SPS

nationalgrid

Steven P. Stucker
Senior Environmental Engineer
Environmental Department

December 19, 2005

Bernard Franklin
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014

Re: Herkimer (Smith St.) Former MGP SSC Report

Dear Mr. Franklin:

Enclosed please find the Supplemental Site Characterization (SSC) report, prepared by TRC Environmental on behalf of National Grid, for the Herkimer (Smith Street) non-owned former manufactured gas plant (MGP) site. The New York State Department of Environmental Conservation (DEC) and National Grid agreed upon an appropriate supplemental scope of work which addressed potential data gaps, and the completed field investigation complied with the Department-approved SSC Work Plan.

The following was determined from the SSC:

- No further BTEX or MGP impacts were detected to the west of the existing concrete slab foundation (SB-16A) at depths up to 15 feet bgs (water table at 8 feet bgs).
- No significant impacts were detected on the eastern portion of the site (SB-17, SB-18 and SB-19).
- No significant BTEX or PAH compounds were detected proximal to the former octagonal holder foundation (SB-14, SB-15, and SB-16A).
- No MGP residuals were detected proximal to the adjacent residence (SB-15).
- No evidence of off-site migration of MGP residuals was detected.

National Grid has addressed existing data gaps as part of the SSC in order to fully identify the "nature and extent" of MGP residuals, and complete the site characterization. We believe that the SSC fully identifies the "nature and extent" of all MGP residuals and petroleum contamination previously detected on- and off-site.

Following DEC review of the SSC, National Grid would like to schedule a meeting to discuss final closure of the site. If you have any questions or comments regarding the SSC, please contact me at (315) 428-5652 or steven.stucker@us.ngrid.com.

Sincerely,

Steven P. Stucker, C.P.G.
Senior Environmental Engineer

Cc w/encl.:
William Holzhauer- National Grid
Terry Young-National Grid (w/o encl.)
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TRC

Customer-Focused Solutions

December 13, 2005

Mr. Steven Stucker
National Grid
300 Erie Boulevard West
Syracuse, NY 13202

Subject: Supplemental Site Characterization Investigation Results
Herkimer (Smith Street) Former MGP Site
TRC Project No. 38278-1000-00012

Dear Steve:

This letter describes the methods used and results for the Supplemental Site Characterization (SSC) investigation conducted by National Grid at the above-referenced site. A limited supplemental drilling program was conducted by TRC Environmental Corporation (TRC), under contract to National Grid, during the period of August 8 through 9, 2005. The work was conducted in accordance with a supplemental investigation scope of work, approved by New York State Department of Environmental Corporation (NYSDEC), which was intended to better assess the extent of site impacts that had been identified during the original Site Characterization investigation. A description of the supplemental investigation activities, physical and analytical results, and overall conclusions based on the site information developed to date, are presented below.

1.0 METHODS

TRC mobilized to the site on August 8, 2005 to perform the supplemental investigation. The program consisted of the advancement of six soil borings with collection of representative soil samples for lab analysis, and evaluation of the four existing monitoring wells for the potential presence of non-aqueous phase liquid (NAPL).

1.1 Drilling Program

TRC contracted Lyon Drilling of Tully, New York to perform the drilling work. Utility clearance activities included discussions with the Village of Herkimer Department of Public Works regarding water and sewer lines in the vicinity of the site.

At each of the six boring locations, Lyon Drilling used a truck-mounted CME-45 hollow stem auger (HSA) rig to conduct soil sampling. Locations of the borings are identified in Figure 1. Drilling and soil sampling was conducted in accordance with the NYSDEC directive for continuous split-spoon sampling. Soils were qualitatively evaluated during advancement of the boring for indications of contamination, using visual, olfactory, and photo-ionization detector (PID) screening methods; those observations were documented in the field log book (refer to the boring logs provided in Appendix A). Borings were generally advanced to a minimum depth of 16 feet below ground surface (bgs), except where field conditions precluded achievement of that depth. Within each boring, two soil samples were collected for laboratory analysis. A total of thirteen soil samples were collected and submitted to CHEMTECH, of Mountainside, New Jersey

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for analysis of benzene, toluene, ethyl benzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs). In addition, one sample collected from boring SB-16A, which exhibited petroleum-like odors, was submitted for GC fingerprint analysis to determine the type of hydrocarbon source.

Following completion of soil sampling, all of the soil borings were abandoned by tremie-grouting to within one-half foot of grade with cement-bentonite grout; the remainder of the borehole was then backfilled with soil and the area surface restored. Following completion of the supplemental drilling program, the new boring locations were surveyed by Thew Associates on August 9, 2005; the location and elevation information was then integrated into the existing site survey base map.

1.2 NAPL Evaluation

TRC evaluated the existing monitoring well network for the presence of NAPL. Existing wells MW-1, MW-3 and MW-4 were successfully located and gauged using an electronic interface probe. Depth measurements were recorded in the field notebook. Neither Well MW-2, located west of the former octagonal holder, nor a previously installed well near West Smith Street, could be located. A large pile of lumber and construction equipment placed in the western portion of the site by the site owner, prevented location of Well MW-2.

A subsequent gauging of the site well network using an electronic interface probe was performed by TRC on December 2, 2005 following clearance of the material around MW-2 by the site owner. No measurable NAPL or other physical indications (i.e., blebs, sheens or odors) were noted in any of the wells. Concerted efforts to locate and gauge another well, which had been installed as part of a previous off-site fuel spill investigation, were unsuccessful.

2.0 RESULTS

The following section summarizes the physical and chemical results of the supplemental boring program. Supplemental borings were designated with sequential numbers from the previous borings that had been completed during the initial SC investigation. Sample locations are depicted on Figure 1. An updated set of geologic cross-sections is provided in Figure 2. A summary data figure depicting concentrations of constituents of concern is provided as Figure 3. Summary data are presented in Table 1. The Data Usability Summary Report (DUSR) for the supplemental investigation analytical data validation is attached as Appendix B. Brief descriptions of physical and analytical findings for each of the supplemental borings are presented below.

Boring SB-14

Boring SB-14 was located in the southwestern corner of the site, in the vicinity of the octagonal former holder foundation. This location was intended to evaluate subsurface conditions adjacent to the property boundary, downgradient of the holder where MGP impacts had previously been detected. Fill was encountered from ground surface to approximately five feet bgs; this material consisted of silt, medium to coarse sand, and gravel, with varying quantities of demolition debris (brick fragments), and process wastes (coal fragments, ash and clinkers). What appeared to constitute native soils were observed from five to 16 feet bgs, consisting of silt, fine to medium sand, clay with and without gravel. The water table was encountered at approximately 8 feet bgs.

No physical evidence of impacts (odor, sheen, PID readings) was noted in the boring. Typically, all soil samples were screened as part of the logging process before collection of the sample(s) for lab analysis. However, due to malfunction of the PID during the drilling of this boring, all of the collected sample intervals were temporarily stored in ziplock bags in an iced sample cooler until the following morning when they could be screened with a functional, calibrated PID.

Two soil samples were collected from SB-14 for lab analysis, one from 8 to 10 foot interval (approximate water table elevation) and one from the 14 to 16 foot interval. As shown in Table 1, no BTEX or PAH compounds were detected in either sample, confirming the absence of contamination in this boring.

Boring SB-15

Boring SB-15 was located in the northwestern portion of the site, immediately east of the adjacent West Smith Street residence. This location was intended to evaluate the absence/presence of MGP residuals in the vicinity of the residence given the previous detection of impacts in the nearby holder foundation. Fill was encountered from ground surface to approximately four feet bgs; this material consisted of silt, medium to coarse sand, with coal fragments, ash, and trace brick fragments. Native soils were observed from four to 16 feet bgs, consisting of silt, fine to medium sand, with little clay. The water table was encountered at 8.7 feet bgs. No physical evidence of impacts (odor, sheen, PID readings) was noted in the boring.

Two soil samples were collected from SB-15 for lab analysis, one from 8 to 10 foot interval and one from the 14 to 16 foot interval. As shown in Table 1, no BTEX or PAH compounds were detected in either sample, confirming the absence of contamination in this location

Boring SB-16

Boring 16 was initiated approximately 25 feet west of the relic concrete foundation in the center of the site. The objective of this boring was to define the southerly extent of petroleum impacts encountered further north, in the vicinity of former oil storage tanks (previous sample locations TP-05, SB-07, SB-08). Shallow material was identified as fill, consisting of fine to medium sand, silt, gravel, brick fragments, and clinkers. Sampler refusal was encountered at a depth of 3.8 feet bgs; efforts to auger through the obstruction, which appeared to be concrete, were unsuccessful. Therefore, the boring location was abandoned and a new soil boring (SB-16A) was advanced.

Boring SB-16A

Boring 16A was located approximately ten feet southwest of SB-16; the revised location was selected upon concurrence with NYSDEC. Approximately five feet of fill consisting of fine sand, silt, and gravel with brick fragments and occasional clinkers, was encountered. From five to final depth of 16 feet bgs, native soils consisting of silt, some clay, trace fine-to-medium sand grading to sand, little silt were encountered. The water table was noted at a depth of approximately 7 feet bgs. Slight petroleum odors, sheens, and elevated PID measurements (high of 207 ppm) were noted in soils in the vicinity of the water table; these impacts diminished with depth and were not evident in the deeper sampled soils at 16 feet bgs.

Two samples were collected for laboratory analysis, one from the 4 to 6 feet interval and one from the 6 to 8 foot interval. Low concentrations of nine PAH compounds were detected in sample SB16A(4-6), with 0.2 ppm benzo(a)pyrene (BaP) detected above the TAGM 4046 Recommended Soil Cleanup Objective (RSCO). Sample SB16A(6-8), collected from the interval exhibiting odor, sheen, and PID readings, yielded 0.0015 ppm xylenes and fourteen PAH compounds, including three at concentrations above TAGM RSCOs (total PAH concentration of 16.15 ppm).

A soil sample representing the 6 to 8 foot interval was also submitted to the contract lab (CHEMTECH) for GC Fingerprint analysis. Result of this analysis indicates the encountered petroleum impacts were consistent with a combination of weathered No. 6 fuel oil and 50-weight lubricating oil. This finding is generally consistent with the previous fingerprint analysis of a soil sample from SB-08 to the east, and the physical observations made in test pit TP-3 during the initial Site Characterization. Actual source of the petroleum impacts on-site is not known but may be associated with former MGP feedstock oil storage, more-recent commercial site uses (e.g., heating oil use), and/or the previously-documented, hydraulically-upgradient off-site fuel spill (NYSDEC Spill Number 878644).

