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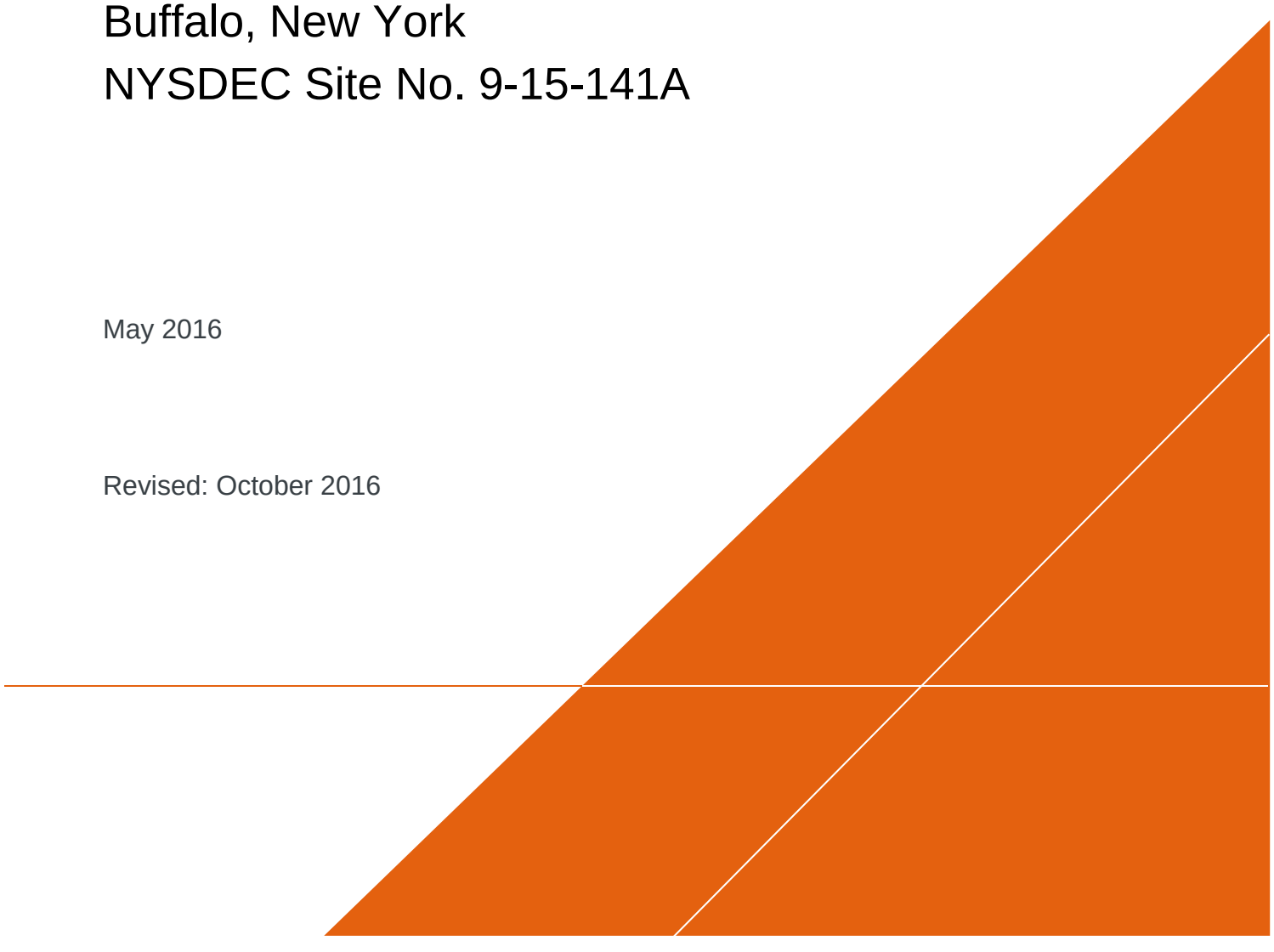
Bristol-Myers Squibb Company
Buffalo, New York

Supplemental Site Investigation Summary Report
Iroquois Gas/Westwood Pharmaceutical
Buffalo, New York
NYSDEC Site No. 9-15-141A

May 2016

Revised: October 2016



SUPPLEMENTAL SITE INVESTIGATION SUMMARY REPORT

Iroquois Gas/Westwood Pharmaceutical

Buffalo, New York

NYSDEC Site No. 9-15-141A

Prepared for:

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ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
ATL	Atlantic Testing Laboratories
bgs	below ground surface
BMS	Bristol-Myers Squibb Company
CPT	Cone Penetration Testing
DER	Department of Environmental Remediation
EM	Electromagnetic
GES	Groundwater & Environmental Services, Inc.
NAPL	Non-Aqueous Phase Liquid
NYSDEC	New York State Department of Environmental Conservation
PID	photoionization detector
ROD	Record of Decision
SSI	Supplemental Site Investigation
SSIWP	Supplemental Site Investigation Work Plan

1 INTRODUCTION

This Supplemental Site Investigation (SSI) Summary Report ("the Report") summarizes the work performed and findings of the SSI study for the Iroquois Gas/Westwood Pharmaceutical site located in Buffalo, New York ("the Site"). The Site location is shown on Figure 1. The SSI field activities were performed in two mobilizations by Arcadis. Initial investigation activities were conducted in June and July 2015 and, for reasons discussed below, an additional mobilization with different drilling equipment was completed in February 2016. The SSI field activities primarily consisted of the following:

- Drilling soil borings and collecting soil samples to: (1) further assess the subsurface stratigraphy to generate a reliable geologic cross-section of the study area; and (2) collect geotechnical data needed to support the interceptor trench design.
- Installing three additional piezometers and collecting synoptic rounds of water level measurements to obtain hydraulic-head data to further evaluate vertical gradient under static conditions.

The SSI study was performed in general accordance with the *Supplemental Site Investigation Work Plan* (Groundwater & Environmental Services, Inc., 2014) ("the SSIWP"), which was verbally approved by the New York State Department of Environmental Conservation (NYSDEC) in July 2014 to Groundwater & Environmental Services (GES). The goals of the SSI study were achieved by the activities summarized herein.

1.1 Description of Ongoing Remedial Measures and Selected Remedy

Ongoing remedial measures at the Site include the operation and maintenance of an existing remedial groundwater pump and treat system (which began in 1997), maintenance of the surface control barrier (cap), and environmental groundwater monitoring. The current remediation system includes a network of six extraction wells. Inspections of the Scajaquada Creek banks conducted in 2011 suggest the extraction wells are not providing complete hydraulic capture of site groundwater.

GES, on behalf of Bristol-Myers Squibb Company (BMS), submitted a Feasibility Study Report (FS Report) on April 4, 2014 in compliance with current NYSDEC regulations and the DER-10 Technical Guidance for Site Investigation and Remediation (DER-10). The FS Report included a detailed evaluation of remedial alternatives applicable to the Site and recommended an interceptor trench as the most appropriate remedial technology for the property given the existing subsurface conditions. The SSI activities described herein were conducted to collect data necessary to design an interceptor trench at the site.

2 PRE-DESIGN INVESTIGATION

This section summarizes the work performed, results obtained for the SSI, and conclusions and recommendations based on the SSI findings. Field investigation methodologies, analytical procedures, and health and safety protocols followed during the completion of the SSI activities are presented in the SSIWP.

2.1 SSI Field Activities

Key work activities performed as part of the SSI are described under the following subsections:

- Subsection 2.1.1 – Site Reconnaissance
- Subsection 2.1.2 – Subsurface Utility Identification
- Subsection 2.1.3 – Groundwater Investigation Activities
- Subsection 2.1.4 – Subsurface Soil Investigation Activities
- Subsection 2.1.5 – Field Survey Activities

2.1.1 Site Reconnaissance

A SSI kick-off site meeting and site walk (reconnaissance) was conducted on June 29, 2015 and attended by personnel from Arcadis and Parratt-Wolff, Inc. (Parratt-Wolff). The meeting was held to discuss the SSI field work and coordinate logistics for implementation (site access, work hours, health and safety, etc.). The meeting was followed by a reconnaissance to: (1) observe approximate sampling locations and assess whether any locations needed to be moved to avoid interference with overhead utilities; and (2) observe site conditions and constraints critical for optimizing the proposed interceptor trench design (Scajaquada Creek embankment east of the investigation area, proximity to overhead utilities, etc.).

2.1.2 Subsurface Utility Identification

Prior to intrusive site work, a private utility locating service (Master Locators) performed a geophysical survey using electromagnetic (EM) and ground penetrating radar (GPR) techniques to identify and mark the location of underground utilities. The private utility locating service used paint and flagging to mark the locations of identified subsurface features, and provided a field sketch of their findings. The field sketch and field service report prepared by the private utility locating service is included in Appendix A. Additionally, representatives of the current property owner, and/or utility locators on behalf of the owners, marked out their respective gas, electric, fiber-optic, and water lines in response to a Dig-Safely New York ticket request issued by Arcadis' drilling and excavation subcontractors.

Two unknown potential historic subsurface utilities were identified on the southern portion of the site via GPR. These historic structures were linear in nature and at less than 5 feet below ground surface (bgs). Based on their shape and depth they likely were historic conduits or other similar historic infrastructure. Their presence had no impact on the SSI boring placements. During site reconnaissance an overhead electrical line was identified running parallel with the SSI area (shown as the 'area inaccessible due to overhead utilities' on Figure 2).

Prior to drilling, soil was removed from each boring by an air knife to a depth of approximately 5 feet bgs. The air knife was used as an additional precautionary measure (beyond the geophysical survey and the other above-described subsurface utility location efforts) to mitigate the potential for striking underground utilities.

2.1.3 Groundwater Gradient Investigation Activities

In accordance with the NYSDEC-approved SSIWP three discretely-screened piezometers (locations P-7 though P-9) were installed and two synoptic groundwater measurements were collected to evaluate the vertical hydraulic gradient in the same water bearing unit under static conditions. The deeper and discrete screens allow for the evaluation of vertical gradients at the lowest level of the formation when compared to the full penetrating screens found in all other wells and piezometers across the Site. The piezometer installation was performed by Arcadis' subcontractor, Parratt-Wolff, to target depth using a hollow stem auger. An Arcadis geologist was onsite full-time to characterize soils recovered from the borings. Soil cuttings were field screened for the presence of volatile organic vapors using a photoionization detector (PID) and results are presented in Table 1. The Soil Boring Logs in Appendix B describe the location of any odor, sheen, or non-aqueous phase liquid (NAPL) identified.

The groundwater treatment system was shut down on June 17, 2015 to allow static groundwater conditions to develop. Piezometers were installed in three soil borings (P-7 though P-9) at depths of approximately 28 feet bgs. Each piezometer was constructed of 2-inch diameter schedule 40 PVC to the top of native clay. A 2-foot slotted screen was located at the bottom of each piezometer to discreetly measure vertical hydraulic gradient. Piezometer Construction Logs are provided in Appendix C.

Groundwater monitoring occurred on July 10 and 14, 2015. Arcadis gauged a select set of monitoring wells (B-6, B-7, and EW-3 though EW-8) and piezometers (P-1 though P-9) for water level and the presence of NAPL. No NAPL was detected in any monitoring well or piezometer, including the recently installed piezometers (P-7, P-8 and P-9) where sheens were observed on soil cores collected during piezometer installation (Table 1, Appendix B). Groundwater monitoring data is presented in Table 2. The groundwater treatment system was restarted July 14, 2015 after groundwater monitoring activities were completed.

2.1.4 Subsurface Soil Investigation Activities

The SSI subsurface soil investigation proposed the drilling and continuous sampling of 15 soil borings and the collection of three undisturbed soil samples (Shelby tubes) to determine the geotechnical engineering properties of the soil and delineate the subsurface stratigraphy of the site. These subsurface soil investigation activities were completed in two mobilizations, with some modifications detailed below, during the weeks of June 29 and July 21, 2015 (initial mobilization) and February 22, 2016 (follow-up mobilization).

The soil borings were installed by Arcadis' subcontractors, Atlantic Testing Laboratories (ATL) (locations CPT-1 though CPT-7 and CPT-9 during the initial mobilization) and Parratt-Wolff (locations CPT-8, CPT-10, and CPT-11 during the follow-up mobilization). An Arcadis geologist was onsite full-time to characterize soils recovered from the borings and collect and process samples for laboratory analysis.

During the first mobilization eight (8) of the proposed 15 soil boring locations were completed (locations CPT-1 through CPT-7 and CPT-9 as shown on Figure 2). Seven of the soil boring locations shown in the SSIWP were removed prior to beginning field work to avoid utilities and steep topography running along the Scajaquada creek, as indicated below:

- *Avoid Conflicts with Overhead Utility Lines:* Soil boring CPT-8 was eliminated from the sampling program and CPT-9 was moved approximately 140 feet south from the location shown in the SSIWP.

- *Areas Inaccessible Due to Steep Topography:* Soil borings CPT-10 though CPT-15 were eliminated from the sampling program.

The reduction in the total number of borings due to site logistics was communicated to the NYSDEC via a voice mail message on June 30, 2015 from Vin Maresco of Arcadis to Glenn May of the NYSDEC. A follow up email detailing the change dated July 1, 2015 from Vin Maresco of Arcadis to Kevin Glaser and Glenn May, both of the NYSDEC, was provided. The scope changes were verbally discussed between Vin Maresco and Glenn May on August 4, 2015.

During a follow-up mobilization in February 2016 a direct push drill rig was used to access the area near the overhead utility lines and complete soil borings at three new locations (locations CPT-8, CPT-10, and CPT-11). This follow-up mobilization with a direct push drill rig was verbally approved by Glenn May during a February 5, 2016 telephone conversation with Vin Maresco, and documented in an email sent to the NYSDEC that same day.

Due to conditions observed during the installation of piezometers P-7 though P-9, it was determined that the top 14-18 feet bgs of fill material was not suitable for Cone Penetration Testing (CPT) as outlined in the SSIWP. NYSDEC provided an e-mail to Arcadis on July 8, 2015 that approved the use of continuous split spoon sampling and hollow stem auger drilling for CPT soil borings CPT-1 through CPT-7 and CPT-9.

The SSIWP proposed final depths of 35 feet bgs in all borings, but due to field evidence of impacts (sheen and/or odor) and observations of NAPL, borings were terminated once the clay unit was encountered. This early termination of the boring depth is also consistent with the SSIWP. Final boring depths are between 26 to 32 feet bgs in all borings except CPT -10 which terminated at 23.4 feet bgs due to refusal. These depths were used to investigate the lithology and verify the location of the clay layer. A geologic cross-section of the data was prepared as Figure 3 and Soil Boring logs are presented in Appendix B.

Continuous split spoon sampling was completed at soil boring locations CPT-1 through CPT-7 and CPT-9 in 2-foot lengths. Soil samples were continuously collected in 4-foot macrocores at locations CPT-8, CPT-10, and CPT-11. Soil recovered from each sample interval was logged for color, moisture content, and grain size by an Arcadis geologist. To further understanding of geophysical properties, blow counts were collected in 6-inch intervals and are presented in Table 3. Soil cuttings were field screened for the presence of volatile organic vapors using a PID and results are presented in Table 1. The Soil Boring Logs in Appendix B describe the location of any odors, sheens, or NAPL identified.

The SSIWP proposed the collection of three Shelby tubes for geotechnical analysis. During the initial mobilization Shelby tubes were successfully collected from the saturated zone of two boring locations, P-8 (22'-24') and P-9 (22'-24'). A third Shelby tube was attempted in the unsaturated zone of boring location P-7; however, due to the lithology no sample was able to be recovered. Both samples were sent to P-W Labs in East Syracuse, New York and analyzed for moisture content via ASTM D2216, grain size distribution via ASTM D422, and Atterberg Limits via ASTM D44318. One sample (P-8) was analyzed for laboratory measured hydraulic conductivity. Analytical results, presented in Appendix D, indicate the soils tested are generally silts with a hydraulic conductivity of approximately 5 x 10^{-7} centimeters per second (cm/sec).

Upon completion, each boring was tremie-grouted to the surface (using a Portland-bentonite grout). Soil cuttings and decontamination wash waters were placed into 55-gallon drums. Arcadis sampled the drummed waste and confirmed it is not characteristically hazardous waste. Analytical data is presented in Appendix E. The waste was transported offsite by a contractor for Waste Management on March 18, 2016 for disposal at the Waste Management Model City landfill in Niagara Falls, New York.

2.1.5 Field Survey Activities

Land survey activities were performed on August 19, 2015 and March 3, 2016 by Arcadis' subcontractor C.T.MALE Associates. The survey activities were performed using conventional survey and global positioning system (GPS) techniques to field-identify and mark SSI soil boring/sampling locations and piezometers. Survey coordinates are presented in Table 4.

2.2 SSI Conclusions

The objectives of the SSI were achieved by the completion of the field activities described in this report. Data has been generated to evaluate the geotechnical properties of subsurface soils as well as the presence of a vertical hydraulic gradient, within the first water bearing unit, in the vicinity of the proposed interceptor trench. The top of the clay unit in this area has been adequately delineated, the well network is now appropriate to evaluate potential vertical groundwater gradients in this area (none have been observed), and a detailed cross section has been developed based on data collected during SSI field activities. Additionally conclusions based on review of the SSI data include:

- Groundwater elevational data was used to generate groundwater contours and to evaluate vertical head differences across the first water bearing unit in the investigation area. This data from the July 14, 2015 monitoring event indicate that a vertical gradient between the deep discretely screened piezometers and the fully penetrating monitoring locations in the same water bearing unit is not present in the investigation area (see Figure 4). Groundwater flow direction for the site is primarily horizontal (westerly), towards Scajaquada Creek. This data will be used in the design of the interceptor trench.
- Soil samples collected from soil borings show that the upper 14 to 18 feet were generally classified as a fill material; brown to dark brown, fine to medium sandy silt with little to trace fine gravel, rock, and brick fragments. This fill material, as shown in the blow count table (Table 3), was relatively harder and denser than the native material found in the lower sections of the borings. The lower native sections were generally dark brown, silt, some fine to medium sand, trace clay, some staining, and some odor with shells and woody organic filled sand lens on top of brown to gray native clay. The top potion of the native clay was generally very tight and stiff. Arcadis did not encounter any pooled NAPL on the basil clay unit.
- Both the upper fill unit and native unit have been evaluated from a geotechnical perspective. The data collected via these assessments included geologic descriptions, field geophysical data such as blow counts, and geologic laboratory analysis. This data will be used in the trench design process.
- Observations noted during the completion of soil borings along the anticipated trench alignment indicate geology in this area is consistent with the area where current pumping wells are located. No geologic features or units that would contribute higher flow rates to the trench were noted during

completion of the soil borings along the anticipated trench alignment. The trench will likely produce more groundwater than the current network of pumping wells in part, due to the trench's proximity to Scajaquada Creek, but moreover the trench will be designed to capture the groundwater flux traveling through the target area. However, the geologic observations of grain size distribution as noted in section 2.1.4 and Appendix D suggest flows will be within a range that is similar to the current pumping wells.

