conductivity of $2.5X10^{-3}$ cm/sec, an average horizontal gradient for the mid-level A-series piezometers (630 feet MSL) of 0.003 feet/foot, and an estimated effective porosity of 0.25.

Using the horizontal hydraulic gradient data for the B-series piezometers (600 feet MSL) of 0.004 feet/foot, an estimated hydraulic conductivity of $1X10^{-5}$ cm/sec, and an estimated effective porosity of 0.40, the average linear groundwater velocity in the glacial till was calculated at 0.00028 ft/day or about 0.1 ft/year.

Using the calculated horizontal hydraulic gradient for the C-series piezometers of 0.013 feet/foot, and estimated hydraulic conductivity of $1X10^{-4}$ cm/sec, and an estimated effective porosity of 0.20, the average linear groundwater velocity in the bedrock was calculated at 0.018 ft/day or about 6.7 ft/year. This calculated flow velocity for the bedrock does not account for fracture flow or potential preferential flow along bedding planes.

LNAPL Thickness

LNAPL continues to be present in wells: WT-02, WT-09, and WT-14. During the November 2014 sampling event, LNAPL thickness within the 2-inch diameter wells was measured at approximately 1.25 feet, 1.09 feet, and a sheen, respectively. A summary of LNAPL elevations and thickness are presented in Table 1. Groundwater has not been sampled from these wells because of the measureable amounts of LNAPL free product.

Groundwater Field Screening Results

Field screening measurements for pH, temperature, dissolved oxygen, and oxidation reduction potential indicate that conditions for remediation by natural attenuation of groundwater contaminants continue to be favorable. Field screening data are summarized in Table 2.

Site Cross-Sections

Three generations of cross-sections have been created since the beginning of the investigations at the gravel pit.

The original cross-section for the site was produced for the 1996 *Site Investigation and Remedial Action Options Report*[2]. The cross-section included Hydropunch® soil boring data completed to the bedrock surface. Figure 7, provides a copy of *Geologic Cross Section A-A' and Vertical Distribution of Non-Chlorinated and Chlorinated VOCs,* as presented in the 1996 report. Note that Figure 7 includes 1996 groundwater quality data and it has not been updated with more recent data.

Two additional cross-sections were completed in 2013 and are provided in Figures 8 and 9 as cross-section B-B' and C-C' respectively. The goal of these cross-sections is to provide detail relative to the Western Source area. The lateral extent of cross-section B-B' has been expanded to incorporate the stratigraphy from the 2014 soil borings/well installations. Both cross-sections have been updated with 2014 VOC groundwater data.

The most recent iteration of cross sections, cross-sections D-D' and E-E', were completed in 2014 to provide regional views extending eastward to County Highway CR. Cross-section D-D', Figure 10, begins in the source area and heads east-northeast and cross-section E-E', Figure 11, continues cross-section B-B' to the southeast. The cross-sections incorporate the stratigraphy from the newly installed wells and piezometers, information from well construction reports (WCRs) for the newly installed replacement private potable wells, and historic private potable wells WCRs. Since there is a mixture of boring logs from different times and different professionals, AECOM interpreted the multiple stratigraphy units into three main units; coarse grained material (sand and gravels), fine grained material (silts, clays, and hardpans), or bedrock. This provides interpreted and generalized cross-sections appropriate for a regional view.

Groundwater Laboratory Analytical Results

Groundwater analytical results were compared to applicable enforcement standards (ES) and preventative action limits (PAL) found in WAC Chapter NR 140 Table 1 for Public Health Standards.

The discussion of the groundwater analytical results is presented in relationship to the Western Source Area. As such, the groundwater results are discussed as:

- Up-gradient,
- the Western Source Area,
- Down-gradient – west of Silver Creek,
- Down-gradient – the meander of Silver Creek,
- Down-gradient – southeast of Silver Creek, and
- Side-gradient – northeast, near Former Town of Newton Gravel Pit Entrance.

[2] *Site Investigation and Remedial Action Options Report,* Rust Environment and Infrastructure, Inc., June 1996.

The groundwater analytical results are summarized in Table 2 and shown on Figures 12 through 15. Laboratory analytical reports are included as Attachment D.

Up-gradient

- Well WT-19 was installed to delineate the up-gradient edge of the groundwater contaminant plume west of the Former Newton Pit property line.

  VOC Discussion: WT-19 had only one VOC detection, trichloroethylene (TCE). The detection of TCE at 0.50 μg/L, which is at the PAL exceedance of 0.5 μg/L, and represents a decreasing concentration trend based on samples analyzed in 2007, 2012, 2013 and most recently in 2014.

- Wells WT-01 and PZ-01 were installed to delineate the up-gradient edge of the groundwater contaminant plume north of the Western Source Area. Both of these wells had no VOCs detected. This remains consistent with samples collected in 2013.

Western Source Area

- WT-09 was installed to delineate the southern perimeter of the source area. Groundwater was not sampled from WT-09 because of measurable LNAPL free product.

- Well WT-18 was installed to delineate the southern perimeter of the source area; south of WT-9.

  VOC Discussion: WT-18 had multiple VOC detections. Benzene and vinyl chloride (VC) were detected at concentrations exceeding their respective ESs. Cis-1,2-DCE, naphthalene, and TCE were detected at concentrations exceeding their respective PAL values. Ethylbenzene, 1,1-Dichloroethane, n-propylbenzene, toluene, and xylene were detected at levels below their respective PALs.

- Well WT-10 was installed to delineate the southeastern perimeter of the source area.

  VOC Discussion: WT-10 had several VOC detections; toluene, benzene, xylene, and the two daughter compounds cis-1,2-DCE and VC. Cis-1,2-DCE, VC, and benzene exceeded their respective ESs. Toluene and xylene were detected at levels below their respective PALs. In general, the concentrations of each of these analytes is consistent with previous sampling rounds except for benzene and xylene were both non-detects the year prior.

- Well WT-02 and PZ-02 were installed to delineate the eastern perimeter of the source area. Groundwater was not sampled from WT-02 because of measurable LNAPL free product.

  VOC Discussion: PZ-02 remained consistent with previous years and has no VOCs detected.

- Well WT-02A was installed to delineate the eastern perimeter of the source area.

VOC Discussion: WT-02A had multiple VOC detections. ES exceedances include: TCE, cis-1,2-DCE, VC, benzene, naphthalene. Toluene and 1,1,1-trichloroethane exceeded their respective PALs. Ethylbenzene and xylene were both detected at levels below their respective PALs.

- Well WT-03 and PZ-03 were installed to delineate the northeastern perimeter of the source area.

  VOC Discussion: WT-03 had several VOC detections. TCE exceeded its ES standard and cis-1,2-DCE exceeded its PAL standard. Other VOCs detected include 1,1-dichloroethene, tetrachloroethene (PCE), and 1,1,1-trichloroethane.

  VOC Discussion: PZ-03 remained consistent with previous years and has no VOCs detected.

- Well WT-17 was installed to delineate the northern perimeter of the source area.

  VOC Discussion: WT-17 had several detections of chlorinated VOCs consistent with 2013 sampling results. This includes TCE, cis-1,2-DCE, and VC, which exceed their respective ES. Detections of 1,1-dichloroethane, trans-1,2-dichloroethene, PCE, and 1,1,1-trichloroethane were all below their respective PALs.

- Well WT-14 was installed to delineate the western perimeter of the source area. It is located on the western property line. Groundwater has not been sampled from the well because it has visible amounts (sheen) of LNAPL free product.

Down-gradient – West of Silver Creek

- Well WT-13 was installed to replace a damaged well WP-02.

  VOC Discussion: Well WP-02 historically had four consecutive rounds (1999 thru 2000) of sampling with no detectable VOCs. Historical VOC detections in WT-13 were limited to a single detection of chloromethane in 2007 which exceeded its PAL and a single detection of VC in 2012 which exceeded its ES. No VOCs were detected in samples collected from WT-13 in 2014. WT-13 represents the mid/down-gradient southern edge of the groundwater contaminant plume.

- Well WT-05, and piezometers PZ-05A and PZ-05B were installed down-gradient of well WT-13.

  VOC Discussion: Well WT-05 exhibited three detections of VOCs including VC at a concentration that exceeds its ES along with TCE and cis-1,2-DCE detected above their PALs. The detection of these compounds and their respective concentrations are consistent with historical data from samples collected between 1994 and 2013.

  No VOCs were detected in samples from PZ-05A and PZ-05B.

Wells WT-11 and WT-12 were installed to delineate the southern edge of the shallow down-gradient groundwater contaminant plume adjacent to and west of Silver Creek. Piezometer PZ-12 was added adjacent to monitoring well WT-12 in August 2013 to form a well nest. Piezometer PZ-12 was screened similar to the screened interval of PZ-16. In this way, the WT-12/PZ-12 well nest and the WT-16/PZ-16 well nest quantify potential groundwater impacts and characterize vertical hydraulic gradients within the local groundwater flow system on the west and east side of Silver Creek respectively.

VOC Discussion: WT-11 had 2 VOC detections TCE and cis-1,2-DCE that both exceed their respective ESs. WT-12 had three VOC detections TCE, cis-1,2-DCE and VC at concentrations that exceeded ESs. PZ-12 had detects of benzene, TCE, cis-1,2-DCE, and VC at concentrations that exceeded their respective ESs. No other VOCs were detected in these wells.

- Well nest WT-15 (well WT-15, piezometers PZ-15A, and PZ 15B) were installed to delineate the southern side-gradient groundwater contaminant plume – south of well nest WT-05.

  VOC Discussion: No VOCs were detected in WT-15, PZ-15A, and PZ-15B in samples collected in 2014.

- Temporary wells WP-04, WP-06, and WP-07 were installed to delineate the northern edge of the shallow down-gradient groundwater contaminant plume adjacent to and west of Silver Creek.

  VOC Discussion: Both WP-04 and WP-06 had VOC detections of cis-1,2-DCE and TCE. TCE was detected at both wells at concentrations that exceeded its PAL and cis-1,2-DCE exceeded its PAL at WP-06. WP-07 did not have any VOCs detected.

Down-gradient – the meander of Silver Creek

- Well WT-16 and piezometer PZ-16 were originally installed as down-gradient "sentinel wells" to monitor the down-gradient edge of the contaminant plume east of Silver Creek. In 2014, PZ-16A, PZ-16B, and PZ16C were added to form a well nest. Piezometer PZ-16A was screened at an elevation of 630 feet above MSL, PZ-16B was screened at 600 feet MSL, and PZ-16C was screened 15 feet into the bedrock. Having nested wells at varying depths, from the water table to the bed rock, allows for a vertical profile of contaminants of concern (COCs) as well as determining where the COCs are reaching the bedrock.

  VOC Discussion:

  Both WT-16 and PZ-16 had detects of benzene, cis-1,2-DCE and VC, at levels that exceeded their respective ESs. TCE were detected above their respective ESs in WT-16 and above their respective PALs in PZ-16. Additionally, trans-1,2-DCE was detected in only PZ-16 at a level below its PAL.

  PZ-16A had VC above its ES and TCE above its PAL. Cis-1,2-DCE and benzene were detected below their respective PALs.

PZ-16B had VC above its ES and TCE above its PAL. Cis-1,2-DCE was detected below its PAL.

PZ-16C did not have any VOCs detected.

This round of groundwater samples from the WT-16 well nest indicates that:

- Concentrations and types of COCs decrease with depth.
- COCs do not appear to have entered bedrock at this location.

- Wells WT-20 thru WT-23. No VOCs were detected in wells WT-20, WT-21, WT-22, and WT-23. The continued lack of COCs in these water table wells may be attributed to the shallow, local groundwater flow direction within the Silver Creek meander (See Figure 3).

- Well WT-24 and piezometers PZ-24A, PZ-24B, and PZ-24C. The nest was installed down-gradient of the source area and at the same depths as the water table well and the piezometers in the WT-16/PZ-16 series. In this way, the WT-16/PZ-16A/B/C well nest and the WT-24/PZ-24A/B/C well nest quantify potential groundwater impacts and characterize vertical and horizontal hydraulic gradients within the local groundwater flow system of the meander of Silver Creek.

  VOC Discussion:

  WT-24 did not have any VOCs detected. The lack of VOCs in this water table well may be attributed to the shallow, local groundwater flow direction within the Silver Creek meander (See Figure 3).

  PZ-24A had ES exceedances of both cis-1,2-DCE and VC. A PAL exceedance for benzene and trans-1,2-DCE detected below the PAL.

  PZ-24B also had ES exceedances of both cis-1,2-DCE and VC. A PAL exceedance for benzene and trans-1,2-DCE detected below the PAL, but at concentrations generally less than PZ-24A.

  PZ-24C had PAL exceedances of benzene and chloromethane. Chloromethane may not be a COC for this site.

  This first round of groundwater samples from the WT-24 well nest indicates that:

  - Concentrations and types of COCs decrease with depth.
  - The appearance of benzene in the PZ-24C bedrock well may be an indicator that COCs are just starting to entered bedrock at this location.

Down-gradient – Southeast of Silver Creek

- Well WT-25 and piezometers PZ-25A, PZ-25B, and PZ-25C. The well nest was installed at the same depths as both the WT-16/PZ-16 series and the WT-24/PZ-24 series to further delineate the vertical and horizontal extent of the plume prior to reaching residential properties along Hecker Road.

  VOC Discussion:

  WT-25 had VC and cis-1,2-DCE at levels above their respective ESs along with a benzene PAL exceedance and a detection of trans-1,2-DCE below the PAL.

  PZ-25A had a VC ES exceedance and cis-1,2-DCE at a level above its PAL.

  PZ-25B had a VC ES exceedance and cis-1,2-DCE above its PAL.

  PZ-25C had a VC ES exceedance and cis-1,2-DCE above its PAL.

  This first round of groundwater samples from the WT-25 well nest indicates that:

  - Concentrations and types of COCs are similar in the piezometers.
  - The appearance of two VOCs (VC and cis-1,2-DCE) in the PZ-25C bedrock well indicates that COCs have entered bedrock at this location.

Side-gradient - Near Former Town of Newton Gravel Pit Entrance

- Well WT-26 and piezometers PZ-26A, PZ-26B, and PZ-26C. The well nest was installed at the same depths as the WT-16/PZ-16 series, the WT-24/PZ-24 series, and the WT-25/PZ-25 series to determine groundwater flow at the different intervals and to determine if the plume continues to flow southeast or directly east.

  VOC Discussion: The only VOC detected in this well nest was toluene, at a concentration below its PAL, in PZ-26B. The elevation of this piezometer is just above the bedrock surface.

  This first round of groundwater samples from the WT-26 well nest indicates that:

  - The singular detect of toluene in the well nest, within piezometer PZ-26B, may or may not indicate an impact to groundwater at this location.

In summary, conditions associated with the Western Source Area groundwater plume continue to indicate groundwater impacts down-gradient as far east as well nest WT-25/PZ-25A/B/C. The chlorinated compounds appear to be infiltrating the bedrock between well nests WT-24 and WT-25.

Groundwater laboratory analytical results are summarized in Table 2. Complete laboratory analytical results are included in Appendix D.

Surface Water Laboratory Analytical Results

A specific Silver Creek surface water sampling event was conducted in September 2014 to assess if there were unknown contaminant sources discharging to Silver Creek within the area of interest, from the Gravel Pit site downstream to the vicinity of CTH CR.

The *2014 Silver Creek Sampling Letter Report*[3] provides site background information, sampling methodology, and the surface water monitoring results. Presented below is the monitoring results discussion as presented in the Silver Creek sampling report:

> **MONITORING RESULTS**
>
> On September 30, 2014, AECOM obtained a total of 13 water samples from 12 locations along Silver Creek. Sample locations 1, 2, and 5 were located on the Gravel Pit property. Sample locations 3, 4, and 6 to 12 were downstream of the Gravel Pit property. A duplicate sample was collected at sample location 5. The sample locations are presented on Figure 1. A photo log of the sample locations is also attached.
>
> Sampling was conducted following a period, approximately 8 days, with little or no precipitation (ref. National Weather Service, Green Bay station climate data). The lack of surface water run-off from rain events preceding the sampling event suggests that the water flowing in the stream was “base flow” from groundwater discharge.
>
> Field Screening Results
>
> Field screening measurements for pH, temperature, conductivity, dissolved oxygen, and oxidation reduction potential provide general indications of water quality. Field screening data are summarized on Table 1.
>
> Laboratory Analytical Results
>
> The laboratory analytical data indicates that contaminant compounds were present at the Silver Creek sample locations historically associated with groundwater discharges adjacent to the Gravel Pit site. The contaminant compounds, or contaminants of concern (COCs), detected during this sampling event were benzene, 1,1-dichloroethane (11-DCA), trichloroethene (TCE), cis-1,2-dichloroethene (Cis DCE), and vinyl chloride (VC). No other sample locations had detectable concentrations of COCs.
>
> The concentration of the COCs found in the surface water samples were compared to applicable WAC Chapter NR 105 Table 9 Human Cancer Criteria Standards for a non-public water supply that is a “warm water forage, limited forage and warm water sport fish community”.

[3] 2014 Silver Creek Sampling Letter Report, Former Town of Newton Gravel Pit, BRRTS No. 02-36-000268, AECOM Project No: 60135471 (82518), December 2, 2014

Vinyl chloride was the only COC detected at a concentration exceeding its NR Table 9 human cancer criteria standard in water collected at sample locations 3 and 4. These sample locations were located immediately downstream of the Gravel Pit site. Other compounds detected in samples collected immediately downstream of the Gravel Pit site either did not exceed their respective NR 105 Table 9 standards or they were not listed in NR 105 Table 9.

The September 2014 surface water data has been incorporated into the summary tables, Table 3, of this report for reporting consistency.

Summary

An expanded down-gradient groundwater investigation occurred during 2014 in association with the annual site-wide groundwater monitoring event. The investigation included the installation of 15 new groundwater monitoring wells in four locations. The goal of the investigation was to further delineate possible impacts associated with Western Source area. The following is a summary of data obtained during the 2014 groundwater monitoring event.

- Groundwater elevation measurements from water table wells indicate that the groundwater flow direction generally continues to be towards the east-southeast with the exception of the area within the Silver Creek meander, where an apparent groundwater divide creates a shallow groundwater flow system towards the creek.

- Groundwater elevation measurements for mid-level piezometers within the unconsolidated aquifer indicate that groundwater flow direction to be towards the east-southeast.

- Groundwater elevation measurements from bedrock piezometers indicate that groundwater flow direction is towards the east.

- Groundwater velocities range between approximately 30 and 50 ft/yr in the unconsolidated (sand and gravel outwash) aquifer.

- Groundwater velocity is on the order of 7 ft/yr within the upper portions of the bedrock aquifer, not taking into account possible bedrock fracture flow velocities.

- Measureable levels of LNAPL free product consistent with historical levels continue to exist in monitoring wells located within the Western Source Area.

- Groundwater field screening parameters indicate that conditions continue to exist that are favorable for remediation by natural attenuation.

- Groundwater analytical results indicate NR 140 ES and PAL standard exceedances for COCs (petroleum and chlorinated compounds) at concentrations similar to historical levels continue to exist within the groundwater plume associated with the Western Source Area.

- Groundwater analytical results for the expanded down-gradient investigation area (monitoring well nests number WT-16, WT-24, WT-25 and WT-26) indicate that, in general;

    - Concentrations and types of COCs decrease with depth.

  - That chlorinated compounds appear to be entering bedrock between well nests WT-24 and WT-25.

- Silver Creek surface water laboratory analytical data indicates that contaminant compounds continue to exist with COCs and concentrations similar to historical levels.

- Residential potable well water sampling activities continue with results provided under separate cover.

If you have any questions regarding these results, please contact Dave Henderson at 414.944.6190 or dave.henderson@aecom.com.

Yours sincerely,

AECOM Technical Services, Inc.

Jordan Junion
Project Scientist

David S. Henderson, P.E.
Senior Project Manager

Cc: Kathleen M. McDaniel, City Attorney, City of Manitowoc
Dan Koski, Director of Public Infrastructure, City of Manitowoc

Enclosures: Tables
Figures
Attachments

Tables:

TABLE 1
SUMMARY OF GROUNDWATER ELEVATIONS

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WT-01	712.3	714.21											Installed 4/28/1993
			31.43	20.92	22.83	691.38	19.5	29.5	692.8	682.8			7/1/1993
			---	24.26	26.17	688.04	---	---	---	---			7/26/1994
			---	24.51	26.42	687.79	---	---	---	---			9/7/1994
			31.48	24.17	26.08	688.13	19.6	29.6	692.7	682.7			5/13/1999
			31.48	24.74	26.65	687.56	19.6	29.6	692.7	682.7			9/29/1999
			31.47	25.33	27.24	686.97	19.6	29.6	692.7	682.7			12/7/1999
			31.48	24.72	26.63	687.58	19.6	29.6	692.7	682.7			3/31/2000
			31.30	23.48	25.39	688.82	19.4	29.4	692.9	682.9			4/15/2005
		714.48	31.41	23.27	25.45	689.03	19.2	29.2	693.1	683.1			10/20/2006
			31.30	24.32	26.5	687.98	19.1	29.1	693.2	683.2			9/18/2007
			31.30	24.26	26.44	688.04	19.1	29.1	693.2	683.2			1/9/2008
			31.31	24.37	26.55	687.93	19.1	29.1	693.2	683.2			9/25/2012
			---	24.41	26.59	687.89	---	---	---	---			10/21/2013
	712.4		31.30	24.11	26.21	688.27	---	---	---	---			11/13/2014
PZ-01	712.7	714.55											Installed 4/28/193
			92.84	23.29	25.14	689.41	86.0	91.0	626.7	621.7			7/1/1993
			92.84	25.35	27.2	687.35	86.0	91.0	626.7	621.7			9/6/1994
			92.78	24.88	26.73	687.82	85.9	90.9	626.8	621.8			5/13/1999
			92.78	25.48	27.33	687.22	85.9	90.9	626.8	621.8			9/29/1999
			92.78	25.84	27.69	686.86	85.9	90.9	626.8	621.8			12/7/1999
			92.79	25.30	27.15	687.40	85.9	90.9	626.8	621.8			3/31/2000
			92.81	24.53	26.38	688.17	86.0	91.0	626.7	621.7			4/15/2005
		714.90	92.90	24.31	26.51	688.39	85.7	90.7	627.0	622.0			10/20/2006
			92.78	25.23	27.43	687.47	85.6	90.6	627.1	622.1			9/18/2007
			92.74	25.27	27.47	687.43	85.5	90.5	627.2	622.2			9/25/2012
			---	24.91	27.11	687.79	---	---	---	---			10/21/2013
			92.78	24.61	26.81	688.09	85.6	90.6	627.1	622.1			11/13/2014

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WT-02	718.5	720.56					28.3	38.3					Installed 4/22/1993
			40.41	29.85	31.91	688.65	28.4	38.4	690.2	680.2	NM	--	7/1/1993
			---	33.94	36	684.56	---	---	---	---	33.49	2.51	7/2/1994
			---	33.19	35.25	685.31	---	---	---	---	34.20	1.05	2/6/1997
			---	35.14	37.2	683.36	---	---	---	---	33.19	4.01	6/5/1997
			---	34.64	36.7	683.86	---	---	---	---	34.50	2.20	10/22/1997
			---	31.56	33.62	686.94	---	---	---	---	32.71	0.91	5/4/1998
			---	33.89	35.95	684.61	---	---	---	---	33.26	2.69	7/2/1998
			40.32	33.77	35.83	684.73	28.3	38.3	690.2	680.2	33.35	2.48	5/19/1999
			40.35	37.14	39.2	681.36	28.3	38.3	690.2	680.2	36.05	3.15	10/5/1999
			40.31	37.10	39.16	681.40	28.3	38.3	690.3	680.3	36.09	3.07	12/9/1999
			40.30	32.69	34.75	685.81	28.2	38.2	690.3	680.3	34.25	0.50	4/5/2000
			40.35	37.54	39.6	680.96	28.3	38.3	690.2	680.2	36.12	3.48	4/14/2005
		720.85	---										10/1/2006
			---	33.31	35.66	685.19	---	---	---	---	34.21	1.45	9/18/2007
			---	32.97	35.32	685.53	---	---	---	---	34.31	1.01	9/19/2007
			---	32.45	34.8	686.05	---	---	---	---	34.38	0.42	9/19/2007
			---	34.41	36.76	684.09	---	---	---	---	34.38	2.38	9/20/2007
			---	33.65	36	684.85	---	---	---	---	34.39	1.61	9/21/2007
			---	31.30	33.65	687.20	---	---	---	---	--	0.00	1/16/2008
			40.08	33.60	35.95	684.90	27.7	37.7	690.8	680.8	34.30	1.65	9/25/2012
			---	33.10	35.45	685.40	---	---	---	---	34.01	1.44	10/21/2013
	718.8		40.35	32.95	35.05	685.80	28.3	38.3	690.5	680.5	33.80	1.25	11/17/2014
													GW not sampled since 4-5-00
PZ-02	718.2	720.29					82.0	87.0					Installed 4/26/1993
			89.00	30.00	32.09	688.20	81.9	86.9	636.3	631.3			7/1/1993
			89.17	31.93	34.02	686.27	82.1	87.1	636.1	631.1			9/7/1994
			89.92	31.83	33.92	686.37	82.8	87.8	635.4	630.4			5/13/1999
			89.02	31.77	33.86	686.43	81.9	86.9	636.3	631.3			10/5/1999
			89.03	32.20	34.29	686.00	81.9	86.9	636.3	631.3			12/9/1999
			89.04	31.85	33.94	686.35	82.0	87.0	636.3	631.3			4/4/2000
			88.94	30.87	32.96	687.33	81.9	86.9	636.4	631.4			4/18/2005
		720.58	89.00	30.62	33	687.58	81.6	86.6	636.6	631.6			10/20/2006
			88.93	31.56	33.94	686.64	81.6	86.6	636.7	631.7			9/18/2007
			88.82	31.64	34.02	686.56	81.4	86.4	636.8	631.8			9/25/2012
			---	31.25	33.63	686.95	---	---	---	---			10/21/2013
	718.7		88.93	31.42	33.32	687.26	82.0	87.0	636.7	631.7			11/18/2014
WT-02A	734.1	736.58					42.5	57.5					Installed 8/11/1994
			59.48	48.78	51.26	685.32	42.0	57.0	692.1	677.1			9/6/1994
			59.31	49.45	51.93	684.65	41.8	56.8	692.3	677.3			5/11/1999
			59.31	48.91	51.39	685.19	41.8	56.8	692.3	677.3			9/29/1999
			59.32	49.32	51.8	684.78	41.8	56.8	692.3	677.3			12/7/1999
			59.33	48.63	51.11	685.47	41.9	56.9	692.3	677.3			3/30/2000
			59.35	48.06	50.54	686.04	41.9	56.9	692.2	677.2			4/18/2005
		736.76	59.43	48.01	50.67	686.09	41.8	56.8	692.3	677.3			10/20/2006
			59.96	48.94	51.6	685.16	42.3	57.3	691.8	676.8			9/18/2007
			59.96	47.92	50.58	686.18	42.3	57.3	691.8	676.8			1/9/2008
			59.97	48.87	51.53	685.23	42.3	57.3	691.8	676.8			9/25/2012
			---	48.59	51.25	685.51	---	---	---	---			10/21/2013
	734.2		59.96	48.35	50.95	685.81	42.4	57.4	691.8	676.8			11/19/2014

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WT-03	716.6	718.53					24.0	34.0					Installed 4/27/1993
			36.02	29.03	30.96	687.57	24.1	34.1	692.5	682.5			7/1/1993
				30.70	32.63	685.90							7/26/1994
			35.97	30.87	32.8	685.73	24.0	34.0	692.6	682.6			9/6/1994
			35.80	30.52	32.45	686.08	23.9	33.9	692.7	682.7			5/11/1999
			36.05	31.04	32.97	685.56	24.1	34.1	692.5	682.5			9/29/1999
			36.05	31.13	33.06	685.47	24.1	34.1	692.5	682.5			12/7/1999
			36.05	32.10	34.03	684.50	24.1	34.1	692.5	682.5			3/30/2000
			36.00	29.94	31.87	686.66	24.1	34.1	692.5	682.5			4/15/2005
		718.90	36.06	29.84	32.14	686.76	23.8	33.8	692.8	682.8			10/20/2006
			36.01	28.81	31.11	687.79	23.7	33.7	692.9	682.9			9/18/2007
			36.01	29.95	32.25	686.65	23.7	33.7	692.9	682.9			1/9/2008
			36.01	30.69	32.99	685.91	23.7	33.7	692.9	682.9			9/25/2012
			---	30.51	32.81	686.09	---	---	---	---			10/21/2013
	717.1		36.01	31.70	33.5	685.40	24.2	34.21	692.9	682.9			11/18/2014
PZ-03	716.6	718.67					92.6	97.6					Installed 4/27/1993
			99.73	28.81	30.88	687.79	92.7	97.7	623.9	618.9			7/1/1993
			99.70	30.68	32.75	685.92	92.6	97.6	624.0	619.0			9/6/1994
			99.62	30.18	32.25	686.42	92.6	97.6	624.1	619.1			5/11/1999
			99.62	30.58	32.65	686.02	92.6	97.6	624.1	619.1			9/29/1999
			99.63	31.01	33.08	685.59	92.6	97.6	624.0	619.0			12/7/1999
			99.64	30.43	32.5	686.17	92.6	97.6	624.0	619.0			3/30/2000
			99.65	29.74	31.81	686.86	92.6	97.6	624.0	619.0			4/15/2005
		718.98	99.70	29.64	32.02	686.96	92.3	97.3	624.3	619.3			10/20/2006
			99.65	30.51	32.89	686.09	92.3	97.3	624.3	619.3			9/18/2007
			99.63	30.50	32.88	686.10	92.3	97.3	624.4	619.4			9/25/2012
			---	30.17	32.55	686.43	---	---	---	---			10/21/2013
	717.1		99.65	30.40	32.3	686.68	92.8	97.8	624.3	619.3			11/18/2014

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WT-05	685.0	687.68					8.5	18.5					Installed 8/17/1994
			20.58	-0.32	2.36	685.32	7.9	17.9	677.1	667.1			9/7/1994
			20.45	-0.75	1.93	685.75	7.8	17.8	677.2	667.2			5/19/1999
			20.46	-0.12	2.56	685.12	7.8	17.8	677.2	667.2			9/30/1999
			20.46	0.30	2.98	684.70	7.8	17.8	677.2	667.2			12/8/1999
			20.46	-0.29	2.39	685.29	7.8	17.8	677.2	667.2			3/30/2000
			20.45	-0.60	2.08	685.60	7.8	17.8	677.2	667.2			4/18/2005
		687.98	20.51	-0.75	2.23	685.75	7.5	17.5	677.5	667.5			10/18/2006
			20.93	0.21	3.19	684.79	7.9	18.0	677.1	667.1			9/21/2007
			20.93	-1.01	1.97	686.01	7.9	18.0	677.1	667.1			1/9/2008
			20.94	0.22	3.2	684.78	8.0	18.0	677.0	667.0			9/25/2012
			---	-0.17	2.81	685.17	---	---	---	---			10/21/2013
	685.4		20.93	-0.02	2.58	685.40	8.3	18.3	677.1	667.1			11/17/2014
PZ-05A	685.0	687.70					32.0	37.0					Installed 8/17/1994
			40.37	0.72	3.42	684.28	32.7	37.7	652.3	647.3			9/7/1994
			40.39	-0.07	2.63	685.07	32.7	37.7	652.3	647.3			5/19/1999
			40.39	0.69	3.39	684.31	32.7	37.7	652.3	647.3			9/30/1999
			40.38	0.96	3.66	684.04	32.7	37.7	652.3	647.3			12/8/1999
			40.38	0.51	3.21	684.49	32.7	37.7	652.3	647.3			3/30/2000
			40.28	0.02	2.72	684.98	32.6	37.6	652.4	647.4			4/18/2005
		687.82	40.31	0.09	2.91	684.91	32.5	37.5	652.5	647.5			10/18/2006
			40.40	0.94	3.76	684.06	32.6	37.6	652.4	647.4			9/21/2007
			40.42	0.90	3.72	684.10	32.6	37.6	652.4	647.4			9/25/2012
			---	0.58	3.40	684.42	---	---	---	---			10/21/2013
	685.2		40.40	0.44	3.04	684.78	32.8	37.8	652.4	647.4			11/17/2014
PZ-05B	685.2	687.81					53.4	58.4					Installed 8/16/1994
			60.95	0.85	3.46	684.35	53.3	58.3	631.9	626.9			9/7/1994
			60.91	0.07	2.68	685.13	53.3	58.3	631.9	626.9			5/19/1999
			60.91	0.64	3.25	684.56	53.3	58.3	631.9	626.9			9/30/1999
			60.90	1.01	3.62	684.19	53.3	58.3	631.9	626.9			12/8/1999
			60.91	0.53	3.14	684.67	53.3	58.3	631.9	626.9			3/30/2000
			60.79	0.17	2.78	685.03	53.2	58.2	632.0	627.0			4/18/2005
		687.97	60.83	0.23	3	684.97	53.1	58.1	632.1	627.1			10/18/2006
			60.91	1.05	3.82	684.15	53.1	58.1	632.1	627.1			9/21/2007
			60.92	1.03	3.8	684.17	53.2	58.2	632.1	627.1			9/25/2012
			---	-0.16	2.61	685.36	---	---	---	---			10/21/2013
	685.4		60.91	0.00	2.6	685.37	53.3	58.3	632.1	627.1			11/17/2014

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WT-09	NM	717.84					24.5	34.5					Installed 9-19-06
			36.59		33.55	684.29	---	---	691.3	681.3	30.69	2.86	10/1/2006
			---		32.85	684.99	---	---	---	---	31.34	1.51	9/18/2007
			---		32.9	684.94	---	---	---	---	31.39	1.51	9/19/2007
			---		32.51	685.33	---	---	---	---	31.44	1.07	9/19/2007
			---		32.66	685.18	---	---	---	---	31.43	1.23	9/20/2007
			---		32.6	685.24	---	---	---	---	31.40	1.20	9/21/2007
			---		33.7	684.14	---	---	---	---	30.70	3.00	1/14/2008
			---		33.2	684.64	---	---	---	---	30.65	2.55	1/15/2008
			---		32.5	685.34	---	---	---	---	30.70	1.80	1/16/2008
			---		32.9	684.94	---	---	---	---	30.65	2.25	1/18/2008
			---		31.7	686.14	---	---	---	---	30.66	1.04	1/22/2008
			---		32.6	685.24	---	---	---	---	30.74	1.86	1/29/2008
			36.31		32.79	685.05	---	---	691.5	681.5	31.41	1.38	9/25/2012
			---		32.31	685.53	---	---	---	---	31.22	1.09	10/21/2013
	715.8		36.59	29.99	31.99	685.85	---	---	691.3	681.3	30.90	1.09	11/17/2014
													Product Present - Not Developed
WT-10	NM	727.32					35.0	45.0					Installed 9-20-06
			48.39		41.25	686.07	---	---	688.9	678.9			10/19/2006
			48.33		42.15	685.17	---	---	689.0	679.0			9/19/2007
			48.33		41.38	685.94	---	---	689.0	679.0			1/9/2008
			48.33		41.15	686.17	---	---	689.0	679.0	--	0.00	1/16/2008
			48.20		42.03	685.29	---	---	689.1	679.1			9/25/2012
			---		42.81	684.51	---	---	---	---			10/21/2013
	724.7		48.33	38.85	41.45	685.87	---	---	689.0	679.0			11/18/2014
WT-11	NM	687.55					3.0	13.0					Installed 9-19-06
			15.26		3.81	683.74	---	---	682.3	672.3			10/1/2006
			15.21		4.6	682.95	---	---	682.3	672.3			9/20/2007
			15.21		2.61	684.94	---	---	682.3	672.3			1/9/2008
			15.21		4.59	682.96	---	---	682.3	672.3			9/25/2012
			---		4.22	683.33	---	---	---	---			10/21/2013
	685.2		---	1.61	4.01	683.54	---	---	---	---			11/17/2014
WT-12	NM	688.19					3.0	13.0					Installed 9-22-06
			15.30		3.75	684.44	---	---	682.9	672.9			10/18/2006
			15.26		4.6	683.59	---	---	682.9	672.9			9/20/2007
			15.26		3.05	685.14	---	---	682.9	672.9			1/9/2008
			15.26		4.48	683.71	---	---	682.9	672.9			9/25/2012
			---		4.21	683.98	---	---	---	---			10/21/2013
	685.9		---	1.91	4.21	683.98	---	---	---	---			11/17/2014
PZ-12							20.0	25.0					Installed 8-26-13
	685.3	687.39	---	1.80	3.91	683.48	---	---	665.3	660.3			10/21/2013
			27.34	1.57	3.68	683.71							11/17/2014
WT-13	NM	696.77					4.0	14.0					Installed 9-20-06
			16.41		11.19	685.58	---	---	690.4	680.4			10/19/2006
			16.38		12.03	684.74	---	---	690.4	680.4			9/19/2007
			16.38		11.17	685.60	---	---	690.4	680.4			1/9/2008
			16.37		12.01	684.76	---	---	690.4	680.4			9/25/2012
			---		11.62	685.15	---	---	---	---			10/21/2013
	694.6		16.38	9.19	11.39	685.38	---	---	---	---			11/18/2014
WT-14	NM	722.48					27.5	37.5					Installed 9-19-06
			40.26		34.01	688.47	---	---	692.2	682.2	34.00	0.01	10/1/2006
			---		34.91	687.57	---	---	---	---		Sheen	9/18/2007
			---		34.92	687.56	---	---	---	---		Sheen	9/19/2007
			---		---	---	---	---	---	---		Sheen	9/20/2007
			---		34.32	688.16	---	---	---	---		0.00	1/16/2008
			40.20		35.12	687.36	---	---	692.3	682.3	35.09	0.03	9/25/2012
			---		34.94	687.54	---	---	---	---	34.80	0.14	10/21/2013
	720.3		40.26	34.40	36.6	685.88	---	---	---	---		36.60	11/17/2014
													Product Present - Not Developed

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WT-15	684.9	686.56					2.0	12.0					Installed 9-4-07
			12.23	1.46	3.12	683.44	0.6	10.6	684.3	674.3			9/21/2007
			12.23	-0.08	1.58	684.98	0.6	10.6	684.3	674.3			1/9/2008
			12.25	1.52	3.18	683.38	0.6	10.6	684.3	674.3			9/25/2012
			---	1.22	2.88	683.68	---	---	---	---			10/21/2013
			12.23	1.05	2.71	683.85	0.6	10.6	684.3	674.3			11/17/2014
PZ-15A	684.0	686.52					20.0	25.0					Installed 9-4-07
			27.40	0.50	3.02	683.50	19.9	24.9	664.1	659.1			9/21/2007
			27.40	0.53	3.05	683.47	19.9	24.9	664.1	659.1			9/25/2012
			---	0.15	2.67	683.85	---	---	---	---			10/21/2013
			27.40	-0.07	2.45	684.07	19.9	24.9	664.1	659.1			11/17/2014
PZ-15B	684.7	686.60					32.5	34.5					Installed 9-4-07
			37.00	1.18	3.08	683.52	33.1	35.1	651.6	649.6			9/21/2007
			37.00	1.16	3.06	683.54	33.1	35.1	651.6	649.6			9/25/2012
			---	0.76	2.66	683.94	---	---	---	---			10/21/2013
			37.00	0.50	2.4	684.20	33.1	35.1	651.6	649.6			11/17/2014
WT-16	685.6	687.81					2.0	12.0					Installed 9-5-07
			13.96	3.10	5.31	682.50	1.8	11.8	683.9	673.9			9/20/2007
			14.00	1.20	3.41	684.40	1.8	11.8	683.8	673.8			1/9/2008
			13.96	2.99	5.2	682.61	1.8	11.8	683.9	673.9			9/25/2012
			---	2.59	4.80	683.01	---	---	---	---			10/21/2013
			14.00	2.34	4.55	683.26	1.8	11.8	683.8	673.8			11/12/2014
PZ-16	685.7	688.01					19.0	24.0					Installed 9-5-07
			26.55	3.15	5.46	682.55	19.2	24.2	666.5	661.5			9/20/2007
			26.50	3.10	5.41	682.60	19.2	24.2	666.5	661.5			9/25/2012
			---	2.70	5.01	683.00	---	---	---	---			10/21/2013
			26.55	2.34	4.65	683.36	19.2	24.2	666.5	661.5			11/12/2014
PZ-16A	685.0	687.52											Installed 11-01-14
			57.80	1.9	4.41	683.11	50.30	55.3	634.72	629.72			11/12/2014
PZ-16B	685.1	687.53											Installed 11-01-14
			87.40	2.98	5.42	682.11	79.96	84.96	605.13	600.13			11/12/2014
PZ-16C	685.2	687.57											Installed 10-31-14
			106.88	3.60	6	681.57	99.48	104.48	585.69	580.69			11/12/2014
WT-17	718.4	720.17					27.0	37.0					Installed 9-5-07
			38.83	31.39	33.16	687.01	27.1	37.1	691.3	681.3			9/19/2007
			38.83	30.92	32.69	687.48	27.1	37.1	691.3	681.3			1/9/2008
			38.83	30.69	32.46	687.71	27.1	37.1	691.3	681.3	--	0.00	1/16/2008
			38.83	30.47	32.24	687.93	27.1	37.1	691.3	681.3			9/25/2012
			---	31.37	33.14	687.03	---	---	---	---			10/21/2013
			38.83	30.98	32.75	687.42	27.1	37.1	691.3	681.3			11/18/2014
WT-18	729.2	731.72					39.0	49.0					Installed 9-6-07
			51.78	43.60	46.12	685.60	39.3	49.3	689.9	679.9			9/19/2007
			51.78	43.12	45.64	686.08	39.3	49.3	689.9	679.9			1/9/2008
			51.78	42.73	45.25	686.47	39.3	49.3	689.9	679.9	--	0.00	1/16/2008
			51.73	43.42	45.94	685.78	39.2	49.2	690.0	680.0			9/25/2012
			---	43.19	45.71	686.01	---	---	---	---			10/21/2013
			51.78	42.88	45.4	686.32	39.3	49.3	689.9	679.9			11/18/2014
WT-19	702.4	704.77					9.0	19.0					Installed 9-6-07
			21.34	13.30	15.67	689.10	9.0	19.0	693.4	683.4			9/19/2007
			21.34	10.69	13.06	691.71	9.0	19.0	693.4	683.4			1/9/2008
			21.26	13.63	16	688.77	8.9	18.9	693.5	683.5			9/25/2012
			---	13.48	15.85	688.92	---	---	---	---			10/21/2013
			21.34	13.16	15.53	689.24	9.0	19.0	693.4	683.4			11/19/2014

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WT-20	685.0	687.21					2.0	12.0					Installed 12-7-07
			14.42	0.89	3.1	684.11	2.2	12.2	682.8	672.8			1/9/2008
			14.33	2.54	4.75	682.46	2.1	12.1	682.9	672.9			9/25/2012
			---	2.00	4.21	683.00	---	---	---	---			10/21/2013
			14.42	1.88	4.09	683.12	2.2	12.2	682.8	672.8			11/12/2014
WT-21	686.3	688.38					2.0	12.0					Installed 12-7-07
			14.30	2.23	4.31	684.07	2.2	12.2	684.1	674.1			1/9/2008
			14.22	4.09	6.17	682.21	2.1	12.1	684.2	674.2			9/25/2012
			---	3.41	5.49	682.89	---	---	---	---			10/21/2013
			14.30	3.22	5.3	683.08	2.2	12.2	684.1	674.1			11/12/2014
WT-22	685.9	687.94					2.0	12.0					Installed 12-7-07
			14.09	2.05	4.09	683.85	2.0	12.0	683.9	673.9			1/9/2008
			14.04	3.89	5.93	682.01	2.0	12.0	683.9	673.9			9/25/2012
			---	3.38	5.42	682.52	---	---	---	---			10/21/2013
			14.09	3.11	5.15	682.79	2.0	12.0	683.9	673.9			11/12/2014
WT-23	686.6	688.26					2.0	12.0					Installed 12-7-07
			14.23	2.48	4.14	684.12	2.6	12.6	684.0	674.0			1/9/2008
			14.18	3.93	5.59	682.67	2.5	12.5	684.1	674.1			9/25/2012
			---	3.48	5.14	683.12	---	---	---	---			10/21/2013
			14.23	3.15	4.81	683.45	2.6	12.6	684.0	674.0			11/12/2014
WT-24	686.1	688.53											Installed 10-29-14
			16.59	3.41	5.89	682.64	4.11	14.11	681.94	671.94			11/13/2014
PZ-24A	686.53	688.53											Installed 10-29-14
			56.70	4.85	6.85	681.68	49.7	54.7	636.8	631.8			11/14/2014
PZ-24B	685.94	688.60											Installed 10-28-14
			87.40	4.06	6.72	681.88	79.7	84.7	606.2	601.2			11/14/2014
PZ-24C	685.99	688.52											Installed 10-28-14
			123.60	4.46	6.99	681.53	116.1	121.1	569.9	564.9			11/14/2014
WT-25	686.3	688.86											Installed 10-31-14
			21.99	5.60	8.2	680.66	9.39	19.39	676.87	666.87			11/14/2014
PZ-25A	686.2	688.74											Installed 10-30-14
			67.50	7.65	10.19	678.55	60.0	65.0	626.2	621.2			11/14/2014
PZ-25B	686.39	688.68											Installed 10-30-14
			97.32	8.71	11	677.68	90.0	95.0	596.4	591.4			11/14/2014
PZ-25C	686	688.66											Installed 10-29-14
			117.77	14.56	17.22	671.44	110.1	115.1	575.9	570.9			11/14/2014
WT-26	704.5	706.61											Installed 11-04-14
			36.21	22.00	24.14	682.47	24.07	34.07	680.40	670.40			11/13/2014
PZ-26A	704.49	707.09											Installed 11-04-14
			77.90	22.51	25.11	681.98	70.3	75.3	634.2	629.2			11/13/2014
PZ-26B	704.73	707.20											Installed 11-03-14
			108.11	22.83	25.3	681.90	100.6	105.6	604.1	599.1			11/13/2014
PZ-26C	704.81	706.60											Installed 11-01-14
			147.10	33.03	34.82	671.78	140.3	145.3	564.5	559.5			11/13/2014

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WP-01	691.1	693.68					0.5	3.5					Installed 7/7/1994
			6.94	1.72	4.3	689.38	1.4	4.4	689.7	686.7			7/12/1994
			7.02	1.81	4.39	689.29	1.4	4.4	689.7	686.7			5/11/1999
			7.02	1.98	4.56	689.12	1.4	4.4	689.7	686.7			9/30/1999
			7.03	3.04	5.62	688.06	1.5	4.5	689.7	686.7			12/8/1999
			7.04	2.47	5.05	688.63	1.5	4.5	689.6	686.6			3/31/2000
			6.97	1.37	3.95	689.73	1.4	4.4	689.7	686.7			4/18/2005
	DAMAGED - ABANDONED												10/1/2006
													not sampled since 4-18-05
WP-02	698.3	700.31					8.5	11.5					Installed 7/6/1994
			13.65	9.69	11.7	688.61	8.6	11.6	689.7	686.7			7/11/1994
			13.75	9.32	11.33	688.98	8.7	11.7	689.6	686.6			5/10/1999
			13.76	10.06	12.07	688.24	8.8	11.8	689.6	686.6			9/23/1999
			13.77	10.07	12.08	688.23	8.8	11.8	689.5	686.5			12/6/1999
			13.76	9.38	11.39	688.92	8.8	11.8	689.6	686.6			3/29/2000
	DAMAGED - ABANDONED												4/14/2005
													not sampled since 3-29-00
WP-04	687.1	689.61					1.5	4.5					Installed 7/6/1994
			6.72	2.38	4.89	684.72	1.2	4.2	685.9	682.9			7/11/1994
			6.82	2.04	4.55	685.06	1.3	4.3	685.8	682.8			5/10/1999
			6.95	2.74	5.25	684.36	1.4	4.4	685.7	682.7			9/23/1999
			6.95	2.68	5.19	684.42	1.4	4.4	685.7	682.7			12/6/1999
			6.96	2.16	4.67	684.94	1.5	4.5	685.7	682.7			3/29/2000
			6.88	1.67	4.18	685.43	1.4	4.4	685.7	682.7			4/14/2005
		689.75	6.93	1.73	4.38	685.37	1.4	4.4	685.8	682.8			10/19/2006
			6.88	2.55	5.2	684.55	1.4	4.4	685.9	682.9			9/19/2007
			6.88	1.11	3.76	685.99	1.4	4.4	685.9	682.9			1/9/2008
			6.88	2.50	5.15	684.60	1.4	4.4	685.9	682.9			9/25/2012
			---	2.18	4.83	684.92	---	---	---	---			10/21/2013
	687.1		6.88	1.95	4.65	685.10	1.3	4.3	685.9	682.9			11/13/2014
WP-05	694.7	695.68					9.5	12.5					Installed 7/6/1994
			13.51	9.52	10.5	685.18	9.5	12.5	685.2	682.2			7/12/1994
			13.66	8.98	9.96	685.72	9.7	12.7	685.0	682.0			5/10/1999
			13.63	9.54	10.52	685.16	9.7	12.7	685.1	682.1			10/5/1999
			13.66	9.80	10.78	684.90	9.7	12.7	685.0	682.0			12/8/1999
			13.67	9.13	10.11	685.57	9.7	12.7	685.0	682.0			3/31/2000
			13.68	8.48	9.46	686.22	9.7	12.7	685.0	682.0			4/14/2005
	DAMAGED - ABANDONED												10/1/2006
													not sampled since 4-14-05
													ABANDONNED 9-6-07

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
WP-06	698.1	700.19					13.8	16.8					Installed 7/6/1994
			18.50	14.32	16.41	683.78	13.4	16.4	684.7	681.7			7/11/1994
			18.56	13.99	16.08	684.11	13.5	16.5	684.6	681.6			5/10/1999
			18.56	14.55	16.64	683.55	13.5	16.5	684.6	681.6			9/23/1999
			18.57	14.44	16.53	683.66	13.5	16.5	684.6	681.6			12/6/1999
			18.56	13.93	16.02	684.17	13.5	16.5	684.6	681.6			3/29/2000
			18.60	13.67	15.76	684.43	13.5	16.5	684.6	681.6			4/14/2005
		700.11	18.64	13.90	15.91	684.20	13.6	16.6	684.5	681.5			10/19/2006
			18.60	14.44	16.45	683.66	13.6	16.6	684.5	681.5			9/19/2007
			18.60	13.25	15.26	684.85	13.6	16.6	684.5	681.5			1/9/2008
			18.59	14.43	16.44	683.67	13.6	16.6	684.5	681.5			9/25/2012
			---	14.27	16.28	683.83	---	---	---	---			10/21/2013
	697.9		18.60	13.90	16.1	684.01	13.4	16.4	684.5	681.5			11/17/2014
WP-07	693.8	696.70					7.0	10.0					Installed 7/5/1994
			13.35	8.40	11.3	685.40	7.4	10.4	686.4	683.4			7/11/1994
			13.29	8.42	11.32	685.38	7.4	10.4	686.4	683.4			5/10/1999
			13.63	9.18	12.08	684.62	7.7	10.7	686.1	683.1			9/23/1999
			13.63	9.15	12.05	684.65	7.7	10.7	686.1	683.1			12/6/1999
			13.63	8.42	11.32	685.38	7.7	10.7	686.1	683.1			3/29/2000
			13.52	7.92	10.82	685.88	7.6	10.6	686.2	683.2			4/14/2005
		696.74	13.57	8.07	11.01	685.73	7.6	10.6	686.2	683.2			10/19/2006
			12.52	8.98	11.92	684.82	6.6	9.6	687.2	684.2			9/19/2007
			12.52	7.43	10.37	686.37	6.6	9.6	687.2	684.2			1/9/2008
			13.53	8.87	11.81	684.93	7.6	10.6	686.2	683.2			9/25/2012
			---	8.56	11.5	685.24	---	---	---	---			10/21/2013
	693.6		12.52	8.21	11.31	685.43	6.4	9.4	687.2	684.2			11/13/2014
WP-08	706.1	708.38					20.5	23.5					Installed 7/6/1994
			25.97	21.40	23.68	684.70	20.7	23.7	685.4	682.4			7/11/1994
			26.03	20.63	22.91	685.47	20.8	23.8	685.4	682.4			5/13/1999
			26.08	21.70	23.98	684.40	20.8	23.8	685.3	682.3			10/5/1999
			26.08	22.14	24.42	683.96	20.8	23.8	685.3	682.3			12/9/1999
			26.08	20.87	23.15	685.23	20.8	23.8	685.3	682.3			3/31/2000
			26.09	20.30	22.58	685.80	20.8	23.8	685.3	682.3			4/14/2005
		708.41	26.13	20.58	22.89	685.52	20.8	23.8	685.3	682.3			10/19/2006
													ABANDONNED 9-6-07

TABLE 1

SUMMARY OF ELEVATIONS
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Well Identification	Ground Surface Elevation	TOC Elevation	Depth to Bottom (ft from TOC)	Depth to Groundwater (ft. BGS)	Depth to Groundwater (ft. from TOC)	Groundwater Elevation	Screened Interval - ft BGS Top	Screened Interval - ft BGS Bottom	Screened Interval - ftMSL Top	Screened Interval - ftMSL Bottom	Free Product depth (ft. from TOC)	Free Product tickness (ft.)	Date
SG-1/SW-01	NM												
		689.36			0.81	688.55							7/1/1993
		691.16			2.62	688.54							7/12/1994
		684.47			1.22	683.25							10/18/2006
						684.47							10/29/2013
													ABANDONED
SG-2/SW-02	NM												
		691.51			13	678.51							7/1/1993
		699.14			15.4	683.74							7/12/1994
		685.41			0.98	684.43							10/18/2006
						685.41							10/29/2013
													ABANDONED
SG-3	NM												
					0.52								7/12/1994
	DAMAGED												10/6/1994
		685.79			0.97	684.82							10/18/2006
						685.79							10/29/2013
													ABANDONED
SG-4	NM												
					0.48								7/12/1994
	DAMAGED - REINSTALLED												10/6/1994
					NM								5/19/1999
					0.31								9/30/1999
					0.26								12/8/1999
					0.86								3/30/2003
													ABANDONED
SG-01	NM	684.47											
					1.22	683.25							10/18/2006
						681.71							10/29/2013
						681.71							11/17/2014
SG-02	NM	685.41											
					0.98	684.43							10/18/2006
						682.28							10/29/2013
SG-03	NM	685.79											
					0.97	684.82							10/18/2006
						682.77							10/29/2013

Notes:
BGS = Below Ground Surface
TOC = Top of Casing
--- or NM = Not Measured

Table 2
SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-01											
			5/20/93	9/7/94	5/13/99	9/29/99	12/7/99	3/31/00	4/15/05	10/20/06	9/18/07	9/24/12	10/21/13	11/13/14
Volatile Organic Compounds (VOCs) (µg/L):														
Benzene	5	0.5	<0.30	<1.0	<0.44	<0.44	**1.7**	<0.44	<0.41	<0.41	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<0.56	<1.0	<0.50	<0.50	<0.50	<0.50	<0.97	<0.97	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3									<1	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<0.37	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85	<0.85	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<0.38	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36	<0.36	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<0.34	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75	<0.75	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<0.78	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57	<0.57	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	<0.39	<1.0	**27**	<0.46	**120**	<0.46	6.1	0.94 Q	<0.68	<0.74	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<0.35	<1.0	<0.64	<0.64	<0.64	<0.64	<0.89	<0.89	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<0.44	<1.0	<0.50	<0.50	2.3	<0.50	<0.54	<0.54	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<0.51	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59	<0.59	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	<0.45	**5.8 B**	<0.38	<0.38	<0.38	<0.38	<0.43	<0.43	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<0.34	<1.0	<0.59	<0.59	2.1	<0.59	<0.74	<0.74	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<0.54	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81	<0.81	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<0.52	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45	<0.45	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<0.29	<1.0	1.6	<0.40	15	<0.40	<0.67	<0.67	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<0.30	<1.0	<0.53	<0.53	0.80 Q	<0.53	<0.90	<0.90	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	<0.34	<1.0	**1.6**	<0.49	**8.9**	**0.80 Q**	**6.9**	<0.48	<0.44	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<0.47	<1.0	<0.47	<0.47	0.79 Q	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<0.47	<1.0	<0.45	<0.45	0.64 Q	<0.45	<0.83	<0.83	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<0.47	<1.0	<0.47	<0.47	1.43	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<0.32	<1.0	<0.17	<0.17	<0.17	<0.17	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<0.81	<2.0	<0.77	<0.77	6.5	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<0.41	<1.0	<0.54	<0.54	3.7	<0.54	<0.83	<0.83	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<0.81	<2.0	<0.77	<0.77	10.2	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<0.30	<1.0	<0.37	<0.37	0.60 Q	<0.37	<0.86 &	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	<1.8	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	<2.3	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	NA	14	<10	<10	<10	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):														
1-Methylnaphthalene	NS	NS	NA	NA	<0.044	<0.044	0.12 Q	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<3	<11	<0.049	<0.049	0.15 Q	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<4	<11	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<5	<11	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<5	<11	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<5	<11	<0.0088	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<4	<11	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<4	<11	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<5	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<4	<11	<0.0080	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<5	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	120	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<5	<11	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<4	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<5	<11	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<4	<11	<0.020	<0.020	<0.020	<0.020	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<4	<11	<0.0084	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	<5	<11	0.16 Q	<0.12	2.2	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	<4	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<4	<11	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<4	<11	<0.13	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-01											
			5/20/93	9/7/94	5/13/99	9/29/99	12/7/99	3/31/00	4/15/05	10/20/06	9/18/07	9/24/12	10/21/13	11/13/14
RCRA Metals (mg/L)														
Antimony	0.006	0.0012	NA	NA	(-0.0032)	0.00025 Q	<0.00020	<0.00020	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	<0.002	<0.0024	**(-0.00047)**	0.00050 Q	(0.00034)	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	0.062	0.026	0.025	0.026	0.025	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	<0.00043	<0.000070	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	<0.0030	<0.00017	(0.00013)	<0.000060	0.000080 Q	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	**0.012**	0.0025	(0.00020)	(0.00048)	(0.00017)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	<0.00094	0.0011	0.0011	(-0.0003)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	<0.027	(0.0097)	0.0053 Q	(-0.024)	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	<0.025	<0.0028	<0.00015	<0.00015	<0.00015	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	0.00032 Q	0.0003	0.00011 Q	0.00099	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	**0.0034**	<0.000042	<0.000042	0.000044 Q	<0.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	<0.0022	0.00097	0.0013	0.00086	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	<0.001	<0.0023	0.00079 Q	0.0018 Q	(0.00083)	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	<0.010	<0.00046	0.00041	<0.000095	(0.00047)	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	1.8	1.7	1.8	1.9	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	<0.0013	<0.000093	<0.000093	<0.000093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	0.0094	0.0074	0.0052 Q	0.0037 Q	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):														
Aroclor-1016	NS	NS	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)														
Alkalinity	increase of 100		NA	370	400	470	410	390	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	4.8	2.9	2.3	3.3 Q	2.7	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	26	19	18	14	10	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	430	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	400	470 H (1)	410	390	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	<2.5	<1.9	<1.9	<1.9	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	<0.043	<0.043	<0.044	<0.044	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	0.34	0.39	0.18 Q	0.12 Q	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	0.99	1.2	<0.50	1.8 A(0.67)	NA	NA	NA	NA	NA	NA
Field Screening Measurements														
pH		IU	7.7	7.3	6.92	7.27	7	6.89	6.91	7.26	6.79	6.68	6.18	7.02
Conductivity		uS	758	460	708	722	689	660	750	789.9	809	992	696	899
Temperature		°C	[8.1]	13	10	10.3	9.6	10.5	10.5	9.7	10.1	10.3	10.67	9.64
Dissolved Oxygen		ppm	NA	NA	7.81	6.08	5.59	101	5.19	6.95	--	3.33	5.63	5.92
Redox Potential		mV	NA	NA	52	81	51	5.28	136	82	60	190.1	98.3	140.6

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-01											
			5/20/93	9-6-94	5/13/99	9/29/99	12/7/99	3/31/00	4/15/05	10/20/06	9/18/07	9/24/12	10/21/13	11/13/14
Volatile Organic Compounds (VOCs) (µg/L):														
Benzene	5	0.5	<0.30	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41	<0.41	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<0.56	<1.0	<0.50	<0.50	<0.50	<0.50	<0.97	<0.97	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3									<1	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<0.37	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85	<0.85	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<0.38	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36	<0.36	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<0.34	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75	<0.75	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<0.78	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57	<0.57	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	<0.39	6.3	**13**	<0.46	**21**	<0.46	<0.83	<0.83	<0.68	<0.74	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<0.35	<1.0	<0.64	<0.64	<0.64	<0.64	<0.89	<0.89	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<0.44	<1.0	<0.50	<0.50	0.69 Q	<0.50	<0.54	<0.54	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<0.51	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59	<0.59	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	<0.45	**6.1 B**	<0.38	<0.38	<0.38	<0.38	<0.43	<0.43	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<0.34	<1.0	<0.59	<0.59	1.0 Q	<0.59	<0.74	<0.74	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<0.54	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81	<0.81	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<0.52	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45	<0.45	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<0.29	<1.0	0.87 Q	<0.40	3.1	<0.40	<0.67	<0.67	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<0.30	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90	<0.90	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	<2.6	**2.1**	**0.89 Q**	<0.49	**2.3**	<0.49	**1.2 Q**	<0.48	<0.44	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<0.47	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<0.47	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83	<0.83	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<0.47	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<0.32	<1.0	<0.17	<0.17	<0.17	<0.17	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<0.81	<2.0	<0.77	<0.77	1.9 Q	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<0.41	<1.0	<0.54	<0.54	0.96 Q	<0.54	<0.83	<0.83	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<0.81	<2.0	<0.77	<0.77	2.86	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<0.30	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86 &	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	<1.8	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	<2.3	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	NA	3.2	<10	<10	<10	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):														
1-Methylnaphthalene	NS	NS	NA	NA	<0.044	<0.044	0.059 Q	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<3	<11	<0.049	<0.049	0.077 Q	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<4	<11	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<5	<11	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<5	<11	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<5	<11	<0.0088	0.049	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<4	<11	<0.012	**0.044**	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<4	<11	<0.016	**0.1**	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<5	<11	<0.018	0.081	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<4	<11	<0.0080	0.024 Q	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<5	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	<7	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<5	<11	<0.0090	0.012 Q	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<4	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<5	<11	<0.019	0.036 Q	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<4	<11	<0.020	<0.020	<0.020	<0.020	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<4	<11	<0.0084	0.096	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	<5	<11	0.16 Q	<0.12	0.84	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	<4	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<4	<11	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<4	<11	<0.13	0.062	<0.13	<0.13	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-01											
			5/20/93	9-6-94	5/13/99	9/29/99	12/7/99	3/31/00	4/15/05	10/20/06	9/18/07	9/24/12	10/21/13	11/13/14
RCRA Metals (mg/L)														
Antimony	0.006	0.0012	NA	NA	(-0.0032)	**0.0016**	<0.00020	<0.00020	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	**0.003**	<0.0024	**(-0.00047)**	**0.0018**	**(0.00034)**	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	0.15	0.17	0.18	0.018	0.18	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	<0.00043	0.00018 Q	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	<0.0030	<0.00017	(0.00013)	<0.000060	0.00043	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	**0.14**	<0.00053	(0.00020)	(0.00048)	(0.00017)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	<0.00094	0.00088	0.00087	(-0.0003)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	**0.97**	**0.9**	**0.93**	**0.78**	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	<0.025	<0.0028	0.00027 Q	<0.00015	<0.00015	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	0.021	0.021	0.021	0.02	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	**0.0034**	<0.000042	<0.00042	<0.000042	<00000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	<0.0022	0.0011	0.0012	0.00094	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	<0.001	<0.0023	<0.00064	0.00095 Q	(0.00083)	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	<0.010	<0.00046	0.0014	<0.000095	(0.00047)	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	9.3	8.9	9.4	9.4	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	<0.0013	0.00010 Q	<0.000093	<0.000093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	<0.00089	0.0063 Q	0.0047 Q	0.0095	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):														
Aroclor-1016	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)														
Alkalinity	increase of 100		NA	305	320	390 H(1)	330	330	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	7.7	7.8	6.5	9.1	8.6	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	26	30	29	31	32	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	470	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	3230	390 H(1)	330	330	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	<2.5	<1.9 H(1)	<1.9	<3.8	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	<0.043	<0.043	<0.044	<0.044	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	<0.090	<0.090	<0.080	<0.080	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	<0.037	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	<0.33	0.83 Q	<0.50	1.3 QA(0.67)	NA	NA	NA	NA	NA	NA
Field Screening Measurements														
pH		IU	7.8	7.85	7.13	7.76	7.36	7.21	7.31	7.44	7.18	7.77	7.35	7.48
Conductivity		uS	512	575	589	602	612	608	619	620	617.2	601	447	626
Temperature		°C	9.7	12.8	11.7	10.1	9.2	10.6	10	9.4	10.3	10.55	10.51	9.57
Dissolved Oxygen		ppm	NA	NA	1.9	3.58	3.49	3.52	2.1	1.18	1.14	0.11	0.62	0.29
Redox Potential		mV	NA	NA	-101	-85	-110	-89	-103	-99	-94	-190	16.1	-94.8