Boring SB-17

Boring 17 was advanced in the northeastern portion of the site, east of a former oil tank area where petroleum impacts had been previously detected. The objective of this boring was to determine if petroleum type impacts extended into the eastern portion of the property. Fill was observed to a depth of 5+ feet bgs, before native soil (silt, sand, little clay, little gravel) was encountered, extending to the bottom of the boring at 16 feet bgs. The water table was noted at a depth of 9.2 feet bgs. No physical indications of impacts were noted within the boring.

Two soil samples were collected from SB-17 for lab analysis, one from 8 to 10 foot interval and one from the 14 to 16 foot interval. As shown in Table 1, no BTEX or PAH compounds were detected in either sample, confirming the absence of contamination in this location. It should be noted that the laboratory holding time for sample SB-17(14-16) was exceeded by one day and therefore the analytical results (all non-detect) are qualified, as documented in the DUSR in Appendix A.

Boring SB-18

Boring 18 was advanced in the southeastern portion of the site, east of the relic concrete foundation. The objective of this boring was to determine if MGP residuals existed in the eastern portion of the site, near the location of former purification operations. Fill was observed to a depth of 5+ feet bgs, before native soil (silt, some fine sand, some clay, little to trace fine gravel) was encountered, extending to the bottom of the boring at 16 feet bgs. Saturated soils indicating the presence of the water table were noted at a depth of approximately 8 feet bgs (no sample was recovered from the 6 to 8 foot interval). Slight fuel oil-like petroleum odors were noted in the 8 to 12 foot interval; a PID reading of 21.5 ppm was noted at the depth of 8 feet, but deeper intervals yielded no measurable PID readings.

Two soil samples were collected from SB-18 for lab analysis, one from 8 to 10 foot interval and one from the 14 to 16 foot interval. The sample from the 8 to 10 foot interval (i.e., vicinity of the

water table) yielded detectable concentrations of the PAH compounds acenapthylene and phenanthree, below the TAGM RSCOs; no BTEX compounds were detected. The deeper sample from the 14 to 16 foot interval yielded no detectable BTEX or PAH compounds. These results indicate that only limited petroleum-related impacts are present downgradient from the area where contamination of a similar nature had been encountered during the Site Characterization.

Boring SB-19

Boring 19 was also advanced in the southeastern portion of the site, adjacent to the site owner's residence. The objective of this boring was to determine if MGP residuals exist south and hydraulically down gradient from the former manufactured gas production area. Fill (silt, sand, gravel, brick and coal fragments, ash) was observed to a depth of 6+ feet bgs, before native soil was encountered, extending to the bottom of the boring at 16 feet bgs. Saturated soils indicating the presence of the water table were noted at a depth of approximately 8 to 9 feet bgs. No physical indications of impacts (i.e., odor, sheen, PID results) were noted during soil logging, however, during processing of the 8 to 10 foot analytical sample, a very slight odor was noted in the sample material.

Two soil samples were collected from SB-19 for lab analysis, one from 8 to 10 foot interval and one from the 14 to 16 foot interval. As shown in Table 1, no BTEX or PAH compounds were detected in either sample, confirming the absence of contamination in this location.

1.2 NAPL Evaluation

During the soil boring program, TRC evaluated the existing monitoring well network for the presence of NAPL. Wells MW-1, MW-3 and MW-4 were successfully located and evaluated using an electronic interface probe. No floating product (LNAPL) or sinking product (DNAPL) was detected in any of the evaluated wells. In addition, during a second evaluation of all four wells (including MW-02), no indications of NAPL were detected in any of the wells.

3.0 CONCLUSIONS

Results of the summary investigations are consistent with those of the previous Site Characterization, which indicated the limited nature of MGP-related impacts on-site. Specifically, the recent supplemental investigations confirm the limited extent of impacts in the vicinity of the former octagonal holder (i.e., less than 60 ppm total BTEX and less than 80 ppm total PAHs), and the absence of significant impacts east of the exposed concrete foundation in the center of the site. Of specific note was the absence of any indications of spent purifier waste in the vicinity of the former gas purification portion of the former MGP, which according to historical Sanborn maps, occupied the eastern section of the former gas production building.

Sampling to the east of the exposed concrete foundation indicates the absence of significant contamination (i.e., non-detect BTEX and less than 1 ppm total PAHs). Sampling to the west of the foundation indicated the presence of hydrocarbon impacts. This finding is consistent with previous studies performed on and adjacent to the site to characterize an off-site, hydraulically upgradient fuel spill from the former Volaro gas station property (located at the corner of West Smith and Dewey Streets). Those studies had detected fuel-type contamination on-site which was

attributed to a possible combination of off-site and on-site sources. The NYSDEC spill file was subsequently closed.

Shallow ground water contouring (refer to Figure 4) continues to indicate that low gradient groundwater flow is directed to the south/southwest, which is consistent with previous studies. Groundwater sampling, as part of the initial Site Characterization, indicated only minor groundwater impacts on-site, with no significant concentrations of BTEX or PAHs detected hydraulically downgradient from former MGP operations. As such, there are no indications of any potential off-site impacts to soil or ground water. Further, no indications of NAPL have been detected in any of the site monitoring wells, during any of the evaluation rounds.

In summary, results of the SSC confirm that the previously detected minor impacts are limited to shallow site soils or structures and do not pose a significant source for off-site migration. Therefore, the present site data base adequately characterizes site conditions associated with former MGP operations and no additional site characterization is proposed.

If you have any questions or comments regarding the work performed or the results discussed herein, please contact me.

Sincerely,
TRC ENVIRONMENTAL CORPORATION

Douglas A. Martin, LEP
Project Manager

Attachments

TABLES

TABLE 1
Herkimer (Smith St.) Former MGP Site
Supplemental Site Characterization - Soil Sample Results (mg/Kg)

Constituent	NYSDEC TAGM RSCOs	[illegible]	SB-1[illegible]			SB-14			SB-15			SB-[illegible]			SB-[illegible]		
			HERK-SB-1[illegible] [illegible]/06/05 8-10			HERK-SB-[illegible] [illegible]/08/05 [illegible]-16			HERK-SB-15-8-10 08/0[illegible]/05 8-10			HERK-SB-[illegible] 08/09/05 [illegible]			HERK-SB-[illegible] 08/08/05 4-6		
BTEX		**UNITS**															
Benzene	0.06	mg/Kg	0.00052	U		0.00051	U		0.00049	U		0.00049	U		0.00048	U	
Toluene	1.5	mg/Kg	0.00052	U		0.00052	U		0.0005	U		0.0005	U		0.00049	U	
Ethyl Benzene	5.5	mg/Kg	0.00046	U		0.00045	U		0.00044	U		0.00044	U		0.00043	U	
m/p-Xylenes	1.2	mg/Kg	0.0011	U		0.0011	U		0.0011	U		0.0011	U		0.0011	U	
o-Xylene	1.2	mg/Kg	0.0005	U		0.00049	U		0.00048	U		0.00047	U		0.00047	U	
Total BTEX	10	mg/Kg	0			0			0			0			0		
PAHs																	
Naphthalene	13	mg/Kg	0.073	U		0.071	U		0.07	U		0.069	U		0.069	U	
Acenaphthylene	41	mg/Kg	0.069	U		0.068	U		0.067	U		0.066	U		0.22	J	
Acenaphthene	50	mg/Kg	0.076	U		0.074	U		0.073	U		0.072	U		0.072	U	
Fluorene	50	mg/Kg	0.072	U		0.07	U		0.07	U		0.069	U		0.068	U	
Phenanthrene	50	mg/Kg	0.068	U		0.066	U		0.066	U		0.065	U		0.064	U	
Anthracene	50	mg/Kg	0.064	U		0.063	U		0.062	U		0.061	U		0.061	U	
Fluoranthene	50	mg/Kg	0.063	U		0.062	U		0.061	U		0.06	U		0.16	J	
Pyrene	50	mg/Kg	0.075	U		0.074	U		0.073	U		0.072	U		0.22	J	
Benzo(a)anthracene	0.224	mg/Kg	0.06	U		0.058	U		0.058	U		0.057	U		0.056	U	
Chrysene	0.4	mg/Kg	0.077	U		0.075	U		0.074	U		0.073	U		0.08	J	
Benzo(b)fluoranthene	1.1	mg/Kg	0.047	U		0.046	U		0.045	U		0.045	U		0.17	J	
Benzo(k)fluoranthene	1.1	mg/Kg	0.094	U		0.092	U		0.091	U		0.089	U		0.095	J	J
Benzo(a)pyrene	0.061	mg/Kg	0.068	U		0.067	U		0.066	U		0.065	U		**0.2**	J	
Indeno(1,2,3-cd)pyrene	3.2	mg/Kg	0.054	U	UJ	0.053	U	UJ	0.052	U	UJ	0.052	U	UJ	0.079	J	J
Dibenz(a,h)anthracene	0.014	mg/Kg	0.054	U		0.052	U		0.052	U		0.051	U		**0.05**	U	
Benzo(g,h,i)perylene	50	mg/Kg	0.071	U		0.069	U		0.068	U		0.067	U		0.26	J	
Total PAHs	50	mg/Kg	0			0			0			0			1.484		

Notes:

UJ - Analyte was not detected above the reported quantitation limit.

J - Estimated value. The analyte was detected and identified.