- The data collected during SSI field activities, in conjunction with previous site data, provides adequate information for trench design to proceed.
- Based on a review of this data, a trench design will be prepared and submitted to the NYSDEC for review.

3 REFERENCES

Groundwater & Environmental Services, Inc. 2014. *Supplemental Site Investigation Work Plan, Iroquois Gas/Westwood Pharmaceutical, Buffalo, New York*, prepared for Bristol-Myers Squibb Company (June 25, 2014).

TABLES

TALBE 1
SUMMARY OF OBSERVED SOIL CONDITIONS

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE BUFFALO, NEW YORK
SUPPLEMENTAL SITE INVESTIGATION

Location ID																
	P-7			P-8			P-9				CPT-1			CPT-2		
Depth (ft bgs.)	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL	Depth (ft bgs.)	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL
0 - 5'	0.0			0.0			0.0			**0 - 5'**	0.0			0.0		
5'-7'	0.0			0.0			0.0			**5'-6'**	0.0			0.0		
7'-9'	0.0			0.0			0.0			**6'-8'**	0.0			0.0		
9'-10'	0.0			0.0			0.0			**8'-10'**	0.0			0.0		
10'-12'	0.0			0.0			0.0			**10'-12'**	0.0			0.0		
12'-14'	0.0			0.0			0.3			**12'-14'**	0.0			0.0		
14'-16'	2.5			0.0			0.8			**14'-16'**	0.1			0.0		
16'-18'	134.6	X		0.4			1.3		X	**16'-18'**	0.5			0.3		
18'-20'	86.3		X	56.2		X	16.2		X	**18'-20'**	5.3			14.8		
20'-22'	28.1		X	19.7			24.4		X	**20'-22'**	72.8	X		32.7		
22'-24'	10.7		X	NM			NM			**22'-24'**	3.8			21.0		
24'-26'	4.8			12.7			38.4	X		**24'-26'**	0.0			7.6		
26'-28'	1.3			4.0			17.8			**26'-28'**	1.2			2.8		
28'-30'	--			0.9			1.8			**28'-30'**	--			--		
30'-32'	--			--			--			**30'-32'**	--			--		

TALBE 1
SUMMARY OF OBSERVED SOIL CONDITIONS

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE BUFFALO, NEW YORK
SUPPLEMENTAL SITE INVESTIGATION

Location ID																		
Depth (ft bgs.)	CPT-3			CPT-4			CPT-5			CPT-6			CPT-7			CPT-8		
	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL
0 - 5'	0.0			0.0			0.0			0.0			0.0			0.0		
5'-6'	0.1			0.0			0.0			NM			NM			0.3		
6'-8'	5.1			0.0			0.0			NM			NM					
8'-10'	0.5			0.0			0.0			NM			NM			1.7		
10'-12'	11.8			0.0			0.0			NM			NM					
12'-14'	NM			0.0			0.0			NM			NM			13.1		
14'-16'	14.8	X		0.2			0.0			NM			NM					
16'-18'	188.7	X	X	1.1			0.2			NM			NM	X	X	86.9		X
18'-20'	14.2			2.7			117.9	X	X	NM	X	X	NM	X				
20'-22'	11.4			4.5			98.6	X	X	NM		X	NM	X	X	NM		X
22'-24'	251.9			114.6	X		103.5	X	X	NM		X	NM	X	X			
24'-26'	24.7			67.4	X		15.3			NM			NM			139.0	X	X
26'-28'	45.1			21.9			2.7			NM			NM					
28'-30'	--			4.7			2.2			NM			NM			--		
30'-32'	--			--			--			--			--					

TALBE 1
SUMMARY OF OBSERVED SOIL CONDITIONS

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE BUFFALO, NEW YORK
SUPPLEMENTAL SITE INVESTIGATION

Depth (ft bgs.)	CPT-9			CPT-10			CPT-11		
	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL	PID	Odor	Sheen/ NAPL
0 - 5'	0.0			0.0			0.0		
5'-6'	1.2			0.0			0.0		
6'-8'	1.8								
8'-10'	5.6			0.8			0.0		
10'-12'	0.0								
12'-14'	0.0			2.4			0.0		
14'-16'	0.0								
16'-18'	78.9	X		13.5			11.8	X	X
18'-20'	46.7								
20'-22'	23.6			37.4	X		2.9	X	
22'-24'	14.6								
24'-26'	9.7			--			23.3	X	
26'-28'	3.1								
28'-30'	--			--			14.0	X	
30'-32'	--								

Notes:

1. bgs = below ground surface.
2. ft. = feet.
3. NM = not measured.
4. -- = Depth exceeds extent of boring.
5. Concentrations reported in parts per million (ppm).
6. Photoionization Detector (PID) was calibrated with isobutylene.
7. X= Denotes the presence of odor and or sheen/ non-aqueous phase liquid (NAPL) at the specified interval.

TABLE 2
GROUNDWATER MONITORING DATA

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE BUFFALO, NEW YORK
SUPPLEMENTAL SITE INVESTIGATION

Location ID	Reference Point (feet, AMSL)	Depth to Groundwater (feet bgs)		Depth to NAPL (feet bgs)		Groundwater Elevation (feet, AMSL)	
		7/10/2015	7/14/2015	7/10/2015	7/14/2015	7/10/2015	7/14/2015
B-6	592.30	18.44	18.27	ND	ND	573.86	574.03
B-7	591.86	18.70	17.99	ND	ND	573.16	573.87
EW-3	592.86	12.80	12.77	ND	ND	580.06	580.09
EW-4	590.78	15.12	15.02	ND	ND	575.66	575.76
EW-5	590.69	17.77	17.60	ND	ND	572.92	573.09
EW-6	590.33	17.37	17.33	ND	ND	572.96	573.00
EW-7	590.31	17.45	17.40	ND	ND	572.86	572.91
EW-8	591.07	18.09	18.00	ND	ND	572.98	573.07
P-1	590.77	15.29	15.15	ND	ND	575.48	575.62
P-2	591.30	17.20	17.37	ND	ND	574.10	573.93
P-3	591.09	18.32	18.18	ND	ND	572.77	572.91
P-4	591.51	18.75	18.04	ND	ND	572.76	573.47
P-5	591.42	17.84	17.31	ND	ND	573.58	574.11
P-6	590.83	17.87	17.39	ND	ND	572.96	573.44
P-7	591.01	18.20	17.50	ND	ND	572.81	573.51
P-8	591.51	18.61	17.96	ND	ND	572.90	573.55
P-9	591.32	18.39	17.77	ND	ND	572.93	573.55
Bridge Creek Gauging Station	576.10	6.49	6.78	ND	ND	569.61	569.32

Notes:

1. Depth to groundwater measurements are presented in feet below ground surface (bgs).
2. Groundwater elevations are presented in feet above mean sea level (AMSL).
3. NAPL = Non-aqueous phase liquid.
4. ND = Not Detected.

TABLE 3
SOIL BORING BLOW COUNTS

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE BUFFALO, NEW YORK
SUPPLEMENTAL SITE INVESTIGATION

Depth Interval (ft)	Blow Counts at Location													
	P-7	P-8	P-9	CPT-1	CPT-2	CPT-3	CPT-4	CPT-5	CPT-6	CPT-7	CPT-8	CPT-9	CPT-10	CPT-11
0 - 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5 - 7	2/3/4/6	3/4/4/3	2/6/5/4	5/3/4/6	N/A	4/5/12/17	N/A	N/A	N/A	N/A	N/A	5/9/11/23	N/A	N/A
7 - 9	7/4/6/4	8/7/3/4	6/5/4/7	8/11/19/6	N/A	19/9/3/4	N/A	N/A	N/A	N/A	N/A	14/9/11/5	N/A	N/A
9 - 10	3/3	5/4	3/5	9/6	N/A	3/7	N/A	N/A	N/A	N/A	N/A	12/12	N/A	N/A
10 - 12	4/8/6/4	6/5/3/27	5/4/4/4	4/3/10/14	N/A	3/6/1/2	N/A	N/A	N/A	N/A	N/A	6/3/4/4	N/A	N/A
12 - 14	5/6/6/7	12/7/3/3	2/2/5/4	5/14/6/3	N/A	6/3/2/4	N/A	N/A	N/A	N/A	N/A	21/29/12/15	N/A	N/A
14 - 16	5/15/7/4	6/15/4/6	1/3/8/3	11/11/6/4	8/7/7/8	6/7/9/10	13/6/6/12	7/4/7/3	16/3/3/4	2/2/1/1	N/A	13/7/2/3	N/A	N/A
16 - 18	1/1/6/1	10/4/3/6	1/3/5/2	4/4/8/12	8/10/7/9	6/6/5/7	7/6/3/6	3/5/4/4	1/1/2/3	1/1/1/3	N/A	5/4/3/3	N/A	N/A
18 - 20	5/9/10/8	2/4/12/4	6/8/3/4	29/6/1/2	2/1/4/4	3/3/5/5	5/4/11/10	10/5/4/3	WH/5/2/3	3/8/9/5	N/A	16/8/7/9	N/A	N/A
20 - 22	3/2/8/2	4/1/1/1	3/1/0/1	WH/4/3/3	4/4/4/4	4/4/6/7	1/2/2/3	4/2/2/2	1/21/5/2	1/1/1/2	N/A	12/10/11/13	N/A	N/A
22 - 24	1/1/2/2	N/A	N/A	3/5/3/4	2/2/3/3	13/10/7/7	3/4/3/3	1/2/2/3	1/1/1/2	WH/2/2/2	N/A	6/4/5/3	N/A	N/A
24 - 26	WH/1/2/1	WH/WH/2/1	WH/1/2/1	2/3/5/5	2/2/3/6	1/2/3/4	WH/WH/WH/3	WH/4/6/6	WH/WH/2/2	1/1/5/2	N/A	3/3/5/8	--	N/A
26 - 28	3/2/3/2	1/0/1/5	6/4/3/2	3/4/8/13	4/4/5/10	4/4/8/6	6/4/4/6	6/11/5/6	--	--	N/A	2/4/3/5	--	N/A
28 - 30	--	WH/WH/2/3	WH/WH/WH/2	--	--	--	5/9/16/21	2/1/2/4	--	--	--	WH/1/3/5	--	N/A
30 - 32	--	--	--	--	--	--	--	--	--	--	--	--	--	N/A

Notes:
1. N/A = Not applicable; split spoon sample not collected for this interval.
2. WH = Weight of Hammer.
3. -- = Depth exceeds extent of boring.

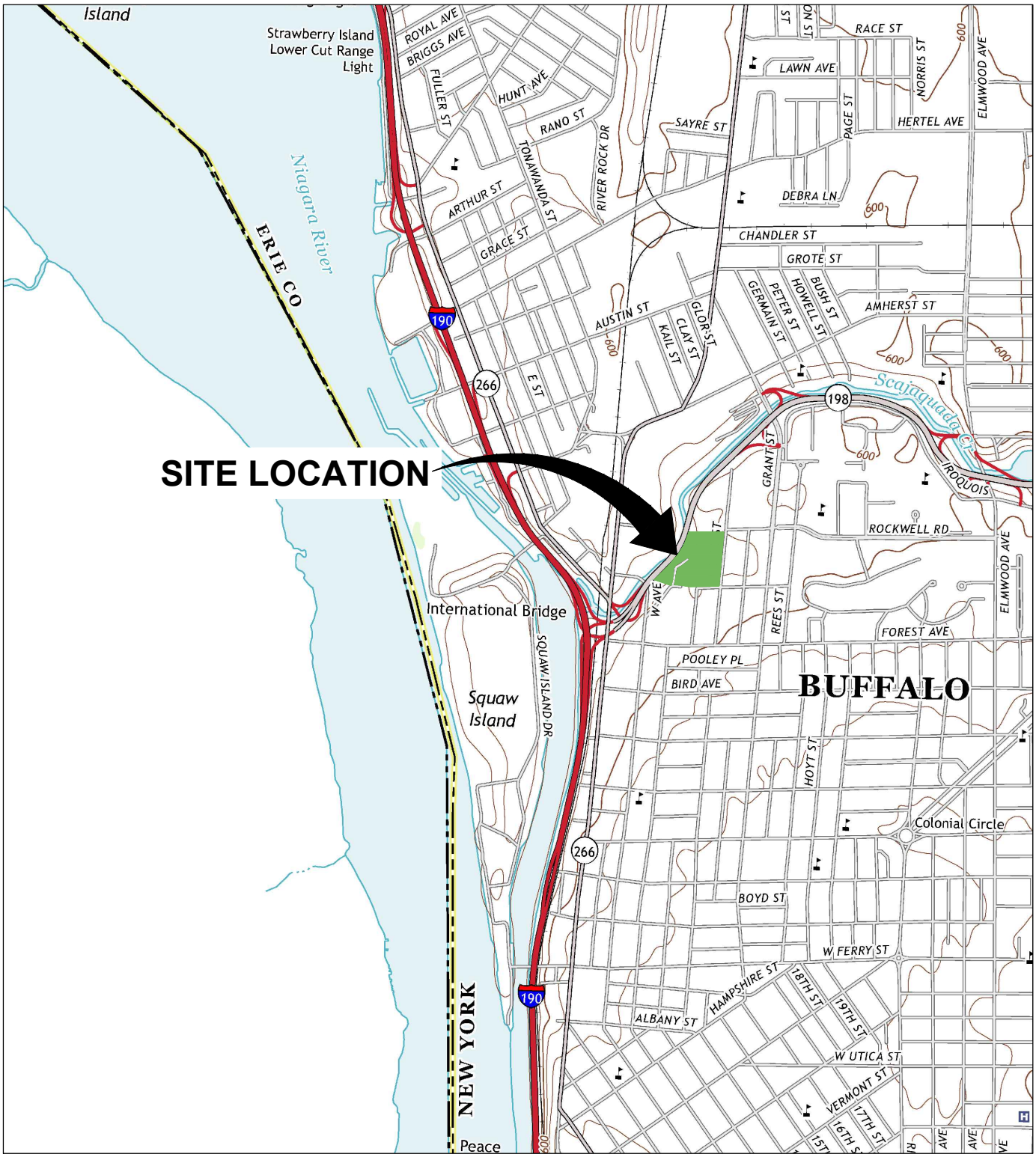
TABLE 4
SURVEY COORDINATES

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE BUFFALO, NEW YORK
SUPPLEMENTAL SITE INVESTIGATION

Location ID	Northing (feet)	Easting (feet)	Elevation (feet)	Comment
CPT-1	1068161.848	1065275.871	588.91	Ground Elevation
CPT-2	1068192.106	1065289.448	588.69	Ground Elevation
CPT-3	1068212.840	1065308.581	589.19	Ground Elevation
CPT-4	1068241.648	1065293.179	589.43	Ground Elevation
CPT-5	1068275.562	1065308.309	589.21	Ground Elevation
CPT-6	1068308.104	1065316.108	588.67	Ground Elevation
CPT-7	1068328.480	1065328.162	588.69	Ground Elevation
CPT-8	1068363.098	1065336.321	588.90	Ground Elevation
CPT-9	1068251.440	1065317.691	589.27	Ground Elevation
CPT-10	1068386.326	1065350.492	589.76	Ground Elevation
CPT-11	1068429.691	1065361.336	589.86	Ground Elevation
P-7	1068215.585	1065276.494	591.20	Top of Casing
	1068215.614	1065276.677	591.01	Top 2" PVC
	1068215.681	1065276.837	588.73	Ground Elevation
P-8	1068294.180	1065309.991	591.68	Top of Casing
	1068294.406	1065310.124	591.51	Top 2" PVC
	1068294.489	1065309.658	588.88	Ground Elevation
P-9	1068337.564	1065325.120	591.50	Top of Casing
	1068337.719	1065325.290	591.32	Top 2" PVC
	1068337.606	1065324.822	588.78	Ground Elevation

Notes:
1. Coordinates are based on the Western Zone of the NYS Plane Coordinate System NAD 83.
2. Elevations are based on NAVD 88 Datum.

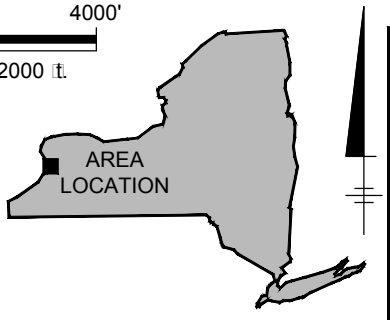
FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., BUFFALO NW, NY-ON, 2013.

0 2000' 4000'

Appr□□□□ □t□ S□□□□: 1 □□. = 2000 □t.



BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE
BUFFALO, NEW YORK

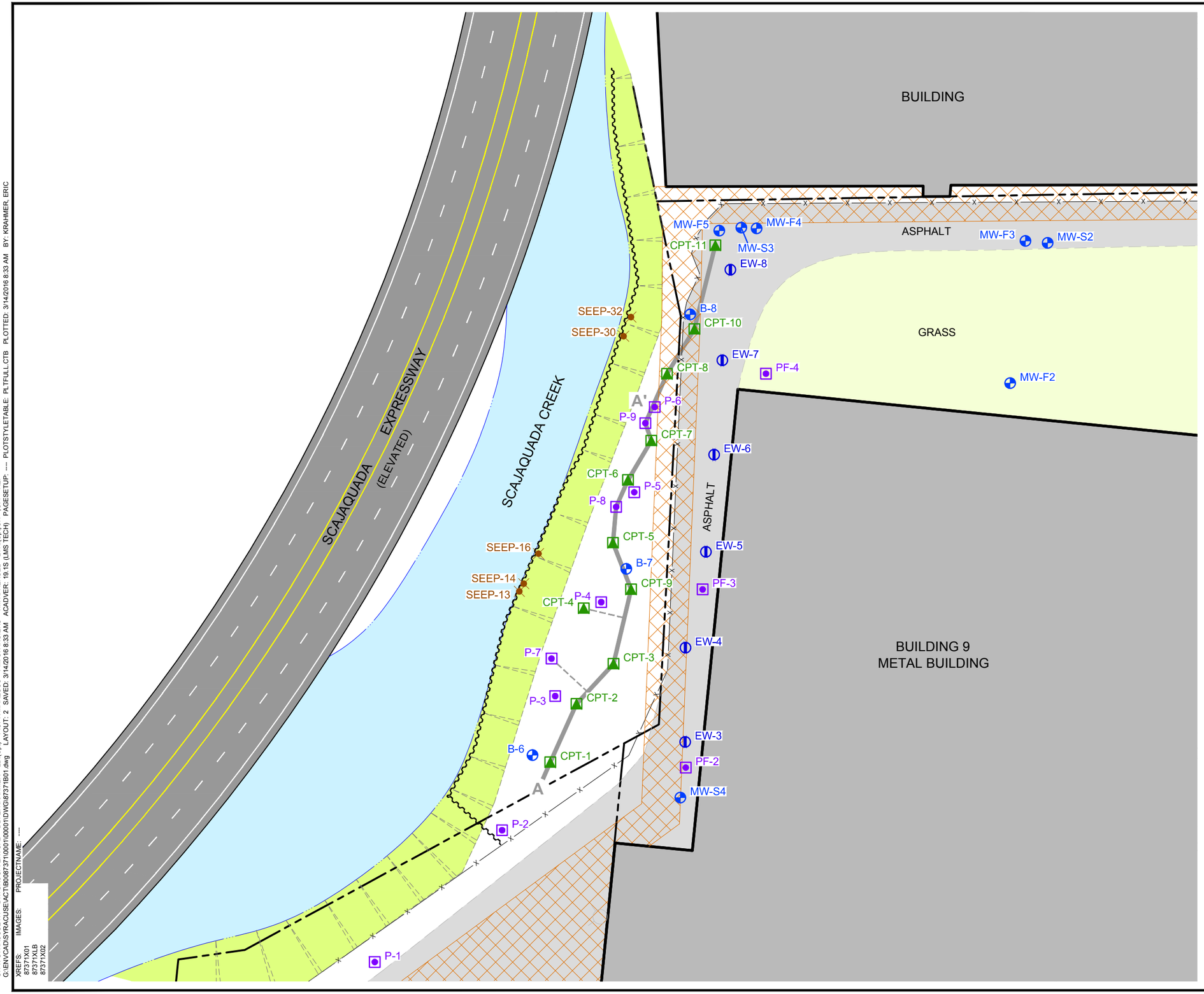
SUPPLEMENTAL SITE INVESTIGATION

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

CITY: SYRACUSE NY DIV/GROUP: ENVCAD DB: E. KRAHMER LD:(Opt) PIC: V. MARESCO PM: C. ANGIERS TM: R. HENSEL LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0087371\0001\00001\DWG\87371N01.dwg LAYOUT: 1 SAVED: 11/19/2015 9:23 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 11/20/2015 10:21 AM BY: KRAHMER, ERIC
XREFS: IMAGES: PROJECTNAME: ---
87371XLB NY: B□□□□□NW 20130308□TM□g□□p□g



LEGEND:

- PROPERTY BOUNDARY
- FENCE
- SHEET PILE RETAINING WALL
- MONITORING WELL
- SEEP LOCATION
- PIEZOMETER
- GROUNDWATER EXTRACTION WELL
- CORE PENETROMETER TEST (CPT) LOCATION
- AREA INACCESSIBLE TO HOLLOW STEM AUGER DRILLING DUE TO OVERHEAD UTILITIES
- AREA INACCESSIBLE DUE TO STEEP SLOPE
- A — A' CROSS SECTION LOCATION

NOTE:

1. BASE MAP FROM A GROUNDWATER & ENVIRONMENTAL SERVICES, INC. FIGURE TITLED "PROPOSED GROUND-WATER COLLECTION TRENCH LOCATION MAP" DATED 4/13/2013.
2. LOCATIONS OF SOIL BORINGS CPT-1 THROUGH CPT-7, CPT-9, AND PIEZOMETERS P-7 THROUGH P-9 WERE SURVEYED BY C.T. MALE ON AUGUST 19, 2015. SOIL BORINGS CPT-8, CPT-10 AND CPT-11 WERE SURVEYED BY C.T. MALE ON MARCH 3, 2016.

0 50' 100'

GRAPHIC SCALE

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE
BUFFALO, NEW YORK
SUPPLEMENTAL SITE INVESTIGATION

SOIL BORING, PIEZOMETER AND CROSS-SECTION LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

CITY: SYRACUSE NY DW/GROUP: ENVCAD DB: E. KRAHMER LD:(Opt) PIC: V. MARESCO PM: C. ANGIERS TM: R. HENSEL LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB0\87371\0001\0001\DWG\87371B01.dwg LAYOUT: 2 SAVED: 3/14/2016 8:33 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ----
XREFS: PROJECTNAME: ----
IMAGES:
87371X01
87371XLB
87371X02
PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/14/2016 8:33 AM BY: KRAHMER, ERIC

A SOUTH — **A'** NORTH

CPT-1 | CPT-2 | P-7 (25.44' W□t) | CPT-3 | CPT-4 (21.61' W□t) | CPT-9 | CPT-5 | P-8 | CPT-6 | CPT-7 | P-9 | CPT-8 | CPT-10 | B-8 (3.95' W□t) | CPT-11

ELEVATION (FEET AMSL): 590, 585, 580, 575, 570, 565, 560, 555

FILL MATERIAL
TILL
SILTY SAND
SILT
SILTY CLAY
SAND
CLAY
GRAVEL

LEGEND:

- CPT-6 — WELL OR BORING ID
- GROUND SURFACE
- LITHOLOGIC CONTACT (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION (JULY 14, 2015)
- BOTTOM OF BORING

BROWN SILTY SAND
ROCK FRAGMENTS
BRICK FRAGMENTS

LITHOLOGIC KEY:

- FILL MATERIAL
- TILL
- SILT
- SAND
- SILTY SAND
- SILTY CLAY
- GRAVEL
- CLAY

NOTES:

1. CONTACTS ARE APPROXIMATE AND INFERRED BETWEEN KNOWN DATA POINTS (BORINGS AND WELLS).
2. LOCATIONS OF SOIL BORINGS CPT-1 THROUGH CPT-7, CPT-9, AND PIEZOMETERS P-7 THROUGH P-9 WERE SURVEYED BY C.T. MALE ON AUGUST 19, 2015. SOIL BORINGS CPT-8, CPT-10 AND CPT-11 WERE SURVEYED BY C.T. MALE ON MARCH 3, 2016.
3. 15 HORIZONTAL FEET WAS OMITTED BETWEEN CPT-10 AND CPT-11 FOR CLARITY.
4. FEET AMSL = FEET ABOVE MEAN SEA LEVEL.
5. VERTICAL EXAGGERATION: 4X

0 20' 40' — HORIZONTAL SCALE

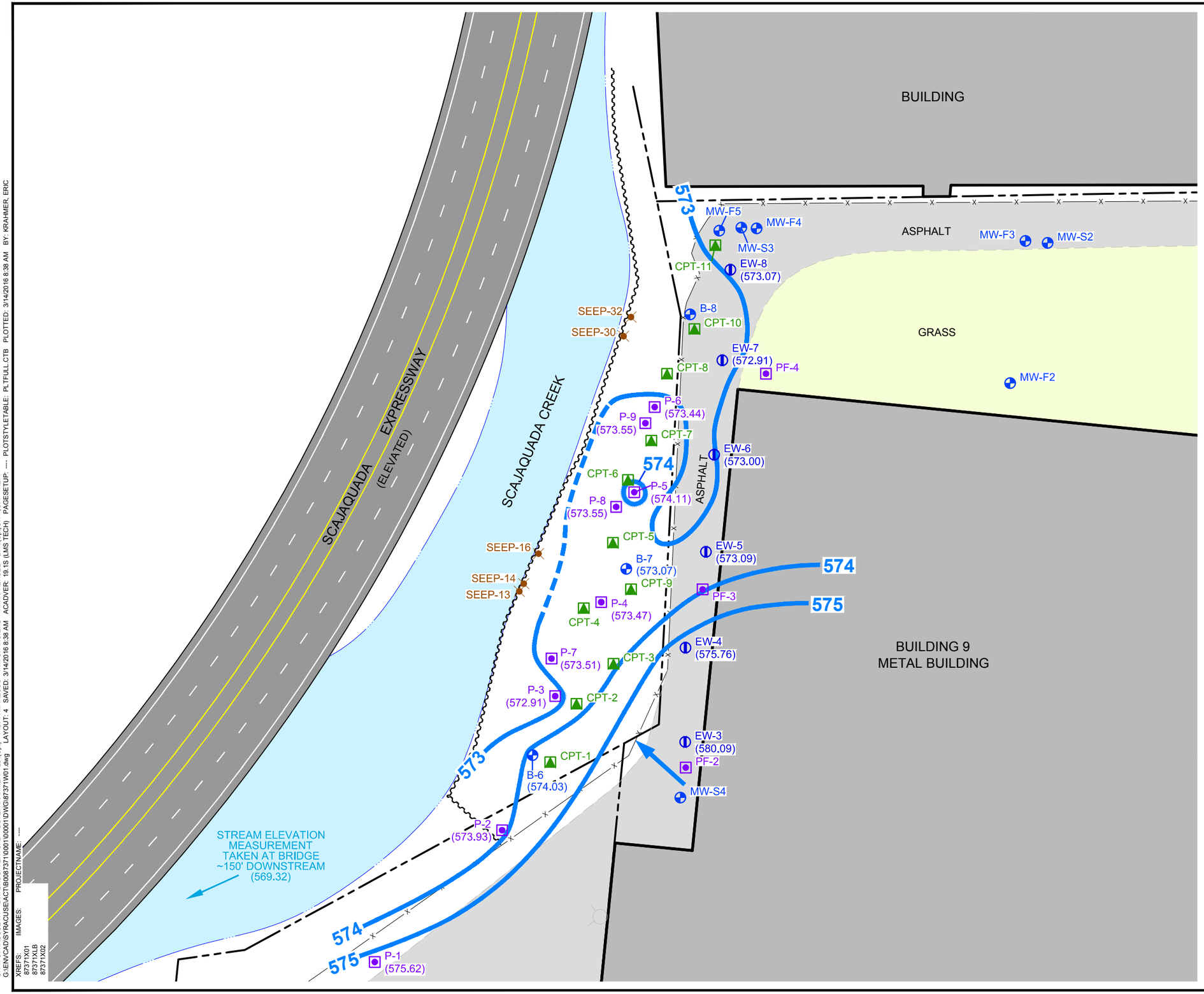
0 5' 10' — VERTICAL SCALE

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE
BUFFALO, NEW YORK
SUPPLEMENTAL SITE INVESTIGATION

GEOLOGIC CROSS-SECTION

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3



LEGEND:

- PROPERTY BOUNDARY
- FENCE
- SHEET PILE RETAINING WALL
- MONITORING WELL
- SEEP LOCATION
- PIEZOMETER
- GROUNDWATER EXTRACTION WELL
- CORE PENETROMETER TEST (CPT) LOCATION
- (573.07) GROUNDWATER ELEVATION (FT AMSL)
- 575 GROUNDWATER CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:

1. BASE MAP FROM A GROUNDWATER & ENVIRONMENTAL SERVICES, INC. FIGURE TITLED "PROPOSED GROUND-WATER COLLECTION TRENCH LOCATION MAP" DATED 4/13/2013.
2. LOCATIONS OF SOIL BORINGS CPT-1 THROUGH CPT-7, CPT-9, AND PIEZOMETERS P-7 THROUGH P-9 WERE SURVEYED BY C.T. MALE ON AUGUST 19, 2015. SOIL BORINGS CPT-8, CPT-10 AND CPT-11 WERE SURVEYED BY C.T. MALE ON MARCH 3, 2016.

0 50' 100'

GRAPHIC SCALE

BRISTOL-MYERS SQUIBB COMPANY
100 FOREST AVENUE
BUFFALO, NEW YORK

SUPPLEMENTAL SITE INVESTIGATION

GROUNDWATER CONTOUR MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4

CITY: SYRACUSE NY DW/GROUP: ENVCAD DB: E. KRAHMER LD:(Opt) PIC: V. MARESCO PM: C. ANGIERS TM: R. HENSEL LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB\087371\000\10000\DWG\87371W01.dwg LAYOUT: 4 SAVED: 3/14/2016 8:38 AM ACADVER: 19.1S (LMS TECH) PAGESETUP: ----
XREFS: PROJECTNAME: ----
87371X01 IMAGES:
87371XLB
87371X02
PLOTTED: 3/14/2016 8:38 AM BY: KRAHMER, ERIC
PLOTSTYLETABLE: PLTFULL.CTB

APPENDIX A

Geophysical Survey Findings: Field Sketch

MASTER LOCATORS FIELD SKETCH

Customer: ARCADIS

Job Number:

Date: 6-17-15

Project/Site Location: FOREST AVE - BUFFALO

Technician: G. KRAUSE

COLOR CODES:

RED - electric/ unknown
YELLOW - gas
ORANGE - comm., FO
BLUE - water
GREEN - storm, sewer
PINK - temporary

SYMBOLS:

CB - catch basin
CO - clean-out
FH - fire hydrant
JB - junction box
MH - manhole
PB - pull box
PIV - post indicator valve
SL - site light
VB - valve box
WV - water valve

master locators
THE FIRST STEP TO A SMARTER JOBSITE
675 Concord Rd., Glen Mills, PA 19342
610-358-0172 610-358-0175 (FAX)

SHEET 1 OF 1

NOTE: All information contained herein is for reference only. Master Locators, Inc. is not responsible for the accuracy of its content.

FIELD SERVICE REPORT

*Formal invoice to follow

master locators
675 Concord Road Glen Mills, PA
1-800-495-4248
www.masterlocators.com

Company: ARCADIS U.S., Inc.
Project: Manufacturing Building
Customer Contact: Vin Maresco
ML Office Rep: RMS
Address:
Lead Technician: Greg Krause
Assts:
Buffalo NY 14213-1032

Services Performed: (Circle all that apply)
GPR Survey | EM Scan | Air / Hydro Excavation | Concrete Scan | Site Training
Leak Locate | VPI | Fault Locate | Survey & Mapping | Other:

Date:	# :	Description of Services:	STD Hours	OT Hours	Begin	Onsite	Offsite	End
06/17/2015	1	Outside GPR:Bore Scan	● / 8		6:45 AM	7:51 AM	10:30	5:00 PM
			4 / 8					
			4 / 8					
			4 / 8					
			4 / 8					

Full Scope of Work:
Mark out locatable utilities at several boring locations.

Utilities/Features Designated: (circle all that apply)

GAS WATER ELECTRIC FIBER OPTIC COMM STORM SEWER REBAR UST UNKNOWN NONE

Other:

Additional Resources: ***(traffic control, rentals, supplies, etc…)***

Results and Notes:
Scanned approx 50'x150' area behind facility. Performed passive scans using all frequencies. Performed circumference and grid scans using gpr and split box. No visible surface features in area. Marked two unknown anomalies. Marked customer air line from building to vault.

Client Communication:
Discussed results with Shawn

Deliverables Requested: PMU ENGINEERING REPORT CAD UPDATE SKETCH OTHER:

Deliverables Provided Onsite: ***YES / NO***

Survey Methodologies

Known Utilities:		Unknown Utilities:		(Grid Spacing)
Utilities within Scope of Work:		Passive Scans:	X	10' x 10'
Utilities outside Scope of Work:		Split Box Scans:	X	10' x 10'
Building Feeds:		GPR Scans:	X	10' x 10'

Other:

Contacts on Site:
Client PO #:
Project Complete: YES / NO

Name: Shawn Skelly Company: ARCADIS U.S., Inc. Phone: (585) 350-8146 Signature:

Name: Company: Phone: Signature:

APPENDIX B

SSI Soil Boring Logs

ARCADIS Design & Consultancy for natural and built assets

Sample/Core Log

Boring/Well P-7 Project/No. B0087371 Page 1 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 27.5' Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-55

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 588.73 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff Inc. Driller N/A Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Brown Silty Sand, Rock Fragments, Brick Fragments, dry). Hand cleared.
5	7	1.0	2/3/4/6	Same as above (SAA).
7	9	1.0	7/4/6/4	SAA.
9	10	0.2	3/3	SAA.
10	12	0.8	4/8/6/4	SAA.
12	14	1.6	5/6/6/7	SAA with trace glacial till (Red-brown SILT, trace f-c Sand, trace sub-rounded gravel, dry).
14	16	1.2	5/15/7/4	SAA (0-0.7').
				Brown SILTY CLAY, trace f-c Sand, trace f-gravel grading to Dark brown SILT, damp (0.7'-1.2').
16	18	1.0	1/1/6/1	Dark brown f-c SAND, little Silt, trace f-gravel, wet. Strong odor.
18	20	0.2	5/9/10/8	Gray SILTY SAND, some rock fragments, wet. NAPL present on drilling rods.
20	22	1.1	3/2/8/2	Dark gray, f-c SAND, little fine Gravel, wet, sheen, loose (0-0.7').
				Dark gray, SILTY CLAY, trace f-Sand, wet (0.7'-1.1').
22	24	2	1/1/2/2	Dark gray SILT, little to some Clay, trace f-c Sand, trace f-Gravel, wet, sheen.
24	26	1.7	WH/1/2/1	SAA (0-0.9').
				Dark brown SILTY f-SAND, trace m-c Sand, trace shell/shell material, damp (0.9'-1.7').
26	28	1.3	3/2/3/2	Dark brown SILTY f-SAND, trace m-c Sand, trace shell/shell material, damp (0-0.9').
				Gray CLAY, trace f-Sand, stiff, damp (0.9'-1.3').