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-02				
			5/20/93	5/19/99	10/5/99	12/9/99	4/5/00
Volatile Organic Compounds (VOCs) (µg/L):							
Benzene	5	0.5	<0.30	**850**	**650 Q**	**570 Q**	**840**
t-Butylbenzene	NS	NS	<0.56	<100	<250	<250	<50
Chloromethane	3	0.3					
2-Chlorotoluene	NS	NS	<0.37	<130	<330	<330	<65
1,2-Dichloroethane	5	0.5	<0.38	<72	<270	<270	<54
1,1-Dichloroethane	850	85	<0.34	**190 Q**	<310	<310	**240**
1,1-Dichloroethene	7	0.7	<0.78	**130 Q**	<230	<230	**91 Q**
cis-1,2-Dichloroethene	70	7	**62**	**170,000 D**	**160,000 D**	**150,000 D**	**85,000 D**
trans-1,2-Dichloroethene	100	20	<0.35	<130	<320	<320	**640**
Ethylbenzene	700	140	2.9	**170 Q**	**860**	**450 Q**	**150 Q**
Isopropylbenzene	NS	NS	0.64	<78	<200	<200	<39
Methylene chloride	5	0.5	<0.45	200 Q	<190	<190	<38
Naphthalene	100	10	6.9	**140 Q**	**1,300**	**860 Q**	**200**
n-Propylbenzene	NS	NS	1.4	<110	340 Q	<270	<54
Tetrachloroethene	5	0.5	1.0	<82	<200	<200	<41
Toluene	1,000	200	7.3	**2,100**	**4,400**	**2,500**	**1,700**
1,1,1-Trichloroethane	200	40	<0.30	**1,100**	**1,600**	**1,200**	**340**
Trichloroethene	5	0.5	**3.6**	**250 Q**	<250	<250	**720**
1,2,4-Trimethylbenzene	--	--	12	140 Q	2300	1500	220
1,3,5-Trimethylbenzene	--	--	3.8	<90	730	450 Q	63 Q
Total Trimethylbenzene	480	96	15.8	**140**	**3030**	**1950**	**283**
Vinyl Chloride	0.2	0.02	<0.32	<100	<85	<85	<17
Xylenes, m + p	--	--	14	580	3,900	2,000	630
Xylene, o	--	--	6.7	320 Q	1,800	1,000	310
Total Xylenes	10,000	1,000	20.7	900	**5,700**	**3,000**	940
Styrene	100	10	<0.30	<74	<190	<190	<37
Ethane	NS	NS	NA	<10	<2000	<100	<10
Ethene	NS	NS	NA	<10	<2000	<100	<10
Methane	NS	NS	NA	<10	<2000	38	170
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):							
1-Methylnaphthalene	NS	NS	NA	9300	1600	6500	50
2-Methylnaphthalene	NS	NS	670	15000	2600	11000	79
Acenaphthene	NS	NS	<83	<2000	<99	<990	<20
Acenaphthylene	NS	NS	180	9900	1500	6100	<18
Anthracene	3000	600	120	**1400**	<4.5	<44	3.5
Benzo(a)anthracene	NS	NS	<100	750	<4.3	<43	0.98
Benzo(a)pyrene	0.2	0.02	<83	**460**	<6.0	**450**	<1.2
Benzo (b)fluoranthene	0.2	0.02	<83	<160	<8.0	<80	<1.6
Benzo(ghi)perylene	NS	NS	<100	<180	29	<90	<1.8
Benzo(k)fluoranthene	NS	NS	<83	<80	<4.0	<40	<0.79
Butyl benzyl phthalate	NS	NS	<100	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	<150	NA	NA	NA	NA
Chrysene	0.2	0.02	<100	**580**	<4.5	<44	**2.6**
Dibenzo(a,h)anthracene	NS	NS	<83	<180	<9.0	<90	<1.8
Fluoranthene	400	80	**130**	<190	<9.5	<95	<1.9
Fluorene	400	80	<83	**4,500**	**580**	**2,500**	<2.0
Indeno(1,2,3-dc)pyrene	NS	NS	<83	<84	<4.2	<42	<0.83
Naphthalene	100	10	**1,200**	**13,000**	**3,000**	**11,000**	**210**
N-Nitroso-Di-N-Propylamin	NS	NS	<100	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	170	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	170	NA	NA	NA	NA
Phenanthrene	NS	NS	380	6800	1000	4900	19
Pyrene	250	50	**180**	<130	**310**	<65	6

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-02				
			5/20/93	5/19/99	10/5/99	12/9/99	4/5/00
RCRA Metals (mg/L)							
Antimony	0.006	0.0012	NA	**0.0040 Q**	**0.0022**	**0.0043**	**0.0059**
Arsenic	0.01	0.001	**0.011**	**0.017 Q**	**(0.0018)**	**0.019**	**0.021**
Barium	2	0.4	0.09	0.0061	0.1	0.011	0.004
Beryllium	0.004	0.0004	NA	<0.00063	0.00026	<0.000070	<.00007
Cadmium	0.005	0.0005	0.0002	<0.00020	(-0.00068)	0.000070 Q	0.00017 Q
Chromium	0.1	0.01	0.009	B(0.0011)	**0.088**	0.0059	(0.00017)
Copper	1.3	0.13	NA	0.0035 Q	0.03	0.0055	(-0.0003)
Iron	0.3	0.15	NA	**2.7**	**11**	**(0.022)**	**0.51**
Lead	0.015	0.0015	**0.072**	<0.0030	**0.19**	**0.012**	0.0012
Manganese	0.05	0.025	NA	**0.44**	**0.39**	**0.38**	**0.17**
Mercury	0.002	0.0002	**0.00031**	<0.000042	<0.000042	<0.000042 K	0.000047 Q
Nickel	0.1	0.02	NA	0.0092	0.018	0.0048	0.0042
Selenium	0.05	0.01	<0.002	<0.0024 ED	0.0034 Q	0.0013 Q	(0.00083)
Sliver	0.05	0.01	<0.001	<0.00050 N	0.00012 QN,*	(-0.00041)	(0.00047)
Sodium	increase of 10		NA	46	25	31	35
Thallium	0.002	0.0004	NA	<0.0014	(0.00018)	<0.000093	<0.000093
Zinc	5	2.5	NA	0.0087 Q	(0.0023)	(-0.0048)	0.021
Poychlorinated Biphenyls (PCBs) (µg/L):							
Aroclor-1016	NS	NS	NA	<330	<33	<16	<0.33
Aroclor-1221	NS	NS	NA	<330	<33	<16	<0.33
Aroclor-1232	NS	NS	NA	<30	<33	<16	<0.33
Aroclor-1242	NS	NS	NA	<330	<33	<16	<0.33
Aroclor-1248	NS	NS	NA	4,200	720	210	5.9
Aroclor-1254	NS	NS	NA	3,200	620	<16	<0.33
Aroclor-1260	NS	NS	NA	<330	<33	49	<0.33
Total PCBs	0.03	0.003	NA	**7400**	**1340**	**259**	**5.9**
General Chemistry Parameters (mg/L)							
Alkalinity	increase of 100		NA	940	680	640	800
Ammonia	NS	NS	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA
Chloride	250	125	NA	**270**	**260**	**270**	20
Cyanide	0.2	0.04	NA	NA	NA	NA	NA
Sulfate	250	125	NA	32 ED	16	42	52
TDS	increase of 200		NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	940	680	640	800
Carbonate Alkalinity	NS	NS	NA	<25	<19	<1.9	<38
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	1700	1500
Ferrous Iron	NS	NS	NA	220	0.13 Q	0.023	<44 ED
Nitrogen, nitrate	increase of 2		NA	<2.2 ED	<0.090	<0.080	<0.080
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	6.9	7.5
TOC as NPOC - Filtered	increase of 1		NA	290	600 A(0.97)	250	240
Field Screening Measurements							
pH		IU	7.7	NA	NA	NA	NA
Conductivity		uS	780	NA	NA	NA	NA
Temperature		°C	9.8	NA	NA	NA	NA
Dissolved Oxygen		ppm	NA	NA	NA	NA	NA
Redox Potential		mV	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-02												
			5/20/93	9/7/94	5/13/99	10/5/99	12/9/99	4/4/00	4/18/05	10/20/06	9/18/07	9/24/12	10/21/13	11/18/14	11/18/14
Volatile Organic Compounds (VOCs) (µg/L):															DUP
Benzene	5	0.5	<0.30	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41	<0.41	<0.47	<0.5	<0.24	<0.24	<0.24
t-Butylbenzene	NS	NS	<0.56	<1.0	<0.50	<0.50	<0.50	<0.50	<0.97	<0.97	<0.34	<0.71	<0.36	<0.36	<0.36
Chloromethane	3	0.3									<1	<1.9	<0.81	<0.81	<0.81
2-Chlorotoluene	NS	NS	<0.37	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85	<0.85	<0.49	<0.7	<0.21	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<0.38	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36	<0.36	<0.45	<0.5	<0.41	<0.41	<0.41
1,1-Dichloroethane	850	85	<0.34	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75	<0.75	<0.56	<0.98	<0.3	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<0.78	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57	<0.57	<0.64	<0.6	<0.4	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	**7.3**	<1.0	**16**	<0.46	1.7	<0.46	<0.83	<0.83	<0.68	<0.74	<0.38	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<0.35	<1.0	<0.64	<0.64	<0.64	<0.64	<0.89	<0.89	<0.95	<0.79	<0.35	<0.35	<0.35
Ethylbenzene	700	140	1.2	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54	<0.54	<0.38	<0.78	<0.55	<0.55	<0.55
Isopropylbenzene	NS	NS	<0.51	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59	<0.59	<0.48	<0.92	<0.3	<0.3	<0.3
Methylene chloride	5	0.5	<0.45	**5.4 B**	<0.38	<0.38	<0.38	<0.38	<0.43	<0.43	<0.69	<1.1	<0.5	<0.5	<0.5
Naphthalene	100	10	<0.34	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74	<0.74	<1.8	<2.1	<1.7	<1.7	<1.7
n-Propylbenzene	NS	NS	0.70	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81	<0.81	<0.38	<0.59	<0.25	<0.25	<0.25
Tetrachloroethene	5	0.5	<0.52	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45	<0.45	<0.52	<0.44	<0.33	<0.33	<0.33
Toluene	1,000	200	<0.29	<1.0	1.0 Q	<0.40	<0.40	<0.40	<0.67	<0.67	<0.46	<0.53	<0.69	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<0.30	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90	<0.90	<0.5	<0.85	<0.33	<0.33	<0.33
Trichloroethene	5	0.5	**12**	<1.0	**0.98 Q**	<0.49	<0.49	<0.49	<0.48	<0.48	<0.44	<0.47	<0.33	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	3.7	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	1.5	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83	<0.83	<0.37	<0.74	<1.4	<1.4	<1.4
Total Trimethylbenzene	480	96	5.2	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<0.32	<1.0	<0.17	<0.17	<0.17	<0.17	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	4.5	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69	<0.69
Xylene, o	--	--	2.3	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83	<0.83	<0.32	<0.8	<0.63	<0.63	<0.63
Total Xylenes	10,000	1,000	6.8	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69	<0.69
Styrene	100	10	<0.30	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86 &	<0.86	NA	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	<1.8	<10	<13	<10	NA	<10	NA	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	<2.3	<10	<13	<10	NA	<10	NA	NA	NA	NA	NA
Methane	NS	NS	NA	NA	26	24	22	35	NA	14	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):															
1-Methylnaphthalene	NS	NS	NA	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<3	<11	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<4	<11	<0.20	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<5	<11	<0.18	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<5	<11	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<5	21	<0.0088	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<4	<11	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<4	<11	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<5	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<4	<11	<0.0080	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<5	66	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	<7	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<5	**22**	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<4	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<5	<11	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<4	<11	<0.020	<0.020	<0.020	<0.020	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<4	<11	<0.0084	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	<5	<11	0.16 Q	<0.12	0.16 Q	<0.12	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	<5	11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<4	<11	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<4	<11	<0.13	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-02												
			5/20/93	9/7/94	5/13/99	10/5/99	12/9/99	4/4/00	4/18/05	10/20/06	9/18/07	9/24/12	10/21/13	11/18/14	11/18/14
RCRA Metals (mg/L)															
Antimony	0.006	0.0012	NA	NA	B(-0.0032)	0.00016 Q	<0.00020	<.00020	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	<0.001	<0.002	<0.0024	**(-0.00047)**	**(0.00038)**	**(0.00034)**	NA	NA	NA	NA	NA	NA	NA
Barium	2	0.4	0.114	0.17	0.15	0.15	0.16	0.17	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	<0.00043	<0.000070	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	<0.0002	<0.0030	<0.00017	(0.00013)	<0.000060	<0.000060	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	<0.002	<0.0044	0.001 Q	(0.00020)	(0.00012)	(0.00017)	NA	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	<0.00094	0.00046 Q	<0.00025	(-0.0003)	NA	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	**0.75**	**0.55**	**0.66**	**0.62**	NA	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	<0.004	<0.025	<0.0028	<0.00015	<0.00015	<0.00015	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	0.019	0.019	0.021	0.021	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	<0.00020	**0.0014**	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	<0.0022	0.0028	0.0031	0.0033	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	<0.002	<0.001	<0.0023	<0.00064	<0.00064	(0.00083)	NA	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	<0.001	<0.010	<0.00046	<0.000095	(-0.00041)	(0.00047)	NA	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	11	9.8	10	11	NA	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	<0.0013	<0.000093	<0.000093	<0.00093	NA	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	0.009	0.0029 Q	-0.0048)	0.0047 Q	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):															
Aroclor-1016	NS	NS	NA	<1.0	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	<0.15	NA	NA
Aroclor-1221	NS	NS	NA	<2.0	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	<0.11	NA	NA
Aroclor-1232	NS	NS	NA	<1.0	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	<0.065	NA	NA
Aroclor-1242	NS	NS	NA	<1.0	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	<0.072	NA	NA
Aroclor-1248	NS	NS	NA	<1.0	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	<0.13	NA	NA
Aroclor-1254	NS	NS	NA	<1.0	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	<0.072	NA	NA
Aroclor-1260	NS	NS	NA	<1.0	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	<0.18	NA	NA
Total PCBs	0.03	0.003	NA	<2.0	<0.33	<0.33	<0.33	<0.33	NA	NA	NA	NA	<0.18	NA	NA
General Chemistry Parameters (mg/L)															
Alkalinity	increase of 100		NA	360	340	400	340	340	NA	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	5.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	24	24	26	27	26	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	43	50	47	42	51	NA	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	480	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	470	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	340	400	340	340	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	<2.5	<1.9	<1.9	<3.8	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	<0.043	<0.043	<0.044	0.12 Q	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	<0.090	0.43	<0.080	<0.080	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	4	3.8	6.5	(0.67)	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements															
pH		IU	7.7	7.2	7.01	7.5	7.2	7.19	7.12	7.02	6.95	7.72	7.53	7.53	10.9
Conductivity		uS	625	500	711	725	728	722	704	721.6	725.4	659	453	453	674
Temperature		°C	10.4	13	10.5	10.1	9.3	9.1	10.4	9.7	10.2	10.73	10.37	10.37	9.6
Dissolved Oxygen		ppm	NA	NA	1.13	3.53	1.97	1.98	0.85	0.62	0.96	0.22	0.68	0.68	0.17
Redox Potential		mV	NA	NA	-68	-16	-57	-29	-41	-60	-34	-118.1	39.1	39.1	-114.6

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-02A											
			9-6-94	5/11/99	9/29/99	12/7/99	3/30/00	4/18/05	10/20/06	9/18/07	9/24/12	10/24/13	11/18/14	11/18/14
Volatile Organic Compounds (VOCs) (µg/L):														DUP
Benzene	5	0.5	**73**	**53**	**95**	**68**	**56 Q**	<20	<51	**90**	<50	**60 J**	**56**	**54**
t-Butylbenzene	NS	NS	<5.0	<0.50	<25	<2.5	<50	<48	<120	<17	<71	<36	<18	<18
Chloromethane	3	0.3								<50	<190	<81	<40.5	<40.5
2-Chlorotoluene	NS	NS	<5.0	<0.65	<32	3.7 Q	<65	<42	<110	<24.5	<70	<21	<10.5	<10.5
1,2-Dichloroethane	5	0.5	<5.0	**0.78 Q**	<27	<2.7	<54	<18	<45	<22.5	<50	<41	<20.5	<20.5
1,1-Dichloroethane	850	85	<5.0	31	44 Q	30	<61	<38	<94	70 J	<98	<30	71	40 J
1,1-Dichloroethene	7	0.7	<5.0	**6**	<23	**5.7 Q**	<47	<28	<71	<32	<60	<40	<20	<20
cis-1,2-Dichloroethene	70	7	<5.0	**8500 D**	**14,000 D**	**8,900 D**	**9,900**	**6,400**	**12,000**	**5,300**	**4000**	**5,800**	**4,800**	**5,000**
trans-1,2-Dichloroethene	100	20	<5.0	14	<32	5.3 Q	<64	<44	<110	<47.5	<79	<35	<17.5	<17.5
Ethylbenzene	700	140	18	58	52 Q	34	<50	<27	<68	94	109 J	66 J	88	80 J
Isopropylbenzene	NS	NS	<5.0	2.2	<20	<1.9	<39	<30	<74	<24	<92	<30	<15	<15
Methylene chloride	5	0.5	**31 B**	<0.38	<19	<1.9	<38	<22	<76	<34.5	<110	<50	<25	<25
Naphthalene	100	10	**18**	**56**	**140**	**38**	<59	<37	<92	<90	<210	<170	**116 J**	**92 J**
n-Propylbenzene	NS	NS	<5.0	3.4	<27	<2.7	<54	<40	<100	<19	<59	<25	<12.5	<12.5
Tetrachloroethene	5	0.5	**13**	**5.9**	<20	**2.3 Q**	<41	<22	<56	<26	<44	<33	<16.5	<16.5
Toluene	1,000	200	180	**340 D**	**430**	**270**	**300**	110	180 Q	**590**	**450**	**340**	**380**	**370**
1,1,1-Trichloroethane	200	40	<5.0	**64**	**67 Q**	35	<53	<45	<110	32 J	<85	39 J	**42 J**	**45 J**
Trichloroethene	5	0.5	**430**	**190 D**	**230**	**170**	**280**	**150**	**95 Q**	<30.5	<47	**63 J**	**62**	**66**
1,2,4-Trimethylbenzene	--	--	9.2	29	24 Q	18	<47	<48	<120	<60	<80	<220	<110	<110
1,3,5-Trimethylbenzene	--	--	<5.0	6.6	<22	4.7 Q	<45	<42	<100	<18.5	<74	<140	<70	<70
Total Trimethylbenzene	480	96	9.2	35.6	24	22.7	<47	<48	<120	<60	<80	<220	<110	<110
Vinyl Chloride	0.2	0.02	<5.0	**1.3 Q**	**55**	**120**	**190**	**580**	**420**	**2,470**	**1220**	**1,070**	**1,410**	**1,430**
Xylenes, m + p	--	--	44	130	140	98	100 Q	<90	<220	272	298 J	180 J	250	239
Xylene, o	--	--	28	78	80 Q	59	<54	<42	<100	150	161 J	100 J	134	126
Total Xylenes	10,000	1,000	72	208	220	157	100	<90	<220	422	459 J	280 J	384	365
Styrene	100	10	<5.0	**13**	<18	9.8	<37	<43 &	<110	NA	NA	NA	NA	NA
Ethane	NS	NS	NA	<2.3	<10	<10	<10	NA	81	NA	NA	NA	NA	NA
Ethene	NS	NS	NA	<1.8	<10	<10	<10	NA	<10	NA	NA	NA	NA	NA
Methane	NS	NS	NA	27	59	85	56	NA	190	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):														
1-Methylnaphthalene	NS	NS	NA	4.3 D	8.8 D	6.7	3.7	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<12	7.4 D	11 D	9.9	5.1	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<12	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<12	<0.18	22 D	17	<0.18	NA	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<12	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<12	<0.0088	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<12	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<12	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<12	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<12	<0.0080	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	<12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<12	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<12	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<12	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<12	0.41	0.75	0.52	<0.020	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<12	<0.0084	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	**13**	**45 D**	**76 D**	**59**	**35**	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	**<12**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<12	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<12	<0.013	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-02A											
			9-6-94	5/11/99	9/29/99	12/7/99	3/30/00	4/18/05	10/20/06	9/18/07	9/24/12	10/24/13	11/18/14	11/18/14
RCRA Metals (mg/L)														
Antimony	0.006	0.0012	NA	<0.0019	0.0011	0.00028 Q	<0.00020	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	**0.006**	**0.0059 Q**	**(-0.00047)**	**0.011**	**0.0057**	NA	NA	NA	NA	NA	NA	NA
Barium	2	0.4	0.13	0.088	0.078	0.082	0.11	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	<0.00043	<0.000070	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	<0.0030	<0.00017	(0.00013)	<0.000060	<0.000060	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	**0.022**	0.0031	(0.00020)	(0.00048)	(-0.00008)	NA	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	**NA**	<0.00094	0.0017	0.0018	(-0.00041)	NA	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	**NA**	**3.1**	(0.0097)	**2.3**	**1**	NA	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	<0.025	<0.0028	<0.00015	<0.00015	<0.00015	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	**0.077**	**0.062**	**0.067**	**0.038**	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	<0.0002	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	<0.0022	0.002	0.0025	0.0027	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	<0.001	<0.0023	<0.00064	0.0014 Q	0.0023	NA	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	<0.010	<0.00046	<0.000095	<0.000095	<0.00010	NA	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	11	11	12	18	NA	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	<0.0013	<0.000093	<0.000093	<0.000093	NA	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	0.00039	0.01	0.0073	0.0079	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):														
Aroclor-1016	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	<0.12	NA	NA
Aroclor-1221	NS	NS	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	<0.086	NA	NA
Aroclor-1232	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	NA	NA
Aroclor-1242	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	<0.055	NA	NA
Aroclor-1248	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	<0.10	NA	NA
Aroclor-1254	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	<0.055	NA	NA
Aroclor-1260	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	<0.14	NA	NA
Total PCBs	0.03	0.003	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	<0.14	NA	NA
General Chemistry Parameters (mg/L)														
Alkalinity	increase of 100		660	490	60 H(1)	500	580	NA	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	18	19	1.7	22	20	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	100	72	19	100	110	NA	NA	NA	NA	NA	NA	NA
TDS	increase of 200		800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	490	60 H(1)	500	580	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	<2.5	<1.9 H(1)	<1.9	<3.8	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<0.044	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	0.33	0.63	0.38	0.59	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	0.91	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	6.9	11	0.76 Q	12	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements														
pH		IU	6.98	6.79	7.09	6.92	6.83	684	6.7	6.89	7.17	6.75	6.75	6.88
Conductivity		uS	1446	870	996	1021	1098	1015	1007	983.6	973	1679	1679	1358
Temperature		°C	10	11.1	10.6	9	10.6	11.4	10.4	10.4	10.9	11.29	11.29	10.16
Dissolved Oxygen		ppm	NA	1.84	1.41	1.73	1.7	2.87	2.75	--	1.23	3.15	3.15	2.07
Redox Potential		mV	NA	-66	0.26	-54	-39	-53	-81	-53	-127.8	77.3	77.3	-60.1

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-03											
			5/20/93	9-6-94	5/11/99	9/29/99	12/7/99	3/30/00	4/15/05	10/20/06	9/18/07	9/24/12	10/24/13	11/17/14
Volatile Organic Compounds (VOCs) (µg/L):														
Benzene	5	0.5	<1.5	<5.0	<0.44	<0.44	<0.44	<0.44	<0.41	<0.41	<2.35	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<2.8	<5.0	<0.50	<0.50	<0.50	<0.50	<0.97	<0.97	<1.7	<0.71	<0.36	<0.36
Chloromethane	3	0.3									<5	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<1.9	<5.0	<0.65	<0.65	<0.65	<0.65	<0.85	<0.85	<2.45	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<1.9	<5.0	<0.54	<0.54	<0.54	<0.54	<0.36	<0.36	<2.25	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<1.7	<5.0	<0.61	0.72 Q	<0.61	<0.61	<0.75	<0.75	<2.8	<0.98	0.32 J	<0.3
1,1-Dichloroethene	7	0.7	<3.9	<5.0	<0.47	<0.47	<0.47	<0.47	<0.57	<0.57	<3.2	<0.6	<0.4	0.48 J
cis-1,2-Dichloroethene	70	7	**100**	**230**	**140**	**180 D**	**100**	**89**	**130**	**170**	**88**	**68**	**85**	**53**
trans-1,2-Dichloroethene	100	20	<1.8	<5.0	<0.64	<0.64	<0.64	<0.64	<0.89	<0.89	<4.75	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<2.2	<5.0	<0.50	<0.50	<0.50	<0.50	<0.54	<0.54	<1.9	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<2.6	<5.0	<0.39	<0.39	<0.39	<0.39	<0.59	<0.59	<2.4	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	<2.3	**30 B**	<0.38	<0.38	<0.38	<0.38	<0.43	<0.43	<3.45	<1.1	<0.5	<0.5
Naphthalene	100	10	<1.7	<5.0	<0.59	<0.59	<0.59	<0.59	<0.74	<0.74	<9	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<2.7	<5.0	<0.54	<0.54	<0.54	<0.54	<0.81	<0.81	<1.9	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<2.6	<5.0	<0.41	**0.73 Q**	<0.41	0.43 Q	<0.45	<0.45	<2.6	<0.44	0.39 J	0.41 J
Toluene	1,000	200	<1.5	8.6	<0.40	<0.40	<0.40	<0.40	<0.67	<0.67	<2.3	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<1.5	<5.0	10	13	7.1	8.7	8.0	8.9	5.3 J	5.4	5.8	3.5
Trichloroethene	5	0.5	**570**	**240**	**180**	**220 D**	**170**	**120**	**88**	**140**	**78**	**58**	**57**	**43**
1,2,4-Trimethylbenzene	--	--	<2.4	<5.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<6	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<2.4	<5.0	<0.45	<0.45	<0.45	<0.45	<0.83	<0.83	<1.85	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<2.4	<5.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<6	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<1.6	<5.0	<0.17	<0.17	<0.17	<0.17	<0.18	<0.18	<1	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<4.1	<10	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<3.35	<1.1	<0.69	<0.69
Xylene, o	--	--	<2.1	<5.0	<0.54	<0.54	<0.54	<0.54	<0.83	<0.83	<1.6	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<4.1	<10	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<3.35	<1.1	<0.69	<0.69
Styrene	100	10	<1.5	<5.0	<0.37	<0.37	<0.37	<0.37	<0.86	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	<2.3	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	<1.8	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	NA	<0.9	<10	<10	<10	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):														
1-Methylnaphthalene	NS	NS	NA	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<3	<11	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<4	<11	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<5	<11	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<5	<11	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<5	<11	<0.0088	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<4	<11	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<4	<11	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<5	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<4	<11	<0.0080	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<5	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	8	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<5	<11	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<4	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<5	<11	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<4	<11	<0.02	<0.020	<0.020	<0.020	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<4	<11	<0.0084	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	<5	<11	<0.12	<0.12	<0.12	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	<5	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<4	<11	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<4	<11	<0.013	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA

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SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-03											
			5/20/93	9-6-94	5/11/99	9/29/99	12/7/99	3/30/00	4/15/05	10/20/06	9/18/07	9/24/12	10/24/13	11/17/14
RCRA Metals (mg/L)														
Antimony	0.006	0.0012	NA	NA	B(-0.0032)	**0.0012**	0.00092	<0.00020	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	<0.002	<0.0024	**(-0.00047)**	0.00061 Q	<0.00020	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	0.054	0.032	0.0333	0.035	0.033	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	<0.00043	0.00011 Q	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	<0.0030	<0.00017	(0.00013)	<0.000060	0.000090 Q	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	0.006	0.0027	(0.00020)	(0.00048)	(-0.00008)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	<0.00094	0.0024	0.0036	(-0.00041)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	<0.027	(0.0097)	<0.0037	0.013	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	<0.025	<0.0028	**0.0026 Q**	**0.00026 Q**	0.00023 Q	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	0.002	0.0073	0.00036	0.0013	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	**0.0023**	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	0.0027 Q	0.0019	0.0024	0.0018	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	<0.001	<0.0023	0.0015 Q	0.0018 QMS	0.00095 W	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	<0.010	<0.00046	<0.000095	<0.000095	<0.00010	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	4.6	4	4.5	4.5	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	<0.0013	<0.000093	<0.000093	<0.0093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	0.0059	0.0083	0.0082	0.0093	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):														
Aroclor-1016	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)														
Alkalinity	increase of 100		NA	440	410	390 H(1)	410	390	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	12	14	13	7.9	7	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	110	44	43	60	52	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	740	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	410	390 H(1)	410	390	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	<2.5	<1.9 H(1)	<1.9	<1.9	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	<0.043	<0.043	<0.044	.051 Q	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	9.8	17	15	11 H(0.15)	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	21	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	3.7	6.5	4.9	(0.67)	NA	NA	NA	NA	NA	NA
Field Screening Measurements														
pH		IU	7.5	7.93	6.97	7.09	7.06	6.8	6.84	7.03	6.88	7.09	6.78	7.08
Conductivity		uS	976	1057	846	894	894	836	882	895.3	767	781	818	733
Temperature		^{o}C	9.8	13.3	12.1	10.6	10.1	11	10.6	9.5	10.2	10.8	11.4	7.8
Dissolved Oxygen		ppm	NA	NA	6.11	8.55	8.56	8.01	5.13	8.2	--	4.01	7.23	7.67
Redox Potential		mV	NA	NA	53	140	139	81	116	97	103	-28.9	99.6	66.5

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FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-03											
			5/20/93	9-6-94	5/11/99	9/29/99	12/7/99	3/30/00	4/15/05	10/20/06	9/18/07	9/24/12	10/24/13	11/17/14
Volatile Organic Compounds (VOCs) (µg/L):														
Benzene	5	0.5	<0.30	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41	<0.41	<0.47	<0.5	0.44 J	<0.24
t-Butylbenzene	NS	NS	<0.56	<1.0	<0.50	<0.50	<0.50	<0.50	<0.97	<0.97	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3									<1	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<0.37	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85	<0.85	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<0.38	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36	<0.36	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<0.34	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75	<0.75	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<0.78	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57	<0.57	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	<0.39	**9.4**	<0.46	<0.46	<0.46	0.47 Q	<0.83	0.84 Q	<0.68	<0.74	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<0.35	<1.0	<0.64	<0.64	<0.64	<0.64	<0.89	<0.89	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<0.44	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54	<0.54	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<0.51	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59	<0.59	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	<0.45	**5.3 B**	<0.38	<0.38	<0.38	<0.38	<0.43	<0.43	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<0.34	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74	<0.74	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<0.54	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81	<0.81	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<0.52	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45	<0.45	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	1.1	1.3	<0.40	<0.40	<0.40	<0.40	<0.67	<0.67	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<0.30	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90	<0.90	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	**8.4**	**2.8**	<0.49	<0.49	**1.6**	**1.1 Q**	<0.48	<0.48	<0.44	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<0.47	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<0.47	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83	<0.83	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<0.47	<1.0	<0.47	<.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<0.32	<1.0	<0.17	<0.17	<0.17	<0.17	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<0.81	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<0.41	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83	<0.83	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<0.81	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<0.30	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	<2.3	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	<1.8	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	NA	1.3	<10	<10	<10	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):														
1-Methylnaphthalene	NS	NS	NA	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<3	<11	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<4	<11	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<5	<11	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<5	<11	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<5	<11	<0.0088	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<4	<11	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<4	<11	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<5	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<4	<11	<0.0080	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<5	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	<7	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<5	<11	<0.0090	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<4	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<5	<11	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<4	<11	<0.02	<0.020	<0.020	<0.020	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<4	<11	<0.0084	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	<5	<11	<0.12	<0.12	<0.12	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	<5	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<3	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<4	<11	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<4	<11	<0.013	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-03											
			5/20/93	9-6-94	5/11/99	9/29/99	12/7/99	3/30/00	4/15/05	10/20/06	9/18/07	9/24/12	10/24/13	11/17/14
RCRA Metals (mg/L)														
Antimony	0.006	0.0012	NA	NA	B(-0.0032)	0.00027 Q	<0.00020	<0.0020	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	<0.002	<0.0024	**(-0.47)**	**0.0019**	**0.0017**	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	0.086	0.18	0.19	0.19	0.19	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	<0.00043	<0.000070	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	<0.0030	<0.00017	(0.00013)	<0.000060	0.000090 Q	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	0.006	<0.00053	(0.00020)	(0.00048)	(-0.00008)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	<0.00094	0.00073 Q	0.00092	(-0.00041)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	0.14	(0.0097)	0.023	0.033	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	<0.025	<0.0028	0.00028 Q	<0.00015	<0.00015	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	**0.056**	**0.058**	**0.065**	**0.06**	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	**0.0021**	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	<0.0022	0.00056	0.00093	0.00056	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	<0.001	<0.0023	<0.00064	0.00097 Q	0.00079 Q	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	<0.010	B(0.00056)	<0.000095	<0.00005	<0.00010	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	9.1	8.7	9.5	9	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	<0.0013	<0.000093	<0.000093	<0.000093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	<0.00089	0.00.7 Q	0.0068	0.0042 Q	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):														
Aroclor-1016	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)														
Alkalinity	increase of 100		NA	300	320	310 H(1)	330	310	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	<5.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	7.3	7.4	7.2	8.7	8	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	27	30	30	30	31	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	320	310 H(1)	330	310	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	<2.5	<1.9 H(1)	<1.9	<1.9	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	<0.043	<0.043	<0.044	<0.044	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	<0.090	<0.090	<0.080	(0.09)	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	<0.037	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	<0.33	2	<0.50	1.5	NA	NA	NA	NA	NA	NA
Field Screening Measurements														
pH		IU	7.8	7.99	7.33	7.7	7.69	7.48	7.41	7.59	7.15	8.02	6.63	8.11
Conductivity		uS	519	567	586	584	587	588	NA	614.9	619.7	591	669	616
Temperature		^{o}C	10.8	8.3	10.9	10.6	8.2	10.6	9.6	9.4	11.6	10.89	10.29	7.62
Dissolved Oxygen		ppm	NA	NA	0.99	2.54	2.66	2.23	NA	1.95	1.58	0.24	0.84	0.27
Redox Potential		mV	NA	NA	101	224	239	-60	NA	0	-22	-134.8	81.3	-50.1

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-05										
			9/7/94	5/19/99	9/30/99	12/8/99	3/30/00	4/18/05	10/18/06	9/21/07	9/26/12	10/24/13	11/17/14
Volatile Organic Compounds (VOCs) (µg/L):													
Benzene	5	0.5	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41	<0.41	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<1.0	<0.50	<0.50	<0.50	<0.50	<0.97	<0.97	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3								<1	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85	<0.85	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36	<0.36	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75	<0.75	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57	<0.57	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	**7.8**	**16**	**18**	**18**	**14**	**30**	**40**	**38**	**41**	**49**	**45**
trans-1,2-Dichloroethene	100	20	<1.0	<0.64	<0.64	<0.64	<0.64	<0.89	<0.89	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54	<0.54	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59	<0.59	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	**5.7 B**	<0.38	<0.38	<0.38	<0.38	<0.43	<0.43	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74	<0.74	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81	<0.81	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45	<0.45	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<1.0	<0.40	<0.40	0.66 Q	<0.40	<0.67	<0.67	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90	<0.90	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	**2.2**	**1.5 Q**	**1.9**	**1.8**	**1.7**	<0.48	**1.5 Q**	**1.76**	**1.53**	**1.6**	**1.75**
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83	<0.83	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<1.0	**1.5 Q**	**1.7**	**1.3**	**1.3**	**2.5**	**4.4**	**3.6**	**1.93**	**2.29**	**1.26**
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83	<0.83	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	<10	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	<10	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	<10	50	20	40	NA	35	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):													
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<11	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<11	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<11	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<11	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<11	<0.0087	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<11	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<11	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<11	<0.0079	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<11	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<11	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<11	<0.020	<0.020	<0.020	<0.020	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<11	<0.0083	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	<11	0.24	0.24	0.24	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<11	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<11	<0.13	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-05										
			9/7/94	5/19/99	9/30/99	12/8/99	3/30/00	4/18/05	10/18/06	9/21/07	9/26/12	10/24/13	11/17/14
RCRA Metals (mg/L)													
Antimony	0.006	0.0012	NA	B(-0.0032)	<0.00016	**0.0013**	<0.00020	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	<0.002	<0.0024	**(-0.00047)**	**(0.00035)**	0.00064	NA	NA	NA	NA	NA	NA
Barium	2	0.4	0.13	0.098	0.1	0.11	0.1	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	<0.00043	<0.000070	0.00029	<0.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	<0.0030	B(-0.00020)	(0.00013)	0.00031	0.000060 Q	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	**0.013**	<0.00053	(0.00020)	(0.00012)	(-0.00008)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	0.0011 Q	0.0015	0.00067 Q	(-0.00041)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	**0.19**	(0.0097)	(0.022)	0.12	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	<0.025	<0.0028	<0.00015	0.00027 Q	<0.00015	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	**0.07**	**0.06**	**0.063**	**0.062**	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	**0.0024**	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	<0.0022	0.0017	0.0018	0.0016	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	<0.001	<0.0023	<0.00064	0.0014 Q	0.0014 Q	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	<0.010	<0.00046	<0.000095	(-0.0004)	<0.00010	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	44	38	34	34	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	**0.0017 Q**	<0.000093	0.00028 Q	<0.000093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	<0.00089	0.0023 Q	(-0.0048)	0.0045 Q	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):													
Aroclor-1016	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)													
Alkalinity	increase of 100		320	320	370	350	340	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		10.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	**190**	51	50	44	44	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	46	56	67	70	68	NA	NA	NA	NA	NA	NA
TDS	increase of 200		720	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	320	370	350	340	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	<2.5	<1.9	<1.9	<1.9	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<0.044	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	<0.090	<0.090	<0.080	<0.080	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	<0.037	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	2.8	2.4	1.4 Q	(0.67)	NA	NA	NA	NA	NA	NA
Field Screening Measurements													
pH		IU	7.2	6.76	7.39	7.19	7.01	7.04	7.07	6.96	6.8	7.05	7.21
Conductivity		uS	800	818	827	836	807	824	840.2	798.6	801	858	758
Temperature		°C	12	10	12.8	10.1	9.6	7.2	10.8	13.5	12.28	11.5	8.81
Dissolved Oxygen		ppm	NA	1.59	0.58	0.66	0.98	2.7	1.03	0.98	0.21	0.27	0.43
Redox Potential		mV	NA	0	28	16	533	-52	-66	131	-78.8	69.4	-0.3

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-05A										
			9/7/94	5/19/99	9/30/99	12/8/99	3/30/00	4/18/05	10/18/06	9/21/07	9/26/12	10/24/13	11/17/14
Volatile Organic Compounds (VOCs) (µg/L):													
Benzene	5	0.5	**1.0**	<0.44	<0.44	<0.44	<0.44	<0.41	<0.41	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<1.0	<0.50	<0.50	<0.50	<0.50	<0.97	<0.97	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3								<1	<1.9	**1.1 J**	<0.81
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85	<0.85	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36	<0.36	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75	<0.75	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57	<0.57	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	**15**	0.70 Q	1.0 Q	2.8	0.93 Q	<0.83	<0.83	<0.68	<0.74	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<1.0	<0.64	<0.64	<0.64	<0.64	<0.89	<0.89	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54	<0.54	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59	<0.59	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	**5.9 B**	<0.38	<0.38	<0.38	<0.38	<0.43	<0.43	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74	<0.74	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81	<0.81	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45	<0.45	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<1.0	<0.40	<0.40	<0.40	<0.40	<0.67	<0.67	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90	<0.90	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	**5.9**	**0.84 Q**	**0.96 Q**	**1.2 Q**	**1.2 Q**	<0.48	<0.48	0.46 J	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83	<0.83	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	**9.8**	<0.17	**1.2**	**0.57**	<0.17	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83	<0.83	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	<10	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	<10	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	<10	18	11	19	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):													
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<11	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<11	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<11	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<11	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<11	<0.0087	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<11	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<11	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<11	<0.0079	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<11	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<11	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<11	<0.020	<0.020	<0.020	<0.020	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<11	<0.0083	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	<11	<0.12	0.17 Q	0.17 Q	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<11	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<11	<0.13	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-05A										
			9/7/94	5/19/99	9/30/99	12/8/99	3/30/00	4/18/05	10/18/06	9/21/07	9/26/12	10/24/13	11/17/14
RCRA Metals (mg/L)													
Antimony	0.006	0.0012	NA	<0.0019	<0.00016	0.0011	**0.0012**	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	<0.002	<0.0024	**(-0.00047)**	**(0.00038)**	**(0.00034)**	NA	NA	NA	NA	NA	NA
Barium	2	0.4	0.13	0.12	0.12	0.12	0.021	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	B(0.00045)	<0.000070	0.00022	0.00021 Q	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	<0.0030	B(-0.00020)	(0.00013)	<0.000060	**0.0029**	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	<0.0044	0.00069 Q	(0.00020)	(0.00012)	(0.00017)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	<0.00094	0.00081	0.00084	(-0.0003)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	**0.63**	**0.67**	**0.64**	(-0.024)	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	<0.025	<0.0028	<0.00015	0.00040 Q	0.00025 Q	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	**0.072**	**0.064**	**0.073**	0.00024	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	**0.0023**	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	<0.0022	0.00097	0.0011	0.00040 Q	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	<0.001	<0.0023	<0.00064	0.00086 Q	(0.00083)	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	<0.010	<0.00046	0.00029 Q	(-0.00041)	(0.00047)	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	14	13	13	0.51	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	<0.0011	<0.000093	0.00025 Q	0.00019 Q	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	<0.00089	0.0032 Q	(-0.0048)	0.013	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):													
Aroclor-1016	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)													
Alkalinity	increase of 100		39	340	420	370	370	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		7.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	26	26	27	22	26	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	39	31	38	37	40	NA	NA	NA	NA	NA	NA
TDS	increase of 200		500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		510	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	340	420	370	370	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	<2.5	<1.9	<1.9	<3.8	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<0.044	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	<0.090	<0.090	<0.080	<0.080	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	<0.037	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	4.3	4.1	3.6	4.5 A(0.67)	NA	NA	NA	NA	NA	NA
Field Screening Measurements													
pH		lU	7	6.87	7.4	7.15	7.04	7.11	7.18	7	6.99	7.16	7.29
Conductivity		uS	500	719	732	746	728	731	727.1	700.2	705	763	699
Temperature		^{o}C	11	10.2	10.9	9.2	10.6	10	9.6	10.7	10.11	10.25	8.03
Dissolved Oxygen		ppm	NA	1.96	1.21	1.2	1.01	1.09	1.26	1.6	0.16	0.3	0.6
Redox Potential		mV	NA	-66	-38	-44	-40	-48	-59	118	-110.1	55.9	-16.6

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-05B										
			9/7/94	5/19/99	9/30/99	12/8/99	3/30/00	4/18/05	10/18/06	9/21/07	9/26/12	10/24/13	11/17/14
Volatile Organic Compounds (VOCs) (µg/L):													
Benzene	5	0.5	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41	<0.41	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<1.0	<0.50	<0.50	<0.50	<0.50	<0.97	<0.97	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3								<1	<1.9	**1.13 J**	<0.81
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85	<0.85	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36	<0.36	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75	<0.75	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57	<0.57	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	1.6	<0.46	<0.46	1.7	<0.46	<0.83	<0.83	<0.68	<0.74	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<1.0	<0.64	<0.64	<0.64	<0.64	<0.89	<0.89	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54	<0.54	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59	<0.59	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	**5.8 B**	<0.38	<0.38	<0.38	<0.38	<0.43	<0.43	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74	<0.74	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81	<0.81	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45	<0.45	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<1.0	<0.40	<0.40	<0.40	<0.40	<0.67	<0.67	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90	<0.90	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	**1.6**	<0.49	<0.49	<0.49	<0.49	<0.48	<0.48	<0.44	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83	<0.83	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97	<0.97	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<1.0	<0.17	<0.17	<0.17	<0.17	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83	<0.83	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8	<1.8	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	<10	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	<10	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	<10	17	12	19	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):													
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	<11	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	<11	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	<11	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	<11	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	<11	<0.0087	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	<11	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	<11	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	<11	<0.0079	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	<11	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	<11	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	<11	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	<11	<0.020	<0.020	<0.020	<0.020	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	<11	<0.0083	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	<11	<0.12	<0.12	0.16 Q	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	<11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	<11	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	<11	<0.13	<0.13	<0.13	<0.13	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	PZ-05B										
			9/7/94	5/19/99	9/30/99	12/8/99	3/30/00	4/18/05	10/18/06	9/21/07	9/26/12	10/24/13	11/17/14
RCRA Metals (mg/L)													
Antimony	0.006	0.0012	NA	<0.0019	<0.00016	<0.00020	<0.00020	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	<0.002	<0.0024	**(-0.00047)**	**(0.38)**	**(0.00034)**	NA	NA	NA	NA	NA	NA
Barium	2	0.4	0.089	0.094	0.092	0.09	0.097	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	<0.00043	<0.000070	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	<0.0030	B(-0.0020)	(0.00013)	0.00019	**0.0024**	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	<0.0044	<0.00053	(0.00020)	(0.00012)	(0.00017)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	<0.00094	0.00067 Q	<0.00025	(-0.0003)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	**0.9**	**0.8**	**0.82**	**0.7**	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	<0.025	<0.0028	<0.00015	0.00016 Q	<0.00015	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	0.017	0.017	0.017	0.016	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	**0.0014**	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	<0.0022	0.00093	0.00084	0.00099	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	<0.001	<0.0023	<0.00064	<0.00064	(0.00083)	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	<0.010	<0.00046	0.00033	(-0.00041)	(0.00047)	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	13	12	12	13	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	**0.0015 Q**	<0.000093	<0.000093	<0.000093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	<0.00089	0.0031 Q	(-0.0048)	0.005 Q	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):													
Aroclor-1016	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	<1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	<2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)													
Alkalinity	increase of 100		330	330	390	350	330	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		<2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		<5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	17	22	22	18	22	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	<0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	44	38	47	50	51	NA	NA	NA	NA	NA	NA
TDS	increase of 200		430	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		550	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	330	390	350	320	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	<2.5	<1.9	<1.9	8	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<0.044	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	<0.090	<0.090	<0.080	<0.080	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	<0.037	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	1.8	2.2	11	2.2	NA	NA	NA	NA	NA	NA
Field Screening Measurements													
pH		IU	6.8	7.11	7.63	7.36	7.28	7.32	7.4	6.79	7.07	7.38	7.52
Conductivity		uS	400	688	706	710	696	716	719.4	682.7	689	715	656
Temperature		^{o}C	13	10.6	10.5	9	10.6	10	9.6	11.7	9.9	10.34	7.92
Dissolved Oxygen		ppm	NA	0.76	1.49	1.56	1.54	1.58	1.05	0.73	0.18	1.75	0.53
Redox Potential		mV	NA	-98	-38	-76	-68	-63	-88	158	-109	69	-3

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-10					WT-11					WT-12						PZ-12	
			10/19/06	9/19/07	9/26/12	10/24/13	11/18/14	10/18/06	9/20/07	9/26/12	10/22/13	11/17/14	10/18/06	9/20/07	9/26/12	10/22/13	11/17/14	11/17/14	10/22/13	11/17/14
																		DUP		
Volatile Organic Compounds (VOCs) (µg/L):																				
Benzene	5	0.5	**20 Q**	<0.94	<50	<24	**20 J**	<4.1	<9.4	<5	<2.4	<2.4	<4.1	<23.5	<25	**13 J**	<12	<12	**72 J**	**67**
t-Butylbenzene	NS	NS	<24	<0.68	<71	<36	<18	<9.7	<6.8	<7.1	<3.6	<3.6	<9.7	<17	<35.5	<18	<18	<18	<36	<18
Chloromethane	3	0.3		<200	<190	<81	<40.5		<9.4	<19	<8.1	<8.1		<50	<95	<40.5	<40.5	<40.5	<81	<40.5
2-Chlorotoluene	NS	NS	<21	<98	<70	<21	<10.5	<8.5	<9.8	<7	<2.1	<2.1	<8.5	<24.5	<35	<10.5	<10.5	<10.5	<21	<10.5
1,2-Dichloroethane	5	0.5	<9.0	<90	<50	<41	<20.5	<3.6	<9	<5	<4.1	<4.1	<3.6	<22.5	<25	<20.5	<20.5	<20.5	<41	<20.5
1,1-Dichloroethane	850	85	<19	<112	<98	<30	<15	<7.5	<11.2	<9.8	4.0 J	<3	<7.5	<28	<49	<15	<15	<15	<30	<15
1,1-Dichloroethene	7	0.7	<14	<128	<60	<40	<20	<5.7	<12.8	<6	<4	<4	<5.7	<32	<30	<20	<20	<20	<40	<20
cis-1,2-Dichloroethene	70	7	**2700**	**4,700**	**1210**	**1,600**	**3,090**	**950**	**480**	**500**	**600**	**420**	**730**	**940**	**2410**	**1670**	**1170**	**1100**	**4800**	**4200**
trans-1,2-Dichloroethene	100	20	<22	<190	<079	<35	<17.5	<8.9	<19	<7.9	<3.5	<3.5	<8.9	<47.5	<39.5	<17.5	<17.5	<17.5	<35	<17.5
Ethylbenzene	700	140	<14	<76	<78	<55	<27.5	<5.4	<7.6	<7.8	<5.5	<5.5	<5.4	<19	<39	<27.5	<27.5	<27.5	<55	<27.5
Isopropylbenzene	NS	NS	<15	<96	<92	<30	<15	<5.9	<9.6	<9.2	<3	<3	<5.9	<24	<46	<15	<15	<15	<30	<15
Methylene chloride	5	0.5	<11	<138	<110	<50	<25	<4.3	<13.8	<11	<5	<5	<4.3	<34.5	<55	<25	<25	<25	<50	<25
Naphthalene	100	10	<18	<360	<210	<170	<85	<7.4	<36	<21	<17	<17	<7.4	<90	<105	<85	<85	<85	<170	<85
n-Propylbenzene	NS	NS	<20	<76	<59	<25	<12.5	<8.1	<7.6	<5.9	<2.5	<2.5	<8.1	<19	<29.5	<12.5	<12.5	<12.5	<25	<12.5
Tetrachloroethene	5	0.5	<11	<104	<44	<33	<16.5	<4.5	<10.4	<4.4	<3.3	<3.3	<4.5	<26	<22	<16.5	<16.5	<16.5	<33	<16.5
Toluene	1,000	200	120	<92	139 J	83 J	106 J	<6.7	<9.2	<5.3	<6.9	<6.9	<6.7	<23	<26.5	<34.5	<34.5	<34.5	<69	<34.5
1,1,1-Trichloroethane	200	40	<22	<100	<85	<33	<16.5	<9.0	<10	<8.5	<3.3	<3.3	<9.0	<25	<42.5	<16.5	<16.5	<16.5	<33	<16.5
Trichloroethene	5	0.5	**16 Q**	<88	<47	<33	<16.5	**16 Q**	**12.8 J**	**10.2 J**	**10.5**	**7.9 J**	**16 Q**	**22.5 J**	**29 J**	**22.5 J**	**22.5 J**	**20.5 J**	<33	**21.5 J**
1,2,4-Trimethylbenzene	--	--	<24	<240	<80	<220	<110	<9.7	<24	<8	<22	<22	<9.7	<60	<75	<110	<110	<110	<220	<110
1,3,5-Trimethylbenzene	--	--	<21	<74	<74	<140	<70	<8.3	<7.4	<7.4	<14	<14	<8.3	<18.5	<37	<70	<70	<70	<140	<70
Total Trimethylbenzene	480	96	<24	<240	<80	<220	<110	<9.7	<24	<8	<22	<22	<9.7	<60	<75	<110	<110	<110	<220	<110
Vinyl Chloride	0.2	0.02	**1800**	**760**	**2250**	**1,050**	**2,180**	**6.7**	<4	<1.8	**13.7**	<1.8	**31**	**37**	**510**	**262**	<9	**11.5 J**	**2980**	**2550**
Xylenes, m + p	--	--	<45	<134	<110	<69	50 J	<18	<13.4	<11	<6.9	<6.9	<18	<33.5	<55	<34.5	<34.5	<34.5	<69	<34.5
Xylene, o	--	--	<21	<64	<80	<63	<31.5	<8.3	<6.4	<8	<6.3	<6.3	<8.3	<16	<40	<31.5	<31.5	<31.5	<63	<31.5
Total Xylenes	10,000	1,000	<45	<134	<110	<69	50 J	<18	<13.4	<11	<6.9	<6.9	<18	<33.5	<55	<34.5	<34.5	<34.5	<69	<34.5
Styrene	100	10	<22	NA	NA	NA	NA	<8.6	NA	NA	NA	NA	<8.6	NA	NA	NA	NA	NA	NA	NA
Ethane	NS	NS	84	NA	NA	NA	NA	<10	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NS	<10	NA	NA	NA	NA	<10	NA	NA	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NS	110	NA	NA	NA	NA	<10	NA	NA	NA	NA	11	NA	NA	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):																				
1-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-10					WT-11					WT-12						PZ-12	
			10/19/06	9/19/07	9/26/12	10/24/13	11/18/14	10/18/06	9/20/07	9/26/12	10/22/13	11/17/14	10/18/06	9/20/07	9/26/12	10/22/13	11/17/14	11/17/14	10/22/13	11/17/14
RCRA Metals (mg/L)																				
Antimony	0.006	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):																				
Aroclor-1016	NS	NS	NA	NA	NA	<0.11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	<0.081	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	<0.047	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	<0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	<0.095	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	<0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	<0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	<0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)																				
Alkalinity	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements																				
pH		IU	6.5	7.07	6.88	7.55	10.22	6.81	6.92	6.82	7.17	7.14	7.41	7.14	6.68	7.15	7.15	7.15	7.18	7.17
Conductivity		uS	754.5	708.4	1082	1076	965	805	776.4	758	663	763	728.5	678.9	708	617	617	674	635	725
Temperature		°C	9.9	10.5	10.83	12.01	9.69	11.8	12.5	12.03	11.13	9.05	12.4	14	12.84	11.51	11.51	8.54	10.14	8.01
Dissolved Oxygen		ppm	0.79	--	0.23	0.38	0.39	0.95	0.53	0.14	0.45	0.21	0.94	0.81	0.09	0.46	0.46	0.49	0.68	0.25
Redox Potential		mV	-54	-116	-145.4	-37.4	-150.3	0.96	201	-58.2	88.6	42.1	41	195	-39	88.4	88.4	66.5	88	30.2

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-13					WT-15				PZ-15A				PZ-15B			
			10/19/06	9/19/07	9/25/12	10/22/13	11/17/14	9/21/07	9/26/12	10/23/13	11/17/14	9/21/07	9/26/12	10/23/13	11/17/14	9/21/07	9/26/12	10/23/13	11/17/14
Volatile Organic Compounds (VOCs) (µg/L):																			
Benzene	5	0.5	<0.41	<0.47	<0.5	<0.24	<0.24	<0.47	<0.5	<0.24	<0.24	<0.47	<0.5	<0.24	<0.24	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<0.97	<0.34	<0.71	<0.36	<0.36	<0.34	<0.71	<0.36	<0.36	<0.34	<0.71	<0.36	<0.36	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3		**1.33 J**	<1.9	<0.81	<0.81	<1	<1.9	<0.81	<0.81	<1	**12.5**	<0.81	<0.81	<1	**10.6**	<0.81	<0.81
2-Chlorotoluene	NS	NS	<0.85	<0.49	<0.7	<0.21	<0.21	<0.49	<0.7	<0.21	<0.21	<0.49	<0.7	<0.21	<0.21	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<0.36	<0.45	<0.5	<0.41	<0.41	<0.45	<0.5	<0.41	<0.41	<0.45	<0.5	<0.41	<0.41	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<0.75	<0.56	<0.98	<0.3	<0.3	<0.56	<0.98	<0.3	<0.3	<0.56	<0.98	<0.3	<0.3	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<0.57	<0.64	<0.6	<0.4	<0.4	<0.64	<0.6	<0.4	<0.4	<0.64	<0.6	<0.4	<0.4	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	<0.83	<0.68	<0.74	<0.38	<0.38	<0.68	<0.74	<0.38	<0.38	<0.68	<0.74	<0.38	<0.38	<0.68	<0.74	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<0.89	<0.95	<0.79	<0.35	<0.35	<0.95	<0.79	<0.35	<0.35	<0.95	<0.79	<0.35	<0.35	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<0.54	<0.38	<0.78	<0.55	<0.55	<0.38	<0.78	<0.55	<0.55	<0.38	<0.78	<0.55	<0.55	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<0.59	<0.48	<0.92	<0.3	<0.3	<0.48	<0.92	<0.3	<0.3	<0.48	<0.92	<0.3	<0.3	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	<0.43	<0.69	<1.1	<0.5	<0.5	<0.69	<1.1	<0.5	<0.5	<0.69	<1.1	<0.5	<0.5	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<0.74	<1.8	<2.1	<1.7	<1.7	<1.8	<2.1	<1.7	<1.7	<1.8	<2.1	<1.7	<1.7	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<0.81	<0.38	<0.59	<0.25	<0.25	<0.38	<0.59	<0.25	<0.25	<0.38	<0.59	<0.25	<0.25	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<0.45	<0.52	<0.44	<0.33	<0.33	<0.52	<0.44	<0.33	<0.33	<0.52	<0.44	<0.33	<0.33	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<0.67	<0.46	<0.53	<0.69	<0.69	<0.46	<0.53	<0.69	<0.69	<0.46	<0.53	<0.69	<0.69	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<0.90	<0.5	<0.85	<0.33	<0.33	<0.5	<0.85	<0.33	<0.33	<0.5	<0.85	<0.33	<0.33	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	<0.48	<0.44	<0.47	<0.33	<0.33	<0.44	<0.47	<0.33	<0.33	<0.44	<0.47	<0.33	<0.33	<0.44	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<0.97	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<0.83	<0.37	<0.74	<1.4	<1.4	<0.37	<0.74	<1.4	<1.4	<0.37	<0.74	<1.4	<1.4	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<0.97	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<0.18	<0.2	**0.59**	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<1.8	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<0.83	<0.32	<0.8	<0.63	<0.63	<0.32	<0.8	<0.63	<0.63	<0.32	<0.8	<0.63	<0.63	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<1.8	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<0.86	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethane	NS	NS	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NS	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NS	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):																			
1-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-13					WT-15				PZ-15A				PZ-15B			
			10/19/06	9/19/07	9/25/12	10/22/13	11/17/14	9/21/07	9/26/12	10/23/13	11/17/14	9/21/07	9/26/12	10/23/13	11/17/14	9/21/07	9/26/12	10/23/13	11/17/14
RCRA Metals (mg/L)																			
Antimony	0.006	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):																			
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)																			
Alkalinity	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements																			
pH		IU	7.72	7.37	7.3	7.41	7.47	7	6.89	7.02	7.25	7.14	6.83	6.98	7.22	7.09	6.89	7.02	7.22
Conductivity		uS	302.3	382.9	470	400	399	727.5	725	782	675	733.5	718	785	686	754.4	723	785	711
Temperature		^{o}C	13.4	15.9	15.51	12.62	9.5	13.7	12.78	10.84	7.66	12.2	11.39	9.99	8.4	10.5	10.68	10.39	7.98
Dissolved Oxygen		ppm	8.17	--	3.47	7.24	7.98	3.06	1.21	2.37	3.09	3.48	1.42	2.88	2.15	0.47	1.29	0.98	1.29
Redox Potential		mV	115	10	-54.1	91.2	67.9	177	-59.4	91.4	70.4	81	-54	91.8	70.1	166	-58.8	90.7	63.1

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-16					PZ-16				PZ-16A		PZ-16B	PZ-16C	WT-17			
			9/20/07	1/9/08	9/27/12	10/23/13	11/12/14	9/20/07	9/27/12	10/23/13	11/12/14	11/12/14	11/12/14 DUP	11/12/14	11/13/14	9/18/07	9/25/12	10/24/13	11/18/14
Volatile Organic Compounds (VOCs) (µg/L):																			
Benzene	5	0.5	**39 J**	**25 J**	**49 J**	**46**	**30 J**	<9.4	**5.6 J**	**3.8 J**	**8.8**	<0.24	0.26 J	<0.24	<0.24	<4.7	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<17	<17	<35.5	<18	<18	<6.8	<7.1	<3.6	<3.6	<0.36	<0.36	<0.36	<0.36	<3.4	<0.71	<0.36	<0.36
Chloromethane	3	0.3	<50	<50	<95	<40.5	<40.5	<20	<19	<8.1	<8.1	<0.81	<0.81	<0.81	<0.81	<10	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<24.5	<24.5	<35	<10.5	<10.5	<9.8	<7	<2.1	<2.1	<0.21	<0.21	<0.21	<0.21	<4.9	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<22.5	<22.5	<25	<20.5	<20.5	<9	<5	<4.1	<4.1	<0.41	<0.41	<0.41	<0.41	<4.5	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<28	<28	<49	<15	<15	<11.2	<9.8	<3	<3	<0.3	<0.3	<0.3	<0.3	<5.6	2.06 J	2.26	0.97
1,1-Dichloroethene	7	0.7	<32	<32	<30	<20	<20	<12.8	<6	<4	<4	<0.4	<0.4	<0.4	<0.4	<6.4	<0.6	<0.4	0.78 J
cis-1,2-Dichloroethene	70	7	**2,490**	**1,450**	**2,490**	**2,600**	**1,540**	**700**	**680**	**241**	**820**	6.3	5.7	1.56	<0.38	**199**	**155**	**119**	**176**
trans-1,2-Dichloroethene	100	20	<47.5	<47.5	<39.5	<17.5	<17.5	<19	**17 J**	15	18.5	<0.35	<0.35	<0.35	<0.35	<9.5	<0.79	1.38	1.31
Ethylbenzene	700	140	<19	<19	<39	<27.5	<27.5	<7.6	<7.8	<5.5	<5.5	<0.55	<0.55	<0.55	<0.55	<3.8	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<24	<24	<46	<15	<15	<9.6	<9.2	<3	<3	<0.3	<0.3	<0.3	<0.3	<4.8	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	<34.5	<34.5	<55	<25	<25	<13.8	<11	<5	<5	<0.5	<0.5	<0.5	<0.5	<6.9	<1.1	<0.5	<0.5
Naphthalene	100	10	<90	<90	<105	<85	<85	<36	<21	<17	<17	<1.7	<1.7	<1.7	<1.7	<18	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<19	<19	<29.5	<12.5	<12.5	<7.6	<5.9	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<3.8	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<26	<26	<22	<16.5	<16.5	<10.4	<4.4	<3.3	<3.3	<0.33	<0.33	<0.33	<0.33	<5.2	<0.44	<0.33	0.44 J
Toluene	1,000	200	<23	<23	<26.5	<34.5	<34.5	<9.2	<5.3	<6.9	<6.9	<0.69	<0.69	<0.69	<0.69	<4.6	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<25	<25	<42.5	<16.5	<16.5	<10	<8.5	<3.3	<3.3	<0.33	<0.33	<0.33	<0.33	7.2 J	5.3	4.5	4.2
Trichloroethene	5	0.5	<22	<22	<23.5	**21 J**	**17 J**	<8.8	<4.7	**3.7 J**	**4.2 J**	**5.4**	**4.4**	**2.38**	<0.33	**29.9**	**14.4**	**36**	**45**
1,2,4-Trimethylbenzene	--	--	<60	<60	<40	<110	<110	<24	<8	<22	<22	<2.2	<2.2	<2.2	<2.2	<12	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<18.5	<18.5	<37	<70	<70	<7.4	<7.4	<14	<14	<1.4	<1.4	<1.4	<1.4	<3.7	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<60	<60	<40	<110	<110	<24	<8	<22	<22	<2.2	<2.2	<2.2	<2.2	<12	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	**1,430**	**950**	**2,210**	**1,890**	**1,460**	**340**	**294**	**89**	**252**	**2.55**	**2.38**	**0.64**	<0.18	<2	<0.18	<0.18	**0.50 J**
Xylenes, m + p	--	--	<33.5	<33.5	<55	<34.5	<34.5	<13.4	<11	<6.9	<6.9	<0.69	<0.69	<0.69	<0.69	<6.7	<1.1	<0.69	<0.69
Xylene, o	--	--	<16	<16	<40	<31.5	<31.5	<6.4	<9	<6.3	<6.3	<0.63	<0.63	<0.63	<0.63	<3.2	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<33.5	<33.5	<55	<34.5	<34.5	<13.4	<11	<6.9	<6.9	<0.69	<0.69	<0.69	<0.69	<6.7	<1.1	<0.69	<0.69
Styrene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):																			
1-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-16					PZ-16				PZ-16A		PZ-16B	PZ-16C	WT-17			
			9/20/07	1/9/08	9/27/12	10/23/13	11/12/14	9/20/07	9/27/12	10/23/13	11/12/14	11/12/14	11/12/14	11/12/14	11/13/14	9/18/07	9/25/12	10/24/13	11/18/14
RCRA Metals (mg/L)																			
Antimony	0.006	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):																			
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.12	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.086	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.050	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.055	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.010	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.055	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.14	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.14	NA
General Chemistry Parameters (mg/L)																			
Alkalinity	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements																			
pH		IU	6.93	---	7.25	7.34	7.37	6.81	7.29	7.43	7.45	7.43	7.54	7.64	7.72	6.83	6.57	6.83	7.06
Conductivity		uS	706	---	727	798	721	677.2	679	538	728	538	686	666	558	515.2	725	797	677
Temperature		°C	14.4	---	13.89	11.59	9.79	10.7	10.67	10	9.48	10	6.97	8.36	8.97	10.5	10.53	10.55	9.62
Dissolved Oxygen		ppm	1.39	---	0.27	0.5	0.43	1.08	0.16	0.5	0.33	0.5	0.45	0.27	0.27	--	1.04	5.03	5.68
Redox Potential		mV	118	---	-120.3	62.8	-49.1	156	-123.9	24	-45.9	24	-185.6	-159.4	-71.8	88	0	87.9	22

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-18				WT-19				WT-20			
			9/19/07	9/25/12	10/24/13	11/18/14	9/19/07	9/24/12	10/24/13	11/19/14	1/9/08	9/25/12	10/23/13	11/12/14
Volatile Organic Compounds (VOCs) (µg/L):														
Benzene	5	0.5	**30.5 J**	**77**	**59**	**58**	<0.47	<0.5	<0.24	<0.24	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<17	<7.1	<3.6	<3.6	<0.34	<0.71	<0.36	<0.36	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3	<23.5	<19	<8.1	<8.1	<0.48	<1.9	<0.81	<0.81	<1	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<24.5	<7	<2.1	<2.1	<0.49	<0.7	<0.21	<0.21	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<22.5	<5	<4.1	<4.1	<0.45	<0.5	<0.41	<0.41	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<28	36	28.8	22.7	<0.56	<0.98	<0.3	<0.3	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<32	<6	<4	<4	<0.64	<0.6	<0.4	<0.4	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	**238**	**20.8 J**	**9.2 J**	**50**	1.57 J	2.32 J	0.72 J	<0.38	<0.68	<0.74	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<47.5	<7.9	<3.5	<3.5	<0.95	<0.79	<0.35	<0.35	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<19	36	29.7	28.5	<0.38	<0.78	<0.55	<0.55	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<24	<9.22	<3	<3	<0.48	<0.92	<0.3	<0.3	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	<34.5	<11	<5	<5	<0.69	<1.1	<0.5	<0.5	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<90	**28.4 J**	**24.8 J**	**27.1 J**	<1.8	<2.1	<1.7	<1.7	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<19	<5.9	3.2 J	2.9 J	<0.38	<0.59	<0.25	<0.25	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<26	<4.4	<3.3	<3.3	<0.52	<0.44	<0.33	<0.33	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	75	**203**	89	84	<0.46	<0.53	<0.69	<0.69	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<25	<8.5	<3.3	<3.3	<0.5	<0.85	<0.33	<0.33	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	<30.5	**5.8 J**	**3.8 J**	**3.3 J**	**0.98 J**	**0.69 J**	**0.53 J**	**0.50 J**	<0.44	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<60	20.4 J	<22	<22	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<18.5	<7.4	<14	<14	<0.37	<0.74	<1.4	<1.4	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<60	20.4 J	<22	<22	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	**1,520**	**360**	**244**	**2040**	<0.2	**0.22 J**	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<33.5	61	37	27.8	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	19 J	47	34	33	<0.32	<0.8	<0.63	<0.63	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	19 J	108	101	60.8	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):														
1-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-18				WT-19				WT-20			
			9/19/07	9/25/12	10/24/13	11/18/14	9/19/07	9/24/12	10/24/13	11/19/14	1/9/08	9/25/12	10/23/13	11/12/14
RCRA Metals (mg/L)														
Antimony	0.006	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):														
Aroclor-1016	NS	NS	NA	NA	<0.12	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	<0.086	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	<0.050	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	<0.055	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	<0.10	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	<0.055	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	<0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	<0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)														
Alkalinity	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements														
pH		IU	6.99	6.87	7.31	10.37	7.08	6.98	6.8	6.99	---	7.07	6.88	7.22
Conductivity		uS	947.8	1134	1200	1271	891.3	888	790	755	---	612	440	565
Temperature		^{o}C	10.8	11.59	11.3	10	14.3	13.01	11.01	9.68	---	17.11	13.27	9.95
Dissolved Oxygen		ppm	--	0.34	0.55	0.18	--	0.79	1.02	0.52	---	0.22	1.42	1.23
Redox Potential		mV	-80	-132	-9	-123.2	71	-51.2	85.8	-65.1	---	-42.9	88.1	57.8