All values are reported in mg/Kg (ppm)

Bold shaded values indicate exceedance of TAGM criterion

TABLE 1
Herkimer (Smith St.) Former MGP Site
Supplemental Site Characterization -- Soil Sample Results (mg/Kg)

Constituent	NYSDEC AGM RSCOs	LOCATION SAMPLE ID DATE Depth	SB-15A			SB-17			SB-17			SB-18			SB-18		
			HERK-SB-15A-6-8 08/08/05 6-8			HERK-SB-17-8-10 08/09/05 8-10			HERK-SB-17-14-16 08/09/05 14-16			HERK-SB-18-8-10 08/09/05 8-10			HERK-SB-18-14-16 08/09/05 14-16		
BTEX		**UNITS**															
Benzene	0.06	mg/Kg	0.00054	U		0.00045	U		0.00051	U	UJ	0.014	U		0.0005	U	
Toluene	1.5	mg/Kg	0.00055	U		0.00045	U		0.00052	U	UJ	0.014	U		0.00051	U	
Ethyl Benzene	5.5	mg/Kg	0.00048	U		0.0004	U		0.00045	U	UJ	0.013	U		0.00044	U	
m/p-Xylenes	1.2	mg/Kg	0.0012	U		0.00097	U		0.0011	U	UJ	0.031	U		0.0011	U	
o-Xylene	1.2	mg/Kg	0.0015	J		0.00043	U		0.00049	U	UJ	0.014	U		0.00048	U	
Total BTEX	10	mg/Kg	0.0015			0			0			0			0		
PAHs																	
Naphthalene	13	mg/Kg	0.076	U		0.063	U		0.071	U	UJ	0.08	U		0.07	U	
Acenaphthylene	41	mg/Kg	0.34	J		0.06	U		0.068	U	UJ	0.077	U		0.067	U	
Acenaphthene	50	mg/Kg	1.7			0.066	U		0.074	U	UJ	0.084	U		0.073	U	
Fluorene	50	mg/Kg	0.96		J	0.062	U		0.07	U	UJ	0.087	J	J	0.069	U	
Phenanthrene	50	mg/Kg	3			0.059	U		0.067	U	UJ	0.1	J		0.066	U	
Anthracene	50	mg/Kg	1.2			0.056	U		0.063	U	UJ	0.071	U		0.062	U	
Fluoranthene	50	mg/Kg	2.2			0.055	U		0.062	U	UJ	0.07	U		0.061	U	
Pyrene	50	mg/Kg	2.6			0.065	U		0.074	U	UJ	0.083	U		0.073	U	
Benzo(a)anthracene	0.224	mg/Kg	**0.6**			0.052	U		0.058	U	UJ	0.066	U		0.058	U	
Chrysene	0.4	mg/Kg	**0.84**			0.066	U		0.075	U	UJ	0.085	U		0.074	U	
Benzo(b)fluoranthene	1.1	mg/Kg	0.61			0.041	U		0.046	U	UJ	0.052	U		0.045	U	
Benzo(k)fluoranthene	1.1	mg/Kg	0.36	J	J	0.081	U		0.092	U	UJ	0.1	U		0.091	U	
Benzo(a)pyrene	0.061	mg/Kg	**0.9**			0.059	U		0.067	U	UJ	0.075	U		0.066	U	
Indeno(1,2,3-cd)pyrene	3.2	mg/Kg	0.2	J	J	0.047	U	UJ	0.053	U	UJ	0.06	U	UJ	0.052	U	UJ
Dibenz(a,h)anthracene	0.014	mg/Kg	0.056	U		0.046	U		0.052	U	UJ	0.059	U		0.052	U	
Benzo(g,h,i)perylene	50	mg/Kg	0.44	J		0.061	U		0.069	U	UJ	0.078	U		0.068	U	
Total PAHs	50	mg/Kg	16.15			0			0			0.187			0		

Notes:

UJ - Analyte was not detected above the reported quantitation limit

J - Estimated value. The analyte was detected and identified.

All values are reported in mg/Kg (ppm)

Bold shaded values indicate exceedance of TAGM criterion

TABLE 1

Herkimer (Smith St.) Former MGP Site

Supplemental Site Characterization - Soil Sample Results (mg/Kg)

Constituent	NYSDEC TAGM RSCOs	STATION SAMPLE ID DATE Depth	SB-8A HERK-SB-8A-8-10 08/09/05 8-10			SB-10 HERK-SB-10-8-10 08/09/05 8-10			SB-13 HERK-SB-13-12-14 08/09/05 12-14		
BTEX		**UNITS**									
Benzene	0.06	mg/Kg	0.00057	U		0.00048	U		0.00047	U	
Toluene	1.5	mg/Kg	0.00058	U		0.00049	U		0.00048	U	
Ethyl Benzene	5.5	mg/Kg	0.00051	U		0.00043	U		0.00042	U	
m/p-Xylenes	1.2	mg/Kg	0.0012	U		0.001	U		0.001	U	
o-Xylene	1.2	mg/Kg	0.00055	U		0.00046	U		0.00046	U	
Total BTEX	10	mg/Kg	0			0			0		
PAHs											
Naphthalene	13	mg/Kg	0.08	U		0.068	U		0.067	U	
Acenaphthylene	41	mg/Kg	0.076	U		0.064	U		0.064	U	
Acenaphthene	50	mg/Kg	0.084	U		0.071	U		0.07	U	
Fluorene	50	mg/Kg	0.079	U		0.067	U		0.066	U	
Phenanthrene	50	mg/Kg	0.075	U		0.063	U		0.062	U	
Anthracene	50	mg/Kg	0.071	U		0.06	U		0.059	U	
Fluoranthene	50	mg/Kg	0.07	U		0.059	U		0.058	U	
Pyrene	50	mg/Kg	0.083	U		0.07	U		0.069	U	
Benzo(a)anthracene	0.224	mg/Kg	0.066	U		0.056	U		0.055	U	
Chrysene	0.4	mg/Kg	0.084	U		0.071	U		0.07	U	
Benzo(b)fluoranthene	1.1	mg/Kg	0.052	U		0.044	U		0.043	U	
Benzo(k)fluoranthene	1.1	mg/Kg	0.1	U		0.087	U		0.086	U	
Benzo(a)pyrene	0.061	mg/Kg	0.075	U		0.063	U		0.063	U	
Indeno(1,2,3-cd)pyrene	3.2	mg/Kg	0.06	U	UJ	0.05	U	UJ	0.05	U	UJ
Dibenz(a,h)anthracene	0.014	mg/Kg	0.059	U		0.05	U		0.049	U	
Benzo(g,h,i)perylene	50	mg/Kg	0.078	U		0.066	U		0.065	U	
Total PAHs	50	mg/Kg	0			0			0		

Notes:

UJ - Analyte was not detected above the reported quantitation limit.

J - Estimated value. The analyte was detected and identified.

All values are reported in mg/Kg (ppm)

Bold shaded values indicate exceedance of TAGM criterion

APPENDIX A
BORING LOGS

PROJECT: Herkimer Former MGP Site
Herkimer, NY

TRC Customer-Focused Solutions

BORING NUMBER: SB-14

BORING LOCATION:

GROUND SURFACE ELEVATION AND DATUM:

DRILLING CONTRACTOR: Lyon Drilling

DATE STARTED: 8/8/05

DATE FINISHED: 8/8/05

DRILLING METHOD: Hollow-stem auger

TOTAL DEPTH (ft.): 16

MEASURING POINT: Ground Surface

DRILLING EQUIPMENT: Mobil Drill B-61

DEPTH TO WATER: FIRST: 8 COMPL.: NA

SAMPLING METHOD: 24" Split Spoon

LOGGED BY: Liam Bane

HAMMER WEIGHT: 140 lbs. DROP: 30 in.

RESPONSIBLE PROFESSIONAL: Doug Martin

REG. NO.: XXXX

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION	REMARKS
0–1		0.8	3,5, 4,3	0	0-0.6' Dark brown SILT, little m-c sand, trace f-gravel, clinkers, brick, bottom ash 0.6-0.7' Light brown/tan Silt and vf-Sand 0.7-0.8' Dark brown SILT, little coal fragments, brick fragments	
2–3		1	2,1, 1,2	0	0-0.1' Dark brown SILT, trace m-c sand 0.1-1.0' Ash-like matter, light gray to dark gray, clinkers, coal fragments, N/O, dry	
4–5		1	3,4, 4,5	0	0-0.4' Medium brown Silt and vf-Sand, little m-sand, trace c-sand and f-gravel, brick, coal and ash like material 0.4-0.6' Dark gray ash, coal fragments, clinkers 0.6-1.0' Medium brown SILT, very dense, N/O, N/S, dry	
6–7		0.4	3,5, 5,6	0	0-0.4' Medium brown Silt, little f-sand and clay, very slightly moist, dense, N/O, N/S	
8–9		0.7	1,2	0	0-0.3'Light brown/tan SILT, little clayand f-sand, wet, dense, N/O, N/S 0.3-0.5' Litht brown/tan F-SAND, some Silt, trace m-sand, wet, dense, N/O 0.5-0.7' Dark brown F-Sand and Silt, trace clay, wet, N/O	Collect sample for BTEX, PAHs (HERK-SB-14(8-10)
10–11		0.7	1,1, 1,2	0	0-0.3' Light/medium brown F-Sand and Silt, trace m-sand and f-gravel, slightly dense, N/O, N/S 0.3-0.7' Light/medium brown SILT, little f-sand, loose, N/O, N/S	
12–13		0.4	30,20 21,15	0	F-C GRAVEL	
14–15		2	4,7, 6	0	0-1.5' Light/medium brown Silt and F-Sand, little f-c gravel, loose, saturated 1.5-2.0' Light/medium brown F-M SAND, some Silt, little c-sand and f-c gravel, slightly cohesive, N/O, N/S	Collect Sample for BTEX, PAHs HERK-SB-14(14-16)
16						

PROJECT: Herkimer Former MGP Site
Herkimer, NY

TRC Customer-Focused Solutions

BORING NUMBER: SB-15

BORING LOCATION:

GROUND SURFACE ELEVATION AND DATUM:

DRILLING CONTRACTOR: Lyon Drilling

DATE STARTED: 8/9/05

DATE FINISHED: 8/9/05

DRILLING METHOD: Hollow-stem auger

TOTAL DEPTH (ft.): 16

MEASURING POINT: Ground Surface

DRILLING EQUIPMENT: Mobil Drill B-61

DEPTH TO WATER: FIRST: 8 COMPL. NA

SAMPLING METHOD: 24" Split Spoon

LOGGED BY: Liam Bane

HAMMER WEIGHT: 140 lbs. DROP: 30 in.