Sample/Core Log

Boring/Well P-8 Project/No. B0087371 Page 2 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 30" Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-55

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 588.88 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff Inc. Driller N/A Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Brown Silty Sand, Rock Fragments, Brick Fragments, dry). Hand cleared.
5	7	0.9	3/4/4/3	Same as above (SAA).
7	9	1.1	8/7/3/4	SAA.
9	10	0.6	5/4	SAA.
10	12	0.5	6/5/3/27	SAA.
12	14	1.2	12/7/3/3	SAA (0-0.8').
				Fill material (Brown SILTY CLAY, trace f-c Sand, trace f-subrounded Gravel, dry [0.8'-1.2']).
14	16	0.6	6/15/4/6	Fill material (Brown Silty Sand, Rock Fragments, Brick Fragments, dry). Hand cleared.
16	18	1.1	10/4/3/6	Brown, SILTY SAND, trace m-c Sand, trace f-Gravel, damp (0-0.3').
				Red SANDSTONE fragments (0.3'-0.5').
				Brown SILTY CLAY, little f-Sand, trace m-c Sand, trace f-Gravel, wet (0.5'-1.1').
18	20	1.0	2/4/12/4	Brown SILTY CLAY, little f-Sand, trace m-c Sand, trace f-Gravel, wet (0-0.2').
				SAA except dark gray/black in color, odor (0.2'-0.6').
				Gray f-m SAND, trace f-Gravel (0.6'-0.8').
				Dark gray/black SILTY CLAY, little f-Sand, trace m-c Sand, trace f-Gravel, odor (0.8'-1.0').
20	22	1.6	4/1/1/1	Dark gray/black SILTY CLAY, some grading to little f-Sand, wet.
22	24	N/A	N/A	Collected Shelby Tube in this interval.
24	26	1.9	WH/WH/2/1	Gray brown SILT, little Clay, trace f-Sand (0-0.9').
				Dark brown f-m SAND, little shell/shell material, wet (0.9'-1.9').
26	28	1.8	1/0/1/5	Dark brown f-m SAND, little shell/shell material, wet (0'-0.8').
				Dark brown f-SAND and SILT, trace roots.
28	30	1.75	WH/WH/2/3	Gray CLAY (0-0.9').
				Brown CLAY (0.9'-1.75').

Sample/Core Log

Boring/Well P-9 Project/No. B0087371 Page 3 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 30" Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-55

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 588.78 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Parratt-Wolff Inc. Driller N/A Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Brown Silty Sand, Rock Fragments, Brick Fragments, dry). Hand cleared.
5	7	1.3	2/6/5/4	Fill material (Gray SANDY SILT, rock fragments, brick [0-0.8']).
				Fill material (Dark gray/black SANDY SILT, trace f-Gravel, rock fragments [0.8'-1.3']).
7	9	0.8	6/5/4/7	Fill material (Dark gray/black grading to brown SANDY SILT, trace f-Gravel, rock fragments [0-0.3']).
				Fill material (Red Brick fragments [0.3'-0.8']).
9	10	0.0	3/5	Fill material; Brick dust in shoe.
10	12	0.8	5/4/4/4	Fill material (Brown SILTY CLAY [0-0.3']).
				Fill material (Gray/tan SANDY SILT, trace f-Gravel and rock fragments, brick fragments [0.3'-0.8']).
12	14	0.7	2/2/5/4	Fill material (Gray/tan grading to black SANDY SILT, trace f-Gravel and rock fragments, brick fragments, concrete fragments [0.3'-0.8']).
14	16	0.5	1/3/8/3	Brown SILTY CLAY, little f-Sand, trace f-Gravel, wet.
16	18	0.6	1/3/5/2	Dark brown SILTY SAND, little f-Gravel, wet, sheen at 0.3'.
18	20	0.2	6/8/3/4	Dark gray SILTY SAND, some f- Gravel, wet, sheen.
20	22	1.4'	3/1/0/1	Dark gray/black SILT, trace f-Gravel, NAPL, sheen, wet.
22	24	N/A	N/A	Collected Shelby Tube in this interval.
24	26	0.9	WH/1/2/1	Dark gray SILT grading to brown SILT, trace f-Sand, trace Clay, trace f-Gravel, wet, odor.
26	28	1.3	6/4/3/2	Dark brown SILT, trace f-Sand, trace Clay, trace f-Gravel, wet (0-1.2').
				Dark brown SILTY SAND, some Organics (wood), trace f-Gravel, wet (1.2'-1.3').
28	30	1.6	WH/WH/WH/2	Gray CLAY grading to brown at 0.8'.

Sample/Core Log

Boring/Well CPT-1 Project/No. B0087371 Page 4 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 28 Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-85

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 588.91 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Atlantic Testing Laboratories Driller Josh Peri Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Brown Silty Sand, Rock Fragments, Brick Fragments, dry). Hand cleared.
5	6	0.4	5/3	Fill Material (Brown SILT, some f-Sand, trace Clay, trace rock fragments, trace f-Gravel, dry).
6	8	0.7	4/6/8/11	Fill Material (Brown SILT, some f-Sand, trace Clay, trace rock fragments, trace f-Gravel, trace brick fragments, dry).
8	10	0.4	19/6/9/6	Fill Material (Brown SILT, some f-Sand, trace Clay, trace rock fragments, trace f-Gravel, trace brick fragments, dry).
10	12	0.7	4/3/10/14	Fill material (Brown SILT, some f-Sand, trace Clay, trace rock fragments, trace f-Gravel, trace brick
				fragments, dry [0-0.3']).
				Red brown TILL (SILT, little Clay, trace sub-rounded f-Gravel), damp (0.3'-0.8').
12	14	0.6'	5/14/6/3	Red brown TILL (SILT, little Clay, trace sub-rounded f-Gravel), damp (0'-0.3').
				Brown SILTY SAND, trace f-Gravel (0.3'-0.6').
14	16	0.6'	11/11/6/4	Brown SILTY SAND, trace f-Gravel, trace rock fragments, wet.
16	18	0.8	4/4/8/12	Brown SILTY SAND, trace f-Gravel, trace rock fragments, trace wood at 0.5'-0.65', grading to dark
				brown/black SILT, little f-Sand, trace f-Gravel wet.
18	20	1.2	29/6/1/2	Dark brown/black SILT, little f-Sand, trace f-Gravel wet (0-0.6').
				Dark brown SILT, some Clay, trace f-Sand, wet (0.6'-1.2').
20	22	2	WH/4/3/3	Dark brown SILT, some Clay, trace f-Sand, wet (0-0.4').
				Dark brown/black SILT, trace Clay, trace f-Sand, damp, odor (0.4'-2.0').
22	24	2	3/5/3/4	Dark brown/black SILT, little to some Clay, trace f-Sand, damp.
24	26	2	2/3/5/5	Dark brown/black SILT, little to some Clay, trace f-Sand, damp (0-0.5').
				Dark brown SILT, trace Clay, trace f-Sand, trace wood, damp (0.5'-1.3').
				Dark brown f-SAND, little shell/shell material, trace f-Gravel (1.3'-1.5').
				Dark brown SANDY SILT, damp (1.5'-2.0').
26	28	1.5	3/4/8/13	Dark brown SANDY SILT, damp (0'-0.2').
				Gray CLAY, trace Silt, trace f-Sand (0.2'-1.5').

Sample/Core Log

Boring/Well CPT-2 Project/No. B0087371 Page 5 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 28 Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-85

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 588.69 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Atlantic Testing Laboratories Driller Josh Peri Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	14	N/A	N/A	Fill material (Hand cleared to 5' and augered to 14' without continuous sampling).
14	16	0.5	8/7/7/8	Brown SILTY SAND, trace f-Gravel, trace rock fragments, wet.
16	18	0.5	8/10/7/9	Brown SILTY SAND, trace f-Gravel, trace rock fragments, wet.
18	20	1.0	2/1/4/4	Dark brown/black Sandy SILT, trace Clay, trace f-Gravel, wet (0-0.5').
				Dark brown SILT and CLAY, trace f-Sand, damp (0.5'-1.0').
20	22	1.3	4/4/4/4	Dark brown SILT and CLAY, trace f-Sand, damp (0-0.8').
				Dark brown/black SILT, trace Clay, trace f-Sand, damp (0.8'-1.3').
22	24	1.6	2/2/3/3	Dark brown/black SILT, trace Clay, trace f-Sand, damp.
24	26	2	2/2/3/6	Dark brown/black grading to brown, SILT, trace Clay, trace f-Sand, damp (0-1.0').
				Brown SILTY SAND, some shells/shell material, trace wood (1.0'-2.0').
26	28	2	4/4/5/10	Brown SILTY SAND, some shells/shell material, trace wood (0-1.5').
				Gray CLAY (1.5'-2.0').

Sample/Core Log

Boring/Well CPT-3 Project/No. B0087371 Page 6 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 28 Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-85

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 589.19 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Atlantic Testing Laboratories Driller Josh Peri Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Brown Silty Sand, Rock Fragments, Brick Fragments, dry). Hand cleared.
5	6	1.0	4/5	Fill Material (Brown SILT, little Clay, trace f-Sand, trace f-Gravel).
6	8	2.0	12/17/19/9	Fill Material (Dark brown SILTY SAND, trace f-Gravel, damp [0-1.4']).
				Fill Material (Gray SAND, some Silt, little f-Gravel, dry [1.4'-2.0']).
8	10	1.0	3/4/3/7	Fill Material (Brown SANDY SILT, little grading to some f-Gravel, damp).
10	12	0.5	3/6/1/2	Fill Material (Brown SANDY SILT, little grading to some f-Gravel, damp).
12	14	1.0	6/3/2/4	Fill Material (Brown SANDY SILT, little grading to some f-Gravel, damp [0-0.5']).
				Brown SILT, some Clay, trace f-Sand, damp (0.5'-1.0').
14	16	1.0	6/7/9/10	Brown SILT, some Clay, trace f-Sand, damp (0-0.4').
				Brown grading to dark brown, SANDY SILT, trace f-Gravel, odor, wet (0.4'-1.0').
16	18	1.0	6/6/5/7	Black f-m SAND, some Silt, trace wood, trace f-Gravel, wet, sheen, odor (0-0.5').
				Brown SILTY CLAY, trace f-Sand, stiff (0.5'-1.0').
18	20	1.5	3/3/5/5	Brown SILTY CLAY, trace f-Sand, stiff.
				Dark brown SILT, some Clay, trace f-Sand, wet (0.6'-1.2').
20	22	1.6	4/4/6/7	Dark brown SILT, some Clay, trace f-Sand, trace wood, wet.
22	24	2	13/10/7/7	Dark brown SILT, some Clay, trace f-Sand, trace wood, wet (0-0.4').
				Black SILT, little f-Sand, trace wood, trace Clay, odor (0.4'-2.0').
24	26	2	1/2/3/4	Dark brown SILT, trace Clay, trace f-Sand, damp (0-1.2').
				Brown SAND, some shells/shell material, trace wood, sulfur odor, damp (1.2'-2.0').
26	28	1.4	4/4/8/6	Brown SAND, some shells/shell material, trace wood, sulfur odor, damp (0'-1.0').
				Gray CLAY, trace Silt, stiff (1.0'-1.4').

Sample/Core Log

Boring/Well CPT-4 Project/No. B0087371 Page 7 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 30 Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-85

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 589.43 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Atlantic Testing Laboratories Driller Josh Peri Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	14	N/A	N/A	Fill material (Hand cleared to 5' and augered to 14' without continuous sampling).
14	16	0.7	13/6/6/12	Fill material (Gray rock fragments, dry [0-0.4']).
				Brown SILTY CLAY, trace f-Sand, trace f-Gravel (0.4'-0.7').
16	18	0.6	7/6/3/6	Brown SILTY SAND, little f-Gravel, wet.
18	20	1.0	5/4/11/10	Brown SILTY SAND, some f-Gravel, trace fabric and rubber wet (0-0.8').
				Brown SILTY CLAY, trace f-Sand, trace f-gravel, wet (0.8'-1.0').
20	22	0.5	1/2/2/3	Brown SILTY CLAY, trace f-Sand, trace f-gravel, wet.
22	24	1.3	3/4/3/3	Dark brown/black SILT, trace Clay, trace f-Sand, trace f-Gravel, wet, odor.
24	26	1.5	WH/WH/WH/3	Dark brown/black SILT, trace Clay, trace f-Sand, trace f-Gravel, wet, odor.
26	28	0.7	6/4/4/6	Brown SAND, some to little shells/shell material, damp.
28	30	1.3	5/9/16/21	Brown SAND, some to little shells/shell material, damp (0-0.1').
				Gray grading to red brown CLAY, stiff (0.1'-1.3').

Sample/Core Log

Boring/Well CPT-5 Project/No. B0087371 Page 8 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 30 Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-85

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 589.21 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Atlantic Testing Laboratories Driller Josh Peri Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	14	N/A	N/A	Fill material (Hand cleared to 5' and augered to 14' without continuous sampling).
14	16	0.6	7/4/7/3	Fill material (Brown SANDY SILT, little f-Gravel, trace concrete fragments, damp).
16	18	0.4	3/5/4/4	Fill material (Brown SANDY SILT, little f-Gravel, trace concrete fragments, damp).
18	20	0.7	10/5/4/3	Brown SAND, trace f-Gravel, wet (0-0.3').
				Dark brown w/black staining SILT, some Clay, trace f-Sand, trace f-Gravel, wet, sheen, odor (0.3'-0.7').
20	22	0.6	4/2/2/2	Dark brown w/black staining SILT, some Clay, trace f-Sand, trace f-Gravel, wet, sheen, odor (0-0.3').
				Brown rock fragments, wet, sheen, NAPL, odor (0.3'-0.6').
22	24	0.3	1/2/2/3	Brown rock fragments, wet, sheen, NAPL, odor.
24	26	2	WH/4/6/6	Dark brown/black grading to brown SILT, trace Clay, trace f-Sand. Trace f-Gravel (0-1.6').
				Brown f-SAND, some shells/shell material, some Silt, trace f-Gravel, damp (1.6'-2.0').
26	28	0	6/11/5/6	No recovery, rock lodged in shoe.
28	30	0.4	2/1/2/4	Brown CLAY, stiff.

Sample/Core Log

Boring/Well CPT-6 Project/No. B0087371 Page 9 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 26 Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-85

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 588.67 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Atlantic Testing Laboratories Driller Helper N/A

Prepared By Ethan Ulm Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	14	N/A	N/A	Fill material (Hand cleared to 5' and augered to 14' without continuous sampling).
14	16	0.8	16/3/3/4	Brown gray SILT, trace Clay, trace f-Gravel, dry.
16	18	0.3	1/1/2/3	Dark brown SAND, some f-Gravel, some SILT, slight odor.
18	20	0.7	WH/5/2/3	Dark gray SILTY SAND, rock fragments, trace Clay, NAPL, odor (0-0.4').
				Gray rock fragments (0.4'-0.7').
20	22	1.3	1/21/5/2	Dark gray SILT, some Clay, NAPL (0-1.0').
				Dark gray SANDY SILT, trace f-Gravel, wet (1.0'-1.3').
22	24	2	1/1/1/2	Dark gray SANDY SILT, trace f-Gravel, wet, NAPL (0-0.9').
				Dark gray CLAY, some Silty sand (0.9'-2.0').
24	26	2	WH/WH/2/2	Dark gray CLAY, some Silty sand (0-1.1').
				Brown SANDY SILT, some shells, moist (1.1'-1.7').
				Medium brown CLAY, moist, trace f-Sand (1.7'-2.0').

Sample/Core Log

Boring/Well CPT-7 Project/No. B0087371 Page 10 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 2426 Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-85

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 588.69 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Atlantic Testing Laboratories Driller Helper N/A

Prepared By Ethan Ulm Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	14	N/A	N/A	Fill material (Hand cleared to 5' and augered to 14' without continuous sampling).
14	16	0.6	2/2/1/1	Brown gray SILT and SAND, trace Clay, trace f-Gravel, dry.
16	18	0.9	1/1/1/3	Dark brown grading to light brown SAND, some f-Gravel, wet, odor (0-0.5').
				Medium red SILTY CLAY, trace NAPL (0.5'-0.9').
18	20	0.9	3/8/9/5	Dark gray SILTY SAND, rock fragments, NAPL, strong odor, wet.
20	22	0.6	1/1/1/2	Dark gray SANDY SILT, grading to SILT, trace Clay, NAPL, strong odor, wet.
22	24	2	WH/2/2/2	Dark gray SANDY SILT, NAPL, wet, odor (0-0.3').
				Dark gray SILT, trace Clay, NAPL, odor, wet (0.3'-0.6').
				Dark gray/black SAND, trace f-Gravel, NAPL, wet (0.6'-1.1').
				Dark gray SILT, trace f-Gravel (1.1'-2.0').
24	26	2	1/1/5/2	Dark gray SILT, trace f-Gravel (0-1.5').
				Medium brown CLAY with a brown SANDY SILT, some shells lense at 1.7'-1.8' (1.5'-2.0').