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-21				WT-22				WT-23			
			1/9/08	9/25/12	10/23/13	11/12/14	1/9/08	9/27/12	10/23/13	11/12/14	1/9/08	9/27/12	10/23/13	11/12/14
Volatile Organic Compounds (VOCs) (µg/L):														
Benzene	5	0.5	<0.47	<0.5	<0.24	<0.24	<0.47	<0.5	<0.24	<0.24	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	<0.34	<0.71	<0.36	<0.36	<0.34	<0.71	<0.36	<0.36	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3	<0.47	<1.9	<0.81	<0.81	<1	<1.9	<0.81	<0.81	<1	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<0.49	<0.7	<0.21	<0.21	<0.49	<0.7	<0.21	<0.21	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<0.45	<0.5	<0.41	<0.41	<0.45	<0.5	<0.41	<0.41	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<0.56	<0.98	<0.3	<0.3	<0.56	<0.98	<0.3	<0.3	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<0.64	<0.6	<0.4	<0.4	<0.64	<0.6	<0.4	<0.4	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	<0.68	<0.74	<0.38	<0.38	<0.68	<0.74	<0.38	<0.38	<0.68	2.7	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<0.95	<0.79	<0.35	<0.35	<0.95	<0.79	<0.35	<0.35	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<0.38	<0.78	<0.55	<0.55	<0.38	<0.78	<0.55	<0.55	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<0.48	<0.92	<0.3	<0.3	<0.48	<0.92	<0.3	<0.3	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	<0.69	<1.1	<0.5	<0.5	<0.69	<1.1	<0.5	<0.5	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<1.8	<2.1	<1.7	<1.7	<1.8	<2.1	<1.7	<1.7	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<0.38	<0.59	<0.25	<0.25	<0.38	<0.59	<0.25	<0.25	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<0.52	<0.44	<0.33	<0.33	<0.52	<0.44	<0.33	<0.33	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<0.46	<0.53	<0.69	<0.69	<0.46	<0.53	<0.69	<0.69	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<0.5	<0.85	<0.33	<0.33	<0.5	<0.85	<0.33	<0.33	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	<0.44	<0.47	<0.33	<0.33	<0.44	<0.47	<0.33	<0.33	<0.44	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<0.37	<0.74	<1.4	<1.4	<0.37	<0.74	<1.4	<1.4	<0.38	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<0.2	<0.18	<0.18	<0.18	<0.2	<0.18	<0.18	<0.18	<0.2	**1.9**	<0.18	<0.18
Xylenes, m + p	--	--	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<0.32	<0.8	<0.63	<0.63	<0.32	<0.8	<0.63	<0.63	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):														
1-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-21				WT-22				WT-23			
			1/9/08	9/25/12	10/23/13	11/12/14	1/9/08	9/27/12	10/23/13	11/12/14	1/9/08	9/27/12	10/23/13	11/12/14
RCRA Metals (mg/L)														
Antimony	0.006	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):														
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)														
Alkalinity	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements														
pH		IU	---	8.06	7.4	7.86	---	7.23	7.13	7.54	---	6.91	7.46	7.32
Conductivity		uS	---	244	201	245	---	362	687	415	---	718	411	642
Temperature		°C	---	18.18	13.97	10.59	---	16.16	13.07	11.02	---	15.82	13.83	10.32
Dissolved Oxygen		ppm	---	4.89	5.54	5.68	---	2.42	2.16	6.34	---	0.2	3.68	1.6
Redox Potential		mV	---	-58.5	89.3	104.9	---	-27.5	85.2	77.8	---	-56.2	80.2	111.3

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-24	PZ-24A		PZ-24B	PZ-24C	WT-25		PZ-25A	PZ-25B	PZ-25C	WT-26	PZ-26A	PZ-26B	PZ-26C
			11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/13/14	11/13/14	11/13/14	11/13/14
Volatile Organic Compounds (VOCs) (µg/L):					DUP				DUP							
Benzene	5	0.5	<0.24	**3.3 J**	**3.4 J**	**4.1 J**	**1.69**	**1.14**	**1.23**	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
t-Butylbenzene	NS	NS	<0.36	<3.6	<3.6	<3.6	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36
Chloromethane	3	0.3	<0.81	<8.1	<8.1	<8.1	**2.58 J**	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81
2-Chlorotoluene	NS	NS	<0.21	<2.1	<2.1	<2.1	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<0.41	<4.1	<4.1	<4.1	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
1,1-Dichloroethane	850	85	<0.3	<3	<3	<3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<0.4	<4	<4	<4	<0.4	0.41 J	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	<0.38	**800**	**800**	**360**	<0.38	**100**	**103**	2.75	1.16 J	1.87	<0.38	<0.38	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	<0.35	4.4 J	4.4 J	3.5 J	<0.35	0.46 J	0.40 J	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
Ethylbenzene	700	140	<0.55	<5.5	<5.5	<5.5	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55
Isopropylbenzene	NS	NS	<0.3	<3	<3	<3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Methylene chloride	5	0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	100	10	<1.7	<17	<17	<17	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
n-Propylbenzene	NS	NS	<0.25	<2.5	<2.5	<2.5	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	5	0.5	<0.33	<3.3	<3.3	<3.3	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Toluene	1,000	200	<0.69	<6.9	<6.9	<6.9	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	5.1	<0.69
1,1,1-Trichloroethane	200	40	<0.33	<3.3	<3.3	<3.3	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Trichloroethene	5	0.5	<0.33	<3.3	<3.3	<3.3	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<2.2	<22	<22	<22	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<1.4	<14	<14	<14	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4
Total Trimethylbenzene	480	96	<2.2	<22	<22	<22	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<0.18	**244**	**243**	**138**	<0.18	**4.9**	**5.2**	**0.31 J**	**0.33 J**	**0.24 J**	<0.18	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<0.69	<6.9	<6.9	<6.9	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69
Xylene, o	--	--	<0.63	<6.3	<6.3	<6.3	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63
Total Xylenes	10,000	1,000	<0.69	<6.9	<6.9	<6.9	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69
Styrene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethane	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):																
1-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WT-24	PZ-24A		PZ-24B	PZ-24C	WT-25		PZ-25A	PZ-25B	PZ-25C	WT-26	PZ-26A	PZ-26B	PZ-26C
			11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/14/14	11/13/14	11/13/14	11/13/14	11/13/14
RCRA Metals (mg/L)																
Antimony	0.006	0.0012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):																
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)																
Alkalinity	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements																
pH		IU	7.01	7.45	7.45	7.58	7.61	7.53	7.53	7.80	8.19	7.53	7.32	7.55	7.72	7.72
Conductivity		uS	0.869	0.662	0.662	0.639	0.523	0.734	0.734	0.613	0.406	0.722	0.885	0.588	1.142	0.531
Temperature		°C	8.28	9.00	9.00	8.53	8.71	9.36	9.36	8.66	8.60	8.77	6.95	9.46	8.67	9.12
Dissolved Oxygen		ppm	6.67	0.15	0.15	0.33	0.27	0.18	0.18	0.13	0.15	0.28	4.21	0.16	0.27	0.25
Redox Potential		mV	161.8	-318.7	-318.7	-492.6	-430.2	-125.1	-125.1	-445.7	-411.5	-485.7	-73.3	-372.8	-286.6	-132.6

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-01 - DAMAGED - ABANDONED					
			7/11/94	5/11/99	9/30/99	12/8/99	3/31/00	4/18/05
Volatile Organic Compounds (VOCs) (µg/L):								
Benzene	5	0.5	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41
t-Butylbenzene	NS	NS	NA	<0.50	<0.50	<0.50	<0.50	<0.97
Chloromethane	3	0.3						
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75
1,1-Dichloroethene	7	0.7	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57
cis-1,2-Dichloroethene	70	7	<1.0	<0.46	<0.46	<0.46	<0.46	<0.83
trans-1,2-Dichloroethene	100	20	NA	<0.64	<0.64	<0.64	<0.64	<0.89
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59
Methylene chloride	5	0.5	**6.2 B**	<0.38	<0.38	<0.38	<0.38	<0.43
Naphthalene	100	10	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45
Toluene	1,000	200	<1.0	<0.40	<0.40	<0.40	<0.40	<0.67
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90
Trichloroethene	5	0.5	<1.0	<0.49	<0.49	<0.49	<0.49	<0.48
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97
Vinyl Chloride	0.2	0.02	<1.0	<0.17	<0.17	<0.17	<0.17	<0.18
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86
Ethane	NS	NS	NA	<2.3	<10	<10	<10	NA
Ethene	NS	NS	NA	<1.8	<10	<10	<10	NA
Methane	NS	NS	NA	<0.9	46	<1.0	<10	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):								
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044	NA
2-Methylnaphthalene	NS	NS	NA	<0.049	<0.049	<0.049	<0.049	NA
Acenaphthene	NS	NS	NA	<0.20	<0.20	<0.20	<0.20	NA
Acenaphthylene	NS	NS	NA	<0.18	<0.18	<0.18	<0.18	NA
Anthracene	3000	600	NA	<0.0090	<0.0089	<0.0089	<0.0089	NA
Benzo(a)anthracene	NS	NS	NA	<0.0088	<0.0087	<0.0087	<0.0087	NA
Benzo(a)pyrene	0.2	0.02	NA	<0.012	<0.012	<0.012	<0.012	NA
Benzo (b)fluoranthene	0.2	0.02	NA	<0.016	<0.016	<0.016	<0.016	NA
Benzo(ghi)perylene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA
Benzo(k)fluoranthene	NS	NS	NA	<0.0080	<0.0079	<0.0079	<0.0079	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	<0.0090	<0.0089	<0.0089	<0.0089	NA
Dibenzo(a,h)anthracene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA
Fluoranthene	400	80	NA	<0.019	<0.019	<0.019	<0.019	NA
Fluorene	400	80	NA	<0.02	<0.02	<0.02	<0.02	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	<0.0084	<0.0083	<0.0083	<0.0083	NA
Naphthalene	100	10	NA	<0.12	<0.12	<0.12	<0.12	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	<0.011	<0.011	<0.011	<0.011	NA
Pyrene	250	50	NA	<0.013	0.15	<0.013	<0.013	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-01 - DAMAGED - ABANDONED					
			7/11/94	5/11/99	9/30/99	12/8/99	3/31/00	4/18/05
RCRA Metals (mg/L)								
Antimony	0.006	0.0012	NA	<0.0019 B((-0.0032)	**0.0014**	0.00081	<0.00020	NA
Arsenic	0.01	0.001	NA	<0.0024	**0.0018 A(-0.00047)**	0.00082 A(0.00038)	0.00050 QA(0.00034)	NA
Barium	2	0.4	NA	0.032	0.031	0.04	0.059	NA
Beryllium	0.004	0.0004	NA	<0.00043	<0.000070	<0.000070	<0.000070	NA
Cadmium	0.005	0.0005	NA	<0.00017	<0.000076 A(0.00013)	<0.000060	0.00010 Q	NA
Chromium	0.1	0.01	NA	<0.00053	0.00046 A(0.00020)	0.00080 A(0.00012)	0.00014 QA(0.00017)	NA
Copper	1.3	0.13	NA	<0.00094	0.00035 Q	<0.00025	0.00086 A(-0.0003)	NA
Iron	0.3	0.15	NA	<0.027	0.012 A(0.0097)	0.110 A(0.022)	0.1 A(-0.024)	NA
Lead	0.015	0.0015	NA	<0.0028	<0.00015	<0.00015	0.00063	NA
Manganese	0.05	0.025	NA	0.0025	**0.11**	**0.057**	**0.034**	NA
Mercury	0.002	0.0002	NA	<0.000042	<0.000042	<0.000042	<0.000042	NA
Nickel	0.1	0.02	NA	<0.0022	0.0015	0.0019	0.0028	NA
Selenium	0.05	0.01	NA	<0.0023	<0.00064	0.00082 Q	<0.00064 A(0.00083)	NA
Sliver	0.05	0.01	NA	<0.00046	0.00021 Q	<0.000095 A(-0.00041)	<0.00010 A(0.00047)	NA
Sodium	increase of 10		NA	1.4	1.5	1.6	1.6	NA
Thallium	0.002	0.0004	NA	<0.0013	<0.000093	<0.000093	<0.000093	NA
Zinc	5	2.5	NA	0.06	0.029	0.015 A(-0.0048)	0.15	NA
Poychlorinated Biphenyls (PCBs) (µg/L):								
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)								
Alkalinity	increase of 100		NA	180	200	220	330	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	1.2	0.83	2.4	1	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	7.7	0.9	11	7.6	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	180	200	220	330	NA
Carbonate Alkalinity	NS	NS	NA	<2.5	<1.9	<1.9	<3.8	NA
Conductance, specific (umhos/c	increase of 200		NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<0.044	NA
Nitrogen, nitrate	increase of 2		NA	<0.090	<0.090	<0.080	<0.080	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	<0.037	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	1	1.3 Q	2.1	1.6	NA
Field Screening Measurements								
pH		IU	7.96	7.5	7.36	7.46	7.27	7.11
Conductivity		uS	411	333	331	381	497	784
Temperature		^{o}C	20	11.1	13.8	8.8	8.4	7.6
Dissolved Oxygen		ppm	NA	5.78	2.14	2.39	2.33	2.66
Redox Potential		mV	NA	26	41	43	6	-99

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-02 - DAMAGED - ABANDONED				
			7/11/94	5/10/99	9/23/99	12/6/99	3/29/00
Volatile Organic Compounds (VOCs) (µg/L):							
Benzene	5	0.5	<1.0	<0.44	<0.44	<0.44	<0.44
t-Butylbenzene	NS	NS	NA	<0.50	<0.50	<0.50	<0.50
Chloromethane	3	0.3					
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61
1,1-Dichloroethene	7	0.7	<1.0	<0.47	<0.47	<0.47	<0.47
cis-1,2-Dichloroethene	70	7	<1.0	<0.46	<0.46	<0.46	<0.46
trans-1,2-Dichloroethene	100	20	NA	<0.64	<0.64	<0.64	<0.64
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39
Methylene chloride	5	0.5	**6.7 B**	<0.38	<0.38	<0.38	<0.38
Naphthalene	100	10	<1.0	<0.59	<0.59	<0.59	<0.59
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41
Toluene	1,000	200	<1.0	<0.40	<0.40	<0.40	<0.40
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53
Trichloroethene	5	0.5	<1.0	<0.49	<0.49	<0.49	<0.49
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47
Vinyl Chloride	0.2	0.02	<1.0	<0.52	<0.17	<0.17	<0.17
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37
Ethane	NS	NS	NA	<2.3	<10	<10	<10
Ethene	NS	NS	NA	<1.4	<10	<10	<10
Methane	NS	NS	NA	300	<10	<10	<10
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):							
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044
2-Methylnaphthalene	NS	NS	NA	<0.049	<0.049	<0.049	<0.049
Acenaphthene	NS	NS	NA	<0.20	<0.20	<0.20	<0.20
Acenaphthylene	NS	NS	NA	<0.18	<0.18	<0.18	<0.18
Anthracene	3000	600	NA	<0.0089	<0.0089	<0.0089	<0.0089
Benzo(a)anthracene	NS	NS	NA	<0.0087	<0.0087	<0.0087	<0.0087
Benzo(a)pyrene	0.2	0.02	NA	<0.012	<0.012	<0.012	<0.012
Benzo (b)fluoranthene	0.2	0.02	NA	<0.016	<0.016	<0.016	<0.016
Benzo(ghi)perylene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018
Benzo(k)fluoranthene	NS	NS	NA	<0.0079	<0.0079	<0.0079	<0.0079
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	<0.0089	<0.0089	<0.0089	<0.0089
Dibenzo(a,h)anthracene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018
Fluoranthene	400	80	NA	<0.019	<0.019	<0.019	<0.019
Fluorene	400	80	NA	<0.02	<0.02	<0.02	<0.02
Indeno(1,2,3-dc)pyrene	NS	NS	NA	<0.0083	<0.0083	<0.0083	<0.0083
Naphthalene	100	10	NA	<0.12	<0.12	<0.12	<0.12
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	<0.011	<0.011	<0.011	<0.011
Pyrene	250	50	NA	<0.013	<0.013	<0.013	0.017 Q

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-02 - DAMAGED - ABANDONED				
			7/11/94	5/10/99	9/23/99	12/6/99	3/29/00
RCRA Metals (mg/L)							
Antimony	0.006	0.0012	NA	<0.0019 B(-0.0032)	**0.0016**	<0.00020	<0.00020
Arsenic	0.01	0.001	NA	<0.0024	0.00074 A(0.00035)	0.00057 Q	0.00037 Q
Barium	2	0.4	NA	0.017	0.023	0.022	0.02
Beryllium	0.004	0.0004	NA	<0.00043	<0.000070	<0.000070	<00007
Cadmium	0.005	0.0005	NA	<0.00017	<0.000060 A(-0.00047)	<0.000060	0.00014 Q
Chromium	0.1	0.01	NA	0.00070 Q	0.00050 A(-0.00024)	0.0012 A(0.00048)	0.00047 A(-.00008)
Copper	1.3	0.13	NA	<0.00094	0.00087	0.001	0.00028 QA(-.00041)
Iron	0.3	0.15	NA	<0.027	<0.0037 A(-0.022)	<0.0037	<0.0037
Lead	0.015	0.0015	NA	<0.0028	<0.00015	0.00019 Q	<0.00015
Manganese	0.05	0.025	NA	0.00098	0.00026 A(0.00013)	0.00017Q	<0.000069
Mercury	0.002	0.0002	NA	<0.000042	<0.000042	<0.000042	<0.000042
Nickel	0.1	0.02	NA	<0.0022	0.00031 Q	0.00045	0.00016 Q
Selenium	0.05	0.01	NA	<0.00057	<0.00064	<0.00064	<0.00064
Sliver	0.05	0.01	NA	0.00052 Q B(0.00056)	<0.000095 A(-0.00089)	<0.000095	0.00027 Q
Sodium	increase of 10		NA	0.320 Q	0.45	0.49	0.47
Thallium	0.002	0.0004	NA	<0.0013	<0.000093	<0.000093	<.000093
Zinc	5	2.5	NA	0.074	0.014	0.019	0.014
Poychlorinated Biphenyls (PCBs) (µg/L):							
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)							
Alkalinity	increase of 100		NA	150	140	140	140
Ammonia	NS	NS	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA
Chloride	250	125	NA	0.62 Q	<0.24	0.57	0.30 Q
Cyanide	0.2	0.04	NA	NA	NA	NA	NA
Sulfate	250	125	NA	4.9	3.2	3.6	4.7
TDS	increase of 200		NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	150	140	140	140
Carbonate Alkalinity	NS	NS	NA	<2.5	<2.5	4.0 Q	<1.9
Conductance, specific (umhos/c	increase of 200		NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<.044
Nitrogen, nitrate	increase of 2		NA	0.23 Q	0.14	0.3	0.39
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	1.1 B(0.70)	1.4	<0.50	1.6 A(.48)
Field Screening Measurements							
pH		IU	7.76	8.14	8.36	8.03	8.02
Conductivity		uS	249	226	261	254	250
Temperature		^{o}C	13	9.8	16.3	12.6	7.8
Dissolved Oxygen		ppm	NA	11.7	9.06	8.94	6.9
Redox Potential		mV	NA	201	111	120	220

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-04										
			7/11/94	5/10/99	9/23/99	12/6/99	3/29/00	4/14/05	10/19/06	9/19/07	9/25/12	10/22/13	11/13/14
Volatile Organic Compounds (VOCs) (µg/L):													
Benzene	5	0.5	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41 H	<0.41	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	NA	<0.50	<0.50	<0.50	<0.50	<0.97 H	<0.97	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3								<1	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85 H	<0.85	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36 H	<0.36	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75 H	<0.75	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57 H	<0.57	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	2.4	1.3 Q	**9.8**	6.8	3.6	1.1 QH	6	**9.6**	**7.4**	**7.5**	5.2
trans-1,2-Dichloroethene	100	20	NA	<0.64	<0.64	<0.64	<0.64	<0.89 H	<0.89	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54 H	<0.54	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59 H	<0.59	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	**10 B**	<0.38	<0.38	<0.38	<0.38	<0.43 H	<0.43	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74 H	<0.74	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81 H	<0.81	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45 H	<0.45	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<1.0	<0.40	<0.40	<0.40	<0.40	<0.67 H	<0.67	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90 H	<0.90	<0.5	<0.85	0.50 J	<0.33
Trichloroethene	5	0.5	**6.2**	**5.5**	**8.9**	**12**	**7.7**	**2.3 H**	**5.3**	**6**	**2.66**	**3.5**	**3.4**
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97 H	<0.97	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83 H	<0.83	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97 H	<0.97	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<1.0	<0.52	<0.17	<0.17	<0.17	<0.18 H	<0.18	<0.2	**0.31 J**	<0.18	<0.18
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8 H	<1.8	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83 H	<0.83	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8 H	<1.8	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86 H&	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	<2.3	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	<1.4	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	4.8	<10	<10	<10	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):													
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	<0.0087	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	<0.0079	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	<0.02	<0.02	<0.02	<0.02	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	<0.0083	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	<0.12	<0.12	<0.12	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	<0.013	<0.013	<0.013	<0.013	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-04										
			7/11/94	5/10/99	9/23/99	12/6/99	3/29/00	4/14/05	10/19/06	9/19/07	9/25/12	10/22/13	11/13/14
RCRA Metals (mg/L)													
Antimony	0.006	0.0012	NA	<0.0019 B(-0.0032)	0.0007	<0.00020	0.00020 Q	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	<0.0024	**0.0014 A(0.00035)**	0.00097	0.00078	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	0.043	0.047	0.052	0.051	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	<0.00043	<0.000070	<0.000070	<.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	<0.00017	<0.000060 A(-0.00047)	<0.000060	0.0003	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	0.00057 Q	0.00054 A(-0.00024)	0.0017 A(0.00048)	0.00023 QA(-0.00008)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	0.0013 Q	0.0027	0.0046	0.0059 A(-0.00041)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	**0.17**	**0.36**	**0.36**	0.028	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	<0.0028	<0.00015	0.00037 Q	0.00051	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	**0.029**	**0.16**	**0.13**	0.0056	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	<0.000042 *	<0.000042	0.000052 Q	<0.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	0.0027 Q	0.0052	0.006	0.0049	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	<0.00057	<0.00064	0.0010 Q	0.0011 Q	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	<0.00046	<0.000095 A(-0.00089)	<0.000095	<.00010	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	5.7	6.6	6.6	5.4	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	<0.0013	<0.00093	<0.000093	<0.000093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	0.12	0.15	0.18	0.29	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):													
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)													
Alkalinity	increase of 100		NA	320	310	360	330	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	17	12	22	17	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	28	26	34	29	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	320	310	360	330	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	<2.5	<2.5	<1.9	<1.9	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/c	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<0.044	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	0.25 Q	0.61	1.4	1.1	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	2.7	4.2	2	4.1 A(.48)	NA	NA	NA	NA	NA	NA
Field Screening Measurements													
pH		IU	7.18	7.3	7.36	7.19	7.15	7.2	7.23	6.73	7.01	7.23	7.17
Conductivity		uS	539	625	630	715	628	638	540.5	675	705	550	783
Temperature		°C	18	10.4	16.2	8.4	7.5	7	11.1	17	15.11	11.4	7.91
Dissolved Oxygen		ppm	NA	1.68	1.8	1.98	1.98	253	3.2	0.76	0.28	1.14	0.32
Redox Potential		mV	NA	133	116	120	80	64	34	-31	-86.8	66.1	-42

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-05 - ABANDONED						
			7/11/94	5/10/99	10/5/99	12/8/99	3/31/00	4/14/05	9/6/07
Volatile Organic Compounds (VOCs) (µg/L):									
Benzene	5	0.5	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41 H	NS
t-Butylbenzene	NS	NS	NA	<0.50	<0.50	<0.50	<0.50	<0.97 H	NS
Chloromethane	3	0.3							NS
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85 H	NS
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36 H	NS
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75 H	NS
1,1-Dichloroethene	7	0.7	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57 H	NS
cis-1,2-Dichloroethene	70	7	<1.0	<0.46	<0.46	<0.46	<0.46	<0.83 H	NS
trans-1,2-Dichloroethene	100	20	NA	<0.64	<0.64	<0.64	<0.64	<0.89 H	NS
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54 H	NS
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59 H	NS
Methylene chloride	5	0.5	**4.5**	<0.38	<0.38	<0.38	<0.38	<0.43 H	NS
Naphthalene	100	10	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74 H	NS
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81 H	NS
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45 H	NS
Toluene	1,000	200	<1.0	<0.40	<0.40	<0.40	<0.40	<0.67 H	NS
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90 H	NS
Trichloroethene	5	0.5	<1.0	<0.49	<0.49	<0.49	<0.49	<0.48 H	NS
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97 H	NS
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83 H	NS
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97 H	NS
Vinyl Chloride	0.2	0.02	<1.0	<0.52	<0.17	<0.17	<0.17	<0.18 H	NS
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8 H	NS
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83 H	NS
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8 H	NS
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86 H&	NS
Ethane	NS	NS	NA	<2.3	<10	<10	<10	NA	NS
Ethene	NS	NS	NA	<1.4	<10	<10	<10	NA	NS
Methane	NS	NS	NA	210	280	31	180	NA	NS
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):									
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044	NA	NS
2-Methylnaphthalene	NS	NS	NA	<0.049	<0.049	<0.049	<0.049	NA	NS
Acenaphthene	NS	NS	NA	<0.20	<0.20	<0.20	<0.20	NA	NS
Acenaphthylene	NS	NS	NA	<0.18	<0.18	<0.18	<0.18	NA	NS
Anthracene	3000	600	NA	<0.0089	<0.0089	<0.0089	<0.0089	NA	NS
Benzo(a)anthracene	NS	NS	NA	<0.0087	<0.0087	<0.0087	<0.0087	NA	NS
Benzo(a)pyrene	0.2	0.02	NA	<0.012	<0.012	<0.012	<0.012	NA	NS
Benzo (b)fluoranthene	0.2	0.02	NA	<0.016	<0.016	<0.016	<0.016	NA	NS
Benzo(ghi)perylene	NS	NS	NA	0.019 Q	<0.018	<0.018	<0.018	NA	NS
Benzo(k)fluoranthene	NS	NS	NA	<0.0079	<0.0079	<0.0079	<0.0079	NA	NS
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NS
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NS
Chrysene	0.2	0.02	NA	**0.024 Q**	<0.0089	<0.0089	<0.0089	NA	NS
Dibenzo(a,h)anthracene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA	NS
Fluoranthene	400	80	NA	<0.019	<0.019	<0.019	<0.019	NA	NS
Fluorene	400	80	NA	<0.02	<0.02	<0.02	<0.02	NA	NS
Indeno(1,2,3-dc)pyrene	NS	NS	NA	<0.0083	<0.0083	<0.0083	<0.0083	NA	NS
Naphthalene	100	10	NA	<0.12	<0.12	<0.12	<0.12	NA	NS
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NS
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NS
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NS
Phenanthrene	NS	NS	NA	<0.011	<0.011	<0.011	<0.011	NA	NS
Pyrene	250	50	NA	<0.013	<0.013	<0.013	<0.013	NA	NS

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-05 - ABANDONED						
			7/11/94	5/10/99	10/5/99	12/8/99	3/31/00	4/14/05	9/6/07
RCRA Metals (mg/L)									
Antimony	0.006	0.0012	NA	<0.0019 B(-0.0032)	<0.00016	0.0023	<0.00020	NA	NS
Arsenic	0.01	0.001	NA	<0.0024	**0.0016 A(-0.00047)**	**0.0014 A(0.00038)**	**0.0018 A(0.00034)**	NA	NS
Barium	2	0.4	NA	0.043	0.058	0.045	0.046	NA	NS
Beryllium	0.004	0.0004	NA	<0.00043	<0.000070	<0.000070	<0.000070	NA	NS
Cadmium	0.005	0.0005	NA	<0.00017	<0.000076 A(0.00013)	<0.000060	0.00015 Q	NA	NS
Chromium	0.1	0.01	NA	0.00068 Q	0.0015 A(0.00020)	0.00063 A(0.00012)	0.00026 A(0.00017)	NA	NS
Copper	1.3	0.13	NA	<0.00094	0.00083	<0.00025	0.0013 A(-0.0003)	NA	NS
Iron	0.3	0.15	NA	0.034 Q	0.130 A(0.0097)	0.011 QA(0.022)	<0.0037 A(-0.024)	NA	NS
Lead	0.015	0.0015	NA	<0.0028	<0.00015	<0.00015	0.00034 Q	NA	NS
Manganese	0.05	0.025	NA	**0.33**	**0.48**	**0.32**	**0.28**	NA	NS
Mercury	0.002	0.0002	NA	<0.000042	<0.000042	<0.000042	<0.000042	NA	NS
Nickel	0.1	0.02	NA	0.0094	0.0075	0.0082	0.012	NA	NS
Selenium	0.05	0.01	NA	<0.00057	<0.00064	0.00079 Q	<0.00064 A(0.00083)	NA	NS
Sliver	0.05	0.01	NA	<0.00046	<0.000095	<0.000095 A(-0.00041)	<0.00010 A(0.00047)	NA	NS
Sodium	increase of 10		NA	5.6	4.6	5.1	6.4	NA	NS
Thallium	0.002	0.0004	NA	<0.0013	<0.000093	<0.000093	<0.000093	NA	NS
Zinc	5	2.5	NA	0.096	0.23	0.093 A(-0.0048)	0.19	NA	NS
Poychlorinated Biphenyls (PCBs) (µg/L):									
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NS
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NS
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NS
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NS
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NS
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NS
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NS
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NS
General Chemistry Parameters (mg/L)									
Alkalinity	increase of 100		NA	340	420	340	340	NA	NS
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NS
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NS
COD	increase of 25		NA	NA	NA	NA	NA	NA	NS
Chloride	250	125	NA	14	17	16	26	NA	NS
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NS
Sulfate	250	125	NA	34	29	35	34	NA	NS
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NS
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NS
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NS
Bicarbonate Alkalinity	NS	NS	NA	340	420	340	340	NA	NS
Carbonate Alkalinity	NS	NS	NA	<2.5	<1.9	<1.9	<1.9	NA	NS
Conductance, specific (umhos/c	increase of 200		NA	NA	NA	NA	NA	NA	NS
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<0.044	NA	NS
Nitrogen, nitrate	increase of 2		NA	0.98	0.43	0.16 Q	0.92	NA	NS
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	1	NA	NS
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NS
TOC as NPOC - Filtered	increase of 1		NA	3.2 B(0.70)	4.6	1.2 Q	3.7 A(0.67)	NA	NS
Field Screening Measurements									
pH		IU	6.57	6.73	6.86	6.67	6.7	6.94	NS
Conductivity		uS	850	680	722	694	692	696	NS
Temperature		^{o}C	12	10.5	3.9	11.8	8.4	8.4	NS
Dissolved Oxygen		ppm	NA	1.4	1.09	1.33	1.29	1.79	NS
Redox Potential		mV	NA	165	33	17	26	-12	NS

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-06										
			7/11/94	5/10/99	9/23/99	12/6/99	3/29/00	4/14/05	10/19/06	9/19/07	9/25/12	10/22/13	11/17/14
Volatile Organic Compounds (VOCs) (µg/L):													
Benzene	5	0.5	<20	<0.44	<2.2	<0.88	<0.44	<0.41 H	<0.41	<4.7	<5	<0.24	<0.24
t-Butylbenzene	NS	NS	<20	<0.50	<0.50	<0.50	<0.50	<0.97 H	<0.97	<3.4	<7.1	<0.36	<0.36
Chloromethane	3	0.3								<10	<19	<0.81	<0.81
2-Chlorotoluene	NS	NS	<20	<0.65	<3.2	<1.3	<0.65	<0.85 H	<0.85	<4.9	<7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<20	<0.54	<2.7	<0.54	<0.54	<0.36 H	<0.36	<4.5	<5	<0.41	<0.41
1,1-Dichloroethane	850	85	<20	0.95 Q	<3.0	<1.2	<0.61	<0.75 H	<0.75	<5.6	<9.8	<0.3	<0.3
1,1-Dichloroethene	7	0.7	<20	<0.47	<2.3	<0.94	<0.47	<0.57 H	<0.57	<6.4	<6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	**3,400 OC**	**200 D**	**630**	**280**	**140**	**87 H**	**81**	**249**	**185**	**22.6**	**23.3**
trans-1,2-Dichloroethene	100	20	**28**	0.90 Q	<3.2	<1.3	<0.64	<0.89 H	<0.89	<9.5	<7.9	0.38 J	<0.35
Ethylbenzene	700	140	<20	<0.50	<2.5	<1.0	<0.50	<0.54 H	<0.54	<3.8	<7.8	<0.55	<0.55
Isopropylbenzene	NS	NS	<20	<0.39	<0.39	<0.39	<0.39	<0.59 H	<0.59	<4.8	<9.2	<0.3	<0.3
Methylene chloride	5	0.5	**480 B**	<0.38	<1.9	<0.76	<0.38	<0.43 H	<0.43	<6.9	<11	<0.5	<0.5
Naphthalene	100	10	<20	<0.59	<2.9	<1.2	<0.59	<0.74 H	<0.74	<18	<21	<1.7	<1.7
n-Propylbenzene	NS	NS	<20	<0.54	<2.7	<1.1	<0.54	<0.81 H	<0.81	<3.8	<5.9	<0.25	<0.25
Tetrachloroethene	5	0.5	<20	<0.41	<2.0	<0.82	<0.41	<0.45 H	<0.45	<5.2	<4.4	<0.33	<0.33
Toluene	1,000	200	<20	<0.40	<2.0	<0.80	<0.40	<0.67 H	<0.67	<4.6	<5.3	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<20	2.3	3.9 Q	2.2 Q	2.1	<0.90 H	1.1 Q	<5	<8.5	0.79 J	0.57 J
Trichloroethene	5	0.5	**43**	**20**	**28**	**26**	**21**	**11 H**	**10**	**14.3**	**11.9 J**	**5.3**	**3.9**
1,2,4-Trimethylbenzene	--	--	<20	<0.47	<2.3	<0.94	<0.47	<0.97 H	<0.97	<12	<8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<20	<0.45	<2.2	<0.90	<0.45	<0.83 H	<0.83	<3.7	<7.4	<1.4	<1.4
Total Trimethylbenzene	480	96	<20	<0.47	<2.3	<0.94	<0.47	<0.97 H	<0.97	<12	<8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<20	<0.52	<0.85	<0.34	<0.17	<0.18 H	<0.18	<2	<1.8	<0.18	<0.18
Xylenes, m + p	--	--	<40	<0.77	<3.9	<1.5	<0.77	<1.8 H	<1.8	<6.7	<11	<0.69	<0.69
Xylene, o	--	--	<20	<0.54	<2.7	<1.1	<0.54	<0.83 H	<0.83	<3.2	<8	<0.63	<0.63
Total Xylenes	10,000	1,000	<40	<0.77	<3.9	<1.5	<0.77	<1.8 H	<1.8	<6.7	<11	<0.69	<0.69
Styrene	100	10	<20	<0.37	<1.8	<0.74	<0.37	<0.86 H&	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	<2.3	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	<1.4	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	1.2	<10	<10	<10	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):													
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	<0.0087	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	<0.0079	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	<0.02	<0.02	<0.02	<0.02	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	<0.0083	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	<0.12	<0.12	<0.12	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	<0.013	<0.013	<0.013	<0.013	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-06										
			7/11/94	5/10/99	9/23/99	12/6/99	3/29/00	4/14/05	10/19/06	9/19/07	9/25/12	10/22/13	11/17/14
RCRA Metals (mg/L)													
Antimony	0.006	0.0012	NA	<0.0019 B(-0.0032)	**0.0023**	<0.00020	<0.00020	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	<0.0024	**0.0010 A(0.00035)**	0.00045 Q	<0.00020	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	0.11	0.11	0.11	0.11	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	<0.00043	0.00021 Q	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	<0.00017	<0.000060 A(-0.00047)	<0.000060	0.00035	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	0.00058 Q	0.00039 A(-0.00024)	0.0023 A(0.00048)	0.00069 A(-0.00008)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	<0.00094	0.0056	0.0035	0.0088	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	<0.027	0.018 A(-0.022)	0.02	0.009 Q	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	<0.0028	0.00033 Q	0.00026 Q	0.00061	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	0.008	0.0016 A(0.00013)	0.0026	0.0022	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	**0.027 Q**	0.0022	0.0019	0.0017	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	<0.00057	<0.00064	0.00075 Q	<0.00064	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	<0.00046	<0.000095 A(-0.00089)	<0.000095	<0.0001	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	5.2	5.1	5.1	5.4	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	<0.0013	0.00020 Q	<0.000093	<0.000093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	0.17	0.084	0.17	0.46	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):													
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)													
Alkalinity	increase of 100		NA	470	410	430	480	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	11	12	14	15	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	35	33	32	32	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	470	410	430	480	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	<2.5	<2.5	<1.9	<1.9	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/c	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	<0.088 ED	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	0.67	0.53	0.92	1.1 H(0.02)	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	2.0 B(0.70)	2.5	1.8	3.9 A(.48)	NA	NA	NA	NA	NA	NA
Field Screening Measurements													
pH		IU	7.2	7.17	7.4	7.2	7.24	6.98	7.34	6.95	6.95	7.3	7.3
Conductivity		uS	930	809	785	814	818	851	786.1	808.4	787	624	668
Temperature		^{o}C	10	8.9	12.6	10	8.9	7.9	10.9	11.8	11.73	10.34	7.78
Dissolved Oxygen		ppm	NA	4.6	4.21	3.98	3.9	83	3.07	--	1.56	1.64	2.6
Redox Potential		mV	NA	59	131	137	138	4.81	110	70	-41.3	84.6	254.7

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-07										
			7/11/94	5/10/99	9/23/99	12/6/99	3/29/00	4/14/05	10/19/06	9/19/07	9/25/12	10/21/13	11/13/14
Volatile Organic Compounds (VOCs) (µg/L):													
Benzene	5	0.5	<1.0	<0.44	<0.44	<0.44	<0.44	<0.41 H	<0.41	<0.47	<0.5	<0.24	<0.24
t-Butylbenzene	NS	NS	NA	<0.50	<0.50	<0.50	<0.50	<0.97 H	<0.97	<0.34	<0.71	<0.36	<0.36
Chloromethane	3	0.3								<1	<1.9	<0.81	<0.81
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85 H	<0.85	<0.49	<0.7	<0.21	<0.21
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36 H	<0.36	<0.45	<0.5	<0.41	<0.41
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75 H	<0.75	<0.56	<0.98	<0.3	<0.3
1,1-Dichloroethene	7	0.7	**1.3**	<0.47	<0.47	<0.47	<0.47	<0.57 H	<0.57	<0.64	<0.6	<0.4	<0.4
cis-1,2-Dichloroethene	70	7	<1.0	<0.46	<0.46	<0.46	<0.46	<0.83 H	<0.83	<0.68	<0.74	<0.38	<0.38
trans-1,2-Dichloroethene	100	20	NA	<0.64	<0.64	<0.64	<0.64	<0.89 H	<0.89	<0.95	<0.79	<0.35	<0.35
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54 H	<0.54	<0.38	<0.78	<0.55	<0.55
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59 H	<0.59	<0.48	<0.92	<0.3	<0.3
Methylene chloride	5	0.5	**22 B**	<0.38	<0.38	<0.38	<0.38	<0.43 H	<0.43	<0.69	<1.1	<0.5	<0.5
Naphthalene	100	10	<1.0	<0.59	<0.59	<0.59	<0.59	<0.74 H	<0.74	<1.8	<2.1	<1.7	<1.7
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81 H	<0.81	<0.38	<0.59	<0.25	<0.25
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45 H	<0.45	<0.52	<0.44	<0.33	<0.33
Toluene	1,000	200	<1.0	<0.40	<0.40	<0.40	<0.40	<0.67 H	<0.67	<0.46	<0.53	<0.69	<0.69
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90 H	<0.90	<0.5	<0.85	<0.33	<0.33
Trichloroethene	5	0.5	**1.6**	**0.59 Q**	**0.66 Q**	<0.49	<0.49	<0.48 H	<0.48	<0.44	<0.47	<0.33	<0.33
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97 H	<0.97	<1.2	<0.8	<2.2	<2.2
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83 H	<0.83	<0.37	<0.74	<1.4	<1.4
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97 H	<0.97	<1.2	<0.8	<2.2	<2.2
Vinyl Chloride	0.2	0.02	<1.0	<0.52	<0.17	<0.17	<0.17	<0.18 H	<0.18	<0.2	<0.18	<0.18	<0.18
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8 H	<1.8	<0.67	<1.1	<0.69	<0.69
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83 H	<0.83	<0.32	<0.8	<0.63	<0.63
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8 H	<1.8	<0.67	<1.1	<0.69	<0.69
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86 H&	<0.86	NA	NA	NA	NA
Ethane	NS	NS	NA	<2.3	<10	<10	<10	NA	<10	NA	NA	NA	NA
Ethene	NS	NS	NA	<1.4	<10	<10	<10	NA	<10	NA	NA	NA	NA
Methane	NS	NS	NA	18	<10	<10	<10	NA	10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):													
1-Methylnaphthalene	NS	NS	NA	<0.044	<0.044	<0.044	<0.044	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	NS	NS	NA	<0.049	<0.049	<0.049	<0.049	NA	NA	NA	NA	NA	NA
Acenaphthene	NS	NS	NA	<0.20	<0.20	<0.20	<0.20	NA	NA	NA	NA	NA	NA
Acenaphthylene	NS	NS	NA	<0.18	<0.18	<0.18	<0.18	NA	NA	NA	NA	NA	NA
Anthracene	3000	600	NA	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	NS	NS	NA	<0.0087	<0.0087	<0.0087	<0.0087	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.2	0.02	NA	<0.012	<0.012	<0.012	<0.012	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene	0.2	0.02	NA	<0.016	<0.016	<0.016	<0.016	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NS	NS	NA	<0.0079	<0.0079	<0.0079	<0.0079	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	0.2	0.02	NA	<0.0089	<0.0089	<0.0089	<0.0089	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NS	NS	NA	<0.018	<0.018	<0.018	<0.018	NA	NA	NA	NA	NA	NA
Fluoranthene	400	80	NA	<0.019	<0.019	<0.019	<0.019	NA	NA	NA	NA	NA	NA
Fluorene	400	80	NA	<0.02	<0.02	<0.02	<0.02	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene	NS	NS	NA	<0.0083	<0.0083	<0.0083	<0.0083	NA	NA	NA	NA	NA	NA
Naphthalene	100	10	NA	<0.12	<0.12	<0.12	<0.12	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NS	NS	NA	<0.011	<0.011	<0.011	<0.011	NA	NA	NA	NA	NA	NA
Pyrene	250	50	NA	<0.013	<0.013	<0.013	<0.013	NA	NA	NA	NA	NA	NA

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-07										
			7/11/94	5/10/99	9/23/99	12/6/99	3/29/00	4/14/05	10/19/06	9/19/07	9/25/12	10/21/13	11/13/14
RCRA Metals (mg/L)													
Antimony	0.006	0.0012	NA	<0.0019	**0.0037**	<0.00020	<0.00020	NA	NA	NA	NA	NA	NA
Arsenic	0.01	0.001	NA	<0.0024	**0.0021 A(0.00035)**	**0.0036**	**0.0047**	NA	NA	NA	NA	NA	NA
Barium	2	0.4	NA	0.072	0.082	0.065	0.046	NA	NA	NA	NA	NA	NA
Beryllium	0.004	0.0004	NA	<0.00043	0.000090 Q	<0.000070	<0.000070	NA	NA	NA	NA	NA	NA
Cadmium	0.005	0.0005	NA	<0.00017	0.00011 QA(-0.00047)	<0.000060	0.00017 Q	NA	NA	NA	NA	NA	NA
Chromium	0.1	0.01	NA	<0.00053	0.00073 A(-0.00024)	0.0016 A(0.00048)	0.00087 A(-0.00008)	NA	NA	NA	NA	NA	NA
Copper	1.3	0.13	NA	<0.00094	0.0018	0.0021	0.0055 A(-0.00041)	NA	NA	NA	NA	NA	NA
Iron	0.3	0.15	NA	**0.26**	**0.200 A(-0.022)**	**0.28**	**0.71**	NA	NA	NA	NA	NA	NA
Lead	0.015	0.0015	NA	<0.0028	0.00016 Q	<0.00015	0.00086	NA	NA	NA	NA	NA	NA
Manganese	0.05	0.025	NA	**0.39**	**0.14**	**0.11**	**0.04**	NA	NA	NA	NA	NA	NA
Mercury	0.002	0.0002	NA	<0.000042	<0.000042	**0.0002**	<.000042	NA	NA	NA	NA	NA	NA
Nickel	0.1	0.02	NA	0.0093	0.0067	0.0056	0.004	NA	NA	NA	NA	NA	NA
Selenium	0.05	0.01	NA	<0.00057	<0.00064	<0.00064	0.00089 Q	NA	NA	NA	NA	NA	NA
Sliver	0.05	0.01	NA	<0.00046	<0.000095 A(-0.00089)	<0.000095	<.0001	NA	NA	NA	NA	NA	NA
Sodium	increase of 10		NA	6.6	8.5	6.7	4.6	NA	NA	NA	NA	NA	NA
Thallium	0.002	0.0004	NA	<0.0013	<0.000093	<0.000093	<.000093	NA	NA	NA	NA	NA	NA
Zinc	5	2.5	NA	0.05	0.034	0.066	0.1	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):													
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)													
Alkalinity	increase of 100		NA	2000	360	350	340	NA	NA	NA	NA	NA	NA
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride	250	125	NA	14	21	21	12	NA	NA	NA	NA	NA	NA
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	125	NA	35	38	36	27	NA	NA	NA	NA	NA	NA
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity	NS	NS	NA	2000	360	350	340	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity	NS	NS	NA	<2.5	<2.5	<1.9	<9.5	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/c	increase of 200		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	NS	NS	NA	<0.043	<0.043	<0.044	0.045 Q	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate	increase of 2		NA	<0.090	<0.090	0.090 Q	0.23 QH(0.07)	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	0.26	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered	increase of 1		NA	2.5	4.4	3.9	6.5 A(.48)	NA	NA	NA	NA	NA	NA
Field Screening Measurements													
pH		IU	7.18	7.09	7.16	7.28	7.07	7.09	6.95	6.57	6.91	7.03	7.15
Conductivity		uS	740	628	736	699	542	784	701.1	741.3	739	576	756
Temperature		°C	16	12.3	15.1	10.8	8.4	8.3	12.2	14.7	13.75	12.35	9.95
Dissolved Oxygen		ppm	NA	3.01	2.27	2.27	1.88	1.96	1.18	--	0.1	0.82	0.93
Redox Potential		mV	NA	3	26	16	40	62	73	19	-64.9	55.3	-38.2

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-08 - ABANDONED							
			7/11/94	5/10/99	10/5/99	12/9/99	3/31/00	4/14/05	10/19/06	9/6/07
Volatile Organic Compounds (VOCs) (µg/L):										
Benzene	5	0.5	**1.1**	<0.44	<0.44	<0.44	<0.44	<0.41 H	<0.41	NS
t-Butylbenzene	NS	NS	NA	0.61 Q	<0.50	<0.50	<0.50	<0.97 H	<0.97	NS
Chloromethane	3	0.3								NS
2-Chlorotoluene	NS	NS	<1.0	<0.65	<0.65	<0.65	<0.65	<0.85 H	<0.85	NS
1,2-Dichloroethane	5	0.5	<1.0	<0.54	<0.54	<0.54	<0.54	<0.36 H	<0.36	NS
1,1-Dichloroethane	850	85	<1.0	<0.61	<0.61	<0.61	<0.61	<0.75 H	<0.75	NS
1,1-Dichloroethene	7	0.7	<1.0	<0.47	<0.47	<0.47	<0.47	<0.57 H	<0.57	NS
cis-1,2-Dichloroethene	70	7	<1.0	<0.46	<0.46	<0.46	<0.46	<0.83 H	<0.83	NS
trans-1,2-Dichloroethene	100	20	NA	<0.64	<0.64	<0.64	<0.64	<0.89 H	<0.89	NS
Ethylbenzene	700	140	<1.0	<0.50	<0.50	<0.50	<0.50	<0.54 H	<0.54	NS
Isopropylbenzene	NS	NS	<1.0	<0.39	<0.39	<0.39	<0.39	<0.59 H	<0.59	NS
Methylene chloride	5	0.5	**6.3 B**	<0.38	<0.38	<0.38	<0.38	<0.43 H	<0.43	NS
Naphthalene	100	10	1.1	<0.59	<0.59	<0.59	<0.59	<0.74 H	<0.74	NS
n-Propylbenzene	NS	NS	<1.0	<0.54	<0.54	<0.54	<0.54	<0.81 H	<0.81	NS
Tetrachloroethene	5	0.5	<1.0	<0.41	<0.41	<0.41	<0.41	<0.45 H	<0.45	NS
Toluene	1,000	200	<1.0	<0.40	<0.40	<0.40	<0.40	<0.67 H	<0.67	NS
1,1,1-Trichloroethane	200	40	<1.0	<0.53	<0.53	<0.53	<0.53	<0.90 H	<0.90	NS
Trichloroethene	5	0.5	<1.0	<0.49	<0.49	<0.49	<0.49	<0.48 H	<0.48	NS
1,2,4-Trimethylbenzene	--	--	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97 H	<0.97	NS
1,3,5-Trimethylbenzene	--	--	<1.0	<0.45	<0.45	<0.45	<0.45	<0.83 H	<0.83	NS
Total Trimethylbenzene	480	96	<1.0	<0.47	<0.47	<0.47	<0.47	<0.97 H	<0.97	NS
Vinyl Chloride	0.2	0.02	<1.0	<0.52	<0.17	<0.17	<0.17	<0.18 H	<0.18	NS
Xylenes, m + p	--	--	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8 H	<1.8	NS
Xylene, o	--	--	<1.0	<0.54	<0.54	<0.54	<0.54	<0.83 H	<0.83	NS
Total Xylenes	10,000	1,000	<2.0	<0.77	<0.77	<0.77	<0.77	<1.8 H	<1.8	NS
Styrene	100	10	<1.0	<0.37	<0.37	<0.37	<0.37	<0.86 H&	<0.86	NS
Ethane	NS	NS	NA	<1.8	<10	<10	<10	NA	<10	NS
Ethene	NS	NS	NA	<2.3	<10	<10	<10	NA	<10	NS
Methane	NS	NS	NA	140	150	260	110	NA	54	NS
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):										
1-Methylnaphthalene	NS	NS	NA	0.069 Q	<0.044	<0.044	<0.044	NA	NA	NS
2-Methylnaphthalene	NS	NS	NA	0.3	<0.049	<0.049	<0.049	NA	NA	NS
Acenaphthene	NS	NS	NA	<0.20	<0.20	<0.20	<0.20	NA	NA	NS
Acenaphthylene	NS	NS	NA	<0.18	<0.18	<0.18	<0.18	NA	NA	NS
Anthracene	3000	600	NA	0.068	0.11	0.053	0.020 Q	NA	NA	NS
Benzo(a)anthracene	NS	NS	NA	0.053	0.22	0.084	0.011 Q	NA	NA	NS
Benzo(a)pyrene	0.2	0.02	NA	**0.025 Q**	<0.012	**0.097**	<0.012	NA	NA	NS
Benzo (b)fluoranthene	0.2	0.02	NA	**0.11**	**0.28**	**0.078**	<0.016	NA	NA	NS
Benzo(ghi)perylene	NS	NS	NA	0.056 Q	NA	0.056	<0.018	NA	NA	NS
Benzo(k)fluoranthene	NS	NS	NA	0.028	NA	0.053	<0.0079	NA	NA	NS
Butyl benzyl phthalate	NS	NS	NA	NA	<0.018	NA	NA	NA	NA	NS
Bis (2-Ethylhexyl) Phthalate	NS	NS	NA	NA	0.12	NA	NA	NA	NA	NS
Chrysene	0.2	0.02	NA	**0.045**	**0.2**	**0.08**	**0.022 Q**	NA	NA	NS
Dibenzo(a,h)anthracene	NS	NS	NA	<0.018	0.026 Q	<0.018	<0.018	NA	NA	NS
Fluoranthene	400	80	NA	0.1	0.34	0.19	<0.019	NA	NA	NS
Fluorene	400	80	NA	0.13	0.11	0.071	0.053 Q	NA	NA	NS
Indeno(1,2,3-dc)pyrene	NS	NS	NA	0.031	0.19	0.064	<0.0083	NA	NA	NS
Naphthalene	100	10	NA	0.25 Q	<0.12	<0.12	<0.12	NA	NA	NS
N-Nitroso-Di-N-Propylamin	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
o-Cresol (2-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
p-Cresol (4-Methylphenol)	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Phenanthrene	NS	NS	NA	0.2	0.35	0.16	0.049	NA	NA	NS
Pyrene	250	50	NA	<0.013	0.43	0.19	0.038 Q	NA	NA	NS

TABLE 2

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	ES[1]	PAL[2]	WP-08 - ABANDONED							
			7/11/94	5/10/99	10/5/99	12/9/99	3/31/00	4/14/05	10/19/06	9/6/07
RCRA Metals (mg/L)										
Antimony	0.006	0.0012	NA	<0.0019 B(-0.0032)	**0.0017**	<0.00020	<0.00020	NA	NA	NS
Arsenic	0.01	0.001	NA	<0.0024	**0.0031 A(-0.00047)**	**0.002 A(0.00038)**	**0.0018 A(0.00034)**	NA	NA	NS
Barium	2	0.4	NA	0.1	0.1	0.095	0.11	NA	NA	NS
Beryllium	0.004	0.0004	NA	<0.00043	<0.000070	<0.000070	<0.000070	NA	NA	NS
Cadmium	0.005	0.0005	NA	<0.00017	<0.000076 A(0.00013	0.00023	0.00010 Q	NA	NA	NS
Chromium	0.1	0.01	NA	<0.00053	0.0027 A(0.00020)	0.0010 A(0.00012)	0.00088 A(0.00017)	NA	NA	NS
Copper	1.3	0.13	NA	<0.00094	0.0016	0.00087	0.0018 A(-0.0003)	NA	NA	NS
Iron	0.3	0.15	NA	**3.3**	**2.2**	**2.2**	**2.6**	NA	NA	NS
Lead	0.015	0.0015	NA	<0.0028	<0.00015	0.00021 Q	<0.00055	NA	NA	NS
Manganese	0.05	0.025	NA	**0.66**	**0.58**	**0.56**	**0.62**	NA	NA	NS
Mercury	0.002	0.0002	NA	<0.000042	<0.000042	<0.000042	<0.000042	NA	NA	NS
Nickel	0.1	0.02	NA	0.0051 Q	0.008	0.0099	0.013	NA	NA	NS
Selenium	0.05	0.01	NA	<0.0023	0.00076 Q	0.0022	0.0014 QA(0.00083)	NA	NA	NS
Sliver	0.05	0.01	NA	<0.00046	<0.000098	<0.000095 A(-0.00041)	<0.00010 A(0.00047)	NA	NA	NS
Sodium	increase of 10		NA	56	55	50	47	NA	NA	NS
Thallium	0.002	0.0004	NA	<0.0013	<0.000093	<0.000093	<0.000093	NA	NA	NS
Zinc	5	2.5	NA	1.1	0.2	0.42	0.22	NA	NA	NS
Poychlorinated Biphenyls (PCBs) (µg/L):										
Aroclor-1016	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Aroclor-1221	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Aroclor-1232	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Aroclor-1242	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Aroclor-1248	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Aroclor-1254	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Aroclor-1260	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Total PCBs	0.03	0.003	NA	NA	NA	NA	NA	NA	NA	NS
General Chemistry Parameters (mg/L)										
Alkalinity	increase of 100		NA	830	1200	880	800	NA	NA	NS
Ammonia	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
BOD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NS
COD	increase of 25		NA	NA	NA	NA	NA	NA	NA	NS
Chloride	250	125	NA	33	35	32	29	NA	NA	NS
Cyanide	0.2	0.04	NA	NA	NA	NA	NA	NA	NA	NS
Sulfate	250	125	NA	38	41	70	37	NA	NA	NS
TDS	increase of 200		NA	NA	NA	NA	NA	NA	NA	NS
TSS	NS	NS	NA	NA	NA	NA	NA	NA	NA	NS
Hardness, Total	increase of 100		NA	NA	NA	NA	NA	NA	NA	NS
Bicarbonate Alkalinity	NS	NS	NA	830	1200	880	800	NA	NA	NS
Carbonate Alkalinity	NS	NS	NA	<2.5	<19	<1.9	<9.5	NA	NA	NS
Conductance, specific (umhos/c	increase of 200		NA	NA	NA	NA	NA	NA	NA	NS
Ferrous Iron	NS	NS	NA	<0.043	0.045 Q	0.054 Q	0.37	NA	NA	NS
Nitrogen, nitrate	increase of 2		NA	<0.090	0.26 Q	0.52	0.29	NA	NA	NS
Nitrogen, NO3 + NO2	increase of 2		NA	NA	NA	NA	0.34	NA	NA	NS
pH, Laboratory (su)	increase of 1		NA	NA	NA	NA	NA	NA	NA	NS
TOC as NPOC - Filtered	increase of 1		NA	9.1	7.3	9	7.5 A(0.67)	NA	NA	NS
Field Screening Measurements										
pH		IU	6.74	6.58	6.86	6.75	6.74	6.88	6.52	NS
Conductivity		uS	1947	1456	1550	1495	14.5	1611	1518	NS
Temperature		^{o}C	13	9.5	10.4	11.4	10.8	9.6	10.9	NS
Dissolved Oxygen		ppm	NA	1.59	0.96	0.96	0.96	2.18	1.56	NS
Redox Potential		mV	NA	-60	-44	-49	-42	-18	-56	NS

SUMMARY OF CONTAMINATES DETECTED IN GROUNDWATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

NOTES:

(1) Enforcement Standard from NR140, January 2007.

(2) Preventive Action Limit from NR140, January 2007.

NL - ES or PAL not listed in NR140.

NA - Not analyzed.
ND - Not detected.
NS - Not sampled.
J - Compound was detected at a concentration between the limit of detection (LOD) and the limit of quantitation (LOQ).
Q - Compound was detected at a concentration between the limit of detection (LOD) and the limit of quantitation (LOQ).
& - LCS recovery was outside of control limits.
H - Holding time exceeded by (n) days
D - The result is from a dilution analysis.
A - Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory LOD. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
ED - Elevated detection limit due to matric effects.
MS - Either the matrix spike or matrix spike duplicate was outside of the acceptable control limits. All other supporting QC was within the acceptable control limits.
E - Analyte concentraion exceeds calibration range (see Sample Narrative).
* - Duplicate analyses not within control limits.
B(x) - Analyte is detected in the method blank at "x" concentration. Method blank criteria is evaluated to the laboratory LOD. Additionally, method blank acceptance may be basedon project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
N - Spiked sample revocery not within control limits; post-digestion spike recovery accepted.
B - Analyte found in method blank.
OC - Elevated reporting limit due to analyte concentration.

Bold indicates a PAL exceedance.
Bold and underlining indicates an ES exceedance.