RESPONSIBLE PROFESSIONAL: Doug Martin REG. NO. XXXX

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION	REMARKS
0–1		0.8	3,4, 7,2	0	0-0.7' Dark brown SILT, trace m-c gravel, little f-sand, trace brick and f-gravel 0.7-0.8' Pulverized coal and ash-like material, dry, N/O	
2–3		1.1	2,2, 3,5	0	0-0-1.1' Medium brown Silt and f-Sand, trace m-c sand, dry, N/O, trace brick fragments on outside of sample - drag down	
4–5		0.7	3,4, 5,6	0	0-0.7' Medium brown SILT, little f-sand, trace clay, very slightly moist, N/O, N/S, very dense	
6–7		1.3	3,3, 3,4	0	0-1.3' Light brown SILT, little clay and f-sand, dense, slightly moist, N/O, N/S	
8–9		0.8	1,1, 1,2	0	0-0.8' Light brown SILT, little clay, trace vf-sand, wet, dense, N/O, N/S	Collect sample for BTEX, PAHs HERK-SB-15(8-10)
10–11		0.5	2,1, 2,3	0	0-0-0.5' Light brown Silt and f-Sand, some m-c Sand and f-Gravel, cohesive, N/O, N/S	
12–13		1	1,1, 2,2	0	0-1.0' SILT with f-c Gravel, no real volume for sample, N/O, N/S, catcher intact	
14–15		0.7	1,1, 1,2	0	0-0.7 Medium brown F-M SAND, some c-Sand, little f-gravel, N/O, N/S	Collect sample for BTEX, PAHs HERK-SB-15(14-16)
16						

PROJECT: Herkimer Former MGP Site
Herkimer, NY

TRC Customer-Focused Solutions

BORING NUMBER: SB-16

BORING LOCATION:	GROUND SURFACE ELEVATION AND DATUM:
DRILLING CONTRACTOR: Lyon Drilling	DATE STARTED: 8/8/05 / DATE FINISHED: 8/8/05
DRILLING METHOD: Hollow-stem auger	TOTAL DEPTH (ft.): 16 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Mobil Drill B-61	DEPTH TO WATER: FIRST: 9 / COMPL.: NA
SAMPLING METHOD: 24" Split Spoon	LOGGED BY: Liam Bane
HAMMER WEIGHT: 140 lbs. / DROP: 30 in.	RESPONSIBLE PROFESSIONAL: Doug Martin / REG. NO.: XXXX

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION	REMARKS
0–1		1.4	7,10, 7,5	0	0-0.4' Dark brown SILT, little m-c sand, trace f-c gravel, dry, N/O 0.4-1.0' Orange brick debris 1.0-1.4' Light brown Silt and vf Sand, N/O, N/S	
2–3		0.8	4,4, 5,6	0	0-0.4' Fall in mix of brick debris and dark brown Silt, some f-gravel, and clinkers	
4–5		1.1	3,3, 3,5	0	0-0.2' Medium brown F-SAND, little silt and m-c sand, trace f-gravel and brick, wet, N/O 0.2-0.5' Medium brown SILT, little m-c sand, trace f-gravel, brick, dry 0.5-1.1' Dark brown SILT, some Clay, trace f-m sand and organics, moist, very slight odor	Refusal at 3.8'. Move boring 10' SW and auger to 4'. Collect Sample for BTEX, PAHs: HERK-SB-16A(4-6)
6–7		1.0	1,2, 3,3	207	0-0-1.0' Mottled brown/gray SILT, some Clay, slight petroleum (gasoline-like degraded) odor	Collect sample for BTEX, PAHs: HERK-SB-16A(6-8)
8–9		0.9	1,1, 2,3	147	0-0.6' Mottled brown/gray SILT, some Clay, little f-sand, very slight petroleum (gas-like) odor, moist, tight. 0.6-0.9' Dark brown/black f-m SAND, little c-sand, trace f-gravel, wet, sheen, petroleum (gas-like) odor, loose	
10–11		0.3	2,3, 2,4	0	0-0.3' Dark brown/black f-m SAND, some c-Sand and f-Gravel, loose, wet, sheen, very slight odor	
12–13		2.0	1,1, 3,5	0	0-0-2.0' Dark brown Silt and f-Sand, some m-Sand, little c-sand and f-gravel, very loose, wet, very slight odor, sheen bursts at the top	
14–15		1.3	3,5, 3,6	0	0-1.3' Dark brown f-m SAND, little silt, c-sand and f-c gravel, wet, N/O	
16						

PROJECT: Herkimer Former MGP Site
Herkimer, NY

TRC Customer-Focused Solutions

BORING NUMBER: SB-17

BORING LOCATION:

GROUND SURFACE ELEVATION AND DATUM:

DRILLING CONTRACTOR: Lyon Drilling

DATE STARTED: 8/9/05

DATE FINISHED: 8/9/05

DRILLING METHOD: Hollow-stem auger

TOTAL DEPTH (ft.): 16

MEASURING POINT: Ground Surface

DRILLING EQUIPMENT: Mobil Drill B-61

DEPTH TO WATER: FIRST: 8 COMPL.: NA

SAMPLING METHOD: 24" Split Spoon

LOGGED BY: Liam Bane

HAMMER WEIGHT: 140 lbs. DROP: 30 in.

RESPONSIBLE PROFESSIONAL: Doug Martin

REG. NO.: XXXX

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION	REMARKS
0–1		1	3,9, 11,11	0	0-0.9' Dark brown Silt with vf Sand, some f-c Gravel, trace m-c sand, brick fragments, coal fragments, N/O, N/S 0.9-1.0' Light brown Silt and vf Sand, dry N/O, N/S	
2–3		0.2	6,3, 1,1	0	0-0.2' Medium brown SILT, some f-c Sand and f-c Gravel, trace brickand clinkers, dry, N/O	
4–5		0.9	3,5, 6,6	0	0-0.9' Medium/dark brown SILT, little f-sand and f-gravel, trace m-c sand, c-gravel and ash (white)-like matter, slightly moist, N/O	
6–7		0.15	1,1, 2,4	0	0-1.5' Light brown Silt and vf Sand, little clay, very moist, N/O, N/S	
8–9		0.9	7,16, 9,25	0	0-0.2' Light/medium brown F-Sand and Silt, wet, N/O 0.2-0.6' Medium brown F-Sand and Silt, some f-c Gravel, trace m-c sand, wet, N/O, N/S 0.6-0.8' Medium brown F-SAND, little f-c gravel, wet, N/O, N/S 0.8-0.9' Tan F-C SAND, little f-gravel, wet, N/O, N/S	Collect sample for BTEX, PAHs: HERK-SB-17(8-10)
10–11		0.5	18,28 18,8	0	0-0.5' Light brown SILT, some f-Sand, c-Sand and angular Gravel, slightly cohesive, N/O, N/S	
12–13		1.1	8,9, 8,20	0	0-0.2' Fall in (light brown Silt and angular Gravel) 0.2-0.5' Light gray F-M SAND with dark spots of mica, wet, N/O, N/S 0.5-1.1' Medium brown F-SAND, little silt, trace m-sand, wet, N/O, N/S	
14–15		1.5	6,15, 16,16	0	0-0.5' Fall in (0-0.2' Light brown Silt and vf Sand, loose; 0.2-0.5' F-M SAND) 0.5-1.0' Medium brown F-SAND, trace silt and m-sand, wet, N/O, N/S 1.0-1.5' Medium brown SILT, some f-m Sand and angular Gravel	Collect sample for BTEX, PAHs HERK-SB-17(14-16)
16						

PROJECT: Herkimer Former MGP Site
Herkimer, NY

TRC Customer-Focused Solutions

BORING NUMBER: SB-18

BORING LOCATION:

GROUND SURFACE ELEVATION AND DATUM:

DRILLING CONTRACTOR: Lyon Drilling

DATE STARTED: 8/9/05

DATE FINISHED: 8/9/05

DRILLING METHOD: Hollow-stem auger

TOTAL DEPTH (ft.): 16

MEASURING POINT: Ground Surface

DRILLING EQUIPMENT: Mobil Drill B-61

DEPTH TO WATER: FIRST: 11 COMPL.: NA

SAMPLING METHOD: 24" Split Spoon

LOGGED BY: Liam Bane

HAMMER WEIGHT: 140 lbs. DROP: 30 in.

RESPONSIBLE PROFESSIONAL: Doug Martin

REG. NO. XXXX

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION	REMARKS
0–1		1.1	3,6, 11,5	0	0-0-1.1' Dark brown SILT, little c-sand and f-c gravel - angular, N/O	
2–3		0.6	4,4, 5,6	0	0-0.6' Dark brown SILT, little c-sand and f-gravel, brick fragments - ash like material with clinkers, dry, N/O	
4–5		0.2	3,2, 3,4	0	0-0.2' Large angular rock (fragmented), dark brown silt with vf sand, moist, N/O	
6–7		0	1,3, 2,3	0	No recovery	
8–9		1.6	1,2, 2,3	21.5	0-0.4' Medium brown SILT, some Clay, trace f-m sand, very moist, N/O 0.4-0.7' Medium brown SILT, some clay, trace f-m sand, very moist, slight petroleum (fuel oil-like) odor 0.7-1.6' Gray/brown SILT, some clay, slight petroleum odor, (fuel oil-like) odor	Collect sample for BTEX, PAHs HERK-SB-18(8-10)
10–11		1.4	1,1, 3,6	0	0-1.1' Medium brown SILT, little clay and f-sand, mottled gray, very moist, N/O 1.1-1.4' Medium brown/gray Silt and f-Sand, little c-sand and f-gravel, wet, N/O	
12–13		Trace	7,7, 7,6	0	Medium brown Silt and m-Sand, trace f-gravel, wet, N/O	
14–15		0.5	14,2, 1,1	0	0-0.5' Medium brwon F-SAND, little silt, N/O, N/S, wet, loose, (shoe cup intact)	Collect sample for BTEX, PAHs HERK-SB-18(14-16)
16						

PROJECT: Herkimer Former MGP Site
Herkimer, NY

TRC Customer-Focused Solutions

BORING NUMBER: SB-19

BORING LOCATION:	GROUND SURFACE ELEVATION AND DATUM:
DRILLING CONTRACTOR: Lyon Drilling	DATE STARTED: 8/9/05 / DATE FINISHED: 8/9/05
DRILLING METHOD: Hollow-stem auger	TOTAL DEPTH (ft.): 16 / MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Mobil Drill B-61	DEPTH TO WATER: FIRST: 11 / COMPL.: NA
SAMPLING METHOD: 24" Split Spoon	LOGGED BY: Liam Bane
HAMMER WEIGHT: 140 lbs. / DROP: 30 in.	RESPONSIBLE PROFESSIONAL: Doug Martin / REG. NO.: XXXX