Sample/Core Log

Boring/Well CPT-9 Project/No. B0087371 Page 11 of 14

Site Location BMS - Buffalo, NY Drilling Started Drilling Completed

Total Depth Drilled 30 Feet Hole Diameter 4 1/4 inches Type of Sample/ Coring Device CME-85

Length and Diameter of Coring Device N/A Sampling Interval 2 feet

Land-Surface Elev. 589.27 feet [X] Surveyed [ ] Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Hollow Stem Auger

Drilling Contractor Atlantic Testing Laboratories Driller Josh Peri Helper N/A

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Brown Silty Sand, Rock Fragments, Brick Fragments, dry). Hand cleared.
5	6	0.8	5/9	Brown SILT, little f-Sand, little Clay, trace f-Gravel.
6	8	1.6	11/23/14/9	Brown SILT, little f-Sand, little Clay, trace f-Gravel (0-0.2').
				Dark brown SILTY SAND, trace to little f-Gravel, dry (0.2'-1.3').
				Gray SILTY SAND, some concrete fragments, little f-Gravel, dry (1.3'-1.6').
8	10	1.0	11/5/12/12	Gray SILTY SAND, some concrete fragments, little f-Gravel, dry (0'-0.2').
				Red Brick fragments with brown SILT, little Clay, little f-Sand, trace f-Gravel (0.2'-0.6').
				Brown/dark brown SILT, little f-Sand, trace f-Gravel, dry (0.6'-1.0').
10	12	1.1	6/3/4/4	Brown SILT, some f-Sand, trace Clay, trace f-Gravel, dry.
12	14	1.1	21/29/12/15	Brown SILT, some f-Sand, trace Clay, trace f-Gravel, dry (0-0.3').
				Red SANDSTONE fragments, dry (0.3'-0.9').
				Gray rock fragments (0.9'-1.1').
14	16	0.5	13/7/2/3	Red SANDSTONE fragments, dry (0-0.2').
				Brown f-SAND, little Silt, trace f-Gravel, dry (0.2'-0.5').
16	18	1.1	5/4/3/3	Brown SILT, little f-Sand, trace f-Gravel, damp (0-0.8').
				Dark brown/black SANDY SILT, trace f-Gravel, odor, wet (0.8'-1.1').
18	20	1.2	16/8/7/9	Brown SILTY SAND, trace f-Gravel, dry (0-0.3').
				Brown SILTY CLAY, trace f-Sand, trace f-Gravel (0.3'-1.2').
20	22	0.4	12/10/11/13	Brown SILTY CLAY, trace f-Sand, trace f-Gravel.
22	24	2	6/4/5/3	Brown grading to dark brown/black SILT, trace f-Sand, trace Clay, trace wood.
24	26	2	3/3/5/8	Dark brown/black SILT, trace f-Sand, trace Clay, trace Wood (0-1.1').
				Brown SILTY SAND, some shelld\s/shell material, trace f-Gravel, trace wood (1.1'-2.0').
26	28	1.8	2/4/3/5	Brown SILTY SAND, some shelld\s/shell material, trace f-Gravel, trace wood (0'-0.9').
				Gray brown SANDY SILT, trace f-Gravel, damp (0.9'-1.8').
28	30	0.5	WH/1/3/5	Gray CLAY, trace Silt, stiff.

Sample/Core Log

Boring/Well CPT-8 Project/No. B0087371 Page 12 of 14

Site Location BMS - Buffalo, NY Drilling Started 2/24/2016 Drilling Completed 2/24/2016

Total Depth Drilled 28 Feet Hole Diameter 2 inches Type of Sample/ Coring Device Geoprobe

Length and Diameter of Coring Device N/A Sampling Interval 4 feet

Land-Surface Elev. N/A feet ☐ Surveyed ☐ Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Geoprobe

Drilling Contractor Parratt-Wolff Inc. Driller Mark Evans Helper Jared Evans

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Hand cleared to 5', no sampling performed).
5	8	1.7	N/A	Gray/brown rock fragments, wet (0 - 1.0').
				Brown Sandy SILT, little f-Gravel, damp (1.0' - 1.7').
8	12	1.6	N/A	Red brick fragments and dust (0 - 0.5').
				Dark brown Silty SAND, little f-Gravel, trace brick and concrete fragments (0.5' - 1.6').
12	16	1.3	N/A	Dark brown Silty SAND, little f-Gravel, trace concrete fragments.
16	20	1.3	N/A	Dark brown rock fragments and fine GRAVEL, wet, NAPL present from 0.9' - 1.3'.
20	24	0	N/A	No recovery. NAPL present on empty Geoprobe tube.
24	28	4	N/A	Dark brown SILT, little to trace f-Sand, trace f-Gravel, damp (0 - 2.6').
				Dark brown Silty SAND, NAPL, moderate odor, wet (2.6' - 3.7').
				Gray CLAY, wet (3.7' - 4.0').

Sample/Core Log

Boring/Well CPT-10 Project/No. B0087371 Page 13 of 14

Site Location BMS - Buffalo, NY Drilling Started 2/24/2016 Drilling Completed 2/24/2016

Total Depth Drilled 23.5 Feet Hole Diameter 2 inches Type of Sample/ Coring Device Geoprobe

Length and Diameter of Coring Device N/A Sampling Interval 4 feet

Land-Surface Elev. N/A feet ☐ Surveyed ☐ Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Geoprobe

Drilling Contractor Parratt-Wolff Inc. Driller Mark Evans Helper Jared Evans

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Hand cleared to 5', no sampling performed).
5	8	2.5	N/A	Dark brown Silty SAND, little f-Gravel (0 - 1.7').
				Brown SILT, trace f-Sand, trace f-Gravel (1.7' - 2.5').
8	12	2.2	N/A	Brown SILT, trace f-Sand, trace f-Gravel (0' - 0.8').
				Brown/Gray Silty SAND, little f-Gravel, trace cinders and brick fragments (0.8' - 2.0').
				Brown SILT, trace f-Sand, trace subrounded f-Gravel, tight (2.0'-2.2').
12	16	2.5	N/A	Brown SILT, trace f-Sand, trace subrounded f-Gravel, tight (0'-2.0').
				Gray Silty SAND, trace f-Gravel, trace brick and concrete fragments (2.0' - 2.5').
16	20	2.2	N/A	Brown SILT, some f-Sand, trace Clay, trace f-Gravel (0 - 1.7').
				Black/dark brown f-SAND, little Silt, trace f-Gravel (1.7' - 2.0').
20	23.5	2.2	N/A	Gray/brown SILT, trace Clay, trace f-Sand, trace f-Gravel (subrounded), trace NAPL (0 - 1.8').
				Gray CLAY, trace red brick fragments and dust in bottom of core tube (1.8' - 2.2').
				Refusal at 23.5' bgs.

Sample/Core Log

Boring/Well CPT-11 Project/No. B0087371 Page 14 of 14

Site Location BMS - Buffalo, NY Drilling Started 2/25/2016 Drilling Completed 2/25/2016

Total Depth Drilled 32 Feet Hole Diameter 2 inches Type of Sample/ Coring Device Geoprobe

Length and Diameter of Coring Device N/A Sampling Interval 4 feet

Land-Surface Elev. N/A feet ☐ Surveyed ☐ Estimated Datum N/A

Drilling Fluid Used N/A Drilling Method Geoprobe

Drilling Contractor Parratt-Wolff Inc. Driller Mark Evans Helper Jared Evans

Prepared By Shawn P. Skelly Hammer Weight N/A Hammer Drop N/A ins.

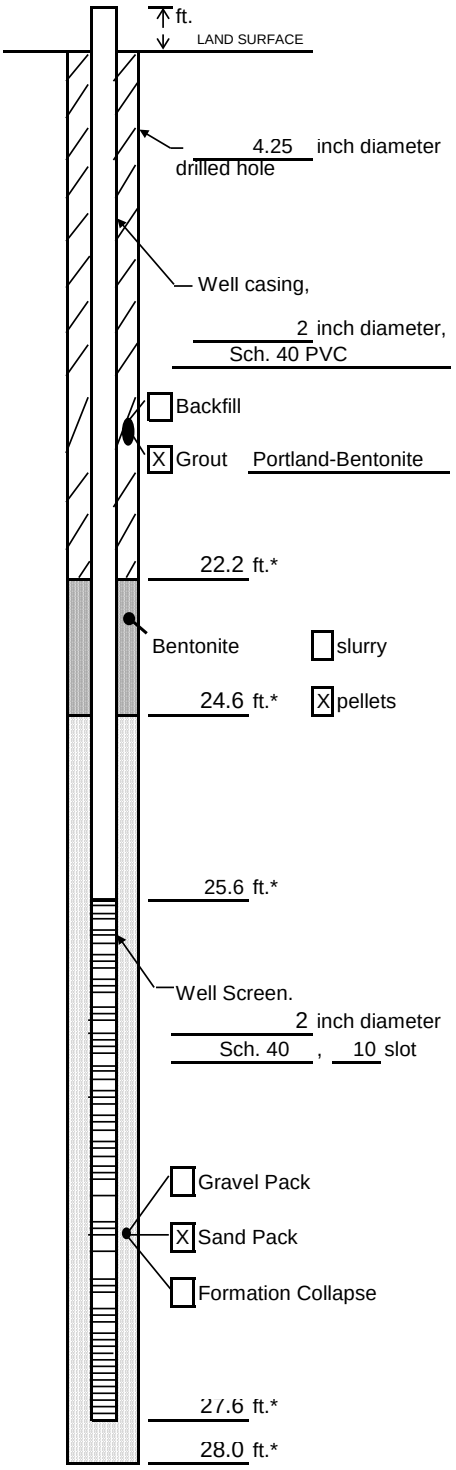
Sample/Core Depth (feet below land surface) From	To	Core Recovery (feet)	Blow Counts	Sample/Core Description
0	5	N/A	N/A	Fill material (Hand cleared to 5', no sampling performed).
5	8	3.0	N/A	Brown SILT, trace Clay, trace f-Sand, trace f-Gravel.
8	12	2.3	N/A	Brown SILT, trace Clay, trace f-Sand, trace f-Gravel, trace concrete fragments (0 - 1.5').
				Brown Silty SAND, trace f-Gravel, trace concrete (1.5' - 2.3').
12	16	2.2	N/A	Brown, Clayey SILT, trace f-Sand, trace f-Gravel.
16	20	2.2	N/A	Black rock fragments and f-GRAVEL (0 - 0.2').
				Brown SILT, some f-Sand, trace Clay, trace f-Gravel, trace NAPL, slight odor (0.2' - 1.4').
				Brown Silty CLAY, trace f-Sand, trace f-Gravel (1.4' - 2.2').
20	24	1.4	N/A	Brown Silty CLAY, trace f-Sand, trace f-Gravel. Wood pieces from 1.2' - 1.4'. Wood had slight petroleum
				odor, NO NAPL).
24	28	2.6	N/A	Brown Silty CLAY, trace f-Sand, trace f-Gravel, trace wood pieces (0 - 1.5').
				Dark brown SILT, some grading to little Clay, trace f-Sand, trace wood, slight odor, no NAPL (1.5' - 2.6').
28	32	4.0	N/A	Dark brown SILT, little Clay, little to trace f-SAND, trace f-Gravel, slight odor, no NAPL (0 - 1.9').
				Gray grading to brown CLAY (1.9' - 4.0').

APPENDIX C

SSI Piezometer Construction Logs

Well Construction Log

(Unconsolidated)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

* Depth Below Land Surface

Project	BMS - Buffalo, NY	Well	P-7
Town/City	Buffalo		
County	Erie	State	NY
Permit No.			

Land-Surface Elevation and Datum:

588.73 feet [X] Surveyed [ ] Estimated

Installation Date(s)	6/29/2015
Drilling Method	Hollow Stem Auger
Drilling Contractor	Parratt-Wolff Inc.
Drilling Fluid	N/A

Development Technique(s) and Date(s)

N/A

Fluid Loss During Drilling	N/A	gallons
Water Removed During Development	N/A	gallons
Static Depth to Water	N/A	feet below M.P.
Pumping Depth to Water	N/A	feet below M.P.
Pumping Duration	N/A	hours
Yield	N/A gpm	Date N/A
Specific Capacity	N/A	gpm/ft.
Well Purpose	water level and NAPL measurements	

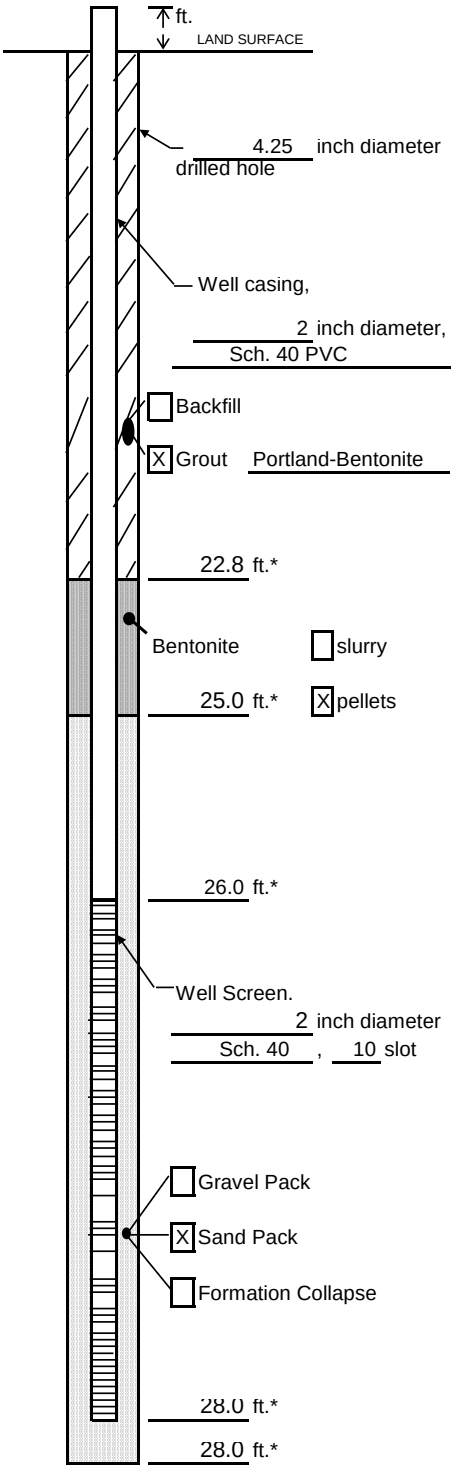
Remarks

Construction depths are measured from ground surface.

Prepared by Shawn P. Skelly

Well Construction Log

(Unconsolidated)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

* Depth Below Land Surface

Project: BMS - Buffalo, NY Well: P-8

Town/City: Buffalo

County: Erie State: NY

Permit No.:

Land-Surface Elevation and Datum:

588.88 feet [X] Surveyed [ ] Estimated

Installation Date(s): 6/30/2015

Drilling Method: Hollow Stem Auger

Drilling Contractor: Parratt-Wolff Inc.

Drilling Fluid: N/A

Development Technique(s) and Date(s)

N/A

Fluid Loss During Drilling: N/A gallons

Water Removed During Development: N/A gallons

Static Depth to Water: N/A feet below M.P.

Pumping Depth to Water: N/A feet below M.P.

Pumping Duration: N/A hours

Yield: N/A gpm Date: N/A

Specific Capacity: N/A gpm/ft.

Well Purpose: water level and NAPL measurements

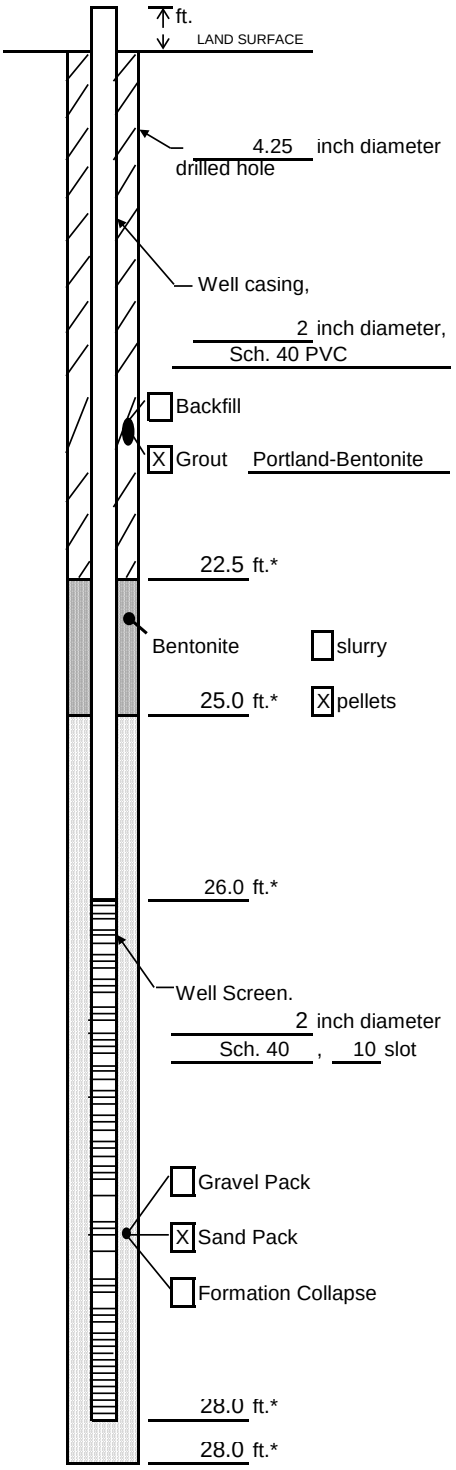
Remarks

Construction depths are measured from ground surface.

Prepared by: Shawn P. Skelly

Well Construction Log

(Unconsolidated)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

* Depth Below Land Surface

Project: BMS - Buffalo, NY Well: P-9

Town/City: Buffalo

County: Erie State: NY

Permit No.:

Land-Surface Elevation and Datum:

588.78 feet [X] Surveyed [ ] Estimated

Installation Date(s): 7/1/2015

Drilling Method: Hollow Stem Auger

Drilling Contractor: Parratt-Wolff Inc.

