REPORT

DRAFT REMEDIAL INVESTIGATION / ALTERNATIVES ANALYSIS / INTERIM REMEDIAL MEASURES REPORT

Niagara Transformer Corporation – 1755 Dale Road
Cheektowaga, New York
BCP Site No. C915234

Submitted To: Chief, Site Control Section
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1.0 INTRODUCTION

This Remedial Investigation / Alternatives Analysis / Interim Remedial Measures (RI/AA/IRM) Report has been prepared on behalf of Niagara Transformer Corporation (NTC) for the 1755 Dale Road Site in the Town of Cheektowaga.

NTC executed a Brownfield Cleanup Agreement (BCA) in November 2009 (Site No. C915234) for redevelopment of the Site under the New York State Brownfield Cleanup Program (BCP). The RI / IRM Work Plan was approved by the NYSDEC in January, 2010. The Site consists of a vacant parcel of approximately 3 acres located adjacent to and due east of NTC's main manufacturing complex at 1747 Dale Road (refer to Figure 1-1). Golder performed RI activities in accordance with the Work Plan at the Site in September and October of 2009 with supplemental sampling conducted in January 2010 at the request of the Department. NTC implemented the IRM with oversight from Golder from February 12 through April 21, 2010. NTC is proposing to construct a manufacturing building on a portion of the vacant parcel that can be integrated into their existing manufacturing operations at 1747 Dale Road.

1.1 Purpose and Scope

This RI/AA/IRM Report has been prepared on behalf of NTC to describe and present the findings of the 2009-2010 RI and subsequent IRM activities and evaluates the IRM as the final remedial alternative for the Site.

The Report is structured as follows:

- Section 2 summarizes the soil and groundwater investigation approach;
- Section 3 describes the physical characteristics of the Site as they relate to the investigation findings;
- Section 4 presents the investigation results by media;
- Section 5 summarizes the IRM activities;
- Section 6 describes the fate and transport of the constituents of primary concern (COPCs);
- Section 7 presents the qualitative risk assessment;
- Section 8 presents and evaluation of remedial alternatives for the Site;
- Section 9 presents the RI/AA/IRM summary and conclusions; and
- Section 10 contains a list of references for this report.

1.2 Background

1.2.1 Site Description

The property is approximately 3 acres in size and located at 1755 Dale Road in the Town of Cheektowaga, New York (Erie County S.B.L No. 102.3-3-6.1). The site is located due south of the intersection of Anderson and Dale Roads.

The parcel was purchased by NTC in 1983 and has remained vacant since that time. To the knowledge and understanding of NTC, the parcel was vacant and unused as far back as the late 1950s and prior to that contained several rail sidings and may have served as a contractor's storage yard or scrap yard.

The southern half of the Site is mostly wooded with dense undergrowth (shrubs and woody vegetation) while the northern half is mostly open grass land. The Site is directly bordered by Dale Road to the north, NTC's manufacturing complex to the west (1747 Dale Rd.), CSX Railroad to the south, and an undeveloped 1.5 acre parcel of land to the east also owned by NTC.

1.2.2 Summary of Previous Investigations

A detailed description and summary of the previous investigations conducted at the Site is presented in Section 1.3 of the Remedial Investigation and Interim Remedial Measures Work Plan prepared by Golder Associates, Inc. in August 2009 (Ref. 1). In summary, A Phase I Environmental Site Assessment (ESA) was completed and three previous limited surface and subsurface soil investigations were conducted on the Site related to both the potential Site cleanup itself and remedial activities performed in conjunction with the adjacent parcel, 1747 Dale Road, under a NYSDEC State superfund cleanup. The three previous investigations were limited to characterization of PCBs in the soil/fill and groundwater based on the known impacts of this contaminant on the adjacent parcel.

1.2.2.1 Phase I ESA

A Phase I ESA was completed by Golder Associates Inc. in August 2009 (Ref. 2) in conjunction with preparation of the BCP Application. The Phase I ESA identified Recognized Environmental Conditions (RECs) and de minimis conditions found during the conduct of the ESA are listed below:

- The known presence of PCB contaminated surficial and subsurface soils on the Site.
- The potential for hazardous materials to be released from approximately eight 55-gallon drums located on the Site. The contents of the drums are unknown and it was not determined that the contents of any of the drums have been released. The assessment was based on the physical condition of the drums and the determination that liquid was present in 2 or 3 of the drums.

The following de minimis conditions in connection with the Site were identified in the Phase I ESA:

- A light oily sheen was observed in the standing water observed adjacent to and surrounding the decommissioned oil tank (from former 1747 Dale Rd, tank farm). NTC stated that the NYSDEC contractor had cleaned the tank several times prior to relocation on the Site and it did not contain mineral with PCBs prior to being taken out of service.

1.2.2.2 Soil Investigations – PCB Assessments

1996/1997 Remediation Staging Area IRM

As previously noted, in conjunction with the 1747 Dale Road NTC Manufacturing Site remediation conducted in 1996 and 1997, the remediation contractor was granted permission to use portions of the Site for staging and storage of equipment and placement of field/office trailers.

Section 2.5.9 of the December 1997 "Remediation Summary Report" prepared by Ecology and Environment (Ref. 3) describes the finding of PCBs in Site soils prior to mobilization of the remedial contractor. The report indicates that "the majority of PCB contamination was found on the west side of the staging area and on the slope immediately adjacent to the NTC driveway". Based on this data the NYSDEC directed the remedial contractor to place geotextile and stone down prior to occupying the Site. At the conclusion of the 1747 Dale Road remediation project, the remedial contractor was required to perform an IRM for the "staging area" on the Site to remove PCB-impacted stone and soils. Specifically, it was documented that 1,330.6 tons of hazardous waste were removed from the staging area from depths ranging between 6 to 18 inches below grade in grids located on the western slope and within the staging area. It was noted that verification sampling conducted after the soil excavation/removal confirmed the presence of PCBs in at concentrations less than 10 parts per million (ppm) in surface and shallow subsurface soils on the Site. It was stated that removal of these remaining impacted soils was not practicable based on the industrial site setting, access issues and economic considerations.

2004 Staging Area IRM

In 2004, a supplemental IRM was conducted on the 1747 Dale Road Manufacturing Site to mitigate on-site and off-site storm water system recontamination issues. As part of this IRM, the remediation contractor was allowed to perform equipment wash down and staging on a portion of the Site (estimated to be approximately a quarter acre) located east of the NTC south parking area and near the western boundary of the Site. Pre-mobilization sampling of the proposed staging area was performed by Ecology and Environment (E & E) on behalf of the NYSDEC and indicated elevated PCB concentrations at some of the sampling locations (in particular SP-6, SP-7 and SP-8). Immediately following sampling, the upper six inches of the soil in the staging area was stockpiled and a decontamination pad and stockpile liner were installed prior to receipt of the elevated results from the pre-mobilization samples. Subsequently the stockpiled soil was covered and fenced to limit access.

Prior to demobilization by the IRM remedial contractor, additional sampling of the staging area was conducted by E & E to more fully characterize the lateral and vertical limits of PCB contamination identified during the pre-mobilization of the staging area. An additional 25 soil samples were collected via manual auger and excavator test pits around the perimeter and within the footprint of the soil stockpile area. Based on the results obtained from this sampling program, the IRM contractor was directed by the NYSDEC to remove soils to depths ranging from 24 to 48 inches bgs beneath the former stockpile area.

A total of 407 tons of soil were excavated and disposed of from the Site as a result of this action (including the original soil stockpile material). A detailed description of the sampling performed, data summaries and excavation work performed under this IRM were included in Section 6.4 (East Yard Excavation) from the January 2005 "Interim Remedial Measure Summary Report" prepared by Ecology and Environment (Ref. 4).

2007 NTC Soil Investigation

In November and December of 2007, NTC performed a comprehensive grid based shallow soil/fill sampling program on the Site in order to characterize surface and selected subsurface soils for PCB impacts in anticipation of the potential redevelopment of the Site for additional manufacturing capacity in support of their current operations at 1747 Dale Road.

The investigation was performed by Benchmark Environmental Engineering and Science, PLLC on behalf of NTC and consisted of:

- Collection of forty (40) shallow (0-6 inches bgs) soil samples on a fifty foot grid interval spacing across the parcel (with the exception of the northwest and northeast corners of the Site) and analysis for total PCBs; and
- Advancement of seven (7) deeper (0-6 feet bgs) soil borings and collection of soil composite samples from each boring for analysis of total PCBs. The seven soil boring locations were selected primarily to assess subsurface soil conditions for foundation design purposes and were located in areas projected for excavation for building footers. Samples collected from these seven locations were analyzed for total PCBs, however as the samples were composited across the entire six foot boring depth, assignment of any detected PCB impacts to a particular depth is not feasible based on the sample collection method.

The results of the soil sampling investigation were transmitted to the NYSDEC and indicated that PCBs were detected at concentrations exceeding the 6 NYCRR Part 375 PCB SCOs for restricted residential or commercial uses (i.e., greater than 1 ppm) or restricted industrial use of the parcel (i.e., greater than 25 ppm). In particular, concentrations of PCBs at Surface Sample Locations 42 and 43 (approximately 20 feet east of the Site's western property line) were 1,060 and 443 ppm, respectively. These locations are located south of the staging area and sample locations associated with the 2004 IRM project. Seven other sample locations in the southwestern and central portions of the Site exceeded the Part 375 restricted industrial SCO. Lower detected concentrations (i.e., typically less than 5 ppm), however, were found to be widespread across the northern half of the Site. In addition to the soil/fill samples collected and analyzed, one 1-inch temporary shallow monitoring well (PZ-01) was installed and sampled. One sample was collected from this location and analyzed for total PCBs and the result reported a concentration of 6.76 µg/L (Arochlor 1260).

This investigation was conducted specifically to assess PCB impacts in soils as NTC evaluated options for a potential manufacturing expansion on the Site at that time. NTC explored the potential for entering

the NYSDEC BCP program at that time, however due to a variety of programmatic and economic reasons did not pursue further. No additional investigations prior to the BCP RI activities were subsequently performed on the Site.

1.3 Constituents of Primary Concern (COPCs)

Based on historic investigations, the Constituent of Primary Concern (COPCs) in the soil/fill and / or groundwater were identified to be PCBs. The Remedial Investigation approach described in the RI and IRM Work Plan (Ref. 4) focused on these COPCs as well as collecting data on volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), pesticides, heavy metals and cyanide based on the historic presence on the Site of railroads and in part for storage of construction materials and as a scrap yard.

2.0 INVESTIGATION APPROACH

The Remedial Investigation focused on identifying contaminants in soil/fill and groundwater that had not been characterized through the previous soil/fill investigations (in particular the comprehensive 2007 shallow PCB soil/fill investigation) or more fully characterize areas of the site for PCBs that were not addressed by previous investigations.

The RI supplemented the surface soil/fill PCB data for areas in the northwest and northeast portions of the Site where data gaps from the 2007 investigation existed. A total of four (4) additional surface soil locations were collected in these areas. In addition, ten (10) subsurface soil borings were advanced and five (5) groundwater monitoring wells were installed across the entire site for collection/characterization of representative subsurface soil/fill and groundwater samples for the RI.

Subsequent to receiving NYSDEC approval of the proposed sampling locations and testing parameters for the RI Work Plan, Golder performed the RI activities in September and October of 2009. The major components of the completed RI tasks are described in detail below. Remedial Investigation sample and groundwater monitoring well locations are illustrated on Figure 3-1. Any deviations from the proposed samples and analyses are described in the following sections.

2.1 Field Investigation Activities

2.1.1 Soil/Fill Investigation

As previously noted, the surface soil sampling program performed by NTC on the Site in 2007 provided an extensive characterization of PCB concentrations in the upper six inches of soil/fill. However, no samples were collected at that time from the northeast and northwest corners of the Site (refer to Sheet 1, “Dale Road Expansion Sampling Results, Dec. 2007 in Appendix A). Therefore, to more fully characterize the potential PCB impacts for the entire site, four additional surface soil samples (0-6 inches below grade) were collected and analyzed for total PCBs at the locations designated as SS-1 through SS-4 on Figure 3-1. The samples were collected using a stainless steel spade, which was decontaminated between each sample location.