DEPTH (feet)	Lithology	Recovery (feet)	Blow Counts	PID/FID (ppm)	DESCRIPTION	REMARKS
0–1		0.8	5,5, 4,5	0	0-0.8' Dark brown SILT, some f-Gravel, trace m-c sand and concrete fragments, coal fragments, dry, N/O	
2–3		0.8	6,5, 5,6	0	0-0.8' Medium brown SILT, ltiile f-c sand, trace f-gravel, brick, coal and ash-like material, N/O, slightly moist	
4–5		0.6	1,2, 2,3	0	0-0.6' Medium brown Silt and f-Sand, some f-Gravel, trace clinkers with ash-like material adhered, plug of silt, very moist in tip, N/O	
6–7		0.8	3,3, 4,4	0	0-0.3' Fall in (medium brown Silt and f-Sand, little gravel, trace brick) 0.3-0.8' Light brown/gray (mottled) SILT, some Clay, little vf sand, very moist, N/O	
8–9		1.9	1,1, 2,2	0	0-1.9' Medium brown/orange/gray brown (mottled) Silt and vf Sand, little clay, very moist, N/O, dense	Collect sample for BTEX, PAHs HERK-SB-19(8-10)
10–11		1.1	1,1, 5,3	0	0-0.2' Medium brown/orange brown/gray brown (mottled) dense Silt and vf Sand, little clay, very moist, N/O 0.2-1.1' Medium brown Silt and vf Sand, trace f-gravel, slightly loose, N/O, N/S, wet	
12–13		0.8	6,3, 4,4	0	0-0.5' Medium brown F-M SAND, little silt and f-c gravel, wet, N/O, N/S 0.5-0.8' Cobble and f-c Gravel, wet, N/O	Collect sample for BTEX, PAHs HERK-SB-19(12-14)
14–15		Soupy	2,3, 4,4	0	Soupy SILT with f-c Gravel, N/O, N/S	
16						

APPENDIX B
DATA USABILITY SUMMARY REPORT

Data Usability Summary Report

Site:	Former Manufactured Gas Plant - Herkimer, New York
Laboratory:	Chemtech – Mountainside, New Jersey
Case Nos.:	T4157
Reviewer:	Steve Miller/TRC Environmental Corporation
Date:	September 13, 2005

1.0 Samples Reviewed and Evaluation Summary

The samples listed in Table 1 were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by SW846 Method 8260, polynuclear aromatic hydrocarbons (PAHs) by SW846 Method 8270, and/or total petroleum hydrocarbon fingerprint analysis by SW846 Method 8015. Data validation was performed in accordance with the USEPA Region II data validation standard operating procedures, as applicable. Laboratory-specified recovery limits were used for evaluation criteria.

Items reviewed during the validation process include:

- Data Completeness
- Holding Times and Sample Preservation
- Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- Laboratory Control Sample (LCS) Results
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Internal Standards
- Field Duplicate Results
- Sample Quantitation and Reported Quantitation Limits
- Target Compound Identification

2.0 Potential Usability and Issues Overall Evaluation of Data

2.1 Volatile Samples

Qualification of the data as a result of sampling issues is not required. Qualifications applied to the data as a result of analytical issues are discussed below.

- All reported BTEX results reported for sample HERK-SB-17-1416 are likely biased low since analysis occurred fifteen days after sample collection.
- LCS analyses are not reported for each BTEX preparation batch. The adequacy of laboratory control of analytical systems is not documented for samples FB080905, HERK-SB-19-810, HERK-SB-18-810, HERK-SB-17-810, HERK-SB-15-1416, and HERK-SB-17-1416.

2.2 Semivolatile Samples

Qualification of the data as a result of sampling issues is not required. Qualifications applied to the data as a result of analytical issues are discussed below.

- All reported PAH results reported for sample HERK-SB-17-1416 are likely biased low since analysis occurred fifteen days after sample collection.
- Reported results for fluorene in sample HERK-SB-18-810; benzo(k)fluoranthene in sample HERK-SB-16A-46; and both fluorene and benzo(k)fluoranthene in sample HERK-SB-16A-68 are estimated based on high initial calibration percent relative standard deviation values.
- Recoveries of indeno(1,2,3-cd)pyrene in all samples are likely biased low based on recoveries in MS/MSD analyses of sample HERK-SB-16A-46.

2.3 Total Petroleum Hydrocarbon Fingerprint Sample

Qualification of data as a result of either sampling or analytical issues is not required.

3.0 Data Completeness

The data package is complete as defined under the requirements for the NYSDEC ASP Category B deliverables and a Category B deliverable is requested on chain-of custody form.

4.0 Holding Times and Sample Preservation

4.1 Volatile Samples

The Method 8260 analysis of sample HERK-SB-17-1416 occurred 15 days after sample collection. Fifteen days is outside the method-defined holding time of 14 days as well as outside the USEPA Region II holding time (defined in SOP No. HW-24) of 10 days. Since all BTEX analytes are reported as non-detected, results in sample HERK-SB-17-1416 are flagged with "UJ" qualifiers.

4.2 Semivolatile Samples

The extraction of sample HERK-SB-17-1416 for PAH analysis was performed 15 days after sample collection. Fifteen days is outside the method-defined holding time for extraction of fourteen days. Since all PAH compounds are reported as non-detected, results in sample HERK-SB-17-1416 are flagged with "UJ" qualifiers.

4.3 Total Petroleum Hydrocarbon Fingerprint Sample

All holding time and sample preservation criteria are met.

5.0 GC/MS Tunes

5.1 Volatile Samples

All criteria are met.

5.2 Semivolatile Samples

All criteria are met.

6.0 Initial and Continuing Calibrations

6.1 Volatile Samples

All criteria are met.

6.2 Semivolatile Samples

%RSD values for fluorene (21.3%) and benzo(k)fluoranthene (28.3%) are greater than 15% in the initial calibration performed on August 8, 2005 between 18:13 and 21:03. The reported positive concentration of fluorene in sample HERK-SB-18-810; benzo(k)fluoranthene in sample HERK-SB-16A-46; as well as both fluorene and benzo(k)fluoranthene in sample HERK-SB-16A-68 are flagged with "J" qualifiers.

6.3 Total Petroleum Hydrocarbon Sample

All criteria are met.

7.0 Blanks

7.1 Volatile Samples

All criteria are met for reported laboratory method blanks.

Toluene was detected (0.59 µg/L) in the field blank identified as FB080905. Since toluene was not detected in associated field samples, data interpretation issues are not indicated and data are not qualified.

7.2 Semivolatile Samples

All criteria are met.

7.3 Total Petroleum Hydrocarbon Fingerprint Sample

All criteria are met.

8.0 LCS Results

8.1 Volatile Samples

SW-846 Method 8000C, Revision 3, March 2003, Section 9.5 offers guidance regarding the frequency of analyzing laboratory control samples (LCSs). This guidance states that an LCS should be included with each preparation batch – with batch being defined as those samples, up to a total of twenty, processed as a unit (SW-846 Chapter 1, Revision 1, July 1992, Section 5.0). The industry standard for frequency of LCS analyses for Method 8260B is understood by this reviewer to be one per a maximum of twenty samples per 12-hour shift per instrument. This frequency was not met for reported BTEX analyses. That is, BTEX analyses of samples FB080905, HERK-SB-19-810, HERK-SB-18-810, HERK-SB-17-810, HERK-SB-15-1416, and HERK-SB-17-1416 are not associated with an LCS analyzed within their respective preparatory batches. As such, no statement can be made regarding the adequacy of laboratory control of analytical systems at the time the listed samples were analyzed. Data are not qualified based on this issue.

The summary form for the reported LCS analysis only includes recoveries for benzene and toluene; however, raw data includes results for all BTEX analytes. Therefore, during the course of this review, percent recoveries for these compounds were calculated. The resultant values are presented in Table 2. Per USEPA Region II guidelines (SOP HW-24, Revision 1, Section 4.4), recovery limits of 70-130% are used as acceptance criteria for those compounds not listed on the laboratory summary form. All recoveries are within limits and data qualification is not required.

8.2 Semivolatile Samples

All criteria are met.

9.0 Surrogate Recoveries

9.1 Volatile Samples

All surrogate recoveries associated with BTEX analyses are within laboratory-defined recovery limits. No data qualification is required.

9.2 Semivolatile Samples

All surrogate recoveries associated with PAH analyses are within laboratory-defined recovery limits. No data qualification is required.

9.3 Total Petroleum Hydrocarbon Fingerprint Sample

Surrogate concentration data are available for the method blank on the quantitation report. Surrogate recoveries for the field sample cannot be determined since neither a summary form nor a quantitation report are available for review. Data are not qualified based on this issue.

10.0 MS/MSD Results

10.1 Volatile Samples

Sample HERK-SB-15-810 was analyzed as an MS/MSD pair for BTEX analytes. The summary form for these analyses only reports recoveries for benzene and toluene; however, raw data includes results for all BTEX analytes. Therefore percent recoveries and relative percent difference (RPD) values for these analyses were calculated as part of this evaluation. The resultant values are presented in Table 3. Per USEPA Region II guidelines (SOP HW-24, Revision 1, Section 4.9), recovery limits of 70-130% are used as acceptance criteria for those compounds not listed on the laboratory summary form. Additionally, a control limit of 20% for RPD is also used. Using these acceptance criteria, all recoveries are within limits and data qualification is not required.

10.2 Semivolatile Samples

Sample HERK-SB-16A-46 was analyzed as an MS/MSD pair for PAH analytes. Recoveries of most spiked analytes are within laboratory-specified limits. Recoveries of indeno(1,2,3-cd)pyrene (31% and 31%) are, however, less than control criteria (42-124%). Since associated LCS recoveries are within limits, reported positive concentrations of indeno(1,2,3-cd)pyrene are flagged with "J" qualifiers and non-detected results are flagged with "UJ" qualifiers in all reported samples.

10.3 Total Petroleum Hydrocarbon Fingerprint Sample

The analysis of a matrix spike sample is indicated on an extraction log reported in the data package. No statement can be made regarding the analysis because data are reported for the MS analysis.

11.0 Internal Standards

11.1 Volatile Samples

All criteria are met.

11.2 Semivolatile Samples

The area of internal standard perylene-d_{12} is less than 50% of the area of the associated 12-hour standard in the MS analysis of sample HERK-SB-16A-46. Since the area of perylene-d_{12} is compliant in the un-spiked analysis as well as the MSD analysis of HERK-SB-16A-46, data are not qualified.

12.0 Field Duplicate Results

Samples HERK-SB-18A-810 was submitted as a field duplicate of sample HERK-SB-18-810. Target analytes are not detected in both analyses; therefore, precision estimates cannot be performed. Analytical results are presented in Table 4. Data are not qualified on the basis of these field duplicate results.

13.0 Sample Quantitation and Reported Quantitation Limits

13.1 Volatile Samples

Sample calculations were spot-checked; there are no errors noted.

Select target analyte results are reported below the lowest calibration standard level and quantitation limit. These results are qualified as estimated (J) by the laboratory.

Sample HERK-SB-18-810 was analyzed at a five-fold dilution. Target analytes are not detected in this sample.

13.2 Semivolatile Samples

Sample calculations were spot-checked; there are no errors noted.

Select target analytes results are reported below the lowest calibration standard level and quantitation limit. These results are qualified as estimated (J) by the laboratory.

13.3 Total Petroleum Hydrocarbon Fingerprint Sample

Concentrations are not reported for the fingerprint analysis.

14.0 Target Compound Identification

14.1 Volatile Samples

All criteria are met.

14.2 Semivolatile Samples

All criteria are met.

14.3 Total Petroleum Hydrocarbon Fingerprint Sample

All criteria are met.

TABLES

Table 1: Samples Reviewed

Matrix	Sample ID	Collection Date	Collection Time	Methods			Lab Sample ID
Soil	HERK-SB-16A-46	8/8/05	1215	SW8260	SW8270	NA	T4157-01
Soil	HERK-SB-16A-68	8/8/05	1230	SW8260	SW8270	SW8015	T4157-04
Soil	HERK-SB-14-810	8/8/05	1555	SW8260	SW8270	NA	T4157-05
Soil	HERK-SB-14-1416	8/8/05	1620	SW8260	SW8270	NA	T4157-06
Soil	HERK-SB-15-810	8/9/05	1041	SW8260	SW8270	NA	T4157-07
Soil	HERK-SB-15-1416	8/9/05	1050	SW8260	SW8270	NA	T4157-08
Soil	HERK-SB-17-810	8/9/05	1245	SW8260	SW8270	NA	T4157-09
Soil	HERK-SB-17-1416	8/9/05	1314	SW8260	SW8270	NA	T4157-10
Soil	HERK-SB-18-810	8/9/05	1524	SW8260	SW8270	NA	T4157-11
Soil	HERK-SB-18A-810	8/9/05	1545	SW8260	SW8270	NA	T4157-12
Soil	HERK-SB-18-1416	8/9/05	1546	SW8260	SW8270	NA	T4157-13
Soil	HERK-SB-19-810	8/9/05	1703	SW8260	SW8270	NA	T4157-14
Soil	HERK-SB-19-1214	8/9/05	1720	SW8260	SW8270	NA	T4157-15
Water	FB080905	8/9/05	1130	SW8260	SW8270	NA	T4157-16

SW8015 *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods*, (U.S. Environmental Protection Agency) Method 8015

SW8260 *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods*, (U.S. Environmental Protection Agency) Method 8260

SW8270 *Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods*, (U.S. Environmental Protection Agency) Method 8270

NA Not Analyzed

Table 2: Summary Report for the LCS Analysis Identified as BSK0816S2

Analyte	LCS		Spike
	Conc.	Recovery	Conc.
Benzene	19	95	20
Toluene	18	90	20
Ethylbenzene	17	85	20
m/p-Xylenes	36	90	40
o-Xylene	17	85	20

Conc. Concentration given in µg/kg
LCS Laboratory Control Sample

Table 3: Summary Report for MS/MSD Analyses of Sample HERK-SB-15-810

Analyte	MS Conc.	MS Recovery	MSD Conc.	MSD Recovery	Spike Conc.	RPD
Benzene	44	88	45	90	50	2
Toluene	41	82	42	84	50	2
Ethylbenzene	36	72	40	80	50	11
m/p-Xylenes	77	77	80	80	100	4
o-Xylene	39	78	42	84	50	7

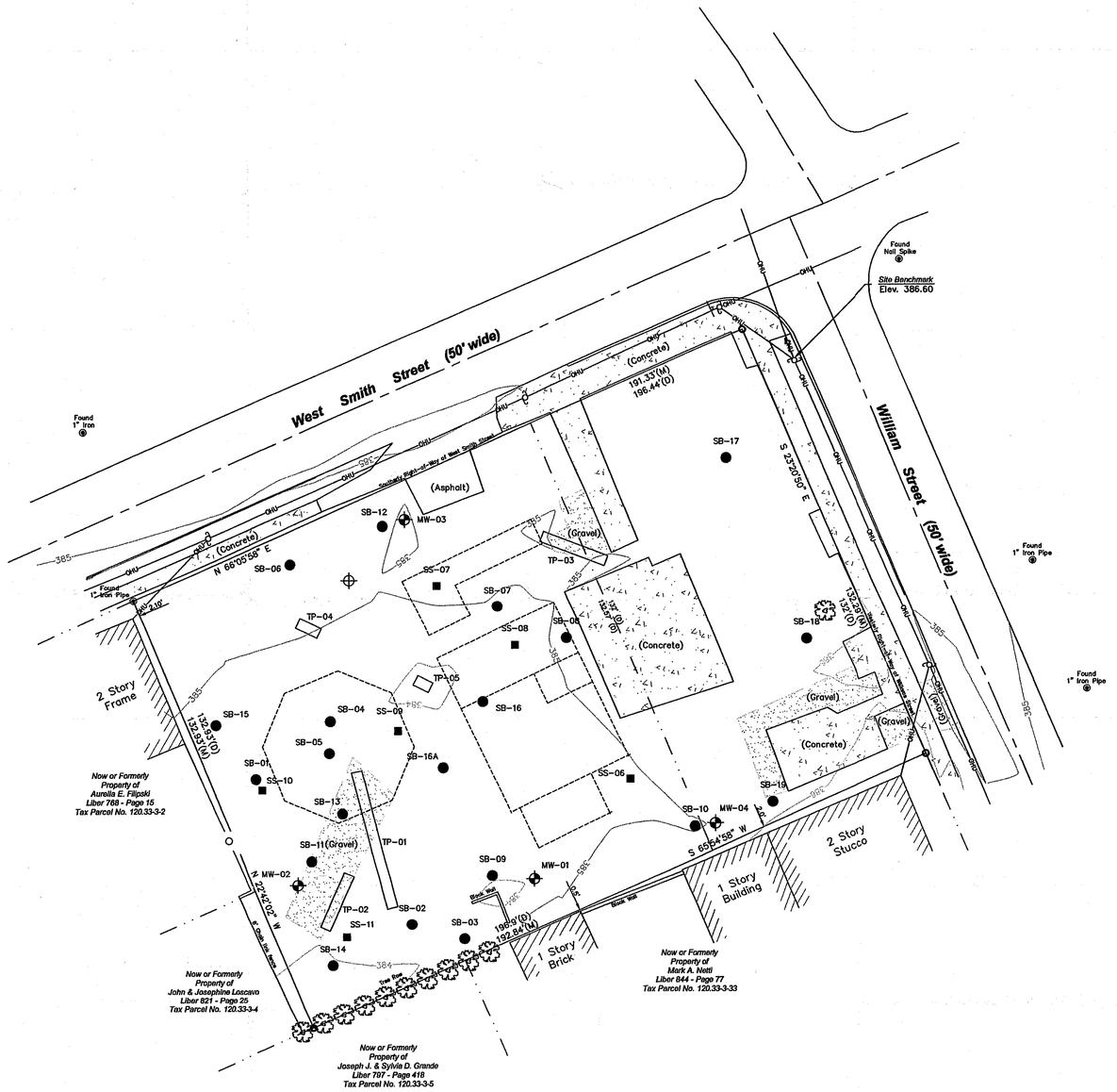
Conc. Concentration given in µg/kg
MS Matrix Spike
MSD Matrix Spike Duplicate
RPD Relative Percent Difference

Table 4: Calculated RPDs for Field Duplicate Analyses of Sample HERK-SB-18-810

Analytes	HERK-SB-18-810	HERK-SB-18A-810	Units	RPD
Benzene	ND	ND	µg/kg	NC
Toluene	ND	ND	µg/kg	NC
Ethylbenzene	ND	ND	µg/kg	NC
m/p-Xylenes	ND	ND	µg/kg	NC
o-Xylene	ND	ND	µg/kg	NC
Naphthalene	ND	ND	µg/kg	NC
Acenaphthylene	ND	ND	µg/kg	NC
Acenaphthene	ND	ND	µg/kg	NC
Fluorene	87	ND	µg/kg	NC
Phenanthrene	100	ND	µg/kg	NC
Anthracene	ND	ND	µg/kg	NC
Fluoranthene	ND	ND	µg/kg	NC
Pyrene	ND	ND	µg/kg	NC
Benzo(a)anthracene	ND	ND	µg/kg	NC
Chrysene	ND	ND	µg/kg	NC
Benzo(b)fluoranthene	ND	ND	µg/kg	NC
Benzo(k)fluoranthene	ND	ND	µg/kg	NC
Benzo(a)pyrene	ND	ND	µg/kg	NC
Indeno(1,2,3-cd)pyrene	ND	ND	µg/kg	NC
Dibenz(a,h)anthracene	ND	ND	µg/kg	NC
Benzo(g,h,i)perylene	ND	ND	µg/kg	NC

NC Not Calculated
ND Not Detected

FIGURES



Legend:

◉	Found Iron (Rebar, Pipe, etc.) as noted
○	Set 5/8" x 30" Reinforcement rod with Red Plastic Cap 1 1/4" in diameter marked "J. Thew, LS No. 050226", and set flush with the ground (Except as noted)
——·——·——	Parcel Line
	Utility Pole
—OHU—OHU—	Overhead Utility Lines
⊕ MW-03	Monitor Well
● SB-01	Soil Boring
■ SS-06	Surface Sample
⊕	Pre-Existing Monitoring Well
120.33-3-3	Tax Parcel Number
(M)	Measured Distance
(D)	Deeded Distance
⬡	Historic MGP Structure

General Notes:

1) North arrow as shown indicates Grid North referenced to NAD83 and projected on the New York State Plane Coordinate System (East Zone).

2) This survey is referenced horizontally to the North American Datum of 1983 (NAD83) and projected on the New York State Plane Coordinate System (East Zone) and vertically to the North American Vertical Datum of 1988 (NAVD88).

3) Base information taken from drawing by Thew Associates, PLLC Title: "Map Showing Existing Topography Former MGP Facility Niagara Mohawk Power Corporation Herkimer, New York" Dated: 7/18/2003, Project Number CK2727B-06-03.