Drilling Fluid: N/A

Development Technique(s) and Date(s)

N/A

Fluid Loss During Drilling: N/A gallons

Water Removed During Development: N/A gallons

Static Depth to Water: N/A feet below M.P.

Pumping Depth to Water: N/A feet below M.P.

Pumping Duration: N/A hours

Yield: N/A gpm Date: N/A

Specific Capacity: N/A gpm/ft.

Well Purpose: water level and NAPL measurements

Remarks

Construction depths are measured from ground surface.

Prepared by: Shawn P. Skelly

APPENDIX D

Geotechnical Laboratory Analytical Data

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

October 8, 2015

Mr. Danylo Kulczycky
Parratt-Wolff, Inc.
5879 Fisher Road
East Syracuse, New York 13057

Re: L-15001
Laboratory Testing
Bristol-Myers Squibb
100 Forest Avenue
Buffalo, New York

Dear Mr. Kulczycky [DKulczycky@pwinc.com]:

Enclosed are the results of laboratory testing performed at your request on two Shelby Tube samples delivered to PW Laboratories, Inc. on 10/1/2015 for the above referenced project. Results include:

1.	Natural Moisture Content ASTM D2216 Laboratory I.D. #31899 & 31900	2 Each
2.	Sieve Analysis ASTM D422 & D1140 Laboratory I.D. #31899 & 31900	2 Each
3.	Hydrometer Analysis ASTM D422 Laboratory I.D. #31899 & 31900	2 Each
4.	Atterberg Limits ASTM D4318 Laboratory I.D. #31899 & 31900	2 Each
5.	Hydraulic Conductivity - Flexible Wall ASTM D5084 Laboratory I.D. #31899	1 Each

All requested tests have been completed on the previously received sample(s) for the above project. All sample remains are scheduled to be disposed of on 11/8/2015. Please notify PW Laboratories, Inc. by letter or telephone prior to 11/5/2015 if you would prefer to pick up the sample(s) or that the sample(s) be retained by PW Laboratories, Inc. for an additional period of time.

Thank you for this opportunity to work with you.

Respectfully,

PW Laboratories, Inc.

Patrick J. Edmiston

Patrick J. Edmiston
Laboratory Manager
PJE/bll

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058 ~ pwlabsinc@hotmail.com

October 8, 2015

L-15001
Laboratory Testing
Bristol-Myers Squibb
100 Forest Avenue
Buffalo, New York

Natural Moisture Content ASTM D2216

Lab I.D. #	Sample I.D.	Depth (Feet)	Moisture Content as a Percent of Dry Weight
31899	P-9, S-10	22 - 24	58.8
31900	P-8, S-10	22 - 24	61.4

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058 ~ pwlabsinc@hotmail.com

Sieve Analysis of Soil / Aggregate

Project Title: Laboratory Testing
Bristol-Myers Squibb
100 Forest Avenue
Buffalo, New York

Project #: L-15001
Test Method: ASTM D422 & D1140

Report # 1
Report Date: October 8, 2015

			Sieve Size - Percent Passing Sieve													
Lab I.D. #	Boring #	Depth (Feet)	1/2"	3/8"	1/4"	#4	#10	#30	#40	#60	#100	#200				
31899	P-9, S-10	22 - 24	--	--	--	100	99.7	97.8	96.6	94.7	92.1	87.2				
31900	P-8, S-10	22 - 24	100	98.9	98.5	97.9	95.7	91.6	89.5	84.4	79.2	73.6				

Sample mass, as received, meets minimum mass requirements of test method: Yes ____ No X

Prewashed: Yes X No ____

Remarks:

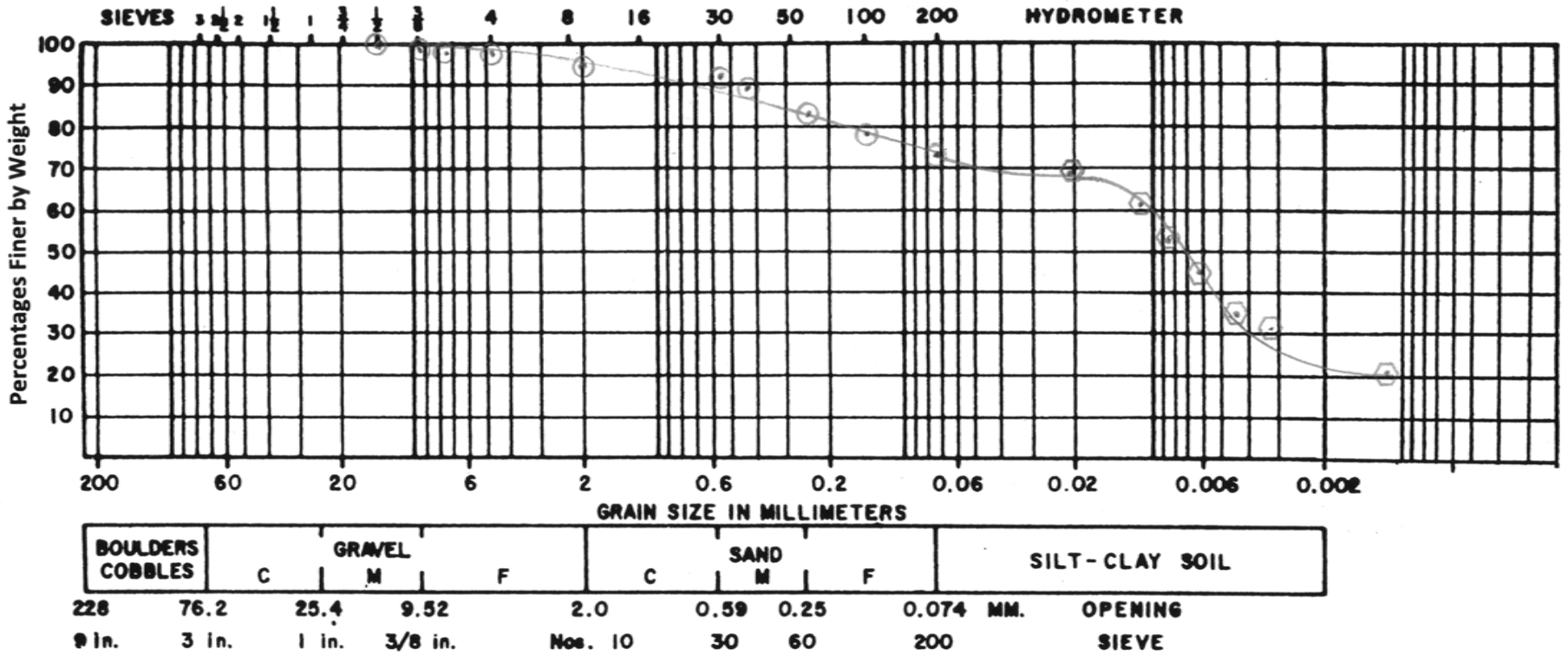
Performed By: J.B.

Checked By: Patrick J. Edmiston

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

Project #:	L-15001
Report #:	2
Date:	October 8, 2015

Grain Size Analysis

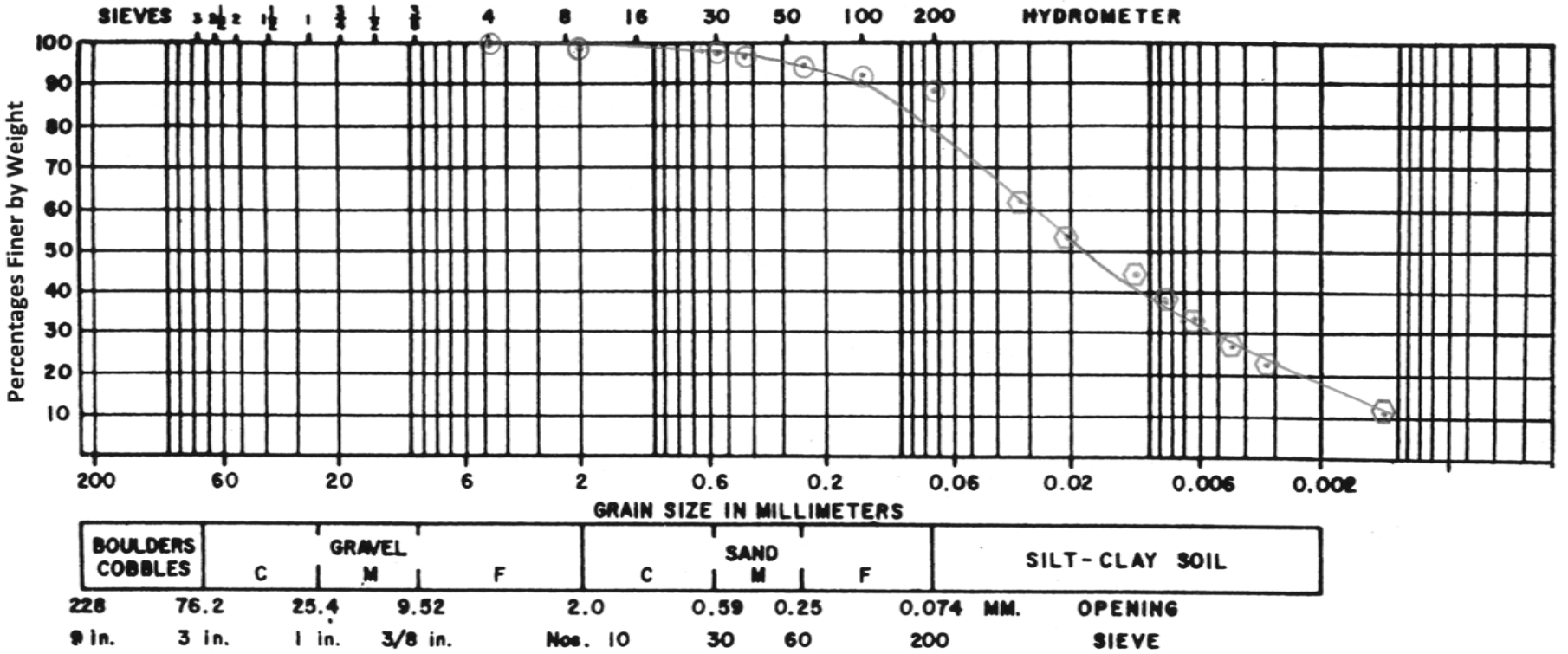


L-15001	Lab I.D. #:	31900
Laboratory Testing	Sample #:	P-9, S-10
Bristol-Myers Squibb	Depth (Feet):	22 - 24
100 Forest Avenue		
Buffalo, New York		
Sieve Analysis ASTM D422 & D1140		
Hydrometer Analysis ASTM D422		

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

Project #:	L-15001
Report #:	1
Date:	October 8, 2015

Grain Size Analysis



L-15001	Lab I.D. #:	31899
Laboratory Testing	Sample #:	P-8, S-10
Bristol-Myers Squibb	Depth (Feet):	22 - 24
100 Forest Avenue		
Buffalo, New York		
Sieve Analysis ASTM D422 & D1140		
Hydrometer Analysis ASTM D422		

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

October 8, 2015

L-15001
Laboratory Testing
Bristol-Myers Squibb
100 Forest Avenue
Buffalo, New York

Atterberg Limits ASTM D4318

Lab I.D. #	Sample I.D.	Depth (Feet)	Plastic Limit	Liquid Limit	Plasticity Index
31899	P-9, S-10	22 - 24	41	51	10
31900	P-8, S-10	22 - 24	47	56	9

PW Laboratories, Inc.
6544 Fremont Road - East Syracuse, New York 13057
Office 315.437.1420 ~ Fax 315.503-3058~ pwlabsinc@hotmail.com

Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter

ASTM D5084

Report Date: October 8, 2015 **Test Start Date:** October 6, 2015

Project #: L-15001 **Project Title:** Laboratory Testing - Bristol-Myers Squibb - 100 Forest Avenue - Buffalo, NY

Sample ID: P-8, S-10 **Lab I.D. #:** 31899

ST No: -- **Depth/Lift/Elev:** 22' - 24' **Type of Sample:**

Method of Compaction: -- **Undisturbed:** X **Remolded:** --

Percent Compaction: -- **Moisture Content (% of Dry Weight)**

Initial Degree of Saturation (B Value) (%): -- **Optimum:** -- **Initial:** 59.9

Final Degree of Saturation (B Value) (%): 96.0 **Dry Unit Weight (PCF)**

Permeant Liquid Used Deaired Deionized H_2O **Maximum:** -- **Initial:** 61.5

Final Moisture Content (% of Dry Weight): 62.6 **Final Dry Unit Weight (PCF):** 62.1

Confining Pressure (PSI):	Test (head) Pressure (PSI):	Tail (back) Pressure (PSI):
71.0	68.0	65.0

Initial Gradient: 19.2 **Initial Height (cm):** 11.00 **Initial Diameter (cm):** 7.20

Final Gradient: 19.4 **Final Height (cm):** 10.90 **Final Diameter (cm):** 7.20

Final Four Determinations k (cm/sec)

4.80×10^{-7}	5.21×10^{-7}
5.18×10^{-7}	4.90×10^{-7}

Mean Value of Final Four Consecutive Determinations: **Coefficient of Permeability k (cm/sec):** 5.02×10^{-7}

Project Specfications --

Notes:

APPENDIX E

Waste Characterization Analytical Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-86164-1
Client Project/Site: Iroquois Gas/Westwood Pharm. Monthly
Revision: 2

For:
ARCADIS U.S. Inc
6723 Towpath Road
Syracuse, New York 13214

Attn: Mr. Victor Finocchiaro

Joseph V. Giacomazza

Authorized for release by:
11/6/2015 1:56:33 PM
Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

Judy Stone, Senior Project Manager
(484)685-0868
judy.stone@testamericainc.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Job ID: 480-86164-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-86164-1

Revision II
Report was revised to include a Percent Moisture result.

Revision I
Report was revised to remove a document not pertaining to this job 480-86164

Receipt
The samples were received on 8/25/2015 2:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7° C.

GC/MS VOA
Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 480-260705 recovered outside acceptance criteria, low biased, for Cyclohexanone. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated sample was non-detect for this analyte, the data have been reported.

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: NAPL 082515 (480-86164-4). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: Surrogate recovery for the following sample was outside control limits: SOIL. 082515 (480-86164-3). Evidence of matrix interference is present; the sample is to be reanalyzed using medium level soil analysis to bring targeted analytes within calibration range.

Method(s) 8260C: The following sample was analyzed using medium level soil analysis to bring the concentration of target analytes within the calibration range: SOIL. 082515 (480-86164-3). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: NAPL 082515 (480-86164-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Client Sample ID: Trip Blank — Lab Sample ID: 480-86164-1

No Detections.

Client Sample ID: SOIL. 082515 — Lab Sample ID: 480-86164-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	14	J	17	2.9	ug/Kg	1		8260C	Total/NA
Benzene	14		3.4	0.17	ug/Kg	1		8260C	Total/NA
m-Xylene & p-Xylene	59		6.8	0.57	ug/Kg	1		8260C	Total/NA
o-Xylene	100		3.4	0.45	ug/Kg	1		8260C	Total/NA
Ethylbenzene - DL	1800		35	10	ug/Kg	1		8260C	Total/NA
Methanol	0.34	J B	0.92	0.27	mg/Kg	1		8015D	Soluble

Client Sample ID: NAPL 082515 — Lab Sample ID: 480-86164-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	62000		2000	600	ug/L	200		8260C	Total/NA
Benzene	100	J	200	82	ug/L	200		8260C	Total/NA
Ethylbenzene	840		200	150	ug/L	200		8260C	Total/NA
m-Xylene & p-Xylene	150	J	400	130	ug/L	200		8260C	Total/NA
o-Xylene	230		200	150	ug/L	200		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Trip Blank

Lab Sample ID: 480-86164-1
Matrix: Water
Date Collected: 08/25/15 00:00
Date Received: 08/25/15 14:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			08/25/15 23:56	1
Toluene	ND		1.0	0.51	ug/L			08/25/15 23:56	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/25/15 23:56	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			08/25/15 23:56	1
o-Xylene	ND		1.0	0.76	ug/L			08/25/15 23:56	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/25/15 23:56	1
Total BTEX	ND		2.0	1.0	ug/L			08/25/15 23:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*71 - 126*		*08/25/15 23:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*66 - 137*		*08/25/15 23:56*	*1*
4-Bromofluorobenzene (Surr)	*95*		*73 - 120*		*08/25/15 23:56*	*1*
Dibromofluoromethane (Surr)	*98*		*60 - 140*		*08/25/15 23:56*	*1*

Client Sample ID: SOIL. 082515

Lab Sample ID: 480-86164-3
Matrix: Solid
Date Collected: 08/25/15 13:30
Date Received: 08/25/15 14:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**14**	**J**	17	2.9	ug/Kg		08/26/15 16:30	08/27/15 02:30	1
Benzene	**14**		3.4	0.17	ug/Kg		08/26/15 16:30	08/27/15 02:30	1
Cyclohexanone	ND		34	12	ug/Kg		08/26/15 16:30	08/27/15 02:30	1
Ethyl acetate	ND		3.4	1.1	ug/Kg		08/26/15 16:30	08/27/15 02:30	1
Ethyl ether	ND		17	1.4	ug/Kg		08/26/15 16:30	08/27/15 02:30	1
4-Methyl-2-pentanone (MIBK)	ND		17	1.1	ug/Kg		08/26/15 16:30	08/27/15 02:30	1
m-Xylene & p-Xylene	**59**		6.8	0.57	ug/Kg		08/26/15 16:30	08/27/15 02:30	1
n-Butyl alcohol	ND		34	1.1	ug/Kg		08/26/15 16:30	08/27/15 02:30	1
o-Xylene	**100**		3.4	0.45	ug/Kg		08/26/15 16:30	08/27/15 02:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*64 - 126*	*08/26/15 16:30*	*08/27/15 02:30*	*1*
4-Bromofluorobenzene (Surr)	*131*	*X*	*72 - 126*	*08/26/15 16:30*	*08/27/15 02:30*	*1*
Toluene-d8 (Surr)	*112*		*71 - 125*	*08/26/15 16:30*	*08/27/15 02:30*	*1*
Dibromofluoromethane (Surr)	*115*		*60 - 140*	*08/26/15 16:30*	*08/27/15 02:30*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**1800**		35	10	ug/Kg		08/27/15 09:44	08/27/15 13:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*53 - 146*	*08/27/15 09:44*	*08/27/15 13:13*	*1*
4-Bromofluorobenzene (Surr)	*111*		*49 - 148*	*08/27/15 09:44*	*08/27/15 13:13*	*1*
Toluene-d8 (Surr)	*101*		*50 - 149*	*08/27/15 09:44*	*08/27/15 13:13*	*1*
Dibromofluoromethane (Surr)	*95*		*60 - 140*	*08/27/15 09:44*	*08/27/15 13:13*	*1*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methanol	**0.34**	**J B**	0.92	0.27	mg/Kg			08/26/15 10:57	1