Table 3
SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[(1)]	SG-1/SW-01 (upstream location abandoned 2003)	SG-2/SW-02 (upstream location abandoned 2003)
		4/30/1993	4/30/1993
Volatile Organic Compounds (VOCs) (µg/L):			
Benzene	140	<0.30	<0.30
t-Butylbenzene		NA	NA
Chloromethane			
2-Chlorotoluene		<0.37	<0.37
1,2-Dichloroethane	217	<0.38	<0.38
1,1-Dichloroethane		<0.34	<0.34
1,1-Dichloroethene		<0.78	<0.78
cis-1,2-Dichloroethene		<0.39	<0.39
trans-1,2-Dichloroethene		<0.35	<0.35
Ethylbenzene		<0.44	<0.44
Isopropylbenzene		NA	NA
Methylene chloride	2,700	<0.45	<0.45
Naphthalene		<0.34	<0.34
n-Propylbenzene		<0.54	<0.54
Tetrachloroethene	46	<0.52	<0.52
Toluene		<0.29	<0.29
1,1,1-Trichloroethane		<0.30	<0.30
Trichloroethene	539	<0.34	<0.34
1,2,4-Trimethylbenzene		<0.47	<0.47
1,3,5-Trimethylbenzene		<0.47	<0.47
Total Trimethylbenzene		<0.47	<0.47
Vinyl Chloride	10	<0.32	<0.32
Xylenes, m + p		<0.81	<0.81
Xylene, o		<0.41	<0.41
Total Xylenes		<0.81	<0.81
Styrene		<0.30	<0.30
Ethane		NA	NA
Ethene		NA	NA
Methane		NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons (PAHs) (µg/L):			
1-Methylnaphthalene		NA	NA
2-Methylnaphthalene		NA	NA
Acenaphthene		NA	NA
Acenaphthylene		NA	NA
Anthracene		NA	NA
Benzo(a)anthracene		NA	NA
Benzo(a)pyrene		NA	NA
Benzo (b)fluoranthene		NA	NA
Benzo(ghi)perylene		NA	NA
Benzo(k)fluoranthene		NA	NA
Butyl benzyl phthalate		NA	NA
Bis (2-Ethylhexyl) Phthalate		NA	NA
Chrysene		NA	NA
Dibenzo(a,h)anthracene		NA	NA
Fluoranthene		NA	NA
Fluorene		NA	NA
Indeno(1,2,3-dc)pyrene		NA	NA
Naphthalene		NA	NA
N-Nitroso-Di-N-Propylamin		NA	NA
o-Cresol (2-Methylphenol)		NA	NA
p-Cresol (4-Methylphenol)		NA	NA
Phenanthrene		NA	NA
Pyrene		NA	NA

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[(1)]	SG-1/SW-01 (upstream location abandoned 2003)	SG-2/SW-02 (upstream location abandoned 2003)
		4/30/1993	4/30/1993
RCRA Metals (mg/L)			
Antimony		NA	NA
Arsenic	0.0133	NA	NA
Barium		NA	NA
Beryllium	0.00033	NA	NA
Cadmium		NA	NA
Chromium		NA	NA
Copper		NA	NA
Iron		NA	NA
Lead		NA	NA
Manganese		NA	NA
Mercury		NA	NA
Nickel		NA	NA
Selenium		NA	NA
Sliver		NA	NA
Sodium		NA	NA
Thallium		NA	NA
Zinc		NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):			
Aroclor-1016		NA	NA
Aroclor-1221		NA	NA
Aroclor-1232		NA	NA
Aroclor-1242		NA	NA
Aroclor-1248		NA	NA
Aroclor-1254		NA	NA
Aroclor-1260		NA	NA
Total PCBs		NA	NA
General Chemistry Parameters (mg/L)			
Alkalinity		NA	NA
Ammonia		NA	NA
BOD		NA	NA
COD		NA	NA
Chloride		NA	NA
Cyanide		NA	NA
Sulfate		NA	NA
TDS		NA	NA
TSS		NA	NA
Hardness, Total		NA	NA
Bicarbonate Alkalinity		NA	NA
Carbonate Alkalinity		NA	NA
Conductance, specific (umhos/cm)		NA	NA
Ferrous Iron		NA	NA
Nitrogen, nitrate		NA	NA
Nitrogen, NO3 + NO2		NA	NA
pH, Laboratory (su)		NA	NA
TOC as NPOC - Filtered		NA	NA
Field Screening Measurements			
pH		NA	NA
Conductivity		NA	NA
Temperature		NA	NA
Dissolved Oxygen		NA	NA
Redox Potential		NA	NA

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[1]	SG-4 (abandoned 2003)			
		5/19/99	9/30/99	12/8/99	3/30/00
Volatile Organic Compounds (VOCs) (µg/L)					
Benzene	140	<0.44	<0.44	<0.44	<0.44
t-Butylbenzene		<0.50	<0.50	<0.50	<0.50
Chloromethane					
2-Chlorotoluene		<0.65	<0.65	<0.65	<0.65
1,2-Dichloroethane	217	<0.54	<0.54	<0.54	<0.54
1,1-Dichloroethane		<0.61	<0.61	<0.61	<0.61
1,1-Dichloroethene		<0.47	<0.47	<0.47	<0.47
cis-1,2-Dichloroethene		1.4 Q	<0.46	0.8 Q	2.6
trans-1,2-Dichloroethene		<0.64	<0.64	<0.64	<0.64
Ethylbenzene		<0.50	<0.50	<0.50	<0.50
Isopropylbenzene		<0.39	<0.39	<0.39	<0.39
Methylene chloride	2,700	<0.38	<0.38	<0.38	<0.38
Naphthalene		<0.59	<0.59	<0.59	<0.59
n-Propylbenzene		<0.54	<0.54	<0.54	<0.54
Tetrachloroethene	46	<0.41	<0.41	<0.41	<0.41
Toluene		<0.40	<0.40	<0.40	<0.40
1,1,1-Trichloroethane		<0.53	<0.53	<0.53	<0.53
Trichloroethene	539	<0.49	<0.49	<0.49	<0.49
1,2,4-Trimethylbenzene		<0.47	<0.47	<0.47	<0.47
1,3,5-Trimethylbenzene		<0.45	<0.45	<0.45	<0.45
Total Trimethylbenzene		<0.47	<0.47	<0.47	<0.47
Vinyl Chloride	10	<0.52	<0.17	<0.17	0.43
Xylenes, m + p		<0.77	<0.77	<0.77	<0.77
Xylene, o		<0.54	<0.54	<0.54	<0.54
Total Xylenes		<0.77	<0.77	<0.77	<0.77
Styrene		<0.37	<0.37	<0.37	<0.37
Ethane		NA	NA	<10	NA
Ethene		NA	NA	<10	NA
Methane		NA	NA	32	NA
SVOCs Polycyclic Aromatic Hydrocarbons					
1-Methylnaphthalene		<0.044	<0.044	<0.044	<0.044
2-Methylnaphthalene		<0.049	<0.049	<0.049	<0.049
Acenaphthene		<0.20	<0.20	<0.20	<0.20
Acenaphthylene		<0.18	<0.18	<0.18	<0.18
Anthracene		<0.0090	<0.0089	<0.0089	<0.0089
Benzo(a)anthracene		<0.0088	<0.0087	<0.0087	<0.0087
Benzo(a)pyrene		<0.012	<0.012	<0.012	<0.012
Benzo (b)fluoranthene		<0.016	<0.016	<0.016	<0.016
Benzo(ghi)perylene		<0.018	<0.018	<0.018	<0.018
Benzo(k)fluoranthene		<0.0080	<0.0079	<0.0079	<0.0079
Butyl benzyl phthalate		NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate		NA	NA	NA	NA
Chrysene		<0.0090	<0.0089	<0.0089	<0.0089
Dibenzo(a,h)anthracene		<0.018	<0.018	<0.018	<0.018
Fluoranthene		<0.019	<0.019	<0.019	<0.019
Fluorene		<0.020	<0.020	<0.020	<0.020
Indeno(1,2,3-dc)pyrene		<0.0084	<0.0083	<0.0083	<0.0083
Naphthalene		<0.12	<0.12	<0.12	<0.12
N-Nitroso-Di-N-Propylamin		NA	NA	NA	NA
o-Cresol (2-Methylphenol)		NA	NA	NA	NA
p-Cresol (4-Methylphenol)		NA	NA	NA	NA
Phenanthrene		<0.011	<0.011	<0.011	<0.011
Pyrene		<0.013	<0.013	<0.013	<0.013

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[(1)]	SG-4 (abandoned 2003)			
		5/19/99	9/30/99	12/8/99	3/30/00
RCRA Metals (mg/L)					
Antimony		<0.0021	<0.00028	<0.00028	0.00020 Q
Arsenic	0.0133	<0.0027	0.0021	0.0037	0.0011 A(0.00034)
Barium		0.047	0.2	0.27	0.036
Beryllium	0.00033	<0.00063	0.00024	**0.00049**	<0.000070
Cadmium		<0.00020	<0.00016 A(-0.00040)	0.00068	0.00017 Q
Chromium		0.0012 Q B(0.0011)	0.0077	0.026	0.000080 QA(0.00017)
Copper		0.0044 Q	0.0088	0.032	0.0021 A(-0.0003)
Iron		0.98	3.9	14	0.030 A(-0.024)
Lead		<0.003	0.0061	0.021	<0.00015
Manganese		0.044	0.057 E	0.32	0.014
Mercury		<0.000042	<0.000042	0.000057 Q	<0.000042
Nickel		0.0051 Q	0.006	0.018	0.0012
Selenium		<0.0012	0.0024 Q	0.0042 Q	<0.00064 A(0.00083)
Sliver		<0.00050	0.00099 N,*	<0.000090	<0.00010 A(0.00047)
Sodium		15	13	15	18
Thallium		<0.0014	0.0011 A(0.00031)	NA	<0.000093
Zinc		0.0068 Q	0.025 A(0.0023)	0.098	0.0037 Q
Poychlorinated Biphenyls (PCBs) (µg/L):					
Aroclor-1016		NA	NA	NA	NA
Aroclor-1221		NA	NA	NA	NA
Aroclor-1232		NA	NA	NA	NA
Aroclor-1242		NA	NA	NA	NA
Aroclor-1248		NA	NA	NA	NA
Aroclor-1254		NA	NA	NA	NA
Aroclor-1260		NA	NA	NA	NA
Total PCBs		NA	NA	NA	NA
General Chemistry Parameters (mg/L)					
Alkalinity		NA	NA	NA	NA
Ammonia		NA	NA	NA	NA
BOD		NA	NA	NA	NA
COD		NA	NA	NA	NA
Chloride		NA	NA	NA	NA
Cyanide		NA	NA	NA	NA
Sulfate		NA	NA	NA	NA
TDS		NA	NA	NA	NA
TSS		NA	NA	NA	NA
Hardness, Total		NA	NA	NA	NA
Bicarbonate Alkalinity		NA	NA	NA	NA
Carbonate Alkalinity		NA	NA	NA	NA
Conductance, specific (umhos/cm)		NA	NA	NA	NA
Ferrous Iron		NA	NA	NA	NA
Nitrogen, nitrate		NA	NA	NA	NA
Nitrogen, NO3 + NO2		NA	NA	NA	NA
pH, Laboratory (su)		NA	NA	NA	NA
TOC as NPOC - Filtered		NA	NA	NA	NA
Field Screening Measurements					
pH		7.8	7.41	7.47	7.46
Conductivity		631	690	753	628
Temperature		18.2	13.1	6.9	6.8
Dissolved Oxygen		8.24	7.08	7.29	6.99
Redox Potential		147	208	211	NA

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[(1)]	SG-01 (2014 Sample Location 4) (new location 2006)					SG-02 (2014 Sample Location 3) (new location 2006)				
		10/18/2006	9/20/2007	9/25/2012	10/22/2013	9/30/2014	10/18/2006	9/20/2007	9/25/2012	10/22/2013	9/30/2014
Volatile Organic Compounds (VOCs) (µg/L)											
Benzene	140	<0.41	<0.47	<0.5	0.33 J	0.40 J	<0.41	<4.7	<5	<0.24	1.31
t-Butylbenzene		<0.97	<0.34	<0.71	<0.36	<0.36	<0.97	<3.4	<7.1	<0.36	<0.36
Chloromethane			<1	<1.9	<0.81	<0.81		<10	<19	<0.81	<0.81
2-Chlorotoluene		<0.85	<0.49	<0.7	<0.21	<0.21	<0.85	<4.9	<7	<0.21	<0.21
1,2-Dichloroethane	217	<0.36	<0.45	<0.5	<0.41	<0.41	<0.36	<4.5	<5	<0.41	<0.41
1,1-Dichloroethane		<0.75	0.63 J	<0.98	<0.3	0.69 J	<0.75	<4.6	<9.8	<0.3	0.96 J
1,1-Dichloroethene		<0.57	<0.64	<0.6	<0.4	<0.4	<0.57	<5.6	<6	<0.4	<0.4
cis-1,2-Dichloroethene		4.0	51.0	102	31.1	50	1.2 Q	<6.4	101	9.7	61
trans-1,2-Dichloroethene		<0.89	<0.95	<0.79	<0.35	<0.35	<0.89	97	<7.9	<0.35	<0.35
Ethylbenzene		<0.54	<0.38	<0.78	<0.55	<0.55	<0.54	<3.8	<7.8	<0.55	<0.55
Isopropylbenzene		<0.59	<0.48	<0.92	<0.3	<0.3	<0.59	<4.8	<9.2	<0.3	<0.3
Methylene chloride	2,700	<0.43	<0.69	<1.1	<0.5	<0.5	<0.43	<6.9	<11	<0.5	<0.5
Naphthalene		<0.74	<1.8	<2.1	<1.7	<1.7	<0.74	<18	<21	<1.7	<1.7
n-Propylbenzene		<0.81	<0.38	<0.59	<0.25	<0.25	<0.81	<3.8	<5.9	<0.25	<0.25
Tetrachloroethene	46	<0.45	<0.52	<0.44	<0.33	<0.33	<0.45	<5.2	<4.4	<0.33	<0.33
Toluene		<0.67	<0.46	<0.53	<0.69	<0.69	<0.67	<4.6	<5.3	<0.69	<0.69
1,1,1-Trichloroethane		<0.90	<0.5	<0.85	<0.33	<0.33	<0.90	<5	<8.5	<0.33	<0.33
Trichloroethene	539	<0.48	1.33 J	1.78	0.40 J	0.80 J	<0.48	<4.4	<4.7	0.46 J	0.63 J
1,2,4-Trimethylbenzene		<0.97	<1.2	<0.8	<2.2	<2.2	<0.97	<12	<8	<2.2	<2.2
1,3,5-Trimethylbenzene		<0.83	<0.37	<0.74	<1.4	<1.4	<0.83	<3.7	<7.4	<1.4	<1.4
Total Trimethylbenzene		<0.97	<1.2	<0.8	<2.2	<2.2	<0.97	<12	<8	<2.2	<2.2
Vinyl Chloride	10	1.8	**11.3**	**32**	**18.6**	**24.6**	<0.18	**51**	**105**	**12.4**	**87**
Xylenes, m + p		<1.8	<0.67	<1.1	<0.69	<0.69	<1.8	<6.7	<11	<0.69	<0.69
Xylene, o		<0.83	<0.32	<0.8	<0.63	<0.63	<0.83	<3.2	<8	<0.63	<0.63
Total Xylenes		<1.8	<0.67	<1.1	<0.69	<0.69	<1.8	<6.7	<11	<0.69	<0.69
Styrene		<0.86	NA	NA	NA	NA	<0.86	NA	NA	NA	NA
Ethane		<10	NA	NA	NA	NA	<10	NA	NA	NA	NA
Ethene		<10	NA	NA	NA	NA	<10	NA	NA	NA	NA
Methane		<10	NA	NA	NA	NA	<10	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons											
1-Methylnaphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[(1)]	SG-01 (2014 Sample Location 4) (new location 2006)					SG-02 (2014 Sample Location 3) (new location 2006)				
		10/18/2006	9/20/2007	9/25/2012	10/22/2013	9/30/2014	10/18/2006	9/20/2007	9/25/2012	10/22/2013	9/30/2014
RCRA Metals (mg/L)											
Antimony		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.0133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.00033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sliver		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):											
Aroclor-1016		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)											
Alkalinity		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements											
pH		7.4	6.85	7.32	NA	6.44	7.94	6.6	7.21	NA	6.51
Conductivity		797.6	737.7	809	NA	0.758	796.2	745	805	NA	0.766
Temperature		9.7	17.5	15.03	NA	10.85	9.8	17	13.23	NA	10.63
Dissolved Oxygen		7.46	4.82	4.58	NA	5.21	8.58	3.54	4.05	NA	5.32
Redox Potential		147	203	-50.4	NA	23	160	203	-46.4	NA	188

TABLE 3

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[1]	SG-03 (2014 Sample Location 5) (new location 2006)						2014 Sample Location 1	2014 Sample Location 2	2014 Sample Location 6	2014 Sample Location 7
		10/18/2006	9/20/2007	9/25/2012	10/22/2013	9/30/2014	9/30/2014 (Dup)	9/30/2014	9/30/2014	9/30/2014	9/30/2014
Volatile Organic Compounds (VOCs) (µg/L)											
Benzene	140	<0.41	<0.47	<0.5	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
t-Butylbenzene		<0.97	<0.34	<0.71	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36
Chloromethane			<1	<1.9	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81	<0.81
2-Chlorotoluene		<0.85	<0.49	<0.7	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
1,2-Dichloroethane	217	<0.36	<0.45	<0.5	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
1,1-Dichloroethane		<0.75	<0.56	<0.98	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
1,1-Dichloroethene		<0.57	<0.64	<0.6	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,2-Dichloroethene		<0.83	2.83	2.31 J	<0.38	0.86 J	0.65 J	<0.38	<0.38	11.5	3.3
trans-1,2-Dichloroethene		<0.89	<0.95	<0.79	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
Ethylbenzene		<0.54	<0.38	<0.78	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55
Isopropylbenzene		<0.59	<0.48	<0.92	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Methylene chloride	2,700	<0.43	<0.69	<1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene		<0.74	<1.8	<2.1	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
n-Propylbenzene		<0.81	<0.38	<0.59	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	46	<0.45	<0.52	<0.44	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Toluene		<0.67	<0.46	<0.53	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69
1,1,1-Trichloroethane		<0.90	<0.5	<0.85	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Trichloroethene	539	<0.48	1.0 J	0.52 J	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
1,2,4-Trimethylbenzene		<0.97	<1.2	<0.8	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
1,3,5-Trimethylbenzene		<0.83	<0.37	<0.74	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4
Total Trimethylbenzene		<0.97	<1.2	<0.8	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2	<2.2
Vinyl Chloride	10	<0.18	<0.2	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	2.86	0.57
Xylenes, m + p		<1.8	<0.7	<1.1	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69
Xylene, o		<0.83	<0.32	<0.8	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63	<0.63
Total Xylenes		<1.8	<0.67	<1.1	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69	<0.69
Styrene		<0.86	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethane		<10	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethene		<10	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane		<10	NA	NA	NA	NA	NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons											
1-Methylnaphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b)fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 3

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[1]	SG-03 (2014 Sample Location 5) (new location 2006)						2014 Sample Location 1	2014 Sample Location 2	2014 Sample Location 6	2014 Sample Location 7
		10/18/2006	9/20/2007	9/25/2012	10/22/2013	9/30/2014	9/30/2014 (Dup)	9/30/2014	9/30/2014	9/30/2014	9/30/2014
RCRA Metals (mg/L)											
Antimony		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.0133	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.00033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sliver		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):											
Aroclor-1016		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1221		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1232		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1242		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1248		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1254		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor-1260		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total PCBs		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)											
Alkalinity		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ammonia		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TDS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TSS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness, Total		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate Alkalinity		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, nitrate		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH, Laboratory (su)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TOC as NPOC - Filtered		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Screening Measurements											
pH		8.14	6.71	7.18	NA	6.73	6.73	7.23	7.51	6.53	6.59
Conductivity		798.3	709	828	NA	0.748	0.748	0.656	0.705	0.752	0.736
Temperature		9.7	18.4	13.21	NA	11.40	11.40	11.25	12.36	13.14	11.91
Dissolved Oxygen		8.4	4.04	5.22	NA	9.13	9.13	3.22	4.21	4.01	7.22
Redox Potential		114	200	-80.3	NA	175	175	194	194	164	171

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[(1)]	2014 Sample Location 8	2014 Sample Location 9	2014 Sample Location 10	2014 Sample Location 11	2014 Sample Location 12
		9/30/2014	9/30/2014	9/30/2014	9/30/2014	9/30/2014
Volatile Organic Compounds (VOCs) (µg/L)						
Benzene	140	<0.24	<0.24	<0.24	<0.24	<0.24
t-Butylbenzene		<0.36	<0.36	<0.36	<0.36	<0.36
Chloromethane		<0.81	<0.81	<0.81	<0.81	<0.81
2-Chlorotoluene		<0.21	<0.21	<0.21	<0.21	<0.21
1,2-Dichloroethane	217	<0.41	<0.41	<0.41	<0.41	<0.41
1,1-Dichloroethane		<0.3	<0.3	<0.3	<0.3	<0.3
1,1-Dichloroethene		<0.4	<0.4	<0.4	<0.4	<0.4
cis-1,2-Dichloroethene		<0.38	<0.38	<0.38	<0.38	<0.38
trans-1,2-Dichloroethene		<0.35	<0.35	<0.35	<0.35	<0.35
Ethylbenzene		<0.55	<0.55	<0.55	<0.55	<0.55
Isopropylbenzene		<0.3	<0.3	<0.3	<0.3	<0.3
Methylene chloride	2,700	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene		<1.7	<1.7	<1.7	<1.7	<1.7
n-Propylbenzene		<0.25	<0.25	<0.25	<0.25	<0.25
Tetrachloroethene	46	<0.33	<0.33	<0.33	<0.33	<0.33
Toluene		<0.69	<0.69	<0.69	<0.69	<0.69
1,1,1-Trichloroethane		<0.33	<0.33	<0.33	<0.33	<0.33
Trichloroethene	539	<0.33	<0.33	<0.33	<0.33	<0.33
1,2,4-Trimethylbenzene		<2.2	<2.2	<2.2	<2.2	<2.2
1,3,5-Trimethylbenzene		<1.4	<1.4	<1.4	<1.4	<1.4
Total Trimethylbenzene		<2.2	<2.2	<2.2	<2.2	<2.2
Vinyl Chloride	10	<0.18	<0.18	<0.18	<0.18	<0.18
Xylenes, m + p		<0.69	<0.69	<0.69	<0.69	<0.69
Xylene, o		<0.63	<0.63	<0.63	<0.63	<0.63
Total Xylenes		<0.69	<0.69	<0.69	<0.69	<0.69
Styrene		NA	NA	NA	NA	NA
Ethane		NA	NA	NA	NA	NA
Ethene		NA	NA	NA	NA	NA
Methane		NA	NA	NA	NA	NA
SVOCs Polycyclic Aromatic Hydrocarbons						
1-Methylnaphthalene		NA	NA	NA	NA	NA
2-Methylnaphthalene		NA	NA	NA	NA	NA
Acenaphthene		NA	NA	NA	NA	NA
Acenaphthylene		NA	NA	NA	NA	NA
Anthracene		NA	NA	NA	NA	NA
Benzo(a)anthracene		NA	NA	NA	NA	NA
Benzo(a)pyrene		NA	NA	NA	NA	NA
Benzo (b)fluoranthene		NA	NA	NA	NA	NA
Benzo(ghi)perylene		NA	NA	NA	NA	NA
Benzo(k)fluoranthene		NA	NA	NA	NA	NA
Butyl benzyl phthalate		NA	NA	NA	NA	NA
Bis (2-Ethylhexyl) Phthalate		NA	NA	NA	NA	NA
Chrysene		NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene		NA	NA	NA	NA	NA
Fluoranthene		NA	NA	NA	NA	NA
Fluorene		NA	NA	NA	NA	NA
Indeno(1,2,3-dc)pyrene		NA	NA	NA	NA	NA
Naphthalene		NA	NA	NA	NA	NA
N-Nitroso-Di-N-Propylamin		NA	NA	NA	NA	NA
o-Cresol (2-Methylphenol)		NA	NA	NA	NA	NA
p-Cresol (4-Methylphenol)		NA	NA	NA	NA	NA
Phenanthrene		NA	NA	NA	NA	NA
Pyrene		NA	NA	NA	NA	NA

TABLE 3

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

Analyte	Table 9 NR 105[(1)]	2014 Sample Location 8	2014 Sample Location 9	2014 Sample Location 10	2014 Sample Location 11	2014 Sample Location 12
		9/30/2014	9/30/2014	9/30/2014	9/30/2014	9/30/2014
RCRA Metals (mg/L)						
Antimony		NA	NA	NA	NA	NA
Arsenic	0.0133	NA	NA	NA	NA	NA
Barium		NA	NA	NA	NA	NA
Beryllium	0.00033	NA	NA	NA	NA	NA
Cadmium		NA	NA	NA	NA	NA
Chromium		NA	NA	NA	NA	NA
Copper		NA	NA	NA	NA	NA
Iron		NA	NA	NA	NA	NA
Lead		NA	NA	NA	NA	NA
Manganese		NA	NA	NA	NA	NA
Mercury		NA	NA	NA	NA	NA
Nickel		NA	NA	NA	NA	NA
Selenium		NA	NA	NA	NA	NA
Sliver		NA	NA	NA	NA	NA
Sodium		NA	NA	NA	NA	NA
Thallium		NA	NA	NA	NA	NA
Zinc		NA	NA	NA	NA	NA
Poychlorinated Biphenyls (PCBs) (µg/L):						
Aroclor-1016		NA	NA	NA	NA	NA
Aroclor-1221		NA	NA	NA	NA	NA
Aroclor-1232		NA	NA	NA	NA	NA
Aroclor-1242		NA	NA	NA	NA	NA
Aroclor-1248		NA	NA	NA	NA	NA
Aroclor-1254		NA	NA	NA	NA	NA
Aroclor-1260		NA	NA	NA	NA	NA
Total PCBs		NA	NA	NA	NA	NA
General Chemistry Parameters (mg/L)						
Alkalinity		NA	NA	NA	NA	NA
Ammonia		NA	NA	NA	NA	NA
BOD		NA	NA	NA	NA	NA
COD		NA	NA	NA	NA	NA
Chloride		NA	NA	NA	NA	NA
Cyanide		NA	NA	NA	NA	NA
Sulfate		NA	NA	NA	NA	NA
TDS		NA	NA	NA	NA	NA
TSS		NA	NA	NA	NA	NA
Hardness, Total		NA	NA	NA	NA	NA
Bicarbonate Alkalinity		NA	NA	NA	NA	NA
Carbonate Alkalinity		NA	NA	NA	NA	NA
Conductance, specific (umhos/cm)		NA	NA	NA	NA	NA
Ferrous Iron		NA	NA	NA	NA	NA
Nitrogen, nitrate		NA	NA	NA	NA	NA
Nitrogen, NO3 + NO2		NA	NA	NA	NA	NA
pH, Laboratory (su)		NA	NA	NA	NA	NA
TOC as NPOC - Filtered		NA	NA	NA	NA	NA
Field Screening Measurements						
pH		6.49	6.53	6.25	7.21	6.72
Conductivity		0.775	0.737	0.987	0.971	0.825
Temperature		11.45	12.27	12.01	13.04	12.10
Dissolved Oxygen		6.21	6.53	7.32	15.71	5.73
Redox Potential		175	177	177	167	170

SUMMARY OF CONTAMINATES DETECTED IN SURFACE WATER
FORMER GRAVEL PIT
TOWN OF NEWTON, WISCONSIN

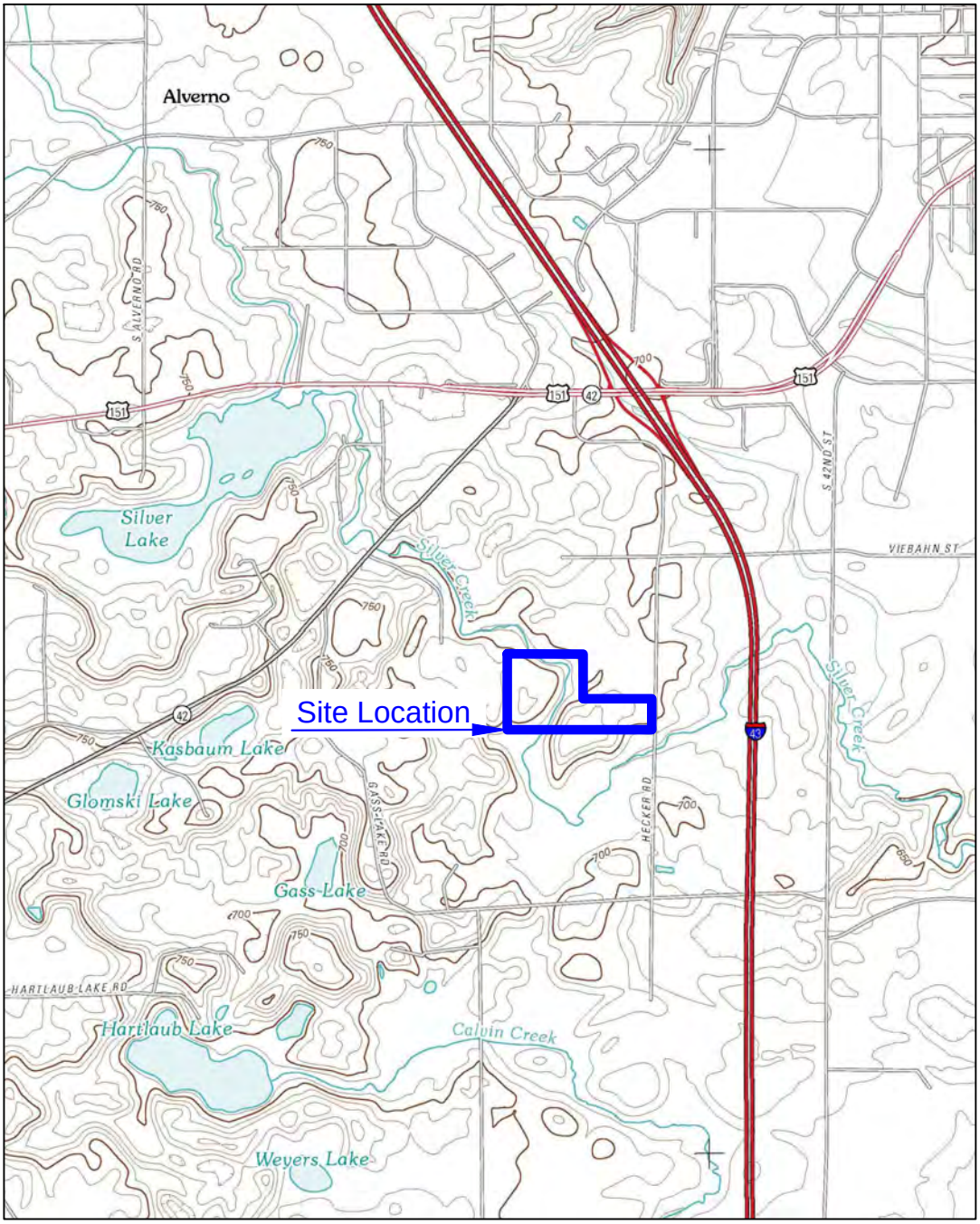
NOTES:

(1) WAC Chapter NR 105, Table 9 Human Cancer Criteria Standards for a non-public water supply that is a “warm water forage, limited forage and warm water sport fish community”.

NA - Not analyzed.
ND - Not detected.
NS - Not sampled.
J - Compound was detected at a concentration between the limit of detection (LOD) and the limit of quantitation (LOQ).
Q - Compound was detected at a concentration between the limit of detection (LOD) and the limit of quantitation (LOQ).
& - LCS recovery was outside of control limits.
H - Holding time exceeded by (n) days
D - The result is from a dilution analysis.
A - Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory LOD. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
ED - Elevated detection limit due to matric effects.
MS - Either the matrix spike or matrix spike duplicate was outside of the acceptable control limits. All other supporting QC was within the acceptable control limits.
E - Analyte concentraion exceeds calibration range (see Sample Narrative).
* - Duplicate analyses not within control limits.
B(x) - Analyte is detected in the method blank at "x" concentration. Method blank criteria is evaluated to the laboratory LOD. Additionally, method blank acceptance may be basedon project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
N - Spiked sample revocery not within control limits; post-digestion spike recovery accepted.
B - Analyte found in method blank.
OC - Elevated reporting limit due to analyte concentration.

Bold indicates a standard exceedance.

Figures:



SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2

1000 500 0 METERS 1000 2000

1 0.5 0 1

MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

Topographic Map courtesy of the United States Geological Survey

http://store.usgs.gov/b2c_usgs/usgs/maplocator/(ctype=areaDetails&xcm=r3standardpitrex_prd&carea=%24ROOT&layout=6_1_61_48&uiarea=2)/.do

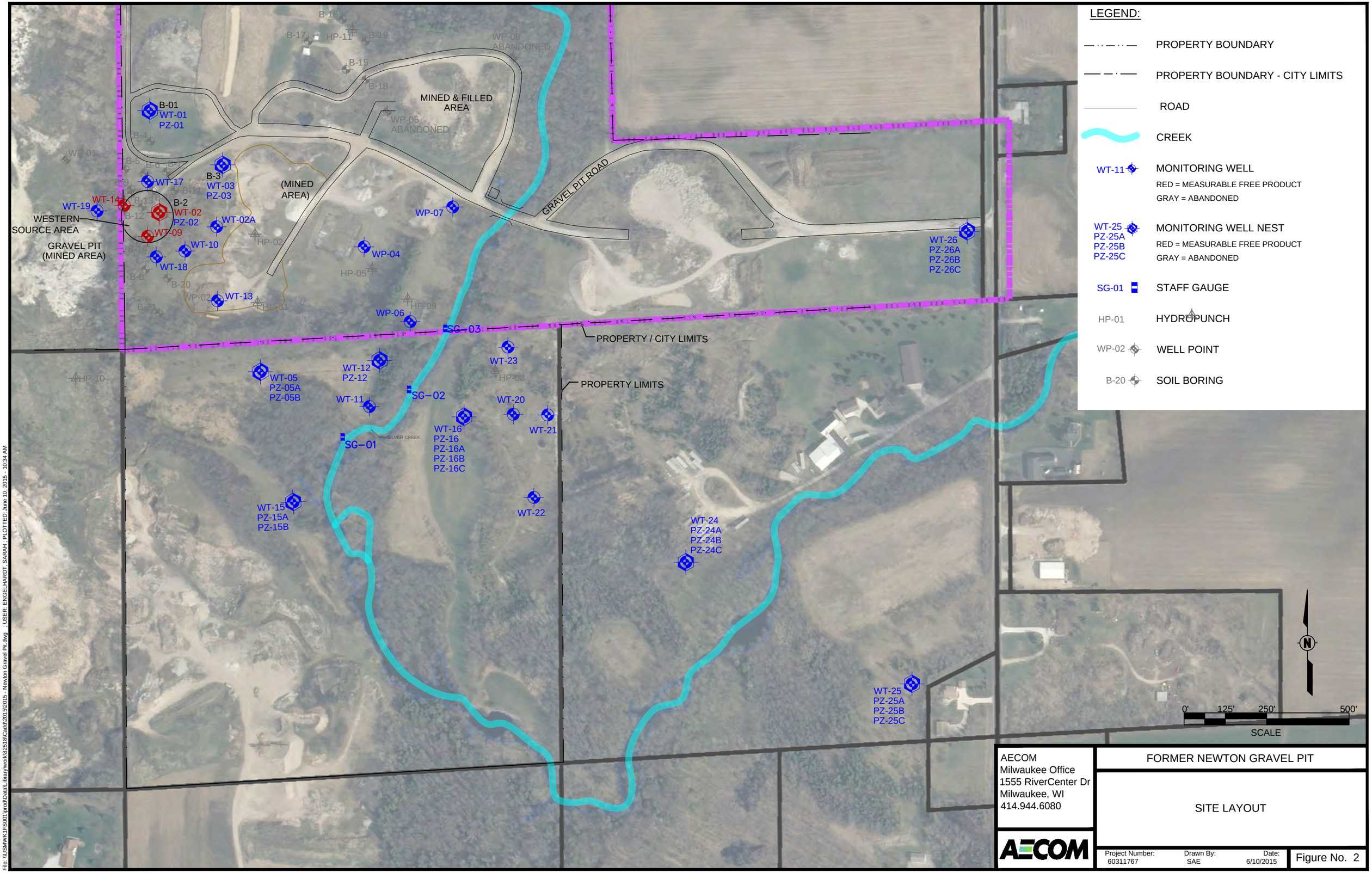
Map Date: 2010

AECOM
Milwaukee Office
1555 RiverCenter Dr
Milwaukee, WI
414.944.6080

FORMER NEWTON GRAVEL PIT

SITE LOCATION

Project Number:	Drawn By:	Date:	Figure No. 1
60311767	SAE	6/10/2015	



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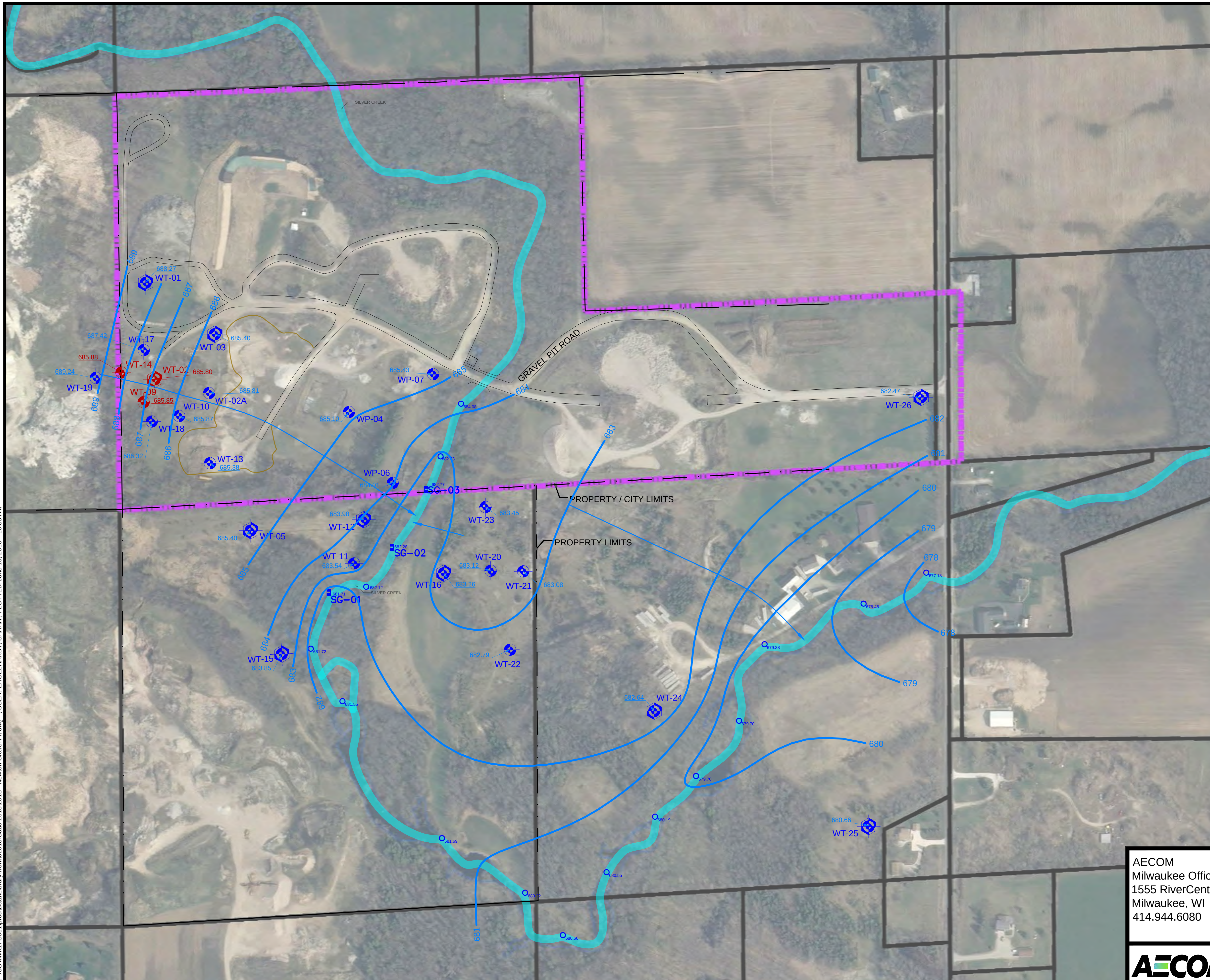
Milwaukee, WI
414.944.6080

FORMER NEWTON GRAVEL PIT

SITE LAYOUT

Project Number:	Drawn By:	Date:	Figure No. 2
60311767	SAE	6/10/2015	



LEGEND:

PROPERTY BOUNDARY

PROPERTY BOUNDARY - CITY LIMITS

ROAD

CREEK

WT-11 MONITORING WELL
RED = MEASURABLE FREE PRODUCT

WT-03 MONITORING WELL NEST
RED = MEASURABLE FREE PRODUCT

SG-01 STAFF GAUGE

WP-02 WELL POINT

SILVER CREEK - BASE SURVEY POINTS

NOTES:

1. SILVER CREEK WAS SURVEYED 10/2013.
2. GROUNDWATER ELEVATIONS FROM MONITORING WELLS WT-02, WT-09 AND WT-14 WERE NOT USED DUE TO THE PRESENCE OF MEASURABLE PRODUCT.

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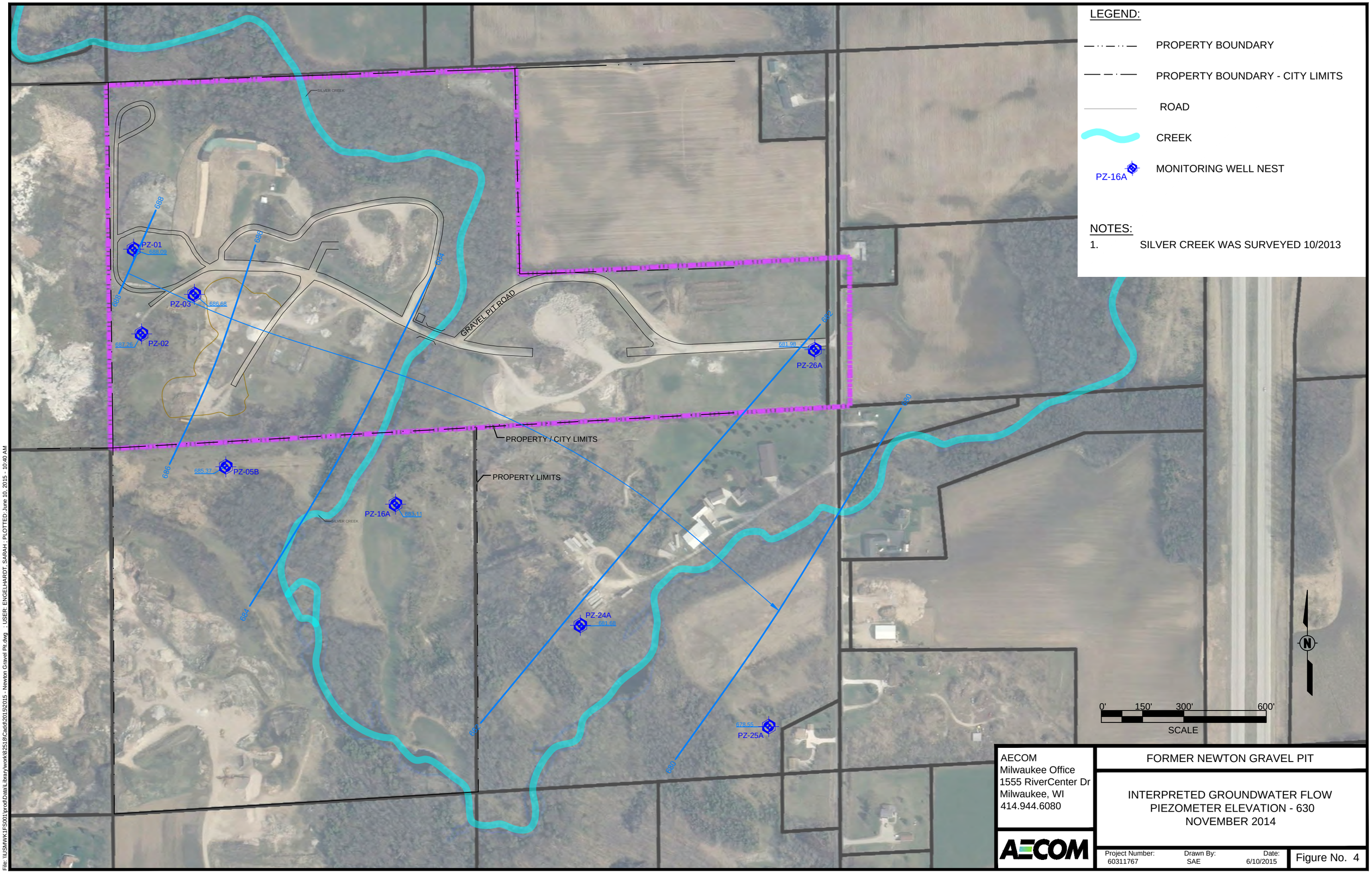
FORMER NEWTON GRAVEL PIT

INTERPRETED GROUNDWATER FLOW
WATER TABLE
NOVEMBER 2014

Project Number:	Drawn By:	Date:	
60311767	SAE	6/10/2015	Figure No. 3



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Milwaukee, WI
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FORMER NEWTON GRAVEL PIT

INTERPRETED GROUNDWATER FLOW
PIEZOMETER ELEVATION - 630
NOVEMBER 2014

Project Number:	Drawn By:	Date:	Figure No. 4
60311767	SAE	6/10/2015	

File: \\USMWK1FS001\prod\Data\Library\work\82518\Cadd\2015\2015 - Newton Gravel Pit.dwg , USER: ENGELHARDT, SARAH , PLOTTED: June 10, 2015 - 10:40 AM

LEGEND:

PROPERTY BOUNDARY

PROPERTY BOUNDARY - CITY LIMITS

ROAD

CREEK

PZ-16B MONITORING WELL NEST

NOTES:

1. SILVER CREEK WAS SURVEYED 10/2013

SILVER CREEK

GRAVEL PIT ROAD

682

680

678

681.90 PZ-26B

PROPERTY / CITY LIMITS

PROPERTY LIMITS

PZ-16B 682.11

SILVER CREEK

681.86 PZ-24B

677.68 PZ-25B

0' 150' 300' 600'

SCALE

N

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FORMER NEWTON GRAVEL PIT

INTERPRETED GROUNDWATER FLOW
PIEZOMETER ELEVATION - 600
NOVEMBER 2014

Project Number:	Drawn By:	Date:	Figure No. 5
60311767	SAE	6/10/2015	

File: \\USMKW1FS001\prod\Data\Library\work\82518\Cadd\2015\2015 - Newton Gravel Pit.dwg , : USER: ENGELHARDT, SARAH : PLOTTED: June 10, 2015 - 10:41 AM

LEGEND:

PROPERTY BOUNDARY

PROPERTY BOUNDARY - CITY LIMITS

ROAD

CREEK

PZ-16C MONITORING WELL NEST

NOTES:

1. SILVER CREEK WAS SURVEYED 10/2013

SILVER CREEK

GRAVEL PIT ROAD

680

675

671.78

PZ-26C

PROPERTY / CITY LIMITS

PROPERTY LIMITS

PZ-16C 681.57

SILVER CREEK

PZ-24C 681.53

671.44

PZ-25C

680

675

N

0' 150' 300' 600'

SCALE

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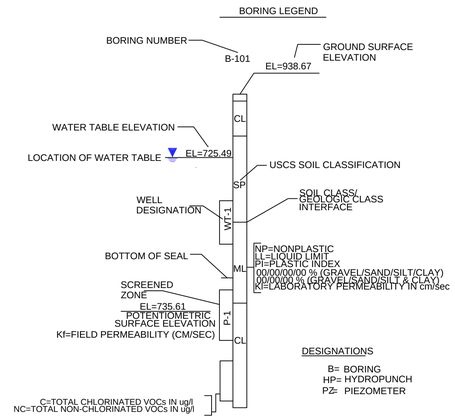
FORMER NEWTON GRAVEL PIT

INTERPRETED GROUNDWATER FLOW
BEDROCK PIEZOMETERS
NOVEMBER 2014

Project Number:	Drawn By:	Date:	Figure No. 6
60311767	SAE	6/10/2015	

File: \\USMKW1FS001\prod\Data\Library\work\82518\Cadd\2015\2015 - Newton Gravel Pit.dwg , : USER: ENGELHARDT, SARAH : PLOTTED: June 10, 2015 - 10:42 AM

GEOLOGIC CROSS-SECTION A-A'
As previously presented in "Site Investigation and Remedial Action Report", June 1996



GEOLOGIC LEGEND

QUATERNARY

Qk KEWAUNEE FORMATION

PALEOZOIC

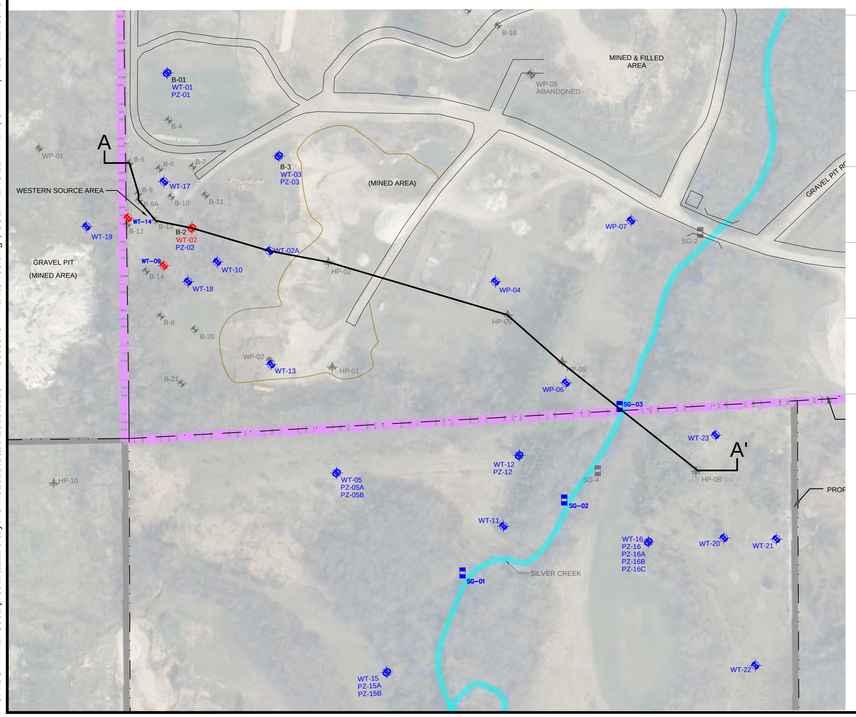
Su SILURIAN DOLOMITE

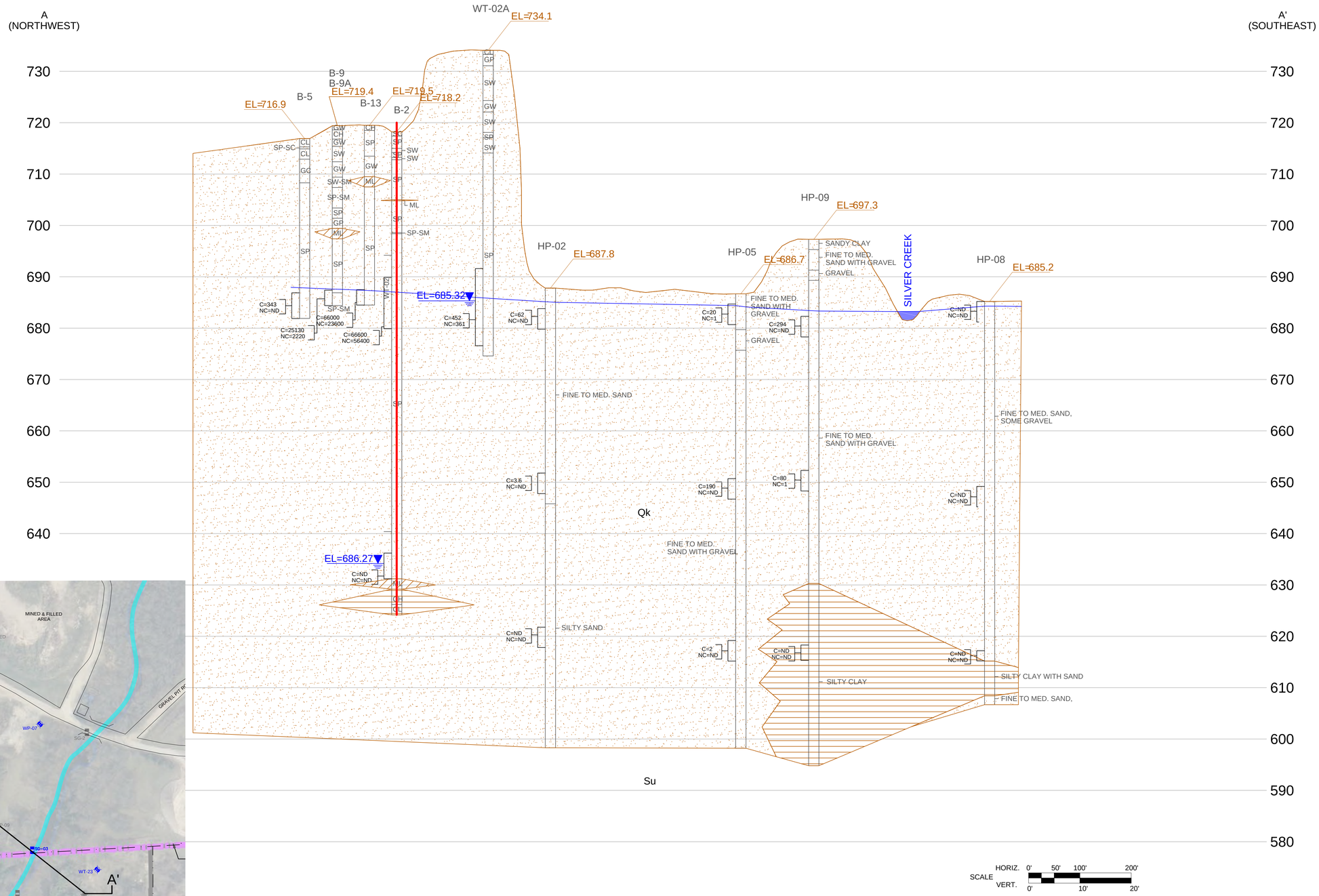
LEGEND

- GEOLOGIC FACIES CONTACT
- INFERRED GEOLOGIC FACIES CONTACT
- WATER TABLE (September 1194)

UNIFIED SOIL CLASSIFICATIONS (ASTM D2488-VISUAL MANUAL PROCEDURE)

GW	WELL GRADED GRAVELS & GRAVEL WITH SAND
GP	POORLY GRADED GRAVELS & GRAVEL WITH SAND
GC	CLAYEY GRAVELS, CLAYEY GRAVEL WITH SAND
SW	WELL GRADED SANDS & SAND WITH GRAVEL
SP	POORLY GRADED SANDS & SAND WITH GRAVEL
SW-SM	WELL GRADED SAND WITH SILT, SAND WITH SILT & GRAVEL
SP-SM	POORLY GRADED SAND WITH SILT, SAND WITH SILT & GRAVEL
SM	SILTY SANDS, SILTY SANDS WITH GRAVEL
SC	CLAYEY SANDS, CLAYEY SANDS WITH GRAVEL
CL	LEAN CLAY, GRAVELLY-SANDY LEAN CLAYS
ML	SILT, GRAVELLY-SANDY SILT





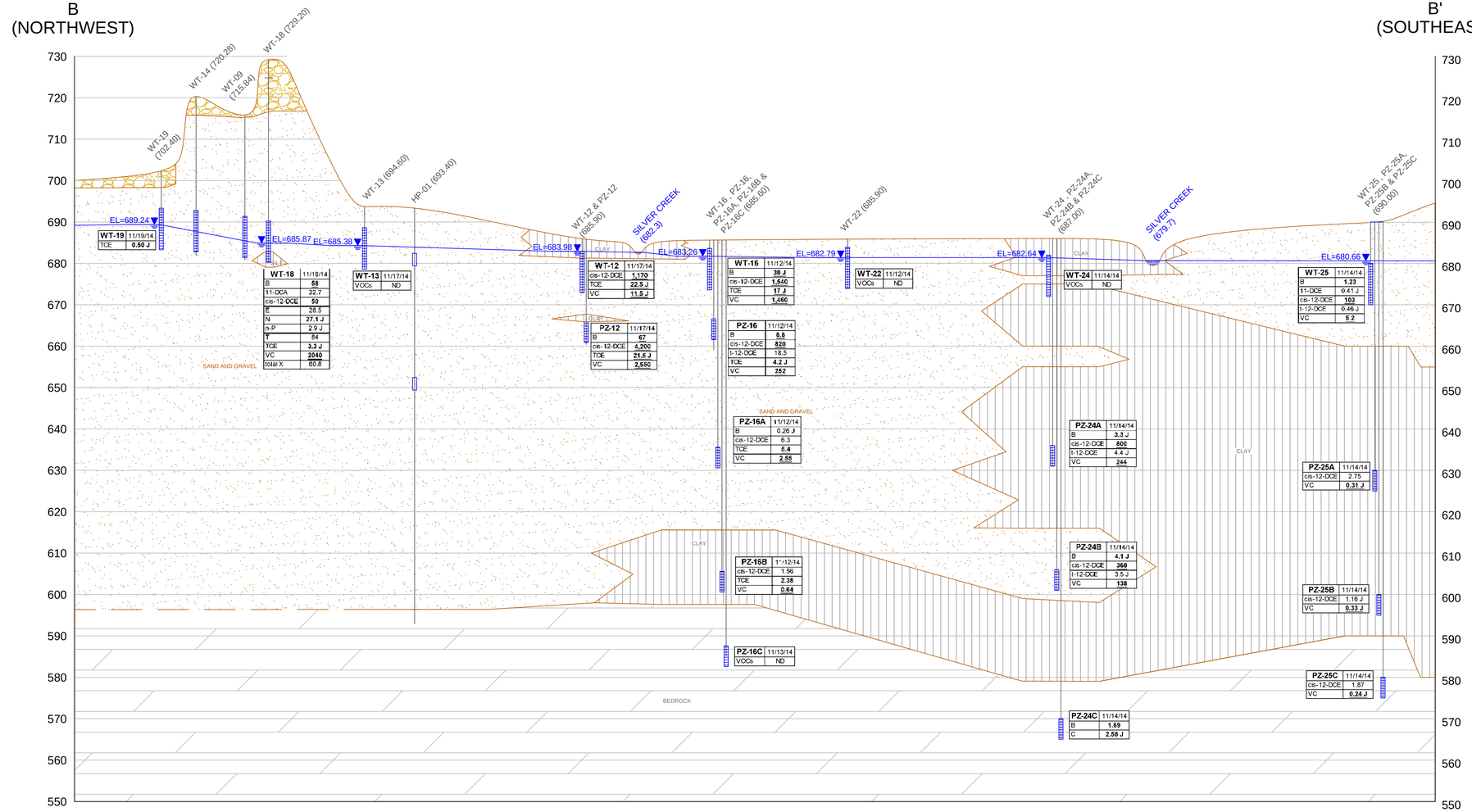
SCALE
HORIZ. 0' 50' 100' 200'
VERT. 0' 10' 20'

AECOM Milwaukee Office 1555 RiverCenter Dr Milwaukee, WI 414.944.6080	FORMER NEWTON GRAVEL PIT
AECOM	CROSS SECTION A-A' AS REPORTED IN 1996
Project Number: 60311767 / Drawn By: SAE / Date: 6/10/2015	Figure No. 7

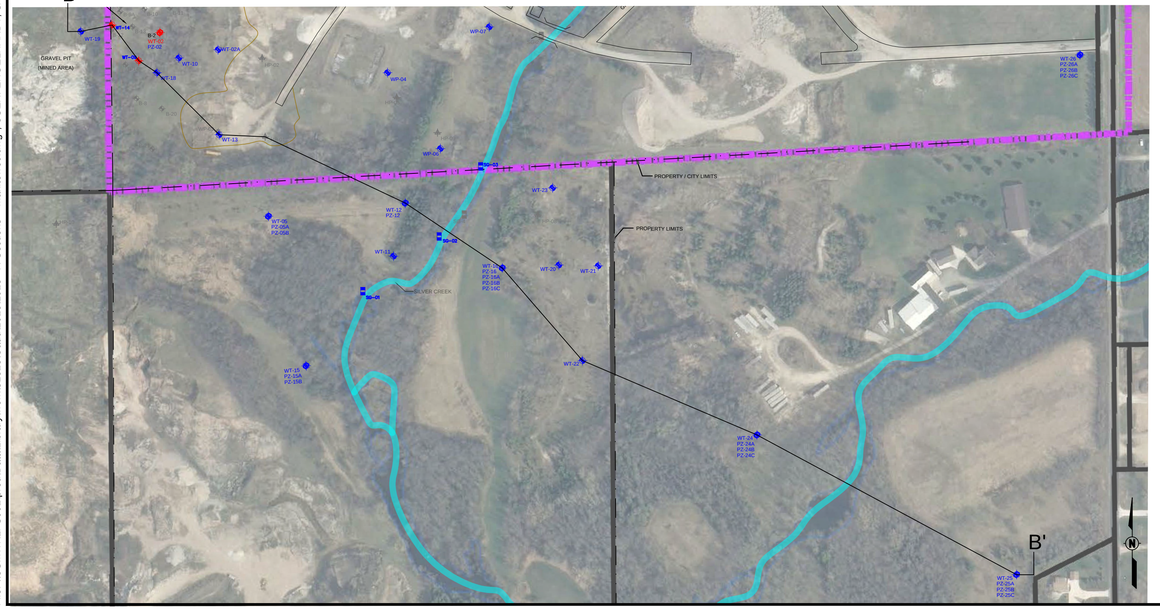
File: \\USMWK1FS001\prof\Data\Library\work\82518\Cadd\2015\2015 - X-Sections - Manitowoc.dwg , USER: ENGELHARDT, SARAH, PLOTTED: June 10, 2015 - 10:53 AM

B
(NORTHWEST)

B'
(SOUTHEAST)

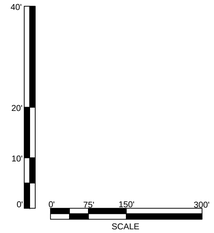


B



LEGEND:

- FILL
- SAND AND GRAVEL
- CLAY AND SILT
- BEDROCK (SILURIAN DOLOMITE)
- MONITORING WELL - SCREEN INTERVAL
- POTABLE WELL - CASING
  - CASING DEPTH
  - OPEN BOREHOLE DEPTH



NOTES:
VOCs = VOLATILE ORGANIC COMPOUNDS MEASURED IN MICROGRAMS PER LITER (UG/L)
B = BENZENE
C = CHLOROMETHANE
11-DCA = 1,1-DICHLOROETHANE
11-DCE = 1,1-DICHLOROETHENE
cis-12-DCE = CIS-1,2-DICHLOROETHENE
t-12-DCE = TRANS-1,2-DICHLOROETHENE
E = ETHYLBENZENE
N = NAPHTHALENE
n-P = N-PROPYLBENZENE
PCE = TETRACHLOROETHENE
T = TOLUENE
111-TCA = 1,1,1-TRICHLOROETHANE
TCE = TRICHLOROETHENE
VC = VINYL CHLORIDE
total X = TOTAL XYLENES
J = COMPOUND WAS DETECTED AT A CONCENTRATION BETWEEN THE LIMIT OF DETECTION AND THE LIMIT OF QUANTITATION
BOLD INDICATES A PREVENTIVE ACTION LIMIT (PAL) EXCEEDANCE
BOLD AND UNDERLINED INDICATES AN ENFORCEMENT STANDARD (ES) EXCEEDANCE

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FORMER NEWTON GRAVEL PIT

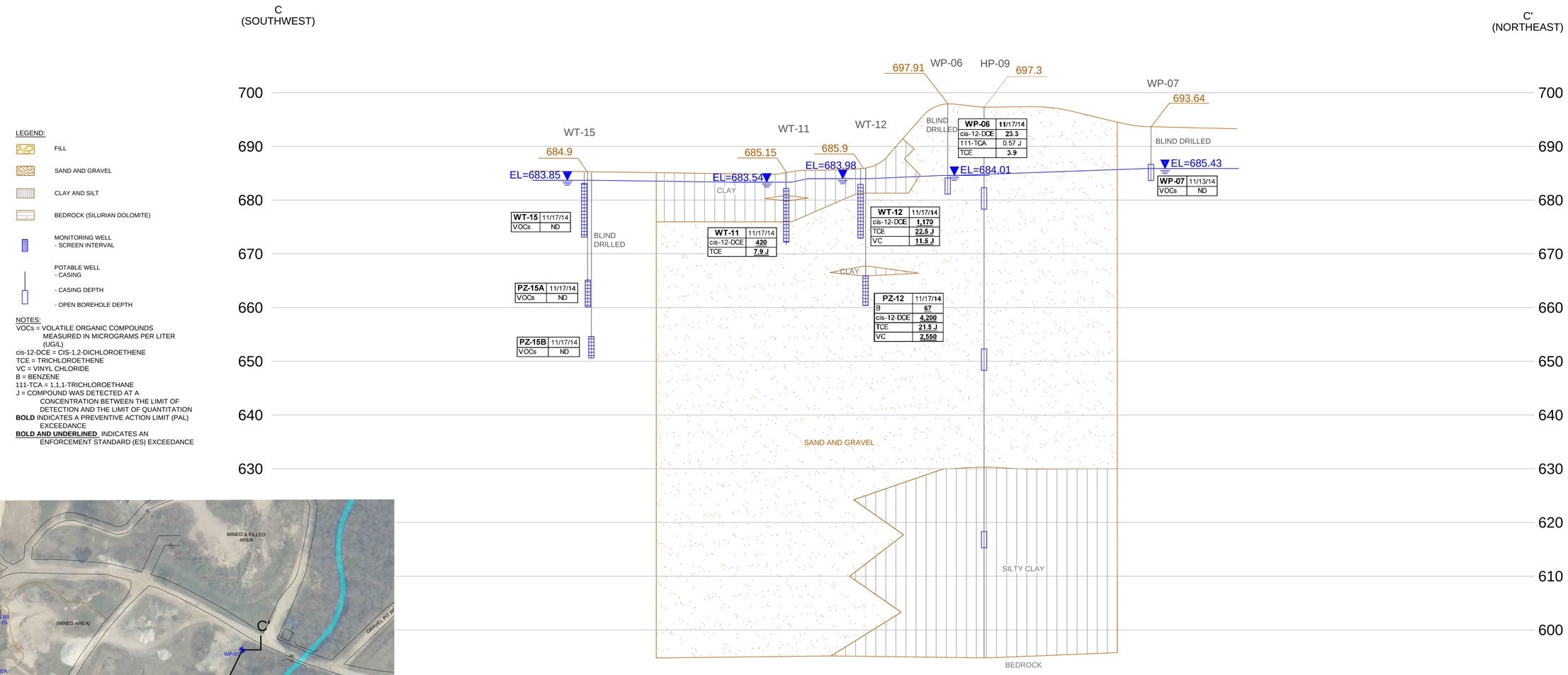
CROSS SECTION B-B'

Project Number:	Drawn By:	Date:	Figure No. 8
60311767	SAE	6/12/2015	

GEOLOGIC CROSS-SECTION C-C'

C
(SOUTHWEST)

C'
(NORTHEAST)

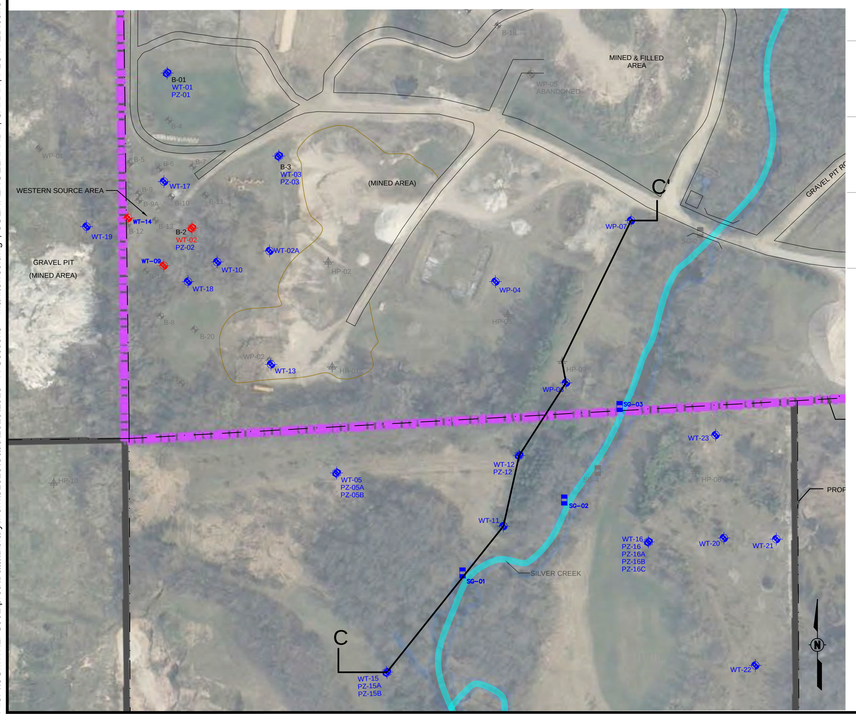


LEGEND:

- FILL
- SAND AND GRAVEL
- CLAY AND SILT
- BEDROCK (SILURIAN DOLOMITE)
- MONITORING WELL - SCREEN INTERVAL
- POTABLE WELL - CASING - CASING DEPTH - OPEN BOREHOLE DEPTH

NOTES:

VOCs = VOLATILE ORGANIC COMPOUNDS MEASURED IN MICROGRAMS PER LITER (UG/L)
cis-12-DCE = CIS-1,2-DICHLOROETHENE
TCE = TRICHLOROETHENE
VC = VINYL CHLORIDE
B = BENZENE
111-TCA = 1,1,1-TRICHLOROETHANE
J = COMPOUND WAS DETECTED AT A CONCENTRATION BETWEEN THE LIMIT OF DETECTION AND THE LIMIT OF QUANTITATION
BOLD INDICATES A PREVENTIVE ACTION LIMIT (PAL) EXCEEDANCE
BOLD AND UNDERLINED INDICATES AN ENFORCEMENT STANDARD (ES) EXCEEDANCE



20'
10'
5'
0'
0' 50' 100' 200'
SCALE

AECOM Milwaukee Office 1555 RiverCenter Dr Milwaukee, WI 414.944.6080	FORMER NEWTON GRAVEL PIT		
AECOM	CROSS SECTION C-C'		
Project Number: 60311767	Drawn By: SAE	Date: 6/11/2015	Figure No. 9

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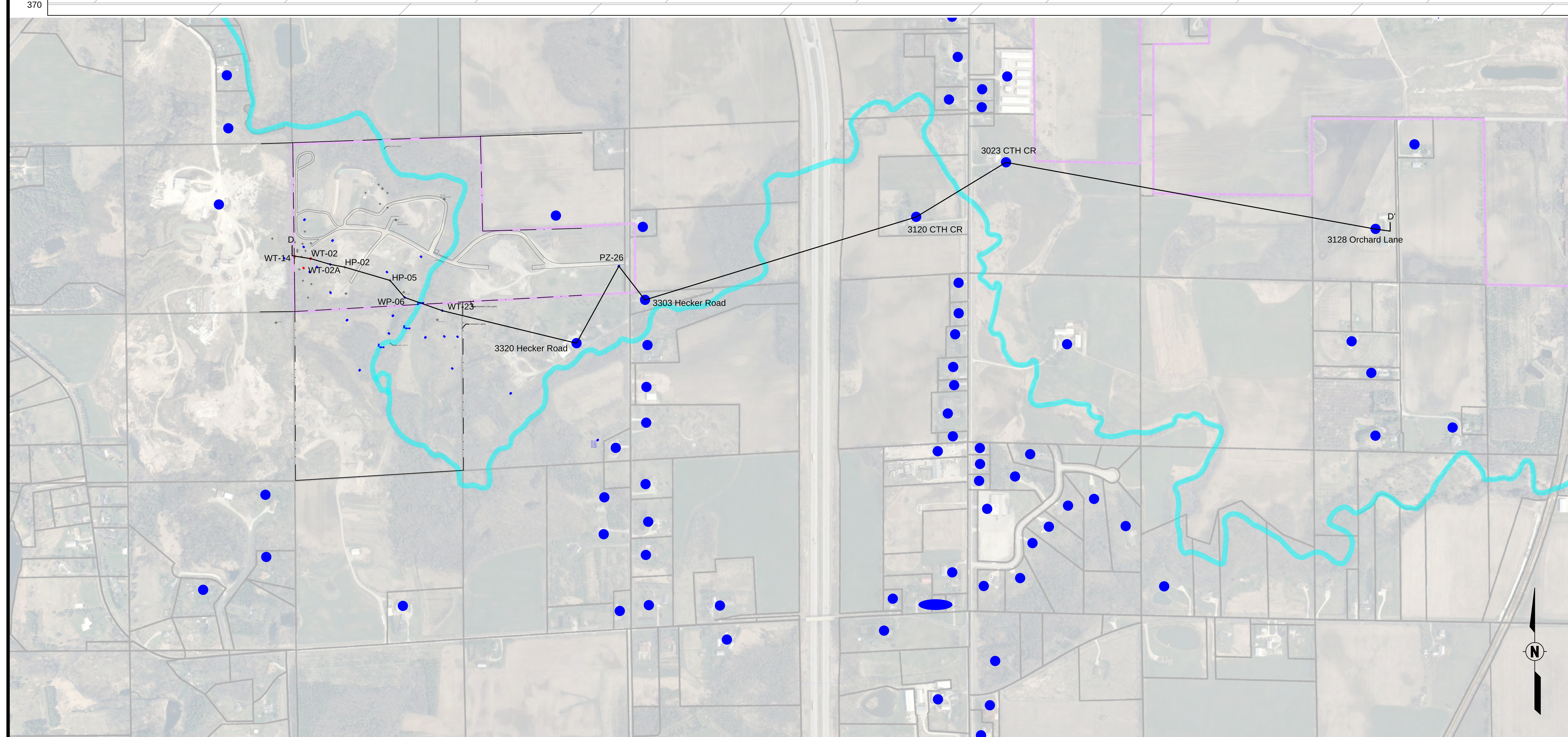

LEGEND:

FILL

SAND AND GRAVEL

CLAY AND SILT

BEDROCK (SILURIAN DOLOMITE)

MONITORING WELL
- SCREEN INTERVAL

POTABLE WELL
- CASING

- CASING DEPTH

- OPEN BOREHOLE DEPTH

SCALE

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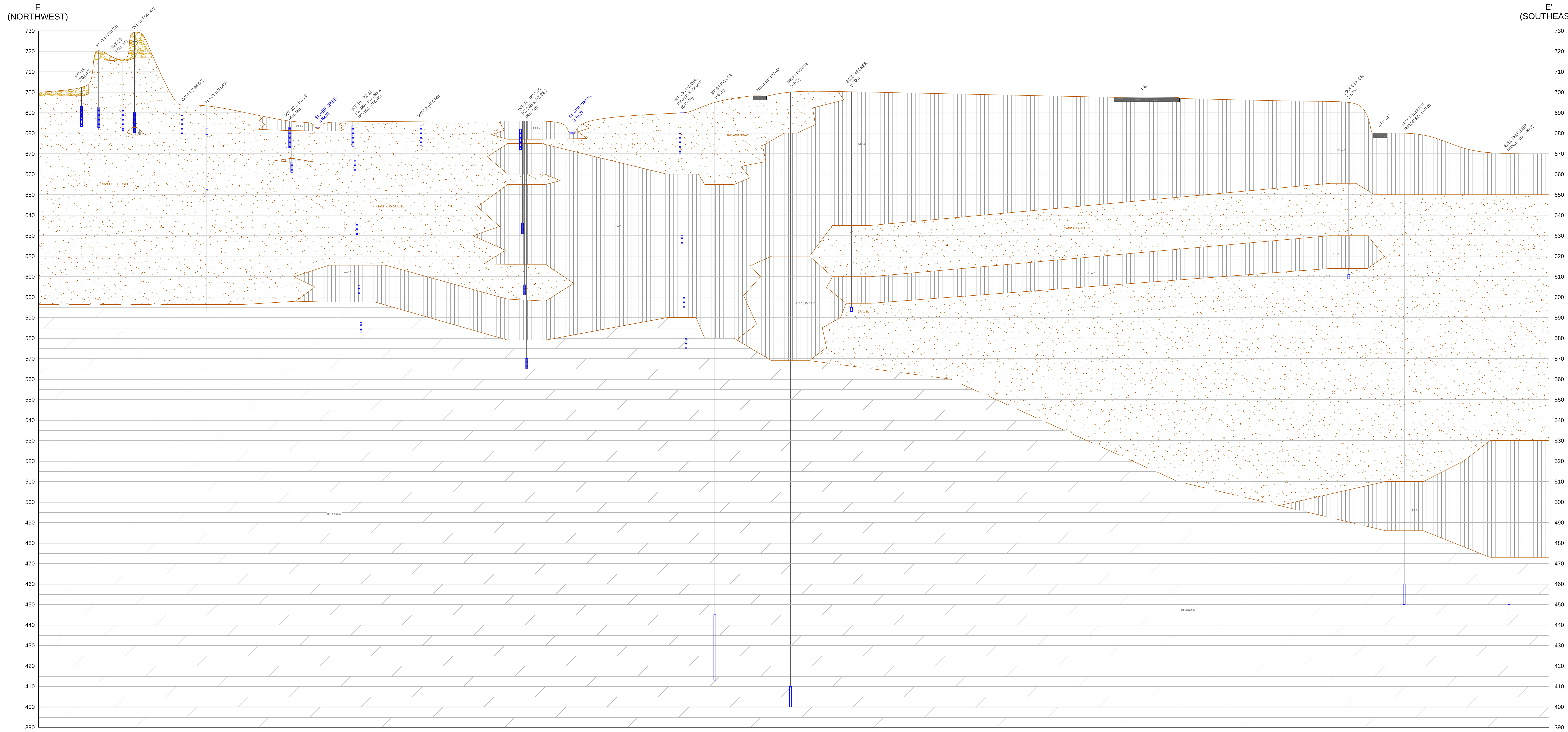
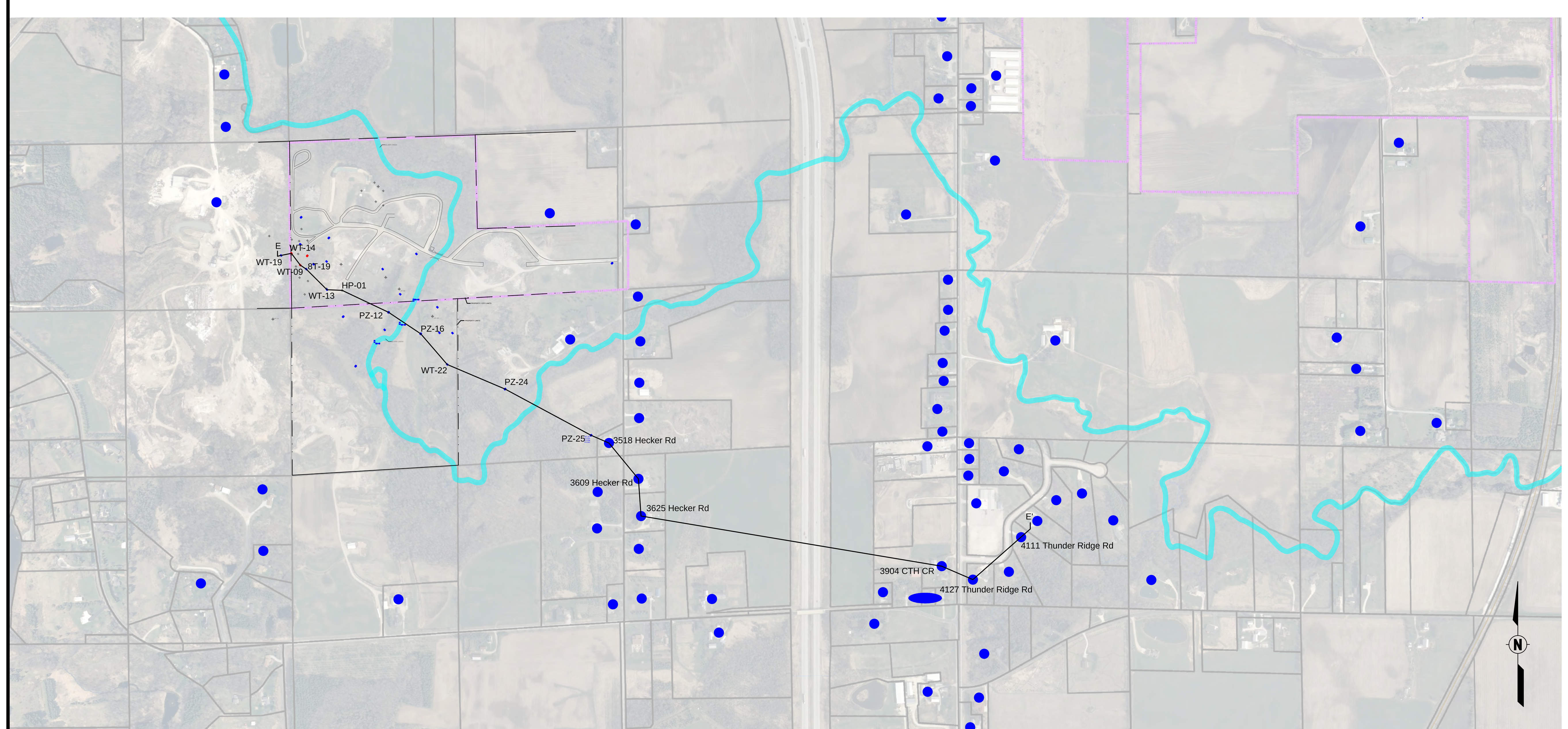
FORMER NEWTON GRAVEL PIT

INTERPRETED CROSS SECTION D-D'

Project Number: 60311767 | Drawn By: SAE | Date: 6/10/2015 | Figure No. 10

File: \\USMWK1FS001\prod\DataLibrary\work\82518\Cadd\2015\2015 - X-Sections - Manitowoc.dwg; USER: ENGELHARDT, SARAH; PLOTTED:June 10, 2015 - 11:33 AM





LEGEND:

- FILL
- SAND AND GRAVEL
- CLAY AND SILT
- BEDROCK (SILURIAN DOLOMITE)
- MONITORING WELL
  - SCREEN INTERVAL
- POTABLE WELL
  - CASING
  - CASING DEPTH
  - OPEN BOREHOLE DEPTH

SCALE

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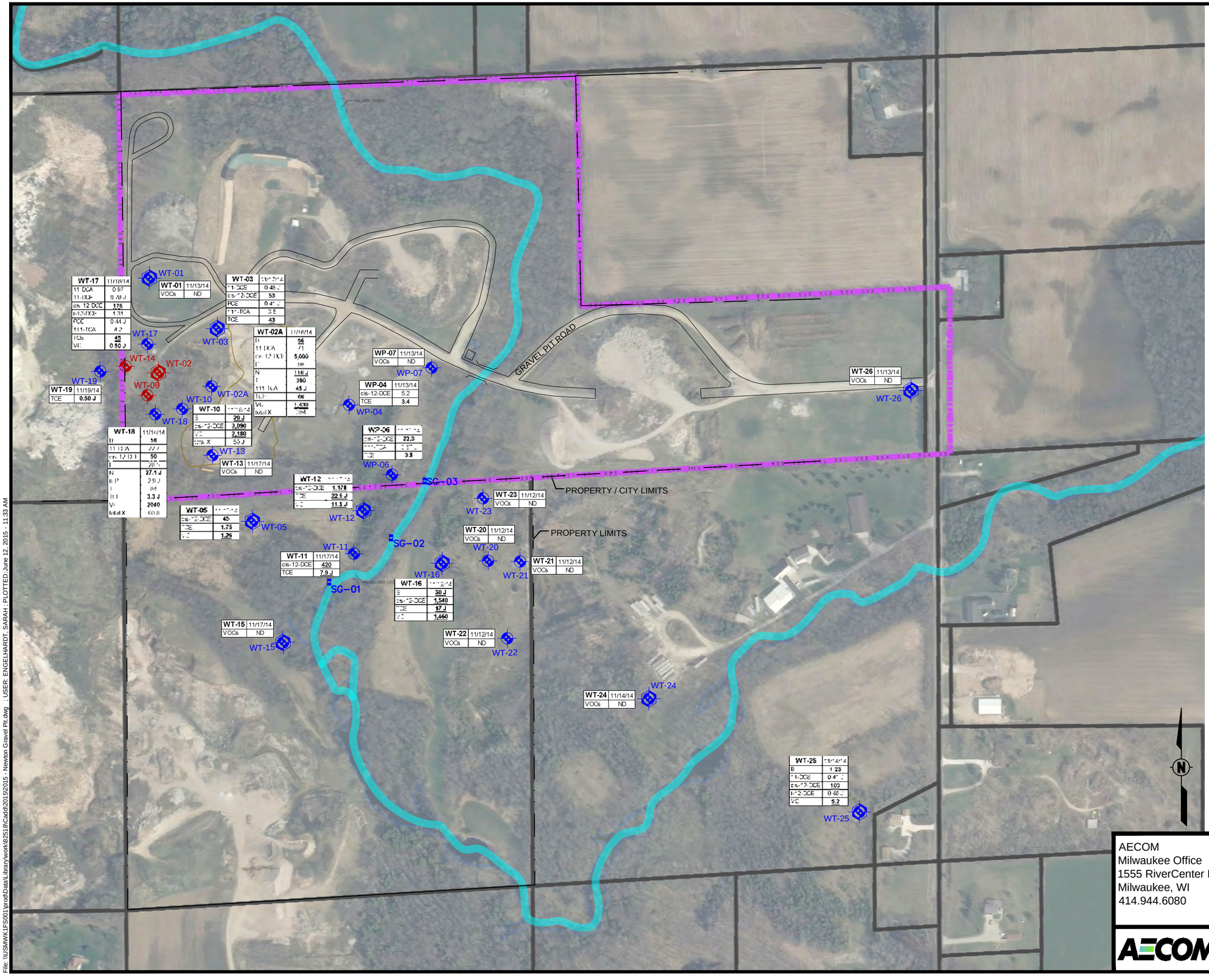
FORMER NEWTON GRAVEL PIT

INTERPRETED CROSS SECTION E-E'

Project Number:	Drawn By:	Date:	
60311767	SAE	6/10/2015	Figure No. 11

File: \\USMKE1FS001\prod\Data\Library\work\82516\Cadd\2015\2015 - X-Sections - Manitowoc.dwg - USER: ENGELHARDT, SARAH PLOTTED June 10, 2015 - 11:33 AM



LEGEND:

- PROPERTY BOUNDARY
- PROPERTY BOUNDARY - CITY LIMITS
- ROAD
- CREEK
- WT-11 — MONITORING WELL
  RED = MEASURABLE FREE PRODUCT (not sampled)
- WT-03 — MONITORING WELL NEST
  RED = MEASURABLE FREE PRODUCT
- SG-01 — STAFF GAUGE
- WP-02 — WELL POINT

NOTES:

VOCs = VOLATILE ORGANIC COMPOUNDS
MEASURED IN MICROGRAMS PER LITER (UG/L)
B = BENZENE
C = CHLOROMETHANE
11-DCA = 1,1-DICHLOROETHANE
11-DCE = 1,1-DICHLOROETHENE
cis-12-DCE = CIS-1,2-DICHLOROETHENE
t-12-DCE = TRANS-1,2-DICHLOROETHENE
E = ETHYLBENZENE
N = NAPHTHALENE
n-P = N-PROPYLBENZENE
PCE = TETRACHLOROETHENE
T = TOLUENE
111-TCA = 1,1,1-TRICHLOROETHANE
TCE = TRICHLOROETHENE
VC = VINYL CHLORIDE
total X = TOTAL XYLENES
J = COMPOUND WAS DETECTED AT A CONCENTRATION BETWEEN THE LIMIT OF DETECTION AND THE LIMIT OF QUANTITATION
BOLD INDICATES A PREVENTIVE ACTION LIMIT (PAL) EXCEEDANCE
BOLD AND UNDERLINED INDICATES AN ENFORCEMENT STANDARD (ES) EXCEEDANCE

0' 150' 300' 600'
SCALE

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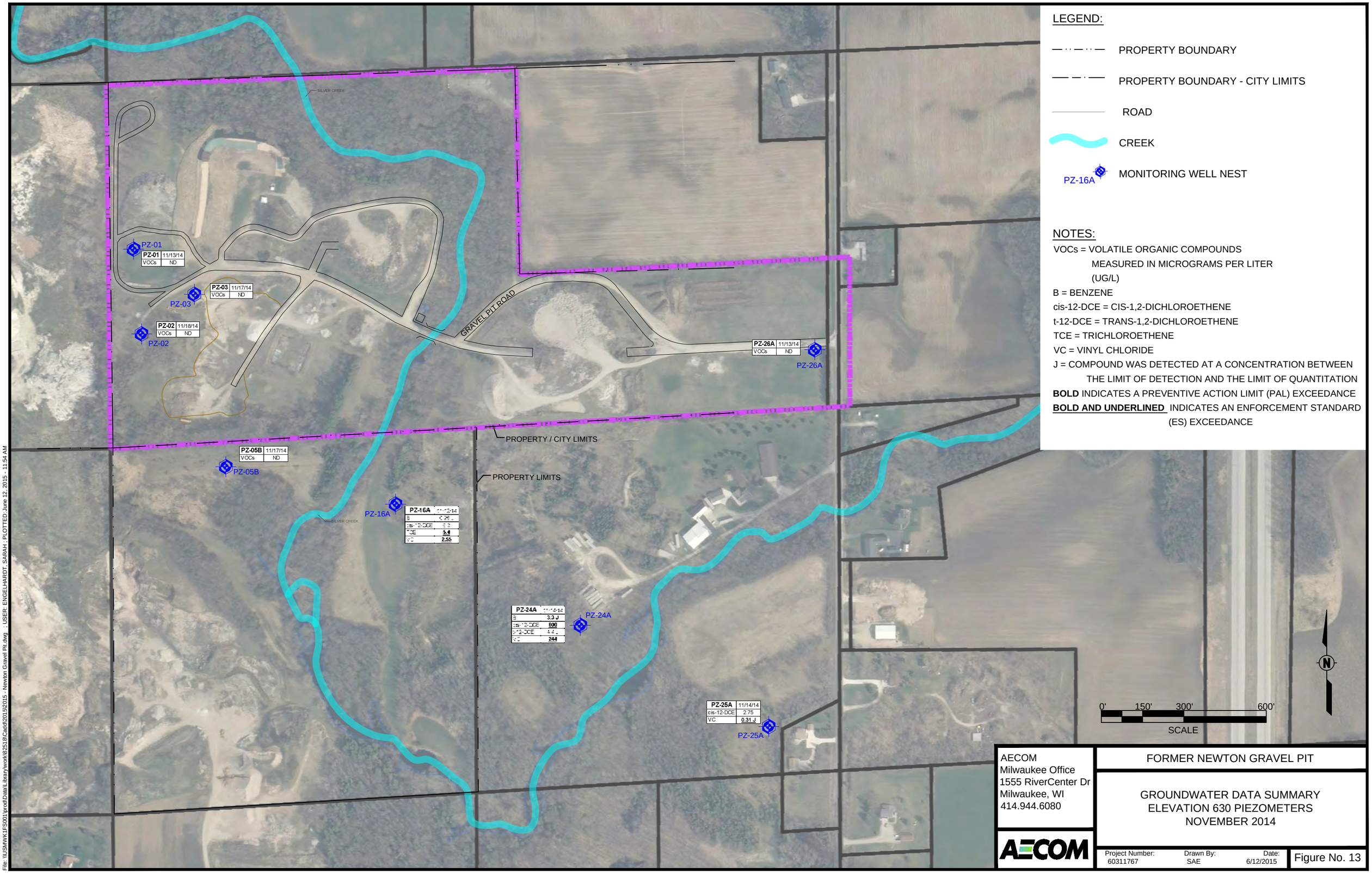
FORMER NEWTON GRAVEL PIT

GROUNDWATER DATA SUMMARY
WATER TABLE WELLS
NOVEMBER 2014

Project Number: 60311767 | Drawn By: SAE | Date: 6/12/2015

Figure No. 12



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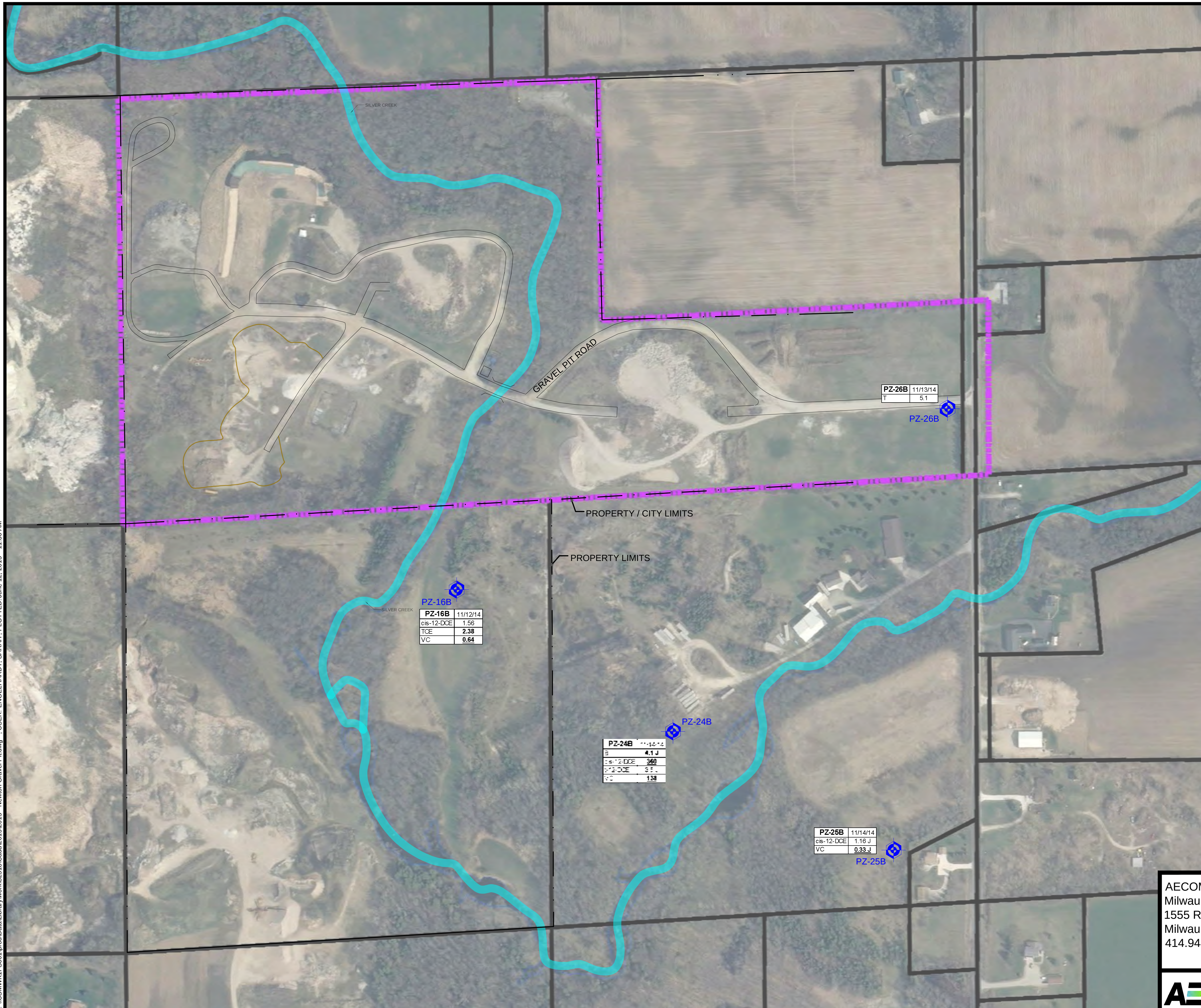
FORMER NEWTON GRAVEL PIT

GROUNDWATER DATA SUMMARY
ELEVATION 630 PIEZOMETERS
NOVEMBER 2014

Project Number:	Drawn By:	Date:	Figure No. 13
60311767	SAE	6/12/2015	



LEGEND:

PROPERTY BOUNDARY

PROPERTY BOUNDARY - CITY LIMITS

ROAD

CREEK

PZ-16A MONITORING WELL NEST

NOTES:

VOCs = VOLATILE ORGANIC COMPOUNDS MEASURED IN MICROGRAMS PER LITER (UG/L)

B = BENZENE

cis-12-DCE = CIS-1,2-DICHLOROETHENE

t-12-DCE = TRANS-1,2-DICHLOROETHENE

TCE = TRICHLOROETHENE

VC = VINYL CHLORIDE

J = COMPOUND WAS DETECTED AT A CONCENTRATION BETWEEN THE LIMIT OF DETECTION AND THE LIMIT OF QUANTITATION

BOLD INDICATES A PREVENTIVE ACTION LIMIT (PAL) EXCEEDANCE

<u>BOLD AND UNDERLINED</u> INDICATES AN ENFORCEMENT STANDARD (ES) EXCEEDANCE

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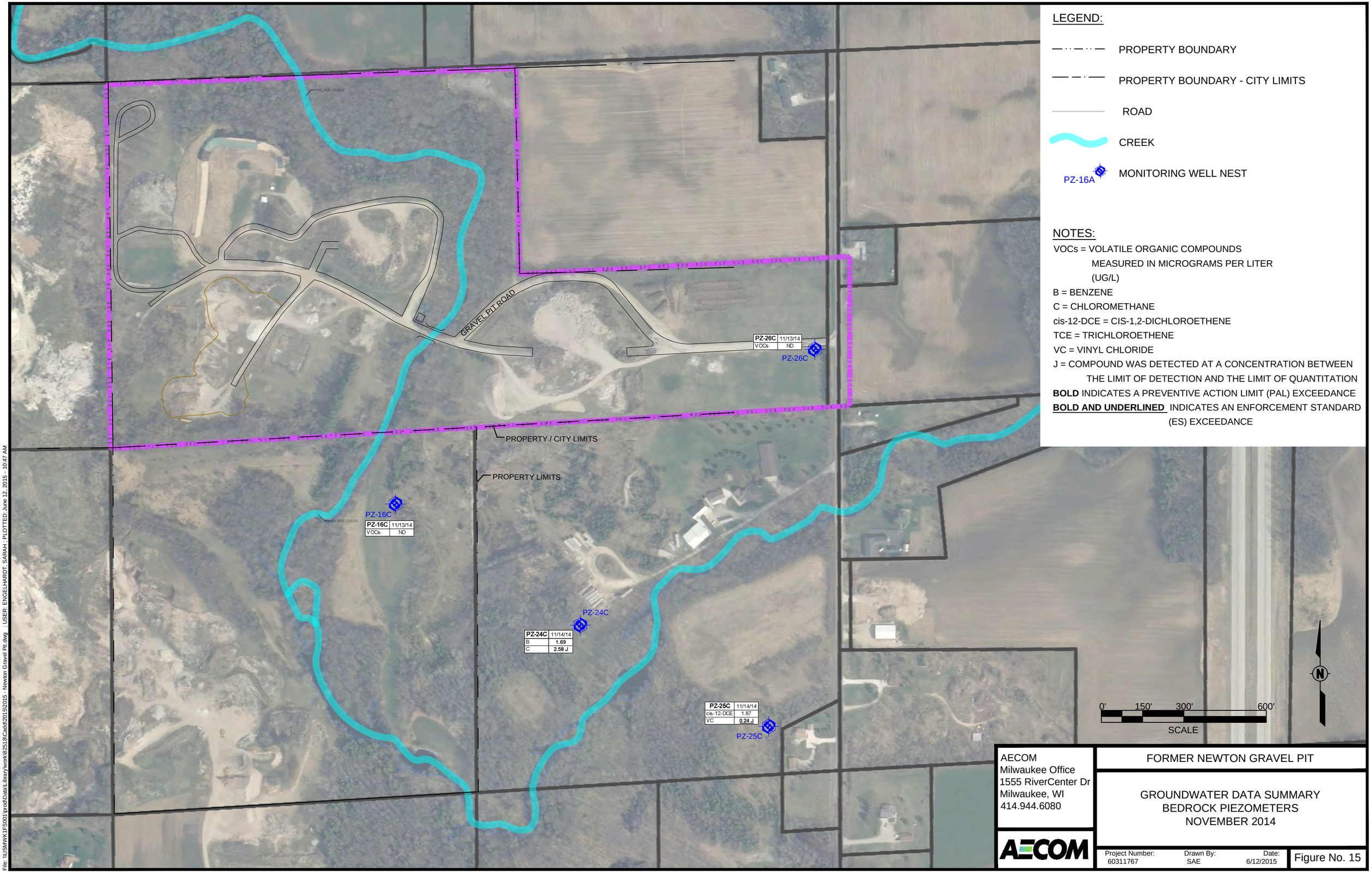
FORMER NEWTON GRAVEL PIT

GROUNDWATER DATA SUMMARY
ELEVATION 600 PIEZOMETERS
NOVEMBER 2014

Project Number:	Drawn By:	Date:
60311767	SAE	6/12/2015

Figure No. 14

File: \\USMWK1FS001\projDataL\Library\work\82518\Cadd\2015\2015 - Newton Gravel Pit.dwg ; USER: ENGELHARDT, SARAH ; PLOTTED: June 12, 2015 - 11:30 AM



LEGEND:

- PROPERTY BOUNDARY
- PROPERTY BOUNDARY - CITY LIMITS
- ROAD
- CREEK
- PZ-16A MONITORING WELL NEST

NOTES:

VOCs = VOLATILE ORGANIC COMPOUNDS MEASURED IN MICROGRAMS PER LITER (UG/L)
B = BENZENE
C = CHLOROMETHANE
cis-12-DCE = CIS-1,2-DICHLOROETHENE
TCE = TRICHLOROETHENE
VC = VINYL CHLORIDE
J = COMPOUND WAS DETECTED AT A CONCENTRATION BETWEEN THE LIMIT OF DETECTION AND THE LIMIT OF QUANTITATION
BOLD INDICATES A PREVENTIVE ACTION LIMIT (PAL) EXCEEDANCE
BOLD AND UNDERLINED INDICATES AN ENFORCEMENT STANDARD (ES) EXCEEDANCE

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FORMER NEWTON GRAVEL PIT

GROUNDWATER DATA SUMMARY
BEDROCK PIEZOMETERS
NOVEMBER 2014

Project Number:	Drawn By:	Date:	Figure No. 15
60311767	SAE	6/12/2015	

Attachment A:

Soil Boring Logs, Monitoring Well Construction Forms, and
Monitoring Well Development Forms

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Former Newton Gravel Pit		PZ-16C

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Fist Name: Last Name:	10 31 2014 (MM/ DD/ YY)	10 31 2014 (MM/ DD/ YY)	**Rotosonic**
Firm:			

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	5 3/4 inches

Local Grid Origin ☐ (Estimated: ☐) or Boring Location ☐
State Plane ____ N, ____ E S/C/N
1/4 of ____ 1/4 of Section ____ T ____ N, R ____ E/W
Lat ° ' "
Long ° ' "
Local Grid Location (if applicable): ____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	Manitowoc	**36**	**Manitowoc**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 Rotosonic	5/4		1.0	Loose brown (10YR 5/3) medium to fine sand, moist, non plastic, non cohesive, few large rounded gravel, well graded	SW									
			2.0											
			3.0	Loose reddish brown (10YR) medium to fine sand, moist, non plastic, non cohesive, well graded.	SW									
			4.0	Loose gray (10YR 5/1) medium to fine sand, wet, non plastic non cohesive, poorly graded						A				
			5.0		SP									
2	5' 5'		6.0							B				
			7.0											
			8.0											
			9.0											
			10.0	Loose gray (10YR 5/1) medium to coarse sand, wet, non plastic, non cohesive, well graded	SW									
			11.0											
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
	AECOM 11425 W. Lake Park Drive, Milwaukee, WI 53224

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
3	9/10'		12.0	Loose gray (10YR 5/1) fine sand, wet, nonplastic, non cohesive, little silt, poorly graded	SP-SM									
			17.0	Loose gray (10 YR 5/1) med to fine sand, wet, nonplastic, non cohesive, poorly graded	SP									
4	10/8'		23.0	Loose gray (10 YR 5/1) medium to coarse sand, wet, nonplastic, none, well graded	SW									
			24.0	Loose gray (10 YR 5/1) medium to fine sand, wet, nonplastic, noncohesive, poorly graded	SP									
			25.0	Loose gray (10YR 5/1) course to medium sand, wet, non plastic, noncohesive, little large rounded gravel, well graded.	SW									
			28.0	Loose gray (10YR 5/1) medium sand, wet, nonplastic, noncohesive little small to large rounded gravel	SW									
			30.0	Loose gray (10YR 5/1) med to fine sand, wet, nonplastic, noncohesive,	SW									
			32.0											

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
	10'/10'		33.0 34.0 35.0 36.0		SW									
5			37.0	Medium dense gray (10YR 5/1) fine sand, wet, nonplastic, noncohesive little silt, poorly grade	SP									
			38.0 39.0 40.0	Loose gray (10YR 5/1) medium to coarse sand, wet, nonplastic, non cohesive, well graded	SW									
6	10'/6'		41.0 42.0 43.0 44.0 45.0 46.0 47.0 48.0 49.0 50.0	Loose gray (10YR 5/1) med to fine sand, wet, nonplastic, non cohesive poorly graded.	SP									
7	10'/9'		51.0 52.0 53.0	As above										

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			54.0	As above										
			55.0		SP									
			56.0											
			57.0											
			58.0	Loose gray (10YR 5/1), sandy gravel, wet, non plastic, non cohesive, few medium to fine sand, little silt, little clay, well graded										
			59.0		SW									
			60.0											
			61.0											
	10/		62.0											
8	6		63.0											
			64.0											
			65.0											
			66.0											
			67.0											
			68.0											
			69.0											
			70.0											
			71.0	stiff gray (10YR 5/1) lean clay, wet, high plasticity, cohesive, few ~~large~~ sand, little silt, ~~few~~ trace large rounded gravel, till	CL									
	10/		72.0											
9	11		73.0											
			74.0											

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			75.0											
			76.0											
			77.0											
			78.0											
			79.0											
			80.0		CL									
			81.0											
			82.0											
				Fine sand	SP									
	10/10		83.0											
10			84.0		CL									
			85.0											
			86.0											
			87.0											
			88.0	Bedrock, Dolostone										
			89.0											
			90.0											
			91.0											
			92.0											
			93.0											
			94.0											
			95.0											

Sample										Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			96.0											
			97.0											
			98.0											
			99.0											
			100.0											
			101.0											
			102.0											
			103.0											
			104.0	EOB @ 103'										
			105.0	Set Well screened 98'-103'										
			106.0											
			107.0											
			108.0											
			109.0											
			110.0											
			111.0											
			112.0											
			113.0											
			114.0											
			115.0											
			116.0											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Former Newton Gravel Pit		PZ-24C

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Fist Name: Jason Last Name:	10 27 2014 (MM/ DD/ YY)	10 28 2014 (MM/ DD/ YY)	Rotosonic
Firm: Cascade			

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	inches

Local Grid Origin ☐ (Estimated: ☐) or Boring Location ☐ — State Plane ____ N, ____ E S/C/N — 1/4 of ____ 1/4 of Section ____ T ____ N, R ____ E/W — Lat ° ' " — Long ° ' " — Local Grid Location (if applicable): ____ Feet ☐ N ☐ S ____ Feet ☐ E ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	Manitowoc	36	Manitowoc

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Topsoil, dark yellowish brown (10YR 3/6) gravelly clay, moist nonplastic cohesive, little s.f.	CL			1.1						
			1.0	Firm dark yellowish brown (4/4) sandy clay w/ gravel, moist, non plastic, noncohesive some med. sand, little angular gravel	CL			0.5						
1	12/		2.0					0.6						
	9V		3.0											
Rotosonic			4.0	Firm dark reddish brown (2.5YR (2.5/2) clay w/ few large gravel, few med. to coarse sand, med. plasticity, cohesive, moist	CL			1.3						
			5.0	Becomes wet @ 5'				1.0			▽			
1			6.0											
			7.0											
			8.0											
			9.0	Loose gray (10YR 5/1) gravelly sand with clay, wet, non plastic, non cohesive	GP, SC									
			10.0											
2			11.0	Soft dark grayish brown (10YR 5/2) sandy clay, wet, medium plasticity, cohesive few med - fine sand, few gravel	CL									
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	AECOM 11425 W. Lake Park Drive, Milwaukee, WI 53224

P2-24C

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			12.0											
			13.0		CL									
2	120/120		14.0	Medium gray (10YR 5/1) lean clay, moist, medium plasticity, cohesive, little silt, little fine sand, trace large gravel	CL									
			15.0											
			16.0											
			17.0											
			18.0											
			19.0											
			20.0											
3	~~20~~ 10/9.6		21.0	Medium gray (10YR 5/1) silty clay, wet, medium plasticity, cohesive, trace small rounded gravel	CL									
			22.0	Medium gray (10YR 5/1) clayey silt, wet, low plasticity, cohesive little clay	CL									
			23.0											
			24.0	Stiff, gray (10YR 5/1) lean clay wet, high plasticity, cohesive, little silt.	CL									
			25.0											
			26.0											
			27.0	Medium dense gray (10YR 5/1) silty fine sand, wet, nonplastic non cohesive, poorly graded	ML									
			28.0											
			29.0	Stiff gray (10YR 5/1) clayey silt, wet, low plasticity, cohesive, few clay	CL									
	Feet		30.0											
4	10/10.7		31.0	Medium dense gray (10YR 5/1) medium to fine sand, wet, non plastic, noncohesive poorly graded	SP									
			32.0	Stiff gray (10YR 5/1) silty clay, moist, medium plasticity, cohesive, few silt.	CL									

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
4	10.0 / 10.7		33.0 34.0 35.0 36.0 37.0	Becomes moist clayey silt - little fine sand	CL CL									
			38.0 39.0 40.0	stiff gray (10YR 5/1) lean clay, moist, medium plasticity, cohesive, little rounded coarse sand, trace small to large rounded gravel										
5	10 / 8.5		41.0 42.0 43.0 44.0 45.0 46.0 47.0		CL									
			48.0 49.0	stiff gray (10YR 5/1) silty clay, wet, low plasticity, cohesive, some silt, trace small rounded gravel	CL									
6	NR		50.0 51.0 52.0 53.0	loose gray (10YR 5/1) med/fine sand, wet, non plastic, noncohesive poorly graded,	SP									

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
6	NR		54.0 55.0 56.0 57.0 58.0 59.0 60.0	Driller said hit potential rock or cobble										
7	60/60 5'/5'		60.0 61.0 62.0 63.0	Soft gray (10YR 5/1) lean clay wet, high plasticity, cohesive, few small to large rounded gravel little med to coarse sand,	CL									
			63.0 64.0	Very loose large rounded gravel, wet, non plastic, non cohesive, few medium sand, trace clay.	GW									
8	15'/13		64.0 65.0 66.0 67.0 68.0 69.0 70.0	Loose gray (10YR 5/1) medium to coarse sand, wet, non plastic, non cohesive, few small sub rounded gravel	SW									
8	15'/13		70.0 71.0 72.0 73.0 74.0	Loose gray (10YR 5/1) rounded large gravel, wet, non plastic non cohesive, few med sand, well graded Loose gray (10YR 5/1) med to coarse sand, with non plastic, non cohesive, well graded	GW SW									

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
B9	15"/13'		75.0	loose, wet gray (10YR 5/1) med to fine sand, wet, non plastic, non cohesive, poorly graded.	SP									
			76.0											
			77.0	loose gray (10YR 5/1) med to coarse sand, wet, non plastic, non cohesive, well graded	SW									
			78.0	loose gray (10YR 5/1) fine med sand, wet, non plastic, non cohesive, poorly graded	SP									
			79.0											
			80.0	loose gray (10YR 5/1) fine sand, wet, non plastic, non cohesive, poorly graded	SP									
			81.0	large rounded gravel										
			82.0	stiff gray (10YR 5/1) lean clay, wet, medium plasticity, cohesive little rounded coarse sand	CL									
B9	10'/3'		83.0	loose gray (10YR 5/1) med to coarse sub rounded sand, wet, non plastic, non cohesive, well graded	SW									
			84.0											
			85.0											
			86.0											@87' driller noted clay
			87.0											
			88.0	stiff gray (10YR 5/1) lean clay moist, high plasticity, cohesive, little coarse rounded sand little large rounded limestone gravel	CL									
			89.0											
			90.0											
B10	10'/13'		91.0											
			92.0											
			93.0											
			94.0											
			95.0											

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			96.0											
			97.0	Dolomite cobble										
			98.0											
			99.0											
11	12'/15'		100.0	Loose gray (10YR 5/1) medium to fine sand, wet, nonplastic, poorly graded	SP									Total recovery 20': [illegible] 100-104 contained coarse sand graded to large gravel, assumed to be slough
			101.0	Stiff reddish brown (5YR 5/3) lean clay, moist, high plasticity, cohesive, little coarse rounded sand trace large rounded gravel	CL									
			102.0											
			103.0	Silt lens (gray 10YR 5/1)	ML									
			104.0	Becomes gray (10YR 5/1)	CL									
			105.0											
			106.0	Silt lens w/ limestone gravel, rounded to sub rounded	ML									
			107.0	light olive gray (5Y 6/1) dolostone, crushed powder, large gravel chunks										
			108.0											
			109.0											
			110.0											
			111.0											
			112.0	No Recovery										
			113.0											
			114.0											
12	6'/7'		115.0											
			116.0											

P7-24C

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
	- 4/5		116.0											
			117.0											
			118.0											
			119.0											
			120.0											
			121.0	EOB @ 121', set well screen 116'-121'										
			122.0											
			123.0											
			124.0											
			125.0											
			126.0											
			127.0											
			128.0											
			129.0											
			130.0											
			131.0											
			132.0											
			133.0											
			134.0											
			135.0											
			136.0											

Sample		Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			137.0											
			138.0											
			139.0											
			140.0											
			141.0											
			142.0											
			143.0											
			144.0											
			145.0											
			146.0											
			147.0											
			148.0											
			149.0											
			150.0											
			151.0											
			152.0											
			153.0											
			154.0											
			155.0											
			156.0											
			157.0											

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Former Newton Gravel Pit		PZ-25C

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Fist Name: Last Name:	10 29 2014 (MM/ DD/ YY)	2014 (MM/ DD/ YY)	Rotosonic
Firm:			

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	inches

Local Grid Origin ☐ (Estimated: ☐) or Boring Location ☐ — Local Grid Location (if applicable)
State Plane N, E S/C/N — Lat ° ' " — ☐ N ☐ E
1/4 of 1/4 of Section T N, R E/W — Long ° ' " — Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	Manitowoc	36	Manitowoc

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1 Rotosonic	5 / 1.4		1.0	loose brown (10YR 5/3) med to fine sand, dry, non plastic, noncohesive few angular to rounded small to large gravel well graded	SW			0.2						
			2.0					0.5						
			3.0					0.1						
			4.0					0.3						
			5.0	+little silt										
			6.0					0.5						
2 Rotosonic	10 / 6.6		7.0					0.6						
			8.0					0.1						
			9.0					0.0						
			10.0											
			11.0	loose brown (10YR 5/3) med to fine sand, moist, non plastic non cohesive, little silt.	SW									
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature | Firm **AECOM** 11425 W. Lake Park Drive, Milwaukee, WI 53224

This form is authorized by Chapters281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			12.0	Loose, brown (10YR 5/3) sandy gravel, moist to wet, nonplastic, noncohesive, some well graded med - fine sand	SP					4				
			13.0	Becomes gray (10YR 5/1)										
			14.0											
			15.0											
3	5'/6'		16.0											
			17.0		GP									
			18.0											
			19.0											
			20.0											
4	10'/6		21.0											
			22.0											
			23.0											
			24.0	Loose gray (10YR 5/1) poorly graded med/fine sand, wet, nonplastic, noncohesive, little large rounded gravel	SP									
			25.0											
			26.0											
			27.0	Loose gray (10YR 5/1) sandy gravel, wet, non plastic, non cohesive, few fine to coarse angular to subrounded sand, well graded	GP									
			28.0											
			29.0											
			30.0	Hard gray (10YR 5/1) lean clay, moist, medium plasticity, cohesive, few coarse to fine rounded to sub rounded sand, little large rounded gravel, little silt	CL									Driller Noted heaving sands @30' and cobble stuck in rod
5	10'/3		31.0											
			32.0											

Sample									Soil Properties					
Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			33.0											
			34.0											
			35.0	As Above										
			36.0											
			37.0		CL									
			38.0											
			39.0											
			40.0											
6	3'/4'		41.0											
			42.0	As above										
			43.0											
			44.0											
	7'/10'		45.0											
7			46.0											
			47.0											
			48.0											
			49.0											
			50.0											
8	5'/7		51.0	as above										
			52.0											
			53.0											

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			54.0											
			55.0		CL									
9	5'/1.6'		56.0	Fine sand seam / lens	SP									
			57.0	As above										
			58.0		CL									
			59.0											
			60.0											
			61.0	silt lens	ML									
10	5'/9'		62.0		CL									
			63.0											
			64.0											
			65.0	med to fine sand lens	SP									
			66.0											
11	5'/8'		67.0		CL									
			68.0											
			69.0	Fine Sand	SP									
			70.0		CL									
12	5'/9'		71.0											
			72.0	Fine/Med sand	SP									
			73.0		CL									
			74.0											

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			75.0											
			76.0	As above										
	5'/10'		77.0		CL									
			78.0											
13			79.0											
			80.0											
			81.0	Fine sand & silt	SP									
	5'/9'		82.0											
14			83.0											
			84.0											
			85.0		CL									
			86.0											
			87.0											
15	5'/7'		88.0											
			89.0	Fine sand & silt	SP									
			90.0											
			91.0		CL									
16	5'/5'		92.0											
				sand/gravel	SW									
			93.0											
			94.0		CL									
			95.0	Fine sand	SP									

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
17	5' / 5.5		96.0 97.0 98.0 99.0 100.0	Bedrock	CC									
18	3' / 5		101.0 102.0 103.0											
19	12' / 5'		104.0 105.0 106.0 107.0											
			108.0 109.0 110.0 111.0 112.0 113.0 114.0 115.0 116.0	EOB @ 115										

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Former Newton Gravel Pit		PZ-26C

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Fist Name: Mike Last Name: Firm: Cascade	11/01/2014 MM/DD/YY	11/02/2014 MM/DD/YY	Rotosonic

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
		PZ-25C	Feet MSL	Feet MSL	inches

Local Grid Origin ☐ (Estimated: ☐) or Boring Location ☐ — Local Grid Location (if applicable)
State Plane ____ N, ____ E S/C/N — Lat ° ' " — ☐ N ☐ E
1/4 of ____ 1/4 of Section ____ T ____ N, R ____ E/W — Long ° ' " — Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/or Village
	Manitowoc	36	Manitowoc

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
1RS	1.8/5.0	WH	1.0	TOPSOIL / LOESS Firm; brown (10YR 5/3); TOPSOIL moist; cohesive; medium plasticity; trace sand and gravel; root zone	CL			0.0						
					1.2									
			2.0	Dark Firm; Reddish brown (2.5YR 3/4); LEAN CLAY (CL); moist; medium plasticity; cohesive; massive; trace subrounded fine gravel; trace medium to coarse sand.	CL			1.4						
			3.0											
			4.0	mottled MOIST				0.0						
			5.0											
2RS	3.9/5.0	WH	6.0											
					6.8									
			7.0	Firm; Reddish brown (5YR 5/4); SILT (ML); moist; low plasticity; cohesive; massive; trace sand and gravel.	ML			0.0						
			8.0											
					8.5									
			9.0	Loose - Reddish Brown (5YR 5/4); POORLY GRADED FINE SAND (SP); moist; non cohesive; massive; trace medium sand;	SP			0.2						
					10.0			0.0						
3RS	5.0/5.0	WH	11.0	Firm; Reddish Brown (5YR 5/4) LEAN CLAY (CL); moist; medium plasticity; cohesive; massive; MOIST trace coarse sand and gravel.	CL			—						
			12.0											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm **AECOM** 11425 W. Lake Park Drive, Milwaukee, WI 53224

This form is authorized by Chapters281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

RZ-26C

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			12.0	- Loose; Light Reddish Brown (5YR6/3); POORLY GRADED FINE SAND (SP); moist; non-plastic; non cohesive; thinly bedded; FINE SAND	12.2 SP									
			13.0											
			14.0	- SILT lens from 14.1 to 14.4 feet.	14.6									
4RS	5.0/5.0	NA	15.0	Loose; Brown (10YR5/3); ~~POORLY~~ WELL GRADED SAND (SW); medium to coarse sand with gravel; moist; non plastic; non cohesive; massive; little subrounded gravel; fluvial.	SW			0.0		moist				
			16.0		16.0									
			17.0	Firm; Brown (10YR5/3) LEAN CLAY (CL); moist; medium plasticity; cohesive; massive; trace subrounded coarse sand and gravel; ~~diamicton~~ diamicton.	CL									
			18.0		16.2									
			19.0	16.2										
			20.0	Loose Light reddish brown (5YR6/3) WELL GRADED SAND WITH GRAVEL (SW); fine to medium sand; moist; non plastic; non-cohesive; massive; little subrounded gravel; - Becomes wet at 21.0 feet.	19.4 SW			0.0						inferred perched b/c of color
5RS	9.8/10.0	NA	21.0					0.2		21.0 wet				
			22.0											
			23.0		23.7									
			24.0	Hard; Brown (10YR5/3) LEAN CLAY (CL); moist; medium plasticity; cohesive; massive; trace subrounded ~~fine~~ sand and gravel; diamicton.	CL	RUN		0.3		moist				
			25.0					0.0						
			26.0		26.3									
			27.0	Hard ~~Gray~~ dark grey (10YR 4/1); LEAN CLAY (CL); moist; low plasticity; cohesive; massive; trace subrounded sand; diamicton.	CL					moist				
			28.0		28.4									
			29.0	Hard, Light ~~red~~ grey (10YR 7/1) SILT (ML); moist; non plastic; non cohesive; massive; alluvium.	ML									
			30.0		30.0									
6RS	8.6/10.0	NA	31.0	Loose; Brown (10YR 5/3); WELL GRADED SAND WITH GRAVEL (SW); wet; non-plastic; non cohesive; massive; little subrounded gravel; medium to coarse sand.	SW			0.0 0.1		wet				
			32.0											

PZ-26C

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
		NA	33.0											
			34.0					0.3		wet				
			35.0		SW									
			36.0											
			37.0											
			38.0											
			39.0											
11/2/14 start			40.0											
7RS	8.1/10.0	NA	41.0					0.1		wet				
			42.0		SW			0.2						
			43.0					0.0						
			44.0											
			45.0											
			46.0											
			47.0	– Fine sand seam from 47.2 to 47.5 feet.										
			48.0											
			49.0											
8RS	9.9/10.0	NA	50.0					0.4						
			51.0		SW			0.2						
			52.0											
			53.0											

PZ-26C

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			54.0		SW			0.3						
			55.0											
			56.0											
			57.0		57.0									
				Loose; Grey (10YR 5/1) POORLY GRADED FINE SAND (SP); moist; non-plastic; non cohesive; massive; trace subrounded cobbles	SP					moist				
			58.0		58.2									
			59.0	Loose; Grey (10YR 5/1) WELL GRADED SAND WITH GRAVEL (SW); moist; non plastic; non cohesive; massive; fine to coase sand; little subround gravel; trace cobbles; fluvial.	SW									
9RS	6.8/10.0	NA	60.0											
			61.0		SW			0.0						
			62.0					0.2						
			63.0											
			64.0							wet				
			65.0											
			66.0											
			67.0											
			68.0											
			69.0											
			70.0		70.0									
TQRS	9.6/10.0	NA		[Loose; Grey (10YR 5/1) POORLY GRADED SAND (SP); Medium Sand; wet; non plastic; non cohesive; massive; trace subrounded gravel fluvial.	SP			0.0		wet				
			71.0											
			72.0											
			73.0											
			74.0											

PZ-26C

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			75.0					0.3		wet				
			76.0											
			77.0		SP									
			78.0											
			79.0											
11RS	9.8		80.0					0.2		wet				
	10.4		81.0		SP									
			82.0											
			83.0											
			84.0											
			85.0							wet				
			86.0	86.0				0.4						
			87.0	LOOSE; light grey (10YR6/1); POORLY GRADED SAND (SP); Fine Sand; wet; non plastic; non cohesive; thinly bedded; fluvial.	SP									
			88.0											
			89.0											
			90.0	90.0										
12RS	10.0		90.0					0.2		wet				
	10.0		91.0	Loose; grey (10YR5/1); POORLY GRADED SAND (SP); medium sand; wet; non plastic; non cohesive; massive;	SP									
			92.0											
			93.0	Fine sand seam from 92.0 to 92.5 feet.				0.3						
			94.0											
			95.0											

PZ-26C

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			96.0							wet				
			97.0											
			98.0											
			99.0											
			100.0		100.0									
13RS	8.4/10.0	NA	100.0	Loose; light grey (10YR 7/1) ~~fine~~ POORLY GRADED SAND (SP); fine sand, interbedded with laminated clay; moist to wet; non plastic; non cohesive; thinly bedded;	SP			0.1		wet moist				
			101.8		101.8									
			102.0	Loose grey (10YR 5/1) POORLY GRADED SAND (SP); medium sand; wet; non plastic; non cohesive; massive	SP			0.2		wet				
			103.0											
			104.0											
			105.0											
			106.0											
			107.0		107.1									
			108.0	Loose; light grey (10YR 7/1) POORLY GRADED SAND (SP); Fine sand; wet; non plastic; non cohesive; non plastic; massive;	SP			0.1						
			109.0											
			110.0		110.0									
14RS	9.6/10.0	NA	110.0	Loose; grey (10YR 5/1) POORLY GRADED SAND (SP); ~~fine to coarse~~ medium sand; wet; non plastic; non cohesive; massive;	SP			0.3		wet				
			111.0											
			112.0					0.2						
			113.0		115.0									
			114.0	Loose; grey (10YR 4/1) WELL GRADED SAND; medium to coarse sand; wet; non plastic; non-cohesive; massive;	SW									
			115.0											
			116.0											

Driller comments
- Approximate DTW 27ft. bgs.
- Approximately 400 gallons used to flush casing during drilling

PZ-26C

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in feet	Soil / Rock Description and Geological Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
15RS	10.0 / 10.0	NA	120.0							wet.				
			121.0											
			122.0	Hard; Brownish gray (10YR 4/3) LEAN CLAY (CL); moist; low plasticity; cohesive; massive; little	CL			0.3		moist				
LEAN CLAY WITH SAND (CL)			123.0											
			124.0											
			125.0											
			126.0											
			127.0											
			128.0											
			129.0		129.0									
			130.0	Bed rock at 129 feet bgs. SILURIAN DOLOMITE										
16RS	10.0	NA	131.0											
			132.0											
			133.0											
			134.0											
			135.0											
			136.0											

Driller Comment encountered bedrock at 129.0 ft

Driller comment switched over to use water while drilling 130'-140'

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: Former Newton Gravel Pit	Local Grid Location of Well: ___ ft N/S ___ ft E/W	Well Name: PZ-16A
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ___ Long ___ or St. Plane ___ ft N ___ ft E S/C/N	Wis. Unique Well No. / DNR Well Id No.: V0248
Facility ID	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ ☑ E ☐ W	Date Well Installed: 11 / 01 / 2014 (mm dd yyyy)
Type of Well; Well Code ___/___	Location of Well relative to Waste/Source: u ☐ Upgradient; d ☐ Downgradient; s ☐ Sidegradient; n ☐ Not Known; Gov. Lot No.	Well Installed By: Name (first, last) and Firm: Mike Bremairer, Cascade
Distance from Waste/Source ___ ft. Enf. Stds. Apply ☐		

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☑ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

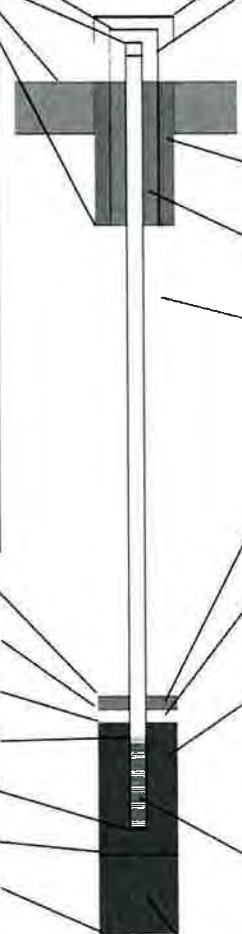
14. Drilling method used: Rotary ☑ 50; Hollow Stem Auger ☐ 41; Other ☐ — Rotary Sonic

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☐ No
Describe: NA

17. Source of water (attach analysis, if required): NA

E. Bentonite seal, top ___ ft. MSL 0 ft.
F. Fine sand, top ___ ft. MSL 46.0 ft.
G. Filter Pack, top ___ ft. MSL 48.0 ft.
H. Screen joint, top ___ ft. MSL 50.0 ft.
I. Well Bottom ___ ft. MSL 55.0 ft.
J. Filter Pack, bottom ___ ft. MSL 55.0 ft.
K. Borehole, bottom ___ ft. MSL 55.0 ft.
L. Borehole, diameter ___ In.
M. O.D. well casing ___ In.
N. I.D. well casing 2. In.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 4 inch X 4 inch square In.
   b. Length: 7.0 Ft.
   c. Material: Steel ☐ 04; Other ☐
   d. Additional Protection? ☐ Yes ☐ No
   If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. Material between well casing and protective pipe: Bentonite ☐ 30; Other ☒ — Sand
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
   b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
   c. 10.1 Lbs/gal mud weight... Bentonite slurry ☒ 31
   d. ___ % Bentonite.......... Bentonite-cement grout ☐ 50
   e. ___ bags ___ volume added for any of the above
   f. How installed: Tremie ☒ 01; Tremie Pumped ☐ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☒ 32
   c. 2 bags; Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
   a. Gravel Quartz ☐
   b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
   a. Red Flint Sand & Gravel #10 ☐
   b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐
10. Screen Material: PVC ☐
   a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
   b. Manufacturer ~~monoflex~~ Johnson Screen
   b. Slot size: 0.010 in.
   c. slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
[signature]	AECOM 1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. Note: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-16B
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.: V0247 (V0247)
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 11 / 01 / 2014 (m m / d d / yyyy)
Type of Well / Well Code /	Section Location of Waste/Source: 1/4 of of Sec., T, N, R, W ☐ E ☑	Well Installed By: Name (first, last) and Firm: Mike Biemairer / Cascade
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient, d ☐ Downgradient, s ☐ Sidegradient, n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ft. MSL
B. Well casing, top elevation ft. MSL
C. Land surface elevation ft. MSL
D. Surface seal, bottom ft. MSL or Ft.

1. Cap and lock? ☑ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 4 in. X 4 in square
   b. Length: 7.0 Ft.
   c. Material: Steel ☑ 04, Other ☐
   d. Additional Protection? ☐ Yes ☐ No
   If yes, describe:
3. Surface seal: Bentonite ☑ 30, Concrete ☐ 01, Other ☐
4. material between well casing and protective pipe: Bentonite ☑ 30, Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
   b. ____ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
   c. 10.1 Lbs/gal mud weight.. Bentonite slurry ☑ 31
   d. ____ % Bentonite..... Bentonite-cement grout ☐ 50
   e. ____ bags ____ volume added for any of the above
   f. How installed: Tremie ☑ 01, Tremie Pumped ☐ 02, Gravity ☐ 00 (TAS 11/1/14)
6. Bentonite Seal: a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite Chips ☑ 32
   c. 2 bags Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
   a. Gravel/Quartz ☐
   b. Volume added bag
8. Filter pack material: Manufacturer, product name & mesh size
   a. Red Flint Sand & Gravel #10 ☐
   b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☑ 23, Flush threaded PVC schedule 80 ☐ 24, Other ☐
10. Screen Material: PVC ☐
    a. screen type: Factory cut ☑ 11, Continuous slot ☐ 01, Other ☐
    b. Manufacturer ~~monoflex~~ Johnson Screen
    b. Slot size: 0.01 in.
    c. slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☑ 14, Other ☐

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☑ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

14 Drilling method used: Rotary ☑ 50, Hollow Stem Auger ☐ 41, Other ☐
Rotary Sonic

15 Drilling fluid used: Water ☐ 02, Air ☐ 01, Drilling Mud ☐ 03, None ☑ 99

16 Drilling additives used? ☐ Yes ☐ No
Describe NA

17. Source of water (attach analysis, if required):
NA

E Bentonite seal, top	ft. MSL	71.0 ft.
F. Fine sand, top	ft. MSL	76.0 ft.
G. Filter Pack, top	ft. MSL	78.0 ft.
H. Screen joint, top	ft. MSL	80.0 ft.
I. Well Bottom	ft. MSL	85.0 ft.
J. Filter Pack, bottom	ft. MSL	85.0 ft.
K. Borehole, bottom	ft. MSL	85.0 ft.
L. Borehole, diameter	5 3/4 In..	
M. O.D. well casing	In..	
N. I.D. well casing	2. In..	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Todd Schaefer Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

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State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-16C
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.: U0246
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 10 / 31 / 2014 (mm dd yyyy)
Type of Well: Well Code 1	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ W ☐ E ☑	Well Installed By: Name (first, last) and Firm: Mike Bremauer, Cascade
Distance from Waste/Source ___ ft. / Enf. Stds Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient, d ☐ Downgradient, s ☐ Sidegradient, n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☑

13. Sieve analysis performed? ☐ Yes ☑ No

14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Other ☐ ___
Rotosonic

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☑ 99

16 Drilling additives used? ☐ Yes ☐ No
Describe ___

17. Source of water (attach analysis, if required):
N/A

E Bentonite seal, top	___ ft. MSL	868.0	ft.
F. Fine sand, top	___ ft. MSL	94.	ft.
G. Filter Pack, top	___ ft. MSL	96.	ft.
H. Screen joint, top	___ ft. MSL	98.0	ft.
I. Well Bottom	___ ft. MSL	103.0	ft.
J. Filter Pack, bottom	___ ft. MSL	103.0	ft.
K. Borehole, bottom	___ ft. MSL	103.0	ft.
L. Borehole, diameter	5 3/4 In..		
M. O.D. well casing	___ In..		
N. I D. well casing	2. In..		

1. Cap and lock? ☑ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4x4 In.
b. Length: 7. Ft.
c. Material: Steel ☑ 24; Other ☐ ___
d. Additional Protection? ☐ Yes ☐ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b ___ Lbs/gal mud weight. Bentonite-sand slurry ☐ 35
c. 10.1 Lbs/gal mud weight. Bentonite slurry ☐ 31
d. ___ % Bentonite..... Bentonite-cement grout ☐ 50
e. bags volume added for any of the above
f. How installed: Tremie ☒ 01; Tremie Pumped ☐ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☒ 32; Other ☐ ___
c. 2 bag
7. Fine sand material: Manufacturer, product name & mesh size
a. Granusil Quartz ☐ ___
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint Sand & Gravel #10 ☐ ___
b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer menoflex
b. Slot size: Johnson Screen 0.01 In.
c. slotted length: 5.0 Ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

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State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: WT-24
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 10 / 29 / 2014 (m m d d yyyy)
Type of Well / Well Code /	Section Location of Waste/Source: 1/4 of of Sec. , T. N, R W ☑ E	Well Installed By: Name (first, last) and Firm: Jason Deabek, CWD Canada
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ft. MSL
B. Well casing, top elevation ft. MSL
C. Land surface elevation ft. MSL
D. Surface seal, bottom ft. MSL or Ft.

12. USCS classification of soil near screen:
GP ☑ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Rotosonic; Other ☐

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ft. MSL 0.0 ft.
F. Fine sand, top ft. MSL 3.0 ft.
G. Filter Pack, top ft. MSL 3.5 ft.
H. Screen joint, top ft. MSL 4.0 ft.
I. Well Bottom ft. MSL 14.0 ft.
J. Filter Pack, bottom ft. MSL 14.0 ft.
K. Borehole, bottom ft. MSL 14.0 ft.
L. Borehole, diameter 5 3/4 In.
M. O.D. well casing Bad In.
N. I.D. well casing 2. In.

1. Cap and lock? ☐ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: In.
b. Length: 5.0 Ft.
c. Material: Steel ☐ 04; Other ☐
d. Additional Protection? ☐ Yes ☐ No
If yes, describe:
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33; b. Lbs/gal mud weight Bentonite-sand slurry ☐ 35; c. Lbs/gal mud weight Bentonite slurry ☐ 31; d. % Bentonite Bentonite-cement grout ☐ 50; e. bags volume added for any of the above; f. How installed: N/A Tremie ☐ 01; Tremie Pumped ☐ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33; b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☒ 32; c. bag Other ☐
7. Fine sand material: Manufacturer, product name & mesh size: a. Commercial Silica Fillers ☐; b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size: a. Red Flint Sand & Gravel #10 ☐; b. Volume added bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐
10. Screen Material: PVC ☐
a. screen type: Factory cut ☒ 21; Continuous slot ☐ 01; Other ☐
b. Manufacturer ~~monoflex~~ Johnson screens
b. Slot size: 0.01 in.
c. slotted length: 10. ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Jason Deabek Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. Note: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-24A
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.: V0204
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 10 / 28 / 2014 (m m d d y y y y)
Type of Well / Well Code /	Section Location of Waste/Source: 1/4 of of Sec. , T. N, R W ☑ E	Well Installed By: Name (first, last) and Firm: Jason Draback, Cascade
Distance from Waste/Source ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ft. MSL
B. Well casing, top elevation ft. MSL
C. Land surface elevation ft. MSL
D. Surface seal, bottom ft. MSL or 40 Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Other ☒ Rotosonic

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe

17. Source of water (attach analysis, if required):

E Bentonite seal, top ft. MSL 40.0 ft.
F. Fine sand, top ft. MSL 46.0 ft.
G. Filter Pack, top ft. MSL 48.0 ft.
H. Screen joint, top ft. MSL 50.0 ft.
I. Well Bottom ft. MSL 55.0 ft.
J. Filter Pack, bottom ft. MSL 55.0 ft.
K. Borehole, bottom ft. MSL 55.0 ft.
L. Borehole, diameter 5 3/4 In.
M. O.D. well casing In.
N. I.D. well casing 2. In.

1. Cap and lock? ☐ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: In.
b. Length: 7.0 Ft.
c. Material: Steel ☒ 24; Other ☐
d. Additional Protection? ☐ Yes ☐ No
If yes, describe:
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
c. Lbs/gal mud weight... Bentonite slurry ☐ 31
d. % Bentonite ..... Bentonite-cement grout ☐ 50
e. bags volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie Pumped ☒ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☒ 32
c. bag Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
a. Granular Silica Fillers ☐
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint Sand & Gravel #10 ☐
b. Volume added 2 ¾ bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐
10. Screen Material: PVC ☐
a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
b. Manufacturer ~~monoflex~~
b. Slot size: Johnson screens 001 in.
c. slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

Please complete both forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. Note: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-24B
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No: V0205
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 10 / 28 / 2014 (m m d d y y y y)
Type of Well / Well Code ___ / ___	Section Location of Waste/Source: ☑ E ☐ W; ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___	Well Installed By: Name (first, last) and Firm: Tyson Drabek, Cascade
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or 4.0 Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Rotosonic; Other ☐ ___

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe ___

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top ___ ft. MSL 70.0 ft.
F. Fine sand, top ___ ft. MSL 76.0 ft.
G. Filter Pack, top ___ ft. MSL *78.0 ft.
H. Screen joint, top ___ ft. MSL 80.0 ft.
I. Well Bottom ___ ft. MSL 85.0 ft.
J. Filter Pack, bottom ___ ft. MSL 85.0 ft.
K. Borehole, bottom ___ ft. MSL 85.0 ft.
L. Borehole, diameter 5 3/4 In.
M. O.D. well casing ___ In.
N. I.D. well casing 2 In.

1. Cap and lock? ☐ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: square ___ In.
b. Length: ? 7 Ft.
c. Material: Steel ☒ 24; Other ☐ ___
d. Additional Protection? ☐ Yes ☐ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 80; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☒ 80; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
c. 10.1 Lbs/gal mud weight... Bentonite slurry ☒ 31
d. ___ % Bentonite... Bentonite-cement grout ☐ 50
e. bags volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie Pumped ☐ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 03
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32
c. 2 bag Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. Granular silica fillers ☐ ___
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint Sand & Gravel #10 ☐ ___
b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer ~~moneflex~~ Johnson Screens
b. Slot size: ~~make products~~ 0.01 in.
c. slotted length: ___ ft.
11. Backfill material (below filter pack): None ☐ 4; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature | Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

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State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: P2-24C
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 10 / 28 / 2014 (m m d d yyyy)
Type of Well / Well Code ___ / ___	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ E ☑ W ☐	Well Installed By: Name (first, last) and Firm: Jason Drabek Cascade
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☑ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ft. MSL
B. Well casing, top elevation ft. MSL
C. Land surface elevation ft. MSL
D. Surface seal, bottom ft. MSL or 4.0 Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis performed? ☐ Yes ☒ No

14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Rotosonic; Other ☐ ___

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe ___

17. Source of water (attach analysis, if required):
___

E. Bentonite seal, top ___ ft. MSL 106.0 ft.
F. Fine sand, top ___ ft. MSL 112.0 ft.
G. Filter Pack, top ___ ft. MSL 114.0 ft.
H. Screen joint, top ___ ft. MSL 116.0 ft.
I. Well Bottom ___ ft. MSL 121.0 ft.
J. Filter Pack, bottom ___ ft. MSL 121.0 ft.
K. Borehole, bottom ___ ft. MSL 121.0 ft.
L. Borehole, diameter 5 3/4 In.
M. O.D. well casing ___ In.
N. I.D. well casing 2. In.

1. Cap and lock? ☐ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: Square ___ In.
b. Length: 7.0 Ft.
c. Material: Steel ☐ 04; Other ☐ ___
d. Additional Protection? ☐ Yes ☐ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☑ 30; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
c. 10.0 Lbs/gal mud weight... Bentonite slurry ☒ 31
d. ___ % Bentonite..... Bentonite-cement grout ☒ 50
e. bags volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie Pumped ☐ 02; Gravity ☒ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32
c. 2 bag Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. Granusil silica fillers ☐ ___
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
a. Granusil silica filler Refflint Sand & Gravel ☐ #10
b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___
10. Screen Material: PVC
a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer ~~monoflex~~ Johnson screens Water Products
b. Slot size: 0.01 in.
c. slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

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State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: UT-25
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 10 / 31 / 2014 (m m d d y y y y)
Type of Well: Well Code /	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ W ☑ E	Well Installed By: Name (first, last) and Firm: Jason Drabek Cascade
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☒ GM ☐ GC ☐ GW ☐ SW ☐ SP ☒
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

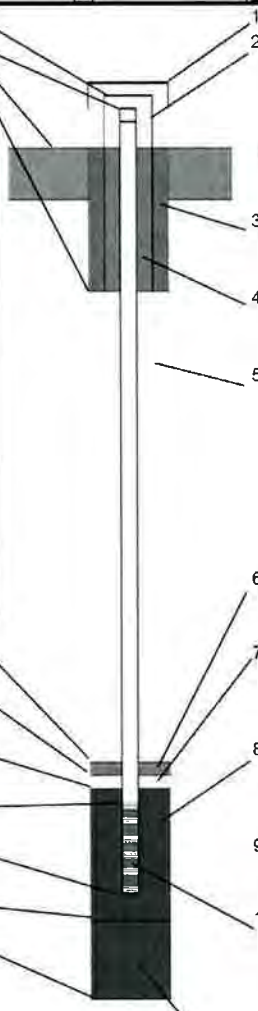
14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Other ☐ ___
Rotosonic

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe ___

17. Source of water (attach analysis, if required):
___

E. Bentonite seal, top ___ ft. MSL 0. ft.
F. Fine sand, top ___ ft. MSL 6.0 ft.
G. Filter Pack, top ___ ft. MSL 8.0 ft.
H. Screen joint, top ___ ft. MSL 10.0 ft.
I. Well Bottom ___ ft. MSL 20.0 ft.
J. Filter Pack, bottom ___ ft. MSL 20.0 ft.
K. Borehole, bottom ___ ft. MSL 20.0 ft.
L. Borehole, diameter 5 3/4 In.
M. O.D. well casing ___ In.
N. I.D. well casing 2. In.



1. Cap and lock? ☑ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4x4 In.
b. Length: 7 Ft.
c. Material: Steel ☑ 24; Other ☐ ___
d. Additional Protection? ☐ Yes ☒ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b ___ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
c ___ Lbs/gal mud weight... Bentonite slurry ☐ 31
d. ___% Bentonite..... Bentonite-cement grout ☐ 50
e. bags ___ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie Pumped ☐ 02; Gravity ☒ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32
c. 2 bag Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. Granusil silica fine ☐ ___
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
a. Red flint sand & gravel ☐ ___
b. Volume added 3 1/2 bags #2,1W
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer ~~monoflex~~ Johnson Screens
b. Slot size: 0.010 in.
c. slotted length: 10.0 ft
11. Backfill material (below filter pack): None ☒ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

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State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-25A ~~25B~~
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.: V0208
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 10 / 30 / 2014 (m m / d d / yyyy)
Type of Well / Well Code ___ / ___	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ W ☑ E	Well Installed By: Name (first, last) and Firm
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

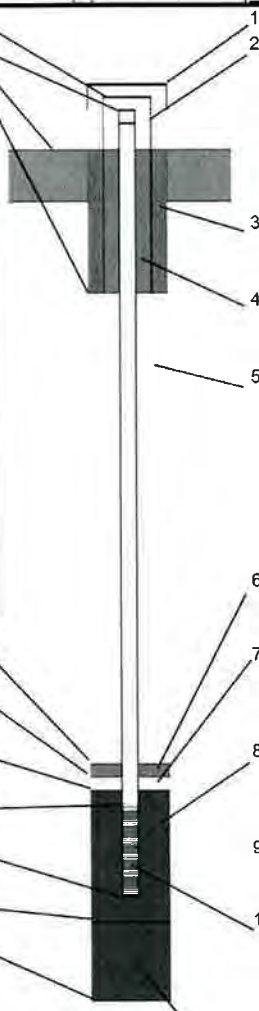
14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Other ☐ ___
Rotosonic

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☐ 99

16 Drilling additives used? ☐ Yes ☐ No
Describe ___

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top ___ ft. MSL 50.0 ft.
F. Fine sand, top ___ ft. MSL 56.0 ft.
G. Filter Pack, top ___ ft. MSL 58.0 ft.
H. Screen joint, top ___ ft. MSL 60.0 ft.
I. Well Bottom ___ ft. MSL 65.0 ft.
J. Filter Pack, bottom ___ ft. MSL 65.0 ft.
K. Borehole, bottom ___ ft. MSL 65.0 ft.
L. Borehole, diameter 5 3/4 In..
M. O.D. well casing ___ In..
N. I.D. well casing 2. In..



1. Cap and lock? ☐ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4x4 In.
b. Length: 7.0 Ft.
c. Material: Steel ☒ 24; Other ☐ ___
d. Additional Protection? ☐ Yes ☒ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
c. 10.0 Lbs/gal mud weight... Bentonite slurry ☒ 31
d. ___ % Bentonite..... Bentonite-cement grout ☐ 50
e. bags ___ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie Pumped ☐ 02; Gravity ☒ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32
c. bag Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. ___ ☐ ___
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint sand & gravel #10 ☐ ___
b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer ~~monoflex~~ Johnson screens
b. Slot size: 0.01 in.
c. slotted length: 5.0 ft
11. Backfill material (below filter pack): None ☐ 4; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. Note: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N/S, ft E/W	Well Name: 72-25B
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. Long or St. Plane ft N ft E S/C/N	Wis. Unique Well No. / DNR Well Id No.: VO208
Facility ID	Section Location of Waste/Source: ___ 1/4 of ___ 1/4 of Sec. ___, T. ___ N, R ___ ☑ E ☐ W	Date Well Installed: 10/30/2014 (mm dd yyyy)
Type of Well Well Code ___/___	Location of Well relative to Waste/Source: u ☐ Upgradient; d ☐ Downgradient; s ☐ Sidegradient; n ☐ Not Known	Gov. Lot No.	Well Installed By: Name (first, last) and Firm
Distance from Waste/Source ___ ft. Enf. Stds. Apply ☐		

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen: GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐ SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐ Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

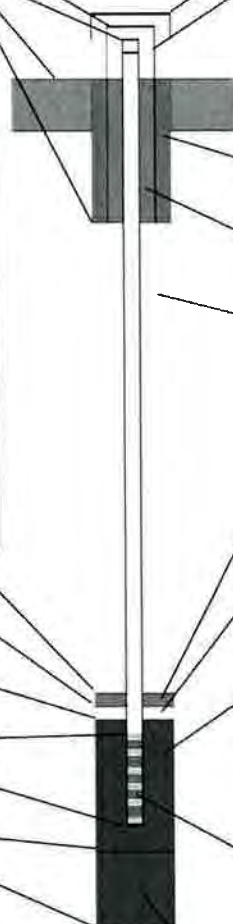
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Rotosonic Other ☐

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☐ No
Describe ___

17. Source of water (attach analysis, if required):

E. Bentonite seal, top ___ ft. MSL 80.0 ft.
F. Fine sand, top ___ ft. MSL 86. ft.
G. Filter Pack, top ___ ft. MSL 88.0 ft.
H. Screen joint, top ___ ft. MSL 90.0 ft.
I. Well Bottom ___ ft. MSL 95.0 ft.
J. Filter Pack, bottom ___ ft. MSL 95.0 ft.
K. Borehole, bottom ___ ft. MSL 95.0 ft.
L. Borehole, diameter 5 3/4 In.
M. O.D. well casing ___ In.
N. I.D. well casing 2. In.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
   a. Inside diameter: 4x4 in.
   b. Length: 7.0 Ft.
   c. Material: Steel ☒ 04; Other ☐
   d. Additional Protection? ☐ Yes ☒ No
   If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
   b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☒ 35
   c. 10.0 Lbs/gal mud weight... Bentonite slurry ☐ 31
   d. ___ % Bentonite.......... Bentonite-cement grout ☐ 50
   e. ___ bags ___ volume added for any of the above
   f. How installed: Tremie ☐ 01; Tremie Pumped ☐ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
   b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☒ 32
   c. 2 bag Other ☐
7. Fine sand material: Manufacturer, product name & mesh size
   a. ___ ☐
   b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
   a. Red flint Sand & Gravel #10 ☐
   b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐
10. Screen Material: PVC ☐
   a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐
   b. Manufacturer ~~monoflex~~ Johnson screen
   b. Slot size: 0.01 in.
   c. slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [signature] Firm **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. Note: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-25C
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No. VO2005
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 10 / 30 / 2014 (m m d d yyyy)
Type of Well / Well Code /	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ W ☐ E ☑	Well Installed By: Name (first, last) and Firm: Jason Dombek Cascade
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☑

13. Sieve analysis performed? ☐ Yes ☒ No

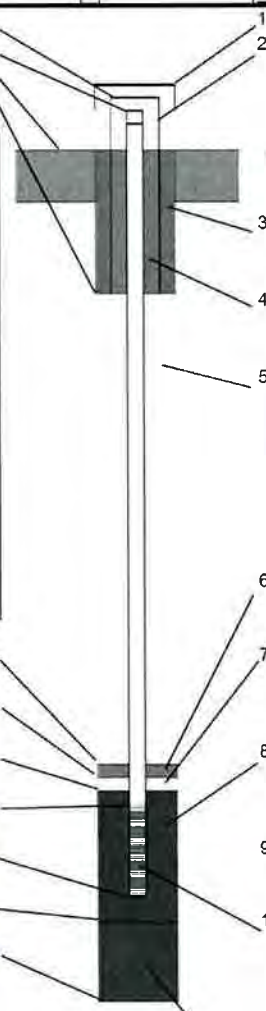
14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Other ☐ ___
Rotosonic

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe ___

17. Source of water (attach analysis, if required): ___

E Bentonite seal, top ___ ft. MSL 100. ft.
F. Fine sand, top ___ ft. MSL 106.0 ft.
G. Filter Pack, top ___ ft. MSL 108.0 ft.
H. Screen joint, top ___ ft. MSL 110.0 ft.
I. Well Bottom ___ ft. MSL 115.0 ft.
J. Filter Pack, bottom ___ ft. MSL 115.0 ft.
K. Borehole, bottom ___ ft. MSL 116.0 ft.
L. Borehole, diameter ___ In..
M. O.D. well casing ___ In..
N. I.D. well casing 2. In..



1. Cap and lock? ☑ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4x4 In.
b. Length: 70 Ft.
c. Material: Steel ☒ 04; Other ☐ ___
d. Additional Protection? ☐ Yes ☐ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 00; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite
Bentonite ☒ 00; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☒ 35
c. 10.1 Lbs/gal mud weight... Bentonite slurry ☐ 31
d. ___ % Bentonite..... Bentonite-cement grout ☐ 50
e. bags volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie Pumped ☐ 02; Gravity ☒ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32
c. 2 bag Other ☐ ___
7. Fine sand material:
Manufacturer, product name & mesh size
a. ___ ☐ ___
b. Volume added ~~2 bag~~ bag
8. Filter pack material:
Manufacturer, product name & mesh size
a. Red Flint Sand & Gravel #10 ☐ ___
b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☒ 21; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer ~~monoflex~~ Johnson screens
b. Slot size: 0.01 in.
c. slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

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State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: WT-26
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 11 / 04 / 2014 (m m d d yyyy)
Type of Well / Well Code ___ / ___	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ E ☑ W ☐	Well Installed By: Name (first, last) and Firm: Jon Doubek Cascade
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Rotosonic; Other ☒

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe ___

17. Source of water (attach analysis, if required): ___

E Bentonite seal, top	___ ft. MSL	0.0 ft.
F. Fine sand, top	___ ft. MSL	20.0 ft.
G. Filter Pack, top	___ ft. MSL	22.0 ft.
H. Screen joint, top	___ ft. MSL	24.0 ft.
I. Well Bottom	___ ft. MSL	34.0 ft.
J. Filter Pack, bottom	___ ft. MSL	34.0 ft.
K. Borehole, bottom	___ ft. MSL	34.0 ft.
L. Borehole, diameter	5¾ In.	
M. O.D. well casing	___ In.	
N. I.D. well casing	2. In.	

1. Cap and lock? ☑ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4¼ In.
b. Length: 2.0 Ft.
c. Material: Steel ☒ 24; Other ☐ ___
d. Additional Protection? ☐ Yes ☒ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. ___ Lbs/gal mud weight.. Bentonite-sand slurry ☐ 35
c. ___ Lbs/gal mud weight... Bentonite slurry ☐ 31
d. ___ % Bentonite..... Bentonite-cement grout ☐ 50
e. bags, volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie Pumped ☐ 02; Gravity ☒ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32
c. 6 x 50 bag Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. Granusil Quartz ☐ ___
b. Volume added ___ bag
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint Sand & Gravel #10 ☐ ___
b. Volume added 5 1/2 bags
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer ~~monoflex~~
b. Slot size: Johnson Screens 0.10 in.
c. slotted length: ___ ft.
11. Backfill material (below filter pack): None ☒ 74; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

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State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-26A
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: ___/___/2014 (m m d d yyyy)
Type of Well / Well Code ___/___	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ E ☑ W ☐	Well Installed By: Name (first, last) and Firm
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☐ No

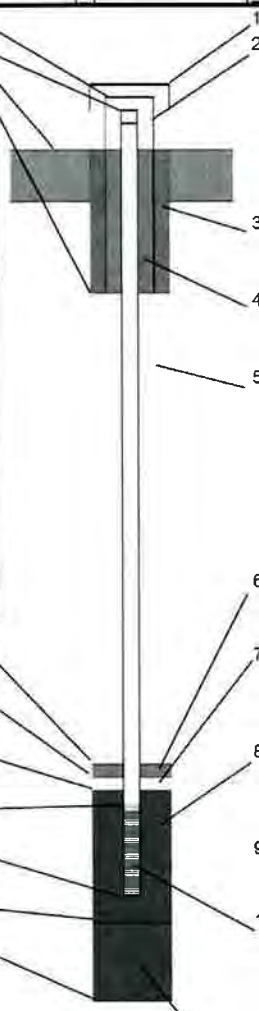
14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; ___ Other ☐ ___

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☐ 99

16 Drilling additives used? ☐ Yes ☐ No
Describe ___

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top ___ ft. MSL 60.0 ft.
F. Fine sand, top ___ ft. MSL 66.0 ft.
G. Filter Pack, top ___ ft. MSL 68.0 ft.
H. Screen joint, top ___ ft. MSL 70.0 ft.
I. Well Bottom ___ ft. MSL 75.0 ft.
J. Filter Pack, bottom ___ ft. MSL 75.0 ft.
K. Borehole, bottom ___ ft. MSL 75.0 ft.
L. Borehole, diameter ___ In..
M. O.D. well casing ___ In..
N. I.D. well casing 2. In..



1. Cap and lock? ☑ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4&4. In.
b. Length: 70 Ft.
c. Material: Steel ☑ 24; Other ☐ ___
d. Additional Protection? ☐ Yes ☑ No
If yes, describe: ___
3. Surface seal: Bentonite ☑ 30; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☑ 30; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33; b. ___ Lbs/gal mud weight.. Bentonite-sand slurry ☐ 35; c. 10.1 Lbs/gal mud weight... Bentonite slurry ☑ 31; d. ___% Bentonite..... Bentonite-cement grout ☐ 50; e. bags, volume added for any of the above
f. How installed: Tremie ☑ 01; Tremie Pumped ☐ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33; b. ☐ 1/4 in. ☑ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32; c. 2 bag Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. Greensil Quartz 1 ☐ ___
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
a. Red Flint Sand & Gravel #10 ☐ ___
b. Volume added 23/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☑ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☑ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer ~~monoflex~~ Johnson Screen
b. Slot size: 0.01 in.
c. slotted length: 5.0 ft
11. Backfill material (below filter pack): None ☑ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature | Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

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State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-26B
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 11 / 03 / 2014 (m m / d d / yyyy)
Type of Well / Well Code /	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ W ☑ E ☐	Well Installed By: Name (first, last) and Firm: Mark Biermaier Cascade
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☑
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

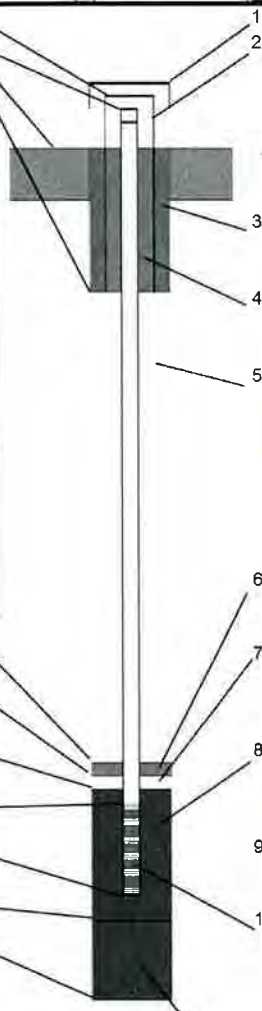
14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Other ☑ Rotosonic

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☑ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe ___

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top ___ ft. MSL 90.0 ft.
F. Fine sand, top ___ ft. MSL 96.0 ft.
G. Filter Pack, top ___ ft. MSL 98.0 ft.
H. Screen joint, top ___ ft. MSL 100.0 ft.
I. Well Bottom ___ ft. MSL 105.0 ft.
J. Filter Pack, bottom ___ ft. MSL 105.0 ft.
K. Borehole, bottom ___ ft. MSL 105.0 ft.
L. Borehole, diameter ___ In.
M. O.D. well casing ___ In.
N. I.D. well casing 2 In.



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4x4 In.
b. Length: 7.0 Ft.
c. Material: Steel ☒ 24; Other ☐ ___
d. Additional Protection? ☐ Yes ☒ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☒ 35
c. 10.1 Lbs/gal mud weight... Bentonite slurry ☐ 31
d. ___ % Bentonite..... Bentonite-cement grout ☐ 50
e. ___ bags ___ volume added for any of the above
f. How installed: Tremie ☑ 01; Tremie Pumped ☐ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32
c. 2 bag Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size ☐ ___
a. Granusil Quartz
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size ☐ ___
a. Red Flint Sand & Gravel #10
b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☐ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer monoflex
b. Slot size: Johnson screens 0.01 in.
c. slotted length: ___ ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. Note: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☑ Other ☐

Facility/Project Name: **Former Newton Gravel Pit**	Local Grid Location of Well: ft N S, ft E W	Well Name: PZ-26C
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐	Wis. Unique Well No. / DNR Well Id No.
Facility ID	Lat. Long or St. Plane ft N ft E S/C/N	Date Well Installed: 11 / 03 / 2014 (m m / d d / y y y y)
Type of Well / Well Code /	Section Location of Waste/Source: ___ 1/4 of ___ of Sec. ___, T. ___ N, R ___ W ☑ E ☐	Well Installed By: Name (first, last) and Firm: Mark Biermaier Cascade
Distance from Waste/Source ___ ft. / Enf. Stds. Apply ☐	Location of Well relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	Gov. Lot No.

A. Protective pipe, top elevation ___ ft. MSL
B. Well casing, top elevation ___ ft. MSL
C. Land surface elevation ___ ft. MSL
D. Surface seal, bottom ___ ft. MSL or ___ Ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☒

13. Sieve analysis performed? ☐ Yes ☒ No

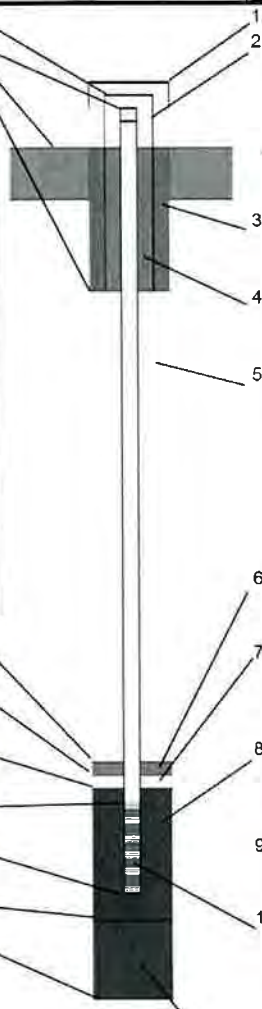
14 Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☐ 41; Rotosonic; Other ☑

15 Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☑ 99

16 Drilling additives used? ☐ Yes ☒ No
Describe ___

17. Source of water (attach analysis, if required): ___

E. Bentonite seal, top	___ ft. MSL	130.0	ft.
F. Fine sand, top	___ ft. MSL	136.	ft.
G. Filter Pack, top	___ ft. MSL	138.0	ft.
H. Screen joint, top	___ ft. MSL	140.0	ft.
I. Well Bottom	___ ft. MSL	145.0	ft.
J. Filter Pack, bottom	___ ft. MSL	145.0	ft.
K. Borehole, bottom	___ ft. MSL	145.0	ft.
L. Borehole, diameter	___ In.		
M. O.D. well casing	___ In..		
N. I.D. well casing	2. In..		



1. Cap and lock? ☒ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4x4 In.
b. Length: 7 Ft.
c. Material: Steel ☒ 24; Other ☐ ___
d. Additional Protection? ☐ Yes ☒ No
If yes, describe: ___
3. Surface seal: Bentonite ☒ 30; Concrete ☐ 01; Other ☐ ___
4. material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ___
5. Annular space seal: a. Granular/Chipped Bentonite ☐ 33
b. ___ Lbs/gal mud weight... Bentonite-sand slurry ☐ 35
c. 10.1 Lbs/gal mud weight... Bentonite slurry ☒ 31
d. ___ % Bentonite..... Bentonite-cement grout ☐ 50
e. ___ bags ___ volume added for any of the above
f. How installed: Tremie ☒ 01; Tremie Pumped ☐ 02; Gravity ☐ 08
6. Bentonite Seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite Chips ☐ 32
c. 3 bag Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. Granusil Quartz ☐ ___
b. Volume added 1 bag
8. Filter pack material: Manufacturer, product name & mesh size
a. #2 Flint Sand & Gravel #10 ☐ ___
b. Volume added 2 3/4 bags
9. Well casing: Flush threaded PVC schedule 40 ☐ 23; Flush threaded PVC schedule 80 ☒ 24; Other ☐ ___
10. Screen Material: PVC ☐ ___
a. screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ___
b. Manufacturer ~~monoflex~~
b. Slot size: Johnson Screen 0.01 in.
c. slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ☒ 74; Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Jordan Jones Firm: **AECOM**
1555 RiverCenter Drive, Suite 214, Milwaukee, Wisconsin, 53212

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. Note: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-16A

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		VO248

1. Can this well be purged dry ? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well: 60 min.

4. Depth of well (from top of well casing): 57.79 ft.

5. Inside diameter of well: 2 in.

6. Volume of water in filter pack and well casing: 12 gal.

7. Volume of water removed from well: 65 gal.

8. Volume of water added (if any): — gal.

9. Source of water added: N/A

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	4.40 ft.	4.40 ft.
Date b.	10/03/2014 mm/dd/yyyy	11/03/2014 mm/dd/yyyy
Time c.	1020 ☒ a.m. ☐ p.m.	1120 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	— inches	— inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
	(Describe)	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	— mg/l	— mg/l
15. COD	— mg/l	— mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:

Volume = (DTB − DTW) * 0.163 + (N * H * Annulus space)
(57.79 − 4.40) * 0.163 + (0.3 * 9 * 1.24)
8.70 + 3.35 = 12.0 gallons per well

Name and Address of Facility Contact/Owner/Responsible Party		I hereby certify that the above information is correct and true to the best of my knowledge
First Name:	Last Name:	
Facility/Firm:	City of Manitowoc	Signature:
Street:		Print Name: Jordan Junion
City/State/Zip:		Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-16B

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		00247

1. Can this well be purged dry ? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well _____ min.

4. Depth of well (from top of well casing) 87.49 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 16.9 gal.

7. Volume of water removed from well 40.0 gal.

8. Volume of water added (if any) NA gal.

9. Source of water added N/A

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	4.90 ft.	23.21 ft.
Date	b.	11/03/2014 mm/dd/yyyy	11/03/2014 mm/dd/yyyy
Time	c.	1145 ☒ a.m. ☐ p.m.	1312 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		_____ inches	_____ inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
		(Describe)	(Describe)
14. Total suspended solids		_____ mg/l	_____ mg/l
15. COD		_____ mg/l	_____ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:

(DTB - DTW) * 0.163 + (N * H x 1.24)
(87.49 - 4.90) * 0.163 + (03 * 9 x 1.24) =
13.5 gal + 3.34 = 16.9

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: City of Manitowoc
Street: _____
City/State/Zip: _____

I hereby certify that the above information is correct and true to the best of my knowledge
Signature: [signature]
Print Name: Jordan Junion
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [✓] Waste Management [ ]
Remediation/Redevelopment [ ] Other [ ]

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-16C

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		UU246

1. Can this well be purged dry ? [ ] Yes [X] No

2. Well development method

surged with bailer and bailed	[ ]	41
surged with bailer and pumped	[X]	61
surged with block and bailed	[ ]	42
surged with block and pumped	[ ]	62
surged with block, bailed and pumped	[ ]	70
compressed air	[ ]	20
bailed only	[ ]	10
pumped only	[ ]	51
pumped slowly	[ ]	50
Other	[ ]	

3. Time spent developing well: 55 min.

4. Depth of well (from top of well casing): 106.08 ft.

5. Inside diameter of well: 2 in.

6. Volume of water in filter pack and well casing: 19.72 gal.

7. Volume of water removed from well: 50 gal.

8. Volume of water added (if any): — gal.

9. Source of water added: N/A

10. Analysis performed on water added? [ ] Yes [X] No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	6.00 ft.	ft.
Date b.	11/03/2014 mm/dd/yyyy	11/03/2014 mm/dd/yyyy
Time c.	1330 [ ] a.m. [X] p.m.	1425 [ ] a.m. [X] p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15	Clear [X] 20 Turbid [ ] 25
	(Describe)	(Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:
(DTB - DTW) x 0.163 + (N * H * 1.24) = well volume
(106.50 − 6.00) x 0.163 (+0.3 * 9 * 1.24) = w V
100
16.38 + 3.35 = 19.72 gallons

Name and Address of Facility Contact/Owner/Responsible Party
First Name:
Last Name:
Facility/Firm: City of Manitowoc
Street:
City/State/Zip:

I hereby certify that the above information is correct and true to the best of my knowledge
Signature: Jordan Junion
Print Name: Jordan Junion
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [✓] Waste Management [ ]
Remediation/Redevelopment [ ] Other [ ]

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	Manitowoc	WT-24

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		← VO 239

1. Can this well be purged dry? [X] Yes [ ] No

2. Well development method

surged with bailer and bailed	[ ]	41
surged with bailer and pumped	[X]	61
surged with block and bailed	[ ]	42
surged with block and pumped	[ ]	62
surged with block, bailed and pumped	[ ]	70
compressed air	[ ]	20
bailed only	[ ]	10
pumped only	[ ]	51
pumped slowly	[ ]	50
Other	[ ]	

3. Time spent developing well _____ min.

4. Depth of well (from top of well casing) 16.58 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 5.7 gal.

7. Volume of water removed from well 26.5 gal.

8. Volume of water added (if any) 0 gal.

9. Source of water added N/A

10. Analysis performed on water added? [ ] Yes [ ] No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	5.85 ft.	_____ ft.
Date b.	10/30/2014 (mm/dd/yyyy)	11/11/2014 (mm/dd/yyyy)
Time c.	_____ [ ] a.m. [ ] p.m.	_____ [ ] a.m. [ ] p.m.
12. Sediment in well bottom	0 inches	0 inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15	Clear [X] 20 Turbid [ ] 25
	(Describe)	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Last Name:
Firm: AECOM

16. Additional comments on development:

Volume = [D.T.B − DTW] × vol/ft) + (N × H * Annulus space) = well volume
= (16.58 − 5.85) × 0.16 + (0.3 * 10.73 * 1.24) =
10.73 × 0.16 +
1.71 + 3.99 = 5.7 gallons

1.) Removed 6 gallons on 10/30/14
2.) Removed 6.5 gallons 11/1/14
3) DTW: 5.70 11/7/14 Removed 6 gallons
4) Removed 4 gallons on 11/11/14

Name and Address of Facility Contact/Owner/Responsible Party

First Name:	Last Name:
Facility/Firm:	City of Manitowoc
Street:	
City/State/Zip:	

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

Signature:	Jordan Junion
Print Name:	Jordan Junion
Firm:	AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

11/1/14 DTW = 5.96' (lowest turbidity 1056 NTU) Removed 6.5 gallons. Dry.
11/7/14 DTW = 5.70' Removed gal. Dry

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [✓] Waste Management [ ]
Remediation/Redevelopment [ ] Other [ ]

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	~~MW~~ P2-24A

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		~~MW~~ V02004

1. Can this well be purged dry ? [X] Yes [ ] No

2. Well development method

surged with bailer and bailed	[ ]	41
surged with bailer and pumped	[X]	61
surged with block and bailed	[ ]	42
surged with block and pumped	[ ]	62
surged with block, bailed and pumped	[ ]	70
compressed air	[ ]	20
bailed only	[ ]	10
pumped only	[ ]	51
pumped slowly	[ ]	50
Other	[ ]	

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	6.73 ft.	ft.
Date b.	10/30/2014 mm/dd/yyyy	10/30/2014 mm/dd/yyyy
Time c.	930 [ ] a.m. [ ] p.m.	1330 [ ] a.m. [X] p.m.
12. Sediment in well bottom	1.55 inches	0 inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15	Clear [X] 20 Turbid [ ] 25
	(Describe)	(Describe)

3. Time spent developing well 200 min. New DTD
4. Depth of well (from top of well casing) 55.15 ft. ~~56.70~~
5. Inside diameter of well 20 in.
6. Volume of water in filter pack and well casing 11.23 gal.
7. Volume of water removed from well 52 gal.
8. Volume of water added (if any) NA gal.
9. Source of water added —
10. Analysis performed on water added? [ ] Yes [X] No (If yes, attach results)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	— mg/l	— mg/l
15. COD	— mg/l	— mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:

Volume = (DTB − DTW) x 0.16 + (Annulus space)
= (55.15 − 6.73) x 0.16 + (0.3 x 9 x 1.24) =
7.89 + 3.34 = 11.238 gallons

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Last Name:
Facility/Firm: City of Manitowoc
Street:
City/State/Zip:

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

Signature: Jordan Junion
Print Name: Jordan Junion
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-24B

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		VO205

1. Can this well be purged dry ? ☐ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☑	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other	☐	

3. Time spent developing well ____ min.

4. Depth of well (from top of well casing) 86.55 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 16.34 gal.

7. Volume of water removed from well ____ gal.

8. Volume of water added (if any) NA gal.

9. Source of water added —

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	6.75 ft.	____ ft.
Date b.	10/30/2014 mm/dd/yyyy	mm/dd/yyyy
Time c.	1345 ☐ a.m. ☒ p.m.	____ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	____ inches	____ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
	(Describe)	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____ mg/l	____ mg/l
15. COD	____ mg/l	____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Last Name:
Firm: AECOM

16. Additional comments on development:

Purged 40 gallons on 10/30/14

Volume = (DTB − DTW) * 0.163 + (N * H * Annulus Space)
(86.55 − 6.75) * 0.163 + 0.3 * 9 * 1.63
13.0 + 3.34 = 16.34 gallons

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Last Name:
Facility/Firm: City of Manitowoc
Street:
City/State/Zip:

I hereby certify that the above information is correct and true to the best of my knowledge
Signature:
Print Name: Jordan Junion
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

11/1/14 DTW = 6.70' (lowest turbidity ~~10.97~~ 10.58 NTU) 11/1/14 Removed 40 gallons

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	P2-24C

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36	VO 240	

1. Can this well be purged dry ? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other	☐	

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	6.75 ft.	ft.
Date b.	11/7/2014 (mm/dd/yyyy)	11/7/2014 (mm/dd/yyyy)
Time c.	1130 ☒ a.m. ☐ p.m.	1300 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	— inches	— inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
	(Describe)	(Describe)
14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

3. Time spent developing well: 90 min.
4. Depth of well (from top of well casing): 123.50 ft.
5. Inside diameter of well: 2.0 in.
6. Volume of water in filter pack and well casing: 22.4 gal.
7. Volume of water removed from well: 65 gal.
8. Volume of water added (if any): — gal.
9. Source of water added: —
10. Analysis performed on water added? ☐ Yes ☑ No (If yes, attach results)

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:

Volume = (DTB − DTW) × 0.163 + (N × H × Annulus Space)
= (123.50 − 6.75) × 0.163 + (0.3 × 9 × 1.24)
19.03 + 3.34 = 22.37 gallons

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Last Name:
Facility/Firm: City of Manitowoc
Street:
City/State/Zip:

I hereby certify that the above information is correct and true to the best of my knowledge
Signature:
Print Name: Jordan Junion
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	WT-25

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36	VO	

1. Can this well be purged dry ? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well: 90 min.

4. Depth of well (from top of well casing): _____ ft.

5. Inside diameter of well: 2.0 in.

6. Volume of water in filter pack and well casing: _____ gal.

7. Volume of water removed from well: 55 gal.

8. Volume of water added (if any): NA gal.

9. Source of water added: NA

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results) NA

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	8.18 ft.	_____ ft.
Date b.	11/01/2014 mm/dd/yyyy	11/01/2014 mm/dd/yyyy
Time c.	14:28 ☒ a.m. ☐ p.m.	1847 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
	(Describe)	(Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	NA mg/l	NA mg/l
15. COD	NA mg/l	NA mg/l

16. Well developed by: Name (first, last) and Firm
First Name: TORY Last Name: SCHULTZ
Firm: AECOM

16. Additional comments on development:
Volume = (DTB − DTW) x 0.163 + (N x H x Annulus Space)
22.09 − 8.18 x 0.163 + (0.3 x 12 x ~~2.99~~ 1.63
2.3

Removed 35 gal. + 20 gal. = 55 gal.

Lowest turbidity 6.14 NTU

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: City of Manitowoc
Street: _____
City/State/Zip: _____

I hereby certify that the above information is correct and true to the best of my knowledge
Signature: Tory A. Schultz
Print Name: ~~Jordan Junion~~ TORY A. SCHULTZ
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [✓] Waste Management [ ]
Remediation/Redevelopment [ ] Other [ ]

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ 25A

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36	VO2098	

1. Can this well be purged dry? [X] Yes [ ] No
Recharges @ rate < 175 mL/min.

2. Well development method

surged with bailer and bailed	[ ]	41
surged with bailer and pumped	[X]	61
surged with block and bailed	[ ]	42
surged with block and pumped	[ ]	62
surged with block, bailed and pumped	[ ]	70
compressed air	[ ]	20
bailed only	[ ]	10
pumped only	[ ]	51
pumped slowly	[ ]	50
Other	[ ]	

3. Time spent developing well _____ min.

4. Depth of well (from top of well casing) _____ ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 40 gal.

8. Volume of water added (if any) NA gal.

9. Source of water added NA

10. Analysis performed on water added? [ ] Yes [X] No
(If yes, attach results) NA

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	9.73 ft.	ft.
Date b.	11/01/2014 (mm/dd/yyyy)	11/01/2014 (mm/dd/yyyy)
Time c.	1828 [ ] a.m. [X] p.m.	[ ] a.m. [X] p.m.
12. Sediment in well bottom	inches	inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15	Clear [ ] 20 Turbid [ ] 25
	(Describe)	(Describe)
14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Last Name:
Firm: AECOM

16. Additional comments on development:
Volume = (DTB − DTW) × 0.163 + (N × H × 67.38 − 9.73 × 0.163 + 0.3 × 9 × 1.24)
Removed 35 gallons
11/1/14 Time 45 minutes + 25 gallons removed
removed 35 gallons on 11/1/14
Lowest turbidity 73.3 NTU

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Last Name:
Facility/Firm: City of Manitowoc
Street:
City/State/Zip:

I hereby certify that the above information is correct and true to the best of my knowledge
Signature:
Print Name: ~~Jordan Junion~~ TORY A. SCHULTZ
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-2SB

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36	WO206	

1. Can this well be purged dry ? ☐ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	____

3. Time spent developing well _____ min.

4. Depth of well (from top of well casing) 94.20 ft.

5. Inside diameter of well _____ in.

6. Volume of water in filter pack and well casing 16.97 gal.

7. Volume of water removed from well _____ gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	10.60 ft.	_____ ft.
Date	b.	11/7/2014 mm/dd/yyyy	11/11/2014 mm/dd/yyyy
Time	c.	☐ a.m. ☐ p.m.	☐ a.m. ☐ p.m.
12. Sediment in well bottom		_____ inches	_____ inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
		(Describe)	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____	mg/l	_____	mg/l
15. COD	_____	mg/l	_____	mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:

(DTB-DTW) * 0.163 + (1 * N * Annulus Space)
(94.20 - 10.60) * 0.163 + (9 * 0.3 * 1.24)
13.62 + 3.35 = 16.97 gallons

Removed 20 gal on 11/7/14
Removed 20 gal on 11/11/14

Name and Address of Facility Contact/Owner/Responsible Party

First Name: _____ Last Name: _____
Facility/Firm: City of Manitowoc
Street: _____
City/State/Zip: _____

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

Signature: _____
Print Name: Jordan Junion
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-25C

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36	VO207	

1. Can this well be purged dry ? ☐ Yes ☒ No

2. Well development method
- surged with bailer and bailed ☐ 41
- surged with bailer and pumped ☒ 61
- surged with block and bailed ☐ 42
- surged with block and pumped ☐ 62
- surged with block, bailed and pumped ☐ 70
- compressed air ☐ 20
- bailed only ☐ 10
- pumped only ☐ 51
- pumped slowly ☐ 50
- Other _____ ☐ _____

3. Time spent developing well 55 min.

4. Depth of well (from top of well casing) 117.71 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 19.68 gal.

7. Volume of water removed from well 40.0 gal.

8. Volume of water added (if any) — gal.

9. Source of water added —

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

		Before Development	After Development
11. Depth to Water (from top of well casing)	a.	17.45 ft.	17.57 ft.
Date	b.	11/07/2014 mm/dd/yyyy	11/07/2014 mm/dd/yyyy
Time	c.	1345 ☐ a.m. ☑ p.m.	1440 ☐ a.m. ☒ p.m.
12. Sediment in well bottom		_____ inches	_____ inches
13. Water clarity		Clear ☐ 10 Turbid ☒ 15	Clear ☐ 20 Turbid ☐ 25
		(Describe)	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l	
15. COD	_____ mg/l	_____ mg/l	

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:

(DTB - DTW) * 0.163 + (H * N * 1.24) =

(117.71 - 17.45) * 0.163 + (9 x 0.3 x 1.24) =

16.34 + 3.34 = 19.68 gallons

Name and Address of Facility Contact/Owner/Responsible Party		I hereby certify that the above information is correct and true to the best of my knowledge
First Name:	Last Name:	
Facility/Firm:	City of Manitowoc	Signature:
Street:		Print Name: Jordan Junion
City/State/Zip:		Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	WT-24

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		

1. Can this well be purged dry ? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	____

3. Time spent developing well _____ min.

4. Depth of well (from top of well casing) 36.21 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 7.30 gal.

7. Volume of water removed from well 18 gal.

8. Volume of water added (if any) — gal.

9. Source of water added —

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	22.40 ft.	36.21 ft.
Date b.	11/04/2014 mm/dd/yyyy	11/11/2014 mm/dd/yyyy
Time c.	1335 ☐ a.m. ☒ p.m.	1045 ☒ a.m. ☐ p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear ☐ 10 Turbid ☐ 15	Clear ☐ 20 Turbid ☐ 25
	(Describe)	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Last Name:
Firm: AECOM

16. Additional comments on development:

(DTB - DTW) * 0.163 + (H * N * Annulus space)
(36.21 - 22.40) * 0.163 + (13.81 * 0.3 * 1.24)
2.25 gal + 5.13 = 7.38 gallons / well volume

- 7 gallons on 11/4/14
- DTW = 24.0 11/10/14
Removed 4 gallons
- DTW on 11/11 w/ 4 gallons removed = 25.75

Name and Address of Facility Contact/Owner/Responsible Party		I hereby certify that the above information is correct and true to the best of my knowledge
First Name:	Last Name:	
Facility/Firm:	City of Manitowoc	Signature:
Street:		Print Name: Jordan Junion
City/State/Zip:		Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-26A

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		

1. Can this well be purged dry ? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other	☐	

3. Time spent developing well: 60 min.

4. Depth of well (from top of well casing): 77.86 ft.

5. Inside diameter of well: 2.0 in.

6. Volume of water in filter pack and well casing: ~~50~~ 11.95 gal.

7. Volume of water removed from well: 30 gal.

8. Volume of water added (if any): — gal.

9. Source of water added: —

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	25.05 ft.	ft.
Date b.	11/04/2014 mm/dd/yyyy	11/04/2014 mm/dd/yyyy
	☐ a.m.	☐ a.m.
Time c.	1400 ☒ p.m.	1500 ☒ p.m.
12. Sediment in well bottom	0.04 inches	0.00 inches
13. Water clarity	Clear ☐ 10	Clear ☒ 20
	Turbid ☒ 15	Turbid ☐ 25
	(Describe)	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	mg/l	mg/l
15. COD	mg/l	mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:

DTB = 77.90'

(DTB - DTW) * 0.163 + (H * N * Annulus space)
(77.86 - 25.05) * 0.163 + (9 * 0.3 x 1.24) = gallons
8.6 + 3.35 = 11.95 gallons

Name and Address of Facility Contact/Owner/Responsible Party

First Name:	Last Name:
Facility/Firm:	City of Manitowoc
Street:	
City/State/Zip:	

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

Signature:	
Print Name:	Jordan Junion
Firm:	AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater [✓] Waste Management [ ]
Remediation/Redevelopment [ ] Other [ ]

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-26B

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		

1. Can this well be purged dry ? [X] Yes [ ] No

2. Well development method

surged with bailer and bailed	[ ]	41
surged with bailer and pumped	[X]	61
surged with block and bailed	[ ]	42
surged with block and pumped	[ ]	62
surged with block, bailed and pumped	[ ]	70
compressed air	[ ]	20
bailed only	[ ]	10
pumped only	[ ]	51
pumped slowly	[ ]	50
Other _____	[ ]	____

3. Time spent developing well _____ min.

4. Depth of well (from top of well casing) 107.42 ft.

5. Inside diameter of well 2 in.

6. Volume of water in filter pack and well casing 16.9 gal.

7. Volume of water removed from well — gal.

8. Volume of water added (if any) — gal.

9. Source of water added —

10. Analysis performed on water added? [ ] Yes [X] No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	24.34 ft.	_____ ft.
Date b. (mm / dd / yyyy)	11/11/2014	mm / dd / yyyy
Time c.	1045 [X] a.m. [ ] p.m.	[ ] a.m. [ ] p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear [ ] 10 Turbid [X] 15	Clear [X] 20 Turbid [ ] 25
	(Describe)	(Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:
(PTB - DTW) * 0.163 + N * H * Annulus space
(107.42 - 24.34) * 0.163 + 0.3 * 9 * 1.24 =
13.54 gallons + 3.35 gallons = 16.9 gallons

Name and Address of Facility Contact/Owner/Responsible Party
First Name: _____ Last Name: _____
Facility/Firm: City of Manitowoc
Street: _____
City/State/Zip: _____

I hereby certify that the above information is correct and true to the best of my knowledge
Signature: Jordan Junion
Print Name: Jordan Junion
Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☑ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐

Facility/Project Name	County Name	Well Name
Former Newton Gravel Pit	**Manitowoc**	PZ-26C

Facility License, Permit or Monitoring Number	County Code	Wisconsin Unique Well Number	DNR Well Number
	36		

1. Can this well be purged dry ? ☐ Yes ☒ No

2. Well development method

surged with bailer and bailed	☐	41
surged with bailer and pumped	☒	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other	☐	

3. Time spent developing well: 90 min.

4. Depth of well (from top of well casing): 147.18 ft.

5. Inside diameter of well: 2 in.

6. Volume of water in filter pack and well casing: 21.6 gal.

7. Volume of water removed from well: 65 gal.

8. Volume of water added (if any): — gal.

9. Source of water added: —

10. Analysis performed on water added? ☐ Yes ☒ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing) a.	34.95 ft.	36.21 ft.
Date b. (mm / dd / yyyy)	11/10/2014	11/10/2014
Time c.	1200 ☐ a.m. ☒ p.m.	1330 ☐ a.m. ☒ p.m.
12. Sediment in well bottom	— inches	— inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15	Clear ☒ 20 Turbid ☐ 25
	(Describe)	(Describe)
14. Total suspended solids	— mg/l	— mg/l
15. COD	— mg/l	— mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Jordan Last Name: Junion
Firm: AECOM

16. Additional comments on development:

(DTB − DTW) * 0.163 + (N * H * Annulus space

(147.18 − 34.95) * 0.163 + (0.3) * 9 * 1.24 =

18.29 + 3.35 = 21.64 gallons per well

Removed 65 gallons

Name and Address of Facility Contact/Owner/Responsible Party		I hereby certify that the above information is correct and true to the best of my knowledge
First Name:	Last Name:	
Facility/Firm:	City of Manitowoc	Signature:
Street:		Print Name: Jordan Junion
City/State/Zip:		Firm: AECOM

NOTE: See instructions for more information including a list of county codes and well type codes

Attachment B:

Well Purging and Sample Collection Forms

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: GT-01 Date Sampled: 11/13/14

Previous Well Sampled: Start of Day

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 20 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 26.20 (from TPVC)

Depth to Bottom: 31.30 (from TPVC)

Length of Water: 5.10

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersible Typhoon Sampling Device: Submersible Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 6.5 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 840 Time Ended: 9:15

Decon Method: Alconox w/ DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-01 Date: 11/13/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
8:55	9.59	6.98	0.894	6.69	149.5	27.30	750
9:00	9.71	6.99	0.900	6.41	147.9	27.30	150
9:05	9.64	7.00	0.895	6.03	144.2	27.30	600
9:10	9.71	7.01	0.896	6.03	142.6	27.30	600
9:15	9.64	7.02	0.899	5.92	140.6	27.30	600
9:15	SAMPLE						

Jared E Daly

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: 72-01 Date Sampled: 11/13/14

Previous Well Sampled: WT-01

GENERAL CONDITIONS:

						If Missing Replaced?	
Surface Seal:	X	Ok		Damaged		Missing:	Yes	No
Protector Pipe:	X	Ok		Damaged		Missing:	Yes	No
Well Cap:	X	Ok		Damaged		Missing:	Yes	No

Ambient Temperature: 25 °F [ ] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 26.80 (from TPVC)

Depth to Bottom: 92.78 (from TPVC)

Length of Water: 65.98

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersible Typhoon Sampling Device: Submersible Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 5.5 gal

Could Well Bail Dry? [ ] Yes [ ] No [X] Low Flow Technique

Purging - Time Start: 9:30 Time Ended: 9:55

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: Now

Odor: Now

Color: Clear

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-01 Date: 11/13/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
9:30	8.97	7.68	0.630	6.58	4.1	27.70	675
9:35	9.13	7.54	0.631	0.53	-72.2	27.30	675
9:40	9.43	7.48	0.627	0.34	-81.4	27.30	600
9:45	9.50	7.49	0.628	0.30	-92.1	27.30	600
9:50	9.51	7.51	0.628	0.34	-95.1	27.30	600
9:55	9.57	7.48	0.626	0.29	-94.8	27.30	600
9:55	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-02A Date Sampled: 11/19/14

Previous Well Sampled: Start of Day

GENERAL CONDITIONS:

						If Missing Replaced?	
Surface Seal:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No
Protector Pipe:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No
Well Cap:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No

Ambient Temperature: 18 °F ☐ Clear ☐ Cloudy ☒ ~~Rain~~ Snow

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 50.95 (from TPVC)

Depth to Bottom: 59.96 (from TPVC)

Length of Water: 9.01

Free Product Observed: ☐ Yes ☒ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — ☒ See back of page for field readings during purge

Volume Purged: 12

Could Well Bail Dry? ☐ Yes ☒ No ☒ Low Flow Technique

Purging - Time Start: 815 Time Ended: 905

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: YES

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: MT-02A Date: 11/19/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
8:20	9.98	6.90	1.621	4.60	14.2	24.5	300
8:23	10.01	6.87	1.605	4.11	-12.8	24.35	600
8:26	10.05	6.87	1.565	3.64	-19.8	24.35	600
8:29	10.00	6.88	1.537	3.45	-25.9	24.35	600
8:32	10.07	6.88	1.488	3.14	-32.2	24.35	600
8:35	10.06	6.88	1.453	2.92	-36.1	24.35	600
8:39	10.00	6.88	1.436	2.73	-42.1	24.35	600
8:42	9.99	6.88	1.426	2.58	-45.2	24.35	600
8:45	10.04	6.89	1.416	2.51	-47.8	24.35	600
8:48	10.00	6.88	1.406	2.42	-49.9	24.35	600
8:51	10.09	6.88	1.387	2.32	-53.3	24.35	600
8:54	10.12	6.88	1.377	2.21	-56.4	24.35	600
8:58	10.14	6.88	1.365	2.13	-57.5	24.35	600
9:01	10.17	6.88	1.353	2.04	-59.1	24.35	600
9:04	10.16	6.88	1.358	2.07	-60.1	24.35	600
9:05 SAMPLE							

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-02 Date Sampled: 11/18/14

Previous Well Sampled: WT-17

GENERAL CONDITIONS:

						If Missing Replaced?	
Surface Seal:	X	Ok		Damaged		Missing:	Yes	No
Protector Pipe:	X	Ok		Damaged		Missing:	Yes	No
Well Cap:	X	Ok		Damaged		Missing:	Yes	No

Ambient Temperature: 15 °F X Clear Cloudy Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 33.32 (from TPVC)

Depth to Bottom: 88.93 (from TPVC)

Length of Water: 55.61

Free Product Observed: Yes X No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submerssable Typhoon

Volume Required: — X See back of page for field readings during purge

Volume Purged: 3

Could Well Bail Dry? Yes X No X Low Flow Technique

Purging - Time Start: 1149 Time Ended: 12:35

Decon Method: Alconox & DI rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: P2-02 Date: 11/18/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1144	8.06	10.26	0.576	3.23	-22.2	34.38	400
1147	8.77	11.35	0.607	1.34	-79.7	34.38	600
1151	8.75	11.51	0.614	1.00	-88.2	34.38	600
1154	9.16	11.15	0.618	0.73	-95.2	34.38	600
1157	9.30	10.26	0.628	0.61	-92.5	34.38	600
1200	9.57	9.76	0.639	0.42	-95.7	34.38	600
1205	9.56	9.87	0.655	0.32	-105.8	34.38	600
1208	9.73	9.63	0.658	0.25	-92.6	34.38	600
1210	9.75	9.62	0.663	0.23	-95.5	34.38	600
1215	9.61	10.10	0.666	0.23	-91.9	34.38	600
1218	9.65	9.74	0.669	0.38	-110.0	34.38	600
1221	9.65	10.30	0.669	0.30	-109.6	34.38	600
1224	9.59	10.79	0.672	0.26	-106.7	34.38	600
1227	9.59	10.87	0.672	0.22	-107.2	34.38	600
1230	9.66	10.99	0.672	0.21	-111.3	34.38	600
1233	9.60	10.90	0.674	0.17	-114.6	34.38	600
1236	SAMPLE						

Last Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: GOT-08 Date Sampled: 11/18/14

Previous Well Sampled: GOT-13

GENERAL CONDITIONS:

					If Missing Replaced?	
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 10 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 33.50 (from TPVC)

Depth to Bottom: 36.01 (from TPVC)

Length of Water: 2.51

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 4

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 8:30 Time Ended: 900

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-08 Date: 11/18/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
8:34	8.01	7.23	0.730	8.83	63.7	32.78	300
8:38	7.87	7.17	0.732	8.32	64.1	32.78	300
8:42	7.06	7.13	0.741	8.20	63.4	32.78	300
8:45	7.90	7.10	0.712	8.00	62.1	32.78	600
8:48	9.50	7.09	0.728	7.81	64.5	32.78	600
8:51	9.54	7.08	0.732	7.89	67.4	32.78	600
8:54	9.49	7.09	0.733	7.66	68.3	32.78	600
8:57	8.75	7.08	0.739	7.65	68.1	32.78	600
9:00	7.80	7.08	0.733	7.67	66.5	32.78	600
9:00 SAMPLE							

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-03 Date Sampled: 11/18/14

Previous Well Sampled: WT

GENERAL CONDITIONS:

						If Missing Replaced?
Surface Seal:	X	Ok		Damaged		Missing: Yes No
Protector Pipe:	X	Ok		Damaged		Missing: Yes No
Well Cap:	X	Ok		Damaged		Missing: Yes No

Ambient Temperature: 12 °F X Clear Cloudy Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 32.30 (from TPVC)

Depth to Bottom: 99.65 (from TPVC)

Length of Water: 67.35

Free Product Observed: Yes X No Thickness: ——

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: —— X See back of page for field readings during purge

Volume Purged: 5gal

Could Well Bail Dry? Yes X No X Low Flow Technique

Purging - Time Start: 915 Time Ended: 1015

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-03 Date: 11/18/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
917	7.20	12.07	0.608	3.02	-24.9	34.50	300
922	6.51	12.06	0.607	0.85	-29.8	34.50	300
925	6.35	12.11	0.605	0.74	-29.9	34.50	300
928	6.12	12.10	0.602	0.55	-25.6	34.50	300
931	5.80	11.93	0.606	0.48	-31.4	34.50	300
934	5.36	11.81	0.606	0.48	-25.0	34.50	300
937	4.57	11.18	0.612	0.46	-28.0	34.50	300
942	3.28	10.64	0.627	0.52	-30.4	34.50	300
945	3.20	10.27	0.623	0.61	-23.2	34.50	300
948	6.45	9.58	0.583	0.82	-43.5	34.50	300
951	6.88	9.30	0.588	0.72	-47.0	34.50	300
954	7.27	9.02	0.595	0.61	-40.7	34.50	300
957	7.28	8.75	0.604	0.45	-38.3	34.50	300
1000	7.89	8.53	0.599	0.51	-50.2	34.50	600
1003	8.09	8.36	0.604	0.43	-44.0	34.50	600
1006	7.86	8.26	0.614	0.38	-46.0	34.50	300
1009	7.83	8.18	0.613	0.30	-48.0	34.50	300
1012	7.62	8.11	0.616	0.27	-50.1	34.50	300
1015	SAMPLE						
~~10~~							

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WP-04 Date Sampled: 11/13/14

Previous Well Sampled: WP-07

GENERAL CONDITIONS:

						If Missing Replaced?	
Surface Seal:	X	Ok		Damaged		Missing:	Yes / No
Protector Pipe:	X	Ok		Damaged		Missing:	Yes / No
Well Cap:	X	Ok		Damaged		Missing:	Yes / No

Ambient Temperature: 27 °F [ ] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 4.60 (from TPVC)

Depth to Bottom: 6.88 (from TPVC)

Length of Water: 2.28

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: paristaltic pump Sampling Device: paristaltic pump

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 3gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1445 Time Ended: 1515

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Comments: Paristaltic Pump used due to small water Column

Well Purging Log

Well: WP-04 Date: 11/13/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1450	7.26	7.39	0.790	0.95	0.4	4.90	400
1455	7.76	7.33	0.787	0.30	-14.9	4.90	400
1500	7.83	7.28	0.786	0.24	-16.7	4.90	400
1505	7.90	7.20	0.784	0.35	-41.3	4.90	400
1510	7.91	7.18	0.784	0.25	-42.4	4.90	400
1515	7.91	7.17	0.783	0.32	-42.0	4.90	400
1515	SAMPLE						

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-05 Date Sampled: 11/17/14

Previous Well Sampled: PZ-05A

5241

GENERAL CONDITIONS:

						If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged		[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged		[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged		[ ] Missing:	Yes	No

Ambient Temperature: 12 °F [ ] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 2.58 (from TPVC)

Depth to Bottom: 20.93 (from TPVC)

Length of Water: 18.35

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Peristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 2.5

Could Well Bail Dry? [ ] Yes [ ] No [X] Low Flow Technique

Purging - Time Start: 1420 Time Ended: 1445

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: GT-05 Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1423	8.09	7.36	0.734	2.73	-6.1	2.71	200
1426	8.40	7.31	0.748	1.20	0.3	2.71	200
1429	8.67	7.29	0.748	1.07	1.0	2.71	200
1432	8.75	7.27	0.751	0.90	2.3	2.71	200
1435	8.75	7.25	0.754	0.73	1.8	2.71	200
1438	8.81	7.23	0.756	0.62	1.7	2.71	200
1441	8.89	7.21	0.755	0.51	0.8	2.71	200
1444	8.81	7.21	0.758	0.43	-0.3	2.71	200
1445	SAMPLE						

Sarah C Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-05A Date Sampled: 11/17/14

Previous Well Sampled: PZ-05B

GENERAL CONDITIONS:

						If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged		[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged		[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged		[ ] Missing:	Yes	No

Ambient Temperature: 12 °F [ ] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 3.04 (from TPVC)

Depth to Bottom: 40.40 (from TPVC)

Length of Water: 37.36

Free Product Observed: [ ] Yes [X] No Thickness: ——

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Peristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: —— [X] See back of page for field readings during purge

Volume Purged: 2.5 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1353 Time Ended: 1415

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-05A Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
[illegible]7	7.22	7.41	0.692	1.26	-4.5	3.21	250
[illegible]	7.70	7.34	0.696	0.88	-7.1	3.21	250
1404	[illegible]	[illegible]31	0.697	0.81	-9.4	3.21	250
1407	[illegible]	[illegible]30	0.700	0.69	-12.7	3.21	250
1412	7.[illegible]	7.29	0.699	0.58	-15.9	3.21	250
1415	8.03	7.29	0.699	0.60	-16.6	3.21	250
1415 SAMPLE							

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-05B Date Sampled: 11/17/14

Previous Well Sampled: WT-15

GENERAL CONDITIONS:

						If Missing, Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 12 °F [X] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 2.60 (from TPVC)

Depth to Bottom: 60.91 (from TPVC)

Length of Water: 58.31

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Peristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 2 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1325 Time Ended: 1350

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	[X]	Cyanide	[ ]
Metals -	[ ]	Hexchrome	[ ]
SVOC	[ ]	Alkalinity	[ ]
TOC	[ ]	Chloride	[ ]
Sulfide	[ ]	Ammonia	[ ]
Phenolics	[ ]	PAHs	[ ]

Well Purging Log

Well: D7-05B Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1327	6.46	7.60	0.652	2.07	36.8	4.54	250
1330	6.70	7.58	0.655	1.79	26.2	4.78	250
1333	7.22	7.55	0.655	1.33	13.8	5.02	250
1336	7.62	7.53	0.653	1.10	4.3	5.16	250
1339	7.76	7.53	0.654	0.79	-1.4	5.18	250
1342	7.83	7.50	0.655	0.60	-1.7	5.20	250
1346	7.92	7.52	0.656	0.53	-3.0	5.20	250
1350	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WP-06 Date Sampled: 11/17/14

Previous Well Sampled: Start of Day

GENERAL CONDITIONS:

				If Missing Replaced?
Surface Seal:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes No
Protector Pipe:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes No
Well Cap:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes No

Ambient Temperature: 10 °F [x] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 16.10 (from TPVC)

Depth to Bottom: 18.60 (from TPVC)

Length of Water: 2.50

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Paristaltic Pump Sampling Device: Paristaltic Pump

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 3 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 9:30 Time Ended: 9:55

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WP-06 Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
938	7.46	7.62	0.665	3.53	233.3	16.20	250
941	7.55	7.33	0.668	2.60	240.4	16.20	250
945	7.67	7.32	0.668	2.47	243.1	16.20	250
948	7.71	7.32	0.669	2.50	244.9	16.20	250
951	7.80	7.30	0.668	2.53	252.0	16.20	250
954	7.78	7.30	0.668	2.60	254.7	16.20	250
955 SAMPLE							

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WP-07 Date Sampled: 11/13/14

Previous Well Sampled: P2-26A

GENERAL CONDITIONS:

						If Missing Replaced?	
Surface Seal:	∝ Ok		Damaged		Missing:	Yes	No
Protector Pipe:	∝ Ok		Damaged		Missing:	Yes	No
Well Cap:	∝ Ok		Damaged		Missing:	Yes	No

Ambient Temperature: 28°F ∝ Clear X Cloudy Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 11.20 (from TPVC)

Depth to Bottom: 12.52 (from TPVC)

Length of Water: 1.32

Free Product Observed: Yes X No Thickness: ←

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Peristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — ∝ See back of page for field readings during purge

Volume Purged: 4 gal

Could Well Bail Dry? Yes X No ∝ Low Flow Technique

Purging - Time Start: 1400 Time Ended: 1435

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Comments: Peristaltic Pump used due to small water column

Well Purging Log

Well: LOP-07 Date: 11/13/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
~~1405~~	9.58	7.48	0.854	1.62	-32.9	11.20	450
1410	9.97	7.34	0.804	1.69	-38.6	11.20	450
1415	10.04	7.28	0.790	1.41	-34.7	11.23	450
1420	10.12	7.22	0.776	1.34	-34.8	11.23	450
1425	10.23	7.17	0.767	0.94	-34.0	11.23	450
1430	10.06	7.19	0.761	1.07	-40.4	11.23	450
1435	9.95	7.15	0.756	0.93	-38.2	11.23	450
1435	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-10 Date Sampled: 11/18/14

Previous Well Sampled: PZ-02

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 15 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 41.45 (from TPVC)

Depth to Bottom: 48.33 (from TPVC)

Length of Water: 6.88

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 5

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1255 Time Ended: 1325

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: YES

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-10 Date: 11/18/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1259	9.09	11.08	1.015	0.86	-133.5	42.50	450
1303	9.33	10.62	0.993	0.61	-145.1	42.50	450
1306	9.47	11.41	0.985	0.54	-148.8	42.25	450
1309	9.64	11.22	0.979	0.56	-149.0	42.25	300
1312	9.71	10.45	0.976	0.52	-146.2	42.25	300
1315	9.79	10.27	0.974	0.49	-144.8	42.25	300
1318	9.76	10.19	0.972	0.42	-140.2	42.25	300
1321	9.69	10.22	0.965	0.39	-150.3	42.25	300
1325 - SAMPLE							

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-11 Date Sampled: 11/17/14

Previous Well Sampled: WT-12

GENERAL CONDITIONS:

					If Missing Replaced?	
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No	
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No	
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No	

Ambient Temperature: 10 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 4.01 (from TPVC)

Depth to Bottom: 15.21 (from TPVC)

Length of Water: 19.20

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Paristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 2 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1115 Time Ended: 1130

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-11 Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1118	8.95	7.26	0.755	0.60	44.9	4.12	250
1121	9.08	7.21	0.758	0.38	40.0	4.12	250
1124	8.93	7.18	0.765	0.28	36.2	4.12	250
1127	8.99	7.15	0.764	0.25	39.7	4.12	250
1130	9.05	7.14	0.763	0.21	42.1	4.12	250
1130	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-12 Date Sampled: 11/17/14

Previous Well Sampled: P2-12

GENERAL CONDITIONS:

						If Missing Replaced?
Surface Seal:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 10 °F [x] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 4.18 (from TPVC)

Depth to Bottom: 15.26 (from TPVC)

Length of Water: 11.08

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Paristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 2.5 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 1045 Time Ended: 1105

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: LOT-12 Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1045	7.68	7.24	0.675	2.00	58.4	4.38	250
1049	7.84	7.21	0.681	0.96	64.7	4.38	250
1052	811	7.18	0.680	0.70	65.7	4.38	250
1055	8.42	7.16	0.673	0.62	64.1	4.38	250
1058	8.55	7.15	0.674	0.51	60.1	4.38	250
1101	8.63	7.15	0.672	0.49	62.4	4.38	250
1104	8.54	7.15	0.674	0.49	66.5	4.38	250
1105	SAMPLE						

Sarah E. Day

Comments: Duplicate Collected

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: P2-12 Date Sampled: 11/17/14

Previous Well Sampled: WP-06

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 10 °F [x] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 3.68 (from TPVC)

Depth to Bottom: 27.34 (from TPVC)

Length of Water: 23.66

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: ParastalticPump Sampling Device: Peristaltic Pump

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 3 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 10:10 Time Ended: 1040

Decon Method: Alconox & DI RINSE

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-12 Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1020	7.40	7.37	0.707	1.19	110.4	3.78	250
1023	7.59	7.31	0.718	0.57	66.7	3.75	250
1026	7.86	7.26	0.719	0.51	56.6	3.75	250
1029	7.85	7.22	0.723	0.37	39.3	3.75	250
1032	7.89	7.19	0.725	0.28	32.5	3.75	250
1035	7.93	7.17	0.724	0.28	30.7	3.75	250
1038	8.01	7.17	0.725	0.25	30.2	3.75	250
1040 SAMPLE							

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-13 Date Sampled: 11/18/14

Previous Well Sampled: Start of Day

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 10 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 11.39 (from TPVC)

Depth to Bottom: 16.38 (from TPVC)

Length of Water: 4.99

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Peristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 2 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 8:00 Time Ended: 8:15

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-13 Date: 11/18/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
8:04	9.11	7.52	0.402	8.15	60.7	11.52	250
8:07	9.25	7.45	0.400	8.05	64.6	11.52	250
8:10	9.30	7.46	0.400	7.97	66.7	11.52	250
8:15	9.50	7.47	0.399	7.98	67.9	11.52	250
8:15 SAMPLE							

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-15 Date Sampled: 11/17/14

Previous Well Sampled: PZ-15B

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 12 °F [ ] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 2.71 (from TPVC)

Depth to Bottom: 12.23 (from TPVC)

Length of Water: 9.52

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Peristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 2gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1258 Time Ended: 1315

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: None

Odor: None

Color: Clear

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-15 Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1257	7.19	7.31	0.664	4.35	76.4	2.76	200
1300	7.14	7.31	0.674	3.57	78.1	2.76	200
1305	7.51	7.28	0.675	3.18	76.7	2.76	200
1309	7.65	7.25	0.675	3.18	70.4	2.76	200
1312	7.66	7.25	0.675	3.09	70.4	2.76	200
1315	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-15A Date Sampled: 11/17/14

Previous Well Sampled: WT-11

GENERAL CONDITIONS:

				If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes No

Ambient Temperature: 12 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 2.45 (from TPVC)

Depth to Bottom: 27.40 (from TPVC)

Length of Water: 24.95

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Parisaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 2.5gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1140 Time Ended: 12.05

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-15A Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
~~1104~~ 1146	7.76	7.34	0.678	2.80	73.2	2.78	200
1149	8.01	7.28	0.681	2.47	71.9	2.78	250
1152	8.12	7.25	0.683	2.29	72.6	2.78	250
1155	8.17	7.25	0.684	2.25	72.0	2.78	250
1158	8.25	7.23	0.684	2.26	70.9	2.78	250
1201	8.33	7.23	0.685	2.16	71.1	2.78	250
1204	8.40	7.22	0.686	2.15	70.1	2.78	250
1205	SAMPLE						

Sarah E Day

Comments: Kink in the PVC

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-15B Date Sampled: 11/17/14

Previous Well Sampled: PZ-15A

GENERAL CONDITIONS:

						If Missing Replaced?	
Surface Seal:	[x] Ok	[ ] Damaged		[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged		[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged		[ ] Missing:	Yes	No

Ambient Temperature: 12 °F [x] Clear [x] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 2.40 (from TPVC)

Depth to Bottom: 37.00 (from TPVC)

Length of Water: 34.60

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Peristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 4.5 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 1215 Time Ended: 1250

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: P2-15B Date: 11/17/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1216	7.90	7.37	0.691	~~+4.9~~ SD 2.32	68.1	2.46	250
1219	7.92	7.31	0.697	2.20	67.6	2.46	250
1222	8.02	7.25	0.702	1.67	67.1	2.46	250
1225	8.05	7.23	0.704	1.62	65.3	2.46	250
1228	8.09	7.22	0.704	1.53	64.7	2.46	250
1231	8.05	7.22	0.707	1.45	64.1	2.46	250
1234	7.99	7.21	0.709	1.38	64.3	2.46	250
1237	8.01	7.21	0.710	1.30	63.1	2.46	250
1241	8.05	7.21	0.710	1.48	61.8	2.46	250
1244	7.94	7.22	0.712	1.40	62.6	2.46	250
1247	7.99	7.22	0.712	1.36	62.6	2.46	250
1250	7.98	7.22	0.711	1.29	63.1	2.46	250
1250 SAMPLE							

Sarah E Day

Comments: kink in the PVC casing

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-16 Date Sampled: 11/12/14

Previous Well Sampled: WT-23

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: °F [x] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 4.41 (from TPVC)

Depth to Bottom: 14.00 (from TPVC)

Length of Water: 9.59

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 4 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 12:00 Time Ended: 12:15

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: None

Odor: None

Color: Clear

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-16 Date: 11/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
12:00	9.70	7.56	0.723	1.28	-62.0	4.51	750
12:05	9.92	7.43	0.721	0.60	-71.3	4.51	750
12:10	9.86	7.39	0.721	0.46	-64.1	4.51	750
12:15	9.79	7.37	0.721	0.43	-49.1	4.51	600
12:15	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: MW PZ-16 Date Sampled: 11/12/14

Previous Well Sampled: MW-16

GENERAL CONDITIONS:

						If Missing Replaced?	
Surface Seal:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No
Protector Pipe:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No
Well Cap:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No

Ambient Temperature: °F ☑ Clear ☐ Cloudy ☐ Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 4.59 (from TPVC)

Depth to Bottom: 26.55 (from TPVC)

Length of Water: 21.96

Free Product Observed: ☐ Yes ☑ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — ☑ See back of page for field readings during purge

Volume Purged: 6gal

Could Well Bail Dry? ☐ Yes ☑ No ☑ Low Flow Technique

Purging - Time Start: 12:25 Time Ended: 12:50

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: None

Odor: None

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-16 Date: 11/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
12:25	9.24	7.69	0.707	4.66	-21.9	4.90	600
12:30	9.32	7.52	0.724	1.23	-69.5	4.90	600
12:35	9.44	7.50	0.723	0.64	-47.0	4.90	600
12:40	9.51	7.48	0.726	0.54	-40.1	4.90	600
12:45	9.51	7.47	0.728	0.45	-32.3	4.90	600
12:50	9.48	7.45	0.728	0.33	-45.9	4.90	600
12:50	SAMPLE						

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-16A Date Sampled: 11/12/14

Previous Well Sampled: PZ-16

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No
Protector Pipe:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No
Well Cap:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No

Ambient Temperature: °F ☑ Clear ☐ Cloudy ☐ Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 4.30 (from TPVC)

Depth to Bottom: 57.80 (from TPVC)

Length of Water: 53.50

Free Product Observed: ☐ Yes ☑ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submerssible Typhoon Sampling Device: Submersable Typhoon

Volume Required: — ☑ See back of page for field readings during purge

Volume Purged: 4 gal

Could Well Bail Dry? ☐ Yes ☑ No ☑ Low Flow Technique

Purging - Time Start: 1305 Time Ended: 13:25

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: P2-16A Date: 11/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
13:05	8.66	7.78	0.570	3.37	-133.5	4.40	850
13:10	8.23	7.58	0.679	0.59	-162.6	4.40	300
13:15	7.51	7.55	0.685	0.37	-179.7	4.40	300
13:20	7.15	7.55	0.686	0.36	-181.9	4.40	300
13:25	6.97	7.54	0.686	0.45	-185.6	4.40	300
13:25	SAMPLE						

Sarah E Day

Comments: Dup collected

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: P2-16B Date Sampled: 11/12/14

Previous Well Sampled: P2-16A

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No
Protector Pipe:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No
Well Cap:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No

Ambient Temperature: °F ☒ Clear ☐ Cloudy ☐ Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 5.30 (from TPVC)

Depth to Bottom: 87.40 (from TPVC)

Length of Water: 82.10

Free Product Observed: ☐ Yes ☒ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — ☒ See back of page for field readings during purge

Volume Purged: 5gal

Could Well Bail Dry? ☐ Yes ☒ No ☒ Low Flow Technique

Purging - Time Start: 1345 Time Ended: 1425

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	☐
Metals -	☐	Hexchrome	☐
SVOC	☐	Alkalinity	☐
TOC	☐	Chloride	☐
Sulfide	☐	Ammonia	☐
Phenolics	☐	PAHs	☐

Well Purging Log

Well: P2-16B Date: 11/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1345	8.46	7.89	0.542	2.77	-208.5	6.80	470
1350	8.49	7.87	0.555	2.36	-209.8	6.90	470
1355	8.53	7.81	0.611	2.16	-214.5	6.80	470
1400	8.43	7.73	0.640	0.51	-210.1	6.37	470
1405	8.02	7.67	0.663	0.37	-192.1	6.03	470
1410	7.62	7.65	0.661	0.39	-190.1	6.03	480
1415	7.98	7.64	0.659	0.33	-173.0	6.03	470
1420	8.11	7.64	0.663	0.32	-157.4	6.03	470
1425	8.36	7.64	0.666	0.27	-159.4	6.03	470
1425	SAMPLE						

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-16C Date Sampled: 11/12/14

Previous Well Sampled: PZ-16B

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: °F [x] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 6.11 (from TPVC)

Depth to Bottom: 106.88 (from TPVC)

Length of Water: 100.77

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 10 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 14:45 Time Ended: 1520

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: P2-16C Date: 11/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1445	8.58	8.18	0.471	10.51	-149.6	6.60	600
1450	8.78	7.97	0.524	1.30	-121.5	6.40	600
1455	9.04	7.79	0.546	0.62	-86.4	6.40	600
1500	8.86	7.73	0.556	0.26	-83.2	6.40	600
1505	8.90	7.73	0.556	0.28	-74.8	6.40	600
1510	8.89	7.73	0.557	0.26	-73.5	6.40	600
1515	8.95	7.73	0.557	0.26	-77.0	6.40	600
1520	8.97	7.72	0.558	0.27	-71.8	6.40	600
1520	SAMPLE						

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-17 Date Sampled: 11/18/14

Previous Well Sampled: PZ-03

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 12 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 32.75 (from TPVC)

Depth to Bottom: 38.83 (from TPVC)

Length of Water: 6.08

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 4.5 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1100 Time Ended: 1125

Decon Method: Alconox & DI rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	[X]	Cyanide	[ ]
Metals -	[ ]	Hexchrome	[ ]
SVOC	[ ]	Alkalinity	[ ]
TOC	[ ]	Chloride	[ ]
Sulfide	[ ]	Ammonia	[ ]
Phenolics	[ ]	PAHs	[ ]

Well Purging Log

Well: WT-17 Date: 11/18/19

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1103	8.17	7.42	0.664	6.23	7.5	32.96	300
1108	8.33	7.09	0.669	5.87	19.7	32.96	300
1113	8.55	7.05	0.669	5.76	21.7	32.96	300
1116	8.89	7.05	0.672	5.59	20.9	32.96	300
1119	8.95	7.05	0.675	5.54	20.3	32.96	300
1122	9.16	7.06	0.675	5.73	22.0	32.96	300
1125	9.62	7.06	0.677	5.68	22.0	32.96	300
1125	SAMPLE						

Sarah E Day

Comments:

AECOM **Groundwater - Well Sampling Field Sheet**

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-18 Date Sampled: 11/18/14

Previous Well Sampled: WT-10

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 15 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 45.40 (from TPVC)

Depth to Bottom: 51.78 (from TPVC)

Length of Water: 6.38

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 4 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1335 Time Ended: 1400

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: YES

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: LOT - 18 Date: 11/18/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1338	9.03	11.14	1.313	0.47	-103.5	45.99	375
1341	9.26	10.10	1.359	0.20	-111.6	45.99	375
1344	9.43	11.10	1.371	0.23	-114.0	45.99	375
1347	9.60	11.05	1.358	0.21	-116.1	46.02	375
1350	9.85	10.35	1.331	0.20	-120.6	46.02	375
1353	10.00	10.61	1.307	0.20	-121.6	46.02	375
1356	9.81	10.41	1.295	0.17	-122.6	46.02	375
1359	10.00	10.37	1.271	0.18	-123.2	46.02	375
1400	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No.: _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-19 Date Sampled: 11/19/14

Previous Well Sampled: WT-02A

GENERAL CONDITIONS:

						If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 18 °F [ ] Clear [ ] Cloudy [X] ~~Rain~~ Snow

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 15.53 (from TPVC)

Depth to Bottom: 21.34 (from TPVC)

Length of Water: 5.81

Free Product Observed: [ ] Yes [X] No Thickness: ——

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Peristaltic Pump Sampling Device: Peristaltic Pump

Volume Required: _____ [X] See back of page for field readings during purge

Volume Purged: _____

Could Well Bail Dry? [ ] Yes [ ] No [X] Low Flow Technique

Purging - Time Start: _____ Time Ended: _____

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: _____

Odor: _____

Color: _____

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: MW-19 Date: 11/19/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
925	7.80	7.43	0.723	9.37	-65.5	15.53	250
930	8.54	7.22	0.735	0.77	-65.2	15.53	250
933	8.98	7.17	0.722	0.61	-60.5	15.53	250
936	9.36	7.13	0.726	0.44	-63.5	15.53	250
941	9.84	7.03	0.740	0.64	-62.7	15.53	250
944	9.69	7.00	0.750	0.47	-64.0	15.53	250
947	9.68	6.99	0.755	0.52	-65.1	15.53	250
950	SAMPLE						

Comments:

AECOM **Groundwater - Well Sampling Field Sheet**

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-20 Date Sampled: 11/12/14

Previous Well Sampled: WT-21

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: °F [x] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 3.91 (from TPVC)

Depth to Bottom: 14.42 (from TPVC)

Length of Water: 10.51

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: ~~Submerged~~ Submersable Typhoon Sampling Device: ~~Submerged~~ submersable Typhoon

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 5 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 10:15 Time Ended: 10:30

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: None

Odor: None

Color: Clear

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-20 Date: 11/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
10:15	10.49	7.50	0.576	2.02	76.4	4.20	900
10:20	10.28	7.33	0.565	1.49	53.5	4.18	600
10:26	10.08	7.24	0.563	1.50	59.5	4.15	500
10:30	9.95	7.22	0.565	1.23	57.8	4.15	750
10:30	SAMPLE						

Comments: Pump at lowest level possible

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-21 Date Sampled: 11/12/14

Previous Well Sampled: Start of Day

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 5.15 (from TPVC)

Depth to Bottom: 14.30 (from TPVC)

Length of Water: 9.15

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersible Typhoon Sampling Device: Submersible Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 8 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 920 Time Ended: 9:55

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: None

Odor: None

Color: Clear

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	[X]	Cyanide	[ ]
Metals -	[ ]	Hexchrome	[ ]
SVOC	[ ]	Alkalinity	[ ]
TOC	[ ]	Chloride	[ ]
Sulfide	[ ]	Ammonia	[ ]
Phenolics	[ ]	PAHs	[ ]

Well Purging Log

Well: WT-21 Date: 1/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
9:25	10.22	7.85	0.250	7.00 ~~62.4~~	140.7	5.50	600
9:35	10.25	7.80	0.248	6.58	66.5	5.50	300
9:40	10.10	7.79	0.246	5.51	64.4	5.50	300
9:45	10.67	7.81	0.245	5.81	83.8	5.50	300
9:50	10.51	7.83	0.246	5.94	95.9	5.50	300
9:53	10.59	7.86	0.245	5.68	104.9	5.50	300
955- SAMPLE							

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-22 Date Sampled: 11/12/14

Previous Well Sampled: WT-20

GENERAL CONDITIONS:

						If Missing Replaced?	
Surface Seal:	[x] Ok	[ ] Damaged		[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged		[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged		[ ] Missing:	Yes	No

Ambient Temperature: °F [x] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 5.02 (from TPVC)

Depth to Bottom: 14.09 (from TPVC)

Length of Water: 9.07

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 3.5 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 10:50 Time Ended: 11:05

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-22 Date: 11/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
10:50	10.55	7.66	0.432	6.96	100.0	5.15	525
10:55	10.94	7.58	0.423	6.62	86.4	5.15	450
11:00	11.01	7.55	0.418	6.51	78.4	5.10	450
11:05	11.02	7.54	0.415	6.34	77.8	5.10	450
11:05	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT 23 Date Sampled: 11/12/14

Previous Well Sampled: WT 22

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No
Protector Pipe:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No
Well Cap:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No

Ambient Temperature: °F ☒ Clear ☐ Cloudy ☐ Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 4.68 (from TPVC)

Depth to Bottom: 14.23 (from TPVC)

Length of Water: 9.55

Free Product Observed: ☐ Yes ☒ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — ☒ See back of page for field readings during purge

Volume Purged: 3.5 gal

Could Well Bail Dry? ☐ Yes ☒ No ☒ Low Flow Technique

Purging - Time Start: 11:25 Time Ended: 11:40

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-23 Date: 11/12/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
11:25	10.45	7.68	0.612	3.50	123.8	4.71	900
11:30	10.40	7.38	0.621	2.37	142.6	4.71	600
11:35	10.37	7.35	0.632	2.00	119.5	4.71	600
11:40	10.32	7.32	0.642	1.60	111.3	4.71	600
11:40 SAMPLE							

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-24 Date Sampled: 11/13/14

Previous Well Sampled: PZ-24C

GENERAL CONDITIONS:

					If Missing Replaced?	
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No	
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No	
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No	

Ambient Temperature: 19 °F [✓] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 5.80 (from TPVC)

Depth to Bottom: 16.59 (from TPVC)

Length of Water: 10.79

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Paristaltic Pump Sampling Device: Paristaltic Pump

Volume Required: — [✓] See back of page for field readings during purge

Volume Purged: 2.5

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 9:40 Time Ended: 1010

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

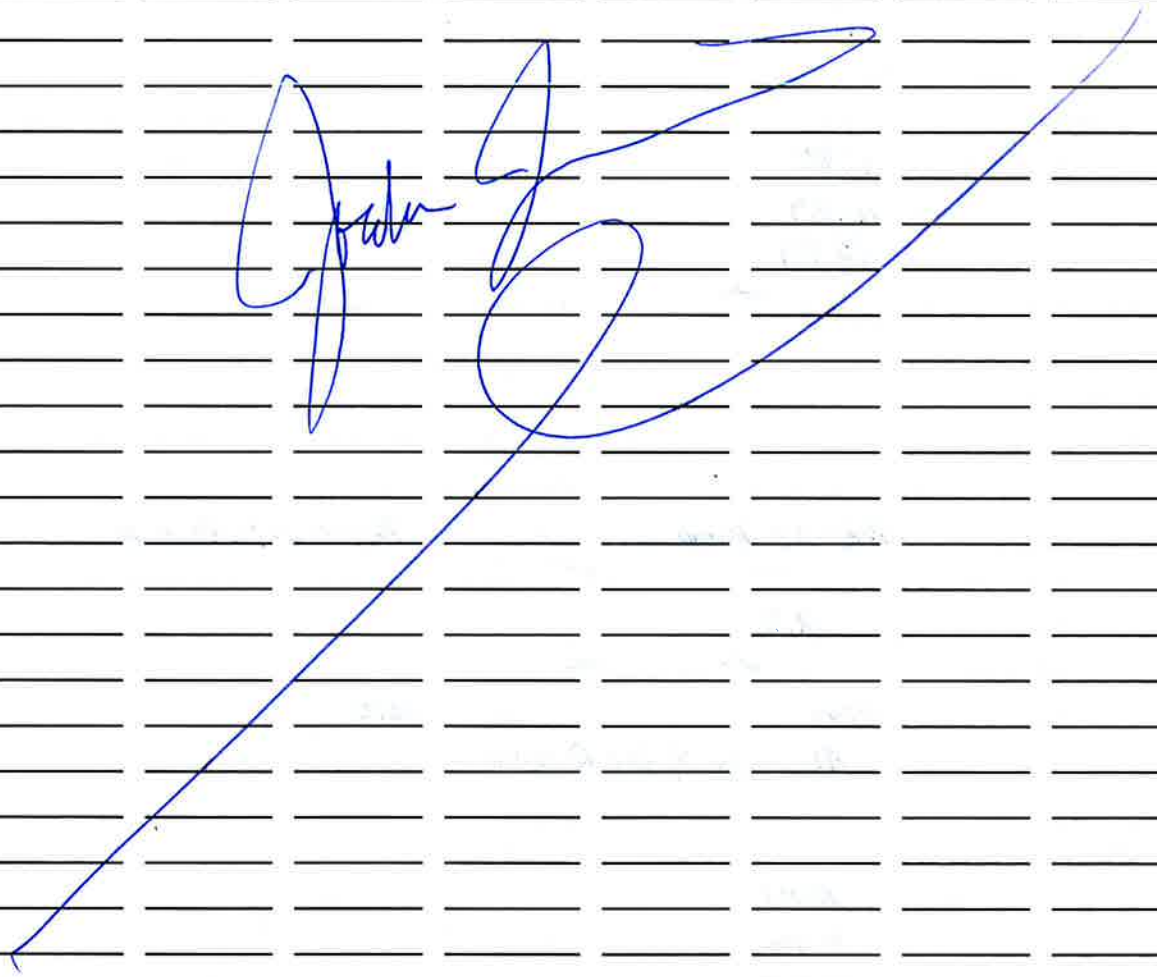
SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: LOT-24 Date: 11/14/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
945	8.25	7.17	0.854	7.25	160.1	7.70	300
950	8.20	7.07	0.859	7.55	155.2	8.33	150
955	8.14	7.04	0.858	6.68	128.5	8.75	150
958	8.10	7.03	0.860	6.55	119.5	9.29	150
1002	8.18	7.00	0.866	6.56	117.5	9.89	150
1005	8.25	7.02	0.869	6.59	167.0	10.20	150
1008	8.28	7.01	0.869	6.67	161.8	10.57	150
1010 - SAMPLE							



Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-24A Date Sampled: 11/14/14

Previous Well Sampled: PZ-24B

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[P] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[P] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[P] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 19 °F [ ] Clear [P] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 6.80 (from TPVC)

Depth to Bottom: 56.70 (from TPVC)

Length of Water: 49.90

Free Product Observed: [ ] Yes [P] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 7 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 11:25 Time Ended: 12:10

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

24

Well Purging Log

Well: PZ-24A Date: 11/14/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
11:25	7.98	7.84	0.646	3.51	177.7	7.90	600
11:28	8.50	7.66	0.666	0.88	63.4	7.90	600
11:31	8.65	7.59	0.672	0.50	7.3	7.90	600
11:35	8.76	7.48	0.670	0.27	-167.4	7.90	600
11:40	8.72	7.45	0.665	0.23	-296.8	7.90	600
11:45	8.73	7.44	0.662	0.24	-344.4	9.00	600
11:50	8.72	7.43	0.661	0.21	-267.2	9.00	600
11:53	8.66	7.44	0.661	0.23	-160.9	9.00	600
11:56	9.13	7.46	0.661	0.44	-365.3	9.90	600
11:59	9.01	7.46	0.662	0.25	-290.4	11.00	600
12:04	9.01	7.45	0.661	0.14	-303.6	11.00	600
12:07	9.00	7.45	0.662	0.15	-318.7	11.00	600
12:10	SAMPLE						

Sarah E Day

Comments: Duplicate collected

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-24B Date Sampled: 11/14/14

Previous Well Sampled:- WT-24

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 19 °F [ ] Clear [x] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 5.15 (from TPVC)

Depth to Bottom: 87.40 (from TPVC)

Length of Water: 82.25

Free Product Observed: [ ] Yes [x] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [x] See back of page for field readings during purge

Volume Purged: 5gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 1010 Time Ended: _____

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	[X]	Cyanide	[ ]
Metals -	[ ]	Hexchrome	[ ]
SVOC	[ ]	Alkalinity	[ ]
TOC	[ ]	Chloride	[ ]
Sulfide	[ ]	Ammonia	[ ]
Phenolics	[ ]	PAHs	[ ]

Well Purging Log

Well: PZ-24B Date: 11/14/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1015	8.13	7.51	0.649	2.33	-271.7	7.75	300
1018	7.94	7.56	0.651	2.45	-376.3	8.55	300
1023	8.78	7.56	0.645	0.49	-484.2	11.60	300
1027	8.75	7.56	0.648	0.42	-468.5	11.60	300
1030	8.69	7.57	0.649	0.40	-499.8	11.72	300
1034	8.64	7.57	0.647	0.34	-485.9	11.80	300
1037	8.56	7.57	0.646	0.29	-502.6	11.80	300
1041	8.53	7.58	0.644	0.32	-599.7	11.90	300
1045	8.55	7.58	0.642	0.29	-421.8	11.90	300
1050	8.56	7.58	0.640	0.57	-510.8	11.98	300
1055	8.51	7.58	0.640	0.39	-492.6	11.98	300
1058	8.53	7.58	0.639	0.33	-492.6	11.90	300
1100	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-24C Date Sampled: 11/14/14

Previous Well Sampled: Start of Day

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[x] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 19 °F [ ] Clear [x] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 6.68 (from TPVC)

Depth to Bottom: 123.60 (from TPVC)

Length of Water: 116.92

Free Product Observed: [ ] Yes [x] No Thickness: ——

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typoon Sampling Device: Submersable Typhoon

Volume Required: —— [x] See back of page for field readings during purge

Volume Purged: 6 gal

Could Well Bail Dry? [ ] Yes [x] No [x] Low Flow Technique

Purging - Time Start: 9:05 Time Ended: 9:45

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-24C Date: 11/14/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
915	8.45	7.86	0.513	1.19	-289.4	SD 7.17	450
920	8.68	7.70	0.516	0.61	-310.4	7.17	450
925	8.82	7.60	0.519	0.33	-346.7	7.17	450
930	8.88	7.60	0.520	0.31	-366.3	7.17	450
935	8.84	7.60	0.521	0.27	-431.1	7.17	450
940	8.78	7.60	0.522	0.27	-435.6	7.17	450
945	8.71	7.61	0.523	0.27	-430.2	7.17	450
9:45 SAMPLE							

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT-25 Date Sampled: 11/14/14

Previous Well Sampled: PZ-25A

GENERAL CONDITIONS:

						If Missing Replaced?
Surface Seal:	X	Ok		Damaged		Missing: Yes No
Protector Pipe:	X	Ok		Damaged		Missing: Yes No
Well Cap:	X	Ok		Damaged		Missing: Yes No

Ambient Temperature: 27 °F [ ] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 9.20 (from TPVC)

Depth to Bottom: 21.99 (from TPVC)

Length of Water: 12.79

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 6

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1500 Time Ended: 1525

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: WT-25 Date: 11/14/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
15:02	8.74	7.69	0.728	1.57	-54.9	8.30	900
15:05	9.26	7.59	0.729	0.81	-80.4	8.30	600
15:08	9.28	7.56	0.732	0.40	-100.9	8.30	600
15:11	9.25	7.55	0.735	0.26	-115.6	8.30	600
1515	9.34	7.54	0.733	0.22	-121.5	8.30	600
1518	9.34	7.54	0.734	0.18	-124.1	8.30	600
1522	9.36	7.53	0.734	0.18	-125.1	8.30	600
1525	SAMPLE						

Sarah E Daly

Comments: Duplicate collected

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-25A Date Sampled: 11/14/14

Previous Well Sampled: PZ-25B

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 27 °F [ ] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 9.90 (from TPVC)

Depth to Bottom: 67.50 (from TPVC)

Length of Water: 57.60

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 4 gal

Could Well Bail Dry? [ ] Yes [ ] No [X] Low Flow Technique

Purging - Time Start: SD 1415 Time Ended: 1445

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: ~~AS~~ CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-25A Date: 11/14/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1420	8.45	7.87	0.618	0.48	-455.2	13.60	300
1425	8.17	7.89	0.615	0.19	-425.7	14.30	300
1430	8.36	7.81	0.614	0.21	-481.2	17.85	300
1435	8.49	7.81	0.610	0.20	-443.9	17.85	300
1440	8.27	7.80	0.615	0.17	-447.0	20.30	300
1445	8.66	7.80	0.613	0.19	-445.7	24.30	300
1445	SAMPLE						

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-25B Date Sampled: 11/14/14

Previous Well Sampled: PZ-25C

GENERAL CONDITIONS:

						If Missing Replaced?
Surface Seal:	✓ Ok		Damaged		Missing:	Yes / No
Protector Pipe:	✓ Ok		Damaged		Missing:	Yes / No
Well Cap:	✓ Ok		Damaged		Missing:	Yes / No

Ambient Temperature: 27 °F ☐ Clear ✓ Cloudy ☐ Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 10.90 (from TPVC)

Depth to Bottom: 97.32 (from TPVC)

Length of Water: 86.42

Free Product Observed: ☐ Yes ✓ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — ✓ See back of page for field readings during purge

Volume Purged: 5 gal

Could Well Bail Dry? ☐ Yes ✓ No ✓ Low Flow Technique

Purging - Time Start: 1325 Time Ended: 1400

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-25 B Date: 11/14/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1326	7.82	8.15	0.419	1.02	-435.2 ~~28~~ 430	11.80	600
1330	7.84	8.19	0.418	0.77	-469.8	11.80	600
1333	7.37	8.21	0.422	0.73	-480.8	12.80	600
1338	8.32	8.21	0.409	0.42	-428.7	17.84	225
1343	8.46	8.25	0.405	0.26	-506.8	17.84	225
1348	8.21	8.21	0.403	0.24	-495.9	20.52	225
1351	8.25	8.21	0.404	0.17	-456.3	21.20	225
1354	8.22	8.21	0.405	0.17	-415.2	23.40	450
1357	8.66	8.19	0.404	0.17	-397.7	23.40	450
1400	8.60	8.19	0.406	0.15	-411.5	24.38	450
1400	SAMPLE						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-25C Date Sampled: 11/14/14

Previous Well Sampled: PZ-24A

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes	No

Ambient Temperature: 27 °F [X] Clear [X] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 17.43 (from TPVC)

Depth to Bottom: 117.70 (from TPVC)

Length of Water: 110.33

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 8 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 1230 Time Ended: 1310

Decon Method: Alconox, DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	[X]	Cyanide	[ ]
Metals -	[ ]	Hexchrome	[ ]
SVOC	[ ]	Alkalinity	[ ]
TOC	[ ]	Chloride	[ ]
Sulfide	[ ]	Ammonia	[ ]
Phenolics	[ ]	PAHs	[ ]

Well Purging Log

Well: PZ-25C Date: 11/14/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1235	8.43	7.65	0.727	5.62	-370.7	18.30	700
1240	8.56	7.51	0.723	0.92	-507.2	18.30	600
1248	8.21	8.76	0.688	0.86	-467.6	18.30	600
1251	8.69	7.97	0.701	0.45	-482.0	18.30	600
1254	8.79	7.78	0.704	0.45	-481.8	18.30	600
1257	8.75	7.64	0.711	0.31	-475.6	18.30	600
1300	8.84	7.58	0.717	0.31	-476.9	18.30	600
1303	8.81	7.55	0.720	0.40	-479.7	18.30	600
1306	8.77	7.53	0.722	0.28	-485.7	18.30	600
1310	SAMPLE						

Sarah EDay

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: WT - 26 Date Sampled: 11/13/14

Previous Well Sampled: PZ - 26C

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No
Protector Pipe:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No
Well Cap:	☒ Ok	☐ Damaged	☐ Missing:	Yes	No

Ambient Temperature: 27 °F ☒ Clear ☐ Cloudy ☐ Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 24.01 (from TPVC)

Depth to Bottom: 36.21 (from TPVC)

Length of Water: 12.20

Free Product Observed: ☐ Yes ☒ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: peristaltic pump Sampling Device: peristaltic pump

Volume Required: — ☒ See back of page for field readings during purge

Volume Purged: 1.5 gal

Could Well Bail Dry? ☐ Yes ☒ No ☒ Low Flow Technique

Purging - Time Start: 1100 Time Ended: 1135

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Comments: used peristaltic pump for lower purge rate

Well Purging Log

Well: WT26 Date: 11/13/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1105	7.49	7.39	0.887	4.99	-71.9	25.54	100
1110	7.18	7.39	0.888	4.53	-71.1	25.98	100
1115	6.88	7.34	0.889	4.44	-72.6	26.48	100
1125	6.97	7.35	0.887	4.21	-72.8	26.78	100
1130	6.90	7.33	0.887	4.22	-73.0	26.92	100
1135	6.95	7.32	0.885	4.21	-73.3	26.92	100
1135	SAMPLED						

Sarah E Day

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-26A Date Sampled: _____

Previous Well Sampled: PZ-26B

GENERAL CONDITIONS:

						If Missing Replaced?
Surface Seal:	☑ Ok	☐ Damaged	☐	Missing:	Yes	No
Protector Pipe:	☑ Ok	☐ Damaged	☐	Missing:	Yes	No
Well Cap:	☑ Ok	☐ Damaged	☐	Missing:	Yes	No

Ambient Temperature: 28 °F ☑ Clear ☑ Cloudy ☐ Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 25.01 (from TPVC)

Depth to Bottom: 77.90 (from TPVC)

Length of Water: 52.89

Free Product Observed: ☐ Yes ☑ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submerssable Typhoon

Volume Required: — ☑ See back of page for field readings during purge

Volume Purged: 8 gal

Could Well Bail Dry? ☐ Yes ☑ No ☑ Low Flow Technique

Purging - Time Start: 1235 Time Ended: 13:25

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-26A Date: 11/13/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1248	8.82	7.65	0.556	0.86	-281.7	26.06	450
1245	8.90	7.59	0.560	0.54	-316.7	26.06	450
1250	8.95	7.52	0.565	0.42	-298.4	26.06	450
1255	9.35	7.50	0.571	0.25	-325.5	26.06	450
1300	9.22	7.51	0.578	0.24	-327.2	26.06	450
1305	9.23	7.51	0.583	0.19	-353.9	26.06	450
1315	9.20	7.54	~~0.580~~ 0.587	0.21	-356.5	26.06	450
1320	9.26	7.54	0.586	0.17	-359.8	26.06	450
1325	9.46	7.55	0.588	0.16	-372.8	26.06	450
1325	SAMPLE						

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-26B Date Sampled: 11/13/14

Previous Well Sampled: WT-26

GENERAL CONDITIONS:

					If Missing Replaced?
Surface Seal:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No
Protector Pipe:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No
Well Cap:	☑ Ok	☐ Damaged	☐ Missing:	Yes	No

Ambient Temperature: 28 °F ☑ Clear ☐ Cloudy ☐ Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 25.53 (from TPVC)

Depth to Bottom: 108.11 (from TPVC)

Length of Water: 82.58

Free Product Observed: ☐ Yes ☑ No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — ☑ See back of page for field readings during purge

Volume Purged: 4.5 gal

Could Well Bail Dry? ☐ Yes ☑ No ☑ Low Flow Technique

Purging - Time Start: 1135 Time Ended: 1220

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-26B Date: 11/13/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1140	8.34	7.71	1.308	2.01	-180.2	28.18	225
1145	8.33	7.77	1.335	1.16	-221.7	28.18	225
1150	8.09	7.75	1.333	0.75	-233.9	28.18	225
1155	8.59	7.75	1.301	0.63	-240.6	28.78	450
1200	8.83	7.75	1.284	0.63	-234.3	28.78	450
1205	8.66	7.73	1.246	0.43	-265.3	29.29	450
1210	8.74	7.72	1.223	0.35	-273.3	29.29	450
1215	8.90	7.72	1.171	0.32	-281.78	29.50	450
1220	8.67	7.72	1.142	0.27	-286.6	29.45	450
1220	SAMPLE						

Comments:

AECOM

Groundwater - Well Sampling Field Sheet

Fill out the entire form. If it does not apply, mark N/A.

Project Name: Former Newton Gravel Pit Job No. _____

Location: Manitowoc, WI Tester: JRJ

Well Number: PZ-26C Date Sampled: 11/13/14

Previous Well Sampled: PZ-01

GENERAL CONDITIONS:

				If Missing Replaced?
Surface Seal:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes No
Protector Pipe:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes No
Well Cap:	[X] Ok	[ ] Damaged	[ ] Missing:	Yes No

Ambient Temperature: 25 °F [X] Clear [ ] Cloudy [ ] Rain

WELL DATA:

Measuring Device: Heron Dipper T

Stick Up or Down: Stick Up (from Ground Surface)

Depth to Water: 34.75 (from TPVC)

Depth to Bottom: 147.10 (from TPVC)

Length of Water: 112.35

Free Product Observed: [ ] Yes [X] No Thickness: —

PURGING/SAMPLING:

Well Purging Calculations: Amount to purge = 0.163 gallons/foot times height of water column in feet for one well volume in a 2-inch monitoring well.

Purging Device: Submersable Typhoon Sampling Device: Submersable Typhoon

Volume Required: — [X] See back of page for field readings during purge

Volume Purged: 7 gal

Could Well Bail Dry? [ ] Yes [X] No [X] Low Flow Technique

Purging - Time Start: 10:20 Time Ended: 1100

Decon Method: Alconox & DI Rinse

IN-SITU TESTING:

Turbidity: NONE

Odor: NONE

Color: CLEAR

pH: _____

Specific Conductivity: _____

Water Temperature: _____

Comments: _____

SAMPLES COLLECTED

VOCs -	X	Cyanide	
Metals -		Hexchrome	
SVOC		Alkalinity	
TOC		Chloride	
Sulfide		Ammonia	
Phenolics		PAHs	

Well Purging Log

Well: PZ-26C Date: 11/13/14

Time	Temp (°C)	pH (units)	Conductivity (ms/cm)	DO (mg/L)	ORP (units)	Depth to Water (ft. btoc)	Purging Rate (ml/min)
1025	7.99	8.18	0.467	20.08	-116.9	35.53	300
1030	7.63	8.07	0.499	3.45	-120.2	35.53	300
1035	7.83	7.94	0.513	2.21	-115.0	35.35	600
1040	8.65	7.81	0.509	1.16	-119.2	35.35	600
1045	9.11	7.74	0.517	0.54	-117.3	35.88	600
1050	9.10	7.73	0.528	0.37	-123.2	35.88	600
1055	9.05	7.72	0.530	0.30	-127.1	35.75	600
1100	9.12	7.72	0.531	0.25	-132.6	35.75	600
1100	SAMPLE						

Sarah E Day

Comments:

Attachment C:

Horizontal & Vertical Gradient Calculations

AECOM

JOB TITLE FORMER NEWTON GRAVEL PIT
JOB NO. _____ CALCULATION NO. _____
ORIGINATOR JDM DATE 12/1/2014
REVIEWER _____ DATE _____
SCALE _____ SHEET NO. 1 OF 6

Horizontal groundwater gradient and average linear groundwater velocity (November 2014 data):

WATER TABLE:

Horizontal Groundwater gradient

$$I_h = \Delta h_h / \Delta l_h$$

Where,

I_h = horizontal hydraulic gradient

Δh_h = difference in water table elevation between the 689-foot and 683-foot water table contour (between western source area and Silver Creek) shown on November 2014 Water Table Map

Δl_h = length (distance) between 689-foot and 683-foot water table contour along flow line shown between western source area and Silver Creek.

$$I_h = \frac{689\text{ ft} - 683\text{ ft}}{1110\text{ ft}} = \frac{6\text{ ft}}{1110\text{ ft}} = 0.005\text{ ft/ft}$$

Δh_h = difference in water table elevation between the 683-foot and 680-foot water table contour (east of local flow system divide) shown on November 2014 Water Table Map

Δl_h = length (distance) between 683-foot and 680-foot water table contour along flow line shown between divide at approximately WT-20 and Silver Creek to the southeast.

$$I_h = \frac{683\text{ ft} - 680\text{ ft}}{660\text{ ft}} = 0.0045\text{ ft/ft}$$

Grid: 4x4 = 1 in

AECOM

JOB TITLE _____

JOB NO. _____ CALCULATION NO. _____

ORIGINATOR _____ DATE _____

REVIEWER _____ DATE _____

SCALE _____ SHEET NO. 2 OF 6

Average linear groundwater velocity

$$V = K I_h / n_e$$

Where,

V = average linear velocity

K = 2.5×10^{-3} cm/s (geometric mean for water table wells presented in June 1996 Site Investigation report and discussed in June 2009 Site Investigation Update and Remedial Action Plan).

I_h = 0.005 ft/ft as calculated above

n_e = 0.25 (estimated based on literature values)

$$V = \frac{(2.5 \times 10^{-3} \text{ cm/s} \times 0.005 \text{ ft/ft})}{0.25}$$

$$= \frac{(2.5 \times 10^{-3} \text{ cm/s} \times \frac{1 \text{ ft}}{30.48 \text{ cm}} \times \frac{60 \text{ s}}{1 \text{ m}} \times \frac{60 \text{ m}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{1 \text{ day}} \times 0.005 \text{ ft/ft})}{0.25}$$

$$= 1.4 \times 10^{-1} \text{ ft/day}$$

$$= \sim 52 \text{ ft/year}$$

Grid: 4x4 = 1 in

WITHIN SAND & GRAVEL AT APPROXIMATE 630 ft MSL BETWEEN WESTERN SOURCE AREA PZ-25A:

Horizontal groundwater gradient

$$I_h = \Delta h_h / \Delta l_h$$

Where, I_h = horizontal hydraulic gradient

Δh_h = difference in groundwater elevation between the 688-foot and 680-foot piezometric surface contour as shown on November 2014 "630" piezometric surface map

Δl_h = length (distance) between 688-foot and 680-foot piezometric surface contour along flow line shown

$$I_h = \frac{688\ ft - 680\ ft}{2460\ ft} = 0.003\ ft/ft$$

Average linear groundwater velocity

$$V = KI_h / n_e$$

Where, V = average linear velocity

K = 2.5×10^{-3} cm/s (consistent with geometric mean for water table wells (sand & gravel))

I_h = 0.003 ft/ft

n_e = 0.25 (estimated based on literature values)

$$V = \frac{(2.5 \times 10^{-3}\ cm/s)(0.003\ ft/ft)}{0.25}$$

$$= \frac{(2.5 \times 10^{-3}\ cm/s)\left(\frac{1\ ft}{30.48\ cm}\right)\left(\frac{60\ s}{1\ m}\right)\left(\frac{60\ m}{1\ hr}\right)\left(\frac{24\ hr}{1\ day}\right)(0.003\ ft/ft)}{0.25}$$

Grid: 4x4 = 1 in

$= 8.5 \times 10^{-2}$ ft/day

$= \sim 31$ ft/year

AT APPROXIMATE 600 ft MSL BETWEEN PZ-16B AND PZ-25B (PRIMARILY WITHIN CLAY):

Horizontal hydraulic gradient

Δh_h = difference in groundwater elevation between the 682-foot and 678-foot piezometric surface contour as shown on November 2014 "600" piezometric surface map

Δl_h = length (distance) between 682-foot and 678-foot piezometric surface contour along flow line shown

$$I_h = \frac{682 \text{ ft} - 678 \text{ ft}}{1020 \text{ ft}} = 0.004 \text{ ft/ft}$$

Average linear groundwater velocity

$$V = K I_h / n_e$$

Where, V = average linear velocity

K = 10^{-5} cm/s (conservative (high) estimate for clay till as described on boring logs for PZ-16B and PZ-25B

n_e = 0.40 (estimated based on literature values)

$$V = \frac{(1 \times 10^{-5} \text{ cm/s})(0.004 \text{ ft/ft})}{0.40}$$

$$= \frac{(1 \times 10^{-5} \text{ cm/s})\left(\frac{1 \text{ ft}}{30.48 \text{ cm}}\right)\left(\frac{60 \text{ s}}{1 \text{ m}}\right)\left(\frac{60 \text{ m}}{1 \text{ hr}}\right)\left(\frac{24 \text{ hr}}{1 \text{ day}}\right)(0.004 \text{ ft/ft})}{0.40}$$

$= 2.8 \times 10^{-4}$ ft/day

$= 0.1$ ft/year

⇒ clay till not a pathway / very slow linear gw velocity

WITHIN SILURIAN BEDROCK EAST OF PZ-16C:

Horizontal hydraulic gradient.

Δh_h = difference in groundwater elevation between the 681-foot and 672-foot piezometric surface contour as shown on November 2014 bedrock piezometric surface map

Δl_h = length (distance) between 681-foot and 672-foot piezometric surface contour along flow line shown

$$I_h = \frac{681 \text{ ft} - 672 \text{ ft}}{690 \text{ ft}} = 0.013 \text{ ft/ft}$$

Average linear groundwater velocity:

$$V = K I_h / n_e$$

where, V = average linear velocity

$K = 10^{-4}$ cm/s (conservative (high) estimate for dolomite based on literature values)

$n_e = 0.20$ (estimated for limestone/dolomite (0-20%) based on literature values)

AECOM

JOB TITLE _____

JOB NO. _____ CALCULATION NO. _____

ORIGINATOR _____ DATE _____

REVIEWER _____ DATE _____

SCALE _____ SHEET NO. 6 OF 6

$$V = \frac{(1 \times 10^{-4} \text{ cm/s})(0.013 \text{ ft/ft})}{0.20}$$

$$V = \frac{\left(1 \times 10^{-4} \frac{\text{cm}}{\text{s}}\right)\left(\frac{1 \text{ ft}}{30.48 \text{ cm}}\right)\left(\frac{60 \text{ s}}{1 \text{ m}}\right)\left(\frac{60 \text{ m}}{1 \text{ hr}}\right)\left(\frac{24 \text{ hr}}{1 \text{ day}}\right)(0.013 \text{ ft/ft})}{0.20}$$

$= 1.8 \times 10^{-2}$ ft/day

$= 6.7$ ft/year (does not account for fracture flow, or bedding planes, etc.)

Grid: 4x4 = 1 in

AECOM

CALCULATION SHEET

Client	City of Manitowoc	**Subject**	Vertical		
Project	Newton Gravel Pit		Groundwater Gradient	**Prepared By** JRJ	**Date** 04/04/15
				Reviewed By dsh	**Date** 4/15/15
				Approved By	**Date**

VERTICAL GROUNDWATER GRADIENT

Objective

Calculate the vertical groundwater gradient at piezometer nest locations.

Design Criteria and Assumptions

1. Piezometric elevations measured October 2013.

2. Vertical distance between two piezometers at a location is the difference between the screen elevations for each piezometer.

3. For piezometers in which the piezometric elevation occurs within the screened interval, the piezometric elevation is the screen elevation. For piezometers in which the piezometric elevation occurs above the screen interval, the midpoint elevation of the screen is the screen elevation.

Calculations

$$I_v = \Delta h_v / \left| \Delta L_v \right|$$

Where:

I_v	=	Vertical groundwater gradient
Δh_v	=	Difference in piezometric elevation between nested piezometers
ΔL_v	=	Difference in screen elevation between nested piezometers

Conclusions

Calculated vertical groundwater gradients:

AECOM

CALCULATION SHEET

Client City of Manitowoc **Subject** Vertical
Project Newton Gravel Pit Groundwater Gradient

Prepared By JRJ **Date** 04/04/15
Reviewed By dsh **Date** 4/15/15
Approved By **Date**

November 2014

Piezometer	Piezometric Elevation (feet MSL)	Screen Elevation (feet MSL)	Vertical Groundwater Gradient (feet/foot)	
WT-01	688.27	688.27		
PZ-01	688.09	624.7	0.0028	Down
WT-03	685.4	685.4		
PZ-03	686.68	621.9	0.0202	Up
WT-05	685.4	677.1		
PZ-05A	684.75	649.9	0.0239	Down
WT-05	685.4	672		
PZ-05B	685.37	629.6	0.0007	Down
PZ-05A	684.78	649.9		
PZ-05B	685.37	629.6	0.0291	Up
WT-12	683.98	682.9		
PZ-12	683.71	662.8	0.0134	Down
WT-15	683.85	683.85		
PZ-15A	684.07	661.6	0.0099	Up
WT-15	683.85	683.85		
PZ-15B	684.2	652.1	0.0110	Up
PZ-15A	684.07	661.6		
PZ-15B	684.2	652.1	0.0137	Up
WT-16	683.26	683.26		
PZ-16	683.36	664	0.0052	Up
WT-16	683.26	683.26		
PZ-16A	683.11	634.72	0.0031	Down
WT-16	683.26	683.26		
PZ-16B	682.11	605.13	0.0147	Down
WT-16	683.26	683.26		
PZ-16C	681.57	585.69	0.0173	Down
WT-24	682.64	681.94		
PZ-24A	681.68	636.8	0.0213	Down
WT-24	682.64	681.94		
PZ-24B	681.88	606.2	0.0100	Down
WT-24	682.64	681.94		
PZ-24C	681.53	569.9	0.0099	Down

AECOM

CALCULATION SHEET

Client City of Manitowoc **Subject** Vertical
Project Newton Gravel Pit Groundwater Gradient

Prepared By JRJ **Date** 04/04/15
Reviewed By dsh **Date** 4/15/15
Approved By **Date**

Piezometer	Piezometric Elevation (feet MSL)	Screen Elevation (feet MSL)	Vertical Groundwater Gradient (feet/foot)
WT-25	680.66	676.87	
PZ-25A	678.55	626.2	0.0416 Down
WT-25	680.66	676.87	
PZ-25B	677.68	596.4	0.0370 Down
WT-25	680.66	676.87	
PZ-25C	671.44	575.9	0.0913 Down
WT-26	682.47	680.4	
PZ-26A	681.98	634.2	0.0106 Down
WT-26	682.47	680.4	
PZ-26B	681.9	604.1	0.0075 Down
WT-26	682.47	680.4	
PZ-26C	671.78	564.5	0.0922 Down

Attachment D:

Laboratory Sample Results

Synergy Environmental Lab, INC.

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

DAVE HENDERSON
AECOM
1555 N RIVER CENTER DRIVE
MILWAUKEE, WI 53212

Report Date *20-Nov-14*

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073A
Sample ID WT-21
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/18/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/18/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/18/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/18/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/18/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/18/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/18/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/18/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/18/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/18/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/18/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/18/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/18/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073A
Sample ID WT-21
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/18/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/18/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/18/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/18/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/18/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/18/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/18/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/18/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/18/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/18/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/18/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/18/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/18/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
SUR - Toluene-d8	108	REC %			1	8260B		11/18/2014	CJR	1
SUR - Dibromofluoromethane	95	REC %			1	8260B		11/18/2014	CJR	1
SUR - 4-Bromofluorobenzene	93	REC %			1	8260B		11/18/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	89	REC %			1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073B
Sample ID WT-20
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/18/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/18/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/18/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/18/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/18/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/18/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/18/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/18/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/18/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/18/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/18/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/18/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/18/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/18/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/18/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/18/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/18/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/18/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/18/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/18/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/18/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/18/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/18/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/18/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/18/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/18/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	102	REC %			1	8260B		11/18/2014	CJR	1
SUR - 4-Bromofluorobenzene	103	REC %			1	8260B		11/18/2014	CJR	1
SUR - Dibromofluoromethane	100	REC %			1	8260B		11/18/2014	CJR	1
SUR - Toluene-d8	95	REC %			1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073C
Sample ID WT-22
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/18/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/18/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/18/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/18/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/18/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/18/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/18/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/18/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/18/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/18/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/18/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/18/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/18/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/18/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/18/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/18/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/18/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/18/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/18/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/18/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/18/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/18/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/18/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/18/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/18/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/18/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	101	REC %			1	8260B		11/18/2014	CJR	1
SUR - Toluene-d8	105	REC %			1	8260B		11/18/2014	CJR	1
SUR - 4-Bromofluorobenzene	119	REC %			1	8260B		11/18/2014	CJR	1
SUR - Dibromofluoromethane	100	REC %			1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073D
Sample ID WT-23
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/18/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/18/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/18/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/18/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/18/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/18/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/18/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/18/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/18/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/18/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/18/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/18/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/18/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/18/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/18/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/18/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/18/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/18/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/18/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/18/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/18/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/18/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/18/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/18/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/18/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/18/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	89	REC %			1	8260B		11/18/2014	CJR	1
SUR - 4-Bromofluorobenzene	102	REC %			1	8260B		11/18/2014	CJR	1
SUR - Dibromofluoromethane	89	REC %			1	8260B		11/18/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073E
Sample ID WT-16
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	30 "J"	ug/l	12	38.5	50	8260B		11/17/2014	CJR	1
Bromobenzene	< 16	ug/l	16	50	50	8260B		11/17/2014	CJR	1
Bromodichloromethane	< 18.5	ug/l	18.5	60	50	8260B		11/17/2014	CJR	1
Bromoform	< 17.5	ug/l	17.5	55	50	8260B		11/17/2014	CJR	1
tert-Butylbenzene	< 18	ug/l	18	60	50	8260B		11/17/2014	CJR	1
sec-Butylbenzene	< 16.5	ug/l	16.5	50	50	8260B		11/17/2014	CJR	1
n-Butylbenzene	< 17.5	ug/l	17.5	55	50	8260B		11/17/2014	CJR	1
Carbon Tetrachloride	< 16.5	ug/l	16.5	55	50	8260B		11/17/2014	CJR	1
Chlorobenzene	< 12	ug/l	12	38.5	50	8260B		11/17/2014	CJR	1
Chloroethane	< 31.5	ug/l	31.5	100	50	8260B		11/17/2014	CJR	1
Chloroform	< 14	ug/l	14	44	50	8260B		11/17/2014	CJR	1
Chloromethane	< 40.5	ug/l	40.5	130	50	8260B		11/17/2014	CJR	1
2-Chlorotoluene	< 10.5	ug/l	10.5	33	50	8260B		11/17/2014	CJR	1
4-Chlorotoluene	< 10.5	ug/l	10.5	34	50	8260B		11/17/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 44	ug/l	44	140	50	8260B		11/17/2014	CJR	3
Dibromochloromethane	< 11	ug/l	11	35	50	8260B		11/17/2014	CJR	1
1,4-Dichlorobenzene	< 15	ug/l	15	48	50	8260B		11/17/2014	CJR	1
1,3-Dichlorobenzene	< 14	ug/l	14	44.5	50	8260B		11/17/2014	CJR	1
1,2-Dichlorobenzene	< 18	ug/l	18	60	50	8260B		11/17/2014	CJR	2
Dichlorodifluoromethane	< 22	ug/l	22	70	50	8260B		11/17/2014	CJR	1
1,2-Dichloroethane	< 20.5	ug/l	20.5	65	50	8260B		11/17/2014	CJR	1
1,1-Dichloroethane	< 15	ug/l	15	48.5	50	8260B		11/17/2014	CJR	1
1,1-Dichloroethene	< 20	ug/l	20	65	50	8260B		11/17/2014	CJR	1
cis-1,2-Dichloroethene	1540	ug/l	19	60	50	8260B		11/17/2014	CJR	1
trans-1,2-Dichloroethene	< 17.5	ug/l	17.5	55	50	8260B		11/17/2014	CJR	1
1,2-Dichloropropane	< 16	ug/l	16	50	50	8260B		11/17/2014	CJR	1
2,2-Dichloropropane	< 18	ug/l	18	60	50	8260B		11/17/2014	CJR	1
1,3-Dichloropropane	< 16.5	ug/l	16.5	50	50	8260B		11/17/2014	CJR	1
Di-isopropyl ether	< 11.5	ug/l	11.5	36.5	50	8260B		11/17/2014	CJR	1
EDB (1,2-Dibromoethane)	< 22	ug/l	22	70	50	8260B		11/17/2014	CJR	1
Ethylbenzene	< 27.5	ug/l	27.5	85	50	8260B		11/17/2014	CJR	1
Hexachlorobutadiene	< 75	ug/l	75	240	50	8260B		11/17/2014	CJR	1
Isopropylbenzene	< 15	ug/l	15	48	50	8260B		11/17/2014	CJR	1
p-Isopropyltoluene	< 15.5	ug/l	15.5	49	50	8260B		11/17/2014	CJR	1
Methylene chloride	< 25	ug/l	25	80	50	8260B		11/17/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 11.5	ug/l	11.5	37	50	8260B		11/17/2014	CJR	1
Naphthalene	< 85	ug/l	85	275	50	8260B		11/17/2014	CJR	3
n-Propylbenzene	< 12.5	ug/l	12.5	40.5	50	8260B		11/17/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 22.5	ug/l	22.5	70	50	8260B		11/17/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 16.5	ug/l	16.5	55	50	8260B		11/17/2014	CJR	1
Tetrachloroethene	< 16.5	ug/l	16.5	55	50	8260B		11/17/2014	CJR	1
Toluene	< 34.5	ug/l	34.5	110	50	8260B		11/17/2014	CJR	1
1,2,4-Trichlorobenzene	< 49	ug/l	49	155	50	8260B		11/17/2014	CJR	3
1,2,3-Trichlorobenzene	< 90	ug/l	90	290	50	8260B		11/17/2014	CJR	3
1,1,1-Trichloroethane	< 16.5	ug/l	16.5	50	50	8260B		11/17/2014	CJR	1
1,1,2-Trichloroethane	< 17	ug/l	17	55	50	8260B		11/17/2014	CJR	1
Trichloroethene (TCE)	17 "J"	ug/l	16.5	50	50	8260B		11/17/2014	CJR	1
Trichlorofluoromethane	< 35.5	ug/l	35.5	115	50	8260B		11/17/2014	CJR	1
1,2,4-Trimethylbenzene	< 110	ug/l	110	345	50	8260B		11/17/2014	CJR	1
1,3,5-Trimethylbenzene	< 70	ug/l	70	225	50	8260B		11/17/2014	CJR	1
Vinyl Chloride	1460	ug/l	9	28.5	50	8260B		11/17/2014	CJR	1
m&p-Xylene	< 34.5	ug/l	34.5	110	50	8260B		11/17/2014	CJR	1
o-Xylene	< 31.5	ug/l	31.5	100	50	8260B		11/17/2014	CJR	1
SUR - Toluene-d8	102	REC %			50	8260B		11/17/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	90	REC %			50	8260B		11/17/2014	CJR	1
SUR - 4-Bromofluorobenzene	119	REC %			50	8260B		11/17/2014	CJR	1
SUR - Dibromofluoromethane	101	REC %			50	8260B		11/17/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073F
Sample ID PZ-16
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	8.8	ug/l	2.4	7.7	10	8260B		11/19/2014	CJR	1
Bromobenzene	< 3.2	ug/l	3.2	10	10	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 3.7	ug/l	3.7	12	10	8260B		11/19/2014	CJR	1
Bromoform	< 3.5	ug/l	3.5	11	10	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 3.6	ug/l	3.6	12	10	8260B		11/19/2014	CJR	2
sec-Butylbenzene	< 3.3	ug/l	3.3	10	10	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 3.5	ug/l	3.5	11	10	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 3.3	ug/l	3.3	11	10	8260B		11/19/2014	CJR	1
Chlorobenzene	< 2.4	ug/l	2.4	7.7	10	8260B		11/19/2014	CJR	1
Chloroethane	< 6.3	ug/l	6.3	20	10	8260B		11/19/2014	CJR	1
Chloroform	< 2.8	ug/l	2.8	8.8	10	8260B		11/19/2014	CJR	1
Chloromethane	< 8.1	ug/l	8.1	26	10	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 2.1	ug/l	2.1	6.6	10	8260B		11/19/2014	CJR	2
4-Chlorotoluene	< 2.1	ug/l	2.1	6.8	10	8260B		11/19/2014	CJR	2
1,2-Dibromo-3-chloropropane	< 8.8	ug/l	8.8	28	10	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 2.2	ug/l	2.2	7	10	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 3	ug/l	3	9.6	10	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 2.8	ug/l	2.8	8.9	10	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 3.6	ug/l	3.6	12	10	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 4.4	ug/l	4.4	14	10	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 4.1	ug/l	4.1	13	10	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 3	ug/l	3	9.7	10	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 4	ug/l	4	13	10	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	820	ug/l	3.8	12	10	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	18.5	ug/l	3.5	11	10	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 3.2	ug/l	3.2	10	10	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 3.6	ug/l	3.6	12	10	8260B		11/19/2014	CJR	8
1,3-Dichloropropane	< 3.3	ug/l	3.3	10	10	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 2.3	ug/l	2.3	7.3	10	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 4.4	ug/l	4.4	14	10	8260B		11/19/2014	CJR	1
Ethylbenzene	< 5.5	ug/l	5.5	17	10	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 15	ug/l	15	48	10	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 3	ug/l	3	9.6	10	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 3.1	ug/l	3.1	9.8	10	8260B		11/19/2014	CJR	1
Methylene chloride	< 5	ug/l	5	16	10	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 2.3	ug/l	2.3	7.4	10	8260B		11/19/2014	CJR	1
Naphthalene	< 17	ug/l	17	55	10	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 2.5	ug/l	2.5	8.1	10	8260B		11/19/2014	CJR	2
1,1,2,2-Tetrachloroethane	< 4.5	ug/l	4.5	14	10	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 3.3	ug/l	3.3	11	10	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 3.3	ug/l	3.3	11	10	8260B		11/19/2014	CJR	1
Toluene	< 6.9	ug/l	6.9	22	10	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 9.8	ug/l	9.8	31	10	8260B		11/19/2014	CJR	2
1,2,3-Trichlorobenzene	< 18	ug/l	18	58	10	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 3.3	ug/l	3.3	10	10	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 3.4	ug/l	3.4	11	10	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	4.2 "J"	ug/l	3.3	10	10	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 7.1	ug/l	7.1	23	10	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 22	ug/l	22	69	10	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 14	ug/l	14	45	10	8260B		11/19/2014	CJR	1
Vinyl Chloride	252	ug/l	1.8	5.7	10	8260B		11/19/2014	CJR	1
m&p-Xylene	< 6.9	ug/l	6.9	22	10	8260B		11/19/2014	CJR	1
o-Xylene	< 6.3	ug/l	6.3	20	10	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	99	REC %			10	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	100	REC %			10	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	107	REC %			10	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	103	REC %			10	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073G
Sample ID PZ-16A
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/18/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/18/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/18/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/18/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/18/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/18/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/18/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/18/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/18/2014	CJR	1
cis-1,2-Dichloroethene	6.3	ug/l	0.38	1.2	1	8260B		11/18/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/18/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/18/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/18/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/18/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/18/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/18/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/18/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/18/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/18/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/18/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/18/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/18/2014	CJR	1
Trichloroethene (TCE)	5.4	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/18/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/18/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/18/2014	CJR	1
Vinyl Chloride	2.55	ug/l	0.18	0.57	1	8260B		11/18/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	104	REC %			1	8260B		11/18/2014	CJR	1
SUR - 4-Bromofluorobenzene	104	REC %			1	8260B		11/18/2014	CJR	1
SUR - Dibromofluoromethane	98	REC %			1	8260B		11/18/2014	CJR	1
SUR - Toluene-d8	103	REC %			1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073H
Sample ID PZ-16A DUP
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	0.26 "J"	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/18/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/18/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/18/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/18/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/18/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/18/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/18/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/18/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/18/2014	CJR	1
cis-1,2-Dichloroethene	5.7	ug/l	0.38	1.2	1	8260B		11/18/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/18/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/18/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/18/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/18/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/18/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/18/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/18/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/18/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/18/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/18/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/18/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/18/2014	CJR	1
Trichloroethene (TCE)	4.4	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/18/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/18/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/18/2014	CJR	1
Vinyl Chloride	2.38	ug/l	0.18	0.57	1	8260B		11/18/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	101	REC %			1	8260B		11/18/2014	CJR	1
SUR - Toluene-d8	88	REC %			1	8260B		11/18/2014	CJR	1
SUR - 4-Bromofluorobenzene	119	REC %			1	8260B		11/18/2014	CJR	1
SUR - Dibromofluoromethane	99	REC %			1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073I
Sample ID PZ-16B
Sample Matrix Water
Sample Date 11/12/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/18/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/18/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/18/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/18/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/18/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/18/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/18/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/18/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/18/2014	CJR	1
cis-1,2-Dichloroethene	1.56	ug/l	0.38	1.2	1	8260B		11/18/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/18/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/18/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/18/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/18/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/18/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/18/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/18/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/18/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/18/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/18/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/18/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/18/2014	CJR	1
Trichloroethene (TCE)	2.38	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/18/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/18/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/18/2014	CJR	1
Vinyl Chloride	0.64	ug/l	0.18	0.57	1	8260B		11/18/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			1	8260B		11/18/2014	CJR	1
SUR - 4-Bromofluorobenzene	108	REC %			1	8260B		11/18/2014	CJR	1
SUR - Dibromofluoromethane	101	REC %			1	8260B		11/18/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073J
Sample ID WT-01
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/18/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/18/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/18/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/18/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/18/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/18/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/18/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/18/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/18/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/18/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/18/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/18/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/18/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/18/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/18/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/18/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/18/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/18/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/18/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/18/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/18/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/18/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/18/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/18/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/18/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/18/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/18/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/18/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/18/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/18/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/18/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/18/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/18/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/18/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/18/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/18/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/18/2014	CJR	1
SUR - Dibromofluoromethane	107	REC %			1	8260B		11/18/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	93	REC %			1	8260B		11/18/2014	CJR	1
SUR - 4-Bromofluorobenzene	100	REC %			1	8260B		11/18/2014	CJR	1
SUR - Toluene-d8	101	REC %			1	8260B		11/18/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073K
Sample ID PZ-01
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	104	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	99	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	101	REC %			1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	89	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073L
Sample ID EB-01
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	98	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	97	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073M
Sample ID PZ-26C
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	98	REC %			1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	97	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	98	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073N
Sample ID WT-26
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	0.89	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	97	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	98	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	95	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073O
Sample ID PZ-26B
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	0.47 "J"	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	5.1	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	97	REC %			1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	92	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	102	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	82	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073P
Sample ID PZ-26A
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	1.25	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	84	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	95	REC %			1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073Q
Sample ID WP-07
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	92	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	99	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073R
Sample ID WP-04
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	5.2	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	3.4	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	100	REC %			1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	94	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	97	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	83	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073S
Sample ID TRIP BLANK
Sample Matrix Water
Sample Date 11/13/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	100	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	92	REC %			1	8260B		11/19/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28073
Project #

Lab Code 5028073T
Sample ID PZ-16C
Sample Matrix Water
Sample Date 11/13/2014

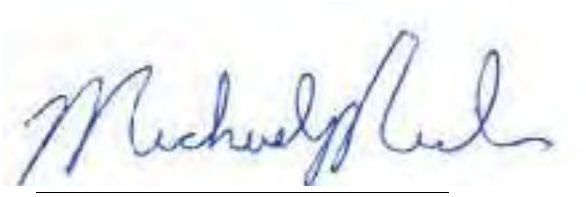
	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/19/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/19/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/19/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/19/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/19/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/19/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/19/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/19/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/19/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/19/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/19/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/19/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/19/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/19/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/19/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/19/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/19/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/19/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/19/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/19/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/19/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/19/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/19/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/19/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/19/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/19/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/19/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/19/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/19/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/19/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/19/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/19/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/19/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/19/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/19/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/19/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/19/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/19/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	97	REC %			1	8260B		11/19/2014	CJR	1
SUR - 4-Bromofluorobenzene	99	REC %			1	8260B		11/19/2014	CJR	1
SUR - Dibromofluoromethane	84	REC %			1	8260B		11/19/2014	CJR	1

"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
2	Relative percent difference failed for laboratory spiked samples.
3	The matrix spike not within established limits.
4	The continuing calibration standard not within established limits.
8	Closing calibration standard not within established limits.

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



CHAIN OF JSTODY RECORD

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 310

Page 1 of 1

Sample Handling Request
___ Rush Analysis Date Required ___
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #

Account No. : **Quote No.:**

Project #:

Sampler: (signature) Jordan

Project (Name / Location): Former Newton Gravel Pit / Manitowoc, WI

Reports To: DAVE HENDERSON	Invoice To: DAVE HENDERSON
Company AECOM	Company SAME
Address 1555 N. River Center Dr. Ste 314	Address
City State Zip Milwaukee, WI 53212	City State Zip
Phone 414-944-6190	Phone
FAX 414-944-6080	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation
502803A	WT-21	11/12/14	9:55		X	N	3	GW	HCl
B	WT-20	11/12/14	10:30		X	N	3	GW	HCl
C	WT-22	11/12/14	11:05		X	N	3	GW	HCl
D	WT-23	11/12/14	11:40		X	N	3	GW	HCl
E	WT-16	11/12/14	12:15		X	N	3	GW	HCl
F	PZ-16	11/12/14	12:50		X	N	3	GW	HCl
G	PZ-16A	11/12/14	13:25		X	N	3	GW	HCl
H	PZ-16A DUP	11/12/14	13:25		X	N	3	GW	HCl
I	PZ-16B	11/12/14	14:25		X	N	3	GW	HCl
J	WT-01	11/13/14	9:15		X	N	3	GW	HCl

Analysis Requested

DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 542.2)	VOC (EPA 8260)	8-RCRA METALS	PID/FID
												X		
												X		
												X		
												X		
												X		
												X		
												X		
												X		
												X		
												X		

Other Analysis

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Analysis per Contract

Analyze PZ-16C Per Dave Henderson - CSR 11/17/14

Sample Integrity - To be completed by receiving lab.

Method of Shipment: Driven

Temp. of Temp. Blank ___ °C On Ice: X

Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
Jordan	11/13/14	1900	Toy A Schuh	11/13/14	1900
Toy A Schuh	11/14/14	0830			

Received in Laboratory By: Time: 10:00 Date: 11/15/14

CHAIN OF JSTODY RECORD

Synergy

Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 310

Page 2 of 2

Sample Handling Request
___ Rush Analysis Date Required ___
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #	
Account No. :	Quote No.:
Project #:	
Sampler: (signature)	
Project (Name / Location): Former Newton Gravel Pit	
Reports To: DAVE HENDERSON	Invoice To: DAVE HENDERSON
Company NECOM	Company SAME
Address 1555 N. RiverCenter Dr. STE 214	Address
City State Zip Milwaukee, WI 53212	City State Zip
Phone 414-944-6190	Phone
FAX 414-944-6080	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 542.2)	VOC (EPA 8260)	8-RCRA METALS	PID/ FID
5023073K	PZ-01	11/13/14	955		X	N	3	GW	HCl													X		
L	EB-01	11/13/14	1005		X	N	3	GW	HCl													X		
M	PZ-26C	11/13/14	1100		X	N	3	GW	HCl													X		
N	WT-26	11/13/14			X	N	3	GW	HCl													X		
O	PZ-26B	11/13/14	1200		X	N	3	GW	HCl													X		
P	PZ-26A	11/13/14	1325		X	N	3	GW	HCl													X		
Q	~~PZ-30~~ WP	11/13/14	1435		X	N	3	GW	HCl													X		
R	WP-04	11/13/14	1515		X	N	3	GW	HCl													X		
	~~Trip Blank~~	~~11/13/14~~	~~0800~~		~~X~~	~~N~~	~~3~~	~~GW~~	~~HCl~~													~~X~~		
S	Trip Blank	11/10/14	0820		X	N	2	GW	HCl													X		

Analysis Requested | **Other Analysis**

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Analysis per Contract

Analyze PZ-16C Per Dave Henderson-CSR 11/17/14

Sample Integrity - To be completed by receiving lab.
Method of Shipment:
Temp. of Temp. Blank ___ °C On Ice: X
Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	11/13/14	1900		1900	11/13/14
	11/14/14	0830			

Received in Laboratory By: Time: 10:00 Date: 11/15/14

Synergy Environmental Lab, INC.

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

DAVE HENDERSON
AECOM
1555 N RIVER CENTER DRIVE
MILWAUKEE, WI 53212

Report Date *26-Nov-14*

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102A
Sample ID PZ-24C
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	1.69	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	0.43 "J"	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	2.58 "J"	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102A
Sample ID PZ-24C
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	94	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	94	REC %			1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	93	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102B
Sample ID PZ-24A
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	3.3 "J"	ug/l	2.4	7.7	10	8260B		11/24/2014	CJR	1
Bromobenzene	< 3.2	ug/l	3.2	10	10	8260B		11/24/2014	CJR	1
Bromodichloromethane	< 3.7	ug/l	3.7	12	10	8260B		11/24/2014	CJR	1
Bromoform	< 3.5	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
tert-Butylbenzene	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	1
sec-Butylbenzene	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
n-Butylbenzene	< 3.5	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
Carbon Tetrachloride	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Chlorobenzene	< 2.4	ug/l	2.4	7.7	10	8260B		11/24/2014	CJR	1
Chloroethane	< 6.3	ug/l	6.3	20	10	8260B		11/24/2014	CJR	1
Chloroform	< 2.8	ug/l	2.8	8.8	10	8260B		11/24/2014	CJR	1
Chloromethane	< 8.1	ug/l	8.1	26	10	8260B		11/24/2014	CJR	1
2-Chlorotoluene	< 2.1	ug/l	2.1	6.6	10	8260B		11/24/2014	CJR	1
4-Chlorotoluene	< 2.1	ug/l	2.1	6.8	10	8260B		11/24/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 8.8	ug/l	8.8	28	10	8260B		11/24/2014	CJR	1
Dibromochloromethane	< 2.2	ug/l	2.2	7	10	8260B		11/24/2014	CJR	1
1,4-Dichlorobenzene	< 3	ug/l	3	9.6	10	8260B		11/24/2014	CJR	1
1,3-Dichlorobenzene	< 2.8	ug/l	2.8	8.9	10	8260B		11/24/2014	CJR	1
1,2-Dichlorobenzene	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	1
Dichlorodifluoromethane	< 4.4	ug/l	4.4	14	10	8260B		11/24/2014	CJR	1
1,2-Dichloroethane	< 4.1	ug/l	4.1	13	10	8260B		11/24/2014	CJR	1
1,1-Dichloroethane	< 3	ug/l	3	9.7	10	8260B		11/24/2014	CJR	1
1,1-Dichloroethene	< 4	ug/l	4	13	10	8260B		11/24/2014	CJR	1
cis-1,2-Dichloroethene	800	ug/l	3.8	12	10	8260B		11/24/2014	CJR	1
trans-1,2-Dichloroethene	4.4 "J"	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
1,2-Dichloropropane	< 3.2	ug/l	3.2	10	10	8260B		11/24/2014	CJR	1
2,2-Dichloropropane	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	4 8
1,3-Dichloropropane	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
Di-isopropyl ether	< 2.3	ug/l	2.3	7.3	10	8260B		11/24/2014	CJR	1
EDB (1,2-Dibromoethane)	< 4.4	ug/l	4.4	14	10	8260B		11/24/2014	CJR	1
Ethylbenzene	< 5.5	ug/l	5.5	17	10	8260B		11/24/2014	CJR	1
Hexachlorobutadiene	< 15	ug/l	15	48	10	8260B		11/24/2014	CJR	1
Isopropylbenzene	< 3	ug/l	3	9.6	10	8260B		11/24/2014	CJR	1
p-Isopropyltoluene	< 3.1	ug/l	3.1	9.8	10	8260B		11/24/2014	CJR	1
Methylene chloride	< 5	ug/l	5	16	10	8260B		11/24/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 2.3	ug/l	2.3	7.4	10	8260B		11/24/2014	CJR	1
Naphthalene	< 17	ug/l	17	55	10	8260B		11/24/2014	CJR	1
n-Propylbenzene	< 2.5	ug/l	2.5	8.1	10	8260B		11/24/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 4.5	ug/l	4.5	14	10	8260B		11/24/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Tetrachloroethene	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Toluene	< 6.9	ug/l	6.9	22	10	8260B		11/24/2014	CJR	1
1,2,4-Trichlorobenzene	< 9.8	ug/l	9.8	31	10	8260B		11/24/2014	CJR	1
1,2,3-Trichlorobenzene	< 18	ug/l	18	58	10	8260B		11/24/2014	CJR	1
1,1,1-Trichloroethane	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
1,1,2-Trichloroethane	< 3.4	ug/l	3.4	11	10	8260B		11/24/2014	CJR	1
Trichloroethene (TCE)	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
Trichlorofluoromethane	< 7.1	ug/l	7.1	23	10	8260B		11/24/2014	CJR	1
1,2,4-Trimethylbenzene	< 22	ug/l	22	69	10	8260B		11/24/2014	CJR	1
1,3,5-Trimethylbenzene	< 14	ug/l	14	45	10	8260B		11/24/2014	CJR	1
Vinyl Chloride	244	ug/l	1.8	5.7	10	8260B		11/24/2014	CJR	1
m&p-Xylene	< 6.9	ug/l	6.9	22	10	8260B		11/24/2014	CJR	1
o-Xylene	< 6.3	ug/l	6.3	20	10	8260B		11/24/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	97	REC %			10	8260B		11/24/2014	CJR	1
SUR - 4-Bromofluorobenzene	97	REC %			10	8260B		11/24/2014	CJR	1
SUR - Dibromofluoromethane	96	REC %			10	8260B		11/24/2014	CJR	1
SUR - Toluene-d8	97	REC %			10	8260B		11/24/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102C
Sample ID PZ-24B
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	4.1 "J"	ug/l	2.4	7.7	10	8260B		11/25/2014	CJR	1
Bromobenzene	< 3.2	ug/l	3.2	10	10	8260B		11/25/2014	CJR	1
Bromodichloromethane	< 3.7	ug/l	3.7	12	10	8260B		11/25/2014	CJR	1
Bromoform	< 3.5	ug/l	3.5	11	10	8260B		11/25/2014	CJR	1
tert-Butylbenzene	< 3.6	ug/l	3.6	12	10	8260B		11/25/2014	CJR	1
sec-Butylbenzene	< 3.3	ug/l	3.3	10	10	8260B		11/25/2014	CJR	1
n-Butylbenzene	< 3.5	ug/l	3.5	11	10	8260B		11/25/2014	CJR	1
Carbon Tetrachloride	< 3.3	ug/l	3.3	11	10	8260B		11/25/2014	CJR	1
Chlorobenzene	< 2.4	ug/l	2.4	7.7	10	8260B		11/25/2014	CJR	1
Chloroethane	< 6.3	ug/l	6.3	20	10	8260B		11/25/2014	CJR	1
Chloroform	< 2.8	ug/l	2.8	8.8	10	8260B		11/25/2014	CJR	1
Chloromethane	< 8.1	ug/l	8.1	26	10	8260B		11/25/2014	CJR	1
2-Chlorotoluene	< 2.1	ug/l	2.1	6.6	10	8260B		11/25/2014	CJR	1
4-Chlorotoluene	< 2.1	ug/l	2.1	6.8	10	8260B		11/25/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 8.8	ug/l	8.8	28	10	8260B		11/25/2014	CJR	1
Dibromochloromethane	< 2.2	ug/l	2.2	7	10	8260B		11/25/2014	CJR	1
1,4-Dichlorobenzene	< 3	ug/l	3	9.6	10	8260B		11/25/2014	CJR	1
1,3-Dichlorobenzene	< 2.8	ug/l	2.8	8.9	10	8260B		11/25/2014	CJR	1
1,2-Dichlorobenzene	< 3.6	ug/l	3.6	12	10	8260B		11/25/2014	CJR	1
Dichlorodifluoromethane	< 4.4	ug/l	4.4	14	10	8260B		11/25/2014	CJR	1
1,2-Dichloroethane	< 4.1	ug/l	4.1	13	10	8260B		11/25/2014	CJR	1
1,1-Dichloroethane	< 3	ug/l	3	9.7	10	8260B		11/25/2014	CJR	1
1,1-Dichloroethene	< 4	ug/l	4	13	10	8260B		11/25/2014	CJR	1
cis-1,2-Dichloroethene	360	ug/l	3.8	12	10	8260B		11/25/2014	CJR	1
trans-1,2-Dichloroethene	3.5 "J"	ug/l	3.5	11	10	8260B		11/25/2014	CJR	1
1,2-Dichloropropane	< 3.2	ug/l	3.2	10	10	8260B		11/25/2014	CJR	1
2,2-Dichloropropane	< 3.6	ug/l	3.6	12	10	8260B		11/25/2014	CJR	4 8
1,3-Dichloropropane	< 3.3	ug/l	3.3	10	10	8260B		11/25/2014	CJR	1
Di-isopropyl ether	< 2.3	ug/l	2.3	7.3	10	8260B		11/25/2014	CJR	1
EDB (1,2-Dibromoethane)	< 4.4	ug/l	4.4	14	10	8260B		11/25/2014	CJR	1
Ethylbenzene	< 5.5	ug/l	5.5	17	10	8260B		11/25/2014	CJR	1
Hexachlorobutadiene	< 15	ug/l	15	48	10	8260B		11/25/2014	CJR	1
Isopropylbenzene	< 3	ug/l	3	9.6	10	8260B		11/25/2014	CJR	1
p-Isopropyltoluene	< 3.1	ug/l	3.1	9.8	10	8260B		11/25/2014	CJR	1
Methylene chloride	< 5	ug/l	5	16	10	8260B		11/25/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 2.3	ug/l	2.3	7.4	10	8260B		11/25/2014	CJR	1
Naphthalene	< 17	ug/l	17	55	10	8260B		11/25/2014	CJR	1
n-Propylbenzene	< 2.5	ug/l	2.5	8.1	10	8260B		11/25/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 4.5	ug/l	4.5	14	10	8260B		11/25/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 3.3	ug/l	3.3	11	10	8260B		11/25/2014	CJR	1
Tetrachloroethene	< 3.3	ug/l	3.3	11	10	8260B		11/25/2014	CJR	1
Toluene	< 6.9	ug/l	6.9	22	10	8260B		11/25/2014	CJR	1
1,2,4-Trichlorobenzene	< 9.8	ug/l	9.8	31	10	8260B		11/25/2014	CJR	1
1,2,3-Trichlorobenzene	< 18	ug/l	18	58	10	8260B		11/25/2014	CJR	1
1,1,1-Trichloroethane	< 3.3	ug/l	3.3	10	10	8260B		11/25/2014	CJR	1
1,1,2-Trichloroethane	< 3.4	ug/l	3.4	11	10	8260B		11/25/2014	CJR	1
Trichloroethene (TCE)	< 3.3	ug/l	3.3	10	10	8260B		11/25/2014	CJR	1
Trichlorofluoromethane	< 7.1	ug/l	7.1	23	10	8260B		11/25/2014	CJR	1
1,2,4-Trimethylbenzene	< 22	ug/l	22	69	10	8260B		11/25/2014	CJR	1
1,3,5-Trimethylbenzene	< 14	ug/l	14	45	10	8260B		11/25/2014	CJR	1
Vinyl Chloride	138	ug/l	1.8	5.7	10	8260B		11/25/2014	CJR	1
m&p-Xylene	< 6.9	ug/l	6.9	22	10	8260B		11/25/2014	CJR	1
o-Xylene	< 6.3	ug/l	6.3	20	10	8260B		11/25/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	98	REC %			10	8260B		11/25/2014	CJR	1
SUR - 4-Bromofluorobenzene	98	REC %			10	8260B		11/25/2014	CJR	1
SUR - Dibromofluoromethane	91	REC %			10	8260B		11/25/2014	CJR	1
SUR - Toluene-d8	96	REC %			10	8260B		11/25/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102D
Sample ID WT-24
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	0.68 "J"	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	95	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	92	REC %			1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	100	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102E
Sample ID PZ-24A DUP
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	3.4 "J"	ug/l	2.4	7.7	10	8260B		11/24/2014	CJR	1
Bromobenzene	< 3.2	ug/l	3.2	10	10	8260B		11/24/2014	CJR	1
Bromodichloromethane	< 3.7	ug/l	3.7	12	10	8260B		11/24/2014	CJR	1
Bromoform	< 3.5	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
tert-Butylbenzene	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	1
sec-Butylbenzene	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
n-Butylbenzene	< 3.5	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
Carbon Tetrachloride	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Chlorobenzene	< 2.4	ug/l	2.4	7.7	10	8260B		11/24/2014	CJR	1
Chloroethane	< 6.3	ug/l	6.3	20	10	8260B		11/24/2014	CJR	1
Chloroform	< 2.8	ug/l	2.8	8.8	10	8260B		11/24/2014	CJR	1
Chloromethane	< 8.1	ug/l	8.1	26	10	8260B		11/24/2014	CJR	1
2-Chlorotoluene	< 2.1	ug/l	2.1	6.6	10	8260B		11/24/2014	CJR	1
4-Chlorotoluene	< 2.1	ug/l	2.1	6.8	10	8260B		11/24/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 8.8	ug/l	8.8	28	10	8260B		11/24/2014	CJR	1
Dibromochloromethane	< 2.2	ug/l	2.2	7	10	8260B		11/24/2014	CJR	1
1,4-Dichlorobenzene	< 3	ug/l	3	9.6	10	8260B		11/24/2014	CJR	1
1,3-Dichlorobenzene	< 2.8	ug/l	2.8	8.9	10	8260B		11/24/2014	CJR	1
1,2-Dichlorobenzene	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	1
Dichlorodifluoromethane	< 4.4	ug/l	4.4	14	10	8260B		11/24/2014	CJR	1
1,2-Dichloroethane	< 4.1	ug/l	4.1	13	10	8260B		11/24/2014	CJR	1
1,1-Dichloroethane	< 3	ug/l	3	9.7	10	8260B		11/24/2014	CJR	1
1,1-Dichloroethene	< 4	ug/l	4	13	10	8260B		11/24/2014	CJR	1
cis-1,2-Dichloroethene	800	ug/l	3.8	12	10	8260B		11/24/2014	CJR	1
trans-1,2-Dichloroethene	4.4 "J"	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
1,2-Dichloropropane	< 3.2	ug/l	3.2	10	10	8260B		11/24/2014	CJR	1
2,2-Dichloropropane	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	4 8
1,3-Dichloropropane	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
Di-isopropyl ether	< 2.3	ug/l	2.3	7.3	10	8260B		11/24/2014	CJR	1
EDB (1,2-Dibromoethane)	< 4.4	ug/l	4.4	14	10	8260B		11/24/2014	CJR	1
Ethylbenzene	< 5.5	ug/l	5.5	17	10	8260B		11/24/2014	CJR	1
Hexachlorobutadiene	< 15	ug/l	15	48	10	8260B		11/24/2014	CJR	1
Isopropylbenzene	< 3	ug/l	3	9.6	10	8260B		11/24/2014	CJR	1
p-Isopropyltoluene	< 3.1	ug/l	3.1	9.8	10	8260B		11/24/2014	CJR	1
Methylene chloride	< 5	ug/l	5	16	10	8260B		11/24/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 2.3	ug/l	2.3	7.4	10	8260B		11/24/2014	CJR	1
Naphthalene	< 17	ug/l	17	55	10	8260B		11/24/2014	CJR	1
n-Propylbenzene	< 2.5	ug/l	2.5	8.1	10	8260B		11/24/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 4.5	ug/l	4.5	14	10	8260B		11/24/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Tetrachloroethene	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Toluene	< 6.9	ug/l	6.9	22	10	8260B		11/24/2014	CJR	1
1,2,4-Trichlorobenzene	< 9.8	ug/l	9.8	31	10	8260B		11/24/2014	CJR	1
1,2,3-Trichlorobenzene	< 18	ug/l	18	58	10	8260B		11/24/2014	CJR	1
1,1,1-Trichloroethane	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
1,1,2-Trichloroethane	< 3.4	ug/l	3.4	11	10	8260B		11/24/2014	CJR	1
Trichloroethene (TCE)	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
Trichlorofluoromethane	< 7.1	ug/l	7.1	23	10	8260B		11/24/2014	CJR	1
1,2,4-Trimethylbenzene	< 22	ug/l	22	69	10	8260B		11/24/2014	CJR	1
1,3,5-Trimethylbenzene	< 14	ug/l	14	45	10	8260B		11/24/2014	CJR	1
Vinyl Chloride	243	ug/l	1.8	5.7	10	8260B		11/24/2014	CJR	1
m&p-Xylene	< 6.9	ug/l	6.9	22	10	8260B		11/24/2014	CJR	1
o-Xylene	< 6.3	ug/l	6.3	20	10	8260B		11/24/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			10	8260B		11/24/2014	CJR	1
SUR - 4-Bromofluorobenzene	93	REC %			10	8260B		11/24/2014	CJR	1
SUR - Dibromofluoromethane	90	REC %			10	8260B		11/24/2014	CJR	1
SUR - Toluene-d8	93	REC %			10	8260B		11/24/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102F
Sample ID PZ-25C
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	1.87	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	0.24 "J"	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	97	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	85	REC %			1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102G
Sample ID PZ-25B
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	1.16 "J"	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	0.33 "J"	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	92	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102H
Sample ID PZ-25A
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	0.84 "J"	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	2.75	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	0.31 "J"	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	97	REC %			1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	93	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	95	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102I
Sample ID WT-25
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	1.14	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	0.41 "J"	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	100	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	0.46 "J"	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	4.9	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	96	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	93	REC %			1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	97	REC %			1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	101	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102J
Sample ID PZ-12
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	67	ug/l	12	38.5	50	8260B		11/21/2014	CJR	1
Bromobenzene	< 16	ug/l	16	50	50	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 18.5	ug/l	18.5	60	50	8260B		11/21/2014	CJR	1
Bromoform	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Chlorobenzene	< 12	ug/l	12	38.5	50	8260B		11/21/2014	CJR	1
Chloroethane	< 31.5	ug/l	31.5	100	50	8260B		11/21/2014	CJR	1
Chloroform	< 14	ug/l	14	44	50	8260B		11/21/2014	CJR	1
Chloromethane	< 40.5	ug/l	40.5	130	50	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 10.5	ug/l	10.5	33	50	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 10.5	ug/l	10.5	34	50	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 44	ug/l	44	140	50	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 11	ug/l	11	35	50	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 15	ug/l	15	48	50	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 14	ug/l	14	44.5	50	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 22	ug/l	22	70	50	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 20.5	ug/l	20.5	65	50	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 15	ug/l	15	48.5	50	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 20	ug/l	20	65	50	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	4200	ug/l	19	60	50	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 16	ug/l	16	50	50	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 11.5	ug/l	11.5	36.5	50	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 22	ug/l	22	70	50	8260B		11/21/2014	CJR	1
Ethylbenzene	< 27.5	ug/l	27.5	85	50	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 75	ug/l	75	240	50	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 15	ug/l	15	48	50	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 15.5	ug/l	15.5	49	50	8260B		11/21/2014	CJR	1
Methylene chloride	< 25	ug/l	25	80	50	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 11.5	ug/l	11.5	37	50	8260B		11/21/2014	CJR	1
Naphthalene	< 85	ug/l	85	275	50	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 12.5	ug/l	12.5	40.5	50	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 22.5	ug/l	22.5	70	50	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Toluene	< 34.5	ug/l	34.5	110	50	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 49	ug/l	49	155	50	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 90	ug/l	90	290	50	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 17	ug/l	17	55	50	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	21.5 "J"	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 35.5	ug/l	35.5	115	50	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 110	ug/l	110	345	50	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 70	ug/l	70	225	50	8260B		11/21/2014	CJR	1
Vinyl Chloride	2550	ug/l	9	28.5	50	8260B		11/21/2014	CJR	1
m&p-Xylene	< 34.5	ug/l	34.5	110	50	8260B		11/21/2014	CJR	1
o-Xylene	< 31.5	ug/l	31.5	100	50	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	97	REC %			50	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	100	REC %			50	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	90	REC %			50	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	96	REC %			50	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102K
Sample ID WP-06
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	23.3	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	0.57 "J"	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	3.9	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	97	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	96	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102L
Sample ID WT-12
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 12	ug/l	12	38.5	50	8260B		11/21/2014	CJR	1
Bromobenzene	< 16	ug/l	16	50	50	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 18.5	ug/l	18.5	60	50	8260B		11/21/2014	CJR	1
Bromoform	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Chlorobenzene	< 12	ug/l	12	38.5	50	8260B		11/21/2014	CJR	1
Chloroethane	< 31.5	ug/l	31.5	100	50	8260B		11/21/2014	CJR	1
Chloroform	< 14	ug/l	14	44	50	8260B		11/21/2014	CJR	1
Chloromethane	< 40.5	ug/l	40.5	130	50	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 10.5	ug/l	10.5	33	50	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 10.5	ug/l	10.5	34	50	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 44	ug/l	44	140	50	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 11	ug/l	11	35	50	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 15	ug/l	15	48	50	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 14	ug/l	14	44.5	50	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 22	ug/l	22	70	50	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 20.5	ug/l	20.5	65	50	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 15	ug/l	15	48.5	50	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 20	ug/l	20	65	50	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	1170	ug/l	19	60	50	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 16	ug/l	16	50	50	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 11.5	ug/l	11.5	36.5	50	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 22	ug/l	22	70	50	8260B		11/21/2014	CJR	1
Ethylbenzene	< 27.5	ug/l	27.5	85	50	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 75	ug/l	75	240	50	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 15	ug/l	15	48	50	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 15.5	ug/l	15.5	49	50	8260B		11/21/2014	CJR	1
Methylene chloride	< 25	ug/l	25	80	50	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 11.5	ug/l	11.5	37	50	8260B		11/21/2014	CJR	1
Naphthalene	< 85	ug/l	85	275	50	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 12.5	ug/l	12.5	40.5	50	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 22.5	ug/l	22.5	70	50	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Toluene	< 34.5	ug/l	34.5	110	50	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 49	ug/l	49	155	50	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 90	ug/l	90	290	50	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 17	ug/l	17	55	50	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	22.5 "J"	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 35.5	ug/l	35.5	115	50	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 110	ug/l	110	345	50	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 70	ug/l	70	225	50	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 9	ug/l	9	28.5	50	8260B		11/21/2014	CJR	1
m&p-Xylene	< 34.5	ug/l	34.5	110	50	8260B		11/21/2014	CJR	1
o-Xylene	< 31.5	ug/l	31.5	100	50	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	97	REC %			50	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			50	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	85	REC %			50	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	95	REC %			50	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102M
Sample ID WT-12 DUP
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 12	ug/l	12	38.5	50	8260B		11/21/2014	CJR	1
Bromobenzene	< 16	ug/l	16	50	50	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 18.5	ug/l	18.5	60	50	8260B		11/21/2014	CJR	1
Bromoform	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Chlorobenzene	< 12	ug/l	12	38.5	50	8260B		11/21/2014	CJR	1
Chloroethane	< 31.5	ug/l	31.5	100	50	8260B		11/21/2014	CJR	1
Chloroform	< 14	ug/l	14	44	50	8260B		11/21/2014	CJR	1
Chloromethane	< 40.5	ug/l	40.5	130	50	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 10.5	ug/l	10.5	33	50	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 10.5	ug/l	10.5	34	50	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 44	ug/l	44	140	50	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 11	ug/l	11	35	50	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 15	ug/l	15	48	50	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 14	ug/l	14	44.5	50	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 22	ug/l	22	70	50	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 20.5	ug/l	20.5	65	50	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 15	ug/l	15	48.5	50	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 20	ug/l	20	65	50	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	1100	ug/l	19	60	50	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 17.5	ug/l	17.5	55	50	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 16	ug/l	16	50	50	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 18	ug/l	18	60	50	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 11.5	ug/l	11.5	36.5	50	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 22	ug/l	22	70	50	8260B		11/21/2014	CJR	1
Ethylbenzene	< 27.5	ug/l	27.5	85	50	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 75	ug/l	75	240	50	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 15	ug/l	15	48	50	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 15.5	ug/l	15.5	49	50	8260B		11/21/2014	CJR	1
Methylene chloride	< 25	ug/l	25	80	50	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 11.5	ug/l	11.5	37	50	8260B		11/21/2014	CJR	3
Naphthalene	< 85	ug/l	85	275	50	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 12.5	ug/l	12.5	40.5	50	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 22.5	ug/l	22.5	70	50	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 16.5	ug/l	16.5	55	50	8260B		11/21/2014	CJR	1
Toluene	< 34.5	ug/l	34.5	110	50	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 49	ug/l	49	155	50	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 90	ug/l	90	290	50	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 16.5	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 17	ug/l	17	55	50	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	20.5 "J"	ug/l	16.5	50	50	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 35.5	ug/l	35.5	115	50	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 110	ug/l	110	345	50	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 70	ug/l	70	225	50	8260B		11/21/2014	CJR	1
Vinyl Chloride	11.5 "J"	ug/l	9	28.5	50	8260B		11/21/2014	CJR	1
m&p-Xylene	< 34.5	ug/l	34.5	110	50	8260B		11/21/2014	CJR	1
o-Xylene	< 31.5	ug/l	31.5	100	50	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			50	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	97	REC %			50	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			50	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	95	REC %			50	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102N
Sample ID WT-11
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 2.4	ug/l	2.4	7.7	10	8260B		11/22/2014	CJR	1
Bromobenzene	< 3.2	ug/l	3.2	10	10	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 3.7	ug/l	3.7	12	10	8260B		11/22/2014	CJR	1
Bromoform	< 3.5	ug/l	3.5	11	10	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 3.6	ug/l	3.6	12	10	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 3.3	ug/l	3.3	10	10	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 3.5	ug/l	3.5	11	10	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 3.3	ug/l	3.3	11	10	8260B		11/22/2014	CJR	1
Chlorobenzene	< 2.4	ug/l	2.4	7.7	10	8260B		11/22/2014	CJR	1
Chloroethane	< 6.3	ug/l	6.3	20	10	8260B		11/22/2014	CJR	1
Chloroform	< 2.8	ug/l	2.8	8.8	10	8260B		11/22/2014	CJR	1
Chloromethane	< 8.1	ug/l	8.1	26	10	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 2.1	ug/l	2.1	6.6	10	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 2.1	ug/l	2.1	6.8	10	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 8.8	ug/l	8.8	28	10	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 2.2	ug/l	2.2	7	10	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 3	ug/l	3	9.6	10	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 2.8	ug/l	2.8	8.9	10	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 3.6	ug/l	3.6	12	10	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 4.4	ug/l	4.4	14	10	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 4.1	ug/l	4.1	13	10	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 3	ug/l	3	9.7	10	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 4	ug/l	4	13	10	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	420	ug/l	3.8	12	10	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 3.5	ug/l	3.5	11	10	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 3.2	ug/l	3.2	10	10	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 3.6	ug/l	3.6	12	10	8260B		11/22/2014	CJR	8
1,3-Dichloropropane	< 3.3	ug/l	3.3	10	10	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 2.3	ug/l	2.3	7.3	10	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 4.4	ug/l	4.4	14	10	8260B		11/22/2014	CJR	1
Ethylbenzene	< 5.5	ug/l	5.5	17	10	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 15	ug/l	15	48	10	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 3	ug/l	3	9.6	10	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 3.1	ug/l	3.1	9.8	10	8260B		11/22/2014	CJR	1
Methylene chloride	< 5	ug/l	5	16	10	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 2.3	ug/l	2.3	7.4	10	8260B		11/22/2014	CJR	1
Naphthalene	< 17	ug/l	17	55	10	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 2.5	ug/l	2.5	8.1	10	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 4.5	ug/l	4.5	14	10	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 3.3	ug/l	3.3	11	10	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 3.3	ug/l	3.3	11	10	8260B		11/22/2014	CJR	1
Toluene	< 6.9	ug/l	6.9	22	10	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 9.8	ug/l	9.8	31	10	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 18	ug/l	18	58	10	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 3.3	ug/l	3.3	10	10	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 3.4	ug/l	3.4	11	10	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	7.9 "J"	ug/l	3.3	10	10	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 7.1	ug/l	7.1	23	10	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 22	ug/l	22	69	10	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 14	ug/l	14	45	10	8260B		11/22/2014	CJR	1
Vinyl Chloride	< 1.8	ug/l	1.8	5.7	10	8260B		11/22/2014	CJR	1
m&p-Xylene	< 6.9	ug/l	6.9	22	10	8260B		11/22/2014	CJR	1
o-Xylene	< 6.3	ug/l	6.3	20	10	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			10	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	95	REC %			10	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			10	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	96	REC %			10	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102O
Sample ID PZ-15A
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	97	REC %			1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	94	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102P
Sample ID PZ-15B
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	98	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	100	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102Q
Sample ID WT-15
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	98	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	82	REC %			1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	98	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102R
Sample ID PZ-05B
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	91	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	95	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	85	REC %			1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	95	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102S
Sample ID PZ-05A
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	94	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	85	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	99	REC %			1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102T
Sample ID WT-05
Sample Matrix Water
Sample Date 11/17/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	45	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	1.75	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	1.26	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	102	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	88	REC %			1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	94	REC %			1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	93	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102U
Sample ID WT+13
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	98	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	97	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102V
Sample ID WT-03
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	0.48 "J"	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	53	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	0.41 "J"	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	3.5	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	43	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	95	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	97	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102W
Sample ID PZ-03
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	96	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	89	REC %			1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	95	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102X
Sample ID WT-17
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	0.97	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	0.78 "J"	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	176	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	1.31	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	0.44 "J"	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	4.2	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	45	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	0.50 "J"	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	94	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	97	REC %			1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	92	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102Y
Sample ID PZ-02
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	97	REC %			1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	93	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	83	REC %			1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 5028102Z
Sample ID PZ-02 DUP
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	95	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	86	REC %			1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	93	REC %			1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 528102AA
Sample ID WT-10
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	20 "J"	ug/l	12	38.5	50	8260B		11/24/2014	CJR	1
Bromobenzene	< 16	ug/l	16	50	50	8260B		11/24/2014	CJR	1
Bromodichloromethane	< 18.5	ug/l	18.5	60	50	8260B		11/24/2014	CJR	1
Bromoform	< 17.5	ug/l	17.5	55	50	8260B		11/24/2014	CJR	1
tert-Butylbenzene	< 18	ug/l	18	60	50	8260B		11/24/2014	CJR	1
sec-Butylbenzene	< 16.5	ug/l	16.5	50	50	8260B		11/24/2014	CJR	1
n-Butylbenzene	< 17.5	ug/l	17.5	55	50	8260B		11/24/2014	CJR	1
Carbon Tetrachloride	< 16.5	ug/l	16.5	55	50	8260B		11/24/2014	CJR	1
Chlorobenzene	< 12	ug/l	12	38.5	50	8260B		11/24/2014	CJR	1
Chloroethane	< 31.5	ug/l	31.5	100	50	8260B		11/24/2014	CJR	1
Chloroform	< 14	ug/l	14	44	50	8260B		11/24/2014	CJR	1
Chloromethane	< 40.5	ug/l	40.5	130	50	8260B		11/24/2014	CJR	1
2-Chlorotoluene	< 10.5	ug/l	10.5	33	50	8260B		11/24/2014	CJR	1
4-Chlorotoluene	< 10.5	ug/l	10.5	34	50	8260B		11/24/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 44	ug/l	44	140	50	8260B		11/24/2014	CJR	1
Dibromochloromethane	< 11	ug/l	11	35	50	8260B		11/24/2014	CJR	1
1,4-Dichlorobenzene	< 15	ug/l	15	48	50	8260B		11/24/2014	CJR	1
1,3-Dichlorobenzene	< 14	ug/l	14	44.5	50	8260B		11/24/2014	CJR	1
1,2-Dichlorobenzene	< 18	ug/l	18	60	50	8260B		11/24/2014	CJR	1
Dichlorodifluoromethane	< 22	ug/l	22	70	50	8260B		11/24/2014	CJR	1
1,2-Dichloroethane	< 20.5	ug/l	20.5	65	50	8260B		11/24/2014	CJR	1
1,1-Dichloroethane	< 15	ug/l	15	48.5	50	8260B		11/24/2014	CJR	1
1,1-Dichloroethene	< 20	ug/l	20	65	50	8260B		11/24/2014	CJR	1
cis-1,2-Dichloroethene	3090	ug/l	19	60	50	8260B		11/24/2014	CJR	1
trans-1,2-Dichloroethene	< 17.5	ug/l	17.5	55	50	8260B		11/24/2014	CJR	1
1,2-Dichloropropane	< 16	ug/l	16	50	50	8260B		11/24/2014	CJR	1
2,2-Dichloropropane	< 18	ug/l	18	60	50	8260B		11/24/2014	CJR	4 8
1,3-Dichloropropane	< 16.5	ug/l	16.5	50	50	8260B		11/24/2014	CJR	1
Di-isopropyl ether	< 11.5	ug/l	11.5	36.5	50	8260B		11/24/2014	CJR	1
EDB (1,2-Dibromoethane)	< 22	ug/l	22	70	50	8260B		11/24/2014	CJR	1
Ethylbenzene	< 27.5	ug/l	27.5	85	50	8260B		11/24/2014	CJR	1
Hexachlorobutadiene	< 75	ug/l	75	240	50	8260B		11/24/2014	CJR	1
Isopropylbenzene	< 15	ug/l	15	48	50	8260B		11/24/2014	CJR	1
p-Isopropyltoluene	< 15.5	ug/l	15.5	49	50	8260B		11/24/2014	CJR	1
Methylene chloride	< 25	ug/l	25	80	50	8260B		11/24/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 11.5	ug/l	11.5	37	50	8260B		11/24/2014	CJR	1
Naphthalene	< 85	ug/l	85	275	50	8260B		11/24/2014	CJR	1
n-Propylbenzene	< 12.5	ug/l	12.5	40.5	50	8260B		11/24/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 22.5	ug/l	22.5	70	50	8260B		11/24/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 16.5	ug/l	16.5	55	50	8260B		11/24/2014	CJR	1
Tetrachloroethene	< 16.5	ug/l	16.5	55	50	8260B		11/24/2014	CJR	1
Toluene	106 "J"	ug/l	34.5	110	50	8260B		11/24/2014	CJR	1
1,2,4-Trichlorobenzene	< 49	ug/l	49	155	50	8260B		11/24/2014	CJR	1
1,2,3-Trichlorobenzene	< 90	ug/l	90	290	50	8260B		11/24/2014	CJR	1
1,1,1-Trichloroethane	< 16.5	ug/l	16.5	50	50	8260B		11/24/2014	CJR	1
1,1,2-Trichloroethane	< 17	ug/l	17	55	50	8260B		11/24/2014	CJR	1
Trichloroethene (TCE)	< 16.5	ug/l	16.5	50	50	8260B		11/24/2014	CJR	1
Trichlorofluoromethane	< 35.5	ug/l	35.5	115	50	8260B		11/24/2014	CJR	1
1,2,4-Trimethylbenzene	< 110	ug/l	110	345	50	8260B		11/24/2014	CJR	1
1,3,5-Trimethylbenzene	< 70	ug/l	70	225	50	8260B		11/24/2014	CJR	1
Vinyl Chloride	2180	ug/l	9	28.5	50	8260B		11/24/2014	CJR	1
m&p-Xylene	50 "J"	ug/l	34.5	110	50	8260B		11/24/2014	CJR	1
o-Xylene	< 31.5	ug/l	31.5	100	50	8260B		11/24/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	100	REC %			50	8260B		11/24/2014	CJR	1
SUR - 4-Bromofluorobenzene	94	REC %			50	8260B		11/24/2014	CJR	1
SUR - Dibromofluoromethane	93	REC %			50	8260B		11/24/2014	CJR	1
SUR - Toluene-d8	95	REC %			50	8260B		11/24/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 528102BB
Sample ID WT-18
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	58	ug/l	2.4	7.7	10	8260B		11/24/2014	CJR	1
Bromobenzene	< 3.2	ug/l	3.2	10	10	8260B		11/24/2014	CJR	1
Bromodichloromethane	< 3.7	ug/l	3.7	12	10	8260B		11/24/2014	CJR	1
Bromoform	< 3.5	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
tert-Butylbenzene	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	1
sec-Butylbenzene	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
n-Butylbenzene	< 3.5	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
Carbon Tetrachloride	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Chlorobenzene	< 2.4	ug/l	2.4	7.7	10	8260B		11/24/2014	CJR	1
Chloroethane	< 6.3	ug/l	6.3	20	10	8260B		11/24/2014	CJR	1
Chloroform	< 2.8	ug/l	2.8	8.8	10	8260B		11/24/2014	CJR	1
Chloromethane	< 8.1	ug/l	8.1	26	10	8260B		11/24/2014	CJR	1
2-Chlorotoluene	< 2.1	ug/l	2.1	6.6	10	8260B		11/24/2014	CJR	1
4-Chlorotoluene	< 2.1	ug/l	2.1	6.8	10	8260B		11/24/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 8.8	ug/l	8.8	28	10	8260B		11/24/2014	CJR	1
Dibromochloromethane	< 2.2	ug/l	2.2	7	10	8260B		11/24/2014	CJR	1
1,4-Dichlorobenzene	< 3	ug/l	3	9.6	10	8260B		11/24/2014	CJR	1
1,3-Dichlorobenzene	< 2.8	ug/l	2.8	8.9	10	8260B		11/24/2014	CJR	1
1,2-Dichlorobenzene	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	1
Dichlorodifluoromethane	< 4.4	ug/l	4.4	14	10	8260B		11/24/2014	CJR	1
1,2-Dichloroethane	< 4.1	ug/l	4.1	13	10	8260B		11/24/2014	CJR	1
1,1-Dichloroethane	22.7	ug/l	3	9.7	10	8260B		11/24/2014	CJR	1
1,1-Dichloroethene	< 4	ug/l	4	13	10	8260B		11/24/2014	CJR	1
cis-1,2-Dichloroethene	50	ug/l	3.8	12	10	8260B		11/24/2014	CJR	1
trans-1,2-Dichloroethene	< 3.5	ug/l	3.5	11	10	8260B		11/24/2014	CJR	1
1,2-Dichloropropane	< 3.2	ug/l	3.2	10	10	8260B		11/24/2014	CJR	1
2,2-Dichloropropane	< 3.6	ug/l	3.6	12	10	8260B		11/24/2014	CJR	4 8
1,3-Dichloropropane	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
Di-isopropyl ether	< 2.3	ug/l	2.3	7.3	10	8260B		11/24/2014	CJR	1
EDB (1,2-Dibromoethane)	< 4.4	ug/l	4.4	14	10	8260B		11/24/2014	CJR	1
Ethylbenzene	28.5	ug/l	5.5	17	10	8260B		11/24/2014	CJR	1
Hexachlorobutadiene	< 15	ug/l	15	48	10	8260B		11/24/2014	CJR	1
Isopropylbenzene	< 3	ug/l	3	9.6	10	8260B		11/24/2014	CJR	1
p-Isopropyltoluene	< 3.1	ug/l	3.1	9.8	10	8260B		11/24/2014	CJR	1
Methylene chloride	< 5	ug/l	5	16	10	8260B		11/24/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 2.3	ug/l	2.3	7.4	10	8260B		11/24/2014	CJR	1
Naphthalene	27.1 "J"	ug/l	17	55	10	8260B		11/24/2014	CJR	1
n-Propylbenzene	2.9 "J"	ug/l	2.5	8.1	10	8260B		11/24/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 4.5	ug/l	4.5	14	10	8260B		11/24/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Tetrachloroethene	< 3.3	ug/l	3.3	11	10	8260B		11/24/2014	CJR	1
Toluene	84	ug/l	6.9	22	10	8260B		11/24/2014	CJR	1
1,2,4-Trichlorobenzene	< 9.8	ug/l	9.8	31	10	8260B		11/24/2014	CJR	1
1,2,3-Trichlorobenzene	< 18	ug/l	18	58	10	8260B		11/24/2014	CJR	1
1,1,1-Trichloroethane	< 3.3	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
1,1,2-Trichloroethane	8.7 "J"	ug/l	3.4	11	10	8260B		11/24/2014	CJR	1
Trichloroethene (TCE)	3.3 "J"	ug/l	3.3	10	10	8260B		11/24/2014	CJR	1
Trichlorofluoromethane	< 7.1	ug/l	7.1	23	10	8260B		11/24/2014	CJR	1
1,2,4-Trimethylbenzene	< 22	ug/l	22	69	10	8260B		11/24/2014	CJR	1
1,3,5-Trimethylbenzene	< 14	ug/l	14	45	10	8260B		11/24/2014	CJR	1
Vinyl Chloride	2040	ug/l	1.8	5.7	10	8260B		11/24/2014	CJR	1
m&p-Xylene	27.8	ug/l	6.9	22	10	8260B		11/24/2014	CJR	1
o-Xylene	33	ug/l	6.3	20	10	8260B		11/24/2014	CJR	1
SUR - 4-Bromofluorobenzene	99	REC %			10	8260B		11/24/2014	CJR	1
SUR - Dibromofluoromethane	94	REC %			10	8260B		11/24/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	94	REC %			10	8260B		11/24/2014	CJR	1
SUR - Toluene-d8	98	REC %			10	8260B		11/24/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 528102CC
Sample ID WT-02A
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	56	ug/l	12	38.5	50	8260B		11/25/2014	CJR	1
Bromobenzene	< 16	ug/l	16	50	50	8260B		11/25/2014	CJR	1
Bromodichloromethane	< 18.5	ug/l	18.5	60	50	8260B		11/25/2014	CJR	1
Bromoform	< 17.5	ug/l	17.5	55	50	8260B		11/25/2014	CJR	1
tert-Butylbenzene	< 18	ug/l	18	60	50	8260B		11/25/2014	CJR	1
sec-Butylbenzene	< 16.5	ug/l	16.5	50	50	8260B		11/25/2014	CJR	1
n-Butylbenzene	< 17.5	ug/l	17.5	55	50	8260B		11/25/2014	CJR	1
Carbon Tetrachloride	< 16.5	ug/l	16.5	55	50	8260B		11/25/2014	CJR	1
Chlorobenzene	< 12	ug/l	12	38.5	50	8260B		11/25/2014	CJR	1
Chloroethane	< 31.5	ug/l	31.5	100	50	8260B		11/25/2014	CJR	1
Chloroform	< 14	ug/l	14	44	50	8260B		11/25/2014	CJR	1
Chloromethane	< 40.5	ug/l	40.5	130	50	8260B		11/25/2014	CJR	1
2-Chlorotoluene	< 10.5	ug/l	10.5	33	50	8260B		11/25/2014	CJR	1
4-Chlorotoluene	< 10.5	ug/l	10.5	34	50	8260B		11/25/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 44	ug/l	44	140	50	8260B		11/25/2014	CJR	1
Dibromochloromethane	< 11	ug/l	11	35	50	8260B		11/25/2014	CJR	1
1,4-Dichlorobenzene	< 15	ug/l	15	48	50	8260B		11/25/2014	CJR	1
1,3-Dichlorobenzene	< 14	ug/l	14	44.5	50	8260B		11/25/2014	CJR	1
1,2-Dichlorobenzene	< 18	ug/l	18	60	50	8260B		11/25/2014	CJR	1
Dichlorodifluoromethane	< 22	ug/l	22	70	50	8260B		11/25/2014	CJR	1
1,2-Dichloroethane	< 20.5	ug/l	20.5	65	50	8260B		11/25/2014	CJR	1
1,1-Dichloroethane	71	ug/l	15	48.5	50	8260B		11/25/2014	CJR	1
1,1-Dichloroethene	< 20	ug/l	20	65	50	8260B		11/25/2014	CJR	1
cis-1,2-Dichloroethene	4800	ug/l	19	60	50	8260B		11/25/2014	CJR	1
trans-1,2-Dichloroethene	< 17.5	ug/l	17.5	55	50	8260B		11/25/2014	CJR	1
1,2-Dichloropropane	< 16	ug/l	16	50	50	8260B		11/25/2014	CJR	1
2,2-Dichloropropane	< 18	ug/l	18	60	50	8260B		11/25/2014	CJR	4 8
1,3-Dichloropropane	< 16.5	ug/l	16.5	50	50	8260B		11/25/2014	CJR	1
Di-isopropyl ether	< 11.5	ug/l	11.5	36.5	50	8260B		11/25/2014	CJR	1
EDB (1,2-Dibromoethane)	< 22	ug/l	22	70	50	8260B		11/25/2014	CJR	1
Ethylbenzene	88	ug/l	27.5	85	50	8260B		11/25/2014	CJR	1
Hexachlorobutadiene	< 75	ug/l	75	240	50	8260B		11/25/2014	CJR	1
Isopropylbenzene	< 15	ug/l	15	48	50	8260B		11/25/2014	CJR	1
p-Isopropyltoluene	< 15.5	ug/l	15.5	49	50	8260B		11/25/2014	CJR	1
Methylene chloride	< 25	ug/l	25	80	50	8260B		11/25/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 11.5	ug/l	11.5	37	50	8260B		11/25/2014	CJR	1
Naphthalene	116 "J"	ug/l	85	275	50	8260B		11/25/2014	CJR	1
n-Propylbenzene	< 12.5	ug/l	12.5	40.5	50	8260B		11/25/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 22.5	ug/l	22.5	70	50	8260B		11/25/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 16.5	ug/l	16.5	55	50	8260B		11/25/2014	CJR	1
Tetrachloroethene	< 16.5	ug/l	16.5	55	50	8260B		11/25/2014	CJR	1
Toluene	380	ug/l	34.5	110	50	8260B		11/25/2014	CJR	1
1,2,4-Trichlorobenzene	< 49	ug/l	49	155	50	8260B		11/25/2014	CJR	1
1,2,3-Trichlorobenzene	< 90	ug/l	90	290	50	8260B		11/25/2014	CJR	1
1,1,1-Trichloroethane	42 "J"	ug/l	16.5	50	50	8260B		11/25/2014	CJR	1
1,1,2-Trichloroethane	< 17	ug/l	17	55	50	8260B		11/25/2014	CJR	1
Trichloroethene (TCE)	62	ug/l	16.5	50	50	8260B		11/25/2014	CJR	1
Trichlorofluoromethane	< 35.5	ug/l	35.5	115	50	8260B		11/25/2014	CJR	1
1,2,4-Trimethylbenzene	< 110	ug/l	110	345	50	8260B		11/25/2014	CJR	1
1,3,5-Trimethylbenzene	< 70	ug/l	70	225	50	8260B		11/25/2014	CJR	1
Vinyl Chloride	1410	ug/l	9	28.5	50	8260B		11/25/2014	CJR	1
m&p-Xylene	250	ug/l	34.5	110	50	8260B		11/25/2014	CJR	1
o-Xylene	134	ug/l	31.5	100	50	8260B		11/25/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	97	REC %			50	8260B		11/25/2014	CJR	1
SUR - 4-Bromofluorobenzene	97	REC %			50	8260B		11/25/2014	CJR	1
SUR - Dibromofluoromethane	90	REC %			50	8260B		11/25/2014	CJR	1
SUR - Toluene-d8	98	REC %			50	8260B		11/25/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 528102DD
Sample ID WT-02A DUP
Sample Matrix Water
Sample Date 11/18/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	54	ug/l	12	38.5	50	8260B		11/25/2014	CJR	1
Bromobenzene	< 16	ug/l	16	50	50	8260B		11/25/2014	CJR	1
Bromodichloromethane	< 18.5	ug/l	18.5	60	50	8260B		11/25/2014	CJR	1
Bromoform	< 17.5	ug/l	17.5	55	50	8260B		11/25/2014	CJR	1
tert-Butylbenzene	< 18	ug/l	18	60	50	8260B		11/25/2014	CJR	1
sec-Butylbenzene	< 16.5	ug/l	16.5	50	50	8260B		11/25/2014	CJR	1
n-Butylbenzene	< 17.5	ug/l	17.5	55	50	8260B		11/25/2014	CJR	1
Carbon Tetrachloride	< 16.5	ug/l	16.5	55	50	8260B		11/25/2014	CJR	1
Chlorobenzene	< 12	ug/l	12	38.5	50	8260B		11/25/2014	CJR	1
Chloroethane	< 31.5	ug/l	31.5	100	50	8260B		11/25/2014	CJR	1
Chloroform	< 14	ug/l	14	44	50	8260B		11/25/2014	CJR	1
Chloromethane	< 40.5	ug/l	40.5	130	50	8260B		11/25/2014	CJR	1
2-Chlorotoluene	< 10.5	ug/l	10.5	33	50	8260B		11/25/2014	CJR	1
4-Chlorotoluene	< 10.5	ug/l	10.5	34	50	8260B		11/25/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 44	ug/l	44	140	50	8260B		11/25/2014	CJR	1
Dibromochloromethane	< 11	ug/l	11	35	50	8260B		11/25/2014	CJR	1
1,4-Dichlorobenzene	< 15	ug/l	15	48	50	8260B		11/25/2014	CJR	1
1,3-Dichlorobenzene	< 14	ug/l	14	44.5	50	8260B		11/25/2014	CJR	1
1,2-Dichlorobenzene	< 18	ug/l	18	60	50	8260B		11/25/2014	CJR	1
Dichlorodifluoromethane	< 22	ug/l	22	70	50	8260B		11/25/2014	CJR	1
1,2-Dichloroethane	< 20.5	ug/l	20.5	65	50	8260B		11/25/2014	CJR	1
1,1-Dichloroethane	40 "J"	ug/l	15	48.5	50	8260B		11/25/2014	CJR	1
1,1-Dichloroethene	< 20	ug/l	20	65	50	8260B		11/25/2014	CJR	1
cis-1,2-Dichloroethene	5000	ug/l	19	60	50	8260B		11/25/2014	CJR	1
trans-1,2-Dichloroethene	< 17.5	ug/l	17.5	55	50	8260B		11/25/2014	CJR	1
1,2-Dichloropropane	< 16	ug/l	16	50	50	8260B		11/25/2014	CJR	1
2,2-Dichloropropane	< 18	ug/l	18	60	50	8260B		11/25/2014	CJR	4 8
1,3-Dichloropropane	< 16.5	ug/l	16.5	50	50	8260B		11/25/2014	CJR	1
Di-isopropyl ether	< 11.5	ug/l	11.5	36.5	50	8260B		11/25/2014	CJR	1
EDB (1,2-Dibromoethane)	< 22	ug/l	22	70	50	8260B		11/25/2014	CJR	1
Ethylbenzene	80 "J"	ug/l	27.5	85	50	8260B		11/25/2014	CJR	1
Hexachlorobutadiene	< 75	ug/l	75	240	50	8260B		11/25/2014	CJR	1
Isopropylbenzene	< 15	ug/l	15	48	50	8260B		11/25/2014	CJR	1
p-Isopropyltoluene	< 15.5	ug/l	15.5	49	50	8260B		11/25/2014	CJR	1
Methylene chloride	< 25	ug/l	25	80	50	8260B		11/25/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 11.5	ug/l	11.5	37	50	8260B		11/25/2014	CJR	1
Naphthalene	92 "J"	ug/l	85	275	50	8260B		11/25/2014	CJR	1
n-Propylbenzene	< 12.5	ug/l	12.5	40.5	50	8260B		11/25/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 22.5	ug/l	22.5	70	50	8260B		11/25/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 16.5	ug/l	16.5	55	50	8260B		11/25/2014	CJR	1
Tetrachloroethene	< 16.5	ug/l	16.5	55	50	8260B		11/25/2014	CJR	1
Toluene	370	ug/l	34.5	110	50	8260B		11/25/2014	CJR	1
1,2,4-Trichlorobenzene	< 49	ug/l	49	155	50	8260B		11/25/2014	CJR	1
1,2,3-Trichlorobenzene	< 90	ug/l	90	290	50	8260B		11/25/2014	CJR	1
1,1,1-Trichloroethane	45 "J"	ug/l	16.5	50	50	8260B		11/25/2014	CJR	1
1,1,2-Trichloroethane	< 17	ug/l	17	55	50	8260B		11/25/2014	CJR	1
Trichloroethene (TCE)	66	ug/l	16.5	50	50	8260B		11/25/2014	CJR	1
Trichlorofluoromethane	< 35.5	ug/l	35.5	115	50	8260B		11/25/2014	CJR	1
1,2,4-Trimethylbenzene	< 110	ug/l	110	345	50	8260B		11/25/2014	CJR	1
1,3,5-Trimethylbenzene	< 70	ug/l	70	225	50	8260B		11/25/2014	CJR	1
Vinyl Chloride	1430	ug/l	9	28.5	50	8260B		11/25/2014	CJR	1
m&p-Xylene	239	ug/l	34.5	110	50	8260B		11/25/2014	CJR	1
o-Xylene	126	ug/l	31.5	100	50	8260B		11/25/2014	CJR	1
SUR - Toluene-d8	95	REC %			50	8260B		11/25/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	96	REC %			50	8260B		11/25/2014	CJR	1
SUR - 4-Bromofluorobenzene	91	REC %			50	8260B		11/25/2014	CJR	1
SUR - Dibromofluoromethane	89	REC %			50	8260B		11/25/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 528102EE
Sample ID WT-19
Sample Matrix Water
Sample Date 11/19/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/21/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/21/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/21/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/21/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/21/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/21/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/21/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/21/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/21/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/21/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/21/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/21/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/21/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/21/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/21/2014	CJR	8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/21/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/21/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/21/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/21/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/21/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/21/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/21/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/21/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/21/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/21/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/21/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/21/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/21/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/21/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/21/2014	CJR	1
Trichloroethene (TCE)	0.50 "J"	ug/l	0.33	1	1	8260B		11/21/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/21/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/21/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/21/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/21/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/21/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/21/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	99	REC %			1	8260B		11/21/2014	CJR	1
SUR - 4-Bromofluorobenzene	98	REC %			1	8260B		11/21/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/21/2014	CJR	1
SUR - Toluene-d8	95	REC %			1	8260B		11/21/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 528102FF
Sample ID TRIP BLANK
Sample Matrix Water
Sample Date 11/14/2014

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	< 0.38	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	< 0.18	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	102	REC %			1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	100	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	83	REC %			1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	95	REC %			1	8260B		11/22/2014	CJR	1

Project Name FMR NEWTON GRAVEL PIT **Invoice #** E28102
Project #

Lab Code 528102GG
Sample ID WT-25 DUP
Sample Matrix Water
Sample Date 11/14/2014

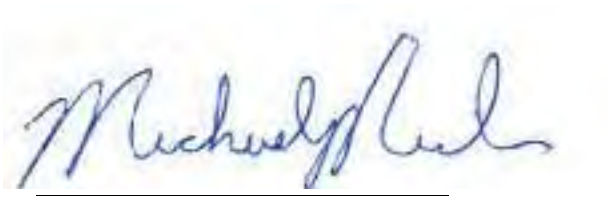
	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Organic										
VOC's										
Benzene	1.23	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Bromobenzene	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
Bromodichloromethane	< 0.37	ug/l	0.37	1.2	1	8260B		11/22/2014	CJR	1
Bromoform	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
tert-Butylbenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
sec-Butylbenzene	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
n-Butylbenzene	< 0.35	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
Carbon Tetrachloride	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Chlorobenzene	< 0.24	ug/l	0.24	0.77	1	8260B		11/22/2014	CJR	1
Chloroethane	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
Chloroform	< 0.28	ug/l	0.28	0.88	1	8260B		11/22/2014	CJR	1
Chloromethane	< 0.81	ug/l	0.81	2.6	1	8260B		11/22/2014	CJR	1
2-Chlorotoluene	< 0.21	ug/l	0.21	0.66	1	8260B		11/22/2014	CJR	1
4-Chlorotoluene	< 0.21	ug/l	0.21	0.68	1	8260B		11/22/2014	CJR	1
1,2-Dibromo-3-chloropropane	< 0.88	ug/l	0.88	2.8	1	8260B		11/22/2014	CJR	1
Dibromochloromethane	< 0.22	ug/l	0.22	0.7	1	8260B		11/22/2014	CJR	1
1,4-Dichlorobenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
1,3-Dichlorobenzene	< 0.28	ug/l	0.28	0.89	1	8260B		11/22/2014	CJR	1
1,2-Dichlorobenzene	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	1
Dichlorodifluoromethane	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
1,2-Dichloroethane	< 0.41	ug/l	0.41	1.3	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethane	< 0.3	ug/l	0.3	0.97	1	8260B		11/22/2014	CJR	1
1,1-Dichloroethene	< 0.4	ug/l	0.4	1.3	1	8260B		11/22/2014	CJR	1
cis-1,2-Dichloroethene	103	ug/l	0.38	1.2	1	8260B		11/22/2014	CJR	1
trans-1,2-Dichloroethene	0.40 "J"	ug/l	0.35	1.1	1	8260B		11/22/2014	CJR	1
1,2-Dichloropropane	< 0.32	ug/l	0.32	1	1	8260B		11/22/2014	CJR	1
2,2-Dichloropropane	< 0.36	ug/l	0.36	1.2	1	8260B		11/22/2014	CJR	4 8
1,3-Dichloropropane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Di-isopropyl ether	< 0.23	ug/l	0.23	0.73	1	8260B		11/22/2014	CJR	1
EDB (1,2-Dibromoethane)	< 0.44	ug/l	0.44	1.4	1	8260B		11/22/2014	CJR	1
Ethylbenzene	< 0.55	ug/l	0.55	1.7	1	8260B		11/22/2014	CJR	1
Hexachlorobutadiene	< 1.5	ug/l	1.5	4.8	1	8260B		11/22/2014	CJR	1
Isopropylbenzene	< 0.3	ug/l	0.3	0.96	1	8260B		11/22/2014	CJR	1
p-Isopropyltoluene	< 0.31	ug/l	0.31	0.98	1	8260B		11/22/2014	CJR	1
Methylene chloride	< 0.5	ug/l	0.5	1.6	1	8260B		11/22/2014	CJR	1
Methyl tert-butyl ether (MTBE)	< 0.23	ug/l	0.23	0.74	1	8260B		11/22/2014	CJR	1
Naphthalene	< 1.7	ug/l	1.7	5.5	1	8260B		11/22/2014	CJR	1
n-Propylbenzene	< 0.25	ug/l	0.25	0.81	1	8260B		11/22/2014	CJR	1
1,1,2,2-Tetrachloroethane	< 0.45	ug/l	0.45	1.4	1	8260B		11/22/2014	CJR	1
1,1,1,2-Tetrachloroethane	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Tetrachloroethene	< 0.33	ug/l	0.33	1.1	1	8260B		11/22/2014	CJR	1
Toluene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
1,2,4-Trichlorobenzene	< 0.98	ug/l	0.98	3.1	1	8260B		11/22/2014	CJR	1
1,2,3-Trichlorobenzene	< 1.8	ug/l	1.8	5.8	1	8260B		11/22/2014	CJR	1
1,1,1-Trichloroethane	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
1,1,2-Trichloroethane	< 0.34	ug/l	0.34	1.1	1	8260B		11/22/2014	CJR	1
Trichloroethene (TCE)	< 0.33	ug/l	0.33	1	1	8260B		11/22/2014	CJR	1
Trichlorofluoromethane	< 0.71	ug/l	0.71	2.3	1	8260B		11/22/2014	CJR	1
1,2,4-Trimethylbenzene	< 2.2	ug/l	2.2	6.9	1	8260B		11/22/2014	CJR	1
1,3,5-Trimethylbenzene	< 1.4	ug/l	1.4	4.5	1	8260B		11/22/2014	CJR	1
Vinyl Chloride	5.2	ug/l	0.18	0.57	1	8260B		11/22/2014	CJR	1
m&p-Xylene	< 0.69	ug/l	0.69	2.2	1	8260B		11/22/2014	CJR	1
o-Xylene	< 0.63	ug/l	0.63	2	1	8260B		11/22/2014	CJR	1
SUR - Toluene-d8	96	REC %			1	8260B		11/22/2014	CJR	1
SUR - 1,2-Dichloroethane-d4	100	REC %			1	8260B		11/22/2014	CJR	1
SUR - 4-Bromofluorobenzene	104	REC %			1	8260B		11/22/2014	CJR	1
SUR - Dibromofluoromethane	87	REC %			1	8260B		11/22/2014	CJR	1

"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
3	The matrix spike not within established limits.
4	The continuing calibration standard not within established limits.
8	Closing calibration standard not within established limits.

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature



CHAIN OF JSTODY RECORD

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 310

Page 1 of 4

Sample Handling Request
_____ Rush Analysis Date Required _____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #

Account No. : | **Quote No.:**

Project #:

Sampler: (signature)

Project (Name / Location): Former Newton Gravel Pit / Manitowoc, WI

Reports To: DAVE HENDERSON	Invoice To: DAVE HENDERSON
Company AECOM	Company SAME
Address 1555 N. RiverCenter STE214	Address
City State Zip Milwaukee, WI 53212	City State Zip
Phone 414-944-6190	Phone
FAX 414-944-6081	FAX

Analysis Requested | **Other Analysis**

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 542.2)	VOC (EPA 8260)	8-RCRA METALS	PID/FID
S028102A	PZ-24C	11/14/14	945		X	N	3	GW	HCl													X		
B	PZ-24A	11/14/14	1210		X	N	3	GW	HCl													X		
C	PZ-24B	11/14/14	1100		X	N	3	GW	HCl													X		
D	WT-24	11/14/14	1010		X	N	3	GW	HCl													X		
E	PZ-24A DUP	11/14/14	1210		X	N	3	GW	HCl													X		
F	PZ-25C	11/14/14	1310		X	N	3	GW	HCl													X		
G	PZ-25B	11/14/14	1400		X	N	3	GW	HCl													X		
H	PZ-25A	11/14/14	1445		X	N	3	GW	HCl													X		
I	WT-25	11/14/14	1525		X	N	3	GW	HCl													X		
J	PZ-12	11/17/14	1040		X	N	3	GW	HCl													X		

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Analysis per Contract

Sample Integrity - To be completed by receiving lab.

Method of Shipment: Dedham

Temp. of Temp. Blank ____ °C On Ice X

Cooler seal intact upon receipt: X Yes ____ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	0800	11/20/14			

Received in Laboratory By: Time: 8:00 Date: 11/21/14

CHAIN OF JSTODY RECORD

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 310

Page 2 of 4

Sample Handling Request
_____ Rush Analysis Date Required _____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #

Account No. : | **Quote No.:**

Project #:

Sampler: (signature) Jason E Day

Project (Name / Location): Former Newton Gravel Pit / Manitowoc, WI

Reports To: DAVE HENDERSON	Invoice To: DAVE HENDERSON
Company AECOM	Company SAME
Address 1555 N. River Center STE 214	Address
City State Zip Milwaukee WI 53212	City State Zip
Phone 414-944-6190	Phone
FAX 414-944-6081	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 542.2)	VOC (EPA 8260)	8-RCRA METALS	PID/ FID
S0281026	WP-06	11/17/14	955		X	N	3	GW	HCl													X		
L	WT-12	11/17/14	1105		X	N	3	GW	HCL													X		
M	WT-12 DUP	11/17/14	1105		X	N	3	GW	HCL													X		
N	WT-11	11/17/14	1130		X	N	3	GW	HCl													X		
O	P2-15A	11/17/14	1205		X	N	3	GW	HCl													X		
P	P2-15B	11/17/14	1250		X	N	3	GW	HCL													X		
Q	WT-15	11/17/14	1315		X	N	3	GW	HCL													X		
R	P2-05B	11/17/14	1350		X	N	3	GW	HCl													X		
S	P2-05A	11/17/14	1415		X	N	3	GW	HCl													X		
T	WT-05	11/17/14	1445		X	N	3	GW	HCl													X		

Analysis Requested | **Other Analysis**

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Analysis Per Contract

Sample Integrity - To be completed by receiving lab.

Method of Shipment: Fedex

Temp. of Temp. Blank ____ °C On Ice: X

Cooler seal intact upon receipt: X Yes ____ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
Jordan	0800	11/20/14			

Received in Laboratory By: [signature] Time: 8:00 Date: 11/21/14

CHAIN OF CUSTODY RECORD

Synergy
Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # No 3100

Page 3 of 4

Sample Handling Request
_____ Rush Analysis Date Required _____
(Rushes accepted only with prior authorization)
_X_ Normal Turn Around

Lab I.D. #	
Account No. :	Quote No.:
Project #:	
Sampler: (signature)	
Project (Name / Location):	Former Newton Gravel Pit / Manitowoc WI
Reports To:	DAVE HENDERSON
Company	7555 N. RiverCenter Dr. STE 214
Address	AECOM
City State Zip	Milwaukee, WI 53212
Phone	414-944-6190
FAX	414-944-6081
Invoice To:	DAVE HENDERSON
Company	SAME
Address	
City State Zip	
Phone	
FAX	

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 542.2)	VOC (EPA 8260)	8-RCRA METALS	PID/ FID
5028102-U	WT-13	11/18/14	815		X	N	3	GW	HCl													X	X	
V	WT-03	11/18/14	900		X	N	3	GW	HCl													X	X	
W	PZ-03	11/18/14	1015		X	N	3	GW	HCl													X	X	
X	WT-07	11/18/14	1125		X	N	3	GW	HCl													X	X	
Y	PZ-02	11/18/14	1235		X	N	3	GW	HCl													X	X	
Z	PZ-02 DUP	11/18/14	1235		X	N	3	GW	HCl													X	X	
AA	WT-10	11/18/14	1335		X	N	3	GW	HCl													X	X	
BB	WT-18	11/18/14	1400		X	N	3	GW	HCl													X	X	
CC	WT-02A	11/18/14	905		X	N	3	GW	HCl													X	X	
DD	WT-02A DUP	11/18/14	905		X	N	3	GW	HCl													X	X	

Analysis Requested | **Other Analysis**

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Analysis per Contract

Sample Integrity - To be completed by receiving lab.
Method of Shipment:
Temp. of Temp. Blank ____ °C On Ice: X
Cooler seal intact upon receipt: X Yes ____ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	0800	11/20/14			

Received in Laboratory By: Time: 8:00 Date: 11/21/14

CHAIN OF CUSTODY RECORD

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # Nº 310

Page 4 of 4

Sample Handling Request
_____ Rush Analysis Date Required _____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #	
Account No. :	Quote No.:
Project #:	
Sampler: (signature)	

Project (Name / Location): Former Newton Gravel Pit / Manitowoc, WI	
Reports To: DAVE HENDERSON	Invoice To: DAVE HENDERSON
Company AECOM	Company SAME
Address 1555 N RiverCenter STE 214	Address
City State Zip Milwaukee WI 53212	City State Zip
Phone 414-944-6190	Phone
FAX 414-944-6081	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 542.2)	VOC (EPA 8260)	8-RCRA METALS	PID/ FID
528102	WT-19	11/19/14	980		X	N	3	GW	HCl													XX		
FF	Trip Blank	11/14/14	0800		X	N	2	GW	HCl													XX		
GG	WT-25 DUP	11/4/14	1525		X	N	3	GW	HCl													X		

Analysis Requested | Other Analysis

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Analysis per Contract

Sample Integrity - To be completed by receiving lab.
Method of Shipment: Courier
Temp. of Temp. Blank ___ °C On Ice: X
Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	0800	11/20/14			

Received in Laboratory By: _____ Time: 8:00 Date: 11/21/14