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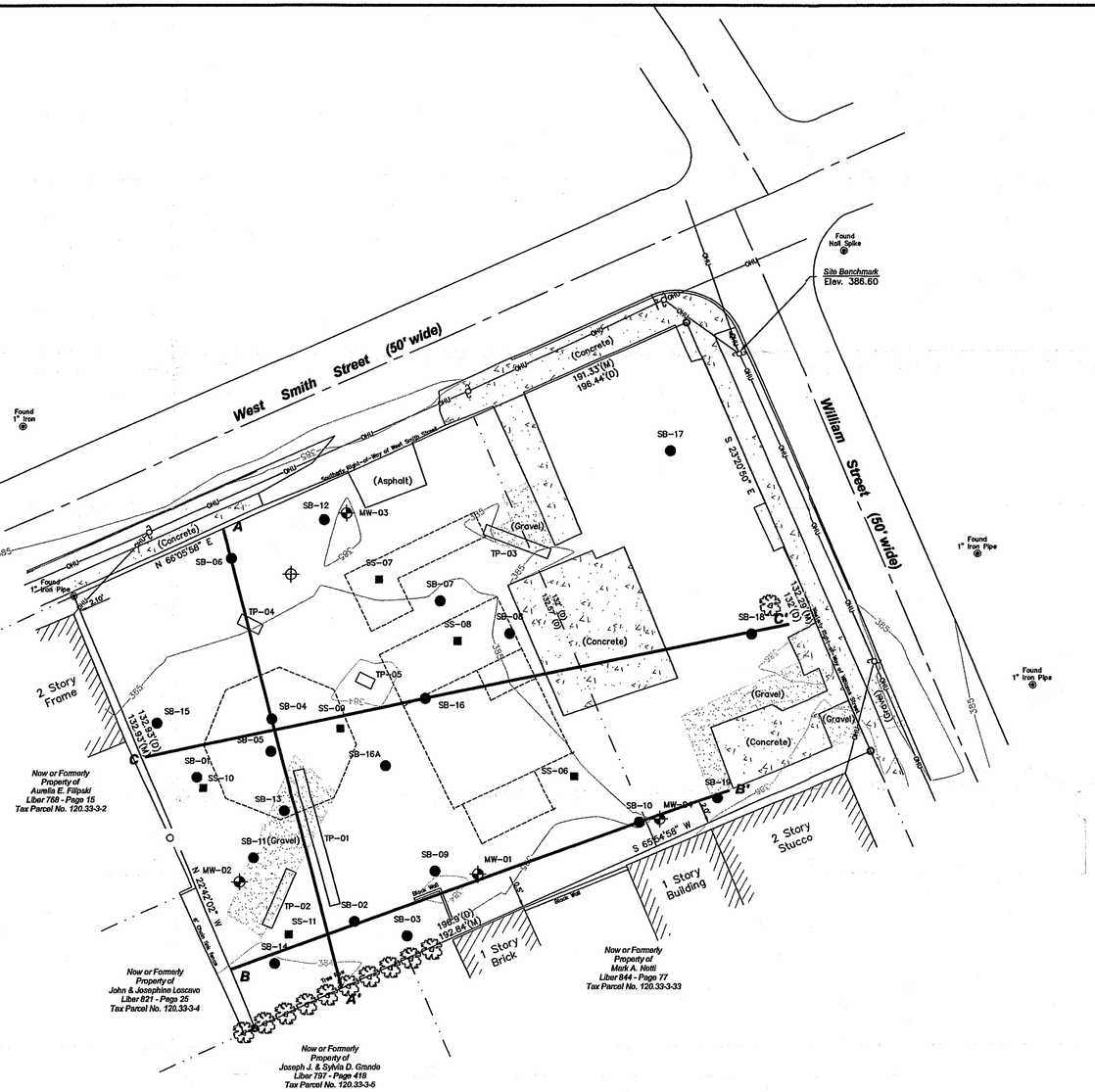
NATIONAL GRID
FORMER MGP SITE
HERKIMER, NEW YORK

FIGURE 1
SITE PLAN

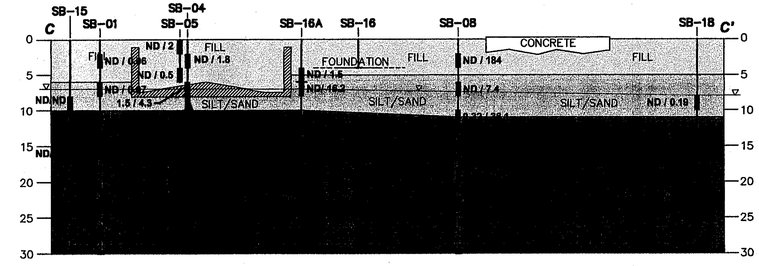
Date: 11/05 | **Project No.** 38278-1000-00012



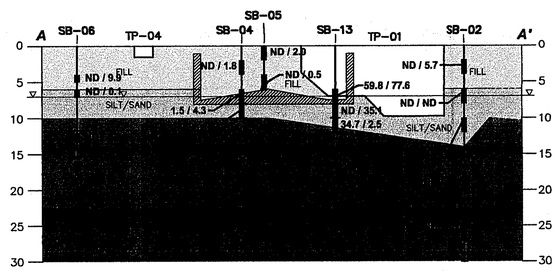
Legend:

- Found Iron (Rebar, Pipe, etc.) as noted
- Set 5/8" x 30" Reinforcement rod with Red Plastic Cap 1 1/4" in diameter marked "J. Thew, LS No. 050226", and set flush with the ground (Except as noted)
- Parcel Line
- Utility Pole
- Overhead Utility Lines
- MW-03 — Monitor Well
- SB-01 — Soil Boring
- SS-06 — Surface Sample
- Pre-Existing Monitoring Well
- 120.33-3-3 — Tax Parcel Number
- (M) — Measured Distance
- (D) — Deeded Distance
- Historic MGP Structure
- 3.0 / ND — Total PAH (mg/Kg) / Total BTEX (mg/Kg)

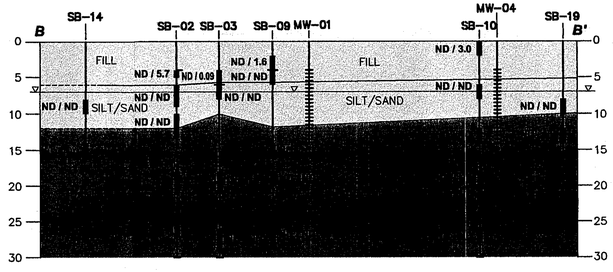
NY MAD 83



CROSS SECTION C-C'



CROSS SECTION A-A'



CROSS SECTION B-B'

General Notes:

1) North arrow as shown indicates Grid North referenced to NAD83 and projected on the New York State Plane Coordinate System (East Zone).
2) This survey is referenced horizontally to the North American Datum of 1983 (NAD83) and projected on the New York State Plane Coordinate System (East Zone) and vertically to the North American Vertical Datum of 1988 (NAVD88).
3) Base information taken from drawing by Thew Associates, PLLC Title: "Map Showing Existing Topography Former MGP Facility Niagara Mohawk Power Corporation Herkimer, New York" Dated: 7/18/2003, Project Number CK2727B-06-03.

0 20 40
HORIZ: 1=20

0 10 20
VERT: 1=10
REFERENCE TO GRADE

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FIGURE 2
GEOLOGIC CROSS-SECTIONS DEPICTING TOTAL BTEX AND TOTAL PAH CONCENTRATIONS IN SOILS (mg/Kg)

Date: 12/05 | Project No. 38278-1000-00012

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PLATE-2.dwg Layout:FIG-2 December 13, 2005-2:02PM Rolame

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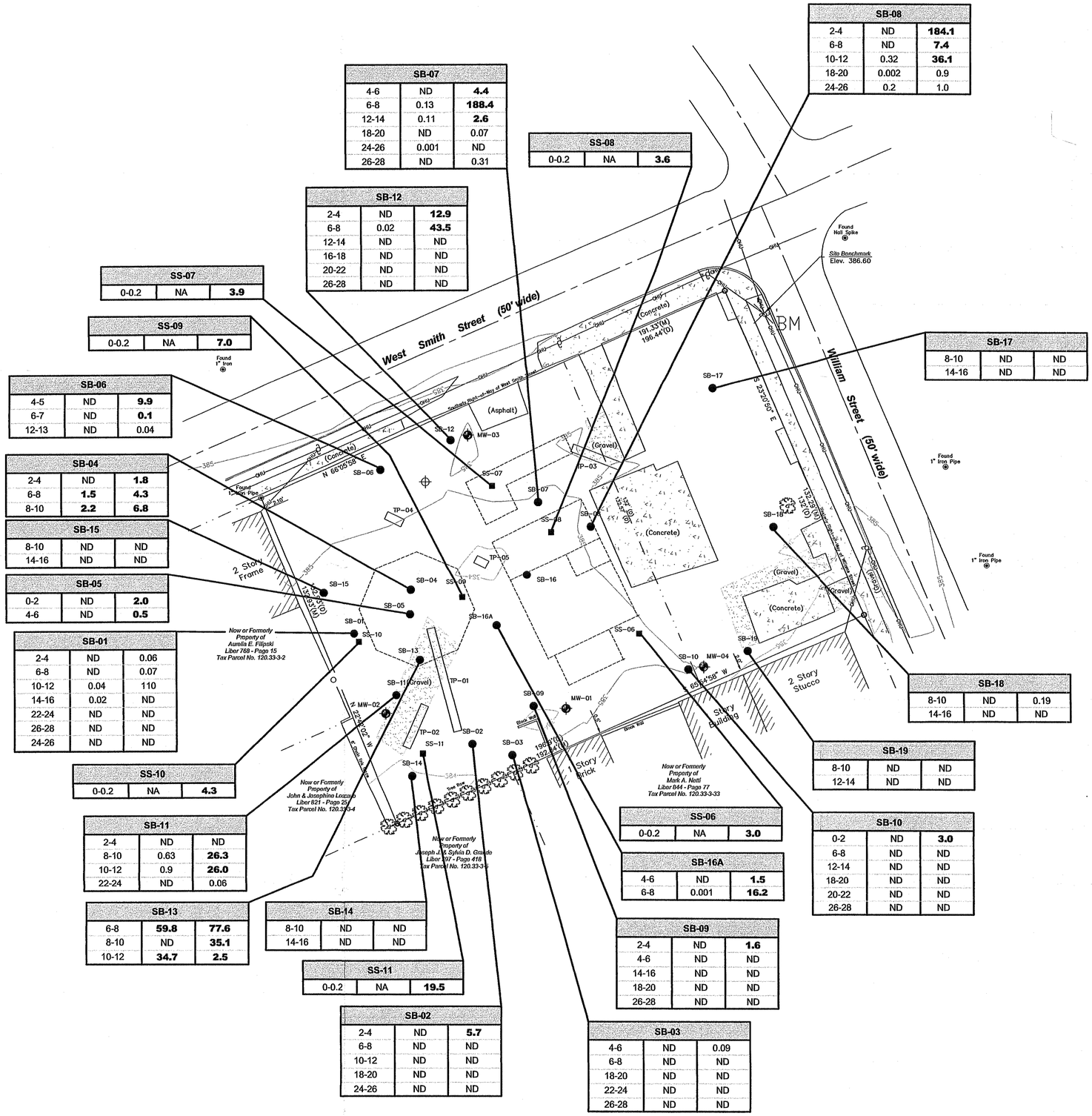

SB-07		
4-6	ND	**4.4**
6-8	0.13	**188.4**
12-14	0.11	**2.6**
18-20	ND	0.07
24-26	0.001	ND
26-28	ND	0.31

SB-08		
2-4	ND	**184.1**
6-8	ND	**7.4**
10-12	0.32	**36.1**
18-20	0.002	0.9
24-26	0.2	1.0

SS-08		
0-0.2	NA	**3.6**

SB-12		
2-4	ND	**12.9**
6-8	0.02	**43.5**
12-14	ND	ND
16-18	ND	ND
20-22	ND	ND
26-28	ND	ND

SS-07		
0-0.2	NA	**3.9**

SS-09		
0-0.2	NA	**7.0**

SB-06		
4-5	ND	**9.9**
6-7	ND	**0.1**
12-13	ND	0.04

SB-17		
8-10	ND	ND
14-16	ND	ND

SB-04		
2-4	ND	**1.8**
6-8	**1.5**	**4.3**
8-10	**2.2**	**6.8**

SB-15		
8-10	ND	ND
14-16	ND	ND

SB-05		
0-2	ND	**2.0**
4-6	ND	**0.5**

SB-01		
2-4	ND	0.06
6-8	ND	0.07
10-12	0.04	110
14-16	0.02	ND
22-24	ND	ND
26-28	ND	ND
24-26	ND	ND

SS-10		
0-0.2	NA	**4.3**

SB-18		
8-10	ND	0.19
14-16	ND	ND

SB-19		
8-10	ND	ND
12-14	ND	ND

SB-10		
0-2	ND	**3.0**
6-8	ND	ND
12-14	ND	ND
18-20	ND	ND
20-22	ND	ND
26-28	ND	ND

SS-06		
0-0.2	NA	**3.0**

SB-11		
2-4	ND	ND
8-10	0.63	**26.3**
10-12	0.9	**26.0**
22-24	ND	0.06

SB-16A		
4-6	ND	**1.5**
6-8	0.001	**16.2**

SB-13		
6-8	**59.8**	**77.6**
8-10	ND	**35.1**
10-12	**34.7**	**2.5**

SB-14		
8-10	ND	ND
14-16	ND	ND

SB-09		
2-4	ND	**1.6**
4-6	ND	ND
14-16	ND	ND
18-20	ND	ND
26-28	ND	ND

SS-11		
0-0.2	NA	**19.5**

SB-02		
2-4	ND	**5.7**
6-8	ND	ND
10-12	ND	ND
18-20	ND	ND
24-26	ND	ND

SB-03		
4-6	ND	0.09
6-8	ND	ND
18-20	ND	ND
22-24	ND	ND
26-28	ND	ND

NY NAD 83

Legend:

- Found Iron (Rebar, Pipe, etc.) as noted
- Set 5/8" x 30" Reinforcement rod with Red Plastic Cap 1 1/4" in diameter marked "J. Thew, LS No. 050226", and set flush with the ground (Except as noted)
- Parcel Line
- Utility Pole
- OHU — OHU — Overhead Utility Lines
- MW-03 — Monitor Well
- SB-01 — Soil Boring
- SS-06 — Surface Sample
- Pre-Existing Monitoring Well
- 120.33-3-3 — Tax Parcel Number
- (M) — Measured Distance
- (D) — Deeded Distance
- Historic MGP Structure

2-4	ND	0.06
6-8	ND	0.07
10-12	0.04	110
14-16	0.02	ND
22-24	ND	ND
26-28	ND	ND
24-26	ND	ND

Total PAH Concentration (mg/kg)
Total BTEX Concentration (mg/kg)
Depth Interval (feet bgs)

NA = Not Analyzed ND = Not Detected

BOLD Values indicate exceedance of one or more TAGM 4046 criterion

General Notes:

1) North arrow as shown indicates Grid North referenced to NAD83 and projected on the New York State Plane Coordinate System (East Zone).

2) This survey is referenced horizontally to the North American Datum of 1983 (NADB3) and projected on the New York State Plane Coordinate System (East Zone) and vertically to the North American Vertical Datum of 1988 (NAVD88).

3) Base information taken from drawing by Thew Associates, PLLC Title: "Map Showing Existing Topography Former MGP Facility Niagara Mohawk Power Corporation Herkimer, New York" Dated: 7/18/2003, Project Number CK2727B-06-03.

0 20 40
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FIGURE 3
TOTAL BTEX and PAH CONCENTRATIONS DETECTED IN SOILS (mg/Kg)

Date: 12/05 | Project No. 38278-1000-00012

J:\CAD\38278\1000\PLATE-2.dwg Layout:FIG-3-REV, 12/13/2005 1:37:27 PM

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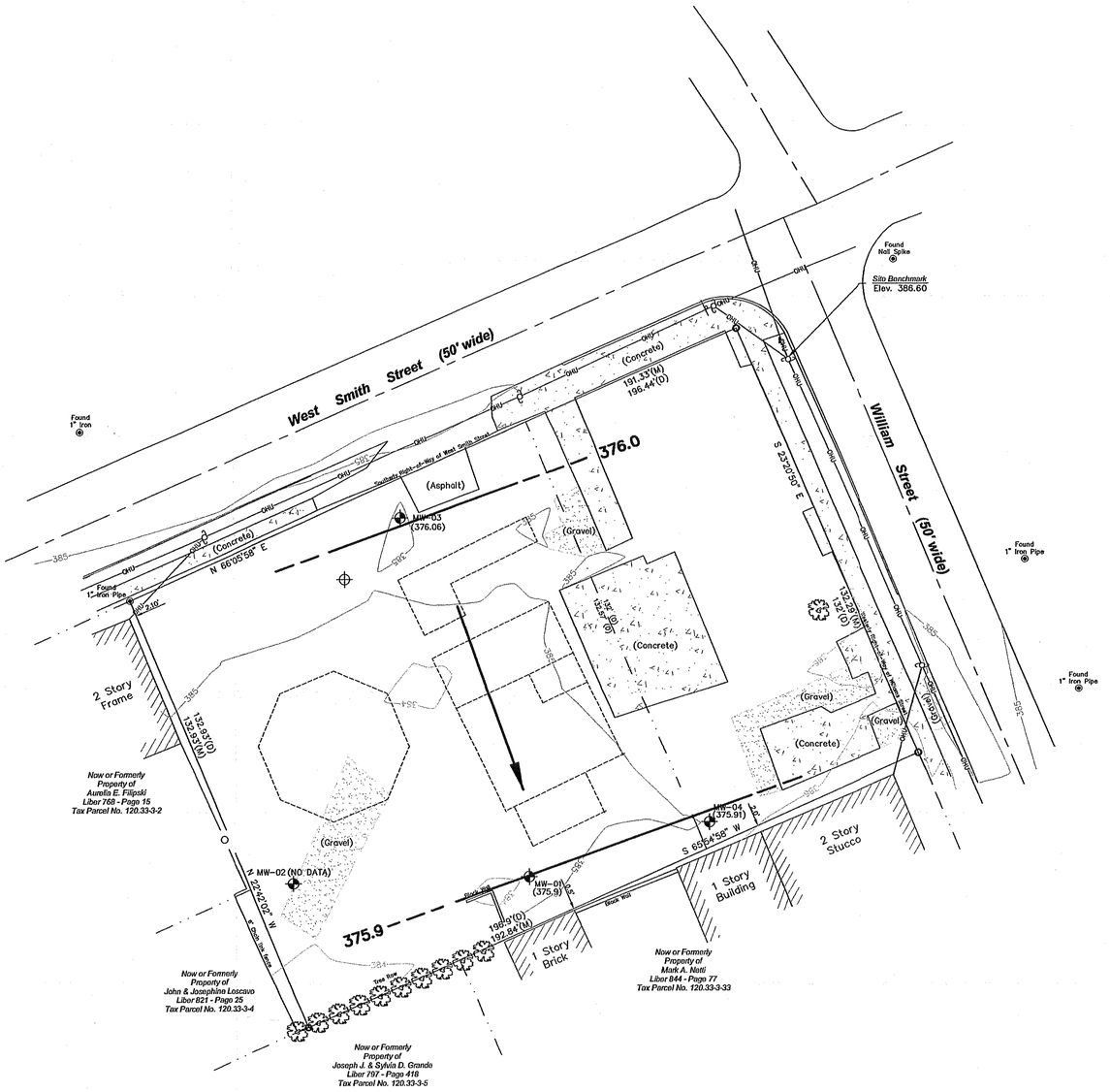
PLATE-2.dwg Layout:FIG-3-REV December 13, 2005-1:37PM Raloma



N
W E
S
NY NAD 83

Legend:

⊙	Found Iron (Rebar, Pipe, etc.) as noted
o	Set 5/8" x 30" Reinforcement rod with Red Plastic Cap 1 1/4" in diameter marked "J. Thew, LS No. 050226", and set flush with the ground (Except as noted)
——— · · ———	Parcel Line
	Utility Pole
—OHU———OHU—	Overhead Utility Lines
MW-03	Monitor Well
	Soil Boring
	Surface Sample
⊕	Pre-Existing Monitoring Well
120.33-3-3	Tax Parcel Number
(M)	Measured Distance
(D)	Deeded Distance
	Historic MGP Structure
←	GROUND WATER FLOW DIRECTION (INFERRED)
376.0	SHALLOW GROUND WATER ELEVATION

0 20 40
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FIGURE 4
SHALLOW GROUNDWATER CONTOURS AUGUST 9, 2005

Date: 12/05 | Project No. 38278-1000-00012

J:\CAD\38278\1000\PLATE-2.dwg Layout:FIG-4 December 13, 2005-2:09PM Raloma

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