Client Sample ID: SOIL. 082515

Lab Sample ID: 480-86164-3

Date Collected: 08/25/15 13:30

Matrix: Solid

Date Received: 08/25/15 14:20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Hexanone	68		30 - 137		08/26/15 10:57	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		0.10	0.10	%			08/25/15 20:55	1

Client Sample ID: NAPL 082515

Lab Sample ID: 480-86164-4

Date Collected: 08/25/15 13:15

Matrix: Water

Date Received: 08/25/15 14:20

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	62000		2000	600	ug/L			08/27/15 16:57	200
Benzene	100	J	200	82	ug/L			08/27/15 16:57	200
Cyclohexanone	ND		2000	1000	ug/L			08/27/15 16:57	200
Ethyl acetate	ND		200	130	ug/L			08/27/15 16:57	200
Ethylbenzene	840		200	150	ug/L			08/27/15 16:57	200
Ethyl ether	ND		200	140	ug/L			08/27/15 16:57	200
4-Methyl-2-pentanone (MIBK)	ND		1000	420	ug/L			08/27/15 16:57	200
m-Xylene & p-Xylene	150	J	400	130	ug/L			08/27/15 16:57	200
n-Butyl alcohol	ND		8000	1800	ug/L			08/27/15 16:57	200
o-Xylene	230		200	150	ug/L			08/27/15 16:57	200

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		73 - 120		08/27/15 16:57	200
Dibromofluoromethane (Surr)	110		60 - 140		08/27/15 16:57	200
1,2-Dichloroethane-d4 (Surr)	112		66 - 137		08/27/15 16:57	200
Toluene-d8 (Surr)	100		71 - 126		08/27/15 16:57	200

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(64-126)	(72-126)	(71-125)	(60-140)
480-86164-3	SOIL. 082515	113	131 X	112	115
LCS 480-260633/1-A	Lab Control Sample	101	121	104	105
MB 480-260633/2-A	Method Blank	97	114	103	108

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(53-146)	(49-148)	(60-140)	(50-149)
480-86164-3 - DL	SOIL. 082515	100	111	95	101
LCS 480-260723/1-A	Lab Control Sample	96	118	104	108
MB 480-260723/2-A	Method Blank	98	115	101	108

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	12DCE	BFB	DBFM
Lab Sample ID	Client Sample ID	(71-126)	(66-137)	(73-120)	(60-140)
480-86164-1	Trip Blank	96	100	95	98
480-86164-4	NAPL 082515	100	112	99	110
LCS 480-260379/5	Lab Control Sample	96	99	98	98
LCS 480-260705/22	Lab Control Sample	100	104	103	106
MB 480-260379/7	Method Blank	96	100	98	100
MB 480-260705/24	Method Blank	99	109	98	107

Surrogate Legend

TOL = Toluene-d8 (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Matrix: Solid **Prep Type: Soluble**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	2HN1 (30-137)							
480-86164-3	SOIL. 082515	68							
480-86164-3 MS	SOIL. 082515	62							
480-86164-3 MSD	SOIL. 082515	67							
LCS 480-260490/2-A	Lab Control Sample	93							
MB 480-260490/1-A	Method Blank	101							

Surrogate Legend

2HN = 2-Hexanone

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-260379/7
Matrix: Water
Analysis Batch: 260379

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0	0.51	ug/L			08/25/15 23:18	1
Benzene	ND		1.0	0.41	ug/L			08/25/15 23:18	1
Xylenes, Total	ND		2.0	0.66	ug/L			08/25/15 23:18	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/25/15 23:18	1
Total BTEX	ND		2.0	1.0	ug/L			08/25/15 23:18	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			08/25/15 23:18	1
o-Xylene	ND		1.0	0.76	ug/L			08/25/15 23:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*66 - 137*		*08/25/15 23:18*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*08/25/15 23:18*	*1*
Dibromofluoromethane (Surr)	*100*		*60 - 140*		*08/25/15 23:18*	*1*
Toluene-d8 (Surr)	*96*		*71 - 126*		*08/25/15 23:18*	*1*

Lab Sample ID: LCS 480-260379/5
Matrix: Water
Analysis Batch: 260379

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	25.0	26.0		ug/L		104	80 - 122
Benzene	25.0	25.8		ug/L		103	71 - 124
Ethylbenzene	25.0	25.9		ug/L		104	77 - 123
m-Xylene & p-Xylene	25.0	24.7		ug/L		99	76 - 122
o-Xylene	25.0	25.8		ug/L		103	76 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*66 - 137*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*
Dibromofluoromethane (Surr)	*98*		*60 - 140*
Toluene-d8 (Surr)	*96*		*71 - 126*

Lab Sample ID: MB 480-260633/2-A
Matrix: Solid
Analysis Batch: 260621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 260633

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		25	4.2	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
Benzene	ND		5.0	0.24	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
Cyclohexanone	ND		50	18	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
Ethyl acetate	ND		5.0	1.7	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
Ethylbenzene	ND		5.0	0.34	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
Ethyl ether	ND		25	2.1	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
4-Methyl-2-pentanone (MIBK)	ND		25	1.6	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
m-Xylene & p-Xylene	ND		9.9	0.83	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
n-Butyl alcohol	ND		50	1.6	ug/Kg		08/26/15 22:53	08/27/15 00:37	1
o-Xylene	ND		5.0	0.65	ug/Kg		08/26/15 22:53	08/27/15 00:37	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-260633/2-A
Matrix: Solid
Analysis Batch: 260621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 260633

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		64 - 126	08/26/15 22:53	08/27/15 00:37	1
4-Bromofluorobenzene (Surr)	114		72 - 126	08/26/15 22:53	08/27/15 00:37	1
Dibromofluoromethane (Surr)	108		60 - 140	08/26/15 22:53	08/27/15 00:37	1
Toluene-d8 (Surr)	103		71 - 125	08/26/15 22:53	08/27/15 00:37	1

Lab Sample ID: LCS 480-260633/1-A
Matrix: Solid
Analysis Batch: 260621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 260633

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	247	222		ug/Kg		90	61 - 137
Benzene	49.3	44.7		ug/Kg		91	79 - 127
Ethylbenzene	49.3	45.7		ug/Kg		93	80 - 120
Ethyl ether	49.3	45.1		ug/Kg		91	55 - 115
4-Methyl-2-pentanone (MIBK)	247	214		ug/Kg		87	65 - 133
m-Xylene & p-Xylene	49.3	46.4		ug/Kg		94	70 - 130
o-Xylene	49.3	45.8		ug/Kg		93	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		64 - 126
4-Bromofluorobenzene (Surr)	121		72 - 126
Dibromofluoromethane (Surr)	105		60 - 140
Toluene-d8 (Surr)	104		71 - 125

Lab Sample ID: MB 480-260705/24
Matrix: Water
Analysis Batch: 260705

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	3.0	ug/L			08/27/15 15:21	1
Benzene	ND		1.0	0.41	ug/L			08/27/15 15:21	1
Cyclohexanone	ND		10	5.2	ug/L			08/27/15 15:21	1
Ethyl acetate	ND		1.0	0.66	ug/L			08/27/15 15:21	1
Ethylbenzene	ND		1.0	0.74	ug/L			08/27/15 15:21	1
Ethyl ether	ND		1.0	0.72	ug/L			08/27/15 15:21	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.1	ug/L			08/27/15 15:21	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			08/27/15 15:21	1
n-Butyl alcohol	ND		40	8.9	ug/L			08/27/15 15:21	1
o-Xylene	ND		1.0	0.76	ug/L			08/27/15 15:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		66 - 137		08/27/15 15:21	1
4-Bromofluorobenzene (Surr)	98		73 - 120		08/27/15 15:21	1
Dibromofluoromethane (Surr)	107		60 - 140		08/27/15 15:21	1
Toluene-d8 (Surr)	99		71 - 126		08/27/15 15:21	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-260705/22
Matrix: Water
Analysis Batch: 260705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	125	154		ug/L		124	56 - 142
Benzene	25.0	25.6		ug/L		102	71 - 124
Ethylbenzene	25.0	26.1		ug/L		104	77 - 123
Ethyl ether	25.0	30.1		ug/L		120	76 - 123
4-Methyl-2-pentanone (MIBK)	125	128		ug/L		103	71 - 125
m-Xylene & p-Xylene	25.0	26.3		ug/L		105	76 - 122
o-Xylene	25.0	26.3		ug/L		105	76 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*66 - 137*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*
Dibromofluoromethane (Surr)	*106*		*60 - 140*
Toluene-d8 (Surr)	*100*		*71 - 126*

Lab Sample ID: MB 480-260723/2-A
Matrix: Solid
Analysis Batch: 260694

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 260723

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		500	410	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
Benzene	ND		100	19	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
Cyclohexanone	ND		1000	880	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
Ethyl acetate	ND		100	52	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
Ethylbenzene	ND		100	29	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
Ethyl ether	ND		500	58	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
4-Methyl-2-pentanone (MIBK)	ND		500	32	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
m-Xylene & p-Xylene	ND		200	55	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
n-Butyl alcohol	ND		1000	380	ug/Kg		08/27/15 09:44	08/27/15 12:18	1
o-Xylene	ND		100	13	ug/Kg		08/27/15 09:44	08/27/15 12:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*53 - 146*	*08/27/15 09:44*	*08/27/15 12:18*	*1*
4-Bromofluorobenzene (Surr)	*115*		*49 - 148*	*08/27/15 09:44*	*08/27/15 12:18*	*1*
Dibromofluoromethane (Surr)	*101*		*60 - 140*	*08/27/15 09:44*	*08/27/15 12:18*	*1*
Toluene-d8 (Surr)	*108*		*50 - 149*	*08/27/15 09:44*	*08/27/15 12:18*	*1*

Lab Sample ID: LCS 480-260723/1-A
Matrix: Solid
Analysis Batch: 260694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 260723

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	12500	10500		ug/Kg		84	47 - 141
Benzene	2500	2630		ug/Kg		105	77 - 125
Ethylbenzene	2500	2780		ug/Kg		111	78 - 124
Ethyl ether	2500	1910		ug/Kg		76	45 - 134
4-Methyl-2-pentanone (MIBK)	12500	11400		ug/Kg		91	74 - 120
m-Xylene & p-Xylene	2500	2800		ug/Kg		112	77 - 125

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-260723/1-A
Matrix: Solid
Analysis Batch: 260694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 260723

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
o-Xylene			2500	2840		ug/Kg		114	80 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*53 - 146*
4-Bromofluorobenzene (Surr)	*118*		*49 - 148*
Dibromofluoromethane (Surr)	*104*		*60 - 140*
Toluene-d8 (Surr)	*108*		*50 - 149*

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC)

Lab Sample ID: MB 480-260490/1-A
Matrix: Solid
Analysis Batch: 260518

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methanol	0.424	J	0.89	0.27	mg/Kg			08/26/15 10:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Hexanone	*101*		*30 - 137*		*08/26/15 10:26*	*1*

Lab Sample ID: LCS 480-260490/2-A
Matrix: Solid
Analysis Batch: 260518

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methanol			17.3	18.5		mg/Kg		107	53 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Hexanone	*93*		*30 - 137*

Lab Sample ID: 480-86164-3 MS
Matrix: Solid
Analysis Batch: 260518

Client Sample ID: SOIL. 082515
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methanol	0.34	J B	19.0	16.4		mg/Kg		85	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Hexanone	*62*		*30 - 137*

Lab Sample ID: 480-86164-3 MSD
Matrix: Solid
Analysis Batch: 260518

Client Sample ID: SOIL. 082515
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methanol	0.34	J B	18.9	17.2		mg/Kg		89	70 - 130	5	30

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Method: 8015D - Nonhalogenated Organic Compounds - Direct Injection (GC) (Continued)

Lab Sample ID: 480-86164-3 MSD
Matrix: Solid
Analysis Batch: 260518

Client Sample ID: SOIL. 082515
Prep Type: Soluble

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2-Hexanone	67		30 - 137

GC/MS VOA

Analysis Batch: 260379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-1	Trip Blank	Total/NA	Water	8260C	
LCS 480-260379/5	Lab Control Sample	Total/NA	Water	8260C	
MB 480-260379/7	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 260621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-3	SOIL. 082515	Total/NA	Solid	8260C	260633
LCS 480-260633/1-A	Lab Control Sample	Total/NA	Solid	8260C	260633
MB 480-260633/2-A	Method Blank	Total/NA	Solid	8260C	260633

Prep Batch: 260633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-3	SOIL. 082515	Total/NA	Solid	5035A	
LCS 480-260633/1-A	Lab Control Sample	Total/NA	Solid	5035A	
MB 480-260633/2-A	Method Blank	Total/NA	Solid	5035A	

Analysis Batch: 260694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-3 - DL	SOIL. 082515	Total/NA	Solid	8260C	260723
LCS 480-260723/1-A	Lab Control Sample	Total/NA	Solid	8260C	260723
MB 480-260723/2-A	Method Blank	Total/NA	Solid	8260C	260723

Analysis Batch: 260705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-4	NAPL 082515	Total/NA	Water	8260C	
LCS 480-260705/22	Lab Control Sample	Total/NA	Water	8260C	
MB 480-260705/24	Method Blank	Total/NA	Water	8260C	

Prep Batch: 260723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-3 - DL	SOIL. 082515	Total/NA	Solid	5035A	
LCS 480-260723/1-A	Lab Control Sample	Total/NA	Solid	5035A	
MB 480-260723/2-A	Method Blank	Total/NA	Solid	5035A	

GC VOA

Leach Batch: 260490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-3	SOIL. 082515	Soluble	Solid	DI Leach	
480-86164-3 MS	SOIL. 082515	Soluble	Solid	DI Leach	
480-86164-3 MSD	SOIL. 082515	Soluble	Solid	DI Leach	
LCS 480-260490/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
MB 480-260490/1-A	Method Blank	Soluble	Solid	DI Leach	

Analysis Batch: 260518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-3	SOIL. 082515	Soluble	Solid	8015D	260490
480-86164-3 MS	SOIL. 082515	Soluble	Solid	8015D	260490
480-86164-3 MSD	SOIL. 082515	Soluble	Solid	8015D	260490
LCS 480-260490/2-A	Lab Control Sample	Soluble	Solid	8015D	260490

GC VOA (Continued)

Analysis Batch: 260518 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-260490/1-A	Method Blank	Soluble	Solid	8015D	260490

General Chemistry

Analysis Batch: 260387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-86164-3	SOIL. 082515	Total/NA	Solid	Moisture	

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Client Sample ID: Trip Blank

Lab Sample ID: 480-86164-1
Matrix: Water
Date Collected: 08/25/15 00:00
Date Received: 08/25/15 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	260379	08/25/15 23:56	GTG	TAL BUF

Client Sample ID: SOIL. 082515

Lab Sample ID: 480-86164-3
Matrix: Solid
Date Collected: 08/25/15 13:30
Date Received: 08/25/15 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035A	DL		260723	08/27/15 09:44	GTG	TAL BUF
Total/NA	Analysis	8260C	DL	1	260694	08/27/15 13:13	SWO	TAL BUF
Total/NA	Prep	5035A			260633	08/26/15 16:30	CDC	TAL BUF
Total/NA	Analysis	8260C		1	260621	08/27/15 02:30	NQN	TAL BUF
Soluble	Leach	DI Leach			260490	08/26/15 09:23	AJM	TAL BUF
Soluble	Analysis	8015D		1	260518	08/26/15 10:57	AJM	TAL BUF
Total/NA	Analysis	Moisture		1	260387	08/25/15 20:55	CMK	TAL BUF

Client Sample ID: NAPL 082515

Lab Sample ID: 480-86164-4
Matrix: Water
Date Collected: 08/25/15 13:15
Date Received: 08/25/15 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		200	260705	08/27/15 16:57	SWO	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-16

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	Ethyl ether
8260C		Water	n-Butyl alcohol

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8015D		Solid	Methanol
8260C		Water	Cyclohexanone
8260C		Water	Total BTEX
8260C	5035A	Solid	Cyclohexanone
8260C	5035A	Solid	Ethyl ether
8260C	5035A	Solid	n-Butyl alcohol
Moisture		Solid	Percent Moisture

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8015D	Nonhalogenated Organic Compounds - Direct Injection (GC)	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm. Monthly

TestAmerica Job ID: 480-86164-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-86164-1	Trip Blank	Water	08/25/15 00:00	08/25/15 14:20
480-86164-3	SOIL. 082515	Solid	08/25/15 13:30	08/25/15 14:20
480-86164-4	NAPL 082515	Water	08/25/15 13:15	08/25/15 14:20

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Shawn P. Skelly	Lab PM: Stone, Judy L	Carrier Tracking No(s):	COC No: 480-71302-18120.2
Client Contact: Mr. Shawn Skelly	Phone: (585) 350-8146	E-Mail: judy.stone@testamericainc.com		Page: Page 2 of 2
Company: ARCADIS U.S. Inc				Job #:

Address: Arcadis 295 Woodcliff Drive #2. 3rd Floor, Suite 301	Due Date Requested:	Analysis Requested
City: Fairport	TAT Requested (days): 2 DAY	
State, Zip: NY, 14450		
Phone: 585-662-4042(Tel) 585-385-4198(Fax)	PO #: 87370.0000.011215	
Email: shawn.skelly@arcadis-us.com	WO #: Project B0087370.0000.00001	
Project Name: Iroquois Gas/Westwood Pharm. Monthly	Project #: 48011056	
Site:	SSOW#:	

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - BTEX - 8260	8260C - (MOD) BTEX - 8260	Moisture - Local Method	8015D_DAI - (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	N	N	N		
TRIP BLANK	08/25/15	-	G	Water				X				
NAPL - 082515		1315	G	Waste				X				
SOIL - 082515		1330	C	Solid				X	X	X		

480-86164 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 08/25/15 1420	Company ARCADIS	Received by:	Date/Time: 08/25/15 1420	Company TA	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4F1 3.7

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 480-86164-1

Login Number: 86164
List Number: 1
Creator: Wallace, Cameron

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	ARCADIS
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-90431-1
Client Project/Site: Iroquois Gas/Westwood Pharm.

For:
ARCADIS U.S. Inc
Arcadis
295 Woodcliff Drive
#2. 3rd Floor, Suite 301
Fairport, New York 14450

Attn: Mr. Shawn Skelly

Joseph V. Giacomazza

Authorized for release by:
11/9/2015 11:37:23 AM
Joe Giacomazza, Project Management Assistant II
joe.giacomazza@testamericainc.com

Designee for

Judy Stone, Senior Project Manager
(484)685-0868
judy.stone@testamericainc.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm.

TestAmerica Job ID: 480-90431-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm.

TestAmerica Job ID: 480-90431-1

Job ID: 480-90431-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-90431-1

Receipt
The sample was received on 11/4/2015 9:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 1311: Due to the matrix and associated reaction to the extraction fluid, the laboratory was unable to perform the leaching procedure with the required 100g for the following sample: SOIL (103015) (480-90431-1). The volume of leaching fluid was adjusted proportionally to maintain a 20:1 ratio of leaching fluid to weight of sample. Reporting limits (RLs) are not affected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm.

TestAmerica Job ID: 480-90431-1

Client Sample ID: SOIL (103015)

Lab Sample ID: 480-90431-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	5.8		2.0	0.40	mg/Kg	1		6010C	Total/NA
Barium	92.6		0.50	0.11	mg/Kg	1		6010C	Total/NA
Cadmium	0.42		0.20	0.030	mg/Kg	1		6010C	Total/NA
Chromium	13.3		0.50	0.20	mg/Kg	1		6010C	Total/NA
Lead	84.6		1.0	0.24	mg/Kg	1		6010C	Total/NA
Arsenic	0.015		0.015	0.0056	mg/L	1		6010C	TCLP
Barium	0.77	J	1.0	0.10	mg/L	1		6010C	TCLP
Cadmium	0.0082		0.0020	0.00050	mg/L	1		6010C	TCLP
Lead	0.30	B	0.020	0.0030	mg/L	1		6010C	TCLP
Mercury	0.14		0.019	0.0076	mg/Kg	1		7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm.

TestAmerica Job ID: 480-90431-1

Client Sample ID: SOIL (103015)

Date Collected: 10/30/15 16:15
Date Received: 11/04/15 09:00

Lab Sample ID: 480-90431-1

Matrix: Solid

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.8**		2.0	0.40	mg/Kg		11/05/15 13:05	11/06/15 14:19	1
Barium	**92.6**		0.50	0.11	mg/Kg		11/05/15 13:05	11/06/15 14:19	1
Cadmium	**0.42**		0.20	0.030	mg/Kg		11/05/15 13:05	11/06/15 14:19	1
Chromium	**13.3**		0.50	0.20	mg/Kg		11/05/15 13:05	11/06/15 14:19	1
Lead	**84.6**		1.0	0.24	mg/Kg		11/05/15 13:05	11/06/15 14:19	1
Selenium	ND		4.0	0.40	mg/Kg		11/05/15 13:05	11/06/15 14:19	1
Silver	ND		0.60	0.20	mg/Kg		11/05/15 13:05	11/06/15 14:19	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.015**		0.015	0.0056	mg/L		11/06/15 10:50	11/07/15 01:46	1
Barium	**0.77**	**J**	1.0	0.10	mg/L		11/06/15 10:50	11/07/15 01:46	1
Cadmium	**0.0082**		0.0020	0.00050	mg/L		11/06/15 10:50	11/07/15 01:46	1
Chromium	ND		0.020	0.010	mg/L		11/06/15 10:50	11/07/15 01:46	1
Lead	**0.30**	**B**	0.020	0.0030	mg/L		11/06/15 10:50	11/07/15 01:46	1
Selenium	ND		0.025	0.0087	mg/L		11/06/15 10:50	11/07/15 01:46	1
Silver	ND		0.0060	0.0017	mg/L		11/06/15 10:50	11/07/15 01:46	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/06/15 11:05	11/06/15 15:25	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.14**		0.019	0.0076	mg/Kg		11/05/15 14:05	11/05/15 17:18	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-273327/1-A
Matrix: Solid
Analysis Batch: 273632

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 273327

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.1	0.41	mg/Kg		11/05/15 13:05	11/06/15 14:22	1
Barium	ND		0.51	0.11	mg/Kg		11/05/15 13:05	11/06/15 14:22	1
Cadmium	ND		0.21	0.031	mg/Kg		11/05/15 13:05	11/06/15 14:22	1
Chromium	ND		0.51	0.21	mg/Kg		11/05/15 13:05	11/06/15 14:22	1
Lead	ND		1.0	0.25	mg/Kg		11/05/15 13:05	11/06/15 14:22	1
Selenium	ND		4.1	0.41	mg/Kg		11/05/15 13:05	11/06/15 14:22	1
Silver	ND		0.62	0.21	mg/Kg		11/05/15 13:05	11/06/15 14:22	1

Lab Sample ID: LCSSRM 480-273327/2-A
Matrix: Solid
Analysis Batch: 273632

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 273327

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	113	92.02		mg/Kg		81.4	69.7 - 142.5
Barium	155	128.7		mg/Kg		83.0	72.9 - 127.1
Cadmium	67.5	56.54		mg/Kg		83.8	73.2 - 126.8
Chromium	164	133.5		mg/Kg		81.4	70.7 - 129.9
Lead	90.1	76.73		mg/Kg		85.2	70.1 - 129.9
Selenium	156	127.8		mg/Kg		81.9	67.3 - 132.1
Silver	52.6	38.99		mg/Kg		74.1	66.7 - 133.5

Lab Sample ID: MB 480-273540/2-A
Matrix: Solid
Analysis Batch: 273720

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 273540

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0056	mg/L		11/06/15 10:50	11/07/15 01:40	1
Barium	ND		1.0	0.10	mg/L		11/06/15 10:50	11/07/15 01:40	1
Cadmium	ND		0.0020	0.00050	mg/L		11/06/15 10:50	11/07/15 01:40	1
Chromium	ND		0.020	0.010	mg/L		11/06/15 10:50	11/07/15 01:40	1
Lead	ND		0.020	0.0030	mg/L		11/06/15 10:50	11/07/15 01:40	1
Selenium	ND		0.025	0.0087	mg/L		11/06/15 10:50	11/07/15 01:40	1
Silver	ND		0.0060	0.0017	mg/L		11/06/15 10:50	11/07/15 01:40	1

Lab Sample ID: LCS 480-273540/3-A
Matrix: Solid
Analysis Batch: 273720

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 273540

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	0.984		mg/L		98	80 - 120
Barium	1.00	1.00		mg/L		100	80 - 120
Cadmium	1.00	0.977		mg/L		98	80 - 120
Chromium	1.00	0.995		mg/L		100	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-273540/3-A
Matrix: Solid
Analysis Batch: 273720

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 273540

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	0.943		mg/L		94	80 - 120
Selenium	1.00	1.04		mg/L		104	80 - 120
Silver	1.00	0.969		mg/L		97	80 - 120

Lab Sample ID: LB2 480-273266/1-B
Matrix: Solid
Analysis Batch: 273720

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 273540

Analyte	LB2 Result	LB2 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015	0.0056	mg/L		11/06/15 10:50	11/07/15 01:37	1
Barium	ND		1.0	0.10	mg/L		11/06/15 10:50	11/07/15 01:37	1
Cadmium	ND		0.0020	0.00050	mg/L		11/06/15 10:50	11/07/15 01:37	1
Chromium	ND		0.020	0.010	mg/L		11/06/15 10:50	11/07/15 01:37	1
Lead	0.00344	J	0.020	0.0030	mg/L		11/06/15 10:50	11/07/15 01:37	1
Selenium	ND		0.025	0.0087	mg/L		11/06/15 10:50	11/07/15 01:37	1
Silver	ND		0.0060	0.0017	mg/L		11/06/15 10:50	11/07/15 01:37	1

Lab Sample ID: 480-90431-1 MS
Matrix: Solid
Analysis Batch: 273720

Client Sample ID: SOIL (103015)
Prep Type: TCLP
Prep Batch: 273540

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.015		1.00	1.10		mg/L		108	75 - 125
Barium	0.77	J	1.00	1.73		mg/L		96	75 - 125
Cadmium	0.0082		1.00	1.07		mg/L		106	75 - 125
Chromium	ND		1.00	0.955		mg/L		96	75 - 125
Lead	0.30	B	1.00	1.28		mg/L		98	75 - 125
Selenium	ND		1.00	1.14		mg/L		114	75 - 125
Silver	ND		1.00	1.07		mg/L		107	75 - 125

Lab Sample ID: 480-90431-1 MSD
Matrix: Solid
Analysis Batch: 273720

Client Sample ID: SOIL (103015)
Prep Type: TCLP
Prep Batch: 273540

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.015		1.00	1.08		mg/L		107	75 - 125	1	20
Barium	0.77	J	1.00	1.69		mg/L		92	75 - 125	2	20
Cadmium	0.0082		1.00	1.05		mg/L		104	75 - 125	2	20
Chromium	ND		1.00	0.933		mg/L		93	75 - 125	2	20
Lead	0.30	B	1.00	1.25		mg/L		95	75 - 125	2	20
Selenium	ND		1.00	1.12		mg/L		112	75 - 125	2	20
Silver	ND		1.00	1.04		mg/L		104	75 - 125	3	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-273547/2-A
Matrix: Solid
Analysis Batch: 273630

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 273547

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/06/15 11:05	11/06/15 15:18	1

Lab Sample ID: LCS 480-273547/3-A
Matrix: Solid
Analysis Batch: 273630

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 273547

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00668	0.00680		mg/L		102	80 - 120

Lab Sample ID: LB2 480-273266/1-C
Matrix: Solid
Analysis Batch: 273630

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 273547

Analyte	LB2 Result	LB2 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00012	mg/L		11/06/15 11:05	11/06/15 15:16	1

Lab Sample ID: 480-90431-1 MS
Matrix: Solid
Analysis Batch: 273630

Client Sample ID: SOIL (103015)
Prep Type: TCLP
Prep Batch: 273547

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.00668	0.00645		mg/L		97	80 - 120

Lab Sample ID: 480-90431-1 MSD
Matrix: Solid
Analysis Batch: 273630

Client Sample ID: SOIL (103015)
Prep Type: TCLP
Prep Batch: 273547

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.00668	0.00665		mg/L		100	80 - 120	3	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 480-273324/1-A
Matrix: Solid
Analysis Batch: 273457

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 273324

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.020	0.0081	mg/Kg		11/05/15 14:05	11/05/15 16:37	1

Lab Sample ID: LCSSRM 480-273324/2-A
Matrix: Solid
Analysis Batch: 273457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 273324

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.37	10.47		mg/Kg		125.0	51.3 - 148.1

Metals

Leach Batch: 273266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	TCLP	Solid	1311	
480-90431-1 MS	SOIL (103015)	TCLP	Solid	1311	
480-90431-1 MSD	SOIL (103015)	TCLP	Solid	1311	
LB2 480-273266/1-B	Method Blank	TCLP	Solid	1311	
LB2 480-273266/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 273324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	Total/NA	Solid	7471B	
LCSSRM 480-273324/2-A	Lab Control Sample	Total/NA	Solid	7471B	
MB 480-273324/1-A	Method Blank	Total/NA	Solid	7471B	

Prep Batch: 273327

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	Total/NA	Solid	3050B	
LCSSRM 480-273327/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 480-273327/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 273457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	Total/NA	Solid	7471B	273324
LCSSRM 480-273324/2-A	Lab Control Sample	Total/NA	Solid	7471B	273324
MB 480-273324/1-A	Method Blank	Total/NA	Solid	7471B	273324

Prep Batch: 273540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	TCLP	Solid	3010A	273266
480-90431-1 MS	SOIL (103015)	TCLP	Solid	3010A	273266
480-90431-1 MSD	SOIL (103015)	TCLP	Solid	3010A	273266
LB2 480-273266/1-B	Method Blank	TCLP	Solid	3010A	273266
LCS 480-273540/3-A	Lab Control Sample	Total/NA	Solid	3010A	
MB 480-273540/2-A	Method Blank	Total/NA	Solid	3010A	

Prep Batch: 273547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	TCLP	Solid	7470A	273266
480-90431-1 MS	SOIL (103015)	TCLP	Solid	7470A	273266
480-90431-1 MSD	SOIL (103015)	TCLP	Solid	7470A	273266
LB2 480-273266/1-C	Method Blank	TCLP	Solid	7470A	273266
LCS 480-273547/3-A	Lab Control Sample	Total/NA	Solid	7470A	
MB 480-273547/2-A	Method Blank	Total/NA	Solid	7470A	

Analysis Batch: 273630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	TCLP	Solid	7470A	273547
480-90431-1 MS	SOIL (103015)	TCLP	Solid	7470A	273547
480-90431-1 MSD	SOIL (103015)	TCLP	Solid	7470A	273547
LB2 480-273266/1-C	Method Blank	TCLP	Solid	7470A	273547
LCS 480-273547/3-A	Lab Control Sample	Total/NA	Solid	7470A	273547
MB 480-273547/2-A	Method Blank	Total/NA	Solid	7470A	273547

Metals (Continued)

Analysis Batch: 273632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	Total/NA	Solid	6010C	273327
LCSSRM 480-273327/2-A	Lab Control Sample	Total/NA	Solid	6010C	273327
MB 480-273327/1-A	Method Blank	Total/NA	Solid	6010C	273327

Analysis Batch: 273720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	TCLP	Solid	6010C	273540
480-90431-1 MS	SOIL (103015)	TCLP	Solid	6010C	273540
480-90431-1 MSD	SOIL (103015)	TCLP	Solid	6010C	273540
LB2 480-273266/1-B	Method Blank	TCLP	Solid	6010C	273540
LCS 480-273540/3-A	Lab Control Sample	Total/NA	Solid	6010C	273540
MB 480-273540/2-A	Method Blank	Total/NA	Solid	6010C	273540

General Chemistry

Analysis Batch: 273185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-90431-1	SOIL (103015)	Total/NA	Solid	Moisture	

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm.

TestAmerica Job ID: 480-90431-1

Client Sample ID: SOIL (103015)

Date Collected: 10/30/15 16:15
Date Received: 11/04/15 09:00

Lab Sample ID: 480-90431-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			273266	11/05/15 10:12	JLS	TAL BUF
TCLP	Prep	3010A			273540	11/06/15 10:50	KJ1	TAL BUF
TCLP	Analysis	6010C		1	273720	11/07/15 01:46	AMH	TAL BUF
Total/NA	Prep	3050B			273327	11/05/15 13:05	CMM	TAL BUF
Total/NA	Analysis	6010C		1	273632	11/06/15 14:19	AMH	TAL BUF
TCLP	Leach	1311			273266	11/05/15 10:12	JLS	TAL BUF
TCLP	Prep	7470A			273547	11/06/15 11:05	TAS	TAL BUF
TCLP	Analysis	7470A		1	273630	11/06/15 15:25	TAS	TAL BUF
Total/NA	Prep	7471B			273324	11/05/15 14:05	TAS	TAL BUF
Total/NA	Analysis	7471B		1	273457	11/05/15 17:18	TAS	TAL BUF
Total/NA	Analysis	Moisture		1	273185	11/04/15 23:17	CMK	TAL BUF

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm.

TestAmerica Job ID: 480-90431-1

Laboratory: TestAmerica Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
New York	NELAP	2	10026	03-31-16

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Solid	Mercury
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm.

TestAmerica Job ID: 480-90431-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL BUF
7470A	Mercury (CVAA)	SW846	TAL BUF
7471B	Mercury (CVAA)	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: Iroquois Gas/Westwood Pharm.

TestAmerica Job ID: 480-90431-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-90431-1	SOIL (103015)	Solid	10/30/15 16:15	11/04/15 09:00

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
ARCADIS	VICTOR FINOCCHIARO	11/3/2015	296800
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 1 **of** 3
6723 TOWPATH RD.			
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
SYRACUSE / NY / 13214	SHAWN P. SKELLY		
Project Name and Location (State)	**Carrier/Waybill Number**		
BMS - IROQUOIS GAS/WESTWOOD PHARM			
Contract/Purchase Order/Quote No.			
B00807370			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: RCRA METALS	TCLP METALS
SOIL (103015)	10/30/15	1615				X	X						X	X

Special Instructions/ Conditions of Receipt

480-90431 Chain of Custody

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☒ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other_____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By (ARCADIS)	11/03/15	1000	1. Received By	11/4/15	0900
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

#1 2.0

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 480-90431-1

Login Number: 90431
List Number: 1
Creator: Janish, Carl M

List Source: TestAmerica Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	arcadis
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

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