REMEDIAL INVESTIGATION REPORT

FORMER ROBLIN STEEL SITE

Tonawanda, New York

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1 INTRODUCTION

This Remedial Investigation Report (RI) was prepared by Natural Resource Group, LLC. (NRG) for NRG Thermal, LLC and is designed to support NRG Thermal, LLC's potential acquisition and development of the Roblin Steel Site (the "Site") which is currently owned by River World, Inc. The Site is located at 4000 River Road in the Town of Tonawanda, Erie County, New York. The Site is currently listed in the New York State Department of Environmental Conservation (NYSDEC) Registry of Inactive Hazardous Waste Disposal Sites in New York State as a Class 2 Site. This report provides the data necessary for the NYSDEC to consider reclassifying the Site as a Class 4 site for industrial development. The location of the Site is shown on Figure 1.

1.1 Previous Site Studies

Numerous documents relating to the Site, or portions thereof, have been developed by private parties and state and federal agencies. These documents assess or summarize the Site setting, contaminant types and source(s), pathways of contaminant migration, potential human health risks, and engineering methods screened as remediation options. The following is a general overview of three of these reports. Figure 2 provides a general layout of the Site.

1. **Remedial Investigation/Feasibility Study Envirotek II Site (BBL, March 1999):** This document, hereinafter referred to as the "Envirotek RI/FS", defines "Envirotek" as a 2.5-acre portion of the Roblin Steel Site that was used as a chemical waste treatment, storage and disposal facility during the 1980's. Its operation resulted in contamination of underlying fill, soils and groundwater at the Site. This document details the Site history and setting, and includes the Site investigation technologies and objectives utilized to characterize these contaminated media;
2. **Record of Decision, Envirotek II Portion of the Roblin Steel Site Operable Unit Nos. 1, 2 and 3 Tonawanda, Erie County, New York, Site Number 9-15-056 (NYSDEC, March 2005):** This document, hereinafter referred to as the "ROD" presents the Envirotek site history, a summary of historic analytical results and the selected remedies for the three operable units at the Envirotek site; and
3. **Site Evaluation Report, Roblin Steel Site, Tonawanda, Erie County, New York, Site Number 9-15-056 (NYSDEC, December 2006):** This summary report, hereinafter referred to as the "SER", was developed by the lead state regulatory agency (NYSDEC) and provides a comprehensive overview of the Site, and it's history, summarizes work completed to date and recommends that three Site areas; the warehouse area, the boiler house area and the northwestern portion of the Site, be investigated prior to consideration of Site reclassification.

The results of sampling and analyses presented in Site documents completed to date conclude that fill, soil and groundwater at the Site are contaminated largely by predominately

low levels of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), cyanide and metals. Collectively, these contaminants are referred to as contaminants of concern (COCs). NYSDEC (SER, page 2) has concluded that the chlorinated VOCs are likely the result of the Envirotek operations, while the remaining compounds, including nonchlorinated VOCs, appear to be attributable to prior steel making at the Site.

1.2 Site Setting and Land Use

Portions of the Site have undergone extensive investigation. These studies have described a Site stratigraphy of fill overlying glaciolacustrine silty clays, alluvial sands, glacial till and shale. Fill material consists predominantly of slag and cinders. Fill deposits range in thickness to a maximum of approximately 19 feet. The glaciolacustrine unit is found between 14 and 19 feet below the ground surface (bgs); the alluvial sands between 15 and 28.5 feet bgs; the glacial till between 30 to 49.5 feet bgs; and the shale is found at approximately 42 to 54 feet bgs.

The NYSDEC (SER, page 15) notes that the glaciolacustrine deposits effectively prevent migration of surficial contaminants to depth at the Site and that all contaminated groundwater resides in highly heterogeneous fill materials as a shallow groundwater unit. The water table elevation in the shallow groundwater system ranges between 6 and 12 feet bgs. The shallow groundwater system flows generally east to west with discharge to the Niagara River. The mean hydraulic conductivity for the shallow groundwater system was reported in the 10^{-2} to 10^{-3} cm/sec range.

Current land use in the vicinity of the Site is industrial. The Site is bordered by River Road to the east and beyond by Tonawanda Coke and INS Auto, the Niagara River to the west, Tonawanda Coke and Marathon/Ashland Petroleum to the south, and the Lafarge ready mix plant and the River Road Superfund site to the north. The majority of the Site is unused. River World, Inc. operates a warehouse in the southeastern portion of the Site. Groundwater beneath the Site is not used for drinking water supply.

NRG completed a general assessment of the adjoining properties by reviewing the 1994 Record of Decision for the abutting River Road Superfund site (provided by the NYSDEC), the March 2005 ROD and March 1990 Administrative Order on Consent for the Envirotek II Portion of the Roblin Steel Site, and by having Environmental Data Resources, Inc. (EDR) complete an electronic file search on properties adjacent to the Site. Of note from this review were the following regarding the adjacent properties:

1. Tonawanda Coke: This property includes parcels on both sides of River Road. It has three landfills used for general landfilling of fly-ash, cinders, coal tar sludge, brick, rubble, demolition material, wood shavings impregnated with iron oxide, and coal tar sludge; a coal storage area; and manufacturing area. A Phase II Investigation has been completed by the responsible party. Analytical results indicate the presence of widespread contamination at the site. Site investigation and data collection/reporting events were noted between 1981 and 2005. Results indicated SVOCs were present in both sediment and water samples. Groundwater contaminants exceeded respective standards for iron, phenols, cyanide, benzene, phenol, naphthalene and benzo (a) pyrene. The report infers that Tonawanda Coke has the potential to impact the Niagara River; and
2. INS (noted as INS Scrap and INS Equipment Co.) is a former landfill that closed in 1986. INS Equipment Co. is also noted in the ROD as responsible for disposing of

foundry sands, paint skimmings and other wastes on the River Road Superfund site between 1964 and 1970. Historic aerial photography indicates solids disposal was taking place at the INS, Lafarge and Roblin Steel sites during this same time period.

1.3 Work Plan Objectives

In February 2007, NRG submitted a Site Investigation Work Plan (SIWP) to the NYSDEC that focused on three areas of concern (AOC) at the Site which the NYSDEC had identified as having data gaps: 1) the warehouse area (southeast portion of the Site), 2) the boiler house area (central portion of the Site) and 3) the former surface water pond (northwestern portion of the Site). The collected data would be combined with data collected during previous studies by others. The resulting data set would be utilized to determine if the Site can be reclassified or removed from the state registry. The SIWP was approved by the NYSDEC on February 14, 2007.

Three specific objectives were approved in the SIWP and later modified in the field based on field conditions and sampling results. The objectives, as modified, are summarized below:

1. Determine the presence and extent of COCs in surface soil/fill (less than 1 foot below ground surface) in proximity of the AOCs.

   This objective was met by collecting and analyzing four soil/fill samples, at depths at 2-inches (0.17 feet) bgs during the construction of new site monitoring wells and by collecting and analyzing 13 soil/fill samples, at depths between 0 to 1 foot below ground surface during the completion of test pits. The samples were submitted to Severn Trent Laboratories, Inc (STL) and analyzed for one or more of the following: Target Compound List (TCL) VOCs, TCL SVOCs, RCRA metals and cyanide. The location of these sampling points are depicted on Figures 2 and 3; and

2. Determine the presence and extent of COCs in subsurface soil/fill (greater than 1 foot below ground surface) in proximity of the AOCs.

   This objective was met by excavating pits to a depth of 10 feet, to the water table, or refusal, whichever was shallower, at select locations. Fourteen (14) test pits were excavated using an excavator so that the underlying stratigraphy could be sampled, field screened and described. Sixteen select subsurface samples were collected and analyzed for one or more of the following: TCL VOCs, TCL SVOCs, RCRA metals and cyanide. The location of these sampling points are depicted on Figure 2; and

3. Obtain samples of the Site groundwater quality.

   This objective was addressed by installing, developing, and sampling six new monitoring wells, two in each of the AOCs, and sampling nine existing monitoring wells at the Site. Three other existing wells were dry and therefore not sampled. Stabilization testing was conducted on the monitoring wells before sample collection. The samples were submitted to STL and analyzed for: TCL VOCs, TCL SVOCs, RCRA metals (total and dissolved) and cyanide. Table 1 provides a summary of the wells that were monitored for water quality and groundwater elevation. The locations of these monitoring wells are depicted on Figure 4.

Table 1
Groundwater Sampling/Elevation Monitoring Locations

Monitoring Well #	Status	Groundwater Quality	Groundwater Elevation
ENV-1	Existing	No	Yes
ENV-5	Existing	Yes	Yes
ENV-7	Existing	Yes	Yes
GW-1	Existing	Yes	Yes
GW-2	Existing	Yes	Yes
GW-3	Existing	Yes	Yes
GW-4	Existing	Yes	Yes
GW-5	Existing	Yes	Yes
GW-6	Existing	Yes	Yes
GW-7	Existing	Dry	Dry
NRG-1	New	Yes	Yes
NRG-2	New	Yes	Yes
NRG-3	New	Yes	Yes
NRG-4	New	Yes	Yes
NRG-5	New	Yes	Yes
NRG-6	New	Yes	Yes
NW-1	Existing (Repaired)	Yes	Yes
NW-2	Existing	Dry	Dry
NW-3	Existing (Repaired)	Dry	Dry
NW-5	Existing	No	Yes

2 SAMPLING AND ANALYSIS

A Sampling and Analysis Plan (SAP), containing information concerning the sampling protocol, techniques, data quality objectives, procedures, and equipment to conduct soil/fill and groundwater sampling at the Site was incorporated into the SIWP submitted to and approved by the NYSDEC. The following summarizes the field investigation completed by excavating test pits and collecting surface and subsurface soil/fill samples and collecting groundwater quality samples from Site wells. Any deviations from the SAP are noted in the appropriate section below.

The SAP recommended that:

1. A minimum of 10 test pits would be excavated at key locations near the three AOCs, as depicted on Figure 2. It was agreed that up to 20 more pits could be added based on the results of the initial 10 test pits. This would be a field decision based on observations by the NRG Project Manager and state representatives;
2. Up to 20 monitoring wells would be sampled at the Site. The well network would consist of existing Site wells, repaired wells and new wells, all finished in the shallow groundwater system (see Figure 4). However, wells could be added or deleted from the sampling program as more Site information became available; and
3. Surface water levels would be obtained from a staff gauge previously established in the Niagara River (see Figure 5).

The following summarizes the results of these sampling processes.

2.1 Test Pits

On February 27, 2007, NRG completed eight test pits (NRGTP-1 through NRGTP-8) in accordance with the SAP. Test pits NRGTP-4 through -8 were excavated to groundwater level within the fill. Test pit NRGTP-1 was excavated to 10 feet bgs and was terminated as it met the depth requirement of the investigation. Test pit NRGPT-2 met refusal in metallic slag at 8.5 feet bgs. Test pit NRGPT-3 encountered a 5.5 foot square chase constructed with fire brick that was located 4.5 feet bgs. All test pits encountered fill consisting of foundry sand, castings, fire brick, and slag. Slag was the predominant fill at NRGTP-2 while the remaining pits had a mixture of foundry sand, gravel sized slag, castings, and debris.

A photoionization detector (PID) was used to measure organic vapors present in select soil/fill samples. PID readings above "0" parts per million (ppm) were recorded at NRGTP-2, NRGTP-4 and NRGTP-6. At these test pit locations, the foundry sand at NRGTP-4 and NRGTP-6 had a maximum headspace concentration of 3.4 and 5.8 ppm, respectively. The metallic slag at NRGTP-2 had a headspace concentration of 12 ppm.

On February 28, 2007, NRG staff completed an additional six test pits. These included two of the test pit locations originally sited in the SAP (NRGTP-9 and NRGTP-10) and an additional four locations NYSDEC staff field-requested to supplement existing coverage at the Site. Two of the additional test pits were added just south of the Tonawanda Coke storm water retention pond (NRGTP-12 and NRGTP-13), one additional test pit (NRGTP-11) was added south of NRGTP-6 to further evaluate the 5.8 ppm PID reading noted at NRGTP-6, and one additional test pit (NRGTP-14) was added west of the boiler house.

Observations of the subsurface fill at NRGTP-9 and NRGTP-10 indicated the presence of gravel-sized slag and foundry sand with no elevated PID reading. Test pit NRGTP-11 encountered similar foundry sand as encountered at NRGTP-4 and NRGTP-6 and had a maximum PID reading of 7.5 ppm. The fill at NRGTP-12 and NRGTP-13 consisted of gravel-sized slag, foundry sand, and debris. PID readings at these two test pits were 0 ppm. There was no observable subsurface impact from the Tonawanda Coke storm water pond located in this area. NRGTP-14 encountered solidified slag (refusal) at a depth of 3.5 feet, and excavation was stopped at this depth. Table 2, summarizes all test pits and the test pit logs are attached in Appendix A.

Table 2
Test Pit Excavation Summary

Location	Depth Completed (feet below ground surface)	Depth to Groundwater (feet below ground surface)	Date	Ground Surface Elevation
NRGTP-1	10	Not Encountered	2/27/2007	579.3
NRGTP-2	8.5	Not Encountered	2/27/2007	578.2
NRGTP-3	9.5	Not Encountered	2/27/2007	580.3
NRGTP-4	9	8	2/27/2007	580.1
NRGTP-5	7.5	7.5	2/27/2007	576.8
NRGTP-6	9	8	2/27/2007	581.4
NRGTP-7	4	3	2/27/2007	574.8
NRGTP-8	8	7	2/27/2007	577.0
NRGTP-9	10	Not Encountered	2/28/2007	580.0
NRGTP-10	9	8.5	2/28/2007	578.0

Table 2 Test Pit Excavation Summary				
Location	**Depth Completed (feet below ground surface)**	**Depth to Groundwater (feet below ground surface)**	**Date**	**Ground Surface Elevation**
NRGTP-11	11	9	2/28/2007	580.4
NRGTP-12	7.5	7	2/28/2007	574.1
NRGTP-13	9	8.5	2/28/2007	577.2
NRGTP-14	3.5	Not Encountered	2/28/2007	580.0

Sixteen (16) soil samples were collected from the test pits for analytical analyses as described in Sections 2.2 and 2.3, below.

2.2 Shallow Soil Samples

NRG collected four shallow soil samples (NRG-1, NRG-4, NRG-5, and NRG-6) during the construction of new monitoring wells. These samples were collected at 2-inches (0.17 feet) bgs and supplement the 13 shallow soil/fill samples collected during test pit completion. Table 3 provides the sampling locations and the analytical analyses completed on each sample. The analytical results are provided in Appendix B. Appendix B, Table I, provides results of historical testing for shallow soils ("shallow soils" are defined in this report as less than one foot in depth), and Table II provides testing results for soils sampled in 2007. The shallow soil observed indicates the Site to be mostly covered with top soil (organic silty sand), asphalt, or gravel. The topsoil is typically less than 0.5 feet thick.

Table 3 Summary of Surface Soil/Fill Samples Collected from Test Pit and Monitoring Well Locations						
Location	**Depth (feet below ground surface)**	**Date Collected**	**Laboratory Analyses**			
			TCL VOCs	**TCL SVOCs**	**RCRA Metals**	**Cyanide**
NRG-1	0.17	3/7/2007			1	1
NRG-4	0.17	3/12/2007			1	1
NRG-5	0.17	3/9/2007			1	1
NRG-6	0.17	3/9/2007			1	1
NRGTP-4	0-1	2/27/2007	1	1	1	1
NRGTP-5	0-1	2/27/2007	1	1	1	1
NRGTP-7	0.5-1	2/27/2007			1	1
NRGTP-8	0.5-1	2/27/2007	1	1	1	1
NRGTP-9	0.5-1	2/28/2007	1	1		
NRGTP-10	0.5-1	2/28/2007			1	1
NRGTP-11	0.5	2/28/2007	1	1		
NRGTP-12	0.5	2/28/2007	1	1	1	1
NRGTP-13	0.5	2/28/2007	1	1	1	1
Total Number of Samples			7	7	11	11

2.3 Subsurface Soil/Fill Analysis

Fourteen test pits and six monitoring wells were completed during the investigation. All of the test pits encountered either fill and/or slag materials to their completion depth. At the new monitoring well locations, fill and slag materials were present between the land surface and a depth that varied between 10 and 17 feet bgs. Native soils, underlying the fill and/or slag at the wells sites, were found to the termination depth of the well borings. No rock was encountered at either the test pit or well sites. Though the fill materials were variable in composition and grain size, they consisted primarily of slag, sand, cinder, brick and wood. The underlying native soil consisted of glaciolacustrine deposits consisting primarily of organic silt with minor clay and fine-grained sand. These soil/fill deposits are consistent with the SER Site geology description which was based on historic work completed at the Site by others.

Subsurface soil/fill samples were collected for analytical analyses from the test pits and from the new monitoring well locations. Table 3a, below, summarizes where subsurface soil/fill samples were collected and the analyses completed on each soil sample. The analytical results are listed in Appendix B. Appendix B Table III provides historical soil analytical data for soil greater than 1 foot below ground surface and listed in the NYSDEC December 2006 report, and Appendix B Table IV provides analytical data for soil greater than 1-foot below ground surface and collected during this investigation.

Table 3a
Summary of SubsurfaceSoil/Fill Samples Collected from Test Pit and Monitoring Well Locations

Location	Depth (feet below ground surface)	Date Collected	Laboratory Analyses			
			TCL VOCs	TCL SVOCs	RCRA Metals	Cyanide
NRG-4	15-17	3/12/2007		1		
NRGTP-2	4	2/27/2007			1	1
NRGTP-4	8	2/27/2007	1	1	1	1
NRGTP-5	5	2/27/2007	1	1	1	1
NRGTP-6	6-8	2/27/2007	1	1	1	1
NRGTP-7	4	2/27/2007			1	1
NRGTP-8	4	2/27/2007	1	1	1	1
NRGTP-8	8	2/27/2007		1	1	1
NRGTP-9	4	2/28/2007			1	1
NRGTP-9	8	2/28/2007			1	1
NRGTP-10	4	2/28/2007			1	1
NRGTP-10	7	2/28/2007	1	1	1	1
NRGTP-11	4	2/28/2007	1	1		
NRGTP-11	8	2/28/2007	1	1	1	1
NRGTP-12	4	2/28/2007	1	1		
NRGTP-13	4	2/28/2007	1	1	1	1
Total Number of Samples			9	11	13	12

2.4 Monitoring Wells/Installations

Installation of groundwater monitoring wells was completed to characterize the groundwater quality conditions in the shallow aquifer and to evaluate the groundwater flow direction at the Site. The wells were strategically placed in the AOCs to supplement the existing monitoring well array. Each well location consisted of a single well with a ten-foot long screen that straddled the water table. Table 1, above, summarizes the wells that were installed and/or sampled at the Site during the investigation. The monitoring well locations are shown on Figure 3.

Well Elevation Survey

An elevation survey loop was completed using known benchmarks elevations and included all test pits and monitoring wells installed in accordance with the SIWP. A survey loop was also conducted to measure the elevation of the top of a steel channel located above the Niagara River. This river level monitoring location ("Staff") is shown on Figure 3. All measurements were recorded to the nearest one hundredth of one foot.

Installation

Six new wells were installed at the Site between March 7, 2007 and March 19, 2007. The monitoring wells were installed using 4¼-inch inner diameter (ID) hollow stem auger. Soil samples were collected continuously from the ground surface to a depth of 12 feet and at select locations thereafter. Table 4, below, provides a construction summary for the six wells and Appendix C provides lithologic and construction logs for the wells.

Table 4
New Monitoring Well Construction Summary

Location	Elevation, Feet MSL				Feet		Feet Below Ground Surface			
	Top of 2-inch Riser	Ground Surface Elev.	Ground Water Elev.	Top of Screen	Total Depth	Riser Stickup	Top of Sand Pack	Top of Seal	Top of Screen	Total Depth
NRG-1	579.31	576.96	568.65	569.44	19.88	2.35	5.00	3.70	7.53	17.53
NRG-2	577.51	575.13	566.53	568.39	19.13	2.38	5.00	3.50	6.75	16.75
NRG-3	584.55	581.96	573.71	578.84	15.71	2.59	2.83	2.00	3.12	13.12
NRG-4	582.31	579.75	573.26	573.56	18.75	2.56	4.00	3.00	6.19	16.19
NRG-5	580.26	577.73	570.03	570.81	19.45	2.53	5.00	4.00	6.92	16.92
NRG-6	580.51	578.38	569.21	570.20	20.31	2.13	6.00	4.50	8.18	18.18

On March 7, 2007, NRG-2 was installed near the Tonawanda Coke storm water retention pond to a depth of 16.75 feet bgs. Fill was encountered from 0 to 11.5 feet and the water table was at 8.6 feet. The fill consisted of a mixture of slag, clay, and silty sand. The underlying native soil varied from thinly bedded silt to sandy silt.

On March 8, 2007, NRG-1 was installed near the Tonawanda Coke storm water retention pond to a depth of 17.5 feet bgs. Fill was encountered from 0 to 11.0 feet and the water table was at 8.3 feet. The fill consisted of a mixture of slag, clay, and silty sand. The underlying native soil varied from thinly bedded silt to sandy silt

On March 9, 2007, NRG-5 and NRG-6 were installed to 16.9 and 18.2 ft bgs, respectively. Both wells are located west of the warehouse. Monitoring wells NRG-5 and NRG-6 encountered native soil, consisting of sandy silt, at 15.5 and 15 feet below the ground surface, respectively. The overlying fill material in this area consisted of gravel sized slag. The bottom of the wells intersected the native soils and the groundwater table occurred in the fill unit at 7.7 and 9.2 ft bgs, respectively.

On March 12, 2007, NRG-3 and NRG-4 were installed. Both wells are located west of the boiler house in an area referred to as the "Ore Pit". The Ore Pit has concrete walls to the south, north and west (and possibly east) of the well installation locations. Of note at these locations was the presence of approximately 0.8 feet of wood planking found during drilling between 12 to 14 feet bgs at NRG-3 and NRG-4. If this is the base of the Ore Pit, it occurs at approximately the same elevation as the surface of the Niagara River measured to be 565.8 ft above mean sea level (MSL) on March 8, 2007. The western edge of the Ore Pit is approximately 125 feet east of the Niagara River. Monitoring wells NRG-3 and NRG-4 are approximately 250 east of the Niagara River. Because the base of the Ore Pit and groundwater level are in close proximity, and due to the fine grained nature of the underlying sediment, it is difficult to determine if the groundwater level in the Ore Pit is in a "perched" condition above the underlying shallow groundwater system.

With prior approval from the NYSDEC, well NGG-4 was completed through the ore pit base and NRG-3 was completed just above the Ore Pit base. A native soil sample(sandy silt-lacustrine) was collected beneath the Ore Pit base at NRG-4 from 15 to 17 feet bgs for SVOC analysis. Based upon visual observations and field screening results, soil contaminants appear to be accumulating at the base of the Ore Pit suggesting separation between the contamination and groundwater in the Ore Pit from the underlying aquifer.

Well Development

SJB Empire developed monitoring wells NRG-1 through NRG-6 on March 12 and 13, 2007 using a submersible pump. All wells produced more than 2.5 gallons per minute (the pump's maximum pumping rate). The wells were developed for approximately two hours and produced clear water at the end of development. Well development logs are in Appendix C.

Groundwater Sampling

In accordance with the SAP, groundwater samples were collected from the monitoring well network, consisting of historic and recently constructed wells, on a one-time basis. This data was obtained to augment groundwater quality data collected by others during prior site-wide investigations. Table 5, below, provides well details, water level measurements and sampling details for the Site 2007 groundwater quality sampling event.

Table 5
Groundwater Level and Well Volume Data for 2007 Groundwater Quality Sampling Event

Location	Measuring Point Elevation (ft MSL)	Depth to Ground-water (feet)	Ground-water Elevation (ft MSL)	Ground-water Level Date /Time	Riser Pipe Stick-up (feet)	Total Depth (feet)	Depth of Water Column (feet)	Well Volume (gallons)	Ground-water Quality Sample Date
ENV-1	579.46	7.18	572.28	3/8/07 9:08	-0.56	24.17	16.99	Not Sampled	Water level only
ENV-5	581.48	11.27	570.21	3/8/07 10:56	2.21	24.11	12.84	2.05	3/8/2007
ENV-7	582.74	12.68	570.06	3/8/07 11:51	2.63	31.50	18.82	3.01	3/8/2007
GW-1[1]	575.92	6.25	569.67	3/8/07 9:29	-0.38	22.92	16.67	2.67	3/8/2007
GW-2	582	13.09	568.91	3/8/07 8:34	2.25	31.56	18.47	2.96	3/8/2007
GW-3	579	9.44	569.56	3/8/07 10:47	2.34	20.61	11.17	1.79	3/9/2007
GW-4	575.89	9.93	565.96	3/8/07 10:35	2.29	17.03	7.10	1.14	3/9/2007
GW-5*	571.92	5.68	566.24	3/8/07 10:28	1.58	13.61	7.93	1.27	3/9/2007
GW-6	574.08	6.64	567.44	3/8/07 10:21	2.44	17.64	11.00	1.76	3/9/2007
GW-7	581.96	dry	--	3/8/07 11:15	2.71	12.14	NA	NA	OK by NYSDEC Not to Sample/No Substitution
Niagara River	569.08	3.28	565.8	3/8/07 14:51	NA	NA	NA	NA	Water level only
Niagara River	569.08	3.88	565.21	3/9/07 14:55	NA	NA	NA	NA	Water level only
NRG-1	579.31	10.60	568.71	3/9/07 14:48	2.35	19.88	9.28	1.48	3/13/2007
NRG-2	577.51	10.90	566.61	3/9/07 14:52	2.38	19.13	8.23	1.32	3/13/2007
NRG-3	584.55	10.84	573.71	3/13/07 7:22	2.59	15.71	4.87	0.78	3/14/2007
NRG-4	582.31	9.05	573.26	3/13/07 7:15	2.56	18.75	9.70	1.55	3/14/2007
NRG-5	580.26	10.23	570.03	3/9/07 15:43	2.53	19.45	9.22	1.48	3/13/2007
NRG-6	580.51	11.30	569.21	3/9/07 14:30	2.13	20.31	9.01	1.44	3/13/2007
NW-1	578.92	9.37	569.55	3/8/07 9:41	-0.38	17.14	7.77	1.24	3/9/2007

Table 5
Groundwater Level and Well Volume Data for 2007 Groundwater Quality Sampling Event

Location	Measuring Point Elevation (ft MSL)	Depth to Ground-water (feet)	Ground-water Elevation (ft MSL)	Ground-water Level Date /Time	Riser Pipe Stick-up (feet)	Total Depth (feet)	Depth of Water Column (feet)	Well Volume (gallons)	Ground-water Quality Sample Date
NW-2	581.25	dry	--	3/8/07 10:11		12.00	NA	NA	OK by DEC Not to Sample/No Substitution
NW-3*	581.3	dry	--	3/8/07 10:15	1.75	11.88	NA	NA	OK by NYSDEC Not to Sample/No Substitution
NW-5	581.58	9.08	572.5	3/8/07 9:21	2.04	18.48	9.40	1.50	Water level Only

Key:

[1] Measuring Point Elevation Surveyed on 3/13/07
* Measuring point elevation updated after 3/2/07 upgrade

Figure 5 provides a groundwater elevation contour map for the data collected on the dates noted in Table 5, above. Generally, groundwater flow is similar to that depicted by others in previous reports for the Site. Flow is from east to west with a radiating pattern (east to northwest and east to southwest) from the central portion of the Site. Due to the low permeable base of the Ore Pit, infiltrating surface water appears to be perched in this area creating a localized mound. Figure 6 depicts the groundwater surface exclusive of groundwater elevations measured in the Ore Pit/perched area.

3 ANALYTICAL LABORATORY

NRG, on behalf of NRG Thermal, LLC, contracted with STL, a laboratory certified under the New York State Department of Health Environmental Laboratory Approval Program to conduct the chemical analysis for the project described above. A copy of STL's New York laboratory certification and Laboratory Quality Manual were provided in the SIWP. STL's data packages were prepared in accordance with USEPA Contract Laboratory Program (CLP) Level IV deliverable protocols. Analytical data were validated by NRG in accordance with applicable USEPA SW-846 analytical method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999), and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) criteria. NRG's data validation packages are attached in Appendix E. NRG's data validation shows the data to be sufficient for its intended use. Each data package was reviewed and determined to be complete and in compliance with the project SAP.

Method blanks and calibration blanks were analyzed with each analytical batch. Trip blanks were included with all shipments of samples for analysis of volatile organics with the exception of SDG220-978. Methylene chloride and acetone were present in the method blanks and trip blanks indicating potential laboratory contamination.

4 ANALYTICAL RESULTS

Data collection during the sampling program included groundwater and soil/fill quality sampling at excavation pits and monitoring wells. This data was compared with applicable chemistry data collected during prior Site investigations to determine whether appreciable change has occurred over time and how the current data compares to relevant standards.

4.1 Groundwater

Attachment 1 provides the STL analytical reports and Appendix D provides summary tables for both historic and recent groundwater testing including flagged results for all data.

Appendix D, Table I tabulates groundwater quality data provided by the NYSDEC in the SER for reported contaminants found historically at the Site. Simple descriptive statistics were added to review the frequency for which these analytes were detected, their maximum concentration and their standard deviation (provided that more than one value was historically reported). Appendix D, Table II presents data collected by NRG in 2007, similarly formatted

Table 6, below, compares statistics derived from the historic unflagged groundwater quality data to the unflagged groundwater quality data collected in 2007. For review, chlorinated VOCs, considered to be associated with releases at the Envirotek Superfund site, are shown in red (200). Those cells where the 2007 maximum and/or average concentration reported exceeded the historic data are bolded (**200**). Note that the referenced Environmental Protection Agency (EPA) methods used for analysis refer only to the 2007 analysis. Those groundwater quality values, either historic or recent, that exceed New York State Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations are highlighted with yellow (200). The most stringent TOGS 1.1.1 standard was used when evaluating this data.

Table 6
Groundwater Quality Statistical Analysis with TOGS 1.1.1 Standard

Analytes	Historic Statistical Analysis			2007 Statistical Analysis			Standard
	Number of Detected Results	Maximum Detected Conc.	Average of Detected Conc.	Number of Detected Results	Maximum Detected Conc.	Average of Detected Conc.	TOGS 1.1.1
VOCs (ug/L) by EPA Method 8260B							
1,1-Dichloroethane	1.0	71.0	71.0	1.0	5.4	5.4	5.0
1,1-Dichloroethene	2.0	93.0	53.5				0.7
1,2-Dichloroethane	1.0	20.0	20.0				0.6
1,2-Dichloroethene	2.0	85.0	70.5				5.0*
cis-1,2-Dichloroethene				3.0	**320.0**	**146.0**	5.0
Benzene				1.0	**6.4**	**6.4**	1.0
Chloroethane	1.0	52.0	52.0				5.0
Ethylbenzene	2.0	170.0	97.0				5.0
Methylene Chloride	1.0	180.0	180.0				5.0
Trichloroethene	1.0	46.0	46.0				5.0
Vinyl chloride				1.0	**250.0**	**250.0**	0.3
Xylenes, Total	1.0	67.0	67.0	1.0	10.0	10.0	5.0

Table 6 Groundwater Quality Statistical Analysis with TOGS 1.1.1 Standard							
Analytes	**Historic Statistical Analysis**			**2007 Statistical Analysis**			**Standard**
	Number of Detected Results	**Maximum Detected Conc.**	**Average of Detected Conc.**	**Number of Detected Results**	**Maximum Detected Conc.**	**Average of Detected Conc.**	**TOGS 1.1.1**
SVOCs (ug/L) by EPA Method 8270C							
Naphthalene				1	**19.0**	**19.0**	10.0
2-Methylphenol				2.0	**330.0**	**194.0**	NS
4-Methylphenol				1.0	**65.0**	**65.0**	NS
2,4-Dimethylphenol				2.0	**300.0**	**179.0**	50.0
Dissolved Metals (ug/L) by EPA Method 6010 B and 7174A (Hg only)							
Aluminum	16.0	52,900.0	15,870.3				NS
Arsenic	9.0	42.1	20.9				25.0
Barium	16.0	510.0	196.6	15.0	150.0	51.9	1,000.0
Beryllium	11.0	4.2	1.4				3.0
Cadmium	8.0	4.6	2.6				5.0
Chromium	16.0	165.0	35.8	1.0	44.0	**44.0**	50.0
Cobalt	15.0	35.0	11.7				NS
Copper	15.0	159.0	54.3				200.0
Iron	16.0	94,500.0	32,813.0				300.0
Lead	15.0	276.0	67.1	3.0	51.0	21.3	25.0
Magnesium	16.0	48,800.0	21,916.3				35,000.0
Manganese	16.0	4,690.0	1,374.5				300.0
Mercury	8.0	0.3	0.1				0.7
Nickel	16.0	109.0	33.5				100.0
Potassium	16.0	39,400.0	16,828.8				NS
Selenium	14.0	60.5	16.6				10.0
Sodium	16.0	52,400.0	21,448.1				20,000.0
Thallium	1.0	8.9	8.9				0.5
Vanadium	16.0	91.9	36.4				NS
Zinc	16.0	3,000.0	341.6				2,000.0
Inorganics (ug/L) by EPA Method 3012B							
Total Cyanide	2.0	19.6	17.0	2.0	**170**	**74.1**	200.0

Key:
*Assumes all 1,2-Dichloroethene is cis-1,2-Dichloroethene
NA: Standard not specified

Review of Table 6 indicates that nine VOCs were found historically at maximum values that exceeded the most restrictive TOGS value. Five VOCs were found in 2007 at maximum levels above the TOGS value. Only two of these VOCs were nonchlorinated and assumed to be not associated with Envirotek (benzene and xylenes). SVOCs were not detected in historical groundwater samples. In 2007, two SVOCs were found with maximum values above their respective TOGS values.

Referring only to those metals analyzed in 2007 (RCRA metals: arsenic, barium cadmium, chromium, lead, mercury, selenium, and silver), all the maximum concentrations of metals in 2007 were lower than maximum levels found historically. It is important to note from this data set that historically the metal results are reported as “total” metals implying these are unfiltered water samples. The NRG 2007 data represents “dissolved” metals which are

filtered. Table 7 compares total and dissolved metal concentrations for the 2007 groundwater quality data.

Table 7
Total and Dissolved Metals Comparison
Samples Collected 3/8/2007 - 3/14/2007

Location	ENV -5	ENV –7	GW -1	GW -2	GW -3	GW -4	GW -5	GW -6	NRG -1	NRG -2	NRG -3	NRG -4	NRG -5	NRG-6	NW -1
Parameter	Concentration ug/L														
Dissolved Arsenic	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	4.3 J	5.9 J	25 U	25 U	25 U	25 U
Total Arsenic	25 U	25 U	25 U	25 U	17 J	5.1 J	49 J	4.5 J	5.3 J	11 J	10 J	9.3 J	5.7 J	5.8 J	25 U
Dissolved Cadmium	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.98 J	1.7 J	10 U	10 U	10 U	10 U	10 U
Total Cadmium	0.85 J	2.3 J	1.6 J	10 U	5.8 J	0.9 7 J	2.2 J	10 U	0.94 J	2.4 J	8.5 J	6.6 J	3.5 J	10 U	4 J
Dissolved Chromium	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	3.1 J	5.7 J	10 U	10 U	10 U	**44**	10 U
Total Chromium	4.4 J	**10**	2.1 J	10 U	**67**	**15**	6.7 J	**11**	**13**	**39**	**42**	**44**	**31**	**180**	**12**
Dissolved Lead	5 U	5 U	5 U	5 U	5 U	4.2 J	3.8 J	5 U	**7.2**	**51**	5 UJ	5 UJ	5 U	**5.7**	3 J
Total Lead	**11**	**28**	**18**	5 U	**88**	**40**	**40**	**9.7**	**22**	**130**	350 J	210 J	**41**	**17**	**8.2**
Dissolved Selenium	30 UJ	30 UJ	30 UJ	30 UJ	16 J	30 U	30 U	30 U	30 U	30 U	30 UJ	30 UJ	30 U	30 U	30 U
Total Selenium	30 UJ	30 UJ	30 UJ	30 UJ	18 J	30 U	30 U	30 U	30 U	30 U	30 UJ	30 UJ	30 U	30 U	30 U
Dissolved Silver	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Total Silver	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.4 J	0.97 J	5 U	5 U	5 U
Dissolved Barium	**27**	**21**	**120**	**70**	**39**	**37**	**150**	**24**	**47**	**59**	**17**	**14**	**32**	**67**	**54**
Total Barium	**72**	**130**	**190**	**200**	**390**	**110**	**440**	**40**	**100**	**260**	**73**	**120**	**130**	**240**	**140**
Dissolved Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U N	0.2 U N	0.2 U	0.2 U	0.2 U N	0.2 U N	0.2 U
Total Mercury	0.12 J	0.08 7 J	0.2 U	0.2 U	0.2 U	0.2 U	0.21 U	0.2 U	0.22 UJ	0.83 UJ	0.15 J	0.2 U	0.16 UJ	0.093 U J	0.2 U

Key:

U: Analyzed for but not detected

J: Indicates an Estimated Value
N: Indicates Matrix Spike Duplicate recovery outside control limits.

Table 7, provides an overview of the metals analysis for wells sampled in 2007 by NRG. Both the total and dissolved metals results are provided. For review, all unflagged data is

bolded (**200**), and only the unflagged data is discussed in this document. The data indicates that neither dissolved or total arsenic, cadmium, selenium, mercury, or silver were reported during this sampling event. Chromium was reported present as a total metal in eleven wells but present only in one well as a dissolved component. Data for the well with both total and dissolved chromium hits indicates a 76% reduction in concentration when accounting for only the dissolved component compared to the total concentration. Twelve of the 15 wells sampled reported total lead while three had a dissolved component. For the three wells with both total and dissolved lead concentrations, the reduction in concentration due to filtering was between 33% to 39% (an average of 35%). All 15 wells sampled reported total and dissolved barium components. For these wells, the reduction in barium concentration due to filtering was between 10% to 63% with an average of 25%. Overall, filtering the groundwater samples resulted in an average reduction of 26% for all metals in all samples.