A soil boring program was also implemented to thoroughly characterize the subsurface soil/fill and groundwater media, and to better characterize the overall site soil/fill overburden material for other potential contaminants of concern. The subsurface soil sampling program consisted of a total of ten (10) soil samples (B-1 through B-10) at evenly spaced intervals across the Site. Borehole locations as depicted on Figure 3-1 were adjusted in the field based on site conditions, accessibility, NYSDEC preferences, or other logistical concerns. In general, the final boring locations were nearly identical to those propose in the RI and IRM Work Plan.

A drilling rig using direct push drilling methods via a Geoprobe® equipped with a concrete core barrel was used to advance the five subsurface soil borings that were not completed as monitoring wells (B-2, B-3,

B-4, B-7 and B-8) through the soil/fill to a maximum of eight feet into the underlying native soil. Native soil material in the area(s) of investigation was encountered in each boring between 2-4 feet below ground surface (bgs). The drilling method used a 1.5-inch diameter, 4-foot core sampler with a dedicated PVC sleeve to advance and retrieve soil core samples at four foot intervals. Visual or olfactory contaminant impacts were not noted in any of the borings and saturated conditions were also not encountered; therefore, the total depth of the borings did not exceed the proposed eight feet.

Upon retrieval of each soil/fill core, the soil/fill samples were screened for total organic vapors using a photo-ionization detector (PID). The organic vapor measurements were recorded and the soil/fill material described on boring logs by a Golder field representative (provided in Appendix B). The recovered soils were characterized by visual observation in accordance with ASTM Method D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). Subsurface soil samples were collected for chemical analysis at the boring locations. The depth from which samples were collected was determined based on screening results of visual and olfactory observations and PID measurements. Samples were collected from the discrete depth interval that displayed the greatest evidence of contamination, if any. If there were no discernable differences across the entire boring depth based on the visual, olfactory or PID screening methods, the default sample collection approach consisted of collecting a composite from the 0 to 4 feet bgs strata.

The boring locations that were advanced only for soil/fill sampling purposes (i.e., Borings B-1, B-2, B-3, B-4, B-7 and B-8) were grouted from total depth to ground level with a grout mixture of 95%cement and 5% bentonite.

2.1.2 Soil/Fill Sample Analyses

Surface soil/fill samples were collected using a stainless steel spade. Subsurface soil/fill samples were collected using a 1.5-inch diameter, 4-foot core sampler with a dedicated PVC sleeve. All non-dedicated, downhole sampling equipment was decontaminated between soil boring locations in accordance with accepted drilling practices using a high-pressure hot water “steam” cleaner, or scrubbed using Alconox® and a hot water followed by a clean potable water rinse. Representative soil samples were placed in pre-cleaned laboratory-provided sample bottles, cooled to 4^{o}C in the field, and transported under chain-of-custody command to Test America, located in Amherst, NY, a New York State Department of Health (NYSDOH) ELAP-certified analytical laboratory. Subsurface soil/fill samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), target compound list (TCL) pesticides, PCBs, target analyte list (TAL) metals, and cyanide. Soil samples were collected from the 0’-4’ bgs interval and analyzed for PCB content in borings B-1 and B-9. Prior to commencement of further borings, Mr. David Locey of the NYSDEC requested that the remaining samples from the borings be split into discrete 0’-2’ bgs and 2’-4’ bgs samples for PCB analysis. Therefore, soil samples were collected from the 0’-2’ bgs and 2’-4’ bgs intervals and analyzed for PCB content in borings B-2, B-3, B-4, B-5, B-6,

B-7 and B-8. Because sample recovery at boring location B-10 was insufficient to allow for a separate 2'-4' bgs interval sample, a 0'-2' bgs sample and a 0'-4' bgs sample was collected.

In December 2009, as part of the final RI/IRM Work Plan approval process, the NYSDEC requested the collection and analysis for PCBs of supplemental RI surface soil/fill samples both on and off the Site in order to address potential data gaps. On January 8, 2010, two surface soil/fill samples were collected east of Boring B-6/MW-3 on-Site and three surface soil/fill samples were collected off-site on the 1747 Dale Road parcel just west of the property line and Boring B-7. The sample locations are also presented on Figure 3-1.

All samples were collected and analyzed in accordance with USEPA SW-846 methodology, while the laboratory is required to furnish an equivalent ASP Category B deliverables package to facilitate data evaluation and preparation of a DUSR by a third party validation expert. Accordingly, the samples were analyzed by an NYSDOH ELAP-approved laboratory certified to perform CLP work.

2.1.3 Groundwater Investigation

Golder personnel provided oversight for the installation of five new groundwater monitoring wells (i.e. MW-1 through MW-5) from September 17 through September 21, 2009 to investigate groundwater flow and quality. Figure 3-1 shows the locations of the monitoring wells. Monitoring well installation, well development, and groundwater sample collection are discussed in the following sections.

2.1.4 Monitoring Well Installation

Monitoring wells were installed in accordance with the approved RI/IRM Work Plan. Monitoring Well construction details are presented on the Field Borehole Logs in Appendix B.

Subsequent to borehole advancement and soil/fill sampling at boring locations B-1, B-5, B-6, B-9 and B-10, temporary monitoring wells were installed in each of the boreholes (Monitoring Wells 1, 2, 3, 4, and 5, respectively). Due to the apparent northward slope of the subsurface groundwater table, wells were installed to a greater depth at the northern end of the Site, and became shallower towards the southern end of the Site. As such, Monitoring Well 1 (MW-1) was installed to a depth of 20' bgs; MW-2 and MW-3 to a depth of 16' bgs, and MW-4 and MW-5 to a depth of 14' bgs.

Shallow overburden well borings were advanced using 4.25-inch I.D. hollow stem augers (HSA). A 2-inch diameter, 2-foot long split spoon sampler was advanced ahead of the auger string with a standard 140-pound hammer. Recovered samples were examined by qualified Golder personnel and characterized in accordance with ASTM Method D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), scanned for total volatile organic vapors with a calibrated PID equipped with a 10.6 eV lamp, and characterized for impacts via visual and/or olfactory observations. All non-dedicated drilling tools and equipment were decontaminated between boring locations using potable tap water and a phosphate-free detergent (i.e., Alconox).

Each monitoring well was constructed of 2-inch I.D. flush-joint Schedule 40 PVC solid riser and machine slotted screen (0.010-inch slot size). The monitoring well screen measured approximately 10 feet in length in MW-1, MW-2 and MW-3, and 7 feet in length in MW-4 and MW-5. Approximately 6 inches of silica sand was placed at the bottom of each boring as a base for the well screen and as part of the sand pack. The well screen and attached riser were placed within the borehole on top of the 6-inch sand layer and the remainder of the sand pack was installed within the borehole annulus to a level of about 3 feet above the top of the well screen. A bentonite seal (2 feet thick) was installed immediately above the sand layer. The bentonite seal was constructed with 3/8-inch bentonite pellets or medium bentonite chips and allowed to hydrate sufficiently to mitigate the potential for down-hole grout contamination. The top of the well riser pipes extended approximately 3 feet above grade and were fitted with a lockable J-plug.

2.1.5 Groundwater Sample Collection

Newly-installed monitoring wells were developed prior to sampling to remove residual sediments and ensure hydraulic connection within the water-bearing zone. The development procedure required purging of the groundwater and periodical surging of the groundwater in the well to loosen and remove suspended fines from the well screen and sandpack. Measurements of the water volume removed and water quality parameters including temperature, pH, conductivity, and turbidity were recorded at regular intervals throughout the development process. Development continued until water quality measurements stabilized to within 10 percent of the previous measurement.

Originally, groundwater was to be collected from each well using low flow sampling techniques (typically less than 0.1 L/min) via dedicated plastic flex tubing and a peristaltic pump. However, it was determined that low-flow sampling was not feasible due to insufficient groundwater recharge rate. Therefore, new and dedicated disposable HDPE bailers were used to collect the groundwater samples.

Field measurements for pH, specific conductivity, temperature, turbidity and water level as well as visual and olfactory field observations were periodically recorded and monitored for stabilization during well purging prior to sampling. Copies of these well development records are provided in Appendix B. Purging was considered complete when pH, specific conductivity and temperature stabilize. Stability is defined as variation of between field measurements of 10 percent or less and no overall upward or downward trend in the measurements. Turbidity was determined by visual inspection of the purge water. The purge water remained slightly turbid with a brown to gray color with little variation in appearance throughout purging. Turbidity was therefore not considered as an indicator in the completion of purging. It should be noted that each sample collected was analyzed by the laboratory for turbidity.

Prior to and immediately following collection of groundwater samples, field measurements for pH, specific conductivity, temperature, turbidity and water level as well as visual and olfactory field observations were recorded. All groundwater samples were collected in the pre-cleaned and pre-preserved laboratory sample bottles in accordance with the RI/IRM Work Plan protocols for analyses.

Subsequent to sample collection all groundwater samples were placed on ice and shipped under chain of custody to the selected analytical laboratory.

2.1.6 Groundwater Sample Analyses

Groundwater samples were collected from MW-1, MW-2, and MW-4. Groundwater samples were not collected from MW-3 and MW-5, as those wells were dry at the time of sampling. Collected groundwater samples were analyzed for VOCs, SVOCs, TCL Pesticides, PCBs, TAL metals, and cyanide. All samples were collected and analyzed in accordance with USEPA SW-846 methodology, while the laboratory is required to furnish an equivalent ASP Category B deliverables package to facilitate data evaluation and preparation of a DUSR by a third party validation expert. Accordingly, the samples were analyzed by an NYSDOH ELAP-approved laboratory certified to perform CLP work.

2.1.7 Sediment and Surface Water Sample Collection and Analysis

In December 2009, as part of the final RI/IRM Work Plan approval process, the NYSDEC requested the collection and analysis for PCBs of supplemental RI off-site drainage ditch surface water and sediment samples in order to better assess potential off-site PCB impacts from run-off. On January 8, 2010, three surface water and two sediment samples were collected from the water drainage ditch located immediately south of the Site property line. The SW-1/SED-1 location was selected to be representative of upgradient off-site drainage, the SW-2/SED-2 location was selected to be representative of Site runoff and the SW-3/SED-3 location was selected to be representative of the runoff immediately downgradient of the Site. A sediment sample from the SED-3 location was not obtained due to the lack of sediment at this location (concrete construction of the ditch was surmised to have enhanced scouring here). The sample locations are also presented on Figure 3-1.

2.1.8 Field Specific Quality Assurance/Quality Control Sampling

In addition to the soil/fill and groundwater samples described above, field-specific quality Assurance/Quality Control (QA/QC) samples were collected and analyzed to confirm the reliability of the reported data as described in the QAPP and to support the required third-party data usability assessment. Site specific QA/QC samples included one trip blank (accompanying VOC samples only), one matrix spike (MS), one matrix spike duplicate (MSD), and one field duplicate sample.

2.2 Site Mapping

Figure 3-1 shows the relevant features of the Site, monitoring well and sample locations, and final remedial excavation boundaries. Surface soil/fill and boring locations were field located based on measurements from known benchmarks (e.g., rebar, pins, etc.) established during the 2007 boundary survey of the Site. Final monitoring well locations as depicted on Figure 3-1 and elevations were surveyed after installation.

The Site Map (Figure 3-1) was prepared by a New York State licensed surveyor. The surveyor established the horizontal and vertical elevations using the New York State Plane Coordinate System and most recent vertical datum. Elevations of the ground surface and top of PVC riser were measured and recorded for each monitoring well.

3.0 SITE PHYSICAL CHARACTERISTICS

The physical characteristics of the Site observed during the RI are described in the following sections.

3.1 Site Topography and Surface Features

The Site generally rectangular is shape with the long axis of the parcel oriented along the North-South axis. It slopes slightly to the southwest with limited distinguishable Site features. The Site is vacant with no current structures. The northern half of the site's surface is mainly covered by grassy vegetation with limited patches of stone and soil. The southern half of the site is mostly wooded or covered by dense brush.

3.2 Geology and Hydrogeology

3.2.1 Overburden

Soil boring logs collected during the RI indicate that the majority of the Site is overlain by a two to three feet-thick fill layer that is shallower on the northern half and increases in thickness to the south. Below the fill, the native soils composed of varying layers of either silty clays or fine sand strata. The silty clay or sand units transition generally below 5 feet bgs to a stiff or hard clay unit that is relatively consistent at these depths across the site. The clay layer is characterized as hard and dry with occasional to frequent rock clasts and trace amounts of silt within the clay matrix.

3.2.2 Bedrock

The Site is situated over the Onondaga Formation of the Middle Devonian Series based on a review of the bedrock geologic map of Erie County. The Onondaga limestone is comprised of a varying texture from coarse to very finely crystalline limestone with a dark gray to tan color and chert and fossils within. The unit has an approximate thickness of 110 to 160 feet. Structurally, the bedrock formations strike in an east-west direction and exhibit a regional dip that approximates 40 feet per mile (3 to 5 degrees) toward the south and southwest. As a result of this dip, the older Onondaga limestone outcrops or subcrops north of the Hamilton Group. An intersecting, orthogonal patter of fractures and joint sets are common throughout the bedrock strata. The surficial geomorphology of the bedrock strata was modified by period subaerial erosion and continental glaciation. Based on geotechnical borings performed for predevelopment design purposes, bedrock is known to be 40 feet or greater bgs and was not encountered during RI soil boring advancement.

3.2.3 Hydrogeology

Based on historical groundwater potentiometric data collected at both the 1747 Dale Road parcel and the ROCO Ltd. site located at 1746 Dale Road to the north/northwest of the Site, the general direction of groundwater flow in the vicinity of the Site is generally known to be to the south and south east. This historical data correlates with groundwater elevation measurements collected from RI monitoring wells MW-1, MW-2 and MW-4 during well development and sampling activities on October 8, 2009. The

groundwater elevation measured at MW-1 (located in the northwest corner of the Site) was 652.37 and the groundwater elevation measured at MW-4 (located in the southwest corner of the Site) was 639.72. This is an elevation differential of approximately 12.6 feet from the north to the south of the Site.

A review of historical groundwater elevation information from the adjacent 1747 Dale Road parcel to the west of the Site indicated that the groundwater depth is highly variable on a seasonable basis and the first water bearing zone (i.e., water table) has ranged from less than 0.1 to greater than 12 feet bgs. The most recent semiannual groundwater monitoring event was performed in May 2009 (Ecology & Environment) and recorded groundwater depths on the 1747 Dale Road parcel ranging between 3.7 and 4.7 feet bgs.

4.0 INVESTIGATION REULSTS BY MEDIA

The following sections discuss the analytical results of the Remedial Investigation. Tables 4-1A and 4-1B, 4-2 and 4-3 summarize the soil/fill, sediment/surface water and groundwater analytical data, respectively. Analytical laboratory data reports are included in Appendix C. Figure 3-1 presents the soil/fill, sediment, surface water sampling and groundwater monitoring locations.

4.1 Soil/Fill

Tables 4-1A (volatile organic compounds, semi-volatile organic compounds, pesticides/herbicides and metals) and 4-1B (PCBs) present a comparison of the detected soil/fill parameters to Restricted Industrial and Commercial Use Soil Cleanup Objectives (SCOs) contained in 6NYCRR Part 375-6.4. Although the Site is intended to be used for industrial purposes, evaluating a more restricted-use scenario is a requirement of the BCP. Soil/fill analytical data compared to Part 375 Restricted Commercial SCOs is further discussed in Sections 8.3.2 and 8.3.3. Sample results are described below according to contaminant class.

4.1.1 Volatile Organic Compounds

The majority of the analyzed volatile organic compounds (VOCs) were reported as non-detectable or at trace (estimated) concentrations below the sample reporting limits. Detected VOC sample concentrations did not exceed Part 375 Restricted Industrial or Commercial SCOs.

4.1.2 Semi-Volatile Organic Compounds

As presented in Table 4-1A, the majority of the samples analyzed had semi-volatile organic compounds (SVOCs) reported as non-detectable or at trace (estimated) concentrations below the sample reporting limit. All but two sample locations had SVOCs concentrations below Part 375 Restricted Industrial or Commercial SCOs. The only constituent detected above the SCOs was one polycyclic aromatic hydrocarbon (PAH) [i.e., benzo(a)pyrene] in samples B-2 (1.4 PPM) and B-7 (1.9 PPM). Based on the lack of elevated PID readings, visual and/or olfactory evidence of contamination, the slightly elevated SVOC appears to be associated with the historic fill, which is common for developed, industrialized areas.

4.1.3 Metals

Metals detected in the soil/fill samples did not exceed Part 375 Restricted Industrial or Commercial SCOs at any of the sampling locations.

4.1.4 Pesticides, Herbicides and Cyanide

Pesticides or cyanide detected in the soil/fill samples did not exceed the Part 375 Restricted Industrial or Commercial SCOs at any of the sampling locations. Herbicides were not detected in any of the samples.

4.1.5 PCBs

Soil Borings

Table 4-1B summarizes the PCB sample analysis data for all soil boring locations. PCBs did not exceed Part 375 Restricted Industrial SCO of 25 ppm in any soil/fill boring samples. At boring locations B-3(0-2 ft) [1.7 ppm], B-5 (0-2 and 2-4 ft) [10 and 3.5 ppm], B-6 (0-2) [2.2 ppm] and B-7 (0-2 ft) [22 ppm] the soil/fill exceeded the Restricted Commercial SCO of 1 ppm.

Surface Soil/Fill Samples

Surface soil analytical results are summarized in Tables 4-1B and 4-2 (Supplemental RI Sample Results). The on-Site surface soil/fill samples did not exceed the Part 375 Restricted Industrial SCOs for PCBs. Three on-Site surface soil/fill locations (SS-3 [4.5 ppm], SS-5 [6 ppm] and SS-6 [4.1 ppm]) exceeded the Restricted Commercial SCO. The off-site surface soil/fill sample SS-7 [49 ppm] exceeded the Restricted Industrial SCOs for PCBs. Off-Site surface soil/fill samples SS-8 [1.2 ppm] and SS-9 [1.3 ppm] exceeded the Restricted Commercial SCO.

Surface Water and Sediment

Surface water and sediment analytical results are summarized in Table 4-2 (January 2010 Supplemental RI Sample Results). PCBs were not detected in the three off-site surface water samples collected from the drainage ditch adjacent to the south property line. PCBs were detected in both sediment samples collected from the same ditch. At SED-1 (upstream) the detected concentration was 0.24 ppm and at SED-2 the detected concentration was 0.38 ppm.

4.1.6 Summary

As described above, concentrations of VOCs, SVOCs, metals, pesticides, herbicides, and cyanide were below Part 375 Restricted Industrial and Commercial SCOs with the exception of benzo(a)pyrene which was detected at sample locations B-2 and B-7 slightly above the respective Part 375 SCOs. PAHs tend to be ubiquitous in the environment, as they are produced from incomplete combustion of fossil fuels and other organic fuel sources, and are commonly found in historic fill and industrialized environments. Table 4-1A provides a summary of all detected compounds and all analytical data reports are provided in Appendix C.

PCBs were not found at concentrations exceeding the Part 375 Restricted Industrial SCO in any of the on-Site investigation locations. PCBs were detected above the Part 375 Commercial SCO in four boring samples (primarily from 0-2 feet bgs) and three surface sample locations distributed across the Site. Tables 4-1B and 4-2 provide a summary of all detected compounds and all analytical data reports are provided in Appendix C. One off-site surface sample (SS-7) was detected above the Restricted SCO, however the adjacent surface samples directly south and at a lower elevation with respect to this location were found to have concentrations of 1.2 and 1.3 ppm respectively. This was determined to be an anomalous result and inconsistent with the data collected at adjacent sampling locations.

4.2 Groundwater

Table 4-3 presents a comparison of the detected groundwater parameters to the Class GA Groundwater Quality Standards (GWQS) per NYSDEC Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1988). The sampling results for groundwater monitoring completed in October 2009 for monitoring wells MW-1, MW-2 and MW-4 are discussed in the following sections. Samples were not obtained or analyzed from MW-3 or MW-5, as the wells were repeatedly found to be dry during and subsequent to the initial sampling event.

4.2.1 Volatile Organic Compounds

VOCs were not detected in any of the groundwater samples collected from monitoring wells MW-1, MW-2 or MW-4.

4.2.2 Semi-Volatile Organic Compounds

With the exception of three compounds, the majority of samples analyzed for SVOCs were not detected. All SVOC detections reported were at trace (estimated) concentrations below the sample reporting limit. None of the samples exceeded the GWQS.

4.2.3 Metals

Metals detected at concentrations above GWQS were limited to naturally-occurring metals typically detected in this concentration range , including iron, manganese, and sodium.

4.2.4 Pesticides, Herbicides and Cyanide

Herbicides or pesticides were not detected above GWQS in any of the samples. Cyanide was not detected in the groundwater samples analyzed.

4.2.5 PCBs

All of the PCB Aroclors were reported as non-detectible in each of the wells sampled.

4.2.6 Summary

As described above and in Table 4-3, concentrations of VOCs, SVOCs, pesticides, herbicides, cyanide, and PCBs were below GWQS with the exception of naturally-occurring metals, including iron, manganese, and sodium.

4.3 Data Usability Summary

In accordance with the RI Work Plan, the laboratory analytical data from this investigation was independently assessed and, as required, submitted for independent review. Ms. Judy Harry of Data Validation Services located in North Creek, New York performed the data usability summary assessment,

which involved a review of the summary form information and sample raw data, and a limited review of associated QC raw data. Specifically, the following items were reviewed:

- Laboratory Narrative Discussion
- Custody Documentation
- Holding Times
- Surrogate and Internal Standard Recoveries
- Matrix Spike Recoveries/Duplicate Recoveries
- Field Duplicate Correlation
- Preparation/Calibration Blanks
- Control Spike/Laboratory Control Samples
- Instrumental IDLs
- Calibration/CRI/CRA Standards
- ICP Interference Check Standards
- ICP Serial Dilution Correlations
- Sample Results Verification

The Data Usability Summary Report (DUSR) was conducted using guidance from the USEPA Region 2 validation Standard Operating Procedures, the USEPA National Functional Guidelines for Data Review, as well as professional judgment.

In summary, most sample results are usable as reported, or with minor qualification. However, the following issues were noted:

- Results for one volatile analyte were rejected in two soil samples
- Reporting limits are elevated in most of the semi-volatile soil samples due to excessive dilution
- Many of the pesticide reported detections were qualified and are suspect as being the result of interferences from the Aroclor constituents.

Any additional qualifications of the data have been incorporated to the summary data tables. The DUSR is included in Appendix D.

5.0 INTERIM REMEDIAL MEASURES (IRM)

An IRM was implemented at the Niagara Transformer 1755 Dale Road Site subsequent to completion of RI activities. Details of the IRM approach are described in the August 2009 RI/IRM Work Plan (Ref.1). Based on the nature and extent of contamination as indicated by prior investigations (primarily based on the PCB impacts identified as a result of the 2007 NTC Soil Investigation) and the planned redevelopment of the subject property, the IRM Work Plan called for source removal via excavation, with off-site disposal of impacted soil. The IRM Work Plan was advertised with the Brownfield Cleanup Program Application for the Site in October 2009. The Work Plan was approved in January 2010.

The IRM work was implemented by Golder Associates Inc. on behalf of the Site owner, Niagara Transformer Corp (NTC). Excavation and associated remedial activities were contracted by NTC to Trec Environmental, Inc. Remediation was initiated on February 12, 2010 and was substantially completed by April 21, 2010. Impacted soil that exceeded the NYSDEC Part 375 restricted industrial SCOs for total poly-chlorinated biphenyls (PCBs) was identified in thirteen (13) excavation grids that were approximately 50 ft. by 50 ft. in area. Refer to Figure 5-1 for a delineation of the excavation grid numbering system. These soils were further characterized as hazardous (i.e., greater than 50 ppm for total PCBs) or non-hazardous (i.e., less than 50 ppm for total PBCs) in each of the grids. All soils that exceeded the Part 375 Restricted Industrial SCO were removed by excavation and transported off-site for disposal at CWM Chemical Services, L.L.C. in Model City, NY. Specific elements of the IRM included:

- Clearing and removal of large trees and brush within the planned excavation footprint;
- Excavation and on-site staging of non-hazardous soil grids. Approximately 1,097 tons of non-hazardous soil was temporarily relocated to an onsite spoils lay down area for further testing and characterization prior to disposal off site. Grids identified as numbers 3, 4, 5 and 7 were characterized as non-hazardous based on the 2007 surface soil investigation performed by NTC. Grid 3, 4 and 7 sample results from the 2007 investigation indicated that the surficial soils were technically below the Part 375 Restricted Industrial SCO. However, it was determined that based on their location between other grids that exceeded the SCO that it was impractical to leave the soil/fill from these grids in place. Therefore they were included in the non-hazardous excavation plan.
- Excavation of PCBs hazardous (i.e.> 50 ppm) soil/fill. Approximately 2,075 tons of soil/fill were removed as hazardous waste for off-site disposal. Grids identified as numbers 1, 2, 6, 8, 9, 10, 11, 12 and 13 were characterized as hazardous based on the 2007 surface soil investigation performed by NTC.
- Characterization and off-site disposal of approximately 6 partially crushed and deteriorated drums containing non-hazardous roofing tar residuals;
- Excavation and on-site relocation of large pieces of concrete rubble from several designated grid areas;
- Verification sampling of the sidewalls and floor areas of the excavated. Golder personnel collected 11 sidewall, 20 floor and 4 sidewall verification samples within the excavation limits and from stockpiled soil from the non-hazardous grids;
- Off-site transportation and disposal of hazardous and non-hazardous soil/fill to the CWM Chemical Services TSD Facility, Model City, New York. All trucks were lined with polyethylene liners so as to allow the soil to be fully removed from the truck;

- Community dust monitoring program implemented during excavation activities. Golder personnel set up and monitored dust monitoring equipment upwind and downwind of excavation activities throughout the project

In general, each individual grid was excavated using a track mounted John Deere 200C LC excavator with a smooth-edged grading blade attached to the excavator bucket. Excavated soils from hazardous characterized grids were direct-transferred into the bucket of a Volvo L70E bucket loader and transported to haul trucks waiting on site for direct loading.

Excavation of the hazardous soil grids (i.e., grids containing soils greater than 50 ppm for total PCBs) was completed first beginning at the southwest corner of the site at Grid 13, so as to complete excavation activities by working from the south end towards the north end of the site. Such activities consisted of performing an excavation measuring approximately 50 feet by 50 feet by approximately 1 foot deep. Typically the excavations followed the existing ground surface contours so as to adhere to the proposed 1 foot excavation depth at each grid. In Grids 2, 6, 8, 9 and 13 the majority of the excavations were continued from 1 to 2 feet deeper than the proposed 1 foot maximum depth based on either initial floor verification sample results that indicated the Restricted Industrial SCO for PCBs had not been met or was below the SCO but considered to be too close to the threshold. In addition, in Grids 6 and 8 excess mounded fill due to an existing topsoil pile present on the western property line border was also excavated and removed. The base of this topsoil pile extended approximately ten feet into the western edge of Grids 6 and 8 and was excavated until it appeared that no fill was present and native soil was encountered.

Special provisions were undertaken to complete the IRM excavation at Grid 13, located at the southwest corner of the Site. Although the floor verification sample collected after the initial excavation of the grid indicated a PCB concentration of 0.2 ppm, subsequent sampling of all the sidewalls indicated concentrations in excess of the Part 375 Restricted Industrial SCO for PCBs (and in some cases in excess of 50 ppm) and led to multiple rounds of additional excavation on every sidewall. In particular, at the southern perimeter of this grid, a soil berm that remained after the initial grid excavation was completely removed based on high sidewall PCB concentrations. The excavation along the southern property line was completed when the floor of the grid was observed to be native soil material and extended to the edge of the concrete lined drainage ditch for the majority of the 50 foot grid length along the Site property line. The northern, western and eastern edges of the grid were also re- excavated approximately 2 – 4 feet further in each direction to address non-conforming initial verification results. The south berm was excavated and removed approximately ten feet east of the original grid footprint to a point where the berm tapered out to existing surrounding grade. A verification sample taken approximately 80 feet east along the southern property line where the berm again was observed to reemerge beyond the excavation, verified that this soil/fill was well below the IRM SCO.

It should be noted that excavation of Grid 13 to its originally planned western boundary along the property line of the Site could not be performed due to the presence of the 18-inch HDPE storm sewer drainage pipe and associated bedding material. This pipe, which collects all stormwater from the 1747 Dale Road parking and roof drains, appears to have been mistakenly installed across the southwest corner of the BCP parcel during the completion of the 1747 Dale Road remedial activities. Therefore it was determined to leave the pipe bedding and pipe in this area undisturbed which required termination of the grid excavation 2-3 feet east of the original grid layout.

Excavation of the non-hazardous grids (i.e., grids containing soils less than 50 ppm for total PBCs) was performed following removal of the surrounding hazardous soil grids. Typically the excavations followed the existing ground surface contours so as to adhere to the proposed 1 foot excavation depth at each grid. In Grids 3 and 7 the excavations were continued from 1 to 2 feet deeper than the proposed 1 foot maximum depth based on either initial floor verification sample results that indicated the Restricted Industrial SCO for PCBs had not been met or was below but considered to be too close to the cleanup threshold. For example, this approach was applied at Grid 3 where, after three rounds of excavation, the floor verification sample still returned a result of 24 ppm. As this concentration was just below the SCO and not consistent with the residual concentrations achieved in adjacent grids, a fourth floor excavation was performed and resulted in a total approximate soil/fill excavation depth in this grid of over 3 feet from original grade. This fourth excavation effort achieved a final soil/fill concentration consistent with the adjacent grids.

The surveyed limits of all IRM excavation areas are included on Figure 5-2. A photographic log documenting the IRM activities is presented in Appendix E.

5.1.1 Post Excavation Verification Sampling Results

As indicated above, Golder personnel collected 11 sidewall, 20 floor and 4 soil/fill stockpile verification samples during the course of the IRM grid excavation activities in conformance with the sampling plan provisions of the RI/IRM Work Plan. A summary of the verification sample analytical results is provided in Table 5-1. The table includes the results for all verification samples collected and illustrates where multiple rounds of verification samples were collected until the final cleanup objective was satisfied (e.g., refer to Grid 3 Floor sample progression). Figure 5-2 illustrates the final floor and sidewall soil/fill verification sample results for each grid and the berm located east of Grid 13 locations. All verification laboratory analytical data reports are provided in Appendix C. All floor and sidewall samples verified conformance with the Part 375 Restricted Industrial SCO for PCBs and confirmed achievement of remedial objectives for subsurface soil/fill as outlined in the RI/IRM Work Plan. Although not initially proposed in the RI/IRM Work Plan, many of the sidewall verification samples were collected and analyzed at the request of the NYSDEC with concurrence from Niagara Transformer Corp. In particular, it was agreed that assessing the residual concentrations along the western property line shared with the 1747

Dale Road parcel (i.e., Grids 2, 6, 11 and 13) would provide a better understanding as to what contaminants still remained in those area.

6.0 FATE AND TRANSPORT OF COPCS

The soil/fill and groundwater sample analytical results were correlated with the physical characterization of the Site to evaluate the fate and transport of Constituents of Primary Concern (COPCs) in Site media. The mechanisms by which the COPCs can migrate to other areas or media are briefly outlined below.

6.1 Fugitive Dust Generation

Volatile and non-volatile chemicals present in soil can be released to ambient air as a result of fugitive dust generation. Since the Site was primarily characterized as flat with limited distinguishable features and heavily vegetated prior to the initiation of the IRM, suspension of soil particulates due to wind erosion or physical disturbance of surface soil/fill is unlikely. IRM work activities were performed during the winter and early spring of 2010 and continuous particulate monitoring performed during these activities documented that dust generation was insignificant and could not be quantified beyond background levels during the excavation and associated IRM activities.

As a result of the completed IRM activities, the areas of the Site that exhibited elevated PCB concentrations in surficial soil/fill have been removed to levels well below the Part 375 Restricted Industrial SCO. Furthermore, under the planned redevelopment of the Site, the majority of the Site will be developed for industrial land use and will be covered by structures, asphalt, concrete, with associated vegetative cover in all areas not otherwise covered by manmade materials. Therefore, this migration pathway is not considered relevant under the current and reasonably anticipated future land use.

6.2 Volatilization

Volatile chemicals present in soil/fill and groundwater may be released to ambient or indoor air through volatilization either from or through the soil/fill underlying current or future building structures. Volatile chemicals typically have a low organic-carbon partition coefficient (K_{OC}), low molecular weight, and a high Henry's Law constant. No volatile organic compounds were detected during the RI sampling program in on-Site soil/fill above 6NYCRR Part 375 unrestricted Residential use SCOs, (refer to Table 4-1A).

VOCs were not detected above GWQS in the upgradient or downgradient monitoring wells, (MW-1 and MW-2 and MW-4, respectively). Accordingly, the volatilization pathway is not considered relevant from the soil or groundwater at this Site.

6.3 Surface Water Runoff

Erosion and transport of surface soils and associated sorbed chemicals in surface water runoff is a potential migration pathway. The potential for long-term PCB-impacted soil particle transport with surface water runoff is low, as the IRM has addressed removal of elevated PCB impacted soil/fill in shallow soils. As described above, under the reasonably anticipated future industrial based land use proposed, a significant portion of the Site will be covered with man-made materials, (e.g., asphalt, buildings, etc.). Furthermore, the redevelopment of the Site will incorporate a new stormwater collection, retention and

discharge system designed in accordance with New York State stormwater standards to provide a mechanism for controlled surface water transport that will result in minimization of sediment erosion and provide an on-Site capture mechanism within a stormwater retention basin. However, since stormwater generated during excavation activities under both the current and future use scenarios could entrain sediment particles potentially containing low concentrations of PCBs, this pathway is potentially relevant under the current and reasonably anticipated future land use.

6.4 Leaching

Leaching refers to chemicals present in soil/fill migrating downward to groundwater as a result of infiltration of precipitation. However the primary COPC at the Site is PCBs which is known to have very low mobility and solubility characteristics in soil matrices. Furthermore, the known impacted PCB soil/fill has been removed from the Site during IRM activities to below the Part 375 Restricted Industrial SCO, therefore, leaching is not considered a relevant migration pathway.

6.5 Groundwater Transport

Groundwater sampling conducted during the RI confirmed that groundwater has not been impacted by the COPC and no contaminants were detected above New York State Class GA GWQS in any of the Site monitoring wells. Therefore, groundwater transport is not considered a relevant migration pathway.

6.6 Exposure Pathways

Based on the analysis of chemical fate and transport provided above, the potential exposure pathway by which COPCs may reach offsite receptors is surface water migration. This potential exposure pathway is anticipated to be substantially mitigated over the long term by both the completion of the soil/fill IRM and, as described above, the installation and implementation of a Site stormwater collection and management system designed in accordance with New York State standards to significantly mitigate the potential for soil erosion on-Site and the potential for off-site transport of soil particles in the form of sediment. This stormwater management system and the anticipated future redevelopment plans for the Site should substantially if not completely address and mitigate this exposure pathway.

The Site Management Plan under preparation for the Site provides proposed strategies to perform stormwater discharge monitoring and evaluation of this potential exposure pathway subsequent to Site redevelopment, to determine the effectiveness of the planned mitigation measures and whether additional measures are required to further reduce off-site exposure to PCB impacted stormwater.

During proposed construction activities, erosion and sediment control strategies required under a NYSDEC Construction Stormwater permit and Stormwater Pollution Prevention Plan (SWPPP) will be implemented to mitigate off-site exposure from stormwater generated during construction related activities.

7.0 QUALIATIVE RISK ASSESSMENT

7.1 Potential Human Health Risks

The Site is presently unoccupied, but planned for redevelopment as an industrial manufacturing facility. As such, under current and future conditions, human contact with the Site can be expected to occur primarily by three types of receptors: trespassers who may traverse the property, construction workers involved in redevelopment related construction activities and industrial workers. Trespassers may be comprised of adolescents or adults, whereas construction and industrial workers would be limited to adults. In all instances, exposure frequency is expected to be minimal. The Site is located in an area where the predominate land use is commercial or industrial, and separated from residential areas by a large rail corridor and major road or highway arteries, further reducing the potential for casual trespassers.

For trespassers, construction and industrial workers, the Site contaminants in soil were removed to industrial cleanup standards. The reasonably anticipated future use of the Site is consistent with its current industrial zoning, with exposed receptors comprised of adults who may work on the property in an occupational setting, customers and vendors (adults), who visit the property for short durations, and occasional construction workers who may access subsurface utilities during non-routine maintenance activities. Site soils were remediated to levels deemed protective under Part 375 of this type of end use.

For stormwater, the proposed design of the proposed dedicated collection and management facilities at the Site mitigates the potential for routine, direct human contact or ingestion. Non-routine contact with Site stormwater is expected to be limited to short durations under specific construction conditions (e.g., a construction worker managing accumulated stormwater during subsurface excavation work). Given the limited frequency and duration of these non-routine activities, and the relatively low level of remaining PCB impacted soils (i.e., < 5 ppm in post IRM Site soil/fill), direct stormwater exposure pathways for onsite and offsite receptors are considered relevant but minimal in risk.

7.2 Potential Ecological Risks

The 1755 Dale Road BCP Site is a located within a highly developed, industrialized area in the Town of Cheektowaga and has a long history of use for industrial or commercial purposes. The Site is currently vacant, providing minimal wildlife habitat or food value. No natural waterways are present on or adjacent to the Site. The reasonably anticipated future use is industrial with the majority of the Site covered by buildings, asphalt and associated concrete structures. As such, no unacceptable ecological risks are anticipated under the current or reasonably anticipated future use scenario.

8.0 REMEDIAL ALTERNATIVES EVALUATION

8.1 Remedial Action Objectives

The final remedial measures for the Niagara Street and Pennsylvania Avenue Site must satisfy Remedial Action Objectives (RAOs). Remedial Action Objectives are site specific statements that convey the goals for minimizing or eliminating substantial risks to public health and the environment. Appropriate RAOs for the 1755 Dale Road Site are:

- Removal of PCB -impacted soil/fill within the Site to levels protective of human health for the intended future use of the Site (industrial SCOs)
- Mitigate and minimize loadings to stormwater from residual PCB-impacted soil/fill.

As discussed in Section 5.0, Part 375 Restricted Industrial SCOs were employed as soil cleanup goals to provide a measure of performance against these RAOs. The SCOs are soil concentration limits protective of human health and groundwater quality. Achievement of the SCOs was confirmed through verification sampling.

Because the IRM achieved removal of soil/fill within the limits of the Site to below Part 375 SCOs, the IRM successfully achieved the above-described RAOs.

In addition to achieving RAOs, NYSDEC's Brownfield Cleanup Program calls for remedy evaluation in accordance with DER-10 Technical Guidance for Site Investigation and Remediation. Specifically, the guidance states "When proposing an appropriate remedy, the person responsible for conducting the investigation and/or remediation should identify and develop a remedial action that is based on the following criteria..:"

- **Overall Protection of Public Health and the Environment.** This criterion is an evaluation of the remedy's ability to protect public health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced, or controlled through removal, treatment, engineering controls, or institutional controls.
- **Compliance with Standards, Criteria, and Guidance (SCGs).** Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance.
- **Long-Term Effectiveness and Permanence**. This criterion evaluates the long term effectiveness of the remedy after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: (i) the magnitude of the remaining risks (i.e., will there be any significant threats, exposure pathways, or risks to the community and environment from the remaining wastes or treated residuals), (ii) the adequacy of the engineering and institutional controls intended to limit the risk, (iii) the reliability of these controls, and (iv) the ability of the remedy to continue to meet RAOs in the future.
- **Reduction of Toxicity, Mobility or Volume with Treatment.** This criterion evaluates the remedy's ability to reduce the toxicity, mobility, or volume of Site contamination.

Preference is given to remedies that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the Site.

- **Short-Term Effectiveness**. Short-term effectiveness is an evaluation of the potential short-term adverse impacts and risks of the remedy upon the community, the workers, and the environment during construction and/or implementation. This includes a discussion of how the identified adverse impacts and health risks to the community or workers at the Site will be controlled, and the effectiveness of the controls. This criterion also includes a discussion of engineering controls that will be used to mitigate short term impacts (i.e., dust control measures), and an estimate of the length of time needed to achieve the remedial objectives.
- **Implementability.** The implementability criterion evaluates the technical and administrative feasibility of implementing the remedy. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.
- **Cost.** Capital, operation, maintenance, and monitoring costs are estimated for the remedy and presented on a present worth basis.
- **Community Acceptance.** This criterion evaluates the public's comments, concerns, and overall perception of the remedy.

8.2 Future Land Use Evaluation

In developing and screening remedial alternatives, NYSDEC's Part 375 regulations require that the reasonableness of the anticipated future land be factored into the evaluation. The regulations identify 16 criteria that must be considered. These criteria were reviewed for the 1755 Dale Rd BCP Site and the evaluation supports industrial redevelopment as the reasonably anticipated future use of the Site, consistent with current Town of Cheektowaga zoning ordinances, surrounding land use, historical use, distance from current residential land use, flood plains or cultural resources, absence of significant natural resources, wetlands or other State or Federal land use designations. Accordingly, remedial alternatives to clean up the Site to restricted industrial end use are identified and evaluated herein.

In addition to the evaluation of alternatives to remediate to the likely end use of the Site, NYSDEC regulation and policy calls for evaluation of more restrictive end-use scenarios. These include an unrestricted use scenario (considered under 6NYCRR Part 375-2.8 to be representative of cleanup to pre-disposal conditions), and a scenario less restrictive than the reasonably anticipated future use (which would be restricted commercial use). Per NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, evaluation of a "no action" alternative is also required to provide a baseline for comparison against other alternatives.

Since an IRM has already been completed for the Site, the alternatives discussed in greater detail in Section 8.3 include:

- No Further Action (IRM only);
- IRM and Implementation of a Site Management Plan; and,

- Restricted Commercial Use Cleanup and Implementation of a SMP.

8.3 Alternatives Evaluation

8.3.1 No Further Action

Under this alternative, the Site would remain in its current state, post-IRM with no additional controls in-place.

Overall Protection of Public Health and the Environment – The Site as it exists is not protective of human health and the environment, due to the absence of institutional controls to prevent less restrictive forms of future site use (e.g., unrestricted). Accordingly, no further action is not protective of public health and does not satisfy the RAOs.

Compliance with SCGs – Under the current and reasonably anticipated future use scenario, the concentrations of constituents detected in the soil/fill and groundwater comply with applicable SCOs and GWQS.

Long-Term Effectiveness and Permanence – The no further action alternative involves no additional equipment, institutional controls or facilities subject to maintenance, but provides no long-term effectiveness toward achieving the RAOs.

Reduction of Toxicity, Mobility, or Volume with Treatment – The interim remedial measures completed at the Site have reduced the toxicity, mobility and volume of prior constituents of concern. With the exception of low-level residual PCBs in surficial soil/fill, further reduction in toxicity, mobility, or volume of PCBs in the soil/fill or groundwater is not necessary based on the RI findings.

Short-Term Effectiveness – There would be no short-term adverse impacts and risks to the community, workers, or the environment attributable to implementation of the no further action alternative.

Implementability – No technical or action-specific administrative implementability issues are associated with the No Further Action alternative.

Cost – The capital cost of the completed IRM was approximately $474,500. There would be no capital or long-term operation, maintenance, or monitoring costs associated with the no further action alternative.

Community Acceptance – The RI/IRM Work Plan was made available for comment from September 23, 2009 through October 22, 2009. No comments were received opposing the proposed work plan.

8.3.2 IRM and Implementation of a Site Management Plan

The IRM achieved removal of the PCB-impacted soil/fill on-site to below Restricted Industrial SCOs, which is expected to be protective of anticipated on-Site construction and long-term industrial worker

occupants and substantially eliminate the off-site stormwater exposure pathway. The "Implementation of a Site Management Plan" alternative is defined as performing no additional cleanup activities at the Site beyond that which was already performed as an IRM (refer to Section 5.0), with implementation of a Site Management Plan (SMP). The SMP will include:

- **An Institutional Controls Plan.** Institutional controls at the site will include groundwater use restrictions and use restrictions of the Site to restricted use (i.e. industrial purposes).
- **A Soil/Fill Management Plan** to assure that future intrusive activities and soil/fill handling at the Site are completed in a safe and environmentally responsible manner.
- **A Site Monitoring Plan** that includes: provisions for a limited stormwater monitoring plan; and, a Site-wide Inspection program to assure that the Institutional controls have not been altered and remain effective.

Overall Protection of Public Health and the Environment – Since the IRM achieved removal of impacted soil/fill to well below industrial SCOs, this alternative is fully protective of human health and the environment, and successfully achieves all RAOs for the Site. The Site Management Plan will include a stormwater monitoring plan to monitor residual PCBs in stormwater, a soil/fill management plan to address any impacted soil/fill encountered during post-development maintenance activities; and a Site-wide Inspection program to assure that the Institutional controls placed on the Site have not been altered and remain effective. Furthermore, although not technically required under the approved IRM Work Plan, Niagara Transformer Corp committed to achieving the lowest reasonable reduction in soil/fill PCB concentrations (below the Restricted Industrial SCO for PCBs) through extensive additional soil/fill excavation and off-site disposal. This approach resulted in the removal of nearly two times more soil/fill by weight than originally proposed in the IRM Work Plan. Final verification testing confirmed that the maximum residual PCB concentration detected in any one excavated grid was 4.8 ppm (Grid 3 Floor) and the average residual concentration of the floor verification samples from the excavated grids is 1.6 ppm and the sidewall samples is 1.5 ppm. These results demonstrate that the IRM cleanup was highly successful in meeting the Restricted Industrial SCO for PCBs of 25 ppm and practically achieved the Restricted Commercial SCO for PCBs of 1 ppm (on average) across all remediated areas of the Site.

Compliance with SCGs – The IRM was performed in accordance with applicable, relevant, and appropriate standards, guidance, and criteria. The IRM achieved removal of impacted soil/fill to below industrial SCOs, this alternative is fully protective of human health and the environment, and successfully achieves all RAOs for the Site. The Site Management Plan will include a stormwater monitoring plan to monitor residual PCBs in stormwater, a soil/fill management plan to address any impacted soil/fill encountered during post-development maintenance activities; and a Site-wide Inspection program to assure that the Institutional controls placed on the Site have not been altered and remain effective.

Long-Term Effectiveness and Permanence – The IRM achieved removal of PCB-impacted soil/fill in all areas of the Site where surficial/shallow soil/fill impacts were known to exceed Restricted Industrial SCO

for PCBs. The Site Management Plan will include a stormwater monitoring plan to monitor residual PCBs in stormwater, a soil/fill management plan to address any impacted soil/fill encountered during post-development maintenance activities; and a Site-wide Inspection program to assure that the Institutional controls placed on the Site have not been altered and remain effective. As such, this alternative is expected to provide long-term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume with Treatment – Through removal of impacted soil/fill exceeding Restricted Industrial SCOs, the IRM permanently and significantly reduced the toxicity, mobility, and volume of Site contamination. As noted above, the IRM was nearly successful in achieving the more conservative cleanup criteria for Restricted Commercial SCOs. The Site Management Plan will include a stormwater monitoring plan to monitor residual PCBs in stormwater, a soil/fill management plan to address any impacted soil/fill encountered during post-development maintenance activities; and a Site-wide Inspection program to assure that the Institutional controls placed on the Site have not been altered and remain effective. Accordingly, this alternative satisfies this criterion.

Short-Term Effectiveness – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the IRM were effectively controlled. During soil/fill excavation and loading activities, continuous dust and VOC monitoring were performed to assure conformance with NYSDOH-approved community air monitoring action levels. The potential for chemical exposures and physical injuries were reduced through safe work practices; proper personal protection equipment; environmental monitoring; establishment of work zones and Site control; and appropriate decontamination procedures. The IRM achieved the RAOs for the Site in approximately two months.

Implementability – No technical or action-specific administrative implementability issues are associated with implementation of the IRM or the SMP. An Environmental Easement will be filed with Erie County documenting the controls placed on the Site.

Cost –The capital cost of the IRM was approximately $474,500. Stormwater monitoring and annual certification is estimated at approximately $4,800 per year. Based on an assumed 30 years of stormwater monitoring and annual certifications, the net present value of this alternative is approximately $543,000 as shown on Table 8-1. Table 8-3 is a summary of costs of each of the alternatives.

Community Acceptance – The RI/AAR/IRM Work Plan was made available for comment from November 20, 2008 through December 19, 2008. No comments opposing the work were received.

8.3.3 Restricted Commercial Use Alternative and Implementation of a Site Management Plan

A Restricted Commercial Use alternative would necessitate remediation of all soil/fill where PCB concentrations exceed the Restricted Commercial SCO for PCBs per 6NYCRR Part 375 Table 6.8(b) of 1 ppm. For this scenario, excavation and off-site disposal of impacted soil/fill combined or use of

engineering controls, such as clean soil cover systems are generally regarded as the most applicable remedial measures. The Restricted Commercial Use alternative assumes that based on the 2007 Soil Investigation results that approximately 80 percent of the northern half of the Site's shallow soil/fill would be excavated and disposed at an off-site commercial solid waste landfill or covered with 1 foot of clean soils to meet the Restricted Commercial SCO. Additionally, selected grids in the southern half of the Site that were not required to be addressed under the IRM would also require excavation or cover to meet the SCO requirements. The estimated total volume of impacted soil/fill that would be removed under this scenario from these areas assuming an average excavation depth of 1.5 feet (based on IRM) is approximately 2,500 cubic yards. Implementation of a cover system as an alternative remedial strategy was considered but not deemed viable for the long term redevelopment of the site which is planned as a multi-phased expansion program with intrusive building requirements. This phased development approach would routinely disrupt or remove the cover soil system and require the management and handling of sub-grade impacted soils that remain in place. Annual maintenance and certification of an engineered cover system under the planned Site redevelopment scenario would be impracticable.

Overall Protection of Public Health and the Environment – The Restricted Commercial Use alternative would achieve the corresponding Part 375 SCOs, which are designed to be protective of human health under a commercial reuse scenario.

Compliance with SCGs – Similar to the IRM soil/fill removal activities, the Restricted Commercial Use alternative would need to be performed in accordance with applicable, relevant, and appropriate standards, guidance, and criteria. The Site Management Plan will include a stormwater monitoring plan to monitor residual PCBs in stormwater, a soil/fill management plan to address any impacted soil/fill encountered during post-development maintenance activities; and a Site-wide Inspection program to assure that the Institutional controls placed on the Site have not been altered and remain effective.

Long-Term Effectiveness and Permanence – The Restricted Commercial Use alternative would achieve removal of residual impacted soil/fill; therefore, soil/fill exceeding the Restricted Commercial SCOs would be removed from the Site. The Site Management Plan will include a stormwater monitoring plan to monitor residual PCBs in stormwater, a soil/fill management plan to address any impacted soil/fill encountered during post-development maintenance activities; and a Site-wide Inspection program to assure that the Institutional controls placed on the Site have not been altered and remain effective. As such, the Restricted Commercial Use alternative would provide long-term effectiveness and permanence.

Reduction of Toxicity, Mobility, or Volume with Treatment – Through removal all impacted soil/fill, the Restricted Commercial Use alternative would permanently and significantly reduce the toxicity, mobility, and volume of Site contamination. The Site Management Plan will include a stormwater monitoring plan to monitor residual PCBs in stormwater, a soil/fill management plan to address any impacted soil/fill encountered during post-development maintenance activities; and a Site-wide Inspection program to

assure that the Institutional controls placed on the Site have not been altered and remain effective. Accordingly, this alternative satisfies this criterion.

Short-Term Effectiveness – The short-term adverse impacts and risks to the community, workers, and environment during implementation of the Restricted Commercial Use alternative are not considered significant and are controllable, but would increase the duration of time community, workers, and the environment is exposed to fugitive dust emissions at the site or stormwater migrating off the site during remediation activities.

Implementability – No technical implementability issues would be encountered in construction of the Restricted Commercial Use alternative. Administrative implementability issues may include the need for rezoning of the area, since commercial zoning uses are not consistent with current General Manufacturing zoning designation or the reasonably anticipated future use of the Site.

Cost – The capital cost of the IRM was approximately $474,500. The capital cost of implementing a Restricted Commercial Use alternative (post-IRM) is estimated to be $405,300. Stormwater monitoring and annual certification is estimated at approximately $4,800 per year. Based on an assumed 30 years of stormwater monitoring and annual certifications, the net present value of this alternative is estimated at $952,500 (see Table 8-2). Table 8-3 is a summary of costs of each of the alternatives.

Community Acceptance – Community acceptance will be evaluated based on comments to be received from the public in response to Fact Sheets and other planned Citizen Participation activities.

8.4 Recommended Remedial Measure

Based on the Alternatives Analysis evaluation, the completed IRM and implementation of the proposed Site Management Plan alternative fully satisfies the remedial action objectives and is fully protective of human health and the environment. Accordingly, the implementation of a Site Management Plan is the recommended final remedial approach for the 1755 Dale Road BCP Site.

9.0 RI/AA/IRM SUMMARY AND CONCLUSIONS

Based on the data and analyses presented in the preceding sections, we offer the following summary and conclusions:

- An IRM was implemented at the Site subsequent to the completion of RI activities. The IRM included: installation of a temporary stone access road to minimize Site soil disturbance; implementation of extensive erosion and sediment control measures around the planned excavation areas; excavation of approximately 2,075-tons of hazardous PCB-impacted soil/fill and 1097 tons of non-hazardous PCB-impacted soil/fill followed by off-site transportation and disposal at a permitted hazardous waste landfill. The IRM also included the removal, characterization and disposal at a permitted landfill of approximately 6 drums of roofing tar material located on the surface of the Site. On-site post-excavation soil sample results were below 6NYCRR Part 375 Industrial SCO for PCBs.
- Based on the soil data collected during the RI, concentrations of VOCs, metals, pesticides, and PCBs were below Part 375 Industrial SCOs. One SVOC (benzo(a)pyrene) was detected at concentrations slightly above their respective 6NYCRR Part 375 Restricted Industrial SCO at sample locations B-2 (0-4 ft) and B-2 (0-4 ft), respectively. Based on the lack of elevated PID readings, as well as absence of any visual or olfactory evidence of contamination, the elevated SVOC appears to be attributable to background concentrations of PAHs, which is common in historic fill and industrialized settings.
- Based on the groundwater data collected during the RI, the three sampled monitoring wells did not contain concentrations of VOCs, SVOCs, metals, pesticides, and PCBs above applicable GWQS. Metals detected above GWQS are limited to naturally occurring minerals.
- Based on the Alternatives Analysis evaluation, the IRM satisfies the remedial action objectives and is protective of human health and the environment. Accordingly, Implementation of a Site Management Plan is the recommended final remedial approach for the 1755 Dale road BCP Site.

10.0 REFERENCES

1. Remedial Investigation & Interim Remedial Measures Work Plan, *Niagara Transformer Corporation – 1755 Dale Road Cheektowaga, New York,* prepared for *New York State Department of Environmental Conservation*, August 2009.

2. Golder Associates Inc., *Report on Phase 1 Environmental Site Assessment Vacant Parcel, 1755 Dale Road, Cheektowaga*, New York, August 2009.

3. Ecology and Environment, Inc., *Niagara Transformer Corporation Site, Cheektowaga, New York Remediation Summary Report*, prepared for *New York State Department of Environmental Conservation*, December 1997.

4. Ecology and Environment, Inc., *Niagara Transformer Corporation NYSDEC Site No. 9-15-146, Town of Cheektowaga, Erie ,New York; Interim Remedial Measure Summary Report*, prepared for *New York State Department of Environmental Conservation*, January 2005.

TABLES

TABLE 4-1A
RI/AA/IRM REPORT
SOIL/FILL ANALYTICAL RESULTS
COMPARISON TO NYSDEC PART375 SOIL CLEANUP OBJECTIVES

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Lab ID	Restricted Industrial SCOs Table 375-6.8(b) (PPM)	Restricted Commercial SCOs Table 375-6.8(b) (PPM)	RSI0643-01 - Solid		RSI0741-03 - Solid		RSI0741-09 - Solid		RSI0741-06 - Solid		RSI0695-07 - Solid		RSI0695-10 - Solid		RSI0741-15 - Solid		RSI0741-12 - Solid		RSI0643-02 - Solid		RSI0643-03 - Solid	
Sample ID			B-1 (0-4)		B-2		B-3		B-4		B-5		B-6		B-7		B-8		B-9		B-10	
Sample Date			9/17/09		9/21/09		9/21/2009		9/21/2009		9/18/2009		9/18/2009		9/21/2009		9/21/2009		9/17/2009		9/17/2009	
Sample Depth			0-4 ft		0-4 ft		0-4 ft		0-4 ft		0-4 ft		0-4 ft		0-4 ft		0-4 ft		0-4 ft		0-4 ft	
Units			PPM		PPM		PPM		PPM		PPM		PPM		PPM		PPM		PPM		PPM	
Volatile Organics (8260B)																						
Acetone	1000	500			0.017	J													0.0054	J		
Methylene Chloride	1000	500			0.012		0.018		0.013		0.026		0.019		0.015		0.028					
Xylenes, total	1000	500									0.0013	J										
Semivolatile Organics (GC/MS)																						
2-Methylnaphthalene	NA	NA							0.0075	J			0.11	D10, J	0.11	D10, J	0.17	D10, J				
Acenaphthene	1000	500				D10									0.39	D10, J						
Acenaphthylene	1000	500				D10											0.1	D10, J				
Anthracene	1000	500				D10									1.1	D10	0.087	D10, J	0.12	D10, J		
Benz[a]anthracene	11	5.6			0.77	D10, J	0.1	D10, J	0.092	J	0.68	D12, J	0.39	D10, J	2.1	D10	0.57	D10, J	0.53	D10, J	0.34	D12,J
Benzo[a]pyrene	1.1	1			1.4	D10, L, J	0.087	D10, L, J	0.11	L, J	0.79	D12, J	0.41	D10, J	1.9	D10, J, L1	0.68	D10, L, J	0.62	D10, J	0.29	D12,J
Benzo[b]fluoranthene	11	5.6			1.7	D10, J	0.11	D10, J	0.12	J	0.81	D12, J	0.51	D10, J	2.2	D10	0.89	D10, J	0.8	D10, J	0.4	D12,J
Benzo[g,h,i]perylene	1000	500			0.95	D10, J			0.081	J	0.62	D12, J	0.31	D10, J	1.3	D10	0.62	D10, J	0.51	D10, J		
Benzo[k]fluoranthene	110	56			0.61	D10, J			0.046	J	0.42	D12, J	0.24	D10, J	0.91	D10, J	0.31	D10, J	0.4	D10, J	0.22	D12,J
Bis(2-ethylhexyl) phthalate	NA	NA			1	D10, J			0.32						0.5	D10, J	0.42	D10, J	1.1	D10, J		
Carbazole	NA	NA													0.6	D10, J						
Chrysene	110	56			1	D10, J	0.089	D10, J	0.097	J	0.63	D12, J	0.43	D10, J	2	D10	0.67	D10, J	0.62	D10, J	0.25	D12, J
Dibenz[a,h]anthracene	1.1	0.56			0.25	D10, J			0.022	J					0.36	D10, J	0.15	D10, J	0.15	D10, J		
Dibenzofuran	NA	NA													0.33	D10, J	0.055	D10, J				
Fluoranthene	1000	500			0.83	D10, J	0.16	D10, J	0.14	J	1.2	D12, J	0.69	D10, J	5	D10	1.2	D10	1.1	D10, J	0.41	D12, J
Fluorene	1000	500													0.51	D10, J						
Indeno[1,2,3-cd]pyrene	11	5.6			0.79	D10, J			0.069	J	0.53	D12, J	0.24	D10, J	1.2	D10	0.49	D10, J	0.38	D10, J	0.22	D12, J
Naphthalene	1000	500															0.12	D10, J				
Phenanthrene	1000	500			0.22	D10, J	0.12	D10, J	0.058	J	0.66	D12, J	0.42	D10, J	4.7	D10	0.63	D10, J	0.72	D10, J	0.31	D12, J
Pyrene	1000	500			0.74	D10, J	0.14	D10, J	0.13	J	0.98	D12, J	0.59	D10, J	3.9	D10	0.96	D10	0.93	D10, J	0.37	D12, J
Organochlorine Pesticides (8081A)					[2C]		[2C]		[2C]		[2C]		[2C]		[2C]		[2C]					
4,4'-DDD	180	92															0.0028	QFL, D04, J				
4,4'-DDT	94	47									1.5	QFL, D04										
delta-BHC	1000	500							0.00085	QFL, J									0.0015	QFL, J	0.0016	QFL, J
Dieldrin	2.8	1.4	0.014	QFL					0.0012	QFL, J	0.34	QFL, D04, J	0.023	QFL, D04			0.0032	QFL, D04, J	0.0086	QFL, J	0.0025	QFL, J
Endrin	410	89	0.0047	QFL			0.021	QFL, D04, J	0.0011	QFL, J	0.26	QFL, D04, J	0.016	QFL, D04, J	0.21	QFL, D04, J	0.0034	QFL, D04, J			0.0027	QFL, J
gamma-Chlordane	NA	NA	0.0021	QFL, J															0.0023	QFL, J		
Heptachlor	29	15															0.0016	QFL, D04, J				
Heptachlor epoxide	NA	NA																	0.0018	QFL, J		
Total Metals (SW 846 Series)																						
Aluminum	NA	NA	5930		13100		11200		6160		14800		7670		7680		5950		4960		8570	
Arsenic	16	16	6.2	J	5.4	J	6	J	2.4	J	5.9	J	5.4	J	6.8	J	9.7	J	8.2	J	10.5	J
Barium	10000	400	50.6	J	118	J	95	J	39.8	J	118	J	108	J	107	J	102	J	108	J	273	J
Beryllium	2700	590	0.359		0.643		0.561		0.293		0.657		0.404		0.449		0.369		0.404		0.501	
Cadmium	60	9.3	0.373				0.511		0.243		0.285		0.462		1.02		1.63		1.05		1.27	
Calcium	NA	NA	83800	D08, J	73100	D08, J	33900	J	41500	J	4490	J	10900	J	47400	J	4630	J	113000	D08, J	27000	J
Chromium	6800	1500	8.26	J	20.9	J	13.9	J	9.88	J	18.6	J	11	J	17.1	J	18.6	J	26.1	J	21	J
Cobalt	NA	NA	3.83		8.45		5.25		4.7		10.6		4.89		6.4		7.76		4.72		9.05	
Copper	10000	270	18.3	J	19.8	J	33.4	J	11.1	J	27.1	J	33.2	J	58.1	J	124	J	60.1	J	89.1	J
Iron	NA	NA	13400	B3, B1, B, J	22700	B1, B3, B, J	17400	B1, B3, B, J	11700	B1, B3, B, J	24500	B1, B3, B, J	15900	B1, B3, B, J	33500	B1, B3, B, J	66600	D08, B, J	25300	B1, B3, B, J	54200	B1, B3, B, J
Lead	3900	1000	291	J	11.7	J	208	J	13.8	J	26.2	J	104	J	206	J	322	J	192	J	1840	J
Magnesium	NA	NA	10800	J	12700	J	10000	J	3390	J	5040	J	5580	J	6790	J	2280	J	5150	J	6600	J
Manganese	10000	10000	385	B1, B, J	312	B1, B, J	1450	B1, B, J	337	B1, B, J	614	B1, B, J	473	B1, B, J	514	B1, B, J	521	B1, B, J	1080	B1, B, J	725	B1, B, J
Mercury	5.7	2.8	0.149		0.0264		0.259				0.168		0.167		0.393		1.02	D08	0.976	D08	0.238	
Nickel	10000	310	8.07	J	23.5	J	12.3	J	10.3	J	22.2	J	11.7	J	22.9	J	25	J	17.1	J	26.2	J
Potassium	NA	NA	993		1760		1420		1170		1900		1130		1060		783		674		1300	
Sodium	NA	NA	363				184															
Vanadium	NA	NA	13.2	J	23.7	J	22	J	14.6	J	28.1	J	17	J	17.4	J	16	J	16.3	J	21.3	J
Zinc	10000	10000	154	J	59.2	J	147	J	62.8	J	86.9	J	113	J	348	J	635	J	475	J	894	J
General Chemistry Parameters																						
Cyanide	10000	27									1	J									2	J
Percent Solids	NA	NA	88%		90%		86%		88%		85%		91%		90%		91%		93%		87%	

TABLE 4-1A
RI/AA/IRM REPORT
SOIL/FILL ANALYTICAL RESULTS
COMPARISON TO NYSDEC PART375 SOIL CLEANUP OBJECTIVES

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Data Qualifiers:

B = Analyte was detected in associated method blank.
B1 = Analyte was detected in associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
B3 = Target analyte detected in calibration blank at or above the method reporting limit.
D04 = Dilution required due to high levels of non-target compounds.
D08 = Dilution required due to high concentration of target analyte(s)
D10 = Dilution required due to sample color.
D12 = Dilution required due to sample viscosity.
J = Analyte detected at a level less than the reporting limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
L = Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.
L1 = Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits.
M8 = The MS and/or MSD were below the acceptance limits.
N1 = See Case Narrative.
QFL = Florisil clean-up (EPA 3620) performed on extract.
[2C] = Results taken from second column.

Footnotes:

All values are in Parts per Million (PPM).
blank = Not detected above the practical quantitation limits (PQL), lower limit of quantitation (LLQ), or reporting limit (RL).
0.34 = Sample concentration exceeds the respective Soil Cleanup Objectives
NA = Not Applicable
NS = Not Specified.

Table by: AML
Checked by: DML
Reviewed by: PTM

TABLE 4-1B
RI/AA/IRM REPORT
SOIL ANALYTICAL RESULTS (PCBS ONLY)
COMPARISON TO NYSDEC PART 375 SOIL CLEANUP OBJECTIVES

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP
CHEEKTOWAGA, NY

Lab ID	Restricted Industrial SCOs Table 375-6.8(b) (PPM)	Restricted Commercial SCOs Table 375-6.8(b) (PPM)	RSI0643-01 - Solid	RSI0741- 01 - Solid	RSI0741-02 - Solid	RSI0741-07 - Solid	RSI0741-08 - Solid	RSI0741-04 - Solid	RSI0741-05 - Solid	RSI0695-05 - Solid	RSI0695-06 - Solid	RSI0695-08 - Solid	RSI0695-09 - Solid
Sample ID			**B-1 (0-4)**	**B-2 (0-2)**	**B-2 (2-4)**	**B-3 (0-2)**	**B-3 (2-4)**	**B-4 (0-2)**	**B-4 (2-4)**	**B-5 (0-2)**	**B-5 (2-4)**	**B-6 (0-2)**	**B-6 (2-4)**
Sample Date			**9/17/09**	**9/21/09**	**9/21/09**	**9/21/2009**	**9/21/2009**	**9/21/2009**	**9/21/2009**	**9/18/2009**	**9/18/2009**	**9/18/2009**	**9/18/2009**
Sample Depth			**0-4 ft**	**0-2 ft**	**2-4 ft**	**0-2 ft**	**2-4 ft**	**0-2 ft**	**2-4 ft**	**0-2 ft**	**2-4- ft**	**0-2 ft**	**2-4 ft**
Units			**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**
Polychlorinated Biphenyls (8082)				**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**
Aroclor 1016	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	NA	NA	0.49 QSU, D08, J	0.14	ND	1.7 D08	0.029	0.084	ND	10 D08	3.5 D08	2.2 D08	0.052
TOTAL PCBs	**25**	**1**	0.49	0.14	0	1.7	0.029	0.084	0	10	3.5	2.2	0.052

Lab ID	Restricted Industrial SCOs Table 375-6.8(b) (PPM)	Restricted Commercial SCOs Table 375-6.8(b) (PPM)	RSI0741-13 - Solid	RSI0741-14 - Solid	RSI0741-10 - Solid	RSI0741-11 - Solid	RSI0643-02 - Solid	RSI0643-03 - Solid	RSI0643-06 - Solid	RSI0695-01 - Solid	RSI0695-02 - Solid	RSI0695-03 - Solid	RSI0695-04 - Solid
Sample ID			**B-7 (0-2)**	**B-7 (2-4)**	**B-8 (0-2)**	**B-8 (2-4)**	**B-9**	**B-10**	**B-10 (0-2)**	**SS-1**	**SS-2**	**SS-3**	**SS-4**
Sample Date			**9/21/2009**	**9/21/2009**	**9/21/2009**	**9/21/2009**	**9/17/2009**	**9/17/2009**	**9/17/2009**	**9/18/2009**	**9/18/2009**	**9/18/2009**	**9/18/2009**
Sample Depth			**0-2 ft**	**2-4 ft**	**0-2 ft**	**2-4 ft**	**0-4 ft**	**0-4 ft**	**0-2 ft**	**0-6 in**	**0-6 in**	**0-6 in**	**0-6 in**
Units			**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**
Polychlorinated Biphenyls (8082)			**[2C]**	**[2C]**	**[2C]**	**[2C]**				**[2C]**	**[2C]**	**[2C]**	**[2C]**
Aroclor 1016	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	NA	NA	22 D08	0.22	0.25 D08	ND	0.33 J, QSU	0.075 J, QSU	0.18 J, QSU	0.15	0.25	4.5 D08	0.69 D08
TOTAL PCBs	**25**	**1**	22	0.22	0.25	0	0.33	0.075	0.18	0.15	0.25	4.5	0.69

Data Qualifiers:

D08 = Dilution required due to high concentration of target analyte(s)
QSU = Sulfur (EPA 3660) clean-up performed on extract.
[2C] = Results taken from second column.

Footnotes:

All values are in Parts per Million (PPM).
blank = Not detected above the practical quantitation limits (PQL) or lower limit of quantitation (LLQ).
NA = Not applicable
ND = Not detected above the practical quantitation limits (PQL), lower limit of quantitation (LLQ), or reporting limit (RL).

Table by: AML
Checked by: DML
Reviewed by: PTM

GOLDER ASSOCIATES

TABLE 4-2
RI/AA/IRM REPORT
JANUARY 2010 SUPPLEMENTAL RI SAMPLE RESULTS
SOIL, SEDIMENT, AND SURFACE WATER

1755 DALE RD. BCP SITE #C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Lab ID	Restricted Industrial SCOs Table 375-6.8(b) (PPM)	Restricted Commercial SCOs Table 375-6.8(b) (PPM)	RTA0293-01 - Solid	RTA0293-02 - Solid	RTA0293-03 - Solid	RTA0293-04 - Solid	RTA0293-05 - Solid	RTA0293-06 - Water	RTA0293-08 - Water	RTA0293-10 - Water	RTA0293-07 - Solid	RTA0293-09 - Solid
Sample ID			**SS-5**	**SS-6**	**SS-7**	**SS-8**	**SS-9**	**SW-1**	**SW-2**	**SW-3**	**SED-1**	**SED-2**
Sample Date			**1/8/10**	**1/8/10**	**1/8/10**	**1/8/10**	**1/8/10**	**1/8/10**	**1/8/10**	**1/8/10**	**1/8/10**	**1/8/10**
Sample Depth			**0-6 in**	**0-6 in**	**0-6 in**	**0-6 in**	**0-6 in**	**-**	**-**	**-**	**-**	**-**
Units			**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**	**PPM**
Polychlorinated Biphenyls (8082)			**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**	**[2C]**
Aroclor 1016	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	NA	NA	6 D08	4.1 D08	49 D08	1.2 D08	1.3 D08	ND	ND	ND	0.24	0.38
TOTAL PCBs	**25**	**1**	6	4.1	49	1.2	1.3	0	0	0	0.24	0.38

Data Qualifiers:

D08 = Dilution required due to high concentration of target analyte(s)
[2C] = Results taken from second column.

Footnotes:

All values are in Parts per Million (PPM).
SS = Surface Sample
SW = Surface Water sample
SED = Sediment sample
ND = Not detected above the practical quantitation limits (PQL), lower limit of quantitation (LLQ), or reporting limit (RL).

Table by: AML
Checked by: JRS
Reviewed by: PTM

TABLE 4-3
RI/AA/IRM REPORT
GROUNDWATER ANALYTICAL RESULTS
COMPARISON TO 6 NYCRR PART 703 WATER QUALITY STANDARDS

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Lab ID	Water Quality Standards Surface Waters and Groundwater (6 NYCRR Part 703) (PPM)		RSJ0665-01		RSJ0665-02		RSJ0665-05		RSJ0665-06	
Sample ID			MW-1		MW-2		DUP		MW-4	
Sample Date			10/9/09		10/9/09		10/9/09		10/9/09	
Units			PPM		PPM		PPM		PPM	
Semivolatile Organics (GC/MS)										
Diethyl phthalate	NA		ND		0.00082	J	ND		ND	
Di-n-butyl phthalate	0.05		0.00051	J	0.00057	J	0.00046	J	0.0004	J
Phenanthrene	NA		ND		0.00088	J	ND		0.00086	J
Organochlorine Pesticides (8081A)			[2C]		[2C]		[2C]		[2C]	
beta-BHC	NA		0.00021	D02, J	ND		ND		ND	
Endrin ketone	0.005		0.00024	D02, J	ND		ND		ND	
Methoxychlor	0.035		ND		0.00026	D02	ND		ND	
Total Metals (SW 846 Series)										
Aluminum	NA		6.61		9.62		5.75		9.04	
Barium	NA		0.12		0.108		0.13		0.099	
Calcium	NA		71		203		67.9		192	
Chromium	0.05		0.0079		0.0148		0.0072		0.0143	
Cobalt	NA		ND		ND		ND		0.0046	
Copper	0.2		ND		0.0179		ND		0.0113	
Iron	0.3		6.27		9.73		5.42		12.6	
Lead	0.025		ND		0.0165		ND		0.0137	
Magnesium	NA		57.7		121		54.8		96.8	
Manganese	0.3		0.113		0.307		0.103		0.527	
Nickel	0.1		ND		ND		ND		0.0107	
Potassium	NA		3.36		7.48		3.28		6.6	
Sodium	20		26.6		52.2		27.2		24.5	
Vanadium	NA		0.0085		0.0139		0.0076		0.0163	
Zinc	NA		0.0162		0.0493		0.0145		0.0825	
General Chemistry Parameters										
Turbidity (NTU)	NA		358	B, J	391	B	137	B, J	467	B

TABLE 4-3
RI/AA/IRM REPORT
GROUNDWATER ANALYTICAL RESULTS
COMPARISON TO 6 NYCRR PART 703 WATER QUALITY STANDARDS

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Data Qualifiers:

B = Analyte was detected in associated method blank.
D02 = Dilution required due to sample matrix effects.
J = Analyte detected at a level less than the reporting limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.
[2C] = Results taken from second column.
ND = Not detected above the practical quantitation limits (PQL), lower limit of quantitation (LLQ), or reporting limit (RL).

Footnotes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. All results are in Parts per Million (PPM) unless stated otherwise.
3. All turbidity results are in Nephelometric Turbidity Units (NTU).
4. Monitoring Wells MW-3 and WM-5 were dry. No water samples were taken from these wells.

0.79 = Sample concentration exceeds the respective Water Quality Standards from 6 NYCRR Part 703.
NA = Not applicable

Table by: AML
Checked by: DML
Reviewed by: PTM

TABLE 5-1
RI/AA/IRM REPORT
IRM VERIFICATION SAMPLE RESULTS
COMPARISON TO NYSDEC PART 375 SOIL CLEANUP OBJECTIVES

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Lab ID	Restricted Industrial SCOs Table 375-6.8(b) (PPM)	Restricted Commercial SCOs Table 375-6.8(b) (PPM)	RTB0801-01	RTB0801-02	RTB0938-01	RTB0801-03	RTB0856-02	RTC0498-01	RTC0635-01	RTC1037-01	RTD1659-01	RTB0856-04
Sample ID			Grid 1 Floor	Grid 2 Foor	Grid 2 Floor	Grid 2 West Wall	Grid 3 Pile	Grid 3 Floor	Grid 3 Floor	Grid 3 Floor	Grid 3 Floor	Grid 4 Pile
Sample Date			2/18/10	2/18/10	2/23/10	2/18/10	2/19/2010	3/4/2010	3/8/2010	3/17/2010	4/21/2010	2/19/2010
Units			PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
Polychlorinated Biphenyls (8082)												
Aroclor 1016	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	NA	NA	4.5 D08	1000 D08, Z3	1.1	2.7 D08	42 D08	63 D08	21 D08	24 D08	4.8	1.8 D08
TOTAL PCBs	**25**	**1**	4.5	1000	1.1	2.7	42	63	21	24	4.8	1.8

TABLE 5-1
RI/AA/IRM REPORT
IRM VERIFICATION SAMPLE RESULTS
COMPARISON TO NYSDEC PART 375 SOIL CLEANUP OBJECTIVES

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Lab ID	Restricted Industrial SCOs Table 375-6.8(b) (PPM)	Restricted Commercial SCOs Table 375-6.8(b) (PPM)	RTC0498-02	RTB0856-03	RTC0498-03	RTB0938-02	RTB0756-03	RTB0856-05	RTB0938-03	RTC0498-04	RTB0856-01
Sample ID			Grid 4 Floor	Grid 5 Pile	Grid 5 Floor	Grid 6 Floor	Grid 6 West Wall	Grid 7 Floor	Grid 7 Floor	Grid 7 Floor	Grid 7 Pile
Sample Date			3/4/2010	2/19/2010	3/4/2010	2/23/2010	2/17/2010	2/19/2010	2/23/2010	3/4/2010	2/19/2010
Units			PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
Polychlorinated Biphenyls (8082)											
Aroclor 1016	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	NA	NA	ND	ND	ND	ND	ND	ND	ND	2	ND
Aroclor 1260	NA	NA	4.4 D08	5.5 D08	0.62	0.17 J	1.2	27 D08	44 D08	1	15 D08
TOTAL PCBs	**25**	**1**	4.4	5.5	0.62	0.17	1.2	27	44	3	15

TABLE 5-1
RI/AA/IRM REPORT
IRM VERIFICATION SAMPLE RESULTS
COMPARISON TO NYSDEC PART 375 SOIL CLEANUP OBJECTIVES

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Lab ID	Restricted Industrial SCOs Table 375-6.8(b) (PPM)	Restricted Commercial SCOs Table 375-6.8(b) (PPM)	RTB0756-02	RTC1039-01	RTB0756-01	RTB0693-04	RTB0655-01	RTB0655-02	RTB0693-03	RTB0693-01	RTB0693-02	RTB0801-04
Sample ID			Grid 8 Floor	Grid 8 Floor	Grid 9 Floor	Grid 10 Floor	Grid 11 Floor	Grid 11 West Wall	Grid 12 Floor	Grid 13 Floor	Grid 13 South Wall	Grid 13 South Wall 2
Sample Date			2/17/2010	3/17/2010	2/17/2010	2/16/2010	2/15/2010	2/15/2010	2/16/2010	2/16/2010	2/16/2010	2/18/2010
Units			PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM
Polychlorinated Biphenyls (8082)												
Aroclor 1016	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1221	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	NA	NA	ND	ND	ND	ND	0.17 J	ND	ND	ND	ND	ND
Aroclor 1254	NA	NA	7.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	NA	NA	10	ND	0.2 J	0.068 J	0.77	0.46	0.18 J	0.2 J	34 D08	370 D08, Z3
TOTAL PCBs	**25**	**1**	17.1	ND	0.2	0.068	0.94	0.46	0.18	0.2	34	370

TABLE 5-1
RI/AA/IRM REPORT
IRM VERIFICATION SAMPLE RESULTS
COMPARISON TO NYSDEC PART 375 SOIL CLEANUP OBJECTIVES

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NY

Lab ID	Restricted Industrial SCOs Table 375-6.8(b) (PPM)	Restricted Commercial SCOs Table 375-6.8(b) (PPM)	RTC0498-05	RTC0498-06	RTC0498-07	RTC0787-02	RTC0635-02	RTC0787-03	RTC0787-01
Sample ID			Grid 13 South Wall	Grid 13 West Wall	Grid 13 East Wall	Grid 13 East Wall	Grid 13 North Wall	Grid 13 North Wall	Grid 13 South Berm (EAST OF GRID 13)
Sample Date			3/4/2010	3/4/2010	3/4/2010	3/11/2010	3/8/2010	3/11/2010	3/11/2010
Units			PPM	PPM	PPM	PPM	PPM	PPM	PPM
Polychlorinated Biphenyls (8082)									
Aroclor 1016	NA	NA	ND	ND	ND		ND	ND	ND
Aroclor 1221	NA	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor 1232	NA	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	NA	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	NA	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	NA	NA	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	NA	NA	0.24 J	0.37	16 D08	4.1	93 D08	1.2	1
TOTAL PCBs	**25**	**1**	0.24	0.37	16	4.1	93	1.2	1

Data Qualifiers:

J = Analyte detected at a level less than the reporting limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations within this range are estimated.

D08 = Dilution required due to high concentration of target analyte(s)

Z3 = The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Footnotes:

All values are in Parts per Million (PPM).

SS = Surface Sample

SW = Surface Water sample

SED = Sediment sample

ND = Not detected above the practical quantitation limits (PQL), lower limit of quantitation (LLQ), or reporting limit (RL).

Table by: AML
Checked by: JRS
Reviewed by: PTