PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT
for
OHIO BLENDERS PROPERTY

NORTHWEST TRIANGLE INITIATIVE
City of York
York County, Pennsylvania

September 2009

Prepared for:

The City of York Redevelopment Authority
49 East Market Street
York, PA

Prepared by:

ARM Group Inc.
Hershey, Pennsylvania

(ARM Project 07214)

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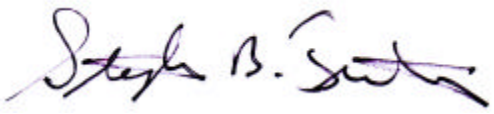
Respectfully submitted:



Stephen B. Fulton, P.G., P.E.
Vice President and Senior Geologist

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1.0 INTRODUCTION

1.1 Project Background

This Phase II Environmental Site Assessment Report (Phase II ESA) has been prepared by ARM Group Inc. (ARM) to summarize the environmental site characterization activities conducted to date for the Ohio Blenders property located within the City of York, York County, Pennsylvania. This report has been prepared at the request of the City of York Redevelopment Authority (RDA), a non-profit organization that is leading an initiative to remediate and redevelop properties within an approximately 14.5-acre portion of the City of York that is referred to as the Northwest Triangle (NWT) Initiative. The NWT is located in the northwestern corner of York, generally bounded to the north and west by the Codorus Creek, to the east by North Beaver Street, and to the south by West Gay Avenue; a general depiction of the site and surrounding area is presented on the attached Figure 1. The goal of the NWT Initiative is to revitalize and enhance this portion of the City of York through the demolition and/or remodeling of contaminated, abandoned and/or under-utilized properties, and to establish new residential and commercial facilities.

This Phase II ESA presents the current investigation results for the Ohio Blenders (AlfaGreen Supreme) property located at 260 North Beaver Street and 132-152 North Pershing Avenue, in the City of York, York County, Pennsylvania (see Figure 1). The site encompasses approximately 2.04 acres, and is split up by railroad right-of-ways that are owned by York Rail. Ohio Blenders has eight grain storage silos and a small office located in the northwestern corner of the property. Review of historical information indicates that the property was originally used for coal and utility pole storage prior to the 1950s. Beginning in the mid-1950s, the property was used as a feed mill, and that use has continued up to the date of ARM's investigation.

The Ohio Blenders has undergone various stages of investigation. Phase I and limited Phase II ESAs were completed by other firms prior to ARM's involvement with the project. ARM was subsequently contracted by the RDA to perform additional site sampling and characterization of the property, and to support the development and implementation of environmental remediation plans. ARM's work was conducted in accordance with the June 2007 Supplemental Phase II Environmental Site Assessment (ESA) Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP), which was reviewed and approved by the Pennsylvania Department of Environmental Protection (PADEP).

1.2 Geologic Setting

The NWT site is underlain by the Conestoga Formation and the Pure Limestone Member of the Kinzers Formation. The Conestoga Formation consists of impure, gray limestone. Both units are susceptible to sinkholes and a highly irregular, pinnacled bedrock surface may occur below a deceptively smooth land surface.

The site is located within the Codorus Creek watershed, and the Creek is the receptor for local surface and groundwater. Groundwater and surface water at and in the vicinity of the site flows to the north and northwest. Groundwater is 13 to 21 feet below the ground surface.

1.3 Previous Investigation Activities

Various phases of investigation were conducted prior to ARM's most recent investigation activities. These previous investigation activities included the following:

- Edge Environmental, Inc. prepared an initial Phase I Environmental Site Assessment Report dated June 1, 2004, which addressed all of the NWT properties of concern. For the Ohio Blenders property, this report identified historical site uses and potential environmental issues. State and federal records were reviewed, a site reconnaissance was performed, and local officials, owners, and occupants were interviewed regarding the site's environmental history. The report identified two coal storage yards (Coal Yards No. 1 and 2) and a former utility pole storage area as potential Areas of Concern (AOCs) at the property.

- A Revised Phase I Environmental Site Assessment (ESA) of the properties of concern was completed by Pennoni Associates, Inc. on June 2, 2005. This report expanded on the Edge Environmental assessment report, and included Sanborn maps, historical aerial photographs, and an Environmental Data Resources (EDR) Report. Historical above-ground storage tanks (ASTs), two fire-proof doors, potential PCBs, PAHs, metals associated with the railroad tracks, and numerous mercury-containing thermostats were identified as items of potential environmental concern at the site.

- GTS Technologies, Inc. (GTS) completed an Interim Site Characterization Report for the Keystone Color Works and Ohio Blenders properties dated December 21, 2005. Three geophysical surveys, including metal detection, terrain conductivity, and ground-penetrating radar, were performed on the Ohio Blenders property. The geophysical surveys identified six potential USTs. Potential PCB-containing transformers were also found on the Ohio Blenders property. Thirty six (36) surface soils samples were collected across the Ohio Blenders property, and antimony, arsenic, total chromium, lead and 1,2-diphenlyhydrazine were detected in soils at concentrations that exceed the associated PADEP Statewide Health Medium Specific Concentrations (MSCs) in Coal Yards No. 1 and 2. An additional 12 surface soil samples were collected from the area where utility poles had been stored, and the concentrations of creosote-related compounds in these soil samples did not exceed any PADEP MSCs. Three surface soil samples were collected from the area where the transformers were located, and the concentrations of PCBs in these samples were below the applicable PADEP MSCs. Eight geoprobe borings were also completed across the site near the suspected UST systems; soil samples collected from these borings were analyzed for leaded gasoline parameters. One sample indicated a concentration of lead in excess of the PADEP MSC, although all other results were below the applicable PADEP MSCs. A summary of this

data from the GTS report is presented in Appendix C, along with the analytical data sheets.

2.0 SITE ASSESSMENT ACTIVITIES

2.1 Sampling Rationale and Methodology

Based on the results of the previous investigation activities, supplemental investigation activities were conducted by ARM to support the identification and delineation of contaminants of potential concern in soils and groundwater at the site, and to ultimately facilitate the completion of an Act 2 Final Report for the site following the implementation of any remediation activities. In general, sampling locations and depths were biased towards locations of potential contamination identified by the previous investigation activities, and/or through supplemental field observations (e.g., staining, odors, proximity to potential discharge locations, and elevated VOC concentrations in air based on field-screening with a photo-ionization detector). In locations were chemical concentrations were previously identified at levels exceeding the PADEP Statewide Health MSCs (25 PA Code Chapter 250), additional sampling was conducted to delineate the lateral and vertical extent of contamination as required by the Chapter 250 regulations for Act 2 projects. Monitoring well locations were selected to help define groundwater flow directions and to provide for monitoring of groundwater quality along the downgradient site boundary.

All sampling and analysis was conducted in accordance with the PADEP-approved Supplemental Phase II ESA SAP and QAPP dated June 2007, as well as all applicable PADEP regulations and guidance for the collection and analysis of environmental samples (e.g., the PADEP's Act 2 Technical Guidance Manual). Specific protocols included the decontamination of non-disposable sampling equipment prior to sample collection, and the proper preservation and chain-of-custody handling of all samples selected for laboratory analysis. All samples were analyzed by Analytical Laboratory Services, Inc. (ALSI) of Middletown, Pennsylvania.

2.2 Sampling Activities and Results

ARM's supplemental sampling of the Ohio Blenders property was conducted from June to August 2009. The sampling activities included: test pit excavations to explore suspected UST locations; the use of Geoprobe direct-push equipment to facilitate the collection of soil samples; installation of groundwater monitoring wells using an air rotary drill rig; and sampling of groundwater. Sample locations were determined based upon analytical results from prior site investigations, including the Edge Environmental, Pennoni Associates, and GTS Technologies reports, and supplemental sampling events were added as appropriate to help better delineate the horizontal and vertical extent of contamination detected at the site.

As generally depicted on the attached Figure 1, the site area consists of eight grain silos, two associated work buildings, a gravel lot, truck scales, and one set of railroad tracks owned by

Ohio Blenders. Rail lines owned by York Rail divide the property south of the silos; the York Rail property was not sampled as part of this work. Selected site photographs are provided in Appendix E.

The sampling activities and results are discussed in the following subsections. The sampling locations are shown on the figures that follow the text of this report, and the sampling results are summarized on the attached data summary tables. The laboratory data sheets from ARM's investigation activities are presented as Appendix B to this report, while historical laboratory data from previous events is presented in Appendix C.

2.2.1 Soil Sampling

A mini-excavator was used on June 12, 2009 to investigate potential UST locations that were identified in the GTS Technologies interim site characterization report. No USTs were discovered during the test pit activities, and it appears that all USTs have been previously removed from the site.

ARM collected 165 shallow and deep subsurface soil samples across the Ohio Blenders property using Geoprobe direct-push equipment. These samples were collected over the course of a series of investigations, from June through August 2009, with the primary goals of characterizing the nature of contamination in the soils at the site, and delineating the vertical and horizontal extent of contamination at the site. The sample locations are shown on the attached Figures 2, 3, and 4, and the laboratory results are summarized on Table 1.

Per the approved SAP, samples were initially collected from the previously identified areas of potential concern, with analyses conducted for the previously identified constituents of potential concern (i.e., arsenic, lead, total chromium and/or 1,2-diphenylhydrazine). Following receipt of the initial samples, subsequent samples were analyzed for arsenic, lead, and/or chromium as needed to help delineate the extent of contamination, as defined by exceedances of the PADEP Statewide Health MSCs. In some cases, the delineation sampling was limited by existing site features, obstructions (e.g., subsurface utilities), and property boundaries. Because there is a different MSC for the different species of chromium, analysis was also conducted for hexavalent chromium (chromium VI) to characterize the species of chromium at the site, and the applicable MSC.

As shown on the attached Table 1, Appendix C, and Figures 2 through 4, a number of samples contained concentrations in excess of the PADEP Statewide Health MSCs. The MSC exceedances were generally limited to the upper 4 feet of soil and fill materials, and the contaminant concentrations typically decrease with depth. Arsenic was by far the most common contaminant detected at the site at elevated concentrations, although lead was detected at concentrations above the MSCs in a few samples collected from the northeast corner of the site. The contamination is believed to be largely associated with previous operations and activities performed on the site (e.g., coal storage), and/or historic fill placement at the site (test pit

excavations indicated that the materials observed near the ground surface contained large amounts of brick, coal ash, and cinders).

2.2.2 Groundwater Sampling

A total of six monitoring wells were installed on the Ohio Blenders property using air-rotary drilling methods. Following installation, each of the monitoring wells was developed by over-pumping, although the well yields were relatively low because of the low-permeability of the formation. Monitoring wells MW-3S, MW-4S, and MW-5S were installed to approximately 50 feet below ground surface (bgs), and are used to monitor shallow groundwater. Monitoring wells MW-3B, MW-4B, and MW-5B were installed from 130 feet to 150 feet bgs, and are used to monitor groundwater found in the bedrock at the site. These wells were installed to supplement the information provided by the two monitoring wells (MW-1 and MW-2) previously installed at upgradient properties within the NWT area. The monitoring well locations are shown on the attached Figure 1, and the monitoring well logs are provided in Appendix D.

Groundwater sampling events were conducted on June 29, 2009 and July 27, 2009 to support the groundwater characterization. Depth to groundwater measurements were collected from each of the monitoring wells at the start of each sampling event, and prior to the removal of water from any of the wells. Each of the wells was than purged of water, and samples were collected in accordance with standard PADEP practices.

Groundwater contour maps were developed from the depth-to-groundwater data to estimate groundwater flow directions and gradients. To support the development of these maps, the well casings were surveyed with a level and rod using a local benchmark with an estimated elevation. The groundwater level measurements are summarized on the attached Table 2, and the estimated groundwater table contour maps are presented as Figures 5 and 6. Based on the inferred groundwater contours presented on Figures 5 and 6, the groundwater flow direction in the area is generally towards the northwest corner of the Ohio Blenders property, in the vicinity of monitoring wells MW-4S and MW-4B. Groundwater follow is expected to be towards the creek, although the apparent localized depression in the groundwater table could be the result of preferential flow conditions and/or off-site pumping across the creek.

The groundwater quality results are summarized on the attached Table 3, and the analytical data sheets are presented in Appendix B. As presented on Table 3, the analytical results indicate concentrations of lead, trichloroethene (TCE), and bis(2-ethylhexyl)phthalate at concentrations that exceed the PADEP Statewide Health Standards for used aquifers. All exceedances were only slightly above the applicable MSCs, and none of the exceedances occurred during both events at any of the wells. The elevated lead concentrations may have been related to excessive turbidity in the original samples. The TCE was detected at monitoring well pairs MW-4 and MW-5, although the source of the TCE has not been identified in the site soils or elsewhere.

2.3 Pre-demolition Site Inspection

In addition to the investigation of soils and groundwater, a hazardous materials survey of the on-site structures was completed by ARM on July 20, 2009 as part of the site assessment process. These inspection activities included an assessment of potential asbestos, lead-based paint, PCB-containing light ballasts, mercury-containing switches, and other materials that would require special handling and/or disposal in association with any structure demolition and site redevelopment. A copy of the building inspection report and associated results is presented in Appendix A of this report.

3.0 SUMMARY AND CONCLUSIONS

Based on the site investigation activities discussed above, the environmental conditions at the Ohio Blenders site are generally summarized as follows:

- Soil contamination has been detected across a majority of the site at concentrations that exceed the PADEP Statewide Health MCSs. The contamination is generally limited to the upper 2 to 4 feet of material across the site, with concentrations decreasing with depth. Arsenic was the most commonly detected contaminant, although lead was also detected at elevated concentrations. The total volume of soil that exceeds the PADEP's Statewide Health MSCs for unrestricted use is approximately 6,000 cubic yards (cy), while the volume of soil that exceeds the PADEP's MSCs for non-residential use is approximately 600 cy.

- Groundwater flow at the site is inferred to be towards the northwest corner of the site towards the Codorus Creek. Lead, TCE, and bis(2-ethylhexyl)phthalate were detected in groundwater at concentrations that exceed the PADEP's Statewide Health MSCs for used aquifers. The exceedances were generally marginal and intermittent, and no apparent source area was identified. Because groundwater is not used at the site, there are no current exposure pathways of concern.

To the extent required, remediation of the site should be conducted under Pennsylvania's Act 2 program, as presented in the regulations at 25 PA Code Chapter 250. The cleanup standard selected should be compatible with the current and proposed future site use, and could include soil removal, soil treatment, in-place containment, and/or institutional controls to prevent unacceptable exposures to soil and groundwater. On behalf of the City of York RDA, a Notice of Intent to Remediate (NIR) the site was submitted to the PADEP in September 2008. Following the completion of any remedial activities and PADEP approval of a Final Report, environmental cleanup liability protection would be available to the site owner and remediator.

FIGURES

LEGEND

PROPERTY BOUNDARY (APPROX.) FOR OHIO BLENDERS (PROPERTY F)

MW-4B BEDROCK MONITORING WELL

MW-4S SHALLOW MONITORING WELL

0 100 200

SCALE IN FEET

Site Layout

Ohio Blenders
Northwest Triangle Initiative
City of York, PA

07/01/2009	Scale: 1" = 100'	07214

ARM Group Inc.
Earth Resource Engineers and Consultants
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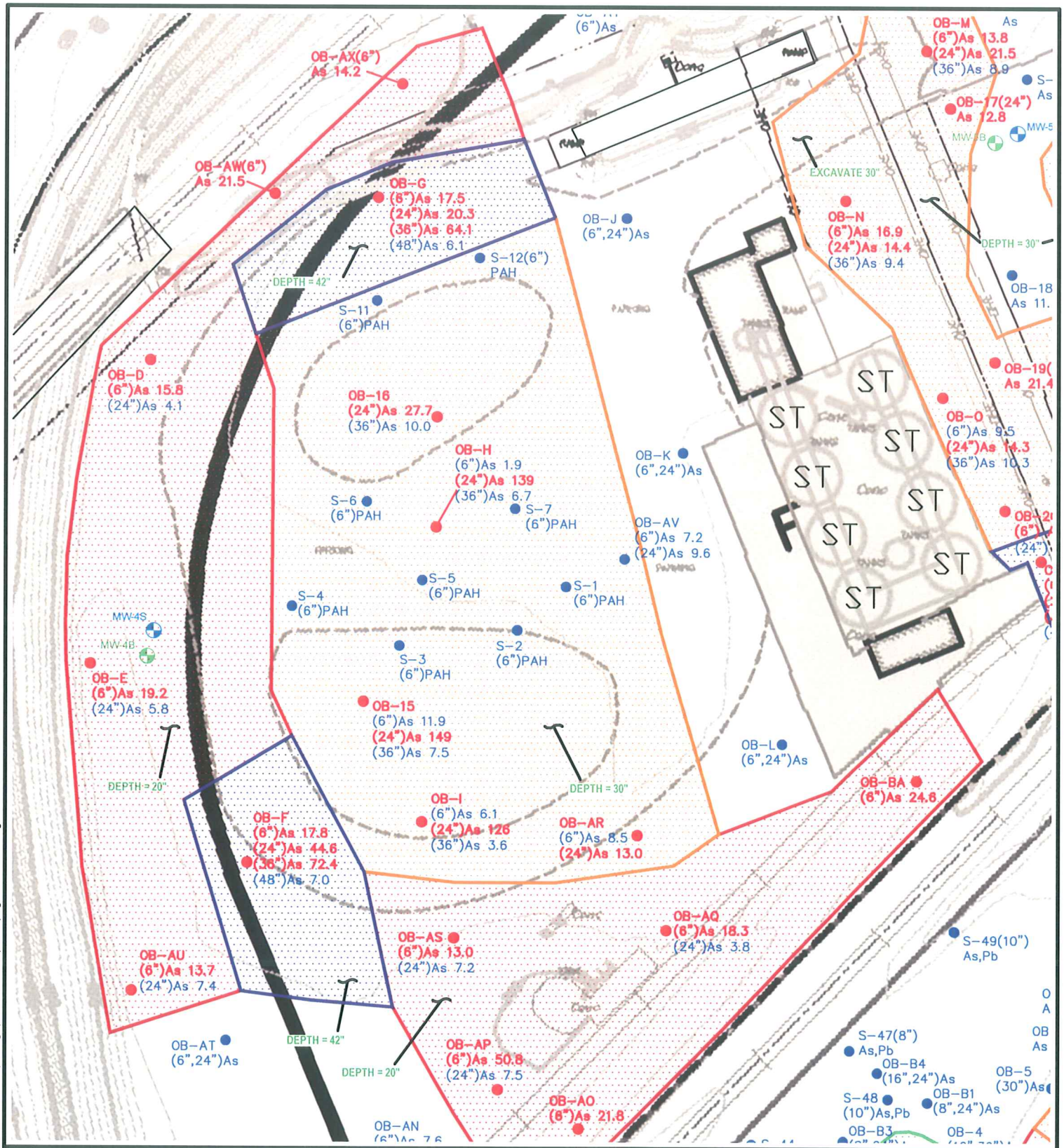
Figure 1

T:\07214 NWT Act 2 Project\STAGE2_OHIO_BLENDERS_Dwg\Phase II Report\Figure 1-Site Layout.dwg



Base map from C.S. DAVIDSON, INC.

LEGEND

- MW-3S — Shallow Monitoring Well
- MW-3B — Bedrock Monitoring Well
- S-22(8") As,Pb — Sample Location Below MSC
- OB-15(24") As 149 — Sample Location Exceeding MSC
- Estimated Extent and Depth of Soils Exceeding Residential MSCs

0 40 80 120

SCALE IN FEET

N

Soil Sample Locations
Northwest Corner of Site

Ohio Blenders
Northwest Triangle Initiative
City of York, PA

07/09/2009	Scale: 1" = 40'	07214

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Figure 2

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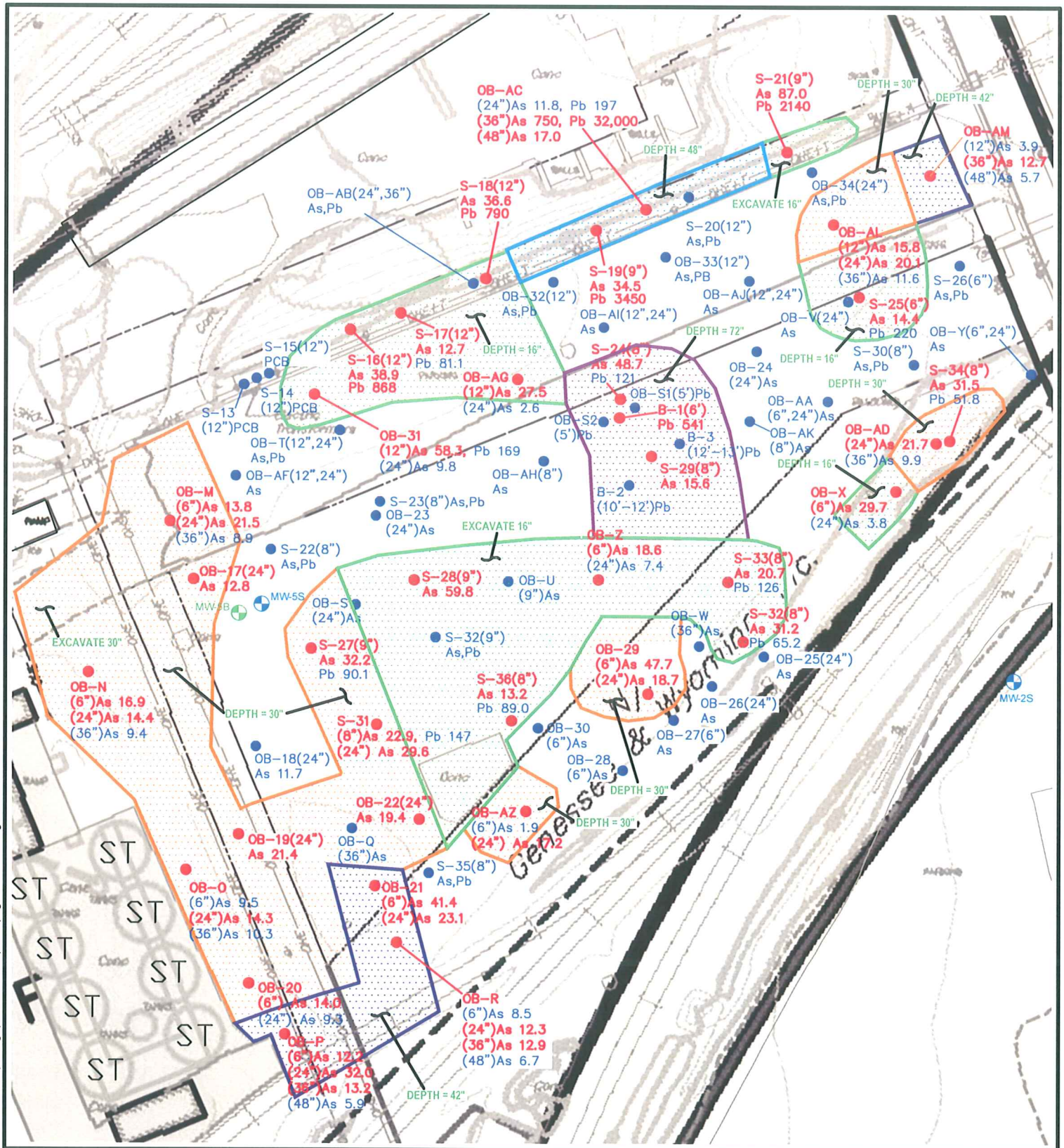

Base map from C.S. DAVIDSON, INC.

LEGEND

- MW-3S — Shallow Monitoring Well
- MW-3B — Bedrock Monitoring Well
- S–22(8") As,Pb — Sample Location Below MSC
- OB–15(24") As 149 — Sample Location Exceeding MSC
- Estimated Extent and Depth of Soils Exceeding Residential MSCs

0 40 80 120

SCALE IN FEET

N

Soil Sample Locations
Northeast Corner of Site

Ohio Blenders
Northwest Triangle Initiative
City of York, PA

07/09/2009	Scale: 1" = 40'	07214

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Figure 3

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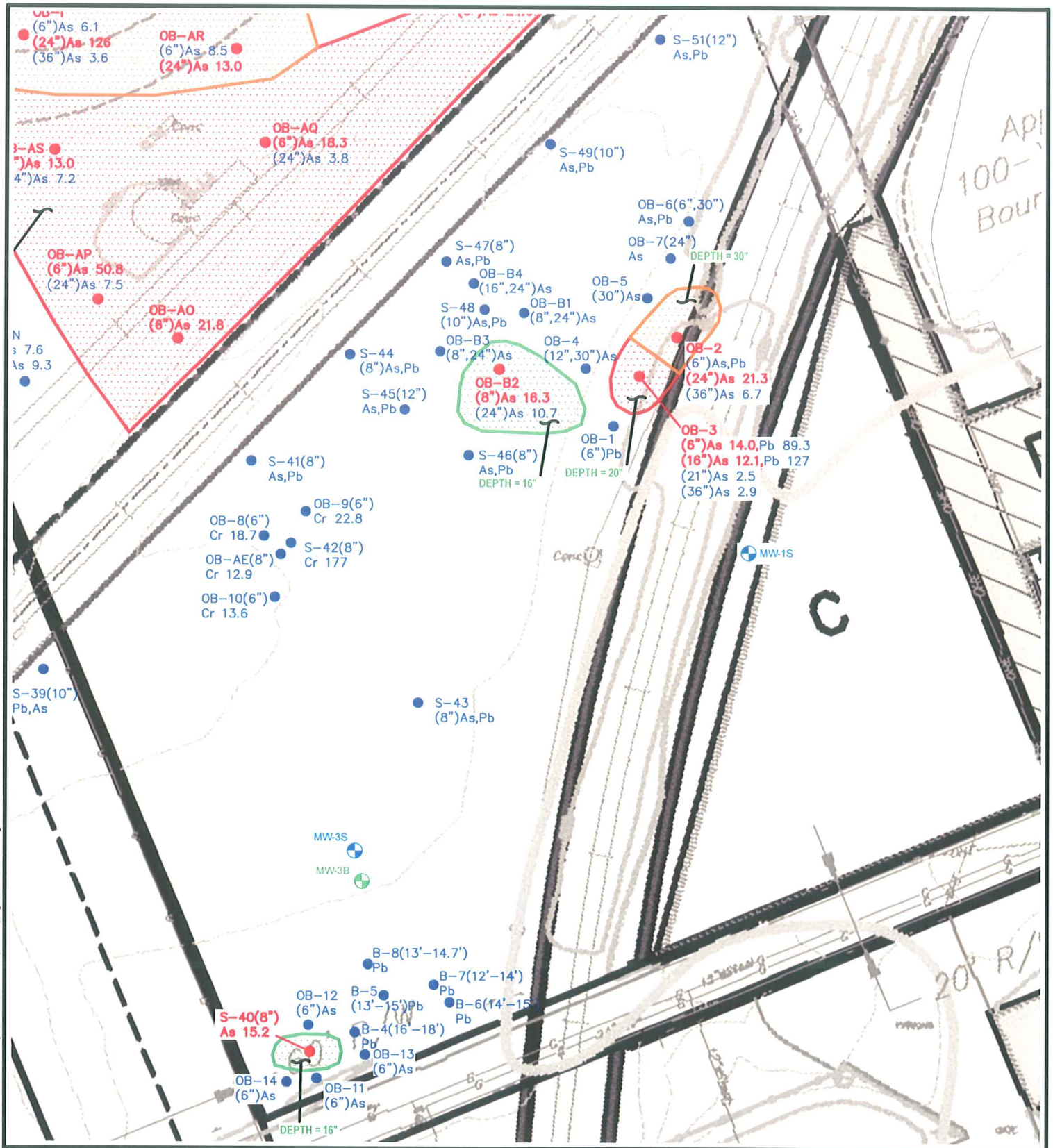

Base map from C.S. DAVIDSON, INC.

LEGEND

- MW-3S — Shallow Monitoring Well
- MW-3B — Bedrock Monitoring Well
- S-22(8") As,Pb — Sample Location Below MSC
- OB-15(24") As 149 — Sample Location Exceeding MSC
- Estimated Extent and Depth of Soils Exceeding Residential MSCs

0 40 80 120

SCALE IN FEET

Soil Sample Locations
Southwest Corner of Site

Ohio Blenders
Northwest Triangle Initiative
City of York, PA

07/09/2009	Scale: 1" = 40'	07214

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Figure 4

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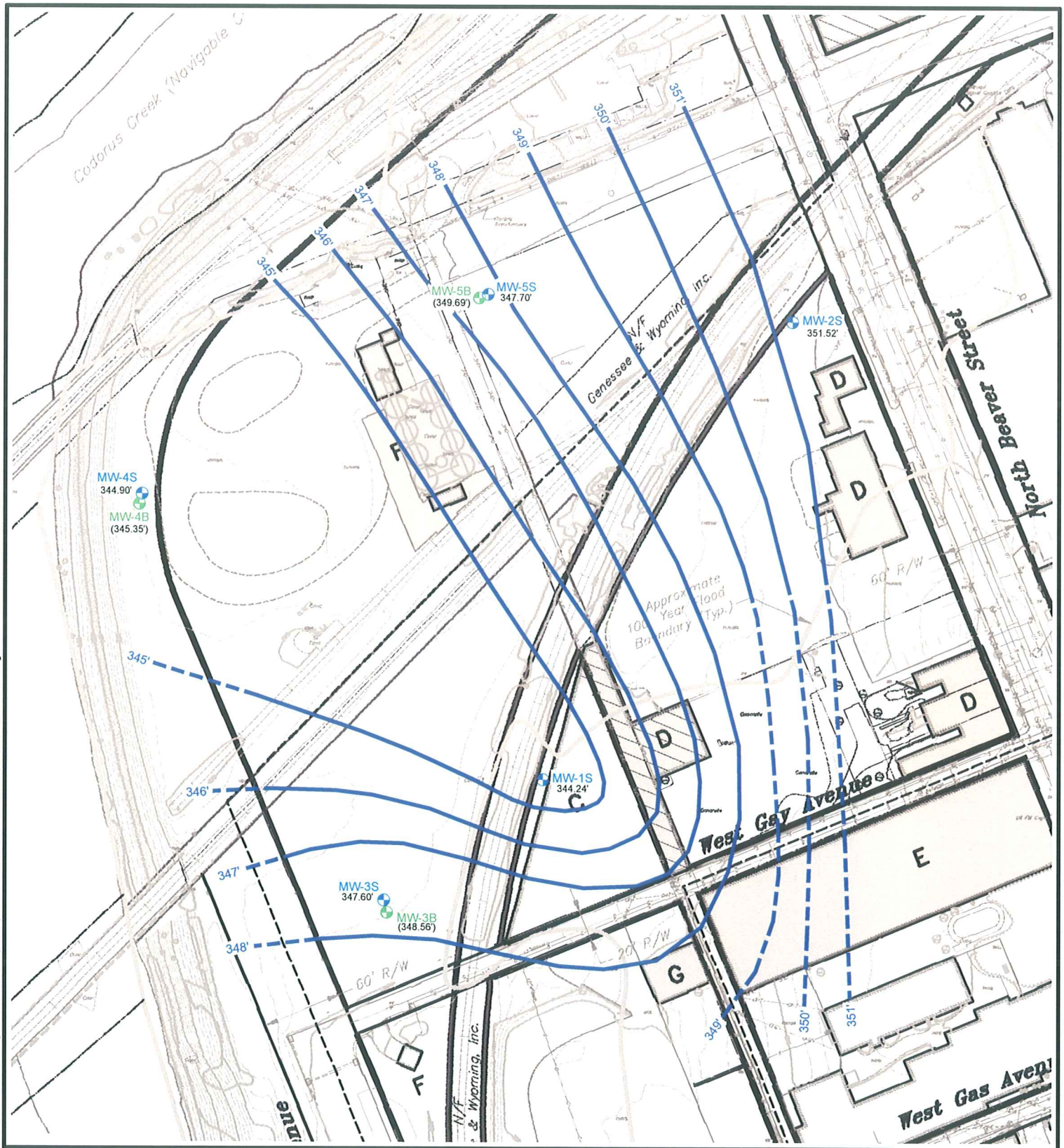

Base map from C.S. Davidson, Inc.

LEGEND

MW-3S — Shallow Monitoring Well

MW-3B — Bedrock Monitoring Well

347.60' — Relative Groundwater Elevation

(348.56') — Bedrock Groundwater Elevation Not Used For Mapping

— Groundwater Elevation Contour

0 100 200 300

SCALE IN FEET

Groundwater Elevations June 29, 2009

Ohio Blenders
Northwest Triangle Initiative
City of York, PA

July 2009	Scale: 1" = 100'	07214

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Figure 5

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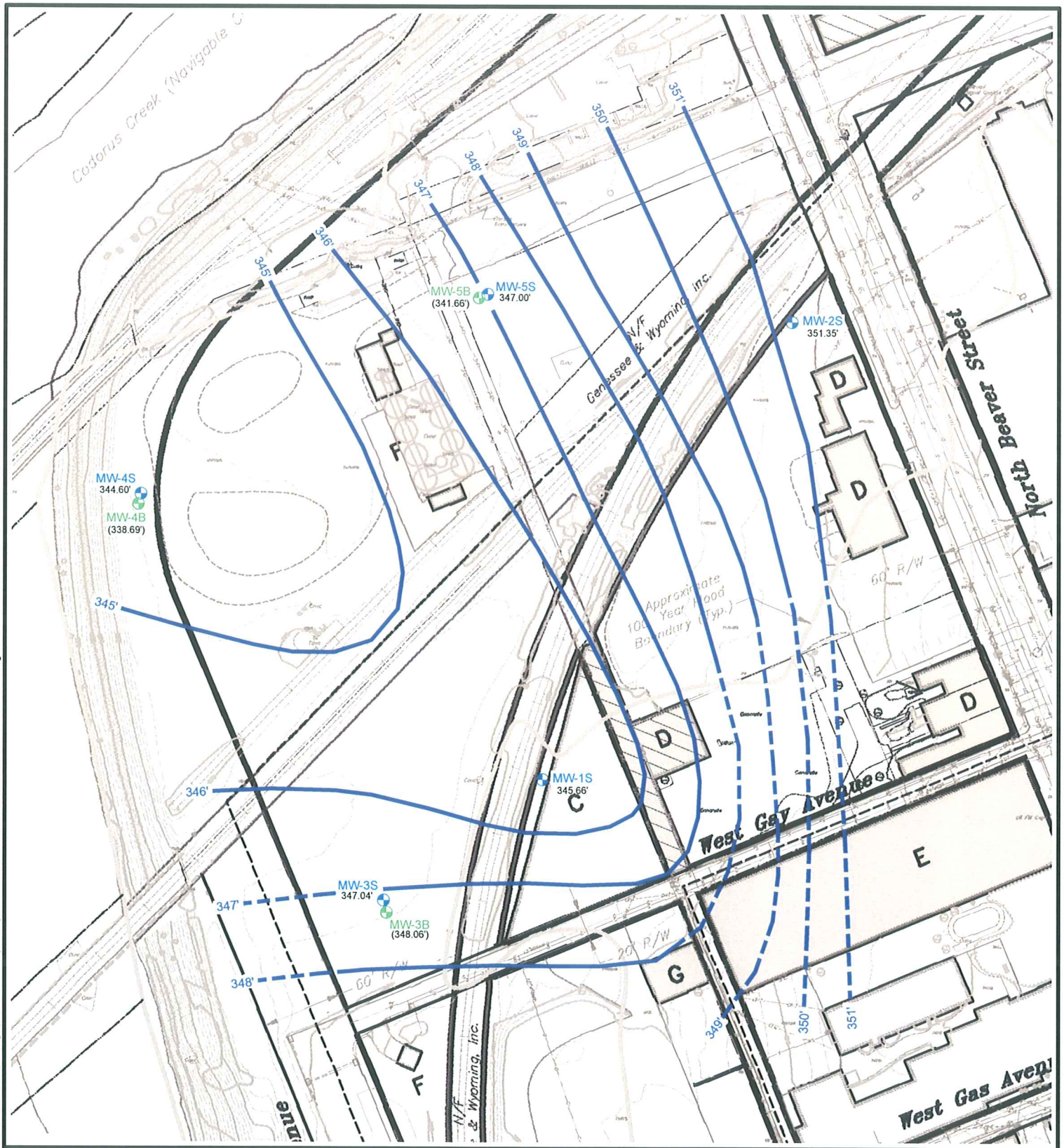

Base map from C.S. Davidson, Inc.

LEGEND

MW-3S — Shallow Monitoring Well

MW-3B — Bedrock Monitoring Well

347.04' — Relative Groundwater Elevation

(348.06') — Bedrock Groundwater Elevation Not Used For Mapping

— Groundwater Elevation Contour

0 100 200 300

SCALE IN FEET

Groundwater Elevations July 27, 2009

Ohio Blenders
Northwest Triangle Initiative
City of York, PA

July 2009	Scale: 1" = 100'	07214

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Figure 6

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TABLES

Table 1
Analytical Results for Total Metals in Soils
Sample Dates June 8-12, 2009

Ohio Blenders Property
Northwest Triangle Initiative
City of York, Pennsylvania

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-1 (6")	OB-2 (6")	OB-3 (6")	OB-3 (16")	OB-4 (30")	OB-5 (30")	OB-6 (6")	OB-6 (30")	OB-7 (24")	OB-8 (6")	OB-9 (6")	0B-10 (6")	OB-11 (24")	OB-12 (6")
Arsenic	**12**	**53**	**150**	NA	NA	**14.0**	**12.1**	6.4	4.9	8.2	5.3	6.2	NA	NA	NA	10.6	6.0
Chromium	**190,000**	**190,000**	**190,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.7	22.8	13.6	NA	NA
Lead	**500**	**1,000**	**450**	97.5	232	89.3	127	NA	NA	68.9	48.5	NA	NA	NA	NA	NA	NA

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-13 (6")	OB-14 (6")	OB-15 (24")	OB-16 (24")	OB-17 (24")	OB-18 (24")	OB-19 (24")	OB-20 (6")	OB-20 (24")	OB-21 (6")	OB-21 (24")	OB-22 (24")	OB-23 (24")	OB-24 (24")
Arsenic	**12**	**53**	**150**	10.5	5.9	**149**	**27.7**	**12.8**	11.7	**21.4**	**14.0**	9.3	**41.4**	**23.6**	**19.4**	9.6	9.1
Chromium	**190,000**	**190,000**	**190,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	**500**	**1,000**	**450**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-25 (24")	OB-26 (24")	OB-27 (6")	OB-28 (6")	OB-29 (6")	OB-29 (24")	OB-30 (6")	OB-31 (12")	OB-32 (12")	OB-33 (12")	OB-34 (12")	OB-S1 (5')	OB-S2 (5')
Arsenic	**12**	**53**	**150**	4.5	4.0	NA	8.0	**47.7**	**18.7**	5.1J	**58.3**	7.1	9.7	5.2	NA	NA
Chromium	**190,000**	**190,000**	**190,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	**500**	**1,000**	**450**	NA	NA	NA	NA	NA	NA	NA	169	101	392	144	91.3	72.0
1,2-Diphenylhydrazine	**22**	**99**	**0.083**	NA	<0.0198	<0.0174	<0.0187	<0.0172	<0.0191	<0.0164	NA	NA	NA	NA	NA	NA

All values in milligrams per kilogram (mg/kg)
MSC = PADEP Statewide Health Medium Specific Concentration (25 PA Code Chapter 250)
821 Result exceeds PADEP MSC
NA = Not Analyzed

Table 1 (continued)
Analytical Results for Total Metals in Soils
Sample Date July 2 2009

Ohio Blenders Property
Northwest Triangle Initiative
City of York, Pennsylvania

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-2 (24")	OB-3 (24")	OB-3 (36")	OB-4 (12")	OB-15 (6")	OB-15 (36")	OB-31 (24")	OB-B1 (8")	OB-B1 (24")	OB-B2 (8")	OB-B2 (24")	OB-B3 (8")	OB-B3 (24")	OB-B4 (16")	OB-B4 (24")	OB-D (6")	OB-D (24")	OB-E (6")	OB-E (24")
Arsenic	12	53	150	**21.3**	2.5	2.9	7.6	11.9	7.5	9.8	8.2	6.4	**16.3**	10.7	8.8	4.6	7.1	5.9	**15.8**	4.1	**19.2**	5.8
Chromium	190,000	190,000	190,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	500	1,000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-F (6")	OB-F (24")	OB-F (36")	OB-G (6")	OB-G (24")	OB-G (36")	OB-H (6")	OB-H (24")	OB-H (36")	OB-I (6")	OB-I (24")	OB-I (36")	OB-J (6")	OB-J (24")	OB-K (6")	OB-K (24")	OB-K (36")	OB-L (6")	OB-L (24")
Arsenic	12	53	150	**17.8**	**44.6**	**72.4**	**17.5**	**20.3**	**64.1**	1.9	**139**	6.7	6.1	**126**	3.6	<0.19	4.4	<0.19	4.3	6.8	5.0	8.5
Chromium	190,000	190,000	190,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	500	1,000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-M (6")	OB-M (24")	OB-M (36")	OB-N (6")	OB-N (24")	OB-N (36")	OB-O (6")	OB-O (24")	OB-O (36")	OB-P (6")	OB-P (24")	OB-Q (36")	OB-R (6")	OB-R (24")	OB-R (36")	OB-S (24")	OB-T (12")	OB-T (24")	OB-U (9")
Arsenic	12	53	150	**13.8**	**21.5**	8.9	**16.9**	**14.4**	9.4	9.5	**14.3**	10.3	**12.2**	**32.0**	7.6	8.5	**12.3**	**12.9**	11.3	4.0	3.3	5.2
Chromium	190,000	190,000	190,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	500	1,000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	109	300	NA

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-V (24")	OB-W (36")	OB-X (6")	OB-X (24")	OB-Y (6")	OB-Y (24")	OB-Z (6")	OB-Z (24")	OB-AA (6")	OB-AA (24")	OB-AB (24")	OB-AB (36")	OB-AC (24")	OB-AC (36")	OB-AD (24")	OB-AE (8")
Arsenic	12	53	150	5.2	4.1	**29.7**	3.8	7.5	6.8	**18.6**	7.4	5.9	5.6	10.4	6.2	11.8	**750**	**21.7**	NA
Chromium	190,000	190,000	190,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.9
Chromium VI	94	420	190,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2.2
Lead	500	1,000	450	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**463**	62.9	197	**32,000**	NA	NA

All values in milligrams per kilogram (mg/kg)
MSC = PADEP Statewide Health Medium Specific Concentration (25 PA Code Chapter 250)
821 Result exceeds PADEP MSC
NA = Not Analyzed

Table 1 (continued)
Analytical Results for Total Metals in Soils
Sample Date July 27, 2009

Ohio Blenders Property
Northwest Triangle Initiative
City of York, Pennsylvania

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-2 (36")	S-31 (24")	OB-F (48")	OB-G (48")	OB-P (36")	OB-P (48")	OP-R (48")	OB-AC (48")	OB-AD (36")	OB-AF (12")	OB-AF (24")	OB-AG (12")	OB-AG (24")	OB-AH (8")
Arsenic	**12**	**53**	**150**	6.7	**29.6**	7.0	6.1	**13.2**	5.9	6.7	**17.0**	9.9	5.6	2.9	**27.5**	2.6	2.1
Lead	**500**	**1,000**	**450**	NA	NA	NA	NA	NA	NA	NA	133	NA	NA	NA	NA	NA	NA

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-AI (12")	OB-AI (24")	OB-AJ (12")	OB-AJ (24")	OB-AK (8")	OB-AL (12")	OB-AL (24")	OB-AL (36")	OB-AM (12")	OB-AM (36")
Arsenic	**12**	**53**	**150**	5.0	5.8	9.1	7.0	5.3	**15.8**	**20.1**	11.6	3.9	**12.7**

All values in milligrams per kilogram (mg/kg)
MSC = PADEP Statewide Health Medium Specific Concentration (25 PA Code Chapter 250)
821 Result exceeds PADEP MSC
NA = Not Analyzed

Table 1 (continued)
Analytical Results for Total Metals in Soils
Sample Date August 10, 2009

Ohio Blenders Property
Northwest Triangle Initiative
City of York, Pennsylvania

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-AM (48")	OB-AN (6")	OB-AN (24")	OB-AO (6")	OB-AP (6")	OB-AP (24")	OB-AQ (6")	OB-AQ (24")	OB-AR (6")	OB-AR (24")	OB-AR (36")	OB-AS (6")	OB-AS (24")	OB-AT (6")	OB-AT (24")
Arsenic	12	53	150	5.7	7.6	9.3	**21.8**	**50.8**	7.5	**18.3**	3.8	8.5	**13.0**	-	**13.0**	7.2	10.1	9.5

Parameter	Residential Direct Contact MSC (0-15')	Non-Residential Direct Contact MSC (0-2')	Soil to Groundwater MSC	OB-AU (6")	OB-AU (24")	OB-16 (36")	OB-AV (6")	OB-AV (24")	OB-AW (6")	OB-AX (6")	OB-AY (6")	OB-AZ (8")	OB-AZ (24")	OB-AZ (36")	OB-BA (6")
Arsenic	12	53	150	**13.7**	7.4	10.0	7.2	9.6	**21.5**	**14.2**	9.2	1.9	**17.2**	-	**24.6**

All values in milligrams per kilogram (mg/kg)
MSC = PADEP Statewide Health Medium Specific Concentration (25 PA Code Chapter 250)
821 Result exceeds PADEP MSC
NA = Not Analyzed

Table 2
Groundwater Elevation Summary

Ohio Blenders Property
Northwest Triangle Initiative
City of York, Pennsylvania

Monitoring Well	Top of Casing Elevation	1/15/2008		2/21/2008		6/29/2009		7/27/2009	
		DTW	GWE	DTW	GWE	DTW	GWE	DTW	GWE
MW-1S	362.07	47.57	314.50	35.07	327.00	17.83	344.24	16.41	345.66
MW-2S	365.00	13.75	351.25	13.09	351.91	13.48	351.52	13.65	351.35
MW-3S	362.94	NA	NA	NA	NA	15.34	347.60	15.90	347.04
MW-3B	362.96	NA	NA	NA	NA	14.40	348.56	14.90	348.06
MW-4S	366.03	NA	NA	NA	NA	21.13	344.90	21.43	344.60
MW-4B	366.10	NA	NA	NA	NA	20.75	345.35	27.41	338.69
MW-5S	363.91	NA	NA	NA	NA	16.21	347.70	16.91	347.00
MW-5B	363.48	NA	NA	NA	NA	13.79	349.69	21.82	341.66

All elevations in feet, based on estimated local benchmark.
DTW = Depth to groundwater
GWE = Groundwater Elevation
NA = Not Applicable (well was not yet installed)

Table 3
Groundwater Analytical Results

Ohio Blenders Property
Northwest Triangle Initiative
City of York, Pennsylvania

Parameter	PADEP Residential Used Aquifer MSC	PADEP Residential Non-Use Aquifer MSC	MW-1S			MW-2S			MW-3S		MW-3B		MW-4S		MW-4B		MW-5S		MW-5B		Trip Blank		
			1/15/2008	2/21/2008	9/10/2008	1/15/2008	2/21/2008	7/27/2009	6/29/2009	7/27/2009	6/29/2009	7/27/2009	6/29/2009	7/27/2009	6/29/2009	7/27/2009	6/29/2009	7/27/2009	6/29/2009	7/27/2009	2/21/2008	6/29/2009	7/27/2009
VOLATILES																							
Acetone	**3,700**	**37,000**	8.3J	7.0J	NA	<10.0	7.0J	NA	<10.0	<10.0	9.3J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
2-Butanone	**2,800**	**280,000**	<10.0	<10.0	NA	<10.0	<10.0	NA	<10.0	<10.0	7.0J	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Carbon Disulfide	**1,900**	**1,900**	1.6	0.27J	NA	<1.0	<1.0	NA	0.42J	<1.0	0.73J	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	**100**	**1,000**	<1.0	0.23J	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.79J	<1.0	0.52J	<1.0	<1.0	0.35J	<1.0
1,1-Dichloroethane	**27**	**270**	<1.0	<1.0	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.1	0.78J	0.60J	0.62J	<1.0	0.45J	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	**70**	**700**	<1.0	0.98J	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	1.5	0.47J	2.5	1.7	2.7	3.2	1.7	1.7	<1.0	<1.0	<1.0
Methylene Chloride	**5**	**500**	<1.0	1.2	NA	<1.0	1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene	**5**	**50**	<1.0	0.62J	NA	<1.0	<1.0	NA	0.41J	0.47J	<1.0	<1.0	0.63J	<1.0	<1.0	<1.0	1.2	1.5	0.57J	0.55J	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	**200**	**2,000**	<1.0	<1.0	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.56J	0.46J	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	**5**	**50**	<1.0	0.30J	NA	<1.0	<1.0	NA	<1.0	<1.0	<1.0	<1.0	4.4	1.8	4.5	3.1	3.8	**6.3**	2.5	2.9	<1.0	<1.0	<1.0
SEMIVOLATILES																							
Acenaphthene	**2,200**	**3,800**	NA	<2.9	<2.9	3.2	1.7J	NA	0.33J	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	NA	NA	NA
Di-n-Butylphthalate	**-**	**-**	NA	<2.9	<2.9	0.60J	<2.8	NA	0.32J	<2.9	0.41J	<2.9	<2.9	<2.9	<2.8	<2.9	<2.9	<2.9	<2.8	<2.8	NA	NA	NA
bis(2-Ethylhexyl)phthalate	**6**	**290**	NA	0.92J	<2.9	<2.9	<2.8	NA	0.86J	<2.9	**6.9**	3.1	0.79J	<2.9	<2.8	0.88J	4.8	<2.9	<2.8	0.82J	NA	NA	NA
Fluorene	**1,500**	**1,900**	NA	<1.9	<1.9	3.8	2.0	NA	0.49J	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	NA	NA	NA
Phenanthrene	**1,100**	**1,100**	NA	<1.4	<1.4	1.6	<1.4	NA	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	NA	NA	NA
Pyrene	**130**	**130**	NA	<1.4	<1.4	<1.4	<1.4	NA	0.49J	<1.4	<1.4	<1.4	0.57J	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	NA	NA	NA
METALS																							
Arsenic	**10**	**50,000**	<10	3J	NA	7J	7J	8.3	<8.0	3.7J	<8.0	4.6J	<8.0	6.6J	<8.0	4.1J	<8.0	3.4J	<8.0	4.0J	NA	NA	NA
Chromium	**100**	**100,000**	47	7	NA	<5	<5	2.3J	2.2J	2.2J	26	3.2J	2.8J	4.5J	2.4J	1.9J	2.6J	3.9J	1.8J	<5	NA	NA	NA
Copper	**1,000**	**1,000,000**	<10	12	NA	<10	<10	<10	3.7J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	NA	NA	NA
Lead	**5**	**5,000**	<2	<2	NA	**7J**	<2	<2	**5.7J**	<2	4.6J	<2	4.9J	<2	**7.0**	<2	2.8J	<2	**5.6J**	<2	NA	NA	NA
Nickel	**100**	**100,000**	3J	2J	NA	<20	<20	<20	7.6J	<20	9.5J	<20	6.7J	14J	<20	<20	<20	<20	<20	<20	NA	NA	NA
Zinc	**2,000**	**2,000,000**	6J	390	NA	5J	<20	<20	30	<20	<20	<20	59	44	18J	8.0J	19J	63	9.4J	8.7J	NA	NA	NA

All values in micrograms per liter (ug/L)
MSC = PADEP Statewide Health Medium Specific Concentration (25 PA Code Chapter 250)
6.9 Result exceeds PADEP Used Aquifer MSC
NA = Not Analyzed
J = indicates concentration estimated by laboratory

APPENDIX A

Pre-Demolition Site Inspection Report

ARM Group Inc.
Earth Resource Engineers and Consultants

July 20, 2009

Shilvosky M. Buffaloe
Project Coordinator
City of York Department of Economic Development
City of York Redevelopment Authority
49 East Market Street
York, PA 17401

Re: Pre-Demolition Site Inspection
Ohio Blenders Property
Northwest Triangle Project, York, PA
ARM Project 07214

Dear Mr. Buffaloe:

ARM Group Inc. (ARM) has completed an asbestos-containing material (ACM), lead-based paint (LBP), and hazardous material (HAZMAT) inspection of the structures situated on the former Ohio Blenders Property, at the Northwest Triangle Project site in the City of York, York County, Pennsylvania. The purpose of this investigation was to determine the location and quantity of ACMs, LBP and HAZMATs (i.e., mercury containing switches and equipment, PCB-containing fluorescent light ballasts, etc.) on and/or within the on-site structure prior to their demolition.

ARM completed the following activities:

- A visual and tactile ACM inspection by Mr. Mark J. Heisey, a PADOLI Licensed Asbestos Inspector (PA License No. 024830);
- A determination for the potential presence of LBP (presumed for coatings applied prior to 1978), based upon the use of colorimetric swabs; and
- an inspection for the presence of hazardous materials.

The inspection was completed on Tuesday June 23, 2009 and revealed the following:

- No suspect ACMs were observed during the inspection, therefore no samples were collected.
- The use of colorimetric swabs did not reveal presence of LBP.

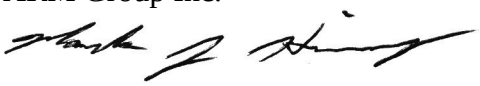
1129 West Governor Road • P.O. Box 797 • Hershey, PA 17033-0797
voice: (717) 533-8600 • fax: (717) 533-8605 • e-mail: info@armgroup.net

- Miscellaneous consumer-end-packaged paints, cleaners, solvents, lubricating oils, etc. were observed within the on-site buildings. In addition, fluorescent light tubes were observed with the on-site buildings.

At this time ARM does not recommend any additional activities at the site beyond the removal and disposal of all consumer-end-packaged hazardous materials and fluorescent light tubes in accordance with all applicable regulations. In addition, prior to any demolition activities, the demolition contractor must submit to the Pennsylvania Department of Environmental Protection (PADEP) the required *Asbestos Abatement and Demolition/Renovation Notification Form*. This form is used to satisfy the reporting requirements of the PADEP, Pennsylvania Department of Labor and Industry (PADOLI), and USEPA under the NESHAP Regulations.

If you should have any questions or comments, or if you require any additional information, please contact the undersigned at your earliest convenience (717-508-0561).

Sincerely yours,
ARM Group Inc.



Mark J. Heisey, CEM, CES
ARM Group - Project Manager

APPENDIX B.1

Laboratory Analytical Results for Groundwater

APPENDIX B.2

Laboratory Analytical Results for Soil

APPENDIX C

Historical Laboratory Analytical Results

Six (6) surficial samples were collected from soils underlying the Keystone Color Works building exterior windows and sills (Photograph 3) to characterize potential contamination from lead-based paint. This area has been identified as "AOC 6 - Keystone Color Works". The samples were analyzed for total lead by United States Environmental Protection Agency (U.S. EPA) Test Method SW-846 6010. Lead was detected above the Statewide Health Standards for residential use and for non-residential use at four (4) of the six (6) sample locations. Table 1 provides a summary of the laboratory analytical results.

TABLE 1
SUMMARY OF SAMPLE RESULTS
SOILS UNDERLYING EXTERIOR WINDOWS

Analyte	Sample Location Sample Depth (ft.)						Statewide Health Standard for Residential Use (mg/kg)	Statewide Health Standard for Non-Residential Use (mg/kg)
	S-52 1.0	S-53 1.0	S-54 1.0	S-55 1.0	S-56 1.0	S-57 1.0		
	Result (mg/kg)							
Lead	**945**	**702**	**510**	266	107	**1,200**	450	450

Notes:

945 = One or more Statewide Health Standard exceeded for analyte.

Thirty-six (36) surficial samples were collected from soils on the Ohio Blenders property to characterize potential contamination resulting from the former use of portions of the property as coal storage yards. These areas were identified as "AOC 2 - Coal Yard No. 1" (Photograph 4) and "AOC 5 - Coal Yard No. 2" (Photograph 5). All thirty-six (36) of the samples were analyzed for Priority Pollutant List (PPL) metals by U.S. EPA Test Method SW-846 6010. Twenty-five (25) of the samples were analyzed for PPL semi-volatile organic compounds (SVOCs) by U.S. EPA Test Method SW-846 8270. Antimony, arsenic, chromium, and lead were the only PPL metals detected above a Statewide Health Standard. Antimony was detected above the Statewide Health Standards for residential use and non-residential use at one (1) of the thirty-six (36) sample locations. Arsenic was detected at or above the Statewide Health Standards for residential use at eighteen (18) of the thirty-six (36) sample locations, and above the Statewide Health Standard for non-residential use at three (3) sample locations. Chromium was detected above the selected concentration for residential use at one (1) sample location. Lead was detected above the Statewide Health Standards for residential use and non-residential use at four (4) of the thirty-six (36) sample locations. The only PPL SVOC detected above the Statewide Health Standard for residential use was 1,2-diphenylhydrazine at one sample location. Table 2 provides a summary of the laboratory analytical results.

Three (3) surficial samples were collected from soils on the Ohio Blenders property to characterize potential contamination associated with three (3) non-utility electric transformers on the property. These samples were located within the area identified as "AOC 8 - Ohio Blenders Transformers". The samples were analyzed for PCBs according to U.S. EPA Test Method SW-846 8082. No PCB analytes were detected above the Statewide Health Standard for residential use or non-residential use. Table 4 provides a summary of the laboratory analytical results.

TABLE 4
SUMMARY OF SAMPLE RESULTS
SOILS UNDERLYING TRANSFORMERS

Analyte	Sample Location Sample Depth (ft.)			Statewide Health Standard for Residential Use (mg/kg)	Statewide Health Standard for Non-Residential Use (mg/kg)
	S-13 1.0	S-14 0.8	S-15 1.0		
	Result mg/kg				
Aroclor 1260	BDL	0.12	0.16	30	130

Notes: BDL = Below Detection Limit.

3.2 Subsurface Soil Sampling

On June 15, 2005, GTS personnel conducted fieldwork to collect subsurface soil samples (samples collected from a depth exceeding 2 feet below ground surface) to characterize potential contamination resulting from the historic use of the four (4) gasoline storage tanks at the Ohio Blenders property. The procedure used to collect the soil samples is described in the *Site Characterization Plan* (GTS, 2005). Prior to field activities, the Pennsylvania One Call System was initiated to determine subsurface utility line locations relative to the proposed boring locations. A gas line and a fiber optic cable were marked by the respective utility companies within the area of investigation. These utilities were observed to be located approximately in the areas identified as geophysical anomalies "B" and "C", respectively (see Figure 3).

A total of eight (8) borings (B-1 through B-8) were advanced using a Geoprobe in areas located adjacent to and/or downgradient from suspected UST system components. Three (3) borings were located to the east of the grain silos to characterize subsurface conditions in the area of the historic UST identified during review of secondary source information and the adjacent anomaly "F" identified during the geophysical investigation (Photograph 7). Five (5) borings were located just to the north of Gay Avenue to characterize subsurface conditions in the area of the three (3) historic USTs identified during review of secondary source information and the anomalies "A", "B", and "C" identified during the geophysical investigation (Photograph 8). Boring locations are shown on Figure 5.

TABLE 2
SUMMARY OF SAMPLE RESULTS
SOILS WITHIN FORMER COAL STORAGE AREAS

Analyte	Sample Location / Sample Depth (ft.)												Statewide Health Standard for Residential Use (mg/kg)	Statewide Health Standard for Non-Residential Use (mg/kg)
	S-16 1.0	S-17 1.0	S-18 1.0	S-19 0.8	S-20 1.0	S-21 0.8	S-22 0.7	S-23 0.7	S-24 0.7	S-25 0.5	S-26 0.5	S-27 0.8		
PPL Metals	Result (mg/kg)													
Antimony	4.0	BDL	4.6	3.4	BDL	BDL	BDL	BDL	**48.7**	BDL	BDL	BDL	27	27
Arsenic	**38.9**	**12.7**	**36.6**	**345**	2.9	**87.0**	9.4	8.7	10.3	**14.4**	11.1	**23.2**	12	53
Beryllium	1.4	0.57	1.3	0.56	0.54	1.4	1.3	2.0	1.3	1.3	1.1	1.2	320	320
Cadmium	5.2	1.9	3.6	1.4	0.54	4.1	2.4	3.2	2.9	2.9	2.6	2.8	38	38
Chromium	29.3	7.0	16.1	21.8	12.8	24.8	23.4	23.8	21.6	26.2	22.2	23.3	94[1]	190[1]
Copper	117.	20.4	110	74.0	26.4	81.8	22.2	21.4	50.1	35.4	35.9	29.6	8,200	36,000
Lead	**868.**	81.1	**790**	**3,450**	40.3	**2,140**	56.4	43.8	121.	220.	195.	90.1	450	450
Mercury	1.3	0.41	1.2	7.1	BDL	1.3	0.34	0.24	0.88	2.0	2.2	2.2	10	10
Nickel	39.7	10.6	25.1	12.9	16.5	31.2	18.5	20.5	18.8	21.1	20.0	26.2	650	650
Selenium	BDL	4.4	12.2	9.3	BDL	BDL	6.4	BDL	10.8	BDL	BDL	7.4	26	26
Silver	BDL	BDL	BDL	3.7	BDL	BDL	BDL	8.5	BDL	BDL	BDL	BDL	84	84
Thallium	5.2	BDL	4.0	6.8	BDL	4.8	BDL	5.0	BDL	BDL	BDL	2.9	14	14
Zinc	392.	29.2	101	324	28.2	223	75.9	69.0	141.	119.	155.	179	12,000	12,000
PPL SVOCs														
Acenaphthene	BDL	BDL	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	2,700	4,700
Acenaphthylene	0.150	BDL	NA	NA	NA	NA	NA	BDL	0.389	BDL	BDL	NA	2,500	6,900
Anthracene	0.0997	BDL	NA	NA	NA	NA	NA	BDL	0.178	BDL	BDL	NA	350	350
Benzo(a)anthracene	0.533	BDL	NA	NA	NA	NA	NA	BDL	2.810	0.143	0.107	NA	25	110
Benzo(a)pyrene	0.379	BDL	NA	NA	NA	NA	NA	BDL	1.550	0.106	0.0900	NA	2.5	11
Benzo(b)fluoranthene	0.523	BDL	NA	NA	NA	NA	NA	BDL	2.310	0.172	0.152	NA	25	110
Benzo(g,h,i)perylene	0.563	BDL	NA	NA	NA	NA	NA	BDL	1.440	BDL	BDL	NA	180	180
Benzo(k)fluoranthene	0.391	BDL	NA	NA	NA	NA	NA	BDL	2.100	0.133	0.130	NA	250	610
Bis(2-Ethylhexyl)phthalate	BDL	BDL	NA	NA	NA	NA	NA	BDL	0.195	BDL	BDL	NA	130	130
Carbazole	0.101	BDL	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	21	83
Chrysene	1.010	BDL	NA	NA	NA	NA	NA	BDL	4.450	0.314	2.77	NA	230	230
Dibenzo(a,h)anthracene	BDL	BDL	NA	NA	NA	NA	NA	BDL	0.164	BDL	BDL	NA	2.5	11
Dibenzofuran	BDL	BDL	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	*	*
Diphenylhydrazine, 1,2-	BDL	BDL	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	0.15	0.58
Fluoranthene	1.130	BDL	NA	NA	NA	NA	NA	BDL	7.830	0.376	0.315	NA	3,200	3,200
Fluorene	BDL	BDL	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	3,000	3,800
Indeno(1,2,3-cd)pyrene	0.427	BDL	NA	NA	NA	NA	NA	BDL	1.440	0.100	0.965	NA	25	110
Methylnaphthalene, 2-	BDL	BDL	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	2,900	8,000
Naphthalene	BDL	BDL	NA	NA	NA	NA	NA	BDL	BDL	BDL	BDL	NA	25	25
Phenanthrene	0.629	BDL	NA	NA	NA	NA	NA	BDL	0.457	0.172	0.156	NA	10,000	10,000
Pyrene	1.080	BDL	NA	NA	NA	NA	NA	BDL	6.760	3.330	0.268	NA	2,200	2,200

Notes: BDL = The reported result is Below the laboratory Detection Limit. NA = Not Analyzed. * = No Statewide Health Standard has been established for this analyte.
1 = No Statewide Health Standard values for total chromium have been established. This value for chromium VI has been used, as it is more restrictive than the value for chromium III.
38.9 = One or more Statewide Health Standard exceeded for analyte.

TABLE 2 (continued)
SUMMARY OF SAMPLE RESULTS
SOILS WITHIN FORMER COAL STORAGE AREAS

Analyte	Sample Location / Sample Depth (ft.)												Statewide Health Standard for Residential Use (mg/kg)	Statewide Health Standard for Non-Residential Use (mg/kg)
	S-28 0.8	S-29 0.7	S-30 0.7	S-31 0.7	S-32 0.8	S-33 0.7	S-34 0.7	S-35 0.7	S-36 0.7	S-37 0.7	S-38 0.7	S-39 0.8		
	Result (mg/kg)													
PPL Metals														
Antimony	17.9	BDL	BDL	BDL	BDL	3.2	BDL	BDL	BDL	4.6	BDL	BDL	27	27
Arsenic	**59.8**	**15.6**	5.6	**22.9**	6.4	**20.7**	**31.5**	9.7	**13.2**	**31.2**	5.2	10.8	12	53
Beryllium	1.1	1.5	0.88	4.9	0.54	1.3	0.88	0.58	0.79	0.84	1.2	1.4	320	320
Cadmium	3.8	3.4	2.0	5.5	1.4	3.1	2.1	2.3	2.0	1.9	3.1	3.2	38	38
Chromium	54.5	73.5	15.6	35.6	9.9	29.9	33.5	8.9	12.4	28.9	19.4	39.2	94[1]	190[1]
Copper	122.	32.2	24.1	54.6	19.3	41.2	23.9	18.5	29.3	43.5	44.4	41.2	8,200	36,000
Lead	218.	90.3	67.8	147.	65.2	126.	51.8	61.3	89.0	112.	97.5	127.	450	450
Mercury	0.95	0.78	0.73	2.3	0.77	1.1	1.2	0.19	1.2	0.79	1.3	1.4	10	10
Nickel	108.	45.2	11.0	44.3	13.1	38.7	20.0	8.9	14.9	27.6	25.3	50.1	650	650
Selenium	13.8	12.6	BDL	BDL	BDL	10.4	8.3	BDL	6.1	BDL	11.3	BDL	26	26
Silver	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	84	84
Thallium	3.5	BDL	BDL	BDL	BDL	3.0	3.6	BDL	BDL	BDL	BDL	3.3	14	14
Zinc	234.	112.	108.	349.	101.	204.	62.5	71.1	116.	97.4	135.	142.	12,000	12,000
PPL SVOCs														
Acenaphthene	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	2,700	4,700
Acenaphthylene	0.218	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	2,500	6,900
Anthracene	0.330	NA	NA	BDL	BDL	0.0861	BDL	BDL	BDL	BDL	BDL	NA	350	350
Benzo(a)anthracene	0.365	NA	NA	0.184	BDL	0.435	0.0910	BDL	BDL	0.490	0.232	NA	25	110
Benzo(a)pyrene	0.324	NA	NA	0.154	BDL	0.333	0.0760	BDL	BDL	0.348	0.161	NA	2.5	11
Benzo(b)fluoranthene	0.760	NA	NA	0.174	BDL	0.405	0.100	BDL	0.0730	0.500	0.185	NA	25	110
Benzo(g,h,i)perylene	0.686	NA	NA	0.0980	BDL	0.353	BDL	BDL	BDL	0.342	0.143	NA	180	180
Benzo(k)fluoranthene	0.527	NA	NA	0.176	BDL	0.340	0.0920	BDL	BDL	0.424	0.189	NA	250	610
Bis(2-Ethylhexyl)phthalate	BDL	NA	NA	BDL	0.425	BDL	BDL	BDL	BDL	BDL	0.306	NA	130	130
Carbazole	0.0950	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	21	83
Chrysene	1.540	NA	NA	0.267	0.0922	0.702	0.140	0.103	0.114	1.020	0.436	NA	230	230
Dibenzo(a,h)anthracene	0.129	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	2.5	11
Dibenzofuran	0.404	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	*	*
Diphenylhydrazine, 1,2-	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	**0.184**	BDL	NA	0.15	0.58
Fluoranthene	1.540	NA	NA	0.450	0.133	0.989	0.176	0.111	0.146	1.280	0.645	NA	3,200	3,200
Fluorene	BDL	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	3,000	3,800
Indeno(1,2,3-cd)pyrene	BDL	NA	NA	0.103	BDL	0.339	BDL	BDL	BDL	0.347	0.144	NA	25	110
Methylnaphthalene, 2-	0.448	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	0.116	BDL	NA	2,900	8,000
Naphthalene	0.340	NA	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	25	25
Phenanthrene	1.330	NA	NA	0.333	BDL	0.353	0.0900	BDL	0.0960	0.632	0.338	NA	10,000	10,000
Pyrene	1.120	NA	NA	0.370	0.114	0.882	0.147	0.123	0.131	1.120	0.581	NA	2,200	2,200

Notes: BDL = The reported result is Below the laboratory Detection Limit. NA = Not Analyzed. * = No Statewide Health Standard has been established for this analyte.
1 = No Medium Specific Concentration value for total chromium has been established. This value for chromium VI will been used, as it is more restrictive than the value for chromium III.
59.8 = One or more Statewide Health Standard exceeded for analyte.

TABLE 2 (continued)
SUMMARY OF SAMPLE RESULTS
SOILS WITHIN FORMER COAL STORAGE AREAS

Analyte	Sample Location / Sample Depth (ft.)												Statewide Health Standard for Residential Use (mg/kg)	Statewide Health Standard for Non-Residential Use (mg/kg)
	S-40 0.7	S-41 0.7	S-42 0.7	S-43 1.0	S-44 0.7	S-45 1.0	S-46 0.7	S-47 0.7	S-48 0.8	S-49 0.8	S-50 1.0	S-51 1.0		
	Result (mg/kg)													
PPL Metals														
Antimony	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	27	27
Arsenic	**15.2**	10.7	7.2	6.5	6.4	7.3	7.2	**12.0**	**15.0**	7.7	**12.0**	8.6	12	53
Beryllium	1.2	1.4	1.5	1.1	1.0	1.2	1.3	2.3	1.3	1.1	1.3	1.4	320	320
Cadmium	2.8	3.1	3.4	2.7	2.1	2.7	2.7	3.7	3.2	2.4	3.3	3.0	38	38
Chromium	31.9	29.8	**177.**	22.2	21.5	23.7	30.1	29.3	22.6	18.2	26.4	26.9	94[1]	190[1]
Copper	37.3	40.4	41.9	59.9	47.4	23.9	28.9	43.1	52.3	37.8	35.0	38.7	8,200	36,000
Lead	98.1	65.9	86.4	217.	73.7	47.6	49.0	88.4	61.4	89.0	98.5	66.1	450	450
Mercury	0.89	1.2	0.76	2.5	0.86	0.50	0.45	0.66	0.94	0.36	0.91	0.86	10	10
Nickel	45.5	26.5	19.7	19.1	17.9	16.1	19.0	21.8	28.3	15.8	21.5	20.9	650	650
Selenium	10.4	9.3	BDL	9.1	BDL	8.0	BDL	BDL	BDL	BDL	BDL	BDL	26	26
Silver	BDL	BDL	5.5	BDL	BDL	1.6	BDL	10.5	9.6	BDL	9.7	BDL	84	84
Thallium	BDL	BDL	BDL	3.1	BDL	BDL	BDL	4.5	4.5	BDL	BDL	3.6	14	14
Zinc	121.	75.9	94.3	151.	60.8	50.9	61.3	126.	65.2	91.5	88.9	95.2	12,000	12,000
PPL SVOCs														
Acenaphthene	BDL	BDL	NA	BDL	BDL	0.723	BDL	NA	BDL	BDL	BDL	BDL	2,700	4,700
Acenaphthylene	BDL	BDL	NA	BDL	BDL	BDL	0.290	NA	BDL	BDL	BDL	BDL	2,500	6,900
Anthracene	BDL	BDL	NA	0.106	0.293	1.180	0.304	NA	0.0758	0.147	BDL	BDL	350	350
Benzo(a)anthracene	0.175	0.262	NA	0.441	0.723	1.550	1.580	NA	0.183	0.533	0.143	0.186	25	110
Benzo(a)pyrene	0.146	0.258	NA	0.307	0.557	0.999	0.820	NA	0.160	0.538	0.128	0.132	2.5	11
Benzo(b)fluoranthene	0.172	0.272	NA	0.337	0.455	0.708	1.040	NA	0.181	0.456	0.169	0.127	25	110
Benzo(g,h,i)perylene	0.169	0.165	NA	0.246	0.520	0.710	0.413	NA	0.230	0.569	0.185	0.0982	180	180
Benzo(k)fluoranthene	0.165	0.242	NA	0.264	0.432	0.793	0.867	NA	0.194	0.428	0.133	0.132	250	610
Bis(2-Ethylhexyl)phthalate	1.690	BDL	NA	BDL	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	130	130
Carbazole	BDL	BDL	NA	BDL	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	21	83
Chrysene	0.371	0.354	NA	0.758	1.470	2.900	1.840	NA	0.407	1.210	0.370	0.309	230	230
Dibenzo(a,h)anthracene	BDL	BDL	NA	BDL	BDL	0.0850	BDL	NA	BDL	BDL	BDL	BDL	2.5	11
Dibenzofuran	BDL	BDL	NA	BDL	BDL	0.0916	BDL	NA	BDL	BDL	BDL	BDL	*	*
Diphenylhydrazine, 1,2-	BDL	BDL	NA	BDL	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	0.15	0.58
Fluoranthene	0.455	0.443	NA	1.210	1.270	2.530	2.560	NA	0.500	0.944	0.500	0.322	3,200	3,200
Fluorene	BDL	BDL	NA	BDL	BDL	0.788	BDL	NA	BDL	BDL	BDL	BDL	3,000	3,800
Indeno(1,2,3-cd)pyrene	0.164	0.154	NA	0.214	0.457	0.634	0.461	NA	0.193	0.498	0.159	0.0894	25	110
Methylnaphthalene, 2-	BDL	BDL	NA	BDL	BDL	0.370	BDL	NA	BDL	BDL	BDL	BDL	2,900	8,000
Naphthalene	BDL	BDL	NA	BDL	BDL	0.0983	BDL	NA	BDL	BDL	BDL	BDL	25	25
Phenanthrene	0.273	0.226	NA	1.140	0.887	3.380	0.497	NA	0.370	0.422	0.384	0.376	10,000	10,000
Pyrene	0.438	0.518	NA	1.250	1.920	3.790	2.070	NA	0.454	1.420	0.458	0.121	2,200	2,200

Notes: BDL = The reported result is Below the laboratory Detection Limit. NA = Not Analyzed. * = No Statewide Health Standard has been established for this analyte.
1 = No Statewide Health Standard values for total chromium have been established. This value for chromium VI has been used, as it is more restrictive than the value for chromium III.
15.2 = One or more Statewide Health Standard exceeded for analyte.

TABLE 3
SUMMARY OF SAMPLE RESULTS
SOILS WITHIN FORMER UTILITY POLE STORAGE AREA

Analyte	Sample Location / Sample Depth (ft.)													
	S-1 0.7	S-2 0.7	S-3 0.7	S-4 0.8	S-5 0.8	S-6 0.8	S- 7 0.8	S-8 1.0	S-9 1.0	S-10 1.0	S-11 0.7	S-12 1.0	Statewide Health Standard for Residential Use (mg/kg)	Statewide Health Standard for Non-Residential Use (mg/kg)
	Result (mg/kg)													
Acenaphthylene	BDL	0.218	0.090	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2,500	6,900
Anthracene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.088	BDL	BDL	BDL	BDL	350	350
Benzo(a)anthracene	0.325	0.363	0.110	BDL	0.179	0.221	BDL	0.367	0.151	BDL	BDL	BDL	25	110
Benzo(a)pyrene	0.231	0.324	0.206	BDL	0.171	0.180	BDL	0.301	0.161	BDL	BDL	BDL	2.5	11
Benzo(b)fluoranthene	0.419	0.582	0.410	BDL	0.246	0.295	BDL	0.590	0.233	0.081	BDL	BDL	25	110
Benzo(g,h,i)perylene	0.134	0.268	0.361	BDL	0.099	0.141	BDL	0.278	0.229	0.088	BDL	BDL	180	180
Benzo(k)fluoranthene	0.325	0.439	0.314	BDL	0.212	0.214	BDL	0.406	0.177	0.085	BDL	BDL	250	610
Chrysene	0.625	0.767	0.731	0.113	0.295	0.411	BDL	0.902	0.464	0.216	0.159	BDL	230	230
Fluoranthene	0.699	0.561	0.402	0.119	0.287	0.366	BDL	0.866	0.515	0.273	0.111	BDL	3,200	3,200
Indeno(1,2,3-cd)pyrene	0.149	0.291	0.347	BDL	0.112	0.140	BDL	0.275	0.209	0.087	BDL	BDL	25	110
Phenanthrene	0.186	0.225	0.171	BDL	0.081	0.199	BDL	0.361	0.288	0.227	0.075	BDL	10,000	10,000
Pyrene	0.708	0.526	0.307	0.107	0.256	0.318	BDL	0.841	0.446	0.240	0.111	BDL	2,200	2,200

Notes: BDL = The reported result is Below the laboratory Detection Limit.

TABLE 5
SUMMARY OF SAMPLE RESULTS
SOILS WITHIN AREA OF HISTORIC GASOLINE USTS

Analyte	Sample Location Sample Depth (ft.) B-1 6-8	B-2 10-12	B-3 12-13	B-4 16-18	B-5 13-15	B-6 14-15	B-7 12-14	B-8 13-14.7	Statewide Health Standard for Residential Use (mg/kg)	Statewide Health Standard for Non-Residential Use (mg/kg)
	Result mg/kg									
Benzene	0.0813	BDL	BDL	BDL	BDL	BDL	0.0078	BDL	0.5	0.5
Cumene (Synonym: Isopropylbenzene)	BDL	BDL	BDL	BDL	0.224	BDL	BDL	0.141	780	1,600
Lead	**541**	50.7	23.4	16.2	25.9	21.1	46.8	27.7	450	450
Naphthalene	0.587	0.092	BDL	BDL	BDL	BDL	BDL	BDL	25	25
Toluene	0.133	BDL	BDL	BDL	BDL	BDL	0.0017	BDL	100	100
Xylenes, Total	252.6	BDL	BDL	BDL	BDL	BDL	BDL	BDL	1,000	1,000

Notes: BDL = Below Detection Limit.
450 = One or more Statewide Health Standard exceeded for analyte

APPENDIX D

Well Logs

ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033-0797
(717) 533-8600 fax: (717) 533-8605

Monitoring Well: MW-1S

(1 of 2)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Justin Trish

Drilling Equipment	: Schramm Air Rotary
Borehole Diameter	: 6"
Casing Diameter	: 2"
Date Started	: 1/3/08
Date Completed	: 1/4/08
Weather	: 20's, sunny
0 hr Depth to GW	: NA
24 hr Depth to GW	: 38'

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-1S TOC Elev.:	Remarks
0		0.0 - 2.0': Fill, gravel, railroad ties.		locking cap 4" steel manway	
		2.0 - 12.5': Sandy CLAY, brown, moist.			PID reading = 0 ppm at 5' PID reading = 0.1 ppm at 7'
5					
10				PVC riser 6" borehole cement grout	TOR at 12.5'
		12.5' - 48.0': Limestone, blue to gray.			
15					
20					
25					

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Monitoring Well: MW-1S

(2 of 2)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Justin Trish

Drilling Equipment	: Schramm Air Rotary
Borehole Diameter	: 6"
Casing Diameter	: 2"
Date Started	: 1/3/08
Date Completed	: 1/4/08
Weather	: 20's, sunny
0 hr Depth to GW	: NA
24 hr Depth to GW	: 38'

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-1S TOC Elev.:	Remarks
26				PVC riser bentonite	
31					
36				6" borehole sand pack PVC screen	
41					
46		End of Boring at 48.0'			
51					

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ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033-0797
(717) 533-8600 fax: (717) 533-8605

Monitoring Well: MW-2S

(1 of 1)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Justin Trish

Drilling Equipment	: Schramm Air Rotary
Borehole Diameter	: 6"
Casing Diameter	: 2"
Date Started	: 1/3/08
Date Completed	: 1/3/08
Weather	: 20's, sunny
0 hr Depth to GW	: 13.5' TOG
24 hr Depth to GW	: 13.40' TOC

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-2S TOC Elev.:	Remarks
0		0.0 - 9.0': Fill, brown to red to gray, sandy clay, moist, brick, gravel, railroad ties.		locking cap 4" steel manway	
5				cement grout PVC riser	PID reading = 0 ppm at 5'
10		9.0 - 22.0': Sandy CLAY, brown, moist to wet.		bentonite 6" borehole	PID reading = 0 ppm at 9' Void from 14' to 17' Wet at 17' Odor at 17'
15					
20		22.0 - 25.0': Limestone, blue to gray.		sand pack PVC screen	TOR at 22'
25		End of Boring at 25.0'			

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ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033-0797
(717) 533-8600 fax: (717) 533-8605

Monitoring Well: MW-3S

(1 of 1)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 6" - 8"
Casing Diameter	: 2"
Date Started	: 6/18/09
Date Completed	: 6/19/09
Weather	: 70's, sunny
0 hr Depth to GW	: 15'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-3S TOC Elev.:	Remarks
0		0.0 - 8.0': Fill, gravelly silt, brick, coal, ash, brown, red, white, moist to wet.		locking cap 4" steel manway cement grout PVC riser bentonite	PID readings = 0 ppm to 7.5'
5					
		8.0' - 9.0': VOID			
10		9.0' - 23.0': FILL, gravelly silt, brick, coal, ash, brown, red, white, moist to wet.			
15				6" borehole	Water at 15'. Water has creosote odor.
20				sand pack PVC screen	
		23.0' - 24.0' LIMESTONE, blue, weathered.			Top of Rock at 23'
25		24.0' - 28.0': LIMESTONE, blue, competent.			
		28.0' - 30.5': CLAY, brown, wet.			Water-bearing zone at 28' (~2 gpm)
30		30.5' - 31.0': LIMESTONE, blue, competent.			
		End of boring at 31.0'			

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ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033-0797
(717) 533-8600 fax: (717) 533-8605

Monitoring Well: MW-3B

(1 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 6" - 8"
Casing Diameter	: 2"
Date Started	: 6/17/09
Date Completed	: 6/18/09
Weather	: 70's, cloudy to raining
0 hr Depth to GW	: 12'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-3B TOC Elev.:	Remarks
0		0.0 - 20.0': Fill, gravelly silt, brick, coal, ash, brown, red, white, moist to wet.		locking cap 4" steel manway	PID readings = 0 ppm to 7.5' 6" steel casing installed to 50'. 8" boring to 50'. 6" boring below 50'.
5					
10					Water at 12'
15				PVC riser cement grout 8" borehole	
20		20.0' - 23.0' LIMESTONE, blue, competent.			Top of Rock at 20' Steel casing weld broke at 20'.
25		23.0' - 26.0': CLAY, brown, wet.			WBZ at 23', <1 gpm
30		26.0' - 43.0': LIMESTONE, blue, competent.			

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Monitoring Well: MW-3B

(2 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 6" - 8"
Casing Diameter	: 2"
Date Started	: 6/17/09
Date Completed	: 6/18/09
Weather	: 70's, cloudy to raining
0 hr Depth to GW	: 12'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-3B TOC Elev.:	Remarks
30				8" borehole	
35				cement grout	
40				PVC riser	
		43.0' - 44.0': LIMESTONE, fractured, clay.			WBZ at 43', >1 gpm. Approximately 4 gpm total flow.
45		44.0' - 47.0': LIMESTONE, blue, competent.		bentonite	
		47.0' - 48.0': CLAY, brown, wet.			
50		48.0' - 80.0': LIMESTONE, blue, competent.			
55				sand pack PVC screen	
60					

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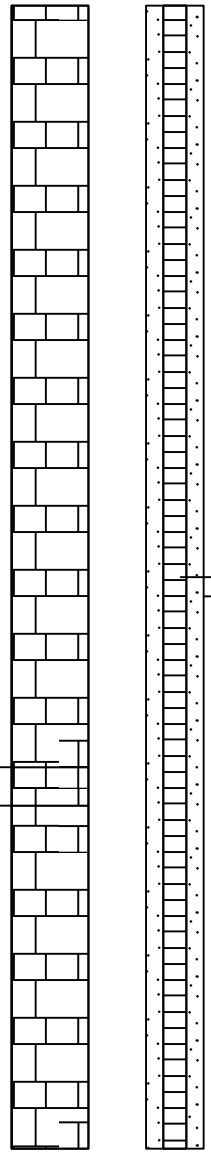
Monitoring Well: MW-3B

(3 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 6" - 8"
Casing Diameter	: 2"
Date Started	: 6/17/09
Date Completed	: 6/18/09
Weather	: 70's, cloudy to raining
0 hr Depth to GW	: 12'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-3B TOC Elev.:	Remarks
60					
65					
70					
75				PVC screen sand pack	
80		80.0' - 81.0': LIMESTONE, blue, weathered.			80' Total flow is 1 gpm
		81.0' - 113': LIMESTONE, blue, competent.			
85					
90					



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Monitoring Well: MW-3B

(4 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 6" - 8"
Casing Diameter	: 2"
Date Started	: 6/17/09
Date Completed	: 6/18/09
Weather	: 70's, cloudy to raining
0 hr Depth to GW	: 12'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-3B TOC Elev.:	Remarks
90					
95					
100					
105				PVC screen sand pack	
110					
115		113.0' - 114.0': LIMESTONE, blue, weathered. 114' - 130': LIMESTONE, blue, competent.			114' Total flow is 1-2 gpm
120					

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Monitoring Well: MW-3B

(5 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 6" - 8"
Casing Diameter	: 2"
Date Started	: 6/17/09
Date Completed	: 6/18/09
Weather	: 70's, cloudy to raining
0 hr Depth to GW	: 12'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-3B TOC Elev.:	Remarks
120					
125				PVC screen sand pack	
130		End of boring at 130.0'			
135					
140					
145					
150					

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ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033-0797
(717) 533-8600 fax: (717) 533-8605

Monitoring Well: MW-4S

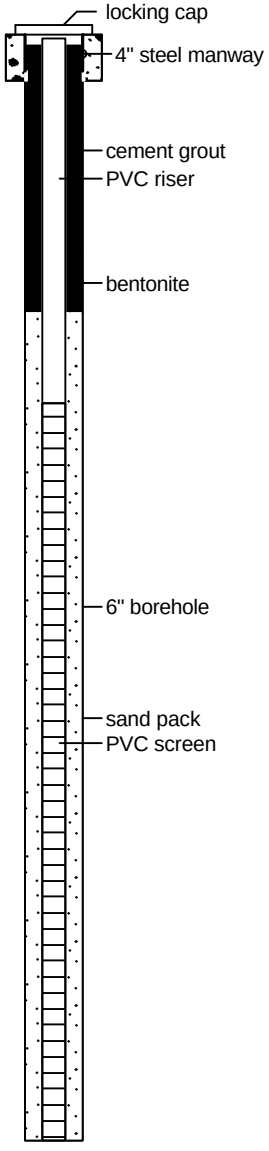
(1 of 1)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8"
Casing Diameter	: 2"
Date Started	: 6/17/09
Date Completed	: 6/17/09
Weather	: 70's, cloudy to raining
0 hr Depth to GW	: 22'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic
0		0.0 - 0.5': FILL, silt, dark brown to black, moist, organics.	
		0.5' - 1.5': FILL, silty clay with gravel, orange-brown, moist.	
5		1.5' - 6.8': FILL, silty clay, orange-brown, moist to wet, little gravel, trace sand, few pieces of brick.	
		6.8' - 8.0': FILL, silty clay, orange-brown to gray-brown, moist, few weathered limestone gravel.	
10		8.0' - 11.5': FILL, gravelly silt, orange-brown to gray-brown, pieces of coal and ash throughout, moist to wet.	
		11.5' - 26.0': clayey silt with fine sand, yellow-brown to gray-brown, wet.	
15			
20			
25			
		26.0' - 30.0': LIMESTONE, tan, weathered.	
30		End of boring at 30.0'	

Well: MW-4S
TOC Elev.:



Remarks

PID readings = 0 ppm to 16.0'

Water at 22'

Top of Rock at 26'

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ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033-0797
(717) 533-8600 fax: (717) 533-8605

Monitoring Well: MW-4B

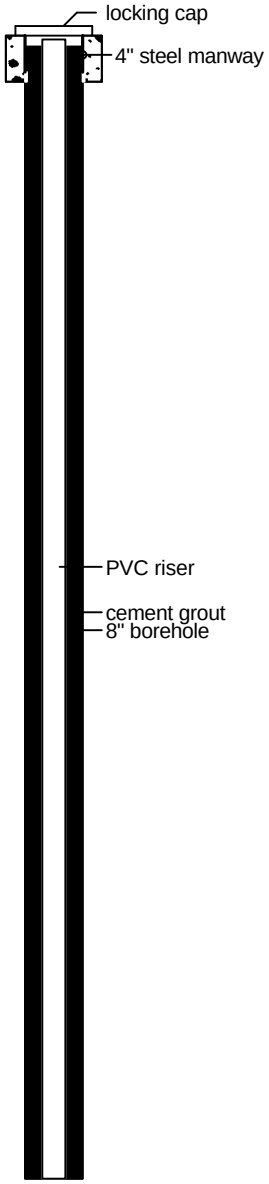
(1 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8"
Casing Diameter	: 2"
Date Started	: 6/16/09
Date Completed	: 6/16/09
Weather	: 70's, cloudy
0 hr Depth to GW	: 25'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description
0		0.0 - 0.5': FILL, silt, dark brown to black, moist, organics.
		0.5' - 1.5': FILL, silty clay with gravel, orange-brown, moist.
5		1.5' - 6.8': FILL, silty clay, orange-brown, moist to wet, little gravel, trace sand, few pieces of brick.
		6.8' - 8.0': FILL, silty clay, orange-brown to gray-brown, moist, few weathered limestone gravel.
10		8.0' - 11.5': FILL, gravelly silt, orange-brown to gray-brown, pieces of coal and ash throughout, moist to wet.
		11.5' - 25.0': Clayey SILT with fine sand, yellow-brown to gray-brown, wet.
15		
20		
25		25.0' - 27.0': LIMESTONE, gray, weathered.
		27.0' - 28.0': LIMESTONE, gray, competent.
		28.0' - 29.0': LIMESTONE, gray, blue, tan, weathered.
30		29.0' - 40.0': LIMESTONE, tan, white, competent.

Graphic



Remarks

PID readings = 0 ppm to 16.0'
6" steel casing set to 30'.

Water at 25'
Top of Rock at 25'

Monitoring Well: MW-4B

(2 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8"
Casing Diameter	: 2"
Date Started	: 6/16/09
Date Completed	: 6/16/09
Weather	: 70's, cloudy
0 hr Depth to GW	: 25'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-4B TOC Elev.:	Remarks
31					
36					
41		40.0' - 41.0': LIMESTONE, tan, gray, weathered. 41.0' - 54.0': LIMESTONE, tan, gray, competent.		PVC riser cement grout 8" borehole	
46					
51					Total flow approximately 2 gpm.
56		54.0' - 55.0': LIMESTONE, tan, weathered. 55.0' - 65.0': LIMESTONE, tan, blue, competent.			
61					

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Monitoring Well: MW-4B

(3 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8"
Casing Diameter	: 2"
Date Started	: 6/16/09
Date Completed	: 6/16/09
Weather	: 70's, cloudy
0 hr Depth to GW	: 25'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-4B TOC Elev.:	Remarks
62					
		65.0' - 66.0': CLAY, brown, wet.			
67		66.0' - 85.0': LIMESTONE, tan, blue, competent.		cement grout	
				PVC riser	
72				bentonite	
77				8" borehole	
82				sand pack	
					WBZ at 85', approximately 1 gpm.
		85.0' - 86.0': LIMESTONE, tan, blue, weathered.		PVC screen	
87		86.0' - 107.0': LIMESTONE, tan, blue, competent.			
92					

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Monitoring Well: MW-4B

(4 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8"
Casing Diameter	: 2"
Date Started	: 6/16/09
Date Completed	: 6/16/09
Weather	: 70's, cloudy
0 hr Depth to GW	: 25'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-4B TOC Elev.:	Remarks
93					Total flow is approximately 3 gpm.
98					
103					
108		107' - 108': LIMESTONE, blue, weathered. 108' - 150': LIMESTONE, blue, competent.		sand pack PVC screen 8" borehole	
113					
118					
123					

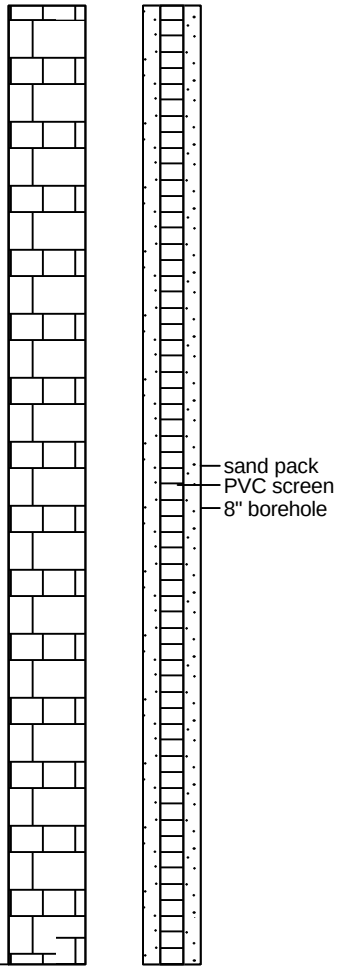
Monitoring Well: MW-4B

(5 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8"
Casing Diameter	: 2"
Date Started	: 6/16/09
Date Completed	: 6/16/09
Weather	: 70's, cloudy
0 hr Depth to GW	: 25'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-4B TOC Elev.:	Remarks
124					
129					
134					
139					
144					
149		End of Boring at 150'.			
154					



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ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033-0797
(717) 533-8600 fax: (717) 533-8605

Monitoring Well: MW-5S

(1 of 1)

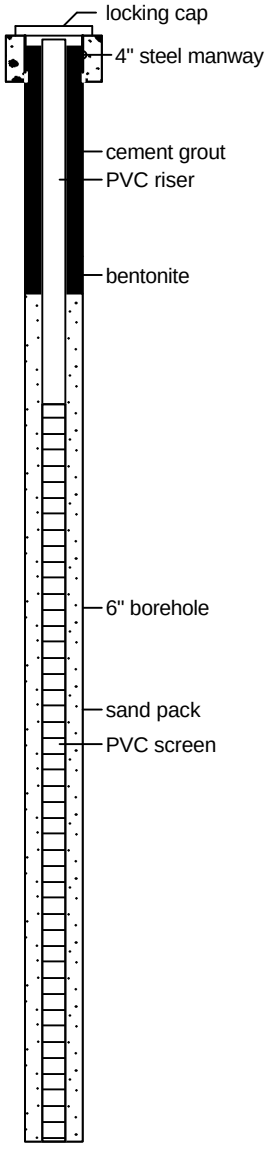
Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8"
Casing Diameter	: 2"
Date Started	: 6/15/09
Date Completed	: 6/16/09
Weather	: 80, sunny
0 hr Depth to GW	: 25'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description
0		0.0 - 0.6': FILL, silty gravel, dark brown to gray, moist.
		0.6' - 5.0': FILL, silty clay, yellow-brown, moist, few pieces of brick, coal, and ash throughout.
5		5.0' - 8.5': FILL, gravelly silt, gray-brown, moist, pieces of coal, brick, and ash throughout.
		8.5' - 23': FILL, silty clay, orange-brown, moist to wet, little sand, few gravel, pieces of coal and ash.
10		
15		
20		
		23.0' - 29.0': LIMESTONE, tan, weathered.
25		
		29.0' - 30.0': LIMESTONE, blue, competent.
30		End of boring at 30.0'

Graphic

Well: MW-5S
TOC Elev.:



Remarks

PID readings = 0 ppm to 10.0'

Top of Rock at 23'

Water at 25'

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ARM Group Inc.
Earth Resource Engineers and Consultants
1129 West Governor Road • Hershey, PA 17033-0797
(717) 533-8600 fax: (717) 533-8605

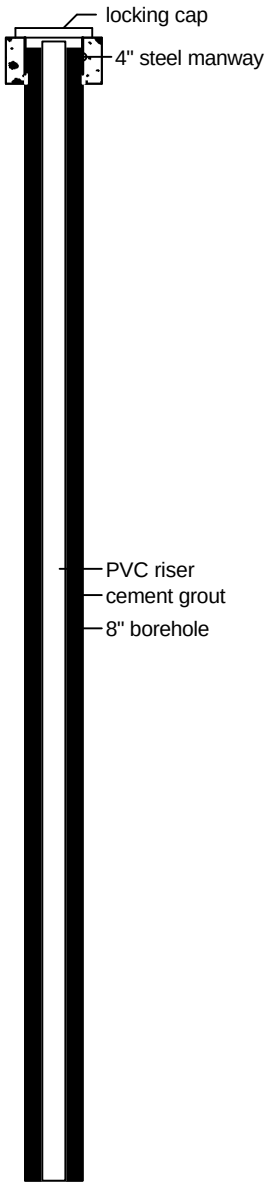
Monitoring Well: MW-5B

(1 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8" to 33', 6" below 33'
Casing Diameter	: 2"
Date Started	: 6/15/09
Date Completed	: 6/16/09
Weather	: 80, sunny
0 hr Depth to GW	: 29'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic
0		0.0 - 0.6': FILL, silty gravel, dark brown to gray, moist.	
		0.6' - 5.0': FILL, silty clay, yellow-brown, moist, few pieces of brick, coal, and ash throughout.	
5		5.0' - 8.5': FILL, gravelly silt, gray-brown, moist, pieces of coal, brick, and ash throughout.	
		8.5' - 23': FILL, silty clay, orange-brown, moist to wet, little sand, few gravel, pieces of coal and ash.	
10			
15			
20			
		23.0' - 29.0': LIMESTONE, blue, tan, slightly weathered, some calcite.	
25			
		29.0' - 30.0': VOID.	
30		30.0' - 54.0': LIMESTONE, blue, competent.	



Remarks
PID readings = 0 ppm to 10.0'
6" steel casing set to 33'
Top of Rock at 23'
Water at 29' (<1 gpm)

Monitoring Well: MW-5B

(2 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8" to 33', 6" below 33'
Casing Diameter	: 2"
Date Started	: 6/15/09
Date Completed	: 6/16/09
Weather	: 80, sunny
0 hr Depth to GW	: 29'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-5B TOC Elev.:	Remarks
31					
36				PVC riser	
41					
46				cement grout 8" borehole	
51					
56		54.0' - 55.0': LIMESTONE, brown, blue, weathered. 55.0' - 64': LIMESTONE, blue, competent.		PVC screen	WBZ at 54' (approximately 1 gpm)
61					

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Monitoring Well: MW-5B

(3 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8" to 33', 6" below 33'
Casing Diameter	: 2"
Date Started	: 6/15/09
Date Completed	: 6/16/09
Weather	: 80, sunny
0 hr Depth to GW	: 29'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-5B TOC Elev.:	Remarks
62		64.0' - 66.0': LIMESTONE, blue, weathered.			
67		66.0' - 68.5': LIMESTONE, blue, competent.			
		68.5' - 69.0': LIMESTONE, blue, weathered.			
		69.0' - 150.0': LIMESTONE, blue, competent.			Very little flow after 69'
72					
77				PVC screen cement grout 8" borehole	
82					
87					
92					

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Monitoring Well: MW-5B

(4 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8" to 33', 6" below 33'
Casing Diameter	: 2"
Date Started	: 6/15/09
Date Completed	: 6/16/09
Weather	: 80, sunny
0 hr Depth to GW	: 29'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-5B TOC Elev.:	Remarks
93				cement grout	
				bentonite	
98					
103					
				PVC screen	
108				8" borehole	
				sand pack	
113					
118					
123					

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Monitoring Well: MW-5B

(5 of 5)

Client	: Northwest Triangle
ARM Project	: 07214
Township	: York City
County, State	: York, PA
ARM Representative	: DOB
Checked By	:
Drilling Company	: Eichelbergers
Driller	: Carey Knaub

Drilling Equipment	: IR Air Rotary
Borehole Diameter	: 8" to 33', 6" below 33'
Casing Diameter	: 2"
Date Started	: 6/15/09
Date Completed	: 6/16/09
Weather	: 80, sunny
0 hr Depth to GW	: 29'
24 hr Depth to GW	: NA

Depth (ft.)	Surface Elev.(ft.)	Description	Graphic	Well: MW-5B TOC Elev.:	Remarks
124					
129					
134				PVC screen sand pack 8" borehole	
139					
144					
149		End of Boring at 150'.			
154					

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APPENDIX E

Site Photographs

Site looking northwest.

Site looking northeast.

Using Mini-Excavator to check for underground storage tanks.

Soil sampling with a geoprobe.

Installing MW-5S.

Installing MW-3S.