Of the eight RCRA metals tested in 2007, historically four had maximum total concentrations that exceeded the TOGS standard: arsenic, lead and selenium. To better understand the implications of the historical total metals data, we assume that the average reduction in concentration found between the total and dissolved concentrations in 2007 can be applied to these metals where only historic total concentrations are reported to obtain an estimated dissolved value for these metals. Applying the average 26% reduction to the historic maximum and average total metals values reported, only the lead (72 mg/L) and the selenium (16 mg/L) maximum values exceeded the TOGS standard. These elevated concentrations were found at wells NW-4 (lead and selenium) and GW-4 (lead). Well GW-4 is near the Tonawanda Coke stormwater discharge pond. This area was resampled for dissolved metals in 2007. That groundwater quality sample did not have elevated lead or selenium. NW-4 is located southwest of Envirotek. It was not resampled in 2007. However, the wells GW-5 and GW-6, located downgradient of NW-4 were sampled in 2007. Neither of these wells indicated elevated lead or selenium levels.

In general, the comparison of the total to dissolved concentrations reported in 2007 indicates that a significant portion of the total metals reported in groundwater is likely associated with suspended solids that are removed by filtering the sample. This suspended component obtained during sampling procedures is generally not mobile in the porous media that comprises the groundwater system at the Site. The historic total metals reported are not considered a significant concern to potential receptors, unless unfiltered water is consumed. The maximum cyanide levels found in 2007 were higher than those found historically; however, they did not exceed the TOGS standard.

To evaluate contaminant loading across the Site, three tables (8 to 11) were compiled from the statistics calculated on the 2007 data. Table 8, below, provides the chemistry for the two upgradient wells tested by NRG (GW-1 and GW-2). The results indicate that two contaminants, benzene and barium, are likely migrating onto the Site via groundwater flow.

Table 8
Groundwater Quality Summary for Upgradient Monitoring Well
(GW-1 and GW-2)
March 2007

Analyte	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentrations
VOCs (ug/L) by EPA Method 8260B			
Acetone	0		
Benzene	1	6.4	6.4
Bromodichloromethane	0		

Table 8 Groundwater Quality Summary for Upgradient Monitoring Well (GW-1 and GW-2) March 2007			
Analyte	**Number of Detected Results**	**Maximum Detected Concentration**	**Average of Detected Concentrations**
Carbon disulfide	0		
Chloroform	0		
Dibromochloromethane	0		
1,1-Dichloroethane	0		
1,2-Dichloroethane	0		
Ethylbenzene	0		
Methylene Chloride	0		
4-Methyl-2-pentanone (MIBK)	0		
Tetrachloroethene	0		
Toluene	0		
Vinyl chloride	0		
Xylenes, Total	0		
cis-1,2-Dichloroethene	0		
Trans-1,2-Dichloroethene	0		
SVOCs (ug/L) by EPA Method 8270C			
Acenaphthene	0		
Bis(2-ethylhexyl) phthalate	0		
Carbazole	0		
Dibenzofuran	0		
Fluorene	0		
2-Methylnaphthalene	0		
Naphthalene	0		
Phenanthrene	0		
2-Methylphenol	0		
4-Methylphenol	0		
2,4-Dimethylphenol	0		
Phenol	0		
Dissolved Metals (ug/L) by EPA Method 6010 B and 7174A (Hg only)			
Arsenic	0		
Cadmium	0		
Chromium	0		
Lead	0		
Selenium	0		
Barium	2	120	95
Inorganics (ug/L) by EPA Method 3012B			
Total Cyanide	0		

Table 9, below, summarizes sampling results for all Site wells except the upgradient wells (GW-1 and GW-2) and most downgradient wells located near the river (NRG-1, NRG-2, GW-4, GW-5, GW-6). This data represents the area of the Site where the majority of Site steel making operations (and Envirotek disposal) took place and, therefore, contaminant loading would be highest.

Table 9
Groundwater Quality Summary For Central Portion of the Site
(ENV-5, ENV-7, GW-3, NRG-3, NRG-4, NRG-5, NRG-6 and NW-1)
March 2007

Analyte	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentrations
VOCs (ug/L) by EPA Method 8260B			
Acetone	0		
Benzene	0		
Bromodichloromethane	0		
Carbon disulfide	0		
Chloroform	0		
Dibromochloromethane	0		
1,1-Dichloroethane	1	5.4	5.4
1,2-Dichloroethane	0		
Ethylbenzene	0		
Methylene Chloride	0		
4-Methyl-2-pentanone (MIBK)	0		
Tetrachloroethene	0		
Toluene	0		
Vinyl chloride	1	250	250.0
Xylenes, Total	1	10	10.0
cis-1,2-Dichloroethene	3	320	146.0
trans-1,2-Dichloroethene	0		
SVOCs (ug/L) by EPA Method 8270C			
Acenaphthene	0		
Bis(2-ethylhexyl) phthalate	0		
Carbazole	0		
Dibenzofuran	0		
Fluorene	0		
2-Methylnaphthalene	0		
Naphthalene	1	19	19.0
Phenanthrene	0		
2-Methylphenol	2	330	194.0
4-Methylphenol	1	65	65.0
2,4-Dimethylphenol	2	300	179.0
Phenol	0		
Dissolved Metals (ug/L) by EPA Method 6010 B and 7174A (Hg only)			
Arsenic	0		
Cadmium	0		
Chromium	1	44	44.0
Lead	1	5.7	5.7
Selenium	0		
Barium	8	67	33.9
Inorganics (ug/L) by EPA Method 3012B			
Total Cyanide	0		

The data presented in Table 9 indicates that four VOCs, four SVOCs and three metals were found in the central area of the Site. Of these, three of the VOCs are chlorinated and

considered to be associated with the Envirotek facility. The nonchlorinated VOC, xylenes, has been found at a higher concentration historically at the Site (see Table 6, above).

The metal barium, reported present in the central portion of the Site, was also found in an upgradient well at a higher concentration, inferring off-site influence by this contaminant. The remaining metals, chromium and lead, have been historically found at the Site (see Table 6, above); however, they were reported previously at higher concentrations.

Table 10, compiles the statistics for the wells located farthest downgradient at the Site to determine if the contaminants found upgradient of these locations are potentially migrating off Site.

Table 10
Groundwater Quality Summary For Site Downgradient Wells
(GW-4, GW-5, GW-6, NRG-1 and NRG-2)
March 2007

Analyte	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentrations
VOCs (ug/L) by EPA Method 8260B			
Acetone	0		
Benzene	0		
Bromodichloromethane	0		
Carbon disulfide	0		
Chloroform	0		
Dibromochloromethane	0		
1,1-Dichloroethane	0		
1,2-Dichloroethane	0		
Ethylbenzene	0		
Methylene Chloride	0		
4-Methyl-2-pentanone (MIBK)	0		
Tetrachloroethene	0		
Toluene	0		
Vinyl chloride	0		
Xylenes, Total	0		
cis-1,2-Dichloroethene	0		
trans-1,2-Dichloroethene	0		
SVOCs (ug/L) by EPA Method 8270C			
Acenaphthene	0		
Bis(2-ethylhexyl) phthalate	0		
Carbazole	0		
Dibenzofuran	0		
Fluorene	0		
2-Methylnaphthalene	0		
Naphthalene	0		
Phenanthrene	0		
2-Methylphenol	0		
4-Methylphenol	0		
2,4-Dimethylphenol	0		
Phenol	0		
Dissolved Metals (ug/L) by EPA Method 6010 B and 7174A (Hg only)			

Table 10 Groundwater Quality Summary For Site Downgradient Wells (GW-4, GW-5, GW-6, NRG-1 and NRG-2) March 2007			
Analyte	**Number of Detected Results**	**Maximum Detected Concentration**	**Average of Detected Concentrations**
Arsenic	0		
Cadmium	0		
Chromium	0		
Lead	2	51	29.1
Selenium	0		
Barium	5	150	63.4
Inorganics (ug/L) by EPA Method 3012B			
Total Cyanide	2	170	96.5

Table 10 indicates that no VOCs, no SVOC, and two metals and cyanide were found in the downgradient wells. Of the two metals found, barium and lead, barium has been found in upgradient wells at the Site. Its presence may be associated in part with off-Site loading; however, it has also been found in Site soil/fill samples. The barium levels detected in the downgradient wells were below their TOGS standard.

The lead level reported exceeded its TOGS standard of 25 ug/L. Monitoring well NRG-2 had the highest concentration found at 51 ug/L. This well point is directly downgradient of the Tonawanda Coke storm water discharge pond. NRG-2 is also the location of the elevated cyanide level (170 ug/L) reported for the Site during this sampling event. However, the cyanide concentration did not exceed its related TOGS standard.

4.1.1 Groundwater Results Discussion

Comparison of the 2007 data to the historic groundwater analytical results in Table 6 infers the groundwater at the Site, contaminated by the Envirotek facility, is improving over time. This data indicates that historically at least seven chlorinated VOCs were associated with Envirotek exceeded the TOGS, while the recent sampling indicates this has been reduced to three. Table 9 of the ROD presents a graphical presentation of the time concentration trend for two wells utilized to monitor the Envirotek plume. This figure indicates that in the early 1990's total VOC concentrations in the Site well ENV-4 were over 1,800 mg/L and by 2004 they had dropped to 8 mg/L. Though, the same well network was not sampled by NRG in 2007, the collective VOC concentration for all Site wells sampled indicates maximum levels in the 0.5 mg/L range, well below the concentrations reported historically. When plotted (see Figure 7), the summed chlorinated VOCs present a dispersed "plume" emanating from the Envirotek area of the Site, likely resulting from the radiating groundwater flow pattern. There is no indication that chlorinated VOCs are leaving the Site via a groundwater pathway and therefore these contaminants are not a concern to off-site receptors.

The historic data evaluated by NRG for nonchlorinated VOCs indicates a sum maximum VOC concentration of 337 ug/L for all Site wells. The 2007 data indicates the concentration of these nonchlorinated compounds has dropped to 16.4 ug/L in the wells sampled by NRG. Of the 16.4 ug/L detected, 6.4 ug/L were found in an upgradient well GW-1 and likely the contaminant (benzene) results from an off-Site source of contamination. The remaining 10 ug/L (xylenes) were found in well NRG-3 which is finished in perched groundwater above the

base of the Ore Pit area. The presence of nonchlorinated VOCs at the Site in 2007 does not reflect a wide-spread contamination issue and there is no indication that these VOCs are leaving the Site via a groundwater pathway and, therefore, these contaminants are not a concern to off-site receptors.

Historic data indicates no unflagged SVOCs were reported for the Site. A number of the wells which were sampled historically were also sampled by NRG in 2007. The 2007 results also indicate no unflagged SVOCs were present at these wells. The unflagged SVOCs reported by NRG in 2007 for Site wells were from two of the wells installed in the Ore Pit area. Groundwater in this area was not assessed in prior investigations. The highest SVOC concentrations were found in the well (NRG-3) finished in perched groundwater above the base of the Ore Pit. Elevated SVOCs were not reported in monitoring wells GW-4 and GW-5 located downgradient of the Ore Pit. SVOCs found in Site groundwater appears to be a localized occurrence and does not indicate a significant threat to human or ecologic groundwater receptors.

Regarding the inorganic compounds found in groundwater at the Site, only the lead concentration exceeded it's respective TOGS standard in the data collected during 2007. As previously noted, that exceedence occurred at NRG-2 located downgradient of the Tonawanda Coke storm water discharge pond. The lead concentration was non-detect in the monitoring well (NRG-1) located upgradient of the storm water discharge pond. This pond may be a point source for groundwater contaminant loading at the Site by processes not associated with Site operations. It is NRG's understanding that Tonawanda Coke has had an easement to operate this pond on the Site and also has an operating permit from the State of New York.

As discussed above, historic elevated metal concentrations are in part due to the results being reported as "total" metal concentrations. NRG's analysis of these historic results indicates that when recalculated as "dissolved" metals, the contaminants found that exceed the TOGS was limited and they do not indicate a significant threat to potential groundwater receptors as groundwater will not be consumed or accessed by operations at the Site

Figure 8 summarizes the groundwater quality analytical results provided in the SER and reported by NRG that exceed their respective TOGS standard. Plotting of these results supports the above discussion in that:

1. VOCs found at the Site are predominantly chlorinated, are at their highest concentration immediately downgradient (westerly) of the Envirotek portion of the Site and are not present in monitoring wells adjacent to the Niagara River. These analytes pose a limited risk to on-Site receptors only in areas above the Envirotek plume. They do not present a risk for off-site receptors;

2. SVOCs are present in groundwater only at the Ore Pit area of the Site. They were not reported as present in monitoring wells adjacent to the Niagara River. The SVOCs present represent a very localized impact posing a limited risk to on-Site receptors and they do not pose a risk to off-site receptors; and

3. Various total metals are found across the Site. Dissolved metals were only detected at one location in 2007, near the Tonawanda Coke stormwater discharge pond. Historic metal results were biased by reporting "total" metals. A comparison of the historic total metal concentrations to 2007 dissolved metals data, suggest that historically dissolved metals that exceeded the evaluated standards were limited in

their geographic location at the Site. Sampling of these areas in 2007 did not indicate these metals exceeded the applied standards. Therefore, metals do not appear to be a risk to receptors on or off Site.

4.1.2 Summary of Potential Response Actions - Groundwater

The groundwater data compiled in this report supports the conclusion that the VOC, SVOC and metal concentrations do not pose a significant risk to either on or off-Site receptors with the exception that chlorinated VOCs may pose a risk to Site workers in the area overlying the Envirotek groundwater plume. The ROD, Sections 5 through 8, review the remediation goals, remedy alternatives considered, and the selected remedy for addressing these groundwater contaminants. No additional actions are necessary for the Roblin Steel Site other than assuring that the requirements of the ROD Section 8 remedy for Envirotek OU3: Groundwater are met during Site redevelopment and operation.

4.2 Soil/Fill

Appendix B provides four summary tables with both historic and recent soils testing including flagged results and detection limits for all data. Appendix B, Table I, tabulates soil quality data provided by the NYSDEC for reported contaminants found historically at the Site in surficial soil/fill (defined as occurring within the top 1 foot of the soil/fill column). Table II tabulates 2007 investigation soil quality data for surficial soil/fill. Table III tabulates data provided by the NYSDEC for reported contaminants found historically at the Site in subsurface soil/fill (defined as soils occurring below 1 foot below the ground surface). Table IV tabulates 2007 investigation soil quality data for subsurface soil/fills. Statistics were added to review the frequency for which these analytes were detected, their maximum concentration and their standard deviation (provided that more than one value was historically reported).

4.2.1 Surficial Soil/Fill

Table 11, below, compares the historic unflagged data to unflagged data collected in 2007 for the surficial soil/fill. Only those analytes detected historically or in 2007 are presented. Those cells where the 2007 maximum and/or average concentration reported exceeded the historic data are highlighted in yellow (200).

Table 11
Historical vs Recent Surface Soil Quality Summary Results (<1.0 feet)

Analyte	Historic Soil Sampling Results – Statistics			2007 Soil Sampling Results- Statistics		
	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.
SVOCs (ug/kg)						
2-Methylnaphthalene				1	440.0	440.0
4-Methylphenol				1	530.0	530.0
Acenaphthene	1	620.0	620.0			

Table 11
Historical vs Recent Surface Soil Quality Summary Results (<1.0 feet)

Analyte	Historic Soil Sampling Results – Statistics			2007 Soil Sampling Results- Statistics		
	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.
Anthracene	1	800.0	800.0	1	420.0	420.0
Benzo (a) anthracene	1	1500.0	1500.0	2	2100.0	1370.0
Benzo (a) pyrene	1	1600.0	1600.0	3	2900.0	1450.0
Benzo (b) fluoranthene	1	1600.0	1600.0	4	3900.0	1525.0
Benzo (g,h,i) perylene	2	2500.0	1525.0	3	2400.0	1596.7
Benzo (k) fluoranthene	1	1600.0	1600.0	2	1400.0	920.0
Chrysene	2	1800.0	1110.0	3	2300.0	1153.3
Dibenz (a,h) anthracene	1	790.0	790.0	1	630.0	630.0
Fluoranthene	2	1900.0	1220.0	3	1900.0	1046.7
Indeno (1,2,3-cd) pyrene	2	2200.0	1315.0	3	2500.0	1490.0
Naphthalene				1	480.0	480.0
Phenanthrene	1	730.0	730.0	3	550.0	453.3
Pyrene	3	2600.0	1186.7	2	1500.0	1125.0
Metals (mg/kg)						
Aluminum	4	19100.0	14622.5			
Antimony	2	37.0	29.5			
Arsenic	6	24.0	11.8	1	11	11
Barium	10	473.0	215.7	4	332	205
Beryllium	4	2.4	1.4			
Cadmium	9	21.0	5.6	2	10.0	9.1
Calcium	4	85800.0	67950.0			
Chromium	11	200.0	86.5	4	335.0	199.0
Cobalt	9	54.0	12.8			
Copper	6	193.0	91.0			
Lead	8	1210.0	319.2	10	899.0	280.6
Magnesium	3	957.0	645.7			
Manganese	4	6120.0	2765.0			
Mercury	4	1.0	0.3	5	0..75	0.3
Nickel	12	152.0	47.6			
Potassium	4	1470.0	1063.3			
Sodium	4	1020.0	566.5			
Thallium	1	0.6	0.6			
Vanadium	4	69.4	29.8			
Zinc	4	551	314.5			
Inorganics (mg/kg)						
Cyanide				3	340.00.0	173.00.0

Referring to Appendix B, 25 surficial soil samples have been collected at the Site; 12 historically and 13 in 2007. Table 11 indicates that no VOCs, 16 SVOCs, 20 metals and cyanide have been reported in Site surficial soil/fill over time. Of those compounds analyzed in 2007, five of the SVOCs had higher maximum concentrations than the 16 historically reported. A reduced suite of metals was analyzed in 2007 (RCRA metals arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) compared to the list of metals historically; therefore, only the metals analyzed in 2007 will be considered in the subsequent discussion. Comparing the six metals analyzed/detected in 2007 to those found historically, only one had a higher maximum concentration. All analytes found in 2007 had been reported previously. No maximum concentration for a given analyte, reported in 2007, had a concentration outside the same order of magnitude than that found historically. This data implies that there is no appreciable difference in the historic versus recent data sets. It also indicates that there are no other COCs present at elevated levels that have not previously been reported in the surficial soil.

Table 12, below, compares maximum detected concentrations of historic and 2007 unflagged data for Site surficial soils to the 6 NYCRR Part 375 Soil Clean-up Objectives for Restricted Development as a Residential Land Use. Those cells where either the historic or the 2007 maximum concentration exceeded the regulatory standard are highlighted in yellow (200).

Table 12
Historical and Recent Surface Soil (<1.0 feet) Quality Summary Compared to Restricted Residential Soil Quality Standards

	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
Analyte	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards-Restricted Residential Land Use	Number of Detected Results	Maximum Detected Conc.
SVOCs (ug/kg)					
2-Methylnaphthalene			NS	1	440.0
4-Methylphenol			NS	1	530.0
Acenaphthene	1	620.0	100,000a		
Anthracene	1	800.0	100,000a	1	420.0
Benzo (a) anthracene	1	1,500.0	1,000f	2	2,100.0
Benzo (a) pyrene	1	1,600.0	1,000f	3	2,900.0
Benzo (b) fluoranthene	1	1,600.0	1,000f	4	3,900.0
Benzo (g,h,i) perylene	2	2,500.0	100,000a	3	2,400.0

Table 12
Historical and Recent Surface Soil (<1.0 feet) Quality Summary Compared to Restricted Residential Soil Quality Standards

Analyte	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards-Restricted Residential Land Use	Number of Detected Results	Maximum Detected Conc.
Benzo (k) fluoranthene	1	1,600.0	3,900	2	1,400.0
Chrysene	2	1,800.0	3,900	3	2,300.0
Dibenz (a,h) anthracene	1	790.0	330e	1	630.0
Fluoranthene	2	1,900.0	NS	3	1,900.0
Indeno (1,2,3-cd) pyrene	2	2,200.0	500f	3	2,500.0
Naphthalene			100,000a	1	480.0
Phenanthrene	1	730.0	100,000a	3	550.0
Pyrene	3	2,600.0	100,000a	2	1,500.0
Metals (mg/kg)					
Aluminum	4	19,100.0	NS		
Antimony	2	37.0	NS		
Arsenic	6	24.0	16f	1	11
Barium	10	473.0	400	4	332
Beryllium	4	2.4	72		
Cadmium	9	21.0	4.3	2	10.0
Calcium	4	85,800.0	NS		
Chromium	11	200.0	NS	4	335.0
Cobalt	9	54.0	NS		
Copper	6	193.0	270		
Lead	8	1,210.0	400	10	899.0
Magnesium	3	957.0	NS		
Manganese	4	6,120.0	2,000f		
Mercury	4	1.0	0.81j	5	0.75
Nickel	12		310		

Table 12
Historical and Recent Surface Soil (<1.0 feet) Quality Summary Compared to Restricted Residential Soil Quality Standards

Analyte	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards-Restricted Residential Land Use	Number of Detected Results	Maximum Detected Conc.
		152.0			
Potassium	4	1,470.0	NS		
Sodium	4	1,020.0	NS		
Thallium	1	0.6	NS		
Vanadium	4	69.4	NS		
Zinc	4	551.0	10,000 d		
Inorganics (mg/kg)					
Cyanide			27h	3	34.0

Footnotes

d: The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.
e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CROL is used as the SCO value
f: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.
h: The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.
J: This SCO is the lower of the values for mercury (elemental) or mercury (inorganic slats). See TSD Table 5.6-1.
NS: Not specified

Table 12 indicates that five SVOCs exceed the Part 375 Restricted Use Soil Cleanup Standard for Restricted Residential Use. Of these compounds, only one was more than an order of magnitude greater than its respective standard (Indeno (1,2,3-cd) pyrene). Appendix B Table I indicates that all the historic SVOCs above the referenced standards were found at either SS-104 or SS-105. Figure 9 shows those locations as west of the Site's warehouse or in the vicinity of Envirotek's cleanup, respectively. Appendix B Table II indicates that the majority of the SVOCs reported in 2007 as above the standard were found in two Site locations: NRGTP-5 and NRGTP-11. NRGTP-5 is located north of the Site Boiler House abutting a concrete pit containing three inches of oil, and NRGTP-11 is in the Ore Pit area (see Figure 9). One additional SVOC, also above the standard, was found at NRGTP-4, also in the Ore Pit area. This data suggests that SVOCs in surficial soil/fill at the Site, at concentrations exceeding this standard, are not a wide-spread concern.

Six inorganics present exceed the Part 375 Restricted Use Soil Cleanup Standard for Restricted Residential Use. The frequency of metals above the standard in surficial soils

indicates precautions should be taken to prevent human exposure if the Site is developed for a residential purpose. See Figure 9 for an aerial plot of the metals exceeding the standard.

Table 13, below, compares maximum detected concentrations of historic unflagged data and the unflagged data for Site surficial soils to the 6 NYCRR Part 375 Soil Clean-up Objectives for Restricted Development as an Industrial Land Use. Those cells where either the historic or the 2007 maximum and/or average concentration exceeded the regulatory standard are highlighted in yellow (200).

Table 13
Historical and Recent Surface Soil (<1.0 feet) Quality Summary Compared to Industrial Soil Quality Standards

	Historic Soil Sampling Results – Statistics			Standard	2007 Soil Sampling Results- Statistics		
Analyte	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards- Industrial Land use	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.
SVOCs (ug/kg)							
2-Methylnaphthalene				NS	1	440.0	440.0
4-Methylphenol				NS	1	530.0	530.0
Acenaphthene	1	620.0	620.0	1,000,000c			
Anthracene	1	800.0	800.0	1,000,000c	1	420.0	420.0
Benzo (a) anthracene	1	1,500.0	1,500.0	11,000	2	2,100.0	1,370.0
Benzo (a) pyrene	1	1,600.0	1,600.0	1,100	3	2,900.0	1,450.0
Benzo (b) fluoranthene	1	1,600.0	1,600.0	11,000.00	4	3,900.0	1,525.0
Benzo (g,h,i) perylene	2	2,500.0	1,525.0	1,000,000c	3	2,400.0	1,596.7
Benzo (k) fluoranthene	1	1,600.0	1,600.0	110,000	2	1,400.0	920.0
Chrysene	2	1,800.0	1,110.0	110,000	3	2,300.0	1,153.3
Dibenz (a,h) anthracene	1	790.0	790.0	1,100	1	630.0	630.0
Fluoranthene	2	1,900.0	1,220.0	1,000,000c	3	1,900.0	1,046.7
Indeno (1,2,3-cd) pyrene	2	2,200.0	1,315.0	11,000	3	2,500.0	1,490.0
Naphthalene				1,000,000c	1	480.0	480.0
Phenanthrene	1	730.0	730.0	1,000,000c	3	550.0	453.3
Pyrene	3	2,600.0	1,186.7	1,000,000c	2	1,500.0	1,125.0
Metals (mg/kg)							

Table 13
Historical and Recent Surface Soil (<1.0 feet) Quality Summary Compared to Industrial Soil Quality Standards

	Historic Soil Sampling Results – Statistics			Standard	2007 Soil Sampling Results- Statistics		
Analyte	**Number of Detected Results**	**Maximum Detected Conc.**	**Average Detected Conc.**	**Part 375 Restricted Use Soil Cleanup Standards- Industrial Land use**	**Number of Detected Results**	**Maximum Detected Conc.**	**Average Detected Conc.**
Aluminum	4	19,100.0	14,622.5	NS			
Antimony	2	37.0	29.5	NS			
Arsenic	6	24.0	11.8	16f	1	11	11
Barium	10	473.0	215.7	10,000d	4	332	205
Beryllium	4	2.4	1.4	2,700			
Cadmium	9	21.0	5.6	60	2	10.0	9.1
Calcium	4	85,800.0	67,950.0	NS			
Chromium	11	200.0	86.5	NS	4	335.0	199
Cobalt	9	54.0	12.8	NS			
Copper	6	193.0	91.0	10,000d			
Lead	8	1,210.0	319.2	3,900	10	899.0	280.6
Magnesium	3	957.0	645.7	NS			
Manganese	4	6,120.0	2,765.0	10,000d			
Mercury	4	1.0	0.3	5.7j	5	0.75	0.3
Nickel	12	152.0	47.6	10,000d			
Potassium	4	1,470.0	1,063.3	NS			
Sodium	4	1,020.0	566.5	NS			
Thallium	1	0.6	0.6	NS			
Vanadium	4	69.4	29.8	NS			
Zinc	4	551.0	314.5	10,000d			
Inorganics (mg/kg)							
Cyanide				10,000d	3	34.0	17.3

Footnotes

c: The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

Table 13
Historical and Recent Surface Soil (<1.0 feet) Quality Summary Compared to Industrial Soil Quality Standards

Analyte	Historic Soil Sampling Results – Statistics			Standard	2007 Soil Sampling Results- Statistics		
	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards- Industrial Land use	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.

d: The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

f: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

NS: Not Specified

Appendix B data and Table 13 indicate that one SVOC (Benzo (a) pyrene at NRGTP-5 and SS-104) and one metal (arsenic at SS-104 and SS-105) exceeded the Part 375 Restricted Use Soil Cleanup Standard for Industrial Use in soil/fill less than 1 foot below the ground surface. Figure 10 show exceedances of this industrial standard for soil within 1 foot of the ground surface. This data suggests that SVOCs and metals in surficial soil/fill at the Site, at concentrations exceeding the standard, are not a wide-spread concern for industrial development at the Site.

4.2.2 Subsurface Soil/Fill

Table 14, below, compares the historic unflagged data to unflagged data collected in 2007 for the subsurface soil/fill. Only those analytes detected historically or in 2007 are presented. Those cells where the 2007 maximum and/or average concentration reported exceeded the historic data are bolded (**200**). Chlorinated VOCs, considered to be associated with releases at the Envirotek Superfund site, are shown in red (200).

Table 14
Historical vs Recent Subsurface (>1.0 feet) Soil Quality Summary

Analyte	Historic Soil Sampling Results – Statistics			2007 Soil Sampling Results- Statistics		
	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.
VOCs (ug/kg)						
1,1,1-Trichloroethane	9	340.0	108.1	0		
1,1-Dichloroethane	3	110.0	55.0	0		
1,2-Dichloroethene	6	280.0	69.7	0		
1,2-Dichloroethene (total)*	5	180.0	94.2	1	**900.0**	**900.0**
1,2-Dichloropropane	1	760.0	760.0	0		
2-Butanone	2	52.0	32.0	0		

Table 14
Historical vs Recent Subsurface (>1.0 feet) Soil Quality Summary

Analyte	Historic Soil Sampling Results – Statistics			2007 Soil Sampling Results- Statistics		
	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.
Acetone	8	2124.0	339.1	1	**88.0**	**88.0**
Benzene	1	34.0	34.0	0		
Ethylbenzene	4	2365.0	703.8	2	2200.0	1135.5
Methylene Chloride	19	263.0	78.3	0		
Tetrachloroethene	12	8300.0	1110.1	0		
Toluene	3	5506.0	2120.3	1	1700.0	1700.0
Trichlorofluoromethane	1	2.0	2.0	0		
Trichloroethene	18	780.0	110.4	0		
Xylenes	7	14727.0	3409.3	2	8800.0	4423.5
SVOCs (ug/kg)						
2,3,4,6-Tetrachlorophenol	1	35968.0	35968.0	0		
2-Methylnaphthalene	5	15865.0	3516.4	0		
2,4-Dimethylphenol				3	**1800.0**	**1400.0**
4,6-Dinitro-2-methylphenol	1	1132.0	1132.0	0		
4-Methyl-2-Pentanone	4	950.0	300.0	0		
2-Methylphenol	1	274.0	274.0	0	**2000.0**	**1365.0**
3-Methylphenol	1	107.0	107.0	0		
4-Methylphenol	2	1495.0	801.0	3	**7100.0**	**3833**
4-Bromophenyl phenyl ether	3	222.0	206.3	0		
Acenaphthene	5	22601.0	5215.2	2	2100.0	1475.0
Anthracene	8	4200.0	1107.8	2	2900.0	**1745.0**
Benzidine	1	185.0	185.0	0		
Benzo (a) anthracene	14	14012.0	1976.4	2	4000.0	**2410.0**
Benzo (a) pyrene	7	9500.0	1902.1	2	3200.0	**2010.0**
Benzo (b) fluoranthene	9	21632.0	3958.0	3	4300.0	1926.7
Benzo (g,h,i) perylene	4	18062.0	4933.0	3	3000.0	1446.7
Bis(2-ethylhexyl)phthalate	12	6607.0	1422.9	3	**6700.0**	**3283.3**
Butlylbenzylphthalate	3	713.0	293.7	0		
Benzo (k) fluoranthene	8	14823.0	3650.4	2	1700.0	1050.0
Benzoic acid	1	87.0	87.0	0		
Carbazole				2	1600.0	1020.0
Chrysene	14	13657.0	2224.3	3	4800.0	2053.3
Dibenzofuran	3	392.0	187.7	2	**1800.0**	**1255.0**
Di-n-butylphthalate	4	633.0	327.5	0		
Di-n-octylphthalate	3	543.0	277.7	0		
Fluoranthene	12	13441.0	1996.4	4	12000.0	**3757.5**
Fluorene	8	7634.0	1013.9	2	5200.0	**3200.0**
Hexachlorobenzene	1	165.0	165.0	0		

Table 14
Historical vs Recent Subsurface (>1.0 feet) Soil Quality Summary

Analyte	Historic Soil Sampling Results – Statistics			2007 Soil Sampling Results- Statistics		
	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.	Number of Detected Results	Maximum Detected Conc.	Average Detected Conc.
Indeno (1,2,3-cd) pyrene	5	11415.0	2764.2	2	3100.0	1985.0
Isophorone	1	254.0	254.0	0		
Naphthalene	4	29658.0	7857.5	3	6400.0	3600.0
Phenanthrene	14	5210.0	1014.2	3	**17000.0**	**6830.0**
Phenol	1	1398.0	1398.0	3	**4700**	**3433**
Pyrene	14	26651.0	4407.4	4	7900.0	2625.0
Metals (mg/kg)						
Aluminum	8	34400.0	21887.5	0		
Antimony	2	20.8	13.3	0		
Arsenic	23	60.5	21.6	0		
Barium	25	680.0	212.9	0		
Beryllium	12	4.0	2.2	0		
Cadmium	14	8.9	3.7	1	**19.7**	**19.7**
Calcium	8	152000.0	106850.0	0		
Chromium	18	575.0	74.2	12	535.0	**93.9**
Cobalt	16	21.6	7.5	0		
Copper	20	12100.0	709.7	0		
Iron	8	192000.0	67337.5	0		
Lead	21	3570.0	406.8	11	609.0	126.8
Magnesium	8	30500.0	14497.5	0		
Mercury	16	0.7	0.3	0		
Nickel	20	142.0	26.1	0		
Potassium	28	2940.0	1002.6	0		
Selenium	4	15.5	5.8	0		
Sodium	12	1740.0	660.4	0		
Vanadium	20	280.0	40.2	0		
Zinc	9	367.0	162.4	0		
Inorganics (mg/kg)						
Cyanide				3	**48.2**	**21.5**

* some data was reported as cis-1,2-Dichloroethene.

Table 14 indicates that 15 VOCs, 34 SVOCs, 20 metals and cyanide have been reported in Site subsurface soil/fill over time. Of those analytes present in 2007, only one of the VOCs had a higher maximum concentration then the 15 found previously. Six of the SVOCs had higher maximum concentrations than the 34 historically reported. Comparing the eight metals analyzed in 2007 to those found historically, only one (cadmium) had a higher maximum concentration than what was previously detected.

The 2007 locations for soil/fill sampling were chosen to evaluate areas suspected of having elevated contaminant levels based on historic sampling events and by using field screening

results. This data does indicate that a number of the analytes had maximum concentrations, reported in 2007, at an order of magnitude greater than those historically detected at the Site. Conversely, a number of historic maximum concentrations were also significantly higher than those reported in 2007, which we interpret as simply reflecting the areal variability of the contaminants.

Appendix B, Tables III and IV, indicate that 75 subsurface samples were analyzed historically and 17 were analyzed in 2007; a Site-wide total of 92 samples. It is important to note that not every sample was analyzed consistently for each compound over time. It appears, at a minimum, that VOCs were analyzed 64 times, SVOCs 38 times, and metals 28 times and cyanide two times. In 2007, VOCs were analyzed ten times, SVOCs 12 times, metals and cyanide 17 times.

The majority of the VOCs reported historically at the Site were chlorinated and associated with the Envirotek release. A soil removal action was initiated to address these contaminants. Recent data indicates that with one exception, the VOCs found at the Site are nonchlorinated. Regardless, all VOCs found in 2007 were detected in samples collected from test pits in the Ore Pit area, which represents a localized occurrence.

Numerous SVOCs and metals were reported historically and/or in 2007 in subsurface soil/fill. Table 14 indicates fewer SVOC compounds were detected in 2007 (21) then historically (32); however, all metals detected in 2007 were also found historically. Though a number of specific SVOCs were more prevalent than others and in some instances certain SVOCs were only detected once, in general, the data suggests that at least four SVOCs would be present at any location sampled at the Site at this depth interval.

The historic data indicates a given metals analyte was found 117 times in the 28 samples collected (4.2 per sample) while the 2007 data indicates 47 times in 17 samples collected (2.8 per sample). This data implies that there is little difference in the historic versus recent data sets and that subsurface SVOCs and metals are common across the Site.

Based on the 2007 data, cyanide was detected in 3 of the 17 (18%) soil samples collected from subsurface soil/fill. Though the three locations are not within one area of the Site (test pits NRGTP-5, 7 and 9 - see Figure 2), this data does not indicate wide-spread distribution of this contaminant, but a more localized occurrence.

Table 15, below, compares maximum detected concentrations of historic unflagged data and the unflagged data for Site subsurficial soils to the 6 NYCRR Part 375 Soil Clean-up Objectives for Development as an Restricted Residential Land Use. Those cells where either the historic or the 2007 maximum and/or average concentration exceeded the regulatory standard are highlighted in yellow (200).

Table15

Historical and Recent Subsurface (>1.0 feet) Soil Quality Summary Compared to Restricted Residential Soil Quality Standards

	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
Analyte	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards-Restricted Residential Land use	Number of Detected Results	Maximum Detected Conc.
VOCs (ug/kg)					
1,1,1-Trichloroethane	9	340	100,000a	0	
1,1-Dichloroethane	3	110	26,000	0	
1,2-Dichloroethene	6	280	NS	0	
1,2-Dichloroethene (total)*	5	180	NS	1	900
1,2-Dichloropropane	1	760	NS	0	
2-Butanone	2	52	NS	0	
Acetone	8	2124	100,000b	1	88
Benzene	1	34	4,800	0	
Ethylbenzene	4	2365	41,000	2	2200
Methylene Chloride	19	263	100,000a	0	
Tetrachloroethene	12	8300	19,000	0	
Toluene	3	5506	100,000a	1	1700
Trichlorofluoromethane	1	2	21,000	0	
Trichloroethene	18	780	NS	0	
Xylenes	7	14727	100,000a	2	8800
SVOCs (ug/kg)					
2,3,4,6-Tetrachlorophenol	1	35968	NS	0	
2-Methylnaphthalene	5	15865	NS	0	
2,4-Dimethylphenol			NS	3	1800
4,6-Dinitro-2-methylphenol	1	1132	NS	0	
4-Methyl-2-Pentanone	4	950	NS	0	
2-Methylphenol	1	274	NS	2	2000
3-Methylphenol	1	107	NS	0	
4-Methylphenol	2	1495	NS	3	7100
4-Bromophenyl phenyl ether	3	222	NS	0	
Acenaphthene	5	22601	100,000a	2	2100
Anthracene	8	4200	100,000a	2	2900
Benzidine	1	185	NS	0	
Benzo (a) anthracene	14	14012	1,000f	2	4000
Benzo (a) pyrene	7	9500	1,000f	2	3200
Benzo (b) fluoranthene	9	21632	1,000f	3	4300

Table15 Historical and Recent Subsurface (>1.0 feet) Soil Quality Summary Compared to Restricted Residential Soil Quality Standards					
	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
Analyte	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards-Restricted Residential Land use	Number of Detected Results	Maximum Detected Conc.
Benzo (g,h,i) perylene	4	18062	100,000a	3	3000
Bis(2-ethylhexyl)phthalate	12	6607	NS	3	6700
Butlylbenzylphthalate	3	713	NS	0	
Benzo (k) fluoranthene	8	14823	NS	2	1700
Benzoic acid	1	87	NS	0	
Carbazole	0		NS	2	1600
Chrysene	14	13657	3,900	3	4800
Dibenzofuran	3	392	59,000	2	1800
Di-n-butylphthalate	4	633	NS	0	
Di-n-octylphthalate	3	543	NS	0	
Fluoranthene	12	13441	NS	4	12000
Fluorene	8	7634	100,000a	2	5200
Hexachlorobenzene	1	165	NS	0	
Indeno (1,2,3-cd) pyrene	5	11415	500f	2	3100
Isophorone	1	254	NS	0	
Naphthalene	4	29658	100,000a	3	6400
Phenanthrene	14	5210	100,000a	3	17000
Phenol	1	1398	100,000a	3	4700
Pyrene	14	26651	100,000a	4	7900
Metals (mg/kg)					
Aluminum	8	34400	NS	0	
Antimony	2	20.8	NS	0	
Arsenic	23	60.5	16f	0	
Barium	25	680	400	0	
Beryllium	12	4	72	0	
Cadmium	14	8.9	4.3	1	19.7
Calcium	8	152000	NS	0	
Chromium	18	575	NS	12	535
Cobalt	16	21.6	NS	0	
Copper	20	12100	270	0	
Iron	8	192000	NS	0	
Lead	21	3570	400	11	609
Magnesium	8	30500	NS	0	

Table15 Historical and Recent Subsurface (>1.0 feet) Soil Quality Summary Compared to Restricted Residential Soil Quality Standards					
	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
Analyte	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards-Restricted Residential Land use	Number of Detected Results	Maximum Detected Conc.
Mercury	16	0.7	0.81j	0	
Nickel	20	142	310	0	
Potassium	28	2940	NS	0	
Selenium	4	15.5	180	0	
Sodium	12	1740	NS	0	
Vanadium	20	280	NS	0	
Zinc	9	367	10,000 d	0	
Inorganics (mg/kg)					
Cyanide	0		27h	3	48.200

Footnotes

a: The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

b: The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

f For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

h: The SCO for this specific compound (or family of compounds) is considered to be met if the analysis For the total species of this contaminant is below the specific SCO.

j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

***** some data was reported as cis-1,2-Dichloroethene.

Table 15, above, indicates that five SVOCs and two metals exceed the Part 375 Restricted Use Soil Cleanup Standard for Restricted Residential Use, both historically and during the 2007 sampling event, in subsurface soil/fill samples. Appendix B Table III indicates that the SVOC exceedances were found in samples collected in three areas: off-Site in the Bike Path area, in the Ore Pit area and south of the former Boiler House (Area C), and Area E (Figure 11). Data from 2007 indicates elevated SVOCs were only found in the Ore Pit area. This data suggests that SVOCs are present at multiple locations in the subsurface soil/fill at the Site at concentrations exceeding this standard but are not a wide-spread concern.

Relative to the inorganics analyzed for in 2007, four exceed the Part 375 Restricted Use Soil Cleanup Standard for Restricted Residential Use over time. Elevated levels of these inorganics were detected Site-wide and in the Bike Path area. The frequency of metals above the standard in subsurface soil/fill indicates precautions should be taken to prevent human exposure if the Site is developed for a residential purpose. See Figure 11 for an

aerial plot of soil quality data for the SVOCs, metals and cyanide data that exceed the restricted residential standard.

Table 16, below, compares maximum detected concentrations of historic unflagged data and the unflagged data for Site subsurficial soils to the 6 NYCRR Part 375 Soil Clean-up Objectives for Development as an Industrial Land Use. Those cells where either the historic or the 2007 maximum and/or average concentration exceeded the regulatory standard are highlighted in yellow (200).

Table16

Historical and Recent Subsurface Soil Quality Summary Results Compared to Industrial Soil Quality Standards (>1.0 feet)

	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
Analyte	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards -Industrial Land use	Number of Detected Results	Maximum Detected Conc.
VOCs (ug/kg)					
1,1,1-Trichloroethane	9	340	1,000,000c	0	
1,1-Dichloroethane	3	110	480,000	0	
1,2-Dichloroethene	6	280	60,000	0	
1,2-Dichloroethene (total)*	5	180	1,000,000c	1	900
1,2-Dichloropropane	1	760	NS	0	
2-Butanone	2	52	NS	0	
Acetone	8	2124	1,000,000c	1	88
Benzene	1	34	89,000	0	
Ethylbenzene	4	2365	780,000	2	2200
Methylene Chloride	19	263	1,000,000c	0	
Tetrachloroethene	12	8300	300,000	0	
Toluene	3	5506	1,000,000c	1	1700
Trichloroethene	18	780	400,000	0	
Trichlorofluoromethane	1	2	NS	0	
Xylenes	7	14727	1,000,000c	2	8800
SVOCs (ug/kg)					
2,3,4,6-Tetrachlorophenol	1	35968	NS	0	
2,4-Dimethylphenol			NS	3	1800
2-Methylnaphthalene	5	15865	NS	0	
2-Methylphenol	1	274	NS	2	2000
3-Methylphenol	1	107	NS	0	
4,6-Dinitro-2-methylphenol	1	1132	NS	0	
4-Bromophenyl phenyl ether	3	222	NS	0	

Table16

Historical and Recent Subsurface Soil Quality Summary Results Compared to Industrial Soil Quality Standards (>1.0 feet)

	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
Analyte	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards -Industrial Land use	Number of Detected Results	Maximum Detected Conc.
4-Methyl-2-Pentanone	4	950	NS	0	
4-Methylphenol	2	1495	NS	3	7100
Acenaphthene	5	22601	1,000,000c	2	2100
Anthracene	8	4200	1,000,000c	2	2900
Benzidine	1	185	NS	0	
Benzo (a) anthracene	14	14012	11,000	2	4000
Benzo (a) pyrene	7	9500	1,100	2	3200
Benzo (b) fluoranthene	9	21632	11,000.00	3	4300
Benzo (g,h,i) perylene	4	18062	1,000,000c	3	3000
Benzo (k) fluoranthene	8	14823	110,000	2	1700
Benzoic acid	1	87	NS	0	
Bis(2-ethylhexyl)phthalate	12	6607	NS	3	6700
Butlylbenzylphthalate	3	713	NS	0	
Carbazole	0		NS	2	1600
Chrysene	14	13657	110,000	3	4800
Dibenzofuran	3	392	1,000,000c	2	1800
Di-n-butylphthalate	4	633	NS	0	
Di-n-octylphthalate	3	543	NS	0	
Fluoranthene	12	13441	1,000,000c	4	12000
Fluorene	8	7634	1,000,000c	2	5200
Hexachlorobenzene	1	165	NS	0	
Indeno (1,2,3-cd) pyrene	5	11415	11,000	2	3100
Isophorone	1	254	NS	0	
Naphthalene	4	29658	1,000,000c	3	6400
Phenanthrene	14	5210	1,000,000c	3	17000
Phenol	1	1398	1,000,000c	4	5800
Pyrene	14	26651	1,000,000c	3	4700
Metals (mg/kg)					
Aluminum	8	34400	NS	0	
Antimony	2	20.8	NS	0	
Arsenic	23	60.5	16f		
Barium	25	680	10,000d		
Beryllium	12	4	2,700	0	
Cadmium	14	8.9	60	1	19.7

Table16 Historical and Recent Subsurface Soil Quality Summary Results Compared to Industrial Soil Quality Standards (>1.0 feet)					
	Historic Soil Sampling Results – Statistics		Standard	2007 Soil Sampling Results-Statistics	
Analyte	Number of Detected Results	Maximum Detected Conc.	Part 375 Restricted Use Soil Cleanup Standards -Industrial Land use	Number of Detected Results	Maximum Detected Conc.
Calcium	8	152000	NS	0	
Chromium	18	575	NS	12	535
Cobalt	16	21.6	NS	0	
Copper	20	12100	10,000d	0	
Iron	8	192000	NS	0	
Lead	21	3570	3,900	11	609
Magnesium	8	30500	NS	0	
Mercury	16	0.7	5.7j	0	
Nickel	20	142	10,000d	0	
Potassium	28	2940	NS	0	
Selenium	4	15.5	6,800	0	
Sodium	12	1740	NS	0	
Vanadium	20	280	NS	0	
Zinc	9	367	10,000d	0	
Inorganics (mg/kg)					
Cyanide	0		10,000d	3	48.200

***** some data was reported as cis-1,2-Dichloroethene.

Footnotes for Part 375 Restricted Use Soil Cleanup Standards-Restricted Residential Land use

c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

f For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

NS: Not Specified

The data compiled and presented in Table 16, above, indicates that five analytes have exceeded the Part 375 Restricted Use Soil Cleanup Standard for Industrial Use; five historically and one in 2007. These exceedences were limited to SVOCs and metals. Appendix B, Table III, and Figure 12 indicate exceedances in three areas: the Ore Pit area, north of Envirotek, and south of the former Boiler House. Data from Appendix B Table IV indicates that only one SVOC, Benzo (a) pyrene, was reported in 2007 as above the standard. This SVOC was detected in the Ore Pit area. This data suggests that SVOCs are present at multiple locations in subsurface soil/fill at the Site at concentrations exceeding this standard; however, they are not a wide-spread concern.

Relative to the three inorganics detected in 2007, none of the eight RCRA metals exceeded the Part 375 Restricted Use Soil Cleanup Standard for Industrial Use. Historically arsenic has exceeded the standard. The frequency of arsenic above the standard in subsurface soil/fill indicates precautions should be taken to reduce human exposure if the Site is developed for industrial purpose. See Figure 12 for an aerial plot of the SVOCs and metals that exceeded the industrial use standard in subsurface soils.

4.2.3 Soil/Fill Results Discussion

Comparison of the 2007 data to the historic soils/fill analytical results in the previous sections infers that with the exception of the chlorinated VOCs, the COCs at the Site have remained consistent through time. The majority of the chlorinated VOCs detected at the Site historically were not found in the 2007 sampling. This is attributed to the soil removal action completed by Envirotek. Nonchlorinated VOCs were not found in soil/fill at any depth above the reviewed standards.

Numerous SVOCs have been detected at the Site and off Site. Though they are widespread, the majority of the SVOC concentrations are below the applicable standards. The SVOCs above their relevant standards are generally localized to specific areas of the Site. In both the surficial and subsurface soils, these areas are generally the Ore Pit area and around the Boiler House, though a few results indicate the standards were exceeded elsewhere.

Metals were also found both at the Site and in samples off-Site. The metal concentrations which exceed standards are not as prevalent in the surficial samples as in the subsurface samples. This may be due in part to the presence of native soils at the land surface in a number of locations and the predominance of fill containing slag, cinder and foundry sand in the subsurface.

As noted on page 2 of the SER, the SVOCs and metals are likely associated with the former steel making operations at the Site. NRG agrees with this statement, but would add that as a number of these contaminants were found off-Site, they can also be attributed, at least in part, to the fill material at the site.

4.2.4 Summary of Potential Response Actions – Soils/Fill

Based on the soil/fill analytical results, VOCs are not a risk to receptors at the Site. For the other COCs, based on a comparison of the exceedences of residential and industrial standards, the Site poses significantly less risk to humans if used for industrial development. NRG recommends the Site only be considered for industrial development and will limit further discussion to the assumption that only industrial development will take place at the Site.

In relation to the Part 375 Restricted Use Soil Cleanup Standard for Industrial Use, shallow surficial soil/fill has had exceeded the standard at two locations (SS 104 and SS 105) for two compounds (Benzo (a) pyrene and arsenic; see Figure 11). The location of SS 105 was within the Envirotek area, which has been remediated; therefore, exposure to these contaminants Site-wide is considered very low. Based on these results, NRG recommends no response action be considered to address contaminants present in the shallow Site soil and that no specific precautions be taken to limit exposure at the Site to this soil.

At greater depth, the frequency of samples exceeding the industrial standard increases. However, only two contaminants are generally present Site-wide: arsenic and Benzo (a) pyrene (see Figure 12). Based on the ubiquitous nature of these contaminants both on- and off-Site, NRG recommends no response action be taken to reduce the levels of these contaminants or otherwise proactively remove or isolate the impacted areas. The soil, present at depth, poses no risk to employees at the Site. However, potential exposure can occur during construction. Construction activities proposed for the Site will have a relatively short time window for worker exposure. NRG recommends that, where possible, subgrade activities be limited and that Site grading be limited to the upper two feet of the land surface. Above grade construction practices should be encouraged. Where subgrade excavation is required, NRG recommends a Health and Safety Plan be developed and employed during all Site activities to reduce worker exposure and to manage residual soil in a manner acceptable to the NYSDEC.

5 CONCLUSIONS AND RECOMMENDATIONS

Based on review of analytical data compiled from historic and recent sampling events, NRG concludes that:

1. Soil/fill analysis for the Site indicate a legacy of contaminants brought to the Site as fill and/or released by Site operations and Envirotek. These COCs are comprised of VOCs, SVOCs, metals and cyanide;
2. Based on groundwater chemistry, a number of the soil/fill contaminants are found in Site groundwater near the central portion of the Site where operations took place. Few COCs are above their regulatory standards established to protect groundwater resources;
3. Groundwater contaminants decrease as they move downgradient from the central portion of the Site, and they are not generally found in the downgradient wells near the river. The data infers attenuation of the contaminants is taking place on Site and that there is no risk to either ecologic or human receptors providing groundwater is not appropriated at the Site and that soil vapor is managed above the Envirotek plume;
4. Over time, the number of contaminants found in Site groundwater has decreased and generally their maximum concentrations have also declined;
5. The Envirotek chlorinated VOC plume is generally definable within Site boundaries;
6. Organic and inorganic contaminants are likely entering the Site from an upgradient source either by groundwater transport or through discharge to a storm water pond located on Site;
7. Based on comparison of the historic and 2007 soil/fill analytical results to applicable standards, the Site is best suited for commercial or industrial development;
8. Few soil/fill contaminants are found at a depth less than 1 foot Site-wide in excess of the Part 375 Restricted Use Soil Cleanup Standard for Residential and Industrial Use in shallow Site soil. Due to their limited occurrence on Site and their occurrence off-Site, they are not considered a potential receptor risk.; and
9. A limited number of metals and SVOCs are found Site-wide in soil/fill greater than 1 foot deep in excess of the Part 375 Restricted Use Soil Cleanup Standard for Residential and Industrial Use. Due to the isolation of the soil/fill contaminants from Site employees, they are not considered a risk. The potential short term risk to construction workers can be managed.

Based on these conclusions, NRG recommends that the Site be prepared for commercial or industrial development to support energy generation. We recommend the following measures precede the Site redevelopment:

1. This report be submitted to the NYSDEC for review, concurrence and approval;
2. That no response actions be completed at the Roblin Steel site to address contaminants present in either groundwater or soil/fill; and
3. The State of New York be petitioned to reclassify the Roblin Steel site to Class 4 and that a petition to declassify the Roblin Steel also be filed.

Upon completion of the first two of these three regulatory formalities and upon their potential purchase of the Site, NRG Thermal, LLC will take the following measures to reduce potential receptor risk during Site construction and to assure compliance with the Envirotek ROD:

1. Develop a Health and Safety Plan (HSP) for Site workers involved in preparing the Site for development to reduce worker exposure to subsurface contaminants. HSP protocols will also be followed if subsurface work is completed after the Site is developed;
2. Adhere to a soil management plan that provides the protocols for evaluating, staging and/or disposing of demolition and contaminated soils, if any, generated at the Site during construction or during later Site improvement and maintenance;
3. Vent all occupied structures that will be located over the applicable area of the chlorinated VOC groundwater plume per the Vapor Intrusion Plan prepared by the Envirotek PRP group; and
4. Maintain and annually sample an approved groundwater monitoring well network relating to the Envirotek site per the approved Groundwater Monitoring Plan, and submit an annual report compiling this groundwater data to the State of New York.

FIGURES

NRG Thermal

Figure 1
Remedial Investigation Report-Former Roblin Steel Site
Site Location
Tonawanda, NY

DATE: 10/12/06
REVISED: 06/20/07
SCALE: 1:12,000
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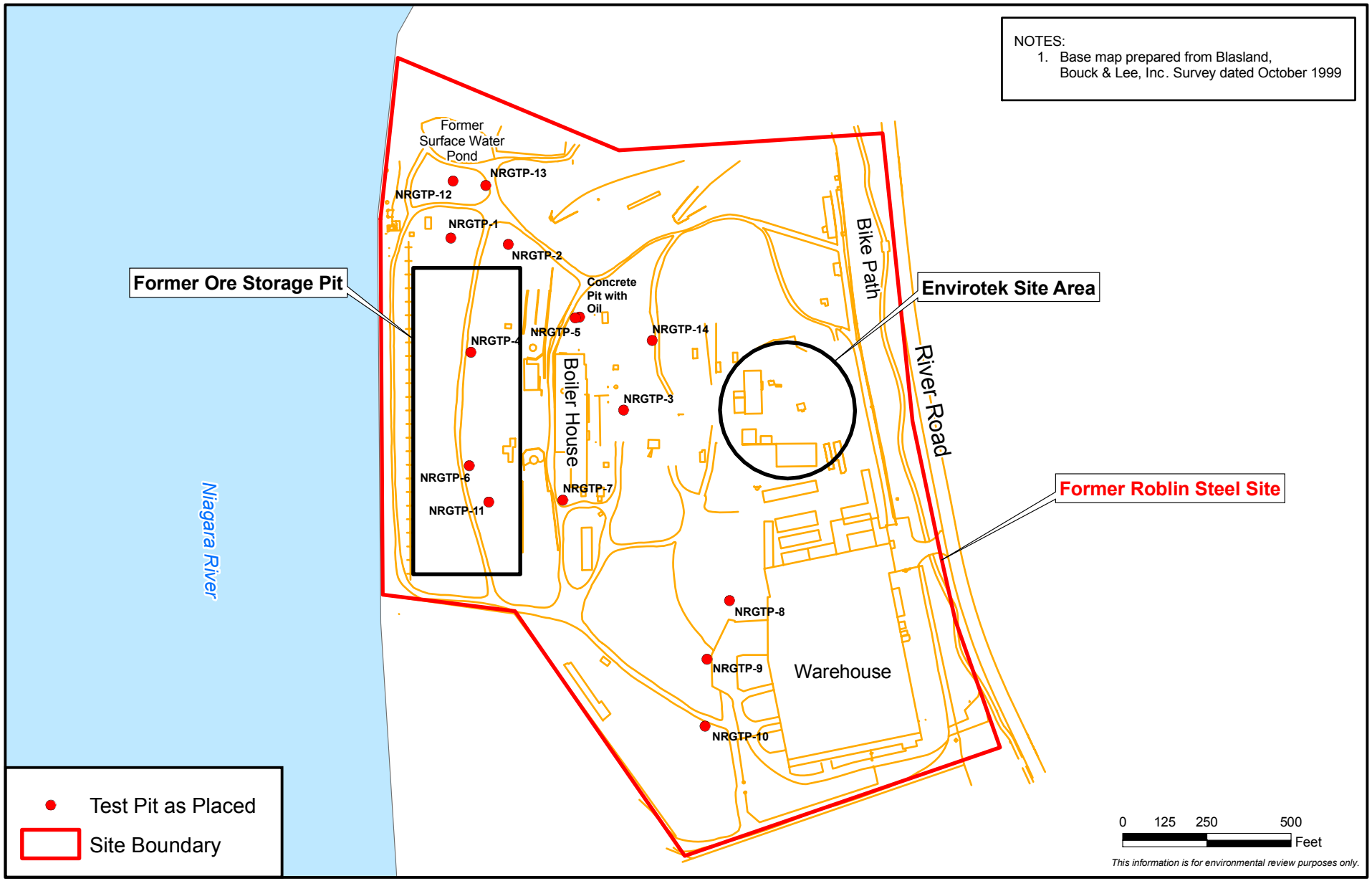

NRG Thermal

Figure 2

Remedial Investigation Report-Former Roblin Steel Site

Test Pit Locations

Tonawanda, NY

DATE: 10/12/06
REVISED: 06/20/07
SCALE: 1:4,900
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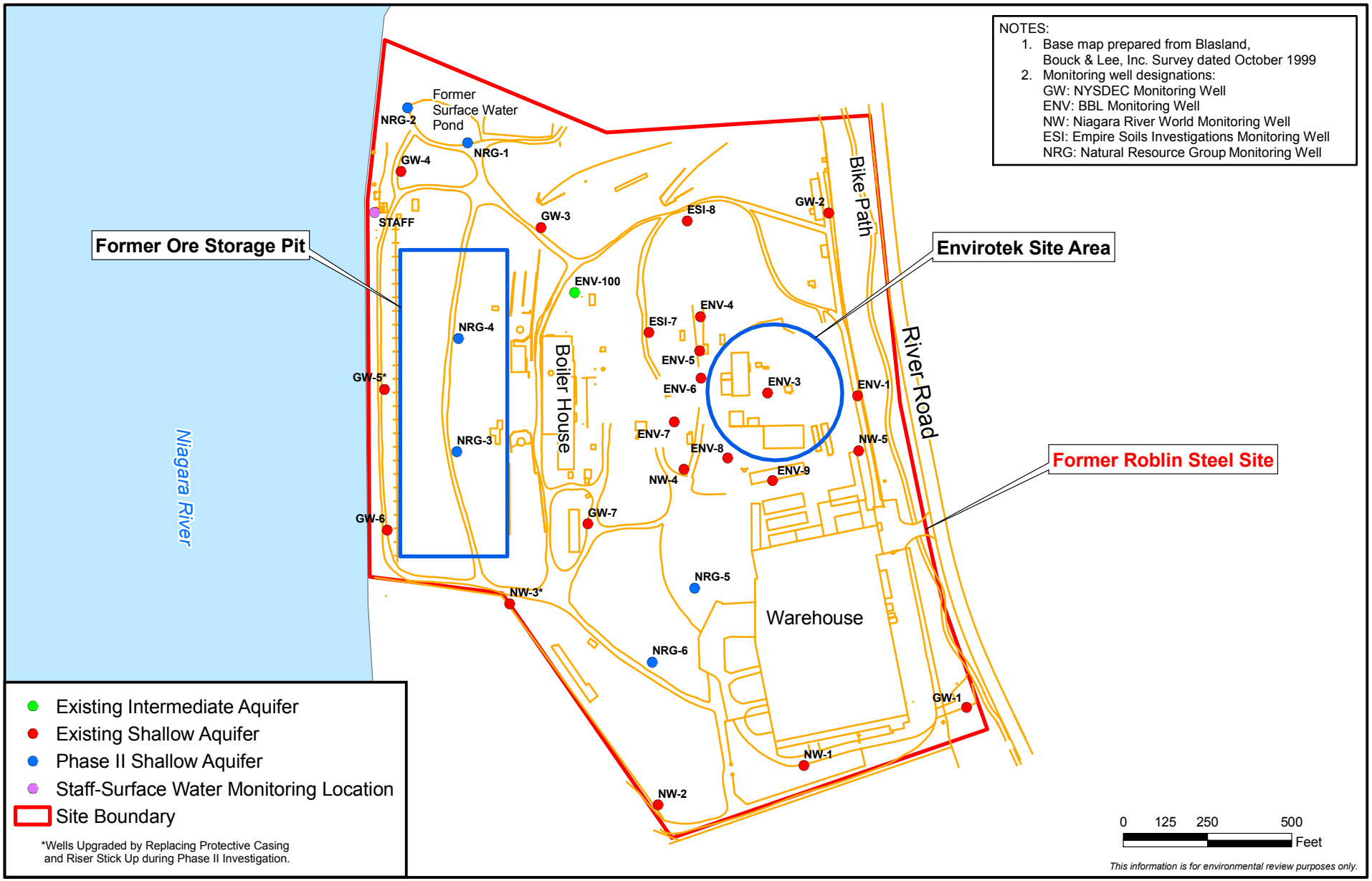

NRG Thermal

Figure 3

Remedial Investigation Report-Former Roblin Steel Site

Monitoring Well Locations

Tonawanda, NY

DATE: 10/12/06
REVISED: 06/20/07
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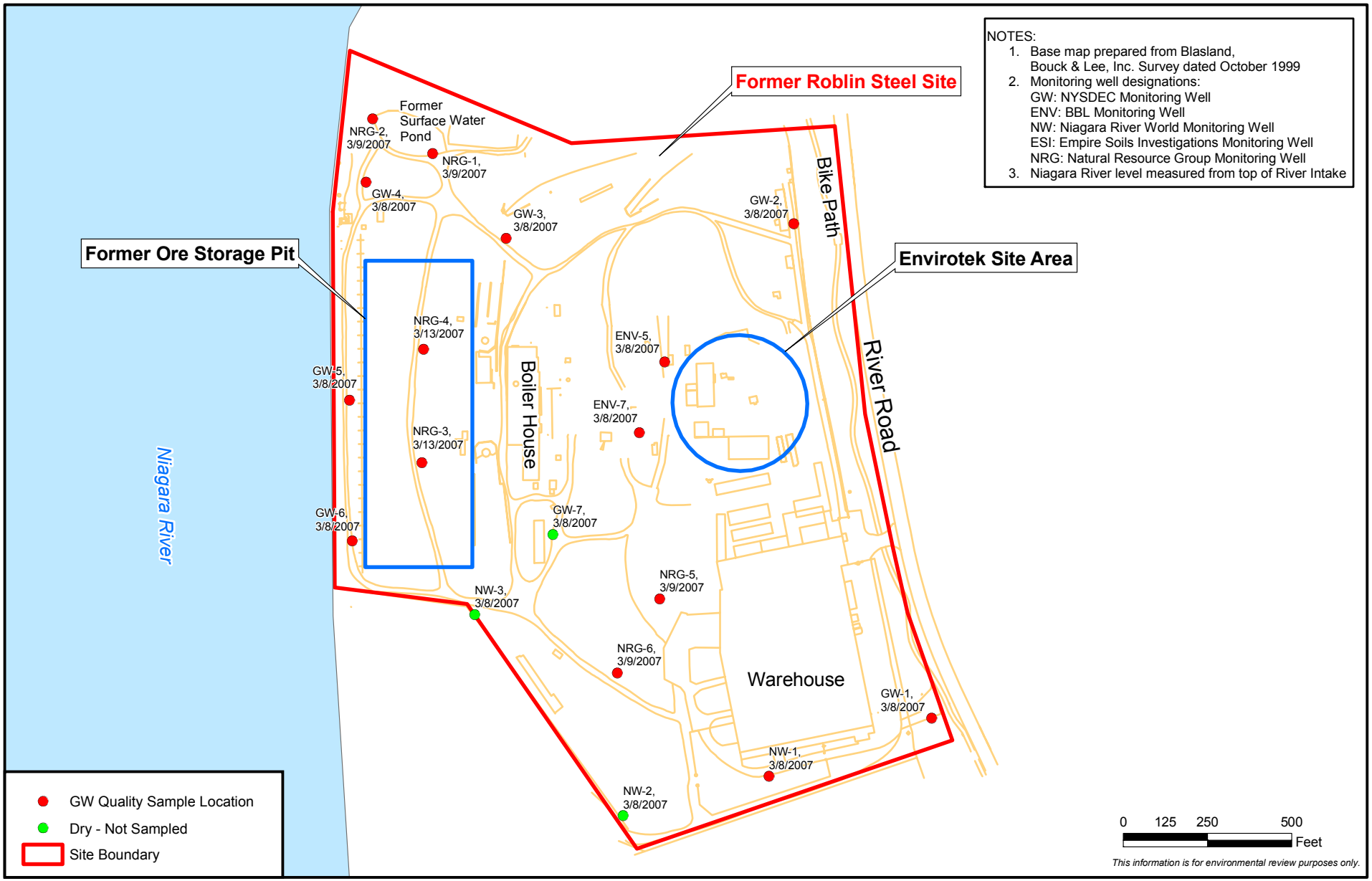

NRG Thermal

Figure 4

Remedial Investigation Report-Former Roblin Steel Site

Groundwater Quality Monitoring Locations
Tonawanda, NY

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REVISED: 06/20/07
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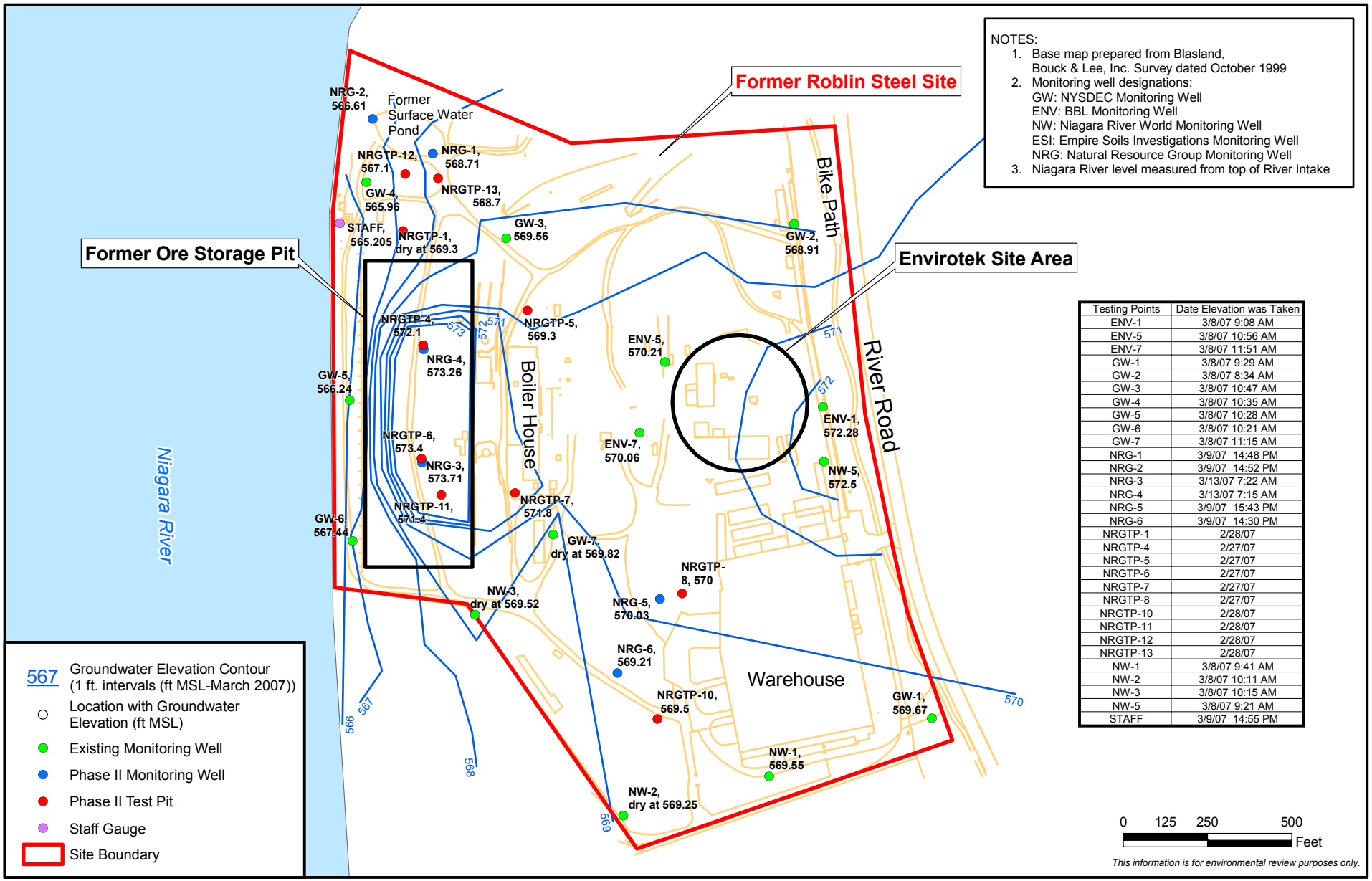

Testing Points	Date Elevation was Taken
ENV-1	3/8/07 9:08 AM
ENV-5	3/8/07 10:56 AM
ENV-7	3/8/07 11:51 AM
GW-1	3/8/07 9:29 AM
GW-2	3/8/07 8:34 AM
GW-3	3/8/07 10:47 AM
GW-4	3/8/07 10:35 AM
GW-5	3/8/07 10:28 AM
GW-6	3/8/07 10:21 AM
GW-7	3/8/07 11:15 AM
NRG-1	3/9/07 14:48 PM
NRG-2	3/9/07 14:52 PM
NRG-3	3/13/07 7:22 AM
NRG-4	3/13/07 7:15 AM
NRG-5	3/9/07 15:43 PM
NRG-6	3/9/07 14:30 PM
NRGTP-1	2/28/07
NRGTP-4	2/27/07
NRGTP-5	2/27/07
NRGTP-6	2/27/07
NRGTP-7	2/27/07
NRGTP-8	2/27/07
NRGTP-10	2/28/07
NRGTP-11	2/28/07
NRGTP-12	2/28/07
NRGTP-13	2/28/07
NW-1	3/8/07 9:41 AM
NW-2	3/8/07 10:11 AM
NW-3	3/8/07 10:15 AM
NW-5	3/8/07 9:21 AM
STAFF	3/9/07 14:55 PM

NRG Thermal

Figure 5

Remedial Investigation Report-Former Roblin Steel Site

Groundwater Elevation Contour Map (Feb. 28-Mar. 13, 2007)
Tonawanda, NY

DATE: 10/12/06
REVISED: 06/20/07
SCALE: 1:4,900
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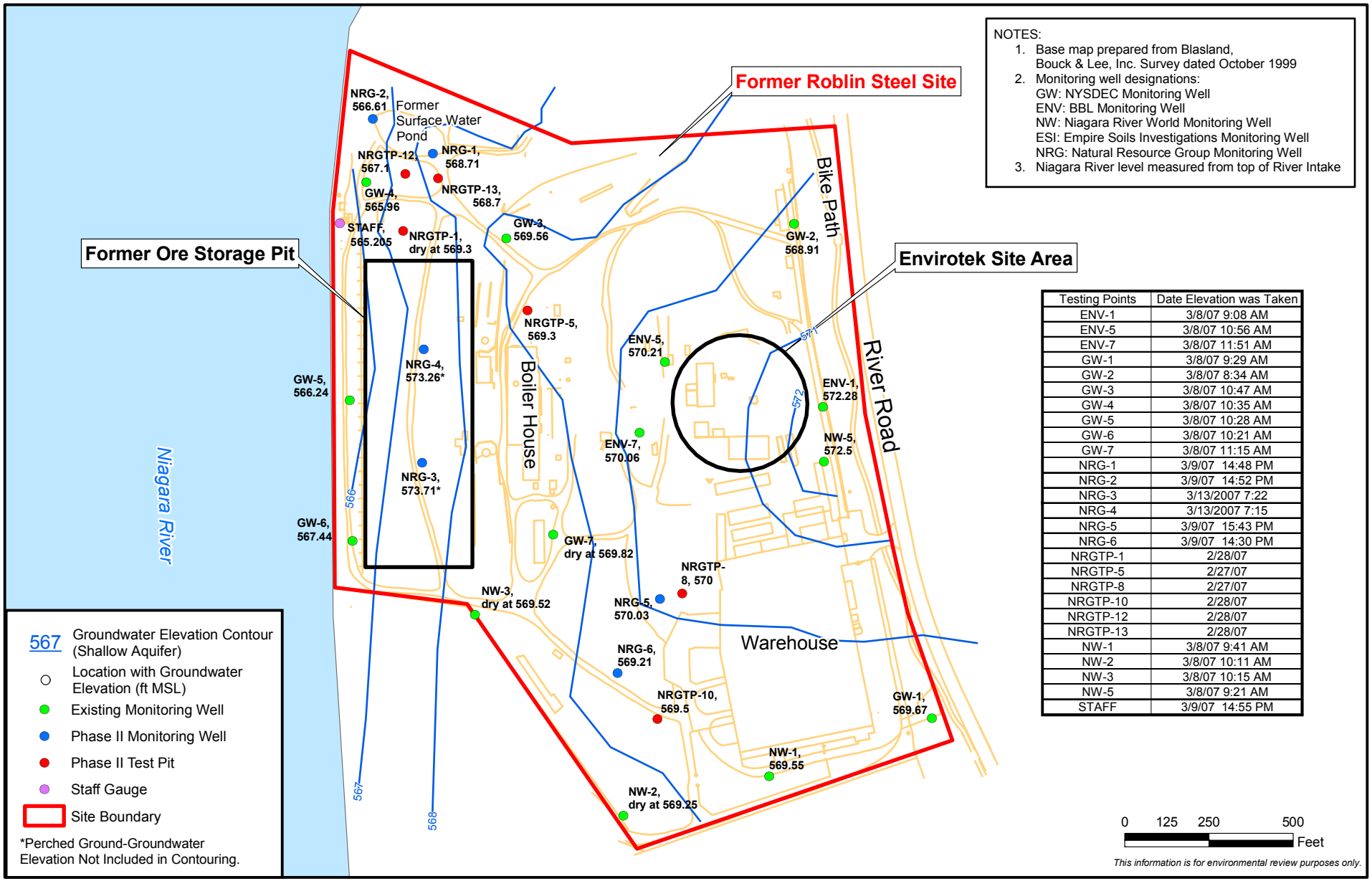

NOTES:
1. Base map prepared from Blasland, Bouck & Lee, Inc. Survey dated October 1999
2. Monitoring well designations:
   GW: NYSDEC Monitoring Well
   ENV: BBL Monitoring Well
   NW: Niagara River World Monitoring Well
   ESI: Empire Soils Investigations Monitoring Well
   NRG: Natural Resource Group Monitoring Well
3. Niagara River level measured from top of River Intake

Testing Points	Date Elevation was Taken
ENV-1	3/8/07 9:08 AM
ENV-5	3/8/07 10:56 AM
ENV-7	3/8/07 11:51 AM
GW-1	3/8/07 9:29 AM
GW-2	3/8/07 8:34 AM
GW-3	3/8/07 10:47 AM
GW-4	3/8/07 10:35 AM
GW-5	3/8/07 10:28 AM
GW-6	3/8/07 10:21 AM
GW-7	3/8/07 11:15 AM
NRG-1	3/9/07 14:48 PM
NRG-2	3/9/07 14:52 PM
NRG-3	3/13/2007 7:22
NRG-4	3/13/2007 7:15
NRG-5	3/9/07 15:43 PM
NRG-6	3/9/07 14:30 PM
NRGTP-1	2/28/07
NRGTP-5	2/27/07
NRGTP-8	2/27/07
NRGTP-10	2/28/07
NRGTP-12	2/28/07
NRGTP-13	2/28/07
NW-1	3/8/07 9:41 AM
NW-2	3/8/07 10:11 AM
NW-3	3/8/07 10:15 AM
NW-5	3/8/07 9:21 AM
STAFF	3/9/07 14:55 PM

567 Groundwater Elevation Contour (Shallow Aquifer)
Location with Groundwater Elevation (ft MSL)
Existing Monitoring Well
Phase II Monitoring Well
Phase II Test Pit
Staff Gauge
Site Boundary
*Perched Ground-Groundwater Elevation Not Included in Contouring.

This information is for environmental review purposes only.

NRG Thermal

Figure 6
Remedial Investigation Report-Former Roblin Steel Site
Groundwater Elevation Contour Map-Shallow Aquifer (Feb. 28-Mar. 13, 2007)
Tonawanda, NY

DATE: 10/12/06
REVISED: 06/20/07
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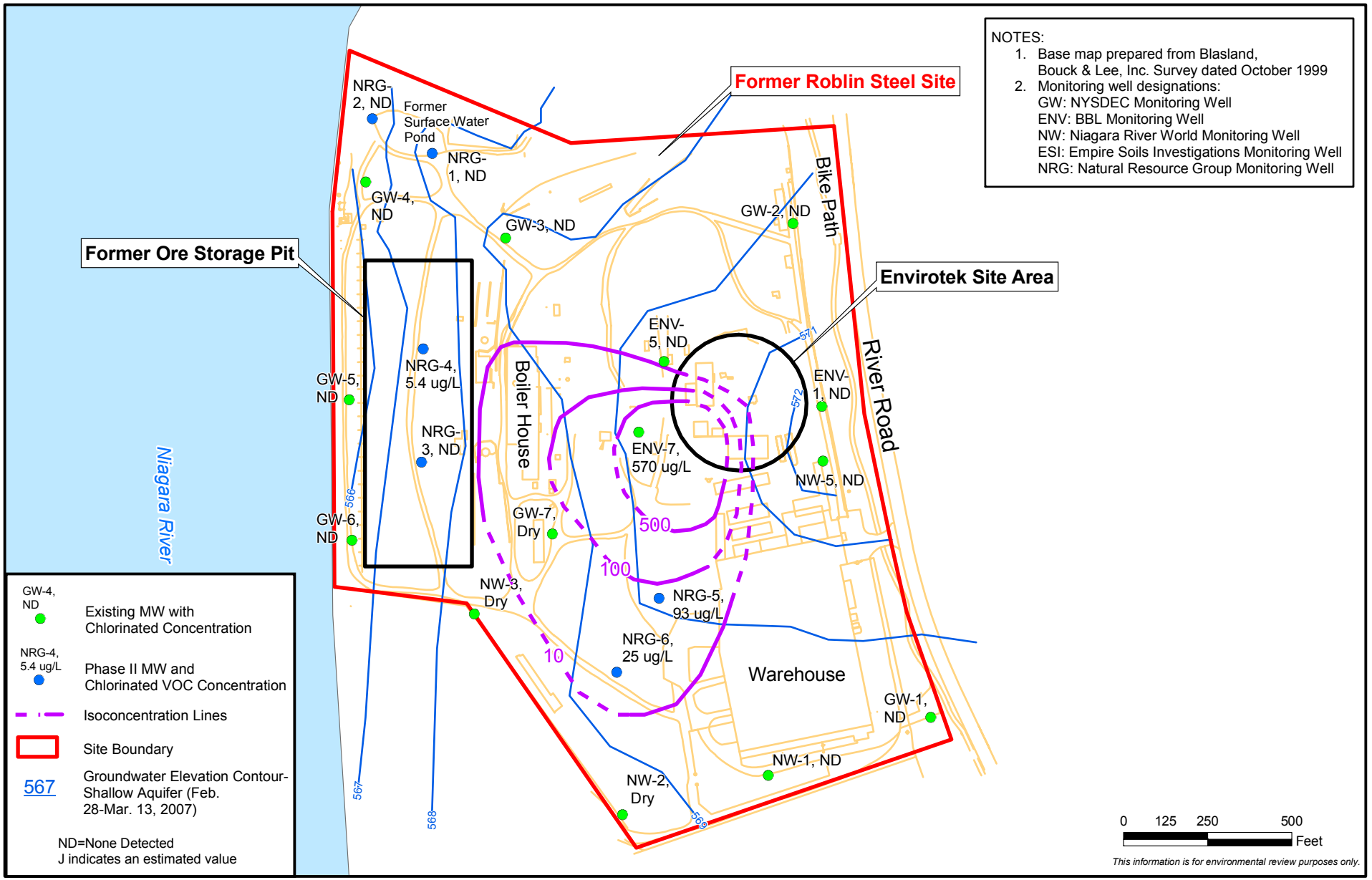

NRG Thermal

Figure 7

Remedial Investigation Report-Former Roblin Steel Site

Groundwater Quality (March 2007-Chlorinated VOCs)
Tonawanda, NY

DATE: 04/24/07
REVISED: 06/20/07
SCALE: 1:4,900
DRAWN BY: JPBOENTJE
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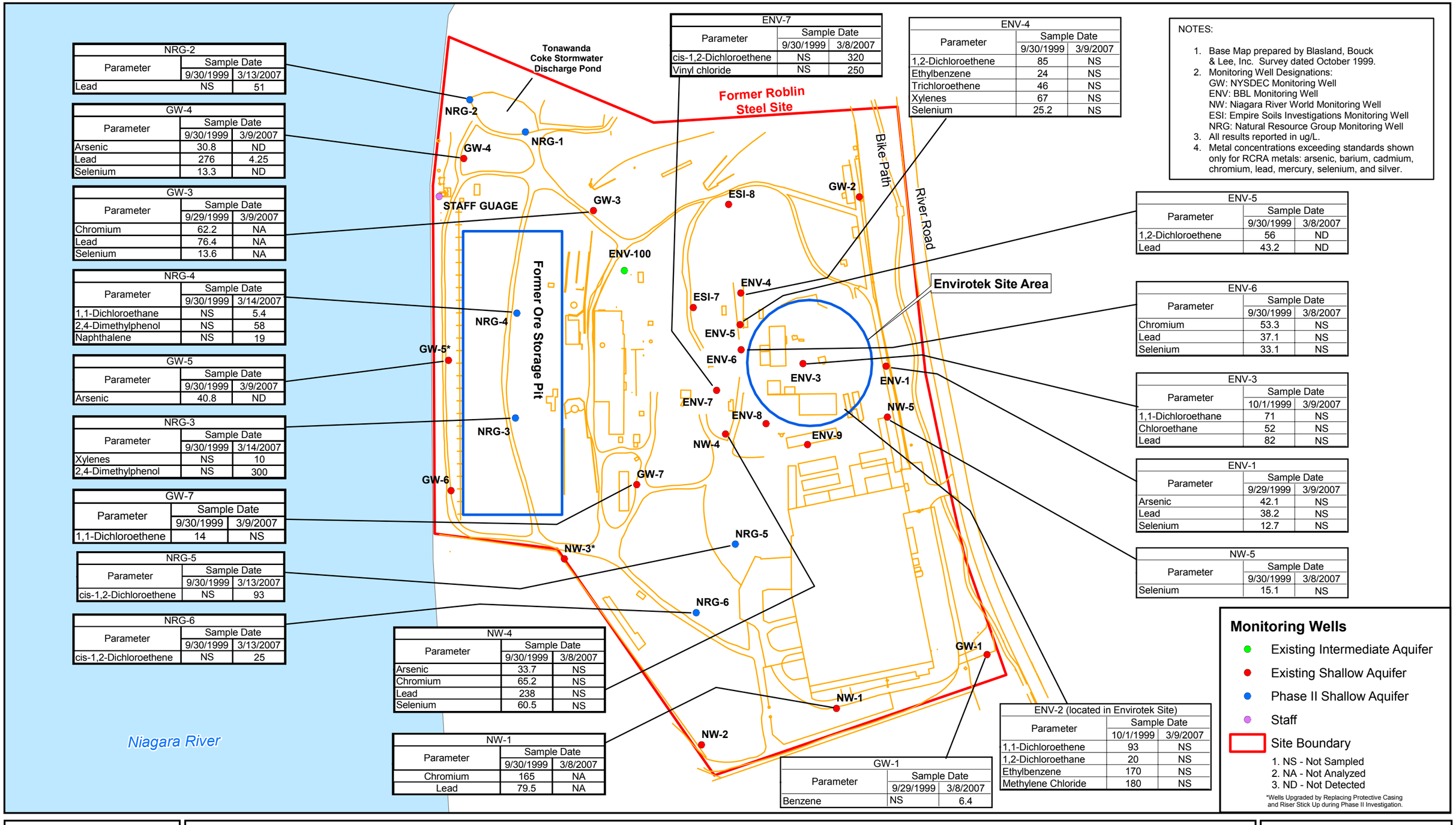

NRG-2		
Parameter	Sample Date	
	9/30/1999	3/13/2007
Lead	NS	51

GW-4		
Parameter	Sample Date	
	9/30/1999	3/9/2007
Arsenic	30.8	ND
Lead	276	4.25
Selenium	13.3	ND

GW-3		
Parameter	Sample Date	
	9/29/1999	3/9/2007
Chromium	62.2	NA
Lead	76.4	NA
Selenium	13.6	NA

NRG-4		
Parameter	Sample Date	
	9/30/1999	3/14/2007
1,1-Dichloroethane	NS	5.4
2,4-Dimethylphenol	NS	58
Naphthalene	NS	19

GW-5		
Parameter	Sample Date	
	9/30/1999	3/9/2007
Arsenic	40.8	ND

NRG-3		
Parameter	Sample Date	
	9/30/1999	3/14/2007
Xylenes	NS	10
2,4-Dimethylphenol	NS	300

GW-7		
Parameter	Sample Date	
	9/30/1999	3/9/2007
1,1-Dichloroethene	14	NS

NRG-5		
Parameter	Sample Date	
	9/30/1999	3/13/2007
cis-1,2-Dichloroethene	NS	93

NRG-6		
Parameter	Sample Date	
	9/30/1999	3/13/2007
cis-1,2-Dichloroethene	NS	25

NW-4		
Parameter	Sample Date	
	9/30/1999	3/8/2007
Arsenic	33.7	NS
Chromium	65.2	NS
Lead	238	NS
Selenium	60.5	NS

NW-1		
Parameter	Sample Date	
	9/30/1999	3/8/2007
Chromium	165	NA
Lead	79.5	NA

ENV-7		
Parameter	Sample Date	
	9/30/1999	3/8/2007
cis-1,2-Dichloroethene	NS	320
Vinyl chloride	NS	250

ENV-4		
Parameter	Sample Date	
	9/30/1999	3/9/2007
1,2-Dichloroethene	85	NS
Ethylbenzene	24	NS
Trichloroethene	46	NS
Xylenes	67	NS
Selenium	25.2	NS

NOTES:

1. Base Map prepared by Blasland, Bouck & Lee, Inc. Survey dated October 1999.
2. Monitoring Well Designations:
   GW: NYSDEC Monitoring Well
   ENV: BBL Monitoring Well
   NW: Niagara River World Monitoring Well
   ESI: Empire Soils Investigations Monitoring Well
   NRG: Natural Resource Group Monitoring Well
3. All results reported in ug/L.
4. Metal concentrations exceeding standards shown only for RCRA metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

ENV-5		
Parameter	Sample Date	
	9/30/1999	3/8/2007
1,2-Dichloroethene	56	ND
Lead	43.2	ND

ENV-6		
Parameter	Sample Date	
	9/30/1999	3/8/2007
Chromium	53.3	NS
Lead	37.1	NS
Selenium	33.1	NS

ENV-3		
Parameter	Sample Date	
	10/1/1999	3/9/2007
1,1-Dichloroethane	71	NS
Chloroethane	52	NS
Lead	82	NS

ENV-1		
Parameter	Sample Date	
	9/29/1999	3/9/2007
Arsenic	42.1	NS
Lead	38.2	NS
Selenium	12.7	NS

NW-5		
Parameter	Sample Date	
	9/30/1999	3/8/2007
Selenium	15.1	NS

ENV-2 (located in Envirotek Site)		
Parameter	Sample Date	
	10/1/1999	3/9/2007
1,1-Dichloroethene	93	NS
1,2-Dichloroethane	20	NS
Ethylbenzene	170	NS
Methylene Chloride	180	NS

GW-1		
Parameter	Sample Date	
	9/29/1999	3/8/2007
Benzene	NS	6.4

Monitoring Wells

- Existing Intermediate Aquifer
- Existing Shallow Aquifer
- Phase II Shallow Aquifer
- Staff
- Site Boundary

1. NS - Not Sampled
2. NA - Not Analyzed
3. ND - Not Detected

*Wells Upgraded by Replacing Protective Casing and Riser Stick Up during Phase II Investigation.

NRG Thermal

0 125 250 500 Feet

Figure 8

Remedial Investigation Report-Former Roblin Steel Site

Historical and Recent Groundwater Quality Data Exceeding TOGS 1.1.1 Standard

Tonawanda, NY

This information is for environmental review purposes only.

DATE: 10/12/06

REVISED: 06/27/07

SCALE: 1:3,500

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NRGTP-12	
Sample Date: 2/28/2007	Sample Depth: 0.5'
Parameter	Concentration
Cyanide	34,000 ug/kg

NRGTP-4	
Sample Date: 2/27/2007	Sample Depth: 0'-1'
Parameter	Concentration
Indeno[1,2,3-cd]pyrene	570 ug/kg

NRGTP-5	
Sample Date: 2/27/2007	Sample Depth: 0'-1'
Parameter	Concentration
Benzo[a]anthracene	2,100 ug/kg
Benzo[a]pyrene	2,900 ug/kg
Benzo[b]fluoranthene	3,900 ug/kg
Dibenz(a,h)anthracene	630 ug/kg
Indeno[1,2,3-cd]pyrene	2,500 ug/kg
Lead	744 mg/kg

NRGTP-11	
Sample Date: 2/28/2007	Sample Depth: 0.5'
Parameter	Concentration
Indeno[1,2,3-cd]pyrene	1,400 ug/kg

SS-104	
Sample Date: 9/10/1999	Sample Depth: (0.0" - 6.0")
Parameter	Concentration
Benzo (a) anthracene	1500 ug/kg
Benzo (a) pyrene	1600 ug/kg
Benzo (b) fluoranthene	1600 ug/kg
Dibenz (a,h) anthracene	790 ug/kg
Indeno (1,2,3-cd) pyrene	2,200 ug/kg
Arsenic	17.5 mg/kg
Cadmium	4.6 mg/kg

SS-105	
Sample Date: 9/10/1999	Sample Depth: (0.0" - 6.0")
Parameter	Concentration
Arsenic	17.1 mg/kg
Cadmium	5.7 mg/kg
Lead	1,210 mg/kg
Mercury	0.96 mg/kg

NRG-5	
Sample Date: 3/9/2007	Sample Depth: 2"
Parameter	Concentration
Lead	899 mg/kg

Surface Water Pond

Area A

Area B

Area C

Area D

Area E

Boiler House

Bike Path

River Road

Warehouse

Former Roblin Steel Site

Envirotek Site Area

Niagara River

- Phase II NRG Monitoring Well Location
- Phase II Sampling Test Pit Location
- Bike Path Sample Location
- Surface Soil Sample Location
- Test Pit Sample Location
- USEPA Soil Sample Location
- Soil Boring (04/2001 & 06/2001)
- Soil Boring (05/1992)
- Soil Boring (09/1999)
- Groundwater Monitoring Wells
- Historic Sampling Areas
- Historic Test Pits

Metal concentrations exceeding standards shown only for RCRA metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

NRG Thermal

0 125 250 500 Feet

Figure 9

Remedial Investigation Report-Former Roblin Steel Site

Historical and Recent Soil Quality Data for Soil less than 1 foot in Depth and Exceeding Part 375 Restricted Use Soil Cleanup Standards (Restricted Residential Land Use)

Tonawanda, NY

This information is for environmental review purposes only.

DATE: 04/23/07

REVISED: 06/27/07

SCALE: 1:3,500

DRAWN BY: JPBOENTJE

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NRGTP-5	
Sample Date: 2/27/2007	Sample Depth: 0'-1'
Parameter	Concentration
Benzo[a]pyrene	2900

SS-105	
Sample Date: 9/10/1999	Sample Depth: 0-6"
Parameter	Concentration
Arsenic	17.1 mg/kg

SS-104	
Sample Date: 9/10/1999	Sample Depth: 0-6"
Parameter	Concentration
Benzo (a) pyrene	1,600 ug/kg
Arsenic	17.5 mg/kg

Former Roblin Steel Site

Envirotek Site Area

Niagara River

Surface Water Pond

Area A

Area B

Area C

Area D

Area E

Boiler House

Bike Path

River Road

Warehouse

- Phase II NRG Monitoring Well Location
- Phase II Sampling Test Pit Location
- Bike Path Sample Location
- Surface Soil Sample Location
- Test Pit Sample Location
- USEPA Soil Sample Location
- Soil Boring (04/2001 & 06/2001)
- Soil Boring (05/1992)
- Soil Boring (09/1999)
- Groundwater Monitoring Wells
- Historic Sampling Areas
- Historic Test Pits

Metal concentrations exceeding standards shown only for RCRA metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

NRG Thermal

0 125 250 500 Feet

Figure 10

Remedial Investigation Report-Former Roblin Steel Site

Historical and Recent Soil Quality Data for Soil less than 1 foot in Depth and Exceeding Part 375 Restricted Use Soil Cleanup Standards (Industrial Land Use)

Tonawanda, NY

This information is for environmental review purposes only.

DATE: 04/23/07

REVISED: 06/27/07

SCALE: 1:3,500

DRAWN BY: JPBOENTJE

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NRGTP-13	
Sample Date: 2/28/2007	Sample Depth: 4'
Parameter	Concentration
Cadmium	19.7
Lead	609

Area B 8	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Cadmium	8.92 mg/kg

Area B 7	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Cadmium	6.4 mg/kg

Area B 6	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Benzo (a) anthracene	5741 ug/kg
Benzo (b) fluoranthene	4165 ug/kg
Benzo (k) fluoranthene	8904 ug/kg
Chrysene	7370 ug/kg
Cadmium	7.56 mg/kg

Area B 5	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Cadmium	6.54 mg/kg

Area A 1	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Arsenic	46 mg/kg

NRGTP-6	
Sample Date: 2/27/2007	Sample Depth:
Parameter	Concentration
Benzo[b]fluoranthene	1,000 ug/kg
Indeno[1,2,3-cd]pyrene	870 ug/kg

NRGTP-11	
Sample Date: 2/28/2007	Sample Depth: 4'
Parameter	Concentration
Benzo[a]anthracene	4,000 ug/kg
Benzo[a]pyrene	3,200 ug/kg
Benzo[b]fluoranthene	4,300 ug/kg
Chrysene	4,800 ug/kg
Indeno[1,2,3-cd]pyrene	3,100 ug/kg

Area C 10	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Arsenic	56.7 mg/kg
Barium	633 mg/kg
Lead	3570 mg/kg

Area C 9	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Arsenic	33.5 mg/kg
Barium	621 mg/kg
Cadmium	4.98 mg/kg

Area E 17	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Arsenic	60.5 mg/kg

Area E 18	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Arsenic	16.1 mg/kg

Area E 19	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Benzo (a) anthracene	1,373 ug/kg
Benzo (a) pyrene	1,500 ug/kg
Indeno (1,2,3-cd) pyrene	686 ug/kg
Arsenic	29.1 mg/kg
Lead	1,360 mg/kg

BG-01	
(Sample Date 8/11/99)	Sample Depth (0.0' - 6.0')
Parameter	Concentration
Barium	549 mg/kg

BG-02	
(Sample Date 8/11/99)	Sample Depth (0.0' - 6.0')
Parameter	Concentration
Benzo (a) anthracene	1000 ug/kg
Benzo (a) pyrene	1000 ug/kg
Indeno (1,2,3-cd) pyrene	800 ug/kg

TP-02	
(Sample Date 8/19/99)	Sample Depth 12.4
Parameter	Concentration
Arsenic	21.3 mg/kg

TP-01	
(Sample Date 8/19/99)	Sample Depth 12'
Parameter	Concentration
Arsenic	20.8 mg/kg

Area C 11	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Benzo (a) anthracene	14,012 ug/kg
Benzo (b) fluoranthene	21,632 ug/kg
Chrysene	13,657 ug/kg
Indeno (1,2,3-cd) pyrene	11,415 ug/kg
Arsenic	50.6 mg/kg
Lead	777 mg/kg

Area D 13	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Benzo (a) anthracene	1,249 ug/kg

Area C 12	
(Sample Date 1990)	Sample Depth 2'
Parameter	Concentration
Benzo (a) anthracene	2,091 ug/kg
Benzo (b) fluoranthene	6,933 ug/kg
Benzo (k) fluoranthene	14,823 ug/kg
Arsenic	29.1 mg/kg
Barium	680 mg/kg
Lead	1,100 mg/kg

NRGTP-9	
Sample Date: 2/28/2007	Sample Depth: 8'
Parameter	Concentration
Cyanide	48,200 ug/kg

Surface Water Pond
Area A
Area B
Area C
Area D
Area E
Boiler House
River Road
Bike Path
Warehouse
Former Roblin Steel Site
Envirotek Site Area
Niagara River

- Phase II NRG Monitoring Well Location
- Phase II Sampling Test Pit Location
- Bike Path Sample Location
- Surface Soil Sample Location
- Test Pit Sample Location
- USEPA Soil Sample Location
- Soil Boring (04/2001 & 06/2001)
- Soil Boring (05/1992)
- Soil Boring (09/1999)
- Groundwater Monitoring Wells
- Historic Sampling Areas
- Historic Test Pits

Metal concentrations exceeding standards shown only for RCRA metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.

NRG Thermal

0 125 250 500 Feet

Figure 11

Remedial Investigation Report-Former Roblin Steel Site

Historical and Recent Soil Quality Data for Soil greater than 1 foot in Depth and Exceeding Part 375 Restricted Use Soil Cleanup Standards (Restricted Residential Land Use)

Tonawanda, NY

This information is for environmental review purposes only.

DATE: 04/23/07
REVISED: 06/27/07
SCALE: 1:3,500
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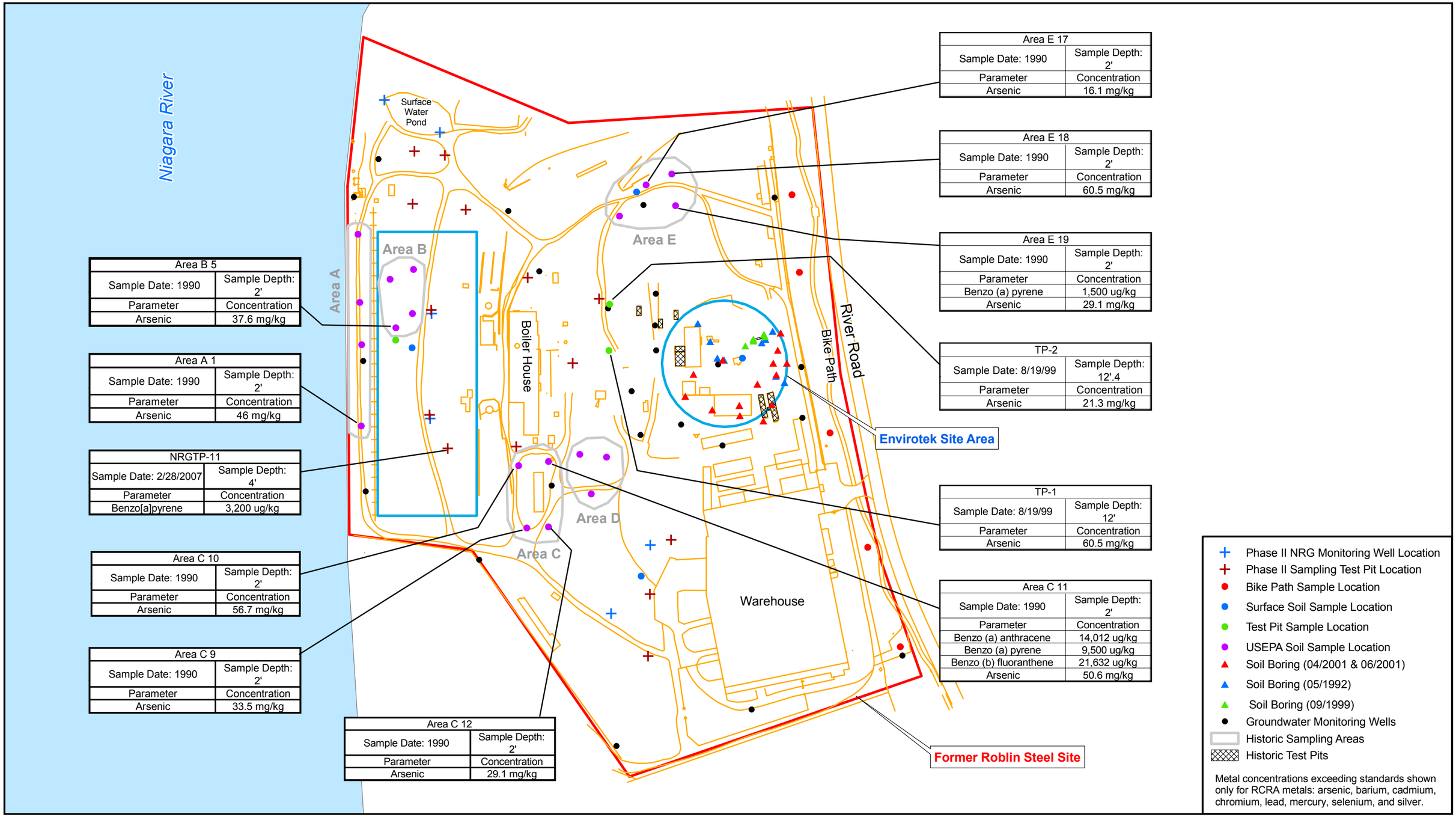

NRG Thermal

Figure 12

Remedial Investigation Report-Former Roblin Steel Site

Historical and Recent Soil Quality Data for Soil greater than 1 foot in Depth and Exceeding Part 375 Restricted Use Soil Cleanup Standards (Industrial Land Use)

Tonawanda, NY

This information is for environmental review purposes only.

DATE: 04/23/07

REVISED: 06/27/07

SCALE: 1:3,500

DRAWN BY: JPBOENTJE

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Appendix A
Test Pit Logs

Test Pit NRGTP-1

Project Name: Niagara River World Reclassification	**Location**: X-coord 667902.98244 Y-coord 4761134.90401 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/27/07 **Finish Depth**: 10.0 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 579.31 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/27/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: >10 ft -Not Determined	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	dark brown to black fine sand, trace silt, moist, no odor (fill).	0.0
2-4	dark brown to black fine sand, trace silt, moist, no odor (fill).	0.0
6	golden brown fine to coarse sand, dry, no odor (fill).	0.0
8	black to white fine to coarse sand, dry, no odor (fill).	0.0
10	red, weathered red brick- clay to cobbles, moist, no odor (fill).	0.0
	General Note: Test pit was orientated east to west and conducted parallel and south of a concrete wall to depth.	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-2

Project Name: Niagara River World Reclassification	**Location**: X-coord 667954.88715 Y-coord 4761129.1281 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/27/07 **Finish Depth**: 8.5 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 578.16 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/27/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: >8.5 ft -Not Determined	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-1	dark brown fine sand top soil, no odor (fill).	0.0
1-2	dark brown to black sand gravel slag, moist, no odor (fill).	0.0
2-4	Slag becomes malleable, very hard trenching, dry, no odor (fill).	0.0
4	malleable slag, very hard trenching, dry, no odor (fill).	12.0
8	malleable slag, very hard trenching, dry, no odor (fill).	0.0
	General Note: Test pit was completed by alternating digging with hoe and hoe hammer. Vary difficult digging conditions.	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-3

Project Name: Niagara River World Reclassification	**Location**: X-coord 668059.36747 Y-coord 4760979.38725 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/27/07 **Finish Depth**: 9.5 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 580.25 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/27/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: >9.5 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	dark brown fine sand with fire brick, dry, no odor (fill).	0.0
2.4	dark brown fine sand with fire brick, dry, no odor (fill).	0.0
	Encountered dry tunnel from 4' to 9.5' made of fire brick.	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-4

Project Name: Niagara River World Reclassification	**Location**: X-coord 667921.08391 Y-coord 4761031.45262 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/27/07 **Finish Depth**: 9.0 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 580.09 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/27/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 8.0 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	Black fine sand top soil, no odor (fill).	0.0
2-4	dark brown to black sandy gravel (foundry sand and castings), dry, no odor (fill).	0.0
4-6	dark brown to black sandy gravel (foundry sand and castings), dry, no odor (fill).	0.0
8	Black fine sand, phenolic odor, saturated (slight sheen on groundwater table) (fill).	3.4
	General Note: Test pit was completed in the former ore pit area. A lot of casting plugs and steel bands in fill materials (mainly foundry sands).	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-5

Project Name: Niagara River World Reclassification	**Location**: X-coord 668015.45259 Y-coord 4761062.7584 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/27/07 **Finish Depth**: 7.5 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 576.78 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/27/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 7.5 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	dark brown fine sand top soil, no odor (fill).	0.0
2-2.5	light tan to brown fine to coarse sand, dry, no odor (fill).	0.0
4-7.5	dark brown fine to coarse sand and fine to medium gravel (cinders), dry to saturated at 7.5', no odor - no sheen (fill).	0.0
	General Note: Test pit was completed from east to west. The eastern most portion abutted the outside wall of a concrete pit. There was 3" of oil in pit at 6.5 ft bgs. The concrete pit was 18' (N/S) X 6' (E/W).	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-6

Project Name: Niagara River World Reclassification	**Location**: X-coord 667919.63517 Y-coord 4760929.00492 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/27/07 **Finish Depth**: 9.0 ft
Project Number: NRT2007-044.00	**Elevation**: 581.44 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/27/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 8.0 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	Black fine sand top soil, no odor (fill).	0.0
2-4	dark brown to black sandy gravel (foundry sand and castings), dry, no odor (fill).	0.0
4-6	dark brown to black sandy gravel (foundry sand and castings), dry, slight phenolic odor- no sheen (fill).	5.8
6-8	Black fine sand, phenolic odor, saturated @ 8'(slight sheen on groundwater table) (fill).	4.0
9	Black fine sand, phenolic odor, saturated (slight sheen on groundwater table) (fill).	4.2
	General Note: Test pit was completed in the former ore pit area. A lot of casting plugs and steel bands in fill materials (mainly foundry sands).	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-7

Project Name: Niagara River World Reclassification	**Location**: X-coord 668004.22856 Y-coord 4760897.95113 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/27/07 **Finish Depth**: 4.0 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 574.82 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/27/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 3.0 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-1	dark brown and white fine sand and fine to coarse gravel slag, much	0.0
4.0	gray sludge, silt, wet, no odor (fill).	0.0

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-8

Project Name: Niagara River World Reclassification	**Location**: X-coord 668155.22633 Y-coord 4760806.95105 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/27/07 **Finish Depth**: 8.0 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 577.0 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/27/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 7.0 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	brown to gray slag mainly fine to coarse gravel, dry, no odor (fill).	0.0
2.4	brown to gray slag mainly fine to coarse gravel, dry, no odor (fill).	0.0
5-8	rust to red slag mainly fine to coarse gravel, dry to saturated at 7 ft bgs, no odor (fill).	0.0
	Asphalt at surface.	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-9

Project Name: Niagara River World Reclassification	**Location**: X-coord 668134.74125 Y-coord 4760754.07878 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/28/07 **Finish Depth**: 10.0 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 580.0 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/28/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: >10.0 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	black fine to coarse sand with fine to medium gravel (slag) , occasional silty clay seams, dry to moist, no odor (fill).	0.0
2.4	black fine to coarse sand with fine to medium gravel (slag) , occasional silty clay seams, dry to moist, no odor (fill).	0.0
4-6	brown slag mainly fine to coarse gravel, dry, no odor (fill).	0.0
6-8	golden brown fine to coarse sand, dry to moist no odor.	0.0
8-10	brown, dark gray, and blue-green slag mainly fine to coarse gravel, dry to saturated at 7 ft bgs, no odor (fill).	0.0
	Difficult excavating below 4'. Began to alternating between use of hoe and hoe ram.	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-10

Project Name: Niagara River World Reclassification	**Location**: X-coord 668132.94838 Y-coord 4760693.56085 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/28/07 **Finish Depth**: 9.0 ft
Project Number: NRT2007-044.00	**Ground Surface Elevation**: 578.0 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/28/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 8.5 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	black fine to cobble-sized gravel (slag and fire brick) , occasional silty clay seams, dry to moist, no odor (fill).	0.0
2.4	black fine to cobble-sized gravel (slag and fire brick) , occasional silty clay seams, dry to moist, no odor (fill).	0.0
4-6	black fine to medium sand with seams of tan-brown fine to coarse sand, with fine to coarse gravel-size slag, dry, no odor (fill).	0.0
6-8	tan-brown and black fine to medium sand and fine to coarse gravel-size slag, dry, no odor (fill).	0.0
8-9	tan-brown and black fine to medium sand and fine to coarse gravel-size slag, dry to saturated at 8.5', no odor (fill).	0.0

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-11			
Project Name: Niagara River World Reclassification	**Location**: X-coord 667937.36724 Y-coord 4760896.18665 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/28/07 **Finish Depth**: 11.0 ft
Project Number: NRT2007-044.00	**Elevation**: 580.4 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/28/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 9.0 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	tan-brown and orange fine to medium sand, moist, methane odor (much garbage in sample) (fill).	1.5
2-4	black fine to medium foundry sand and slag, dry, phenolic odor (fill).	7.0
4-6	black fine to medium foundry sand and slag, dry, phenolic odor (fill).	7.5
8	black fine to medium foundry sand and slag, dry, phenolic odor (fill).	7.0
10-11	Black fine sand, phenolic odor, saturated @ 9' (slight sheen on groundwater table) (fill).	7.5
	General Note: Test pit was completed in the former ore pit area. A lot of steel bands and garbage (glass, wood, cloth, scrap metal, plastic) in fill materials (mainly foundry sands).	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-12

Project Name: Niagara River World Reclassification	**Location**: X-coord 667904.87403 Y-coord 4761186.26567 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/28/07 **Finish Depth**: 7.5 ft
Project Number: NRT2007-044.00	**Elevation**: 574.1 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/28/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 7.0 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	dark brown fine to medium sand and fine to coarse gravel slag, moist, no odor (fill).	0.0
2-4	golden brown fine to coarse sand, dry, no odor (fill)	0.0
4-6	dark brown fine to coarse sand, occasional slag and fire brick fragments, dry, no odor (fill).	0.0
7.5	dark brown fine to coarse sand, occasional slag and fire brick fragments, no sheen on water table at 7', no odor (fill).	0.0

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-13

Project Name: Niagara River World Reclassification	**Location**: X-coord 667934.57077 Y-coord 4761182.26692 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/28/07 **Finish Depth**: 9.0 ft
Project Number: NRT2007-044.00	**Elevation**: 577.2 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/28/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: 8.5 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-2	dark brown fine to medium sand with some silt and clay seams, moist, no odor (fill).	0.0
2-4	brown fine to coarse sand to boulder sized slag, dry, no odor (fill)	0.0
4-6	dark brown fine to coarse gravel slag, occasional fire brick fragments, dry, no odor (fill).	0.0
6-8	dark brown fine to coarse gravel slag, occasional fire brick fragments, dry, no odor (fill).	0.0
	Encountered 2' diameter sewer line (concrete?) at 8' below ground surface oriented SE/NW. Pipe was mainly filled with sediment with water in pipe at 8.5'.	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Test Pit NRGTP-14

Project Name: Niagara River World Reclassification	**Location**: X-coord 668085.15423 Y-coord 4761042.17561 (coords in UTM Zone 17 N [meters NAD 83])	**Method**: Backhoe (TB175 Takeuchi with TB135 Takeuchi hoe hammer on-site)	**Start Date**: 02/28/07 **Finish Depth**: 3.5 ft
Project Number: NRT2007-044.00	**Elevation**: 580.0 (ft MSL)	**Logged by**: Stephen Lorentz (NRG)	**Finish Date**: 02/28/07
Sample: Grab	**Excavator**: SJB Empire **Operator**: Ken Fuller	**Depth to Water**: >3.5 ft	**Service Rep**: Dave Steiner

Depth (feet)	Description	PID* (ppm)
0-3.5	gravel slag, dry, no odor (fill).	0.0
	Very difficult excavating - Encountered massive slag deposits of varying colors- Used ho ram multiple times.	

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Appendix B
Soil Chemistry Summation Tables

Table I
Historic Surficial Soil Quality Sampling Results (<1.0 feet)
Remedial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

	Data Source: Table 6-1 of NYSDEC Site Evaluation Report (December 2006)											
Sample ID:	SS-102	SS-103	SS-104	SS-105	BB-23	AJ-19	AF-18	AH-17	AI-18	BC-27	AK-12	DN-32
Sample Date:	9/10/1999	9/10/1999	9/10/1999	9/10/1999	7/28/2003	7/24/2003	7/24/2003	7/24/2003	7/24/2003	7/28/2003	7/24/2003	8/4/2003
Sample Depth:	(0.0" - 6.0")	(0.0" - 6.0")	(0.0" - 6.0")	(0.0" - 6.0")	(0.0" - 2.0")	(0.0" - 2.0")	(0.0" - 2.0")	(0.0" - 2.0")	(0.0" - 2.0")	(0.0" - 2.0")	(0.0" - 2.0")	(0.0" - 2.0")
VOCs (ug/kg)												
1,1,1-Trichloroethane												
1,1-Dichloroethane												
1,2-Dichloroethane												
1,2-Dichloroethene												
1,2-Dichloroethene (total)												
1,2-Dichloropropane												
2-Butanone												
2-Hexanone												
4-Methyl-2-Pentanone					.							
Acetone												
Benzene												
Carbon Disulfide												
Chloroethane												
Ethylbenzene												
Methylene Chloride	2 J	2 J	3 J	2 J								
Tetrachloroethene				100 J								
Toluene												
Trichloroethene				6 J								
Trichlorofluoromethane												
Vinyl Chloride												
Xylenes												
SVOCs (ug/kg)												
2,3,4,6-Tetrachlorophenol												
2-Methylnaphthalene		76 J										
2-Methylphenol												
3-Methylphenol												
4,6-Dinitro-2-methylphenol												
4-Bromophenyl phenyl ether												
4-Methylphenol		38 J										
Acenaphthene	52 J		620	120 J								
Anthracene	71 J		800	240 J								
Benzidine												
Benzo (a) anthracene	280 J	53 J	1500	350 J								
Benzo (a) pyrene	110 J		1600	350 J								
Benzo (b) fluoranthene	260 J		1600	260 J								
Benzo (g,h,i) perylene	410 J	120 J	2500	550								
Benzo (k) fluoranthene	290 J		1600	330 J								
Benzoic acid												
Bis(2-ethylhexyl)phthalate	1100 B			1700 B								
Butlylbenzylphthalate				140 J								
Carbazole			130 J	51 J								
Chrysene	380 J	77 J	1800	420								
Dibenz (a,h) anthracene			790	120 J								
Dibenzofuran												
Di-n-butylphthalate			92 J	74 J								
Di-n-octylphthalate				43 J								
Fluoranthene	460 J	60 J	1900	540								
Fluorene												
Hexachlorobenzene												
Indeno (1,2,3-cd) pyrene	310 J	85 J	2200	430								
Isophorone												
Naphthalene		43 J										
Phenanthrene	190 J	94 J	730	270 J								
Phenol												
Pyrene	460	66 J	2600	500								
Metals (mg/kg)												
Aluminum	19100	8390	12200	18800								
Antimony	1 JN	4.4 JN	2.5 JN	5 JN					22			37
Arsenic	4.9	3.8	17.5	17.1	3.5	24						
Barium	139	139	223	171		200	473		360	82	230	140
Beryllium	1.2	0.76	1.3	2.4								
Cadmium	1.2	1.9	4.6	5.7	3				21	4.4	4	5
Calcium	85800	47400	70900	67700								
Chromium	40.8	69.5	200	46.2	112 E	16	54	2.4	162	81	118	162
Cobalt	2.1	1.2	3.2	3.8		14	54		16		12	9
Copper	122JN	37JN	148JN	132JN	40	68	63	13	1370E	193	2330E	169
Iron	29000**	16400**	77300**	58000**	25200 E	87300 E	85600 E	9150 E	85600E	36100E	87300E	87300E
Lead	148	83.5	399	1210	136 E	99	102 E	13	922E	152	449	595E
Magnesium	35300 J	1170 J	13900 J	9930 J	813	1240 E	2980 E	167	5080E	957	6290E	3730E
Manganese	1130	1840	6120	1970								
Mercury	0.06	0.06	0.16	0.96								
Nickel	20.5	18.6	62.3	25	23	27	20	6.3	123	63	152	30
Potassium	1200	614	1470	969								
Selenium	1.8 JN	2.3 JN	4.3 JN	1.9 JN								
Silver												
Sodium	392	271	583	1020								
Thallium			0.58									
Vanadium	19.1	6.5	69.4	24.3								
Zinc	152 JN	221 JN	436 JN	2600 JN	359 E	389	182	136	1100E	551	407E	693E
Inorganics (mg/kg)												
Cyanide		6.35 JN										

Table I
Historic Surficial Soil Quality Sampling Results (<1.0 feet)
Remedial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

Sample ID: Sample Date: Sample Depth:	Statistical Analysis[1]				Part 375 Restricted Use Soil Cleanup Standards	
	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentrations	Standard Deviation	Industrial Land Use	Restricted Residential Land use
VOCs (ug/kg)						
1,1,1-Trichloroethane	0	0.0			1,000,000c	100,000a
1,1-Dichloroethane	0	0.0			480,000	26,000
1,2-Dichloroethane	0				60,000	NS
1,2-Dichloroethene	0	0.0			1,000,000c	NS
1,2-Dichloroethene (total)	0	0.0			NS	NS
1,2-Dichloropropane	0	0.0			NS	NS
2-Butanone	0	0.0			NS	NS
2-Hexanone	0				NS	NS
4-Methyl-2-Pentanone	0	0.0			NS	NS
Acetone	0	0.0			1,000,000c	100,000b
Benzene	0	0.0			89,000	4,800
Carbon Disulfide	0				NS	NS
Chloroethane	0				NS	NS
Ethylbenzene	0	0.0			780,000	41,000
Methylene Chloride	0	0.0			1,000,000c	100,000a
Tetrachloroethene	0	0.0			300,000	19,000
Toluene	0	0.0			1,000,000c	100,000a
Trichloroethene	0	0.0			400,000	21,000
Trichlorofluoromethane	0	0.0			NS	NS
Vinyl Chloride	0				NS	900
Xylenes	0	0.0			1,000,000c	100,000a
SVOCs (ug/kg)						
2,3,4,6-Tetrachlorophenol	0	0.0			NS	NS
2-Methylnaphthalene	0	0.0			NS	NS
2-Methylphenol	0	0.0			NS	NS
3-Methylphenol	0	0.0			NS	NS
4,6-Dinitro-2-methylphenol	0	0.0			NS	NS
4-Bromophenyl phenyl ether	0	0.0			NS	NS
4-Methylphenol	0	0.0			NS	NS
Acenaphthene	1	620.0	620.0	357.957	1,000,000c	100,000a
Anthracene	1	800.0	800.0	461.880	1,000,000c	100,000a
Benzidine	0	0.0			NS	NS
Benzo (a) anthracene	1	1500.0	1500.0	750.000	11,000	1,000f
Benzo (a) pyrene	1	1600.0	1600.0	923.760	1,100	1,000f
Benzo (b) fluoranthene	1	1600.0	1600.0	923.760	11,000.00	1,000f
Benzo (g,h,i) perylene	2	2500.0	1525.0	1186.996	1,000,000c	100,000a
Benzo (k) fluoranthene	1	1600.0	1600.0	923.760	110,000	3,900
Benzoic acid	0	0.0			NS	NS
Bis(2-ethylhexyl)phthalate	0	0.0			NS	NS
Butlylbenzylphthalate	0	0.0			NS	NS
Carbazole	0				NS	NS
Chrysene	2	1800.0	1110.0	853.288	110,000	3,900
Dibenz (a,h) anthracene	1	790.0	790.0	558.614	1,100	330e
Dibenzofuran	0	0.0			1,000,000c	59,000
Di-n-butylphthalate	0	0.0			NS	NS
Di-n-octylphthalate	0	0.0			NS	NS
Fluoranthene	2	1900.0	1220.0	896.883	1,000,000c	NS
Fluorene	0	0.0			1,000,000c	100,000a
Hexachlorobenzene	0	0.0			NS	NS
Indeno (1,2,3-cd) pyrene	2	2200.0	1315.0	1048.121	11,000	500f
Isophorone	0	0.0			NS	NS
Naphthalene	0	0.0			1,000,000c	100,000a
Phenanthrene	1	730.0	730.0	365.000	1,000,000c	100,000a
Phenol	0	0.0			1,000,000c	100,000a
Pyrene	3	2600.0	1186.7	1162.354	1,000,000c	100,000a
Metals (mg/kg)						
Aluminum	4	19100.0	14622.5	5234.885	NS	NS
Antimony	2	37.0	29.5	15.955	NS	NS
Arsenic	6	24.0	11.8	8.831	16f	16f
Barium	10	473.0	215.7	117.804	10,000d	400
Beryllium	4	2.4	1.4	0.697	2,700	72
Cadmium	9	21.0	5.6	5.941	60	4.3
Calcium	4	85800.0	67950.0	15808.120	NS	NS
Chromium	11	200.0	86.5	66.926	NS	NS
Cobalt	9	54.0	12.8	16.380	NS	NS
Copper	6	193.0	91.0	68.310	10,000d	270
Iron	0	0.0		0.000	NS	NS
Lead	8	1210.0	319.2	349.479	3,900	400
Magnesium	3	957.0	645.7	342.722	NS	NS
Manganese	4	6120.0	2765.0	2266.929	10,000d	2,000f
Mercury	4	1.0	0.3	0.436	5.7j	0.81j
Nickel	12	152.0	47.6	45.657	10,000d	310
Potassium	4	1470.0	1063.3	362.792	NS	NS
Selenium	0	0.0			6,800	180
Silver	0				6,800	180
Sodium	4	1020.0	566.5	328.484	NS	NS
Thallium	1	0.6	0.6		NS	NS
Vanadium	4	69.4	29.8	27.421	NS	NS
Zinc	4	551.0	314.5	184.554	10,000d	10,000 d
Inorganics (mg/kg)						
Cyanide	0				10,000d	27h

Table I
Historic Surficial Soil Quality Sampling Results (<1.0 feet)
Remedial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

Footnotes

J - Compound reported at an estimated concentration below the reporting limit
B - Analyte was detected in the associated blank as well as the sample
N - Spiked sample recovery not within control limits
** - Duplicate analysis not within control limits
E - The reported value is estimated due to the presence of interference
W - Post-digestion spike is out of control limits, while sample absorbance is less than 50% of spike absorbance
D - Compound identified in analysis at a secondary dilution factor

Part 375 Restricted Use Soil Cleanup Standards footnotes

a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum valueof 100 ppm. See TSD section 9.3.
b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.
c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.
d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.
e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), theCRQL is used as the SCO value.
f For constituents where the calculated SCO was lower than the rural soil background concentration asdetermined by the Department and Department of Health rural soil survey, the rural soil backgroundconcentration is used as the Track 2 SCO value for this use of the site.
g This SCO is derived from data on mixed isomers of BHC.
h The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for thetotal species of this contaminant is below the specific SCO.
i This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.
j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

Table II
2007 Surficial Soil Quality Sampling Results (<1.0 feet)
Former Roblin Steel Site
Town of Tonawanda, New York

Date Sampled	2/27/2007	2/27/2007	2/27/2007	2/27/2007	2/28/2007	2/28/2007	2/28/2007	2/28/2007	2/28/2007	3/7/2007	3/12/2007	3/9/2007	3/9/2007
Sample Location	NRGTP-4 0-1'	NRGTP-5 0-1'	NRGTP-7 0.5-1'	NRGTP-8 0.5-1'	NRGTP-9 0.5-1'	NRGTP-10 0.5-1'	NRGTP-11 0.5'	NRGTP-12 0.5'	NRGTP-13 0.5'	NRG-1 2"	NRG-4 2"	NRG-5 2"	NRG-6 2"
VOCs (ug/kg) by EPA Method 8260B													
2-Hexanone			NA			NA				NA	NA	NA	NA
Acetone			NA			NA		100 J		NA	NA	NA	NA
Benzene			NA			NA				NA	NA	NA	NA
Carbon disulfide			NA			NA				NA	NA	NA	NA
cis-1,2-Dichloroethene			NA			NA				NA	NA	NA	NA
Ethylbenzene			NA			NA				NA	NA	NA	NA
Methylene Chloride			NA			NA		47 J*B		NA	NA	NA	NA
Tetrachloroethene			NA			NA				NA	NA	NA	NA
Toluene			NA			NA				NA	NA	NA	NA
Xylenes, Total			NA			NA				NA	NA	NA	NA
SVOCs (ug/kg) by EPA Method 8270C													
1,2,4-Trichlorobenzene			NA			NA				NA	NA	NA	NA
1,2-Dichlorobenzene			NA			NA				NA	NA	NA	NA
2,4-Dimethylphenol	220 J		NA			NA				NA	NA	NA	NA
2-Methylnaphthalene	440	160 J	NA			NA	200 J			NA	NA	NA	NA
2-Methylphenol	180 J		NA			NA				NA	NA	NA	NA
4-Methylphenol	530		NA			NA				NA	NA	NA	NA
Acenaphthene			NA			NA	220 J			NA	NA	NA	NA
Acenaphthylene		400 J	NA			NA	140 J			NA	NA	NA	NA
Anthracene		420	NA			NA	190 J			NA	NA	NA	NA
Benzo[a]anthracene	350 J	2100	NA	160 J	210 J	NA	640			NA	NA	NA	NA
Benzo[a]pyrene	500	2900	NA	190 J	180 J	NA	950			NA	NA	NA	NA
Benzo[b]fluoranthene	580	3900	NA	310 J	420	NA	1200		90 J	NA	NA	NA	NA
Benzo[g,h,i]perylene	590	2400	NA	240 J	200 J	NA	1800			NA	NA	NA	NA
Benzo[k]fluoranthene	210 J	1400	NA		170 J	NA	440			NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate			NA			NA				NA	NA	NA	NA
Butyl benzyl phthalate			NA			NA				NA	NA	NA	NA
Carbazole		96 J	NA			NA	71 J			NA	NA	NA	NA
Chrysene	430	2300	NA	200 J	240 J	NA	730			NA	NA	NA	NA
Dibenz(a,h)anthracene	140 J	630	NA			NA	270 J			NA	NA	NA	NA
Dibenzofuran	98 J	82 J	NA			NA	71 J			NA	NA	NA	NA
Di-n-butyl phthalate			NA			NA				NA	NA	NA	NA
Di-n-octyl phthalate			NA			NA				NA	NA	NA	NA
Fluoranthene	280 J	1900	NA	230 J	420	NA	820		79 J	NA	NA	NA	NA
Fluorene			NA		200 J	NA	65 J			NA	NA	NA	NA
Indeno[1,2,3-cd]pyrene	570	2500	NA	240 J	230 J	NA	1400		65 J	NA	NA	NA	NA
Isophorone			NA			NA				NA	NA	NA	NA
Naphthalene	480	160 J	NA			NA	180 J			NA	NA	NA	NA
Phenanthrene	370	550	NA	150 J	210 J	NA	440			NA	NA	NA	NA
Phenol			NA			NA				NA	NA	NA	NA
Pyrene	320 J	1500	NA	250 J	260 J	NA	750		88 J	NA	NA	NA	NA
Metals (mg/kg) by EPA Method 6010B and 7471A (Hg only)													
Arsenic		45.8 J		8 J		11.7 J				10.1 J	4.1 J	11	4.6 J
Barium	32.9 J	342 J	126 J	811 J		264 J		1190 J	119 J	185	332	165	138
Cadmium			1.8 J			1.7 J				2.2 J	8.2 J	10 J	1.5 J
Chromium	14.5 J	40.9 J	19 J	47.6 J		172 J		57.5 J	17.1 J	42	107	312	335
Lead	18.8	744	281	131		236		6.4 J	11.6	229	204	899	51.9
Mercury			0.75							0.48	0.073	0.18	0.15
Selenium				2.1 J									
Silver											1.7 J		
Total Cyanide Concentration (ug/Kg) by EPA Method 3012B		4100	13800	380 J				34000			7000 J	1000 j	

Table II
2007 Surficial Soil Quality Sampling Results (<1.0 feet)
Former Roblin Steel Site
Town of Tonawanda, New York

Date Sampled	Statistical Analysis[1]				Standard from Part 375 Restricted Use Soil Cleanup Standards	
Sample Location	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentrations	Standard Deviation	Industrial Land Use	Restricted Residential Land use
VOCs (ug/kg) by EPA Method 8260B						
2-Hexanone	0				NS	NS
Acetone	0	0.0			1,000,000c	100,000b
Benzene	0				89,000	48,000
Carbon disulfide	0				NS	NS
cis-1,2-Dichloroethene	0	0.0			NS	100,000a
Ethylbenzene	0	0.0			780,000	41,000
Methylene Chloride	0				1,000,000c	100,000a
Tetrachloroethene	0				300,000	19,000
Toluene	0	0.0			1,000,000c	100,000a
Xylenes, Total	0	0.0			1,000,000c	100,000a
SVOCs (ug/kg) by EPA Method 8270C						
1,2,4-Trichlorobenzene	0				NS	NS
1,2-Dichlorobenzene	0				NS	NS
2,4-Dimethylphenol	0	0.0			NS	NS
2-Methylnaphthalene	1	440.0	440.0	146.7	NS	NS
2-Methylphenol	0	0.0			NS	NS
4-Methylphenol	1	530.0	530.0	200.3	NS	NS
Acenaphthene	0	0.0			1,000,000c	100,000a
Acenaphthylene	0				NS	NS
Anthracene	1	420.0	420.0	148.5	1,000,000c	100,000a
Benzo[a]anthracene	2	2100.0	1370.0	643.2	11,000	1,000f
Benzo[a]pyrene	3	2900.0	1450.0	885.6	1,100	1,000f
Benzo[b]fluoranthene	4	3900.0	1525.0	1130.6	11,000.00	1,000f
Benzo[g,h,i]perylene	3	2400.0	1596.7	852.2	1,000,000c	100,000a
Benzo[k]fluoranthene	2	1400.0	920.0	449.1	110,000	3,900
Bis(2-ethylhexyl) phthalate	0	0.0			NS	NS
Butyl benzyl phthalate	0				NS	NS
Carbazole	0	0.0			NS	NS
Chrysene	3	2300.0	1153.3	701.4	110,000	3,900
Dibenz(a,h)anthracene	1	630.0	630.0	210.0	1,100	330e
Dibenzofuran	0	0.0			1,000,000c	59,000
Di-n-butyl phthalate	0				NS	NS
Di-n-octyl phthalate	0				NS	NS
Fluoranthene	3	1900.0	1046.7	575.0	1,000,000c	NS
Fluorene	0	0.0			1,000,000c	100,000a
Indeno[1,2,3-cd]pyrene	3	2500.0	1490.0	790.3	11,000	500f
Isophorone	0				NS	NS
Naphthalene	1	480.0	480.0	160.0	1,000,000c	100,000a
Phenanthrene	3	550.0	453.3	215.6	1,000,000c	100,000a
Phenol	0	0.0			1,000,000c	100,000a
Pyrene	2	1500.0	1125.0	466.2	1,000,000c	100,000a
Metals (mg/kg) by EPA Method 6010B and 7471A (Hg only)						
Arsenic	1	11.0	11.0	4.2	16f	16f
Barium	4	332.0	205.0	113.8	10,000d	400
Cadmium	0				60	4.3
Chromium	4	335.0	199.0	128.5	NS	NS
Lead	10	899.0	280.6	299.1	3,900	400
Mercury	5	0.8	0.3	0.3	5.7j	0.81j
Selenium	0				6,800	180
Silver	0				6,800	180
Total Cyanide Concentration (ug/Kg) by EPA Method 3012B	3	34000.0	17300.0	13522.7	10,000,000d	27,000h

Table II
2007 Surficial Soil Quality Sampling Results (<1.0 feet)
Former Roblin Steel Site
Town of Tonawanda, New York

Footnotes

J - Compound reported at an estimated concentration below the reporting limit

B - Analyte was detected in the associated blank as well as the sample

N - Spiked sample recovery not within control limits

** - Duplicate analysis not within control limits

E - The reported value is estimated due to the presence of interference

W - Post-digestion spike is out of control limits, while sample absorbance is less than 50% of spike absorbance

D - Compound identified in analysis at a secondary dilution factor

* LCS or LCSD exceeds the control limit

M Indicates result was obtained via a manual integration (rather than via a calculation from the instrument software)

[1] Does not Include B, *, and J values

Part 375 Restricted Use Soil Cleanup Standards footnotes

a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum valueof 100 ppm. See TSD section 9.3.

b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), theCRQL is used as the SCO value.

f For constituents where the calculated SCO was lower than the rural soil background concentration asdetermined by the Department and Department of Health rural soil survey, the rural soil backgroundconcentration is used as the Track 2 SCO value for this use of the site.

g This SCO is derived from data on mixed isomers of BHC.

h The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for thetotal species of this contaminant is below the specific SCO.

i This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

Table III
Historic Subsurface Soil Quality Sampling Results (>1.0 feet)
Remidial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

Sample ID: Sample Date: Sample Depth:	Data Source: Table 6-2 of NYSDEC Site Evaluation Report (December 2006)--1990 USEPA Data												
	Area A 1 1990 (2.0')	Area A 2 1990 (2.0')	Area A 3 1990 (2.0')	Area A 4 1990 (2.0')	Area A 20 1990 (2.0')	Area B 5 1990 (2.0')	Area B 6 1990 (2.0')	Area B 7 1990 (2.0')	Area B 8 1990 (2.0')	Area C 9 1990 (2.0')	Area C 10 1990 (2.0')	Area C 11 1990 (2.0')	Area D 12 1990 (2.0')
VOCs (ug/kg)													
1,1,1-Trichloroethane													
1,1-Dichloroethane													
1,2-Dichloroethane													
1,2-Dichloroethene													
1,2-Dichloroethene (total)													
1,2-Dichloropropane						760							
2-Butanone			1 J		2 J	156 J		1 J		1 J	2 J	1 J	4 J
2-Hexanone													
4-Methyl-2-Pentanone													
Acetone						2124							
Benzene						70 J							
Carbon Disulfide													
Chloroethane													
Ethylbenzene						2365							
Methylene Chloride	6 J	11	8	33	44	131 J	13	49	33	48	96	110	94
Tetrachloroethene						1052				13	20 J	13 J	23 J
Toluene					1 J	5506				2 J	4 J	2 J	1 J
Trichloroethene									3 J	2 J		3 J	
Trichlorofluoromethane												2	
Vinyl Chloride													
Xylenes	24					14727					2 J		
SVOCs (ug/kg)													
2,3,4,6-Tetrachlorophenol							35968						
2-Methylnaphthalene							15865	276	233	284	924		
2-Methylphenol								274					
3-Methylphenol								107					
4,6-Dinitro-2-methylphenol	1132												
4-Bromophenyl phenyl ether			203	222	194								
4-Methylphenol							1495	107					
Acenaphthene						97	22601			70	112		3196
Anthracene						211		115	92	609	734	869	2032
Benzidine	185												
Benzo (a) anthracene	242						5741	221	95	458	88	14012	2091
Benzo (a) pyrene								283	82			9500	
Benzo (b) fluoranthene							4165	575	201	316		21632	6933
Benzo (g,h,i) perylene												18062	
Benzo (k) fluoranthene							8904	797	278	438			14823
Benzoic acid								87					
Bis(2-ethylhexyl)phthalate	1010	638	129	515	281		6607	1950	1769	2389	362		
Butlylbenzylphthalate							713	127	41				
Carbazole													
Chrysene	274						7370	253	123	513	94	13657	3341
Dibenz (a,h) anthracene													
Dibenzofuran						68			103		392		
Di-n-butylphthalate	633			143					314	220			
Di-n-octylphthalate	543							205	85				
Fluoranthene						127		334	187	122	148	13441	2102
Fluorene		62	56	63	97	82	7634	76	41				
Hexachlorobenzene	165												
Indeno (1,2,3-cd) pyrene												11415	
Isophorone	254												
Naphthalene	230						29658		505		1037		
Phenanthrene	403					200		536	459	577	696	5210	749
Phenol							1398						
Pyrene						75	26651	338	162	232	164	20957	5362
Metals (mg/kg)													
Aluminum													
Antimony			5.71								20.8		
Arsenic	46	8.01	4.38		7.66	37.6	7.85	15	10.2	33.5	56.7	50.6	29.1
Barium	374	11.3	5.94	7.48	13.8	291	70.3	96.1	81.6	621	633	167	680
Beryllium											3.66		2.1
Cadmium						6.54	7.56	6.4	8.92	4.98		2.56	3.04
Calcium													
Chromium	11.4	5.3				575	35.7	77.6	41.2	37.4		28.4	36.2
Cobalt	19.3					21.6				7.45	8.74	7.21	6.57
Copper	15.8				8.28	998	40.5	92.2	43.4	19.1	12100	24.6	259
Iron													
Lead	15.7		6.66	7.29	7.22	197	269	227	275	218	3570	777	1100
Magnesium													
Manganese													
Mercury										0.72		0.12	0.32
Nickel						142	11.2	34.1	12.8	11.9	15.1	15.5	15.5
Potassium	451	142	128	164	937	187	408	489	506	664	2190	995	981
Selenium													
Silver													
Sodium	58.1 J	38.9 J	42.5 J	36 J	56.9 J	176 J	119 J	172 J	157 J	92.1J	369J	173J	262
Thallium													
Vanadium						18.9				40.9	9.62	29.8	12.4
Zinc	29.5 J	16.6 J	18.7 J	19.2 J	0 J	264 J	1049 J	902 J	1071 J	977J	309J	486J	322
Inorganics (mg/kg)													
Cyanide													

Table III
Historic Subsurface Soil Quality Sampling Results (>1.0 feet)
Remidial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

	Data Source: Table 6-2 of NYSDEC Site Evaluation Report (December 2006)-- 1990 USEPA Data							Data Source: Table 6-3 of NYSDEC Site Evaluation Report (December 2006)-- Bike Path				
Sample ID:	Area D 13	Area D 14	Area D 15	Area E 16	Area E 17	Area E 18	Area E 19	BG-01	BG-02	BG-03	BG-04	BG-05
Sample Date:	1990	1990	1990	1990	1990	1990	1990	8/11/99	8/11/99	8/11/99	8/11/99	8/11/99
Sample Depth:	(2.0')	(2.0')	(2.0')	(2.0')	(2.0')	(2.0')	(2.0')	(0.0' - 6.0')	(0.0' - 6.0')	(0.0' - 6.0')	(0.0' - 6.0')	(0.0' - 8.0')
VOCs (ug/kg)												
1,1,1-Trichloroethane												
1,1-Dichloroethane												
1,2-Dichloroethane												
1,2-Dichloroethene												
1,2-Dichloroethene (total)												
1,2-Dichloropropane												
2-Butanone	1 J	1 J	1 J	2 J	3 J	2 J	2 J					
2-Hexanone												
4-Methyl-2-Pentanone												
Acetone												8 J
Benzene					1 J							
Carbon Disulfide					2 J							3 J
Chloroethane												
Ethylbenzene												
Methylene Chloride	177	50	95	150	263	88	119					
Tetrachloroethene	114 J	28 J	6 J								2 J	
Toluene	3 J	2 J	2 J	1 J	2 J		2 J					
Trichloroethene	5 J	4 J	3 J	4 J								
Trichlorofluoromethane												
Vinyl Chloride												
Xylenes	2 J											
SVOCs (ug/kg)												
2,3,4,6-Tetrachlorophenol												
2-Methylnaphthalene									61 J		92 J	
2-Methylphenol												
3-Methylphenol												
4,6-Dinitro-2-methylphenol												
4-Bromophenyl phenyl ether												
4-Methylphenol												
Acenaphthene									130 J	39 J		
Anthracene								43 J	180 J	93 J	42 J	
Benzidine												
Benzo (a) anthracene	1249						1373	150 J	1000	360	180 J	150
Benzo (a) pyrene							1500	150 J	1000	430	170 J	160 J
Benzo (b) fluoranthene								150 J	820	560	190 J	150 J
Benzo (g,h,i) perylene								140 J	710	480	170 J	83 J
Benzo (k) fluoranthene							2303	110 J	1200	460	140 J	120 J
Benzoic acid												
Bis(2-ethylhexyl)phthalate			134	1291						1400 BJ		
Butlylbenzylphthalate												
Carbazole									64 J			
Chrysene	1544				406		1515	170 J	970	470	210 J	160 J
Dibenz (a,h) anthracene												
Dibenzofuran									60 J			
Di-n-butylphthalate												
Di-n-octylphthalate												
Fluoranthene	1581						2095	240 J	1800	520	320 J	210 J
Fluorene									55 J			
Hexachlorobenzene										84 J		
Indeno (1,2,3-cd) pyrene							686	120 J	800	460	170 J	140 J
Isophorone												
Naphthalene									67 J		54 J	
Phenanthrene	713	503			683		1550	180 J	720	290 J	190 J	100 J
Phenol												
Pyrene	2741	784					1518	270 J	1300	490	270 J	200 J
Metals (mg/kg)												
Aluminum								18000	17000	13900	28000	16700
Antimony								6 JN		1.8 JN		1.7 JN
Arsenic	3.47	4.47		8.45	16.1	60.5	29.1		7.7	6.7	3.1 J	4 J
Barium	39.3	32.3	174	30	113	396	135	549	209	123	310	160
Beryllium						2.43	1.3	0.89	1.9	1.3	3.6	0.98
Cadmium					2.09	2.93	1.76	2.1 J**	1.4 J**	0.92 J**	0.63	0.59
Calcium								143000	60000	59500	152000	93300
Chromium	5.76	7.12	16.3	6.45	13.4	33.6	98.7	1320 **	41.6 **	17.5 **	13.3	292
Cobalt						6.99	9.3	2.6	5	4.3	3.3	7.5
Copper	16.4	21.1	27.6	21.1	51.1	29.2	289	74.8	30.1	32.1	9.9 J	25.4 J
Iron								72600	27200	16000	10800	33800
Lead	34.3	43.8	52.5	22.8	118	80.1	1360	306 JN	70.7 JN	133 JN	28.5	132
Magnesium								30500	10500	9990	17500	14400
Manganese								17500 **	1390 **	1360 **	2550 EJ	7430 EJ
Mercury	0.25	0.12	0.33	0.71	0.38	0.17	0.18	0.08	0.1	0.17		
Nickel				7.75	9.88	8.59	33.6	18	18.9	12.2	8.2	17.8
Potassium	535	613	699	252	681	1470	1010	2040	1660	1650	1890	1690
Selenium								15.5	1.5	2.2	4.1	
Silver												
Sodium	120	84	236	117 J	213 J	551 J	610 J	372	539	188	1740	1120
Thallium								0.44JW	0.02JW			
Vanadium	7.58	6.18	27.5	8.16	13.8	48.5	23.2	280	20.2	19.2	15.8	90.5
Zinc	66.6	86.3	123	52.9 J	190 J	184 J	2580 J	367	196	160	38.5	102
Inorganics (mg/kg)												
Cyanide												

Table III
Historic Subsurface Soil Quality Sampling Results (>1.0 feet)
Remidial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

	Data Source: Table 6-6 of NYSDEC SER -- Test Pits			Data Source: Table 6-4 of NYSDEC Site Evaluation Report (December 2006)-- Envirotek II Area						Data Source: Table 6-5 of NYSDEC SER (12-2006)-- Envirotek II Area			
Sample ID:	TP-1	TP-2	TP-3	B-8	B-9	B-12	B-15	B-16	B-17	SB-01	SB-01	SB-02	SB-02
Sample Date:	8/19/99	8/19/99	8/19/99	5/12/92	5/12/92 (8'	5/12/92 (8'	5/13/92 (6'	5/13/92 (6'	5/13/92 (8'	8/12/99	8/12/99	8/12/99	8/12/99
Sample Depth:	(12.0')	(12.4')	(1.5' - 3.0')	(8' - 10')	- 10')	- 10')	- 8')	- 8')	- 10')	(2.0' - 4.0')	(4.0' - 6.0')	(2.0' - 4.0')	(6.0' - 8.0')
VOCs (ug/kg)													
1,1,1-Trichloroethane				340		270	660 J			41	33		13
1,1-Dichloroethane	2 J	2 J		17 J	390 J	16 J				3 J	2 J		
1,2-Dichloroethane													
1,2-Dichloroethene										74	30	3	5
1,2-Dichloroethene (total)						150							
1,2-Dichloropropane													
2-Butanone													
2-Hexanone													
4-Methyl-2-Pentanone													
Acetone				200 B					130 B				5 J
Benzene													
Carbon Disulfide									26 J	7 J	5 J	2 J	4 J
Chloroethane													
Ethylbenzene				170			550 J	91 J					
Methylene Chloride	1 J			8 J	280 J	18 J	260 BJ		5 J			2 J	1 J
Tetrachloroethene	4 J	4 J	1 J	39		3600	8300			990 D	370 D	9 J	52
Toluene							820			17 J	23 J	1 J	2 J
Trichloroethene		5 J		100		310	780			400 D	130	15	23
Trichlorofluoromethane													
Vinyl Chloride													
Xylenes				270			8500						1 J
SVOCs (ug/kg)													
2,3,4,6-Tetrachlorophenol													
2-Methylnaphthalene				3100 J									
2-Methylphenol													
3-Methylphenol													
4,6-Dinitro-2-methylphenol				1400 J									
4-Bromophenyl phenyl ether													
4-Methylphenol													
Acenaphthene										85 DJ			
Anthracene				4200						150 DJ			
Benzidine													
Benzo (a) anthracene				1400 J						300 DJ	96 J	45 J	
Benzo (a) pyrene													
Benzo (b) fluoranthene								2100 J					
Benzo (g,h,i) perylene								1100 J			170 J		
Benzo (k) fluoranthene													
Benzoic acid													
Bis(2-ethylhexyl)phthalate	200 J	64 J					1300 J						
Butlylbenzylphthalate													
Carbazole													
Chrysene				1600 J	2100 J					370 DJ	120 J	64 J	
Dibenz (a,h) anthracene													
Dibenzofuran				710 J									
Di-n-butylphthalate				630 J	710 J	530 J		410 J					
Di-n-octylphthalate													
Fluoranthene				480 J	1700 J		390 J	560 J		400 DJ	140 J	57 J	
Fluorene				1000 J									
Hexachlorobenzene													
Indeno (1,2,3-cd) pyrene					2100 J			1200 J			130 J	55 J	
Isophorone				1600 J									
Naphthalene													
Phenanthrene				4100 J						390 DJ	87 J	40 J	
Phenol													
Pyrene				420 J	1900 J		490 J	1400 J		400 DJ	130 J	51 J	
Metals (mg/kg)													
Aluminum	27800	19300											
Antimony	1.6 JN	1.2 JN											
Arsenic	20.8	21.3											
Barium	601 JN	342 JN											
Beryllium	4	3.1											
Cadmium	1.2												
Calcium	146000	100000											
Chromium	75.5 JN**	62.3 JN**											
Cobalt	4.5	2.2											
Copper	137 JN	126 JN											
Iron	119000	192000											
Lead	96.5 JN**	73.2 JN**											
Magnesium	16300	9880											
Manganese	5480 **	4580 **											
Mercury	0.04	0.08											
Nickel	38.5	35.3											
Potassium	2940	1850											
Selenium	2.6 J	2.2 J											
Silver													
Sodium	1560	1000											
Thallium													
Vanadium	44	55.6											
Zinc	303 JN	286 JN											
Inorganics (mg/kg)													
Cyanide	7.47 J	0.617 J											

Table III
Historic Subsurface Soil Quality Sampling Results (>1.0 feet)
Remidial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

	Data Source: Table 6-5 of NYSDEC SER (12- 2006)-- Envirotek II Area												
Sample ID:	SB-03	SB-03	SB-03	SB-04	SB-04	SB-05	SB-05	SB-05	SB-05	SB-11	SB-11	SB-11	SB-11
Sample Date:	8/8/99	8/12/99	8/12/99	8/12/99	8/12/99	8/12/99	8/12/99	8/13/99	8/13/99	8/12/99	8/12/99	3/29/01	3/29/01
Sample Depth:	(0.0' - 8.0')	(4.0' - 6.0')	(6.0' - 8.0')	(2.0' - 4.0')	(4.0' - 6.0')	(2.0' - 4.0')	(6.0' - 8.0')	(4.0' - 6.0')	(6.0' - 8.0')	(4.0' - 6.0')	(6.0' - 8.0')	(6.0' - 8.0')	(8.0' - 10.0')
VOCs (ug/kg)													
1,1,1-Trichloroethane		3 J	190	10 J	37 J	27	12 J						
1,1-Dichloroethane			110		2 J		14 J						
1,2-Dichloroethane										2 J	2 J		
1,2-Dichloroethene		26	280										
1,2-Dichloroethene (total)										6 J	9 J		
1,2-Dichloropropane													
2-Butanone		3 J		4 J		3 J	40 J						
2-Hexanone													
4-Methyl-2-Pentanone													
Acetone		6 J	30	18	65	9	140						
Benzene		1 J			3 J								
Carbon Disulfide		3 J	7 J		11 J	2 J	14 J						
Chloroethane			8 J				7 J						
Ethylbenzene			4 J		5 J								
Methylene Chloride		6		3 J		1 J							
Tetrachloroethene		77 J	750 D	35 J	71 J	43	120			110 J	12 J		
Toluene		4 J	5 J		7 J	1 J	6 J			3 J			
Trichloroethene		120	95	44	43 J	50	53 J			7 J	4 J		
Trichlorofluoromethane													
Vinyl Chloride													
Xylenes			7 J		13 J		16 J						
SVOCs (ug/kg)													
2,3,4,6-Tetrachlorophenol													
2-Methylnaphthalene					160 DJ			39 J					
2-Methylphenol													
3-Methylphenol													
4,6-Dinitro-2-methylphenol													
4-Bromophenyl phenyl ether													
4-Methylphenol													
Acenaphthene								190 J					
Anthracene								250 J					
Benzidine													
Benzo (a) anthracene					130 DJ			590					
Benzo (a) pyrene								520					
Benzo (b) fluoranthene								420					
Benzo (g,h,i) perylene				51 J				480					
Benzo (k) fluoranthene								350 J					
Benzoic acid													
Bis(2-ethylhexyl)phthalate													
Butlylbenzylphthalate													
Carbazole								130 J					
Chrysene				99 J	360 DJ			610					
Dibenz (a,h) anthracene													
Dibenzofuran					91 DJ			70 J					
Di-n-butylphthalate													
Di-n-octylphthalate													
Fluoranthene					320 DJ			1500					
Fluorene					150 DJ			87 J					
Hexachlorobenzene													
Indeno (1,2,3-cd) pyrene				51 J	92 DJ			460					
Isophorone													
Naphthalene													
Phenanthrene					220 DJ			1200	470 DJ				
Phenol													
Pyrene				120 J	210 DJ			930	590 DJ				
Metals (mg/kg)													
Aluminum	34400												
Antimony	3.1 JN												
Arsenic	12.4												
Barium	112 JN												
Beryllium	0.8												
Cadmium	2.9												
Calcium	101000												
Chromium	163 JN**												
Cobalt	4.1												
Copper	486 JN												
Iron	67300												
Lead	506 JN												
Magnesium	6910												
Manganese	1480 **												
Mercury	0.49												
Nickel	55.3												
Potassium	850												
Selenium	1.9 J												
Silver													
Sodium	704												
Thallium													
Vanadium	33												
Zinc	1260 JN												
Inorganics (mg/kg)													
Cyanide													

Table III
Historic Subsurface Soil Quality Sampling Results (>1.0 feet)
Remidial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

	Data Source: Table 6-5 of NYSDEC SER (12- 2006)-- Envirotek II Area												
Sample ID:	SB-15	SB-15	SB-18	SB-18	SB-19	SB-19	SB-20	SB-20	SB-21	SB-21	SB-22	SB-22	SB-24
Sample Date:	4/4/01	4/4/01	4/4/01	4/5/01	4/5/01	4/5/01	4/4/01	4/4/01	4/4/01	4/4/01	4/2/01	4/2/01	3/30/01
Sample Depth:	(6.0' - 8.0')	(8.0' - 10.0')	(6.0' - 8.0')	(8.0' - 10.0')	(6.0' - 8.0')	(8.0' - 10.0')	(6.0' - 8.0')	(8.0' - 10.0')	(2.0' - 4.0')	(8.0' - 10.0')	(6.0' - 8.0')	(8.0' - 10.0')	(6.0' - 8.0')
VOCs (ug/kg)													
1,1,1-Trichloroethane				2 J						2 J		10 J	42
1,1-Dichloroethane		4 J	1 J	2 J						1 J			5 J
1,2-Dichloroethane													
1,2-Dichloroethene		9 J	2 J	2 J	2 J	2 J							
1,2-Dichloroethene (total)	2 J	91	22	28	6 J	6 J	9 J	5 J		180		6 J	9 J
1,2-Dichloropropane													
2-Butanone		4 J		6 J						19 J			
2-Hexanone										10 J			
4-Methyl-2-Pentanone				8 J						200			4 J
Acetone		6 J	22 J	26 J			8 J			16 J		9 J	30 J
Benzene				1 J								34	
Carbon Disulfide			2 J	6 J						7 J			
Chloroethane													
Ethylbenzene				2 J						3 J			6 J
Methylene Chloride		2 J	2 J	7 J	2 J	2 J	2 J			6 J			10 J
Tetrachloroethene	2 J	54	28	1	10 J	14 J	8 J	5 J	3 J	10 J	20 J	700 DJ	330 J
Toluene				40 J									7 J
Trichloroethene	2 J	18	14	24	12 J	6 J	16	6 J	19	180	3 J	34	160 J
Trichlorofluoromethane													
Vinyl Chloride													
Xylenes										53			50 J
SVOCs (ug/kg)													
2,3,4,6-Tetrachlorophenol													
2-Methylnaphthalene													
2-Methylphenol													
3-Methylphenol													
4,6-Dinitro-2-methylphenol													
4-Bromophenyl phenyl ether													
4-Methylphenol													
Acenaphthene													
Anthracene													
Benzidine													
Benzo (a) anthracene													
Benzo (a) pyrene													
Benzo (b) fluoranthene													
Benzo (g,h,i) perylene													
Benzo (k) fluoranthene													
Benzoic acid													
Bis(2-ethylhexyl)phthalate													
Butlylbenzylphthalate													
Carbazole													
Chrysene													
Dibenz (a,h) anthracene													
Dibenzofuran													
Di-n-butylphthalate													
Di-n-octylphthalate													
Fluoranthene													
Fluorene													
Hexachlorobenzene													
Indeno (1,2,3-cd) pyrene													
Isophorone													
Naphthalene													
Phenanthrene													
Phenol													
Pyrene													
Metals (mg/kg)													
Aluminum													
Antimony													
Arsenic													
Barium													
Beryllium													
Cadmium													
Calcium													
Chromium													
Cobalt													
Copper													
Iron													
Lead													
Magnesium													
Manganese													
Mercury													
Nickel													
Potassium													
Selenium													
Silver													
Sodium													
Thallium													
Vanadium													
Zinc													
Inorganics (mg/kg)													
Cyanide													

Table III
Historic Subsurface Soil Quality Sampling Results (>1.0 feet)
Remidial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

	Data Source: Table 6-5 of NYSDEC SER (12- 2006)-- Envirotek II Area										
Sample ID: Sample Date: Sample Depth:	SB-24 3/30/01 (8.0' - 10.0')	SB-25 6/14/01 (6.0' - 8.0')	SB-25 6/14/01 (8.0' - 10.0')	SB-26 6/14/01 (6.0' - 8.0')	SB-26 6/14/01 (8.0' - 10.0')	SB-27 6/15/01 (2.0' - 4.0')	SB-27 6/15/01 (4.0' - 6.0')	SB-28 6/15/01 (6.0' - 8.0')	SB-28 6/15/01 (8.0' - 10.0')	SB-29 6/18/01 (6.0' - 8.0')	SB-29 6/18/01 (8.0' - 10.0')
VOCs (ug/kg)											
1,1,1-Trichloroethane		21 J	25 J							17	
1,1-Dichloroethane	33	48 J	21 J	22	2 J		2 J				
1,2-Dichloroethane											
1,2-Dichloroethene											
1,2-Dichloroethene (total)		9 J	11 J	6 J	3 J		8 J				
1,2-Dichloropropane											
2-Butanone	52			8 J	8 J		12				
2-Hexanone							1 J				
4-Methyl-2-Pentanone	36	13 J	9 J	14	950						
Acetone	260						67			5 J	49 J
Benzene							2 J				
Carbon Disulfide	3 J		7 J	2 J	5 J		10 J				
Chloroethane	5 J										
Ethylbenzene	260			20	4 J						
Methylene Chloride	8 J	7 J		4 J	3 J						
Tetrachloroethene	4 J	61 J	30 J		2 J		3 J			19	
Toluene	22 J			35	7 J		2 J				
Trichloroethene		54 J	32 J	11 J	15		3 J			4 J	
Trichlorofluoromethane											
Vinyl Chloride				9 J							
Xylenes	243			48	10 J						
SVOCs (ug/kg)											
2,3,4,6-Tetrachlorophenol											
2-Methylnaphthalene											
2-Methylphenol											
3-Methylphenol											
4,6-Dinitro-2-methylphenol											
4-Bromophenyl phenyl ether											
4-Methylphenol											
Acenaphthene											
Anthracene											
Benzidine											
Benzo (a) anthracene											
Benzo (a) pyrene											
Benzo (b) fluoranthene											
Benzo (g,h,i) perylene											
Benzo (k) fluoranthene											
Benzoic acid											
Bis(2-ethylhexyl)phthalate											
Butlylbenzylphthalate											
Carbazole											
Chrysene											
Dibenz (a,h) anthracene											
Dibenzofuran											
Di-n-butylphthalate											
Di-n-octylphthalate											
Fluoranthene											
Fluorene											
Hexachlorobenzene											
Indeno (1,2,3-cd) pyrene											
Isophorone											
Naphthalene											
Phenanthrene											
Phenol											
Pyrene											
Metals (mg/kg)											
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Inorganics (mg/kg)											
Cyanide											

Table III
Historic Subsurface Soil Quality Sampling Results (>1.0 feet)
Remidial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

Sample ID: Sample Date: Sample Depth:	Statistical Analysis[1]				Part 375 Restricted Use Soil Cleanup Standards	
	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentrations	Standard Deviation	Industrial Land Use	Restricted Residential Land use
VOCs (ug/kg)						
1,1,1-Trichloroethane	9	340.0	108.1	100.137	1,000,000c	100,000a
1,1-Dichloroethane	3	110.0	55.0	24.876	480,000	26,000
1,2-Dichloroethane	0				60,000	NS
1,2-Dichloroethene	6	280.0	69.7	83.428	1,000,000c	NS
1,2-Dichloroethene (total)	5	180.0	94.2	54.146	NS	NS
1,2-Dichloropropane	1	760.0	760.0		NS	NS
2-Butanone	2	52.0	32.0	10.374	NS	NS
2-Hexanone	0				NS	NS
4-Methyl-2-Pentanone	4	950.0	300.0	330.366	NS	NS
Acetone	8	2124.0	339.1	451.138	1,000,000c	100,000b
Benzene	1	34.0	34.0	12.851	89,000	4,800
Carbon Disulfide	0				NS	NS
Chloroethane	0				NS	NS
Ethylbenzene	4	2365.0	703.8	676.204	780,000	41,000
Methylene Chloride	19	263.0	78.3	58.628	1,000,000c	100,000a
Tetrachloroethene	12	8300.0	1110.1	1326.012	300,000	19,000
Toluene	3	5506.0	2120.3	1028.077	1,000,000c	100,000a
Trichloroethene	18	780.0	110.4	130.805	400,000	21,000
Trichlorofluoromethane	1	2.0	2.0		NS	NS
Vinyl Chloride	0				NS	900
Xylenes	7	14727.0	3409.3	4236.769	1,000,000c	100,000a
SVOCs (ug/kg)						
2,3,4,6-Tetrachlorophenol	1	35968.0	35968.0		NS	NS
2-Methylnaphthalene	5	15865.0	3516.4	4964.882	NS	NS
2-Methylphenol	1	274.0	274.0		NS	NS
3-Methylphenol	1	107.0	107.0		NS	NS
4,6-Dinitro-2-methylphenol	1	1132.0	1132.0	800.445	NS	NS
4-Bromophenyl phenyl ether	3	222.0	206.3	14.295	NS	NS
4-Methylphenol	2	1495.0	801.0	981.464	NS	NS
Acenaphthene	5	22601.0	5215.2	7462.369	1,000,000c	100,000a
Anthracene	8	4200.0	1107.8	1173.108	1,000,000c	100,000a
Benzidine	1	185.0	185.0		NS	NS
Benzo (a) anthracene	14	14012.0	1976.4	3181.888	11,000	1,000f
Benzo (a) pyrene	7	9500.0	1902.1	2911.914	1,100	1,000f
Benzo (b) fluoranthene	9	21632.0	3958.0	6037.250	11,000.00	1,000f
Benzo (g,h,i) perylene	4	18062.0	4933.0	5659.462	1,000,000c	100,000a
Benzo (k) fluoranthene	8	14823.0	3650.4	4629.887	110,000	3,900
Benzoic acid	1	87.0	87.0		NS	NS
Bis(2-ethylhexyl)phthalate	12	6607.0	1422.9	1666.794	NS	NS
Butlylbenzylphthalate	3	713.0	293.7	365.690	NS	NS
Carbazole	0				NS	NS
Chrysene	14	13657.0	2224.3	3081.451	110,000	3,900
Dibenz (a,h) anthracene	0	0.0			1,100	330e
Dibenzofuran	3	392.0	187.7	143.536	1,000,000c	59,000
Di-n-butylphthalate	4	633.0	327.5	224.761	NS	NS
Di-n-octylphthalate	3	543.0	277.7	237.490	NS	NS
Fluoranthene	12	13441.0	1996.4	2804.003	1,000,000c	NS
Fluorene	8	7634.0	1013.9	2191.515	1,000,000c	100,000a
Hexachlorobenzene	1	165.0	165.0	116.673	NS	NS
Indeno (1,2,3-cd) pyrene	5	11415.0	2764.2	3015.240	11,000	500f
Isophorone	1	254.0	254.0	179.605	NS	NS
Naphthalene	4	29658.0	7857.5	11969.456	1,000,000c	100,000a
Phenanthrene	14	5210.0	1014.2	1071.592	1,000,000c	100,000a
Phenol	1	1398.0	1398.0		1,000,000c	100,000a
Pyrene	14	26651.0	4407.4	6356.893	1,000,000c	100,000a
Metals (mg/kg)						
Aluminum	8	34400.0	21887.5	7223.857	NS	NS
Antimony	2	20.8	13.3	7.343	NS	NS
Arsenic	23	60.5	21.6	18.162	16f	16f
Barium	25	680.0	212.9	212.038	10,000d	400
Beryllium	12	4.0	2.2	1.170	2,700	72
Cadmium	14	8.9	3.7	2.829	60	4.3
Calcium	8	152000.0	106850.0	36993.745	NS	NS
Chromium	18	575.0	74.2	126.136	NS	NS
Cobalt	16	21.6	7.5	5.482	NS	NS
Copper	20	12100.0	709.7	2411.127	10,000d	270
Iron	8	192000.0	67337.5	61881.521	NS	NS
Lead	21	3570.0	406.8	734.770	3,900	400
Magnesium	8	30500.0	14497.5	7402.148	NS	NS
Manganese	0	0.0	#DIV/0!	0.000	10,000d	2,000f
Mercury	16	0.7	0.3	0.214	5.7j	0.81j
Nickel	20	142.0	26.1	30.085	10,000d	310
Potassium	28	2940.0	1002.6	735.400	NS	NS
Selenium	4	15.5	5.8	5.577	6,800	180
Silver	0				6,800	180
Sodium	12	1740.0	660.4	493.596	NS	NS
Thallium	0	0.0			NS	NS
Vanadium	20	280.0	40.2	60.047	NS	NS
Zinc	9	367.0	162.4	99.072	10,000d	10,000 d
Inorganics (mg/kg)						
Cyanide	0				10,000d	27h

Table III
Historic Subsurface Soil Quality Sampling Results (>1.0 feet)
Remidial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

Footnotes

J - Compound reported at an estimated concentration below the reporting limit
B - Analyte was detected in the associated blank as well as the sample
N - Spiked sample recovery not within control limits
** - Duplicate analysis not within control limits
E - The reported value is estimated due to the presence of interference
W - Post-digestion spike is out of control limits, while sample absorbance is less than 50% of spike absorbance
D - Compound identified in analysis at a secondary dilution factor

Part 375 Restricted Use Soil Cleanup Standards footnotes

a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum valueof 100 ppm. See TSD section 9.3.
b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.
c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.
d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.
e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), theCRQL is used as the SCO value.
f For constituents where the calculated SCO was lower than the rural soil background concentration asdetermined by the Department and Department of Health rural soil survey, the rural soil backgroundconcentration is used as the Track 2 SCO value for this use of the site.
g This SCO is derived from data on mixed isomers of BHC.
h The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for thetotal species of this contaminant is below the specific SCO.
i This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.
j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

Key	Data Source: Tonawanda Coke Letter dated 1/21/94
Sample ID:	ACTS # 3B-4893E
Sample Date:	12/02/93
Sample Depth:	Lagoon Dredging
TCLP Volatiles	
2-Butanone	16.0 B
Chloroform	2.9 B
TCLP Metals	
Arsenic	6
Barium	590
Cadmium	10
Chromium	30

B - Analyte was detected in the associated blank as well as the sample

Table IV
2007 Subsurface Soil Quality Sampling Results (>1.0 feet)
Former Roblin Steel Site
Town of Tonawanda, New York

Date Sampled	2/27/2007	2/27/2007	3/12/2007	2/27/2007	2/27/2007	2/27/2007	2/27/2007	2/27/2007	2/28/2007	2/28/2007	2/28/2007	2/28/2007	2/28/2007	2/28/2007	2/28/2007
Sample Location	NRGTP-2 4'	NRGTP-4 8'	NRG-4 15-17'	NRGTP-5 5'	NRGTP-6 6-8'	NRGTP-7 4'	NRGTP-8 4'	NRGTP-8 8'	NRGTP-9 4'	NRGTP-9 8'	NRGTP-10 4'	NRGTP-10 7'	NRGTP-11 4'	NRGTP-11 8'	NRGTP-12 4'
VOCs (ug/kg) by EPA Method 8260B															
2-Hexanone	NA		NA			NA		NA	NA	NA	NA				
Acetone	NA	7.5 J	NA		88	NA		NA	NA	NA	NA	4.7 J		73 J	9.5 J
Benzene	NA		NA			NA		NA	NA	NA	NA		91 J		
Carbon disulfide	NA		NA		1.7 J	NA		NA	NA	NA	NA				
cis-1,2-Dichloroethene	NA		NA			NA		NA	NA	NA	NA		900		
Ethylbenzene	NA		NA		0.98 J	NA		NA	NA	NA	NA		2200	71	
Methylene Chloride	NA		NA			NA		NA	NA	NA	NA			44 J	
Tetrachloroethene	NA		NA			NA		NA	NA	NA	NA		480 J		
Toluene	NA		NA			NA		NA	NA	NA	NA		1700		
Xylenes, Total	NA		NA		4.5 J	NA		NA	NA	NA	NA		8800	47	
SVOCs (ug/kg) by EPA Method 8270C															
1,2,4-Trichlorobenzene	NA				100 J	NA			NA	NA	NA				
1,2-Dichlorobenzene	NA				77 J	NA			NA	NA	NA		240 J	90 J	
2,4-Dimethylphenol	NA	1800	410 M		1200	NA			NA	NA	NA		1200 J	1200	
2-Methylnaphthalene	NA	1900			1800	NA			NA	NA	NA	75 J	6100	310 J	
2-Methylphenol	NA	2000	70 J		730	NA			NA	NA	NA			350 J	
4-Methylphenol	NA	7100	170 J		2700	NA			NA	NA	NA		4900 J	1700	
Acenaphthene	NA				850	NA			NA	NA	NA		2100	110 J	
Acenaphthylene	NA					NA			NA	NA	NA				
Anthracene	NA				590	NA			NA	NA	NA		2900	120 J	
Benzo[a]anthracene	NA	430 J		98 J	820	NA			NA	NA	NA	110 J	4000	200 J	
Benzo[a]pyrene	NA	670 J			820	NA			NA	NA	NA	100 J	3200	200 J	
Benzo[b]fluoranthene	NA	720 J		130 J	1000	NA			NA	NA	NA	180 J	4300	290 J	
Benzo[g,h,i]perylene	NA	750 J		120 J	920	NA			NA	NA	NA	81 J	3000	200 J	
Benzo[k]fluoranthene	NA				400	NA			NA	NA	NA		1700		
Bis(2-ethylhexyl) phthalate	NA	660 J			2500	NA			NA	NA	NA		6700	650	
Butyl benzyl phthalate	NA					NA			NA	NA	NA		440 J	100 J	
Carbazole	NA				440	NA			NA	NA	NA		1600		
Chrysene	NA	500 J		100 J	1000	NA			NA	NA	NA	100 J	4800	280 J	
Dibenz(a,h)anthracene	NA				220 J	NA			NA	NA	NA		820 J		
Dibenzofuran	NA				710	NA			NA	NA	NA		1800	88 J	
Di-n-butyl phthalate	NA				120 J	NA			NA	NA	NA		1300 J		
Di-n-octyl phthalate	NA				290 J	NA			NA	NA	NA				
Fluoranthene	NA	480 J			2000	NA			NA	NA	NA	150 J	12000	480	
Fluorene	NA	290 J			1200	NA			NA	NA	NA		5200	150 J	
Indeno[1,2,3-cd]pyrene	NA	680 J		100 J	870	NA			NA	NA	NA	93 J	3100	170 J	
Isophorone	NA					NA			NA	NA	NA				
Naphthalene	NA	2500			1900	NA			NA	NA	NA		6400	390 J	
Phenanthrene	NA	670 J			2900	NA			NA	NA	NA	110 J	17000	590	
Phenol	NA	2600			4700	NA			NA	NA	NA		5800 J	3000	
Pyrene	NA	540 J		110 J		NA			NA	NA	NA		7900	460	
Metals (mg/kg) by EPA Method 6010B and 7471A (Hg only)															
Arsenic	26.5 J									8 J				8 J	
Barium	34.8 J	38 J		951 J	66.8 J	73.9 J	3070 J	348 J	42.7 J	837 J	159 J	16.3 J		49.9 J	
Cadmium					1.6 J										
Chromium	57.1 J	25.4 J		22.2 J	114 J	6.8 J	11.2 J	52.9 J	11.6 J	9.4 J	189 J	2 J		91.7 J	
Lead	7.1	24.4		83.5	93	162	34.7	36.8	12.8	2.6 J	276	2.6 J		55.7	
Mercury															
Selenium							3.5 J								
Silver															
Total Cyanide Concentration (ug/Kg) by EPA Method 3012B				5400		10900	150 J	150 J		48200					

Table IV
2007 Subsurface Soil Quality Sampling Results (>1.0 feet)
Former Roblin Steel Site
Town of Tonawanda, New York

Date Sampled	2/28/2007	2/28/2007	Statistical Analysis[1]				Standard from Part 375 Restricted Use Soil Cleanup Standards	
Sample Location	NRGTP-13 4'	NRGTP-13 8'	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentrations	Standard Deviation	Industrial Land Use	Restricted Residential Land use
VOCs (ug/kg) by EPA Method 8260B								
2-Hexanone			0				NS	NS
Acetone	5 J	13 J	1	88.0	88.0	23.5	1,000,000c	100,000b
Benzene			0				89,000	48,000
Carbon disulfide			0				NS	NS
cis-1,2-Dichloroethene			1	900.0	900.0		NS	100,000a
Ethylbenzene			2	2200.0	1135.5	693.6	780,000	41,000
Methylene Chloride			0				1,000,000c	100,000a
Tetrachloroethene			0				300,000	19,000
Toluene			1	1700.0	1700.0		1,000,000c	100,000a
Xylenes, Total			2	8800.0	4423.5	2781.2	1,000,000c	100,000a
SVOCs (ug/kg) by EPA Method 8270C								
1,2,4-Trichlorobenzene			0				NS	NS
1,2-Dichlorobenzene			0				NS	NS
2,4-Dimethylphenol			3	1800.0	1400.0	695.7	NS	NS
2-Methylnaphthalene			3	6100.0	3266.7	1956.6	NS	NS
2-Methylphenol			2	2000.0	1365.0	680.5	NS	NS
4-Methylphenol			3	7100.0	3833.3	2294.1	NS	NS
Acenaphthene			2	2100.0	1475.0	760.1	1,000,000c	100,000a
Acenaphthylene	110 J		0				NS	NS
Anthracene	78 J		2	2900.0	1745.0	962.1	1,000,000c	100,000a
Benzo[a]anthracene	320 J	99 J	2	4000.0	2410.0	1113.8	11,000	1,000f
Benzo[a]pyrene	350 J	140 J	2	3200.0	2010.0	932.5	1,100	1,000f
Benzo[b]fluoranthene	480	180 J	3	4300.0	1926.7	1195.5	11,000.00	1,000f
Benzo[g,h,i]perylene	420	250 J	3	3000.0	1446.7	845.3	1,000,000c	100,000a
Benzo[k]fluoranthene	180 J		2	1700.0	1050.0	597.5	110,000	3,900
Bis(2-ethylhexyl) phthalate	120 J		3	6700.0	3283.3	2156.6	NS	NS
Butyl benzyl phthalate			0				NS	NS
Carbazole			2	1600.0	1020.0	599.9	NS	NS
Chrysene	360	160 J	3	4800.0	2053.3	1330.7	110,000	3,900
Dibenz(a,h)anthracene	98 J		0	0.0			1,100	330e
Dibenzofuran			2	1800.0	1255.0	649.9	1,000,000c	59,000
Di-n-butyl phthalate			0				NS	NS
Di-n-octyl phthalate			0				NS	NS
Fluoranthene	550	130 J	4	12000.0	3757.5	3433.9	1,000,000c	NS
Fluorene			2	5200.0	3200.0	1729.5	1,000,000c	100,000a
Indeno[1,2,3-cd]pyrene	350 J	250 J	2	3100.0	1985.0	873.4	11,000	500f
Isophorone			0				NS	NS
Naphthalene	58 J		3	6400.0	3600.0	2085.8	1,000,000c	100,000a
Phenanthrene	270 J		3	17000.0	6830.0	5095.0	1,000,000c	100,000a
Phenol			3	4700.0	3433.3	1804.9	1,000,000c	100,000a
Pyrene	540	140 J	3	7900.0	2966.7	2360.3	1,000,000c	100,000a
Metals (mg/kg) by EPA Method 6010B and 7471A (Hg only)								
Arsenic	20.9 J		0				16f	16f
Barium	153 J		0				10,000d	400
Cadmium	19.7		1	19.7	19.7	13.9	60	4.3
Chromium	535 J		0				NS	NS
Lead	609		11	609.0	126.8	169.7	3,900	400
Mercury			0				5.7j	0.81j
Selenium			0				6,800	180
Silver			0				6,800	180
Total Cyanide Concentration (ug/Kg) by EPA Method 3012B			3	48200.0	21500.0	20243.3	10,000,000d	27,000h

Table IV
2007 Subsurface Soil Quality Sampling Results (>1.0 feet)
Former Roblin Steel Site
Town of Tonawanda, New York

Footnotes

J - Compound reported at an estimated concentration below the reporting limit

B - Analyte was detected in the associated blank as well as the sample

N - Spiked sample recovery not within control limits

** - Duplicate analysis not within control limits

E - The reported value is estimated due to the presence of interference

W - Post-digestion spike is out of control limits, while sample absorbance is less than 50% of spike absorbance

D - Compound identified in analysis at a secondary dilution factor

* LCS or LCSD exceeds the control limit

M Indicates result was obtained via a manual integration (rather than via a calculation from the instrument software)

[1] Does not Include B, *, and J values

Part 375 Restricted Use Soil Cleanup Standards footnotes

a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum valueof 100 ppm. See TSD section 9.3.

b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), theCRQL is used as the SCO value.

f For constituents where the calculated SCO was lower than the rural soil background concentration asdetermined by the Department and Department of Health rural soil survey, the rural soil backgroundconcentration is used as the Track 2 SCO value for this use of the site.

g This SCO is derived from data on mixed isomers of BHC.

h The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for thetotal species of this contaminant is below the specific SCO.

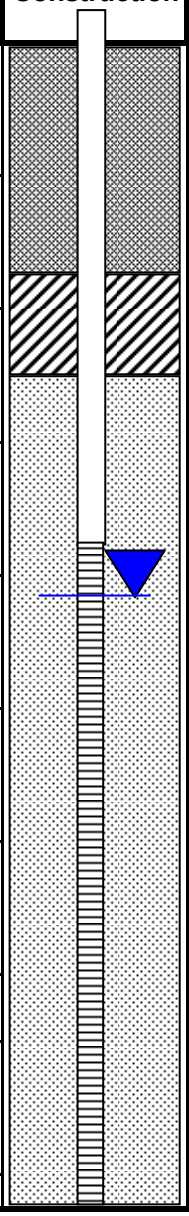
i This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

Appendix C
Well Logs

Monitoring Well Log for NRG-1

Project Name: Niagara River World Reclassification	**Location**: X-coord 667929.73833 Y-coord 4761204.71935 (coords in UTM Zone 17 N [m. NAD 83])	**Method**: CME 85 - 4 1/4" dia. Hollow Stem Auger by SJB Empire	**Start Date**: 03/08/07 **Finish Date:** 03/08/07
Project Number: NRT2007-044.00	**Ground Surface Elevation (ft MSL)**: 576.96	**Logged by**: Stephen Lorentz (NRG)	**Total Depth**: 19.87
Sample: 2" dia Split Spoon	**Riser Pipe Elevation (ft MSL)**: 579.31	**Groundwater Elevation (ft MSL)**: 568.65	**Driller**: Ken Fuller

Depth (feet)	Blows/6"	Recovery (inches)	Well Construction	Description	PID* (ppm)
0-2	20 49 18 11	13		Frost to 0.5'	0.0
2-4	13 18 18 25	15		Fill - Consists of gravel sized slag, reddish brown to black, dry to 8' where it becomes wet, some brick and wood, no odor or oil sheen.	0.0
4-6	10 6 6 8	9			0.0
6-8	50/.4' 	3			0.0
8-10	31 50/.3' 				0.0
10-12	27 7 4 3	9		Organic Sandy Silt - Slightly plastic, slow dilatancy, organic, about 10 % clay, 60 % silt, and 30 % fine-grained sand, no ordor or sheen, Alluvium/Lacustrine. Sample intervals from 12-17' appeared to cotain more sand based on rapid inflow of groundwater into borehole	0.0
12-14	6 5 5 5	0			
15-17	8 5 2 2	0			

Neat Cement Grout

Bentinite Chips Seal

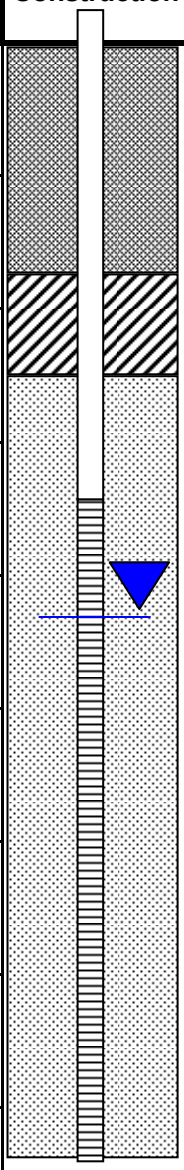
Screen (# 10 slot) and Riser are threaded PVC - Locking protective casing covers riser stickup.

Sand Pack is Filpro # 0 Superior Quartz Filtration Media

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Monitoring Well Log for NRG-2

Project Name: Niagara River World Reclassification	**Location**: X-coord 667875.42943 Y-coord 4761236.20496 (coords in UTM Zone 17 N [m. NAD 83])	**Method**: CME 85 - 4 1/4" dia. Hollow Stem Auger by SJB Empire	**Start Date**: 03/07/07 **Finish Date:** 03/08/07
Project Number: NRT2007-044.00	**Ground Surface Elevation (ft MSL)**: 575.13	**Logged by**: Stephen Lorentz (NRG)	**Total Depth**: 19.12
Sample: 2" dia Split Spoon	**Riser Pipe Elevation (ft MSL)**: 577.51	**Groundwater Elevation (ft MSL)**: 566.53	**Driller**: Ken Fuller

Depth (feet)	Blows/6"	Recovery (inches)	Well Construction	Description	PID* (ppm)
0-2	15 19 11 10	12		Frost to 0.5' Fill - Consists of mainly red clay, no odor or oil sheen.	0.0
2-4	8 7 7 9	14			0.0
4-6	4 4 5 5	2		Fill - Consists of gravel sized slag, reddish brown to black, some brick and wood, no odor or oil sheen.	0.0
6-8	6 14 14 18	10			0.0
8-10	8 15 50/.4'	11			0.0
10-12	18 12 11 5				0.0
12-14	4 2 2 1	16		Organic Silt - Slightly plastic, slow dilatancy, organic, about 10 % clay, 60 % silt, and 30 % fine-grained sand, no odor or sheen, Alluvium/Lacustrine.	0.0
14-16	4 2 3 4	16			0.0

Neat Cement Grout

Bentinite Chips Seal

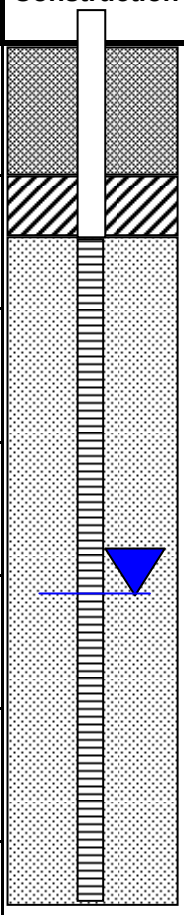
Screen (# 10 slot) and Riser are threaded PVC - Locking protective casing covers riser stickup.

Sand Pack is Filpro # 0 Superior Quartz Filtration Media

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Monitoring Well Log for NRG-3

Project Name: Niagara River World Reclassification	**Location**: X-coord 667920.05244 Y-coord 4760925.31879 (coords in UTM Zone 17 N [m. NAD 83])	**Method**: CME 85 - 4 1/4" dia. Hollow Stem Auger by SJB Empire	**Start Date**: 03/12/07 **Finish Date:** 03/12/07
Project Number: NRT2007-044.00	**Ground Surface Elevation (ft MSL)**: 581.96	**Logged by**: Stephen Lorentz (NRG)	**Total Depth**: 15.71
Sample: 2" dia Split Spoon	**Riser Pipe Elevation (ft MSL)**: 584.55	**Groundwater Elevation (ft MSL)**: 573.71	**Driller**: Ken Fuller

Depth (feet)	Blows/6"	Recovery (inches)	Well Construction	Description	PID* (ppm)
0-2	2 6 31 35	15		Frost to 0.5' Fill - Black fine sand, phenolic odor, some fire brick and castings (slight sheen on groundwater table).	0.0
2-4	5 7 10 9	16			0.0
4-6	5 4 4 4				5.0
6-8	3 3 3 4				8.0
8-10	4 2 2 1	0			5.5
10-12	2 2 1 3	0			7.0
12-14	13 8 8 6				8.0

Neat Cement Grout

Bentonite Chips Seal

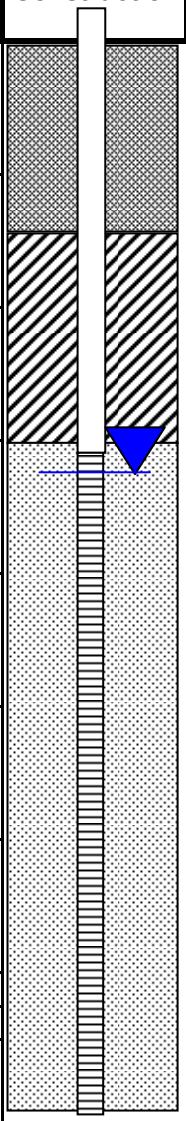
Screen (# 10 slot) and Riser are threaded PVC - Locking protective casing covers riser stickup.

Sand Pack is Filpro # 0 Superior Quartz Filtration Media

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Monitoring Well Log for NRG-4

Project Name: Niagara River World Reclassification	**Location**: X-coord 667921.54258 Y-coord 4761027.76566 (coords in UTM Zone 17 N [m. NAD 83])	**Method**: CME 85 - 4 1/4" dia. Hollow Stem Auger by SJB Empire	**Start Date**: 03/10/07 **Finish Date:** 03/12/07
Project Number: NRT2007-044.00	**Ground Surface Elevation (ft MSL)**: 579.75	**Logged by**: Stephen Lorentz (NRG)	**Total Depth**: 18.75
Sample: 2" dia Split Spoon	**Riser Pipe Elevation (ft MSL)**: 582.31	**Groundwater Elevation (ft MSL)**: 573.26	**Driller**: Ken Fuller

Depth (feet)	Blows/6"	Recovery (inches)	Well Construction	Description	PID* (ppm)
0-2	9 9 32 28	24		Frost to 0.5'	0.0
2-4	14 16 13 12	15			0.0
4-6	8 8 6 13	2			3.2
6-8	19 18 14 6			Fill - Fill - Black fine sand, phenolic odor, some fire brick and castings (slight sheen on groundwater table-heavier oil sheen at 13'), Wood in sample tip from 13.5 feet (probably bottom of former ore storage pit).	5.5
8-10	1 1 1 1				6.0
10-12	8 3 3 3	0			6.2
12-14	7 25 50/.2'	24			8.1
15-17	11 5 7 10	19		Organic Silt - Slightly plastic, slow dilatancy, organic, about 10 % clay, 60 % silt, and 30 % fine-grained sand, slight ordor, no sheen, Alluvium/Lacustrine.	4.0
17-19		24			

Neat Cement Grout

Bentonite Chips Seal

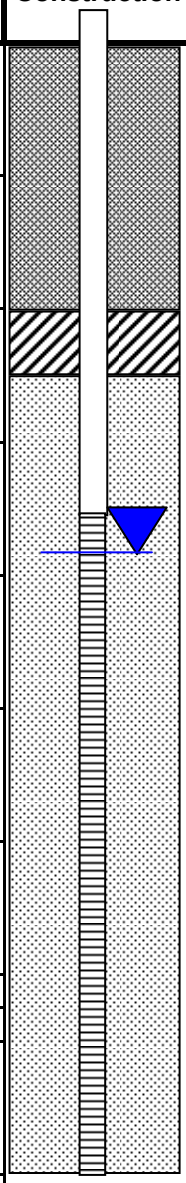
Screen (# 10 slot) and Riser are threaded PVC - Locking protective casing covers riser stickup.

Sand Pack is Filpro # 0 Superior Quartz Filtration Media

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Monitoring Well Log for NRG-5

Project Name: Niagara River World Reclassification	**Location**: X-coord 668135.07214 Y-coord 4760802.03178 (coords in UTM Zone 17 N [m. NAD 83])	**Method**: CME 85 - 4 1/4" dia. Hollow Stem Auger by SJB Empire	**Start Date**: 03/09/07 **Finish Date:** 03/09/07
Project Number: NRT2007-044.00	**Ground Surface Elevation (ft MSL)**: 577.73	**Logged by**: Stephen Lorentz (NRG)	**Total Depth**: 19.45
Sample: 2" dia Split Spoon	**Riser Pipe Elevation (ft MSL)**: 580.26	**Groundwater Elevation (ft MSL)**: 570.03	**Driller**: Ken Fuller

Depth (feet)	Blows/6"	Recovery (inches)	Well Construction	Description	PID* (ppm)
0-2	50/.2'	4.5		Frost to 0.5'	
				Fill - Consists of gravel sized slag, reddish brown to black, some brick and wood, no odor or oil sheen.	
2-4	9 11 13 19	9			
4-6	10 7 10 12	8			
6-8	13 10 8 5	10			
8-10	10 7 4 4	5			
10-12	16 10 21 22	10			
12-14	15 18 19 21	12			
15-17	6 1 2 4	15		Organic Silt - Slightly plastic, slow dilatancy, organic, about 10 % clay, 60 % silt, and 30 % fine-grained sand, no ordor or sheen, Alluvium/Lacustrine.	

Neat Cement Grout

Bentonite Chips Seal

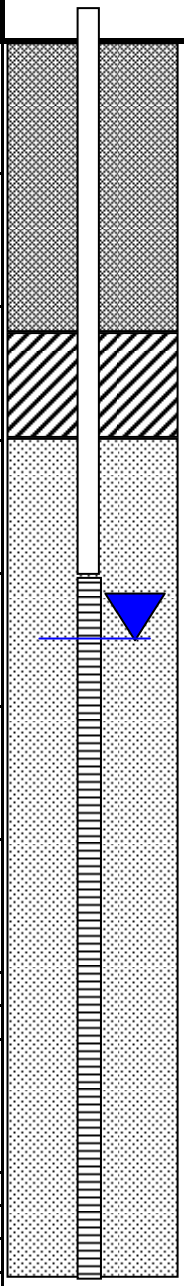
Screen (# 10 slot) and Riser are threaded PVC - Locking protective casing covers riser stickup.

Sand Pack is Filpro # 0 Superior Quartz Filtration Media

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

Monitoring Well Log for NRG-6

Project Name: Niagara River World Reclassification	**Location**: X-coord 668096.80199 Y-coord 4760735.11142 (coords in UTM Zone 17 N [m. NAD 83])	**Method**: CME 85 - 4 1/4" dia. Hollow Stem Auger by SJB Empire	**Start Date**: 03/09/07 **Finish Date:** 03/09/07
Project Number: NRT2007-044.00	**Ground Surface Elevation (ft MSL)**: 578.38	**Logged by**: Stephen Lorentz (NRG)	**Total Depth**: 20.31
Sample: 2" dia Split Spoon	**Riser Pipe Elevation (ft MSL)**: 580.51	**Groundwater Elevation (ft MSL)**: 569.21	**Driller**: Ken Fuller

Depth (feet)	Blows/6"	Recovery (inches)	Well Construction	Description	PID* (ppm)
0-2	50/.4'	5		Frost to 0.5'	
2-4	50/.2'	2			
4-6	50/.4'				
6-8	50/.2'	o		Fill - Consists of gravel sized slag, reddish brown to black, some brick and wood, no odor or oil sheen.	
8-10	50/.4'	5			
10-12	50/.3'	6			
12-14	50/.2'	2			
15-17	0 2 2 1	12		Organic Silt - Slightly plastic, slow dilatancy, organic, about 10 % clay, 60 % silt, and 30 % fine-grained sand, no odor or sheen,	

Neat Cement Grout

Bentonite Chips Seal

Screen (# 10 slot) and Riser are threaded PVC - Locking protective casing covers riser stickup.

Sand Pack is Filpro # 0 Superior Quartz Filtration Media

* PID used is an ION Science INNOVATION PhoCheck 1000 with 10.6 Lamp - ppm

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: NRG2006-057 BD-07-018 Well No. ENV-5 Site: NRG – TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other: _____

Pump Type: PERISTALTIC Bailer Type: _____

Weather Conditions: OVERCAST, MID-20's °F

Volume Calculation: _____

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 2.22

3 VOL = 6.66 GAL
5 VOL = 11.1 GAL

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	DO ~~Cond.~~	°F Temp.	Color	Odor Y/N	Turbidity
1056	11.27'	24.36'							
1330	START	PURGING							
1340	WATER BECOME GRAY-BLACK		2.0						
1346	WATER CLEARING SOMEWHAT		3.0						
1415	field parameters		7.25 = 3.5 VOL	9.05	1.01	45.68	clear	N	0.81
1430	FIELD PARAMETERS		9.5 = 4.5 VOL	9.07	2.53	47.66	CLEAR	N	0.20
1447	FIELD PARAMETERS		11.7 = 5.5 VOL	9.03	1.26	50.07	CLEAR	N	0.85
		Sample Readings							

Comments: INITIAL WATER IS CLEAR W/BLACK SOLIDS ON OCCASION. WATER HAS SLIGHT SULFUR ODOR

COLLECTED GW SAMPLES @ 1450

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time: _____

Well Duplicate ☐ No.: _____

Signature: DRS

Date: 3/8/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: BEV-07-018 NRG 2006-057 Well No. ENV-7 Site: NRG

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: Masterflex E/S Pump Drive Bailer Type: 2" polypropylene bailer for sampling

Weather Conditions: overcast / cold ~10°F

Volume Calculation: (17.06 − 12.68) · 0.17 = 0.74

(D.T.B. − D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 3.72 (5 well volumes)

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	~~Cond.~~ DO	Temp.	Color	Odor Y/N	Turbidity
1151	12.68	17.06							
1140			2.25	9.12	8.39	44.15	clear	N	7.15
200			3.00	9.08	1.98	46.35	Clear	N	2.35
210			3.75	9.14	1.87	46.10	Clear	N	5.35
		Sample Readings							

Comments: Field measurements taken @ 3, 4, and 5 well volumes purged

COLLECTED GW SAMPLES @ 1503

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: Jud Mapp

Date: 3/8/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

BEV-07-018

Project No.: NRG2006-057 Well No. GW-1 Site: NRG

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: Masterflex E/S Pump Drive Bailer Type: 2" polypropylene tube for sampling

Weather Conditions: overcast / cold ~ 10°F

Volume Calculation: (23.22 - 6.25) · 0.17 = ~~16.97~~ 2.88 gal/well vol

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 14.42 (5 well volumes)

	Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
Initial		6.25	23.22							
	1215			8.50	8.21	6.28	48.3°F	Clear	N	4.75
	1240			11.50	8.24	5.63	49.1°F	Clear	N	3.51
	1255			14.50	8.16	5.70	48.1°F	Clear	N	2.70
			Sample Readings							

Comments: Field measurements were taken after 3, 4, and 5 well volumes purged

COLLECTED GW SAMPLES @ 1535

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: Jad Mar

Date: 3/8/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

BEV-07-018

Project No.: NRG2006-057 Well No. GW-2 Site: NRG

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: Masterflex E/S Pump Drive Bailer Type: 2" polypropylene tube for sampling

Weather Conditions: overcast / cold ~10°F

Volume Calculation: (31.56 - 13.09) · 0.17 = 3.14 gal/well vol

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 15.70 (5 well volumes)

	Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	Do ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
Initial	835	13.09'	31.56'							
	959			9.50	7.62	8.25	47.4°F	clear	N	4.46
	1020			12.50	7.70	7.35	48.2°F	clear	N	3.13
	1040			15.00	7.81	7.11	47.9	clear	N	1.43
			Sample Readings							

Comments: Field measurements were taken after 3, 4, and 5 well volumes purged

COLLECTED GW SAMPLES @ 1520

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: JL Mc

Date: 3/8/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

NRG2006-057

Project No.: BEV-07-018 Well No. GW-3 Site: NRG

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: Masterflex E/S Pump Drive Bailer Type: 2" polypropylene tube for sampling

Weather Conditions: sunny / cold ~15-20 °F

Volume Calculation: (20.86' - 9.44') · 0.17 = 1.94 gal / well vol

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 9.71 (gal / 5 well vol)

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	Do ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
Initial	9.44'	20.86'							
1045			5.82	12.37	0.88	54.08	clear	N	0.81
1100			7.75	12.40	1.24	52.59	clear	N	0.84
1110			10.00	12.38	1.22	52.58	clear	N	0.68
		Sample Readings							

Comments: Field parameters measured @ 3, 4, and 5 well volumes purged

COLLECTED GW SAMPLES @ 1410

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: Jad Mufti

Date: 3/9/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SB SERVICES, INC.

Well Purging and Sample Collection

Project No.: NRG2006-057 BD-07-018 Well No. GW-4 Site: NRG-TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other: _____

Pump Type: PERISTALTIC Bailer Type: _____

Weather Conditions: SUNNY, 20's °F

Volume Calculation: _____

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.25

3 VOL = 3.75
4 VOL = 5.00
5 VOL = 6.25

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
3-8-07 1035	9.93'	17.28'	~~START~~						
3-9-07 0850			START PURGING						
1005			6.25	11.56	2.25	48.29	CLEAR	N	1.62
1014			7.5	11.85	1.38	47.86	CLEAR	N	0.65
1023			9.0	11.86	0.87	47.38	CLEAR	N	0.46
		Sample Readings							

Comments: WATER DARK GRAY-BLACK AT FIRST; CLEARING AFTER ≈ 1/2-GAL. WATER BECOMES TURBID – OPAQUE WHEN AGITATED, OTHERWISE REMAINS CLEAR DURING PUMPING. COLLECTED GW SAMPLES @ 1440

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time: _____

Well Duplicate ☐ No.: _____

Signature: DRS

Date: 3/9/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

NRG2006-057

Project No.: BEV-07-018 Well No. GW-5 Site: NRG

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: Masterflex E/S Pump Drive Bailer Type: 2" polypropylene tube for sampling

Weather Conditions: sunny / cold ~ 15-20°F

Volume Calculation: (13.86 - 5.68) · 0.17 = 1.39 gal / well vol

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 6.95 gal / 5 well volumes

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	~~Cond.~~ DO	Temp.	Color	Odor Y/N	Turbidity
Initial	5.68'	13.86'							
1710			4.00	8.05	1.80	49.69	brown	N	394
1720			5.50	8.10	2.35	48.60	brown	N	200
1735			7.00	7.95	1.55	50.19	brown	N.	235
		Sample Readings							

Comments: Field parameters taken after 3, 4, and 5 well volumes purged

COLLECTED GW SAMPLES @ 1345

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: Jul Mtfn

Date: 3/9/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: NRG2006-057 BD-07-018 Well No. GW-6 Site: NRG-TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other: _____

Pump Type: PERISTALTIC Bailer Type: _____

Weather Conditions: SUNNY, 20's °F

Volume Calculation: 11.25' x 0.17 = 1.9

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.9 GAL

3 = 5.7
4 = 7.6
5 = 9.5

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
3-8-07 1021	6.64'	17.89	INITIAL WL						
3-9-07 1042	START PURGING								
1130			6.0	9.62	1.88	43.10	CLEAR	N	1.64
1142			8.0	8.76	2.06	40.87	CLEAR	N	1.32
1155			10.0	8.55	1.85	40.70	CLEAR	N	2.15
		Sample Readings							

Comments: INITIAL WATER WAS TURBID - OPAQUE DARK BROWN, CLEARED AFTER 0.5-GAL. WATER BECOMES TURBID WHEN AGITATED, BUT IS OTHERWISE CLEAR DURING PURGING. COLLECTED GROUNDWATER SAMPLES @ 1500

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time: _____

Well Duplicate ☐ No.: _____

Signature: DRS

Date: 3/9/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

NRG2006-057

Project No.: BEV-07-018 Well No. NW-1 Site: NRG

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: Masterflex E/S Pump Drive Bailer Type: 2" polypropylene tube for sampling

Weather Conditions: sunny / cold ~ 15-20°F

Volume Calculation: (17.39' - 9.37') · 0.17 = 1.36 gal / well volume

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 6.8l (5 well volumes)

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	~~Cond.~~ DO	Temp.	Color	Odor Y/N	Turbidity
Initial	9.37'	17.39'							
914			4.00	9.93	1.45	42.40	Clear	N	2.25
925			5.50	10.98	0.94	48.79	Clear	N	1.78
935			6.75	11.10	4.91	53.18	Clear	N	0.79
		Sample Readings							

Comments: Field parameters taken @ 3, 4, and 5 well volumes purged

COLLECTED GW SAMPLES @ 1530

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature:

Date: 3 / 9 / 07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: NRG2006-057 BD-07-018 Well No. NRG-1 Site: NRG - Tonawanda

Purging Method: Pumped [X] Bailed [ ] Other:

Pump Type: ~~Submersible~~ Peristaltic Bailer Type: 3" polypropylene tube for sampling

Weather Conditions: Overcast ~50°F

Volume Calculation: (19.82 - 10.57) · 0.17 = 1.57

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 7.86 gal/5 well vol

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
841	10.57	19.82	0						
921			4.75	8.50	44.5/2.45	44.32	clear	N	1.16
935			6.25	8.47	38.7/2.40	44.01	clear	N	0.85
951			8.00	8.47	34.3/2.72	44.00	clear	N	0.58
		Sample Readings							

Comments: GW parameters measured @ 3, 4, and 5 well volumes purged

COLLECTED GW SAMPLES @ 1355

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken [ ] Time:

Well Duplicate [ ] No.:

Signature: Jul Mft

Date: 3/13/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

NRG2006-057

Project No.: BD-07-018 Well No. NRG-42 Site: NRG - TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other: _____

Pump Type: PERISTALTIC Bailer Type: SAMPLED W/ BAILER

Weather Conditions: OVERCAST, 40's °F

Volume Calculation: 8.58' x .017 GAL/FT = 1.46

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.46 GAL 3 VOL = 4.4 4 VOL = 5.8 5 VOL = 7.3 GAL

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
0905	10.65	~~19.23~~ 19.23	4.5 GW	9.45	19.0/2.51	43.94	CLEAR	N	3.1 NTU
1005			↓	↓	↓	↓	↓	↓	↓
1015			6.0 GAL	9.70	16.1/2.67	43.73	CLEAR	N	1.4 NTU
1025			7.5 GAL	9.74	18.4/2.48	43.50	CLEAR	N	0.8 NTU
		Sample Readings							

Comments: WATER TURBID, OPAQUE DARK-GRAY AT FIRST, CLEARING AFTER ≈ 1 GAL.

COLLECTED GW SAMPLES @ 1410

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time: _____

Well Duplicate ☐ No.: _____

Signature: DRS

Date: 3/13/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: NRG2006-057 BD-07-018 Well No. NRG-3 Site: NRG-TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: PERISTALTIC Bailer Type: SAMPLED W/ BAILER

Weather Conditions: OVERCAST, 40's °F

Volume Calculation: 5.06' x 0.17 gal/FT = 0.86 3 = 2.6 gal 4 = 3.4 5 = 4.3

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 0.86 gal

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP / DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
1155	10.84	15.90	- INITIAL		WL -				
1202	- BEGIN PURGING								
1223			3.0	10.52	-136.4 / 1.35	48.49	SLIGHTLY CLOUDY	INDUSTRIAL ODOR	53 NTU
1234			4.0	10.58	-166.1 / 0.97	48.29	"	"	41 NTU
1244			5.0	10.61	-177.1 / 1.13	48.22	"	"	32 NTU
		Sample Readings							

Comments: WATER IS TURBID - CLOUDY, DARK GRAY AT FIRST, CLEARING AFTER 0.5 GAL

COLLECTED SAMPLES @ 1455

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: DRS

Date: 3/14/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: NRG2006-057 BD-07-018 Well No. NRG-4 Site: NRG-TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: PERISTALTIC Bailer Type: SAMPLED W/ BAILER

Weather Conditions: OCC. RAIN, 40's - 50's °F

Volume Calculation: 9.88' x 0.17 GAL/FT = 1.68

3 = 5.04
4 = 6.72
5 = 8.4

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.68

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
0955	8.84	18.72	-INTIAL-						
1008	-START PURGING-								
1045			5.1	10.79	-187.2 / 1.11	50.30	CLEAR	SLIGHT INDUS. ODOR	7.8 NTU
1058			7.0	10.99	-185.5 / 0.96	48.77	CLEAR	"	4.6 NTU
1112			9.0	11.07	-184.5 / 1.28	48.63	CLEAR	"	4.3 NTU
		Sample Readings							

Comments: WATER IS TURBID - CLOUDY, DARK-GRAY AT FIRST; CLEARING AFTER ≈ 1 GAL.

COLLECTED SAMPLES @ 1435

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: DRS

Date: 3/14/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

NRG2006-057
BD-07-018

Well Purging and Sample Collection

Project No.: ~~NRG-1~~ Well No. NRG-5 Site: NRG- Tonawanda

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: ~~Submersible~~ peristaltic Bailer Type: 2" polypropylene tube for sampling

Weather Conditions: overcast ~50°F

Volume Calculation: (19.60 - 10.18) · 0.17 = 1.60

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 8.01 gal / 5 well volumes

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/Do ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
1025	10.18'	19.60'	0						
1055			4.75	10.00	(-110.8)/1.07	51.89	clear	N	1.21
1117			6.50	10.07	(-116.3)/1.17	51.62	clear	N	0.77
1128			8.00	10.10	(-114.3)/1.15	52.18	clear	N.	0.54
		Sample Readings							

Comments: water parameters measured @ 3, 4, and 5 well volumes purged

COLLECTED GW SAMPLES @ 1435

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature:

Date: 3 / 13 / 07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

NRG2006-057

Project No.: BD-07-018 Well No. NRG-6 Site: NRG - Tonawanda

Purging Method: Pumped ☒ Bailed ☐ Other: 2" poly propylene tube for sampling

Pump Type: ~~Submersible~~ Peristaltic Bailer Type:

Weather Conditions: overcast ~50°F ~~Pumping Rate = 2.5 gal/min~~

Volume Calculation: (20.24 - 11.34) · 0.17 = 1.51

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 7.57 gal/5 well vol

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/Do ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
1215	11.34	20.24	0						
1250			4.50	12.17	(-218.3)/1.58	54.32	clear	N	0.42
1302			6.00	12.27	(-222.9)/1.76	52.72	clear	N	0.62
1313			7.50	12.23	(-217.7)/2.24	53.04	clear	N	0.54
		Sample Readings							

Comments: Well volumes purged and parameters taken @ 3, 4, and 5 well volumes purged.

COLLECTED GW SAMPLES @ 1505

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature:

Date: 3/13/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

NRG2006-057

Project No.: BD-07-018 Well No. NRG-1 Site: NRG - Tonawanda

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: Submersible Bailer Type:

Weather Conditions: cloudy ~40°F Purging Rate = 2.5 gpm

Volume Calculation: (18.75 - 10.60) · 0.17 = 1.39 | WELL DEVELOPMENT

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.39

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/DO ~~Cond.~~	~~ORP/DO~~ ~~Temp.~~	Color	Odor Y/N	Turbidity
1558	10.60	18.75	0						water black and opaque
1600			2 min						water clearing
1602			4 min	8.38	(-18.6)/2.58	42.06	opaque	N	561
1615	12.10		17 min						
1628			30 min	8.82	(-42.1)/2.53	42.61	cloudy	N	367
1635	12.42		37 min						
1650	12.50		52 min						
1655			57 min	8.73	(-39.0)/3.74	42.78	clear	N	27.6
			57 min = 142.5 gal = total purged						
		Sample Readings							

Comments: water was opaque and black at first but soon began to clear. Pump was used to surge well by raising and lowering pump. Water became turbid during surging

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature:

Date: 3 / 12 / 07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: BD-07-018 NRG 2006-057 Well No. NRG-2 Site: NRG- Tonawanda

Purging Method: Pumped [X] Bailed [ ] Other:

Pump Type: submersible Bailer Type:

Weather Conditions: cloudy ~40°F Pumping Rate = 2.5 gpm

Volume Calculation: (18.69 - 10.85) · 0.17 = 1.33 | WELL DEVELOPMENT

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.33

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/De Cond.	Temp.	Color	Odor Y/N	Turbidity
1441	10.85'	18.69'	0						water black and gray; opaque
			2 min						water clearing
1451			10 min	10.07	(-118.5)/1.76	43.71	cloudy	N	87.4
1513			32 min						
1516	12.05'		35 min	9.74	(-86.4)/1.85	42.77	opaque	N	322
1541			60 min	9.73	(-14.5)/1.73	42.41	opaque	N	161
1545	12.30'		64 min = 160 gal =	total	purged				
		Sample Readings							

Comments: water was clear after purging began. Pumped was periodically surged by moving it up and down causing the turbidity to increase

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken [ ] Time:

Well Duplicate [ ] No.:

Signature: Jul C Mtg

Date: 3/12/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

NRG2006-057

Project No.: B0-07-018 Well No. NRG-3 Site: NRG - Tonawanda

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: Submersible Bailer Type:

Weather Conditions: overcast ~50°F Pumping Rate = 2.5 gpm

Volume Calculation: 4.87' x 0.17 gal/ft = 0.83 gal WELL DEVELOPMENT

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 0.83 gal.

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
15[13]	10.98'	15.85'	0						water appears black; opaque
15[16]	11.15'		3 min						
15[20]		Pump	shut off						
15[25]	11.22'								
15[41]			28 min	10.55	(-153)/0.51	54.48	black	N	> 1000
15[50]									water clearing
15[53]			40 min	10.61	(-172)/1.09	52.17	black	N	145
15[59]	11.15'								
16[10]			57 min	10.64	(-183)/0.64	52.65	brown	N	153
16[29]			76 min	⇒	Pump Stopped (~26 gal purged)				
		Sample Readings							

Comments: Pump periodically stops due to the falling head of the GW. Pump turned off approximately every 5 min to allow recharge.

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: Joel C Mayer

Date: 3/13/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

NRG2006-057
Project No.: BD-07-018 Well No. NRG-4 Site: NRG-TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: SUBMERSIBLE Bailer Type:

Weather Conditions: OVERCAST, 40'S °F | WELL DEVELOPMENT

Volume Calculation: 9.7' x 0.17 GAL/FT = 1.65 | PUMPING RATE = 2.5 GPM

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.65

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP / ~~Cond.~~ DO	Temp.	Color	Odor Y/N	Turbidity
1052	9.07	18.77							
1058	– START PUMPING –				SURGING EVERY 10 MIN.				APPROX.
1115	10.3'		17 MIN.						
1150	10.5'		52 MIN.	11.03	-206.5 / 1.12	51.70	CLEAR	N	7.1 NTU
1202			62 MIN.	11.15	-199.4 / 1.41	49.55	CLEAR	N	6.6 NTU
1212			72 MIN.	11.16	-193.2 / 1.92	49.58	CLEAR	N	5.4 NTU
	– DEVELOPMENT COMPLETE –								
		Sample Readings							

Comments: WATER OPAQUE, TURBID, DARK GRAY AT FIRST, CLEARING AFTER ≈ 5 MIN. WATER BECOMES TURBID – OPAQUE WHEN SURGED.

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: DRS

Date: 3/13/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: NRG 2006-057 BD-07-018 Well No. NRG-5 Site: NRG-TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other: WELL DEVELOPMENT

Pump Type: SUBMERSIBLE Bailer Type:

Weather Conditions: SUNNY, 40's °F | PUMPING RATE IS 2.5 GPM

Volume Calculation: 9.04' x 0.17 GAL/FT = 1.54 GAL

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.54

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/D.O./Cond.	Temp.	Color	Odor Y/N	Turbidity
1132	10.06	19.30	0						WATER OPAQUE, GRAY-BLACK AT FIRST
			3 min.						WATER CLEARING, LOWERED PUMP
1157	10.08		9.5 MIN	9.42 ~~9.25~~	-57.5 / 1.93	53.21	CLEAR	N	CLEAR
1217	10.24		30 MIN	9.81	-87.5 / 1.29	51.13	GRAY CLOUDY	N	84 NTU
1230	~~1200~~ - RAISED PUMP ≈ 4' & SURGED								
1250			62 MIN		SURGED - LOWERED	WELL PUMP &	BACK TO BOTTOM		
1254			67 MIN	9.73	-57.2 / 1.73	50.32	CLEAR	N	36 NTU
1300	DEVELOPMENT COMPLETE		70 MIN = 175 GAL. = TOTAL PURGED						
		Sample Readings							

Comments: WATER IS CLEAR DURING PUMPING, BUT BECOMES TURBID/OPAQUE WHEN PUMP IS LOWERED. SURGED PERIODICALLY BY RAISING & LOWERING PUMP, WHICH MAKES WATER OPAQUE DARK GRAY-BLACK

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: DRS

Date: 3/12/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

SJB SERVICES, INC.

Well Purging and Sample Collection

Project No.: NRG2006-057 BD-07-018 Well No. NRG-6 Site: NRG - TONAWANDA

Purging Method: Pumped ☒ Bailed ☐ Other:

Pump Type: SUBMERSIBLE Bailer Type: WELL DEVELOPMENT

Weather Conditions: CLOUDY, 40's °F PUMPING RATE = 2.5 GPM

Volume Calculation: 8.4' x 0.17 G/FT = 1.43

(D.T.B. – D.T.W. x vol./ft. = Gals./well vol.)
(Gals./well vol. x 5 = Total Volume to be removed)

Gals./well vol.: 1.43

Time	Depth to Water (D.T.W.)	Depth to Bottom (D.T.B.)	Volume Removed (gal.)	pH	ORP/DO ~~Cond.~~	Temp.	Color	Odor Y/N	Turbidity
1316	11.33'	19.73	0						water opaque black and gray
			2 min						water becoming more clear
1321			5 min	12.27	(-318.4)/2.40	48.72	cloudy	N	95.4
1344			28 min	12.14	(-311.6)/2.43	49.15	clear	N	9.0
1350	11.55'				~~(-311.9)/2.45~~				
1404			48 min	12.33	(-311.9)/2.45	48.74	clear	N	5.6
1416			60 min	12.22	(-311.6)/2.52	48.67	clear	N	10.0
1422	11.61		66 min	= 165 gallons = total purged					
		Sample Readings							

Comments: Water became clear after 2 min of pumping. However, the water becomes turbid and opaque when pump is lowered and raised (surged)

Inside Diameter	vol./ft.
1"	0.04
1.25"	0.06
2"	0.16
4"	0.65

Field Blank Taken ☐ Time:

Well Duplicate ☐ No.:

Signature: Jack C Mgr

Date: 3/12/07

HNu/PPM	LEL/%	O2/%	H2S/PPM	CO/PPM	

Appendix D
Water Chemistry Summary Tables

Table I
Historic Groundwater Quality
Former Roblin Steel Site
Remedial Investigation Report-Tonawanda, New York

Key	Data Source: Table 6-7 of NYSDEC Site Evaluation Report (December 2006)--1990 USEPA Data												
Sample ID: Sample Date:	NW-1 9/30/99	NW-4 9/30/99	NW-5 9/30/99	ESI-8 9/29/99	GW-2 9/29/99	GW-3 9/29/99	GW-4 9/30/99	GW-5 9/30/99	GW-6 9/30/99	GW-7 9/30/99	ENV-1 9/29/99	ENV-2 10/01/99	ENV-3 10/01/99
Volatiles													
1,1,1-Trichloroethane												2500 D	
1,1,2-Trichloroethane												1 J	
1,1-Dichloroethane		8 J								1 J		910 DJ	71
1,1-Dichloroethene										14		93	
1,2-Dichloroethane												20	
1,2-Dichloroethene		8 J		2 J								26000 D	
Benzene						1 J	1 J					2 J	1 J
Chlorobenzene												3 J	
Chloroethane													52
Ethylbenzene												170	
Methylene Chloride												180	2 J
Tetrachloroethene		2 J								3 J		7700 D	
Toluene				1 J								2400 D	
Trichloroethene		1 J								1 J		7300 D	
Vinyl chloride		9 J										790 DJ	
Xylenes, Total												900 DJ	
Semi-Volatiles													
Bis(2-ethylhexyl)phthalate	1 J					1 J							
Di-n-butylphthalate	5 J	2 J			2 J	6 J		1 J			1 J	5 J	4 J
NSphthalene						5 J	2 J						
PheNSNSthrene						1 J							
Phenol						6 J	7 J						
Metals													
Aluminum	4540	36500	2690	5560	6590	52900	37300	8470	2640	744	22300	7370	7720
Antimony	3.9 JN	12.7 JN					13.9 JN				7.4 JN		4.7 JN
Arsenic		33.7				15.1	30.8	40.8	3.7	4	42.1	8.4	9.7
Barium	147	447	74.7	113	190	368	510	184	42.8	38.3	225	135	128
Beryllium		2.6				4.2	2.2	0.29		0.32	0.16	0.5	0.29
Cadmium	1.4	3.4				2.5	2.8		0.88		0.92	4.1	
Calcium	56900 EJ	190000 EJ	105000 EJ	172000 EJ	196000 EJ	277000 EJ	230000 EJ	70400 EJ	63000 EJ	254000 EJ	209000 EJ	127000 EJ	35100 EJ
Chromium	165	65.2	7.3	9.1	9.6	62.2	67.7	18.2	7.5	2	38.2	10.8	19.5
Cobalt	4.5	29.1		3.7	4.3	35	27.9	9.2	2.4	2.7	13.7	3.3	7.8
Copper	73.7	132	2.9	18.9	24.3	102	159	27.6	16.7		53.1	48.3	34.9
Iron	29400	94300	3400	6870	18200	67400	94500	34200	6080	918	57500	8240	39900
Lead	79.5	238	5.9	9.9	17.3	76.4	276	14.2	5.8		38.2	64.5	82
Magnesium	6470	40500	20200	4920	36200	27000	24200	12500	10600	1110	38000	5960	24600
Manganese	2910	2460	115	268	1260	1730	3130	552	213	27.6	4690	573	1290
Mercury	0.04	0.21				0.17	0.26				0.1	0.1	0.05
Nickel	19.8	109	3.9	12.5	14.1	91	79.5	23.8	6.5	1.6	46.1	10.8	20.6
Potassium	4250	11300	9670	21100	10500	24800	24300	17500	7330	29300	9450	7260	11700
Selenium	5.5	60.5	15.1	10.9	4.8	13.6	13.3	7.5			12.7	15.7	6.5
Sodium	20800	12400	13100	20200	43600	25500	20888	52400	5480	13800	23700	7890	11000
Thallium										8.9			
VaNSdium	72.4	91.5	7.1	10.6	15	75.7	91.9	21.6	7.8	21	48.3	8.2	27.3
Zinc	114	682	23.4	53.4	61.4	298	548	87.6	29.7	8.7	143	3000	83.5
Inorganics													
Cyanide				14.4	19.6								

J - Compound reported at an estimated concentration below the reporting limit

N - Spiked sample recovery not within control limits

E - The reported value is estimated due to the presence of interference

D - Compound identified in ansalysis at a secondary dilution factor

[1] Does not Include B, *, and J values

[2] TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Protection for Source of Drinking Water.

The most stringent standard from Surface Water, Guidance and Groundwater was used.

Table I
Historic Groundwater Quality
Former Roblin Steel Site
Remedial Investigation Report-Tonawanda, New York

Key	Data Source: Table 6-7 of NYSDEC Site Evaluation Report (December 2006)--1990 USEPA Data			Statistical Analysis[1]				Groundwater Quality Standard
Sample ID: Sample Date:	ENV-4 9/30/99	ENV-5 9/30/99	ENV-6 9/30/99	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentration	Standard Deviation	TOGS 1.1.1
Volatiles								
1,1,1-Trichloroethane				0				
1,1,2-Trichloroethane				0				
1,1-Dichloroethane	2 J	2 J		1	71.0	71.0	29.0	5
1,1-Dichloroethene				2	93.0	53.5	55.9	0.7
1,2-Dichloroethane				1	20.0	20.0		0.6
1,2-Dichloroethene	85	56	6 J	2	85.0	70.5	37.5	5.0*
Benzene				0				1
Chlorobenzene				0				
Chloroethane				1	52.0	52.0		5
Ethylbenzene	24			2	170.0	97.0	103.2	5
Methylene Chloride				1	180.0	180.0	127.3	5
Tetrachloroethene				0				
Toluene	9 J			0				
Trichloroethene	46			1	46.0	46.0	23.0	5
Vinyl chloride	5 J	3 J	2 J	0				0.3
Xylenes, Total	67			1	67.0	67.0	47.4	5
Semi-Volatiles								
Bis(2-ethylhexyl)phthalate				0				
Di-n-butylphthalate	1 J	7 J	3 J	0				
NSphthalene				0				10
PheNSNSthrene				0				
Phenol				0				
Metals								
Aluminum	15000	14000	29600	16	52900.0	15870.3	15453.0	NS
Antimony	61.9 JN		7.3 JN	0				
Arsenic				9	42.1	20.9	15.8	25
Barium	166	139	238	16	510.0	196.6	136.3	1,000.00
Beryllium	1.2	1.2	2	11	4.2	1.4	1.3	3
Cadmium			4.6	8	4.6	2.6	1.4	5
Calcium	235000 EJ	124000 EJ	408000 EJ	0				
Chromium	21.2	16.2	53.3	16	165.0	35.8	41.3	50
Cobalt	8.4	7.5	15.4	15	35.0	11.7	10.6	NS
Copper	31.3	31.4	58.2	15	159.0	54.3	44.8	200
Iron	14800	15900	33400	16	94500.0	32813.0	30717.8	300
Lead	18.5	43.2	37.1	15	276.0	67.1	82.0	25
Magnesium	21300	28300	48800	16	48800.0	21916.3	14247.4	35,000.00
Manganese	538	626	1610	16	4690.0	1374.5	1325.8	300
Mercury		0.1		8	0.3	0.1	0.1	0.7
Nickel	25.7	22.5	48.2	16	109.0	33.5	32.7	100
Potassium	19500	21900	39400	16	39400.0	16828.8	9586.6	NS
Selenium	25.2	8.3	33.1	14	60.5	16.6	14.8	10
Sodium	20000	27200	25300	16	52400.0	21453.6	12330.3	20,000.00
Thallium				1	8.9	8.9		0.5
VaNSdium	33	23.2	27.1	16	91.9	36.4	30.0	NS
Zinc	80.1	93.6	159	16	3000.0	341.6	734.1	2,000.00
Inorganics								
Cyanide				2	19.6	17.0	3.7	200

J - Compound reported at an esJ - Compound reported at an estimated concentration below the reporting limit

N - Spiked sample recovery notN - Spiked sample recovery not within control limits

E - The reported value is estimaE - The reported value is estimated due to the presence of interference

D - Compound identified in ansaD - Compound identified in ansalysis at a secondary dilution factor

[1] Does not Include B, *, and J v[1] Does not Include B, *, and J values

[2] TOGS 1.1.1 Ambient Water Q[2] TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Pro

The most stringent standaThe most stringent standard from Surface Water, Guidance and Groundwater was used.

Table II
2007 Groundwater Quality Data
Remedial Investigation Report-Former Roblin Steel Site
Tonawanda, New York

Date Sampled	3/8/2007	3/8/2007	3/8/2007	3/8/2007	3/9/2007	3/9/2007	3/9/2007	3/9/2007	3/13/2007	3/13/2007	3/14/2007	3/14/2007	3/13/2007	3/13/2007	3/9/2007	Statistical Analysis[1]				Standards (ug/l)
Sample Location	ENV-5	ENV-7	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	NRG-1	NRG-2	NRG-3	NRG-4	NRG-5	NRG-6	NW-1	Number of Detected Results	Maximum Detected Concentration	Average of Detected Concentrations	Standard Deviation	TOGS 1.1.1 AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES AND GROUNDWATER EFFLUENT LIMITATIONS[2]
VOCs (ug/L) by EPA Method 8260B																				
1,1-Dichloroethane											2.3 J	5.4	4.2 J			1	5.4	5.4	3.1	5.0
1,2-Dichloroethane													4.4 J			0				0.7
4-Methyl-2-pentanone (MIBK)											1.2 J	1.3 J				0				NS
Acetone																0				50.0
Benzene			6.4			0.82 J					1.7 J	0.79 J				1	6.4	6.4	3.2	1.0
Carbon disulfide					1.4 J											0				NS
cis-1,2-Dichloroethene	3.3J	320											93	25		3	320	146.0	145.7	5.0
Ethylbenzene											1.1 J					0				5.0
Methylene Chloride																0				5.0
Tetrachloroethene					0.6 J											0				0.7
Toluene											3.1 J	1.8 J				0				5.0
trans-1,2-Dichloroethene													6.7 J	1.1 J		0				5.0
Vinyl chloride		250											6.1 J	1.4 J		1	250	250.0	144.3	0.3
Xylenes, Total											10	1.6 J				1	10	10.0	7.1	5.0
SVOCs (ug/L) by EPA Method 8270C																				
2,4-Dimethylphenol											300	58				2	300	179.0	171.1	50.0
2-Methylnaphthalene		1.9 J									5.3 J	5.8 J				0				NS
2-Methylphenol											330	58				2	330	194.0	192.3	NS
4-Methylphenol											42 J	65				1	65	65.0	46.0	NS
Acenaphthene											5.5 J	3.9 J				0				20.0
Bis(2-ethylhexyl) phthalate							2.6 J									0				5.0
Carbazole												4.8 J				0				NS
Dibenzofuran												5.1 J				0				NS
Fluorene											4 J	9.2 J				0				50.0
Naphthalene		1.3 J				0.68 J					18 J	19				1	19	19.0	9.5	10.0
Phenanthrene											5.5 J	7.7 J				0				50.0
Phenol											4.6 J	2.1 J				0				1.0
Dissolved Metals (ug/L) by EPA Method 6010 B and 7174A (Hg only)																				
Arsenic										4.3 J	5.9 J					0				25.0
Barium	27	21	120	70	39	37	150	24	47	59	17	14	32	67	54	15	150	51.9	38.4	1000.0
Cadmium									0.98 J	1.7 J						0				5.0
Chromium									3.1 J	5.7 J				44		1	44	44.0	25.4	50.0
Lead						4.2 J	3.8 J		7.2	51				5.7	3 J	3	51	21.3	20.0	25.0
Selenium					16 J											0				10.0
Total Cyanide Concentration (ug/L) by EPA Method 9012B				44 J		25 J			23	170					9.2J	2	170	96.5	74.1	200.0

B The analyte was found in associated blank as well as in the sample
J Indicates an Estimated Value
M Indicates result was obtained via a manual integration (rather than via a calculation from the instrument software)
[1] Does not Include B, *, and J values, or Trip Blank Data
[2] TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Protection for Source of Drinking Water. The most stringent standard from Surface Water, Guidance and Groundwater was used.

Appendix E

NRG Soil and Groundwater Quality Analytical Data Validation Check Lists

NATURAL RESOURCE GROUP, INC.

DATA VALIDATION CHECKLIST

Job Number: 220-978-1

Sample Identification(s):	NRGTP-2 4'	NRGTP-7 4'	NRGTP-10 0.5-1'	NRGTP-12 4'
	NRGTP-4 0-1'	NRGTP-8 0.5-1'	NRGTP-10 4'	NRGTP-13 0.5'
	NRGTP-4 8'	NRGTP-8 4'	NRGTP-10 7'	NRGTP-13 4'
	NRGTP-5 0-1'	NRGTP-8 8'	NRGTP-11 0.5'	NRGTP-13 8'
	NRGTP-5 5'	NRGTP-9 0.5-1'	NRGTP-11 4'	
	NRGTP-6 6-8'	NRGTP-9 4'	NRGTP-11 8'	
	NRGTP-7 0.5-1'	NRGTP-9 8'	NRGTP-12 0.5'	

Sample Date(s): February 27-28, 2007
Sample Team: Steve Lorentz, NRG
Sample Matrix: Solid
Analyzing Laboratory: Severn Trent Laboratories, Inc. Connecticut

Analytical data were validated in accordance with applicable USEPA SW-846 analytical method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999), and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) criteria.

The data package reviewed includes analytical results and data for all samples associated with this job number. The data package was prepared in accordance with USEPA Contract Laboratory Program (CLP) Level IV deliverable protocols. Only QA/QC results and raw data associated with target analytes were reviewed and / or discussed under this validation.

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

INORGANIC ANALYSES – TOTAL METALS

Method 6010B: Arsenic, Cadmium, Chromium, Lead, Selenium, Silver, & Barium
Method 7471A: Mercury

	Reported		Performance Acceptable		
	No	Yes	No	Yes	Not Required
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Calibration curve standards		X		X	
4. Initial calibration verification (ICV) %R		X		X	
5. Continuing calibration verification (CCV) %R		X		X	
6. Blanks					
A. Method blank		X		X	
B. Calibration blanks		X	X		
C. Field blanks	X				
7. Interference check sample %R		X		X	
8. Serial dilution check %D	X				
9. Laboratory control sample (LCS) %R		X		X	
10. Matrix spike (MS) %R		X	X		
11. Post-digestion spike (PDS) %R	X				
12. Laboratory duplicate RPD		X	X		
13. Field duplicate comparison	X				

%R - percent recovery %D - percent difference RPD - relative percent difference
NA - not applicable or not analyzed

Comments:
Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) unless otherwise noted.

6b. CCB 220-4130/21 and CCB 220-4130/57 had arsenic concentrations of 4.0 ug/L and 4.9 ug/L, respectively. Samples NRGTP-5 5', NRGTP-6 6-8', NRGTP-7 0.5-1, NRGTP-7 4', NRGTP-8 0.5-1, NRGTP-8 4', NRGTP-8 8', NRGTP-9 4', NRGTP-9 8', NRGTP-10 4', NRGTP-11 8', NRGTP-12 0.5' and NRGTP-13 0.5' had arsenic concentrations less than 5 times the blank concentration, these results were qualified as non-detect (U). CCB 220-4130//61 had barium concentration of 0.55 ug/L. All associated samples had barium results greater than 5 times the blank concentration. ICB 220-4114/6 and CCB 220-4114/38 had mercury concentrations of 0.087 ug/L and 0.077 ug/L. Samples NRGTP-2 4', NRGTP-5 0-1, NRGTP-5 5', NRGTP-6 6-8', NRGTP-7 4', NRGTP-8 0.5-1, NRGTP-8 4', NRGTP-8 8', NRGTP-9 4', NRGTP-10 0.5-1', NRGTP-10 4', NRGTP-10 7', NRGTP-11 8', NRGTP-13 0.5', and NRGTP-13 4' had a mercury concentration less than 5 times the blank concentration; these results were qualified as non-detect (U).

10. The matrix spike %R was above control limits for arsenic at 298%, lead at 349%, selenium at 269%, and barium at 168%. Sample results for arsenic, selenium, and barium were qualified as estimated (J), if detect. The matrix spike %R was below control limits for chromium at 59% and silver at 66%. Sample results for chromium and silver were qualified as estimated (J), if detect, and estimated (UJ) if non-detect.

NATURAL RESOURCE GROUP, INC.

INORGANIC ANALYSES – TOTAL METALS (cont.)

12. The laboratory duplicate RPD for barium was above the control limit at 42%. Associated sample results for barium were qualified as estimated (J), if detect, and estimated (UJ), if non-detect.

INORGANIC ANALYSES - GENERAL CHEMISTRY METHODS

Method 9012B: Cyanide

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Calibration curve standards		X		X	
4. Initial calibration verification (ICV) %R		X		X	
5. Continuing calibration verification (CCV) %R		X		X	
6. Blanks					
A. Method blanks		X		X	
B. Calibration blanks		X		X	
C. Field blanks	X				
7. Laboratory control sample (LCS) %R		X		X	
8. Matrix spike (MS) %R		X		X	
9. Post-digestion spike (PDS) %R	X				
10. Laboratory duplicate RPD		X		X	
11. Field duplicate comparison	X				

%R percent recovery
LCS - laboratory control sample
RPD - relative percent difference
NA - not applicable or not analyzed
MSD - matrix spike duplicate

Comments:

Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) unless otherwise noted.

All control limits were met. No qualification of the data was necessary.

NATURAL RESOURCE GROUP, INC.

ORGANIC ANALYSES - VOLATILE ORGANIC COMPOUND

Method 8260B

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks					
A. Method blanks		X	X		
B. Field Blanks	X				
C. Trip blanks	X				
4. Instrument tune and performance check		X		X	
5. Initial calibration RRF's and %RSD's		X		X	
6. Continuing calibration RRF's and %D's		X	X		
7. Laboratory Control Sample (LCS) %R		X	X		
8. Matrix spike (MS) %R	X				
9. Matrix spike duplicate (MSD) %R	X				
10. MS/MSD precision (RPD)	X				
11. Surrogate spike recoveries		X		X	
12. Internal standard retention times and areas		X		X	
13. Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation reports		X		X	
14. Field duplicate comparison	X				

%D - percent drift RRF - relative response factor %R - percent recovery
%RSD - percent relative standard deviation RPD - relative percent difference

Comments:
Performance was acceptable, with the following exception and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999) unless otherwise noted.

3a. The method blank for Batch 220-4078 and Batch 220-4124 had a methylene chloride concentrations of 5.5 ug/kg and 7.1 ug/kg, respectively. Samples with methylene chloride concentrations less than 5 times the blank concentration were qualified as non-detect (U) at the reporting limit. The method blank for Batch 220-4248 had an acetone concentration of 1300 ug/kg. Sample NRGTP-11 4' had a acetone concentration less than 5 times the blank concentration; therefore, this sample was qualified as non-detect (U).

3c. A TRIP BLANK was not included with this sample shipment.

6. The continuing calibration (3/12/07) %D for 1,2-Dichloroethane was above the control limit at 90.1%. The continuing calibration (3/8/07) %Rs were above the control limit for chloroethane at 26.6%, acetone at 43.8%, and 2-butanone at 32.9%. No qualification of the data was necessary.

ORGANIC ANALYSES - VOLATILE ORGANIC COMPOUND (cont.)

7. The laboratory control sample (Batch 220-4078 %R was above control limits for methylene chloride at 127%. The laboratory control sample (Batch 220-4124) %R was above control limits for chloroform at 141% and methylene chloride at 148%. All associated samples were non-detect for chloroform; therefore no qualification of the chloroform data was necessary. Methylen chloride results for samples NRGTP-11 8' and NRGTP-12 0.5' were qualified as estimated (J), since detect.

ORGANIC ANALYSES - SEMIVOLATILE ORGANIC COMPOUNDS

Method 8270C

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times					
A. Extraction holding time		X		X	
B. Analysis holding time		X		X	
2. Reporting limits		X		X	
3. Blanks					
A. Method blanks		X		X	
B. Field Blanks	X				
4. Instrument tune and performance check		X		X	
5. Initial calibration RRF's and %RSD's		X		X	
6. Continuing calibration RRF's and %D's		X	X		
7. Matrix spike (MS) %R	X				
8. Matrix spike duplicate (MSD) %R	X				
9. MS/MSD precision (RPD)	X				
10. Laboratory control sample (LCS) %R		X	X		
11. LCS duplicate (LCSD) %R	X				
12. LCS/LCSD precision (RPD)	X				
13. Surrogate spike recoveries		X	X		
14. Internal standard retention times and areas		X		X	
15. Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation reports		X		X	
16. Field duplicate comparison	X				

%D - percent drift RRF - relative response factor %R - percent recovery
%RSD - percent relative standard deviation RPD - relative percent difference

Comments:
Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999) unless otherwise noted.

6. The continuing calibration (3/8/07) %D for Butylbenylphthalate was above the control limit at 21.7%. The butyl benzyl phthalate result for sample NRGTP-11 8' was qualified as estimated (J), since detect.

10. The laboratory control samples for Batches 220-4103 and 220-4178 %Rs were above control limits for 2,4-Dinitrophenol at 61% and 85%, respectively. All associated sample results for 2,4-Dinitorphenol were non-detect; therefore, no qualification of the data was necessary.

NATURAL RESOURCE GROUP, INC.

ORGANIC ANALYSES - SEMIVOLATILE ORGANIC COMPOUNDS (cont.)

13. The surrogate spike recovery was below control limits for 2-fluorophenol at 152% and phenol-d5 at 158% in sample NRGTP-11 4'. The acid fraction compounds in sample NRGTP-11 4' were qualified as estimated (J), if detect.

NATURAL RESOURCE GROUP, INC.

DATA VALIDATION CHECKLIST
SUMMARY OF DATA QUALIFIER CODES

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
NRGTP-2 4'	Arsenic	26.5 mg/kg	J	MS %R above control limits.
	Barium	34.8 mg/kg	J	MS %R above control limits.
	Chromium	57.1 mg/kg	J	MS %R below control limits.
	Silver	3.0 mg/kg	UJ	MS %R below control limits.
	Mercury	<0.05 mg/kg	U	Blank contamination.
NRGTP-4 0-1'	Barium	32.9 mg/kg	J	MS %R above control limits.
	Chromium	14.5 mg/kg	J	MS %R below control limits.
	Silver	2.7 mg/kg	UJ	MS %R below control limits.
	Methylene Chloride	<21 ug/kg	U	Blank contamination.
NRGTP-4 8'	Barium	38.0 mg/kg	J	MS %R above control limits.
	Chromium	25.4 mg/kg	J	MS %R below control limits.
	Silver	3.6 mg/kg	UJ	MS %R below control limits.
	Methylene Chloride	<24 ug/kg	U	Blank contamination.
NRGTP-5 0-1'	Arsenic	45.8 mg/kg	J	MS %R above control limits.
	Barium	342 mg/kg	J	MS %R above control limits.
	Chromium	40.9 mg/kg	J	MS %R below control limits.
	Silver	3.7 mg/kg	UJ	MS %R below control limits.
	Mercury	0.21 mg/kg	U	Blank contamination.
	Methylene Chloride	<25 ug/kg	U	Blank contamination .
NRGTP-5 5'	Arsenic	18.0 mg/kg	U	Blank contamination.
	Barium	951 mg/kg	J	MS %R above control limits.
	Chromium	22.2 mg/kg	J	MS %R below control limits.
	Silver	4.3 mg/kg	UJ	MS %R below control limits.
	Mercury	0.14 mg/kg	U	Blank contamination.
	Methylene Chloride	<29 ug/kg	U	Blank contamination.
NRGTP-6 6-8'	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	66.8 mg/kg	J	MS %R above control limits.
	Chromium	114 mg/kg	J	MS %R below control limits.
	Silver	3.5 mg/kg	UJ	MS %R below control limits.
	Mercury	0.15 mg/kg	U	Blank contamination.
	Methylene Chloride	<22 ug/kg	U	Blank contamination.
NRGTP-7 0.5-1'	Arsenic	9.4 mg/kg	U	Blank contamination.
	Barium	126 mg/kg	J	MS %R above control limits.
	Chromium	19.0 mg/kg	J	MS %R below control limits.
	Silver	3.5 mg/kg	UJ	MS %R below control limits.
NRGTP-7 4'	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	73.9 mg/kg	J	MS %R above control limits.
	Chromium	6.8 mg/kg	J	MS %R below control limits.
	Silver	6.4 mg/kg	UJ	MS %R below control limits.
	Mercury	0.19 mg/kg	U	Blank contamination.
NRGTP-8 0.5-1	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	811 mg/kg	J	MS %R above control limits.
	Selenium	21 mg/kg	J	MS %R above control limits.
	Chromium	47.6 mg/kg	J	MS %R below control limits.
	Silver	3.0 mg/kg	UJ	MS %R below control limits.
	Mercury	<0.05 mg/kg	U	Blank contamination.
	Methylene Chloride	<24 ug/kg	U	Blank contamination.
NRGTP-8 4'	Arsenic	8.3 mg/kg	U	Blank contamination.
	Barium	3070 mg/kg	J	MS %R above control limits.
	Chromium	11.2 mg/kg	J	MS %R below control limits.

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
	Selenium	3.5 mg/kg	J	MS %R above control limits.
	Silver	4.1 mg/kg	UJ	MS %R below control limits.
	Mercury	<0.05 mg/kg	U	Blank contamination.
	Methylene Chloride	<24 ug/kg	U	Blank contamination.
NRGTP-8 8'	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	348 mg/kg	J	MS %R above control limits.
	Chromium	52.9 mg/kg	J	MS %R below control limits.
	Silver	3.6 mg/kg	UJ	MS %R below control limits.
	Mercury	<0.05 mg/kg	U	Blank contamination.
NRGTP-9 0.5-1'	Methylene Chloride	<24 ug/kg	U	Blank contamination.
NRGTP-9 4'	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	42.7 mg/kg	J	MS %R above control limits.
	Chromium	11.6 mg/kg	J	MS %R below control limits.
	Silver	4.3 mg/kg	UJ	MS %R below control limits.
	Mercury	<0.05 mg/kg	U	Blank contamination.
NRGTP-9 8'	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	837 mg/kg	J	MS %R above control limits.
	Chromium	9.4 mg/kg	J	MS %R below control limits.
	Silver	5.1 mg/kg	UJ	MS %R below control limits.
NRGTP-10 0.5-1'	Arsenic	11.7 mg/kg	J	MS %R above control limits.
	Barium	264 mg/kg	J	MS %R above control limits.
	Chromium	172 mg/kg	J	MS %R below control limits.
	Silver	3.4 mg/kg	UJ	MS %R below control limits.
	Mercury	0.38 mg/kg	U	Blank contamination.
NRGTP-10 4'	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	159 mg/kg	J	MS %R above control limits.
	Chromium	189 mg/kg	J	MS %R below control limits.
	Silver	4.1 mg/kg	UJ	MS %R below control limits.
	Mercury	0.19 mg/kg	U	Blank contamination.
NRGTP-10 7'	Barium	16.3 mg/kg	J	MS %R above control limits.
	Chromium	2.0 mg/kg	J	MS %R below control limits.
	Silver	3.6 mg/kg	UJ	MS %R below control limits.
	Mercury	0.051 mg/kg	U	Blank contamination.
	Methylene Chloride	<24 ug/kg	UJ	Blank contamination.
NRGTP-11 0.5'	Methylene Chloride	<23 ug/kg	UJ	Blank contamination.
NRGTP-11 4'	Acetone	<3300 ug/kg	U	Blank contamination.
	4-Methylphenol	4900 ug/kg	J	Surrogate recovery %R above control limits.
	2,4-Dimethylphenol	1200 ug/kg	J	Surrogate recovery %R above control limits.
	Phenol	5800 ug/kg	J	Surrogate recovery %R above control limits.
NRGTP-11 8'	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	49.9 mg/kg	J	MS %R above control limits.
	Chromium	91.7 mg/kg	J	MS %R below control limits.
	Silver	3.1 mg/kg	UJ	MS %R below control limits.
	Mercury	0.30 mg/kg	U	Blank contamination.
	Methylene Chloride	44 ug/kg	J	LCS %R above control limits.
	Butyl benzyl phthalate	100 ug/kg	J	Continuing calibration %D above the control limit.
NRGTP-12 0.5	Arsenic	13.8 mg/kg	U	Blank contamination.
	Barium	1190 mg/kg	J	MS %R above control limits.
	Chromium	57.5 mg/kg	J	MS %R below control limits.
	Silver	5.3 mg/kg	UJ	MS %R below control limits.

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
	Methylene Chloride	47 ug/kg	J	LCS %R above control limits.
NRGTP-12 4'	Methylene Chloride	<34 ug/kg	U	Blank contamination.
NRGTP-13 0.5	Arsenic	<8.0 mg/kg	U	Blank contamination.
	Barium	119 mg/kg	J	MS %R above control limits.
	Chromium	17.1 mg/kg	J	MS %R below control limits.
	Silver	3.7 mg/kg	UJ	MS %R below control limits.
	Mercury	<0.05 mg/kg	U	Blank contamination.
	Methylene Chloride	<23 ug/kg	U	Blank contamination.
NRGTP-13 4'	Arsenic	20.9 mg/kg	J	MS %R above control limits.
	Barium	153 mg/kg	J	MS %R above control limits.
	Chromium	535 mg/kg	J	MS %R below control limits.
	Silver	3.3 mg/kg	UJ	MS %R below control limits.
	Mercury	0.15 mg/kg	U	Blank contamination.
	Methylene Chloride	<23 ug/kg	U	Blank contamination.
NRGTP-13 8"	Methylene Chloride	<30 ug/kg	U	Blank contamination.

VALIDATION PERFORMED BY: Anica McAdams

VALIDATION PERFORMED BY SIGNATURE: Anica McAdams

DATE: 6/18/07

NATURAL RESOURCE GROUP, INC.

DATA VALIDATION CHECKLIST

Job Number: 220-1004-1

Sample Identification(s):	ENV-5 ENV-7 GW-2 GW-1 TRIP BLANK
Sample Date(s):	May 8, 2007
Sample Team:	Dave Steiner, SJB Empire
Sample Matrix:	Water
Analyzing Laboratory:	Severn Trent Laboratories, Inc. Connecticut

Analytical data were validated in accordance with applicable USEPA SW-846 analytical method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999), and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) criteria.

The data package reviewed includes analytical results and data for all samples associated with this job number. The data package was prepared in accordance with USEPA Contract Laboratory Program (CLP) Level IV deliverable protocols. Only QA/QC results and raw data associated with target analytes were reviewed and / or discussed under this validation.

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

	Reported		Performance Acceptable		
	No	Yes	No	Yes	Not Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

INORGANIC ANALYSES – TOTAL AND DISSOLVED METALS

Method 6010B: Arsenic, Cadmium, Chromium, Lead, Selenium, Silver, & Barium
Method 7471A: Mercury

	Reported		Performance Acceptable		
	No	Yes	No	Yes	Not Required
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Calibration curve standards		X		X	
4. Initial calibration verification (ICV) %R		X		X	
5. Continuing calibration verification (CCV) %R		X		X	
6. Blanks					
A. Method blank		X	X		
B. Calibration blanks		X		X	
C. Field blanks	X				X
7. Interference check sample %R		X	X		
8. Serial dilution check %D		X		X	
9. Laboratory control sample (LCS) %R		X		X	
10. Matrix spike (MS) %R		X	X		
11. Post-digestion spike (PDS) %R		X		X	
12. Laboratory duplicate RPD		X		X	
13. Field duplicate comparison	X				X

%R - percent recovery %D - percent difference RPD - relative percent difference
NA - not applicable or not analyzed

Comments:
Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) unless otherwise noted.

6a. The method blank had a barium concentration of 0.49 ug/L. All sample results were greater than 5x the blank concentration; therefore, no qualification of the data was required.

7. The interference check sample %R for Selenium was below control limits at 72%. Selenium results were qualified as estimated (UJ), since non-detect

10. The matrix spike %R for Selenium was below control limits at 50%. Since the post-digestion spike %R was within control limits, the Selenium results were qualified as estimated (UJ), since non-detect.

11. The post-digestion spike %R for Lead was outside control limits. Since the sample result for Lead was greater than 4x the spike amount, no qualification of the data was required.

INORGANIC ANALYSES - GENERAL CHEMISTRY METHODS

Method 9012B: Cyanide

	Reported		Performance Acceptable		
	No	Yes	No	Yes	Not Required
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Calibration curve standards		X		X	
4. Initial calibration verification (ICV) %R		X		X	
5. Continuing calibration verification (CCV) %R		X		X	
6. Blanks					
A. Method blanks		X		X	
B. Calibration blanks		X		X	
C. Field blanks	X				X
7. Laboratory control sample (LCS) %R		X		X	
8. Matrix spike (MS) %R		X	X		
9. Post-digestion spike (PDS) %R		X		X	
10. Laboratory duplicate RPD		X		X	
11. Field duplicate comparison	X				X

%R percent recovery
LCS - laboratory control sample
RPD - relative percent difference
NA - not applicable or not analyzed
MSD - matrix spike duplicate

Comments:
Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) unless otherwise noted.

8. The MS %R was below control limits at 74%. Cyanide results were qualified as estimated (J), if detect, and estimated (UJ), if non-detect.

ORGANIC ANALYSES - VOLATILE ORGANIC COMPOUND

Method 8260B

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks					
A. Method blanks		X		X	
B. Field Blanks	X				X
C. Trip blanks		X	X		
4. Instrument tune and performance check		X		X	
5. Initial calibration RRF's and %RSD's		X	X		
6. Continuing calibration RRF's and %D's		X	X		
7. Matrix spike (MS) %R	X				
8. Matrix spike duplicate (MSD) %R	X				
9. MS/MSD precision (RPD)	X				
10. Surrogate spike recoveries		X		X	
11. Internal standard retention times and areas		X		X	
12. Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation reports		X		X	
13. Field duplicate comparison	X				X

%D - percent drift
%RSD - percent relative standard deviation
RRF - relative response factor
RPD - relative percent difference
%R - percent recovery

Comments:
Performance was acceptable, with the following exception and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999) unless otherwise noted.

3c. The TRIP BLANK sample had an acetone concentration of 2.1 ug/L. Samples ENV-7 and GW-2 had acetone concentrations less than 5 times the trip blank concentrations; therefore these results were qualified as non-detect (U) a the reporting limit.

5. The initial calibration %RSD for acetone was above the control limit at 43.4%. No samples within this job number were associated with this initial calibration; therefore no qualification of the data was necessary.

6. The continuing calibration %D was above control limits for 1,2-Dichloroethane at 90.1%, Chloromethane at 31.2%, Acetone at 49.3%, 2-Butanone at 31.5%, 2-Hexanone at 31.3%. Samples analyzed on 3/14/07 were qualified as estimated (J), if detect, and estimated (UJ), if non-detect for these parameters.

ORGANIC ANALYSES - SEMIVOLATILE ORGANIC COMPOUNDS

Method 8270C

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times					
A. Extraction holding time		X		X	
B. Analysis holding time		X		X	
2. Reporting limits		X		X	
3. Blanks					
A. Method blanks		X		X	
B. Field Blanks	X				
4. Instrument tune and performance check		X		X	
5. Initial calibration RRF's and %RSD's		X		X	
6. Continuing calibration RRF's and %D's		X		X	
7. Matrix spike (MS) %R	X				
8. Matrix spike duplicate (MSD) %R	X				
9. MS/MSD precision (RPD)	X				
10. Laboratory control sample (LCS) %R		X		X	
11. LCS duplicate (LCSD) %R	X				X
12. LCS/LCSD precision (RPD)	X				X
13. Surrogate spike recoveries		X	X		
14. Internal standard retention times and areas		X		X	
15. Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation reports		X		X	
16. Field duplicate comparison	X				X

%D - percent drift
%RSD - percent relative standard deviation
RRF - relative response factor
RPD - relative percent difference
%R - percent recovery

Comments:
Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999) unless otherwise noted.

12. The surrogate spike recoveries (%R) for 2-Fluorophenol for samples ENV-5 and the method blank were below control limits at 20% and 6%, respectively. The %R for Phenol-d5 and 2,4,6-Tribromophenol were below control limits for the method blank. Since the surrogate spike recoveries for the samples were within with control limits with the exception of 2-Flurophenol for sample ENV-5. Therefore, no qualification of the data was made.

NATURAL RESOURCE GROUP, INC.

DATA VALIDATION CHECKLIST
SUMMARY OF DATA QUALIFIER CODES

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
ENV-5	Selenium	<30 ug/L	UJ	ICS and MS %Rs below control limits.
	Dissolved Selenium	<30 ug/L	UJ	ICS and MS %Rs below control limits.
	Cyanide	<10 ug/L	UJ	MS %R below control limits.
ENV-7	Selenium	<30 ug/L	UJ	ICS and MS %Rs below control limits.
	Dissolved Selenium	<30 ug/L	UJ	ICS and MS %Rs below control limits.
	Cyanide	<10 ug/L	UJ	MS %R below control limits.
	Acetone	<40 ug/L	UJ	Trip blank contamination and CCV %D above control limits.
	2-Butanone	<40 ug/L	UJ	CCV %D above control limits.
	Chloromethane	<20 ug/L	UJ	CCV %D above control limits.
	1,2-Dichloroethane	<20 ug/L	UJ	CCV %D above control limits.
	2-Hexanone	<40 ug/L	UJ	CCV %D above control limits.
GW-2	Selenium	<30 ug/L	UJ	ICS and MS %Rs below control limits.
	Dissolved Selenium	<30 ug/L	UJ	ICS and MS %Rs below control limits.
	Cyanide	44 ug/L	J	MS %R below control limits.
	Acetone	<10 ug/L	UJ	Trip blank contamination and CCV %D above control limits.
	2-Butanone	<10 ug/L	UJ	CCV %D above control limits.
	Chloromethane	<5 ug/L	UJ	CCV %D above control limits.
	1,2-Dichloroethane	<5 ug/L	UJ	CCV %D above control limits.
	2-Hexanone	<10 ug/L	UJ	CCV %D above control limits.
GW-1	Selenium	<30 ug/L	UJ	ICS and MS %Rs below control limits.
	Dissolved Selenium	<30 ug/L	UJ	ICS and MS %Rs below control limits.
	Cyanide	<10 ug/L	UJ	MS %R below control limits.
	Acetone	<10 ug/L	UJ	CCV %D above control limits.
	2-Butanone	<10 ug/L	UJ	CCV %D above control limits.
	Chloromethane	<5 ug/L	UJ	CCV %D above control limits.
	1,2-Dichloroethane	<5 ug/L	UJ	CCV %D above control limits.
	2-Hexanone	<10 ug/L	UJ	CCV %D above control limits.
TRIP BLANK	Acetone	2.1 ug/L	J	CCV %D above control limits.
	2-Butanone	<10 ug/L	UJ	CCV %D above control limits.
	Chloromethane	<5 ug/L	UJ	CCV %D above control limits.
	1,2-Dichloroethane	<5 ug/L	UJ	CCV %D above control limits.
	2-Hexanone	<10 ug/L	UJ	CCV %D above control limits.

VALIDATION PERFORMED BY: Anica McAdams

VALIDATION PERFORMED BY SIGNATURE: Anica McAdams

DATE: 6/18/07

NATURAL RESOURCE GROUP, INC.

DATA VALIDATION CHECKLIST

Job Number: 220-1036-1

Sample Identification(s):	GW-5 GW-3 GW-6 NW-1 GW-4 M-2 TRIP BLANK
Sample Date(s):	May 9, 2007
Sample Team:	Dave Steiner, SJB Empire
Sample Matrix:	Water
Analyzing Laboratory:	Severn Trent Laboratories, Inc. Connecticut

Analytical data were validated in accordance with applicable USEPA SW-846 analytical method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999), and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) criteria.

The data package reviewed includes analytical results and data for all samples associated with this job number. The data package was prepared in accordance with USEPA Contract Laboratory Program (CLP) Level IV deliverable protocols. Only QA/QC results and raw data associated with target analytes were reviewed and / or discussed under this validation.

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

	Reported		Performance Acceptable		
	No	Yes	No	Yes	Not Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

INORGANIC ANALYSES – TOTAL AND DISSOLVED METALS

Method 6010B: Arsenic, Cadmium, Chromium, Lead, Selenium, Silver, & Barium
Method 7471A: Mercury

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Calibration curve standards		X		X	
4. Initial calibration verification (ICV) %R		X		X	
5. Continuing calibration verification (CCV) %R		X		X	
6. Blanks					
A. Method blank		X	X		
B. Calibration blanks		X	X		
C. Field blanks	X				X
7. Interference check sample %R		X		X	
8. Serial dilution check %D		X		X	
9. Laboratory control sample (LCS) %R		X		X	
10. Matrix spike (MS) %R		X		X	
11. Post-digestion spike (PDS) %R		X	X		
12. Laboratory duplicate RPD		X	X		
13. Field duplicate comparison	X				X

%R - percent recovery %D - percent difference RPD - relative percent difference
NA - not applicable or not analyzed

Comments:
Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) unless otherwise noted.

6a. The method blank had a barium concentration of 0.43 ug/L. All sample results were greater than 5x the blank concentration; therefore, no qualification of the data was required.

6b. The continuing calibration blank had a mercury concentration of 0.089 ug/L. Samples GW-5 and GW-3 had concentrations less than 5x the blank concentration; therefore the mercury data for these samples were qualified as non-detect (U).

11. The post-digestion spike %R for Selenium was above control limits at 133%. Since the matrix spike %R was within control limits, no qualification of the data was made.

12. The laboratory duplicate RPD for mercury was above the control limit at 60%. Since the original sample and duplicate sample concentrations were less than 5 times the CRQL, no qualification of the data was required.

INORGANIC ANALYSES - GENERAL CHEMISTRY METHODS

Method 9012B: Cyanide

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Calibration curve standards		X		X	
4. Initial calibration verification (ICV) %R		X		X	
5. Continuing calibration verification (CCV) %R		X		X	
6. Blanks					
A. Method blanks		X		X	
B. Calibration blanks		X		X	
C. Field blanks	X				X
7. Laboratory control sample (LCS) %R		X		X	
8. Matrix spike (MS) %R		X	X		
9. Post-digestion spike (PDS) %R		X		X	
10. Laboratory duplicate RPD		X		X	
11. Field duplicate comparison	X				X

%R percent recovery
LCS - laboratory control sample
RPD - relative percent difference
NA - not applicable or not analyzed
MSD - matrix spike duplicate

Comments:

Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) unless otherwise noted.

8. The MS %R was below control limits at 74%. Cyanide results were qualified as estimated (J), if detect, and estimated (UJ), if non-detect.

ORGANIC ANALYSES - VOLATILE ORGANIC COMPOUND

Method 8260B

	Reported		Performance Acceptable		
	No	Yes	No	Yes	Not Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks					
A. Method blanks		X	X		
B. Field Blanks	X				X
C. Trip blanks		X	X		
4. Instrument tune and performance check		X		X	
5. Initial calibration RRF's and %RSD's		X	X		
6. Continuing calibration RRF's and %D's		X	X		
7. Laboratory Control Sample (LCS) %R		X	X		
8. Matrix spike (MS) %R	X				
9. Matrix spike duplicate (MSD) %R	X				
10. MS/MSD precision (RPD)	X				
11. Surrogate spike recoveries		X		X	
12. Internal standard retention times and areas		X		X	
13. Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation reports		X		X	
14. Field duplicate comparison	X				X

%D - percent drift RRF - relative response factor %R - percent recovery
%RSD - percent relative standard deviation RPD - relative percent difference

Comments:
Performance was acceptable, with the following exception and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999) unless otherwise noted.

3a. The method blank for Batch 220-4383 had an acetone concentration of 2.1 ug/L and a methylene chloride concentration of 3.7 ug/L. Sample GW-5 and TRIP BLANK had acetone concentrations less than 5 times the blank concentration; therefore these results were qualified as non-detect (U) at the reporting limit. The TRIP BLANK had a methylene chloride concentration less than 5 times the blank concentration; therefore this result was qualified as non-detect (U). The method balnk for Batch 220-4435 had concentrations of acetone (2.4 ug/L), 2-butanone (1.5 ug/L), and methylene chloride (0.63 ug/L). Sample GW-3 was associated with this method blank but non-detect for the analytes found in the method blank; .no qualification of the data was necessary.

3c. The TRIP BLANK sample had an acetone concentration of 3.1 ug/L and a methylene chloride concentration of 5.7 ug/L. These results were qualified as non-detect (U) due to contamination in the method blank.

ORGANIC ANALYSES - VOLATILE ORGANIC COMPOUND (cont.)

5. The initial calibration %RSD for acetone was above the control limit at 51.8%. Since no samples had detections of acetone due to qualification from blank contamination, no additional qualification of the data was necessary.

6. The continuing calibration %D for bromomethane was above the control limit at 34.6%. Since no samples had detections of bromomethane, no qualification of the data was necessary.

7. The laboratory control sample %R in batch 220-4385 for Chloroform and batch 220-4435 for Chloromethane were above control limits at 125% and 168%, respectively. Since the chloroform and chloromethane concentrations were below the reporting limit; no qualification of the data was necessary.

ORGANIC ANALYSES - SEMIVOLATILE ORGANIC COMPOUNDS

Method 8270C

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
1. Holding times					
A. Extraction holding time		X		X	
B. Analysis holding time		X		X	
2. Reporting limits		X		X	
3. Blanks					
A. Method blanks		X		X	
B. Field Blanks	X				
4. Instrument tune and performance check		X		X	
5. Initial calibration RRF's and %RSD's		X		X	
6. Continuing calibration RRF's and %D's		X		X	
7. Matrix spike (MS) %R	X				
8. Matrix spike duplicate (MSD) %R	X				
9. MS/MSD precision (RPD)	X				
10. Laboratory control sample (LCS) %R		X	X		
11. LCS duplicate (LCSD) %R	X				X
12. LCS/LCSD precision (RPD)	X				X
13. Surrogate spike recoveries		X		X	
14. Internal standard retention times and areas		X		X	
15. Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation reports		X		X	
16. Field duplicate comparison	X				X

%D - percent drift RRF - relative response factor %R - percent recovery
%RSD - percent relative standard deviation RPD - relative percent difference

Comments:
Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999) unless otherwise noted.

11. The laboratory control sample %R for 2,4-Dimetylphenol was below control limits at 29%. Sample results were qualified as estimated (UJ), since non-detect.

NATURAL RESOURCE GROUP, INC.

DATA VALIDATION CHECKLIST
SUMMARY OF DATA QUALIFIER CODES

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
GW-5	Mercury	0.21 ug/L	U	Blank contamination.
	Cyanide	<10 ug/L	UJ	MS %R below control limits.
	Acetone	<10 ug/L	U	Blank contamination.
	2,4-Dimethylphenol	<10 ug/L	UJ	LCS %R below limits.
GW-3	Mercury	0.20 ug/L	U	Blank contamination.
	Cyanide	<10 ug/L	UJ	MS %R below control limits.
	2,4-Dimethylphenol	<10 ug/L	UJ	LCS %R below limits.
GW-6	Cyanide	<10 ug/L	UJ	MS %R below control limits.
	2,4-Dimethylphenol	<10 ug/L	UJ	LCS %R below limits.
NW-1	Cyanide	9.2 ug/L	J	MS % R below control limits.
	2,4-Dimethylphenol	<10 ug/L	UJ	LCS %R below limits.
GW-4	Cyanide	25 ug/L	J	MS %R below control limits.
	2,4-Dimethylphenol	<10 ug/L	UJ	LCS %R below limits.
M-2	Cyanide	<10 ug/L	UJ	MS %R below control limits.
	2,4-Dimethylphenol	<10 ug/L	UJ	LCS %R below limits.
TRIP BLANK	Acetone	<10 ug/L	U	Blank contamination.
	Methylene Chloride	5.7	U	Blank contamination.

VALIDATION PERFORMED BY: Anica McAdams

VALIDATION PERFORMED BY SIGNATURE: Anica McAdams

DATE: 6/18/07

NATURAL RESOURCE GROUP, INC.

DATA VALIDATION CHECKLIST

Job Number: 220-1044-1

Sample Identification(s):	NRG-4 2" NRG-6 2" NRG-5 2" NRG-1 2"
Sample Date(s):	March 8, 2007
Sample Team:	Stephen Lorentz, NRG
Sample Matrix:	Solid
Analyzing Laboratory:	Severn Trent Laboratories, Inc. Connecticut

Analytical data were validated in accordance with applicable USEPA SW-846 analytical method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999), and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) criteria.

The data package reviewed includes analytical results and data for all samples associated with this job number. The data package was prepared in accordance with USEPA Contract Laboratory Program (CLP) Level IV deliverable protocols. Only QA/QC results and raw data associated with target analytes were reviewed and / or discussed under this validation.

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

	Reported		Performance Acceptable		Not
	No	Yes	No	Yes	Required
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	

QA - quality assurance

INORGANIC ANALYSES – TOTAL METALS

Method 6010B: Arsenic, Cadmium, Chromium, Lead, Selenium, Silver, & Barium
Method 7471A: Mercury

	Reported		Performance Acceptable		
	No	Yes	No	Yes	Not Required
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Calibration curve standards		X			
4. Initial calibration verification (ICV) %R		X		X	
5. Continuing calibration verification (CCV) %R		X		X	
6. Blanks					
A. Method blank		X		X	
B. Calibration blanks		X		X	
C. Field blanks	X				X
7. Interference check sample(ICS) %R		X	X		
8. Serial dilution check %D		X		X	
9. Laboratory control sample (LCS) %R		X		X	
10. Matrix spike (MS) %R		X	X		
11. Post-digestion spike (PDS) %R		X	X		
12. Laboratory duplicate RPD		X		X	
13. Field duplicate comparison	X				X

%R - percent recovery %D - percent difference RPD - relative percent difference
NA - not applicable or not analyzed

Comments:
Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) unless otherwise noted.

7. The interference check sample %R for Selenium was below control limits at 76%. Selenium results were qualified as estimated (J), if detect and estimated (UJ), if non-detect

10. The matrix spike %R for Cadmium was above control limits at 129%. Since the post-digestion spike %R was within control limits, the Cadmium results were qualified as estimated (J), if detect. The %R for Chromium and Lead were also outside control limits. Since the sample results for Chromium and Lead were greater than 4x the spike amount, no qualification of the data was required.

11. The post-digestion spike %R for Lead was outside control limits. Since the sample result for Lead was greater than 4x the spike amount, no qualification of the data was required.

INORGANIC ANALYSES - GENERAL CHEMISTRY METHODS

Method 9012B: Cyanide

	Reported		Performance Acceptable		
	No	Yes	No	Yes	Not Required
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Calibration curve standards		X		X	
4. Initial calibration verification (ICV) %R		X		X	
5. Continuing calibration verification (CCV) %R		X		X	
6. Blanks					
A. Method blanks		X		X	
B. Calibration blanks		X		X	
C. Field blanks	X				X
7. Laboratory control sample (LCS) %R		X		X	
8. Matrix spike (MS) %R		X	X		
9. Post-digestion spike (PDS) %R					
10. Laboratory duplicate RPD		X		X	
11. Field duplicate comparison	X				X

%R percent recovery
LCS - laboratory control sample
RPD - relative percent difference
NA - not applicable or not analyzed
MSD - matrix spike duplicate

Comments:

Performance was acceptable, with the following exceptions and notes.

Qualification of data was based on "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (February 1994) unless otherwise noted.

8. The MS %R was above control limits at 149%. Cyanide results were qualified as estimated (J), if detect.

NATURAL RESOURCE GROUP, INC.

DATA VALIDATION CHECKLIST
SUMMARY OF DATA QUALIFIER CODES

Sample ID	Analyte(s)	Result	Qualifier	Reason(s)
NRG-4 2"	Cadmium	8.2 mg/kg	J	MS %R above control limits.
	Selenium	<11.7 mg/kg	UJ	ICS %R below control limits.
	Cyanide	7000 ug/kg	J	MS %R above control limit.
NRG-6 2"	Cadmium	1.5 mg/kg	J	MS %R above control limits.
	Selenium	<9.1 mg/kg	UJ	ICS %R below control limits.
NRG-5 2"	Cadmium	10 mg/kg	J	MS %R above control limits.
	Selenium	<13.1 mg/kg	UJ	ICS %R below control limits.
	Cyanide	1000 ug/kg	J	MS %R above control limits.
NRG-1 2"	Cadmium	2.2 mg/kg	J	MS %R above control limits.
	Selenium	<14.4 mg/kg	UJ	ICS %R below control limits.

VALIDATION PERFORMED BY: Anjca McAdams

VALIDATION PERFORMED BY SIGNATURE: Anica McAdams

DATE: 6/18/07

Attachments

1. Severn Trent Laboratory Data
2. NRG Soil and Groundwater Quality Analytical Data Validation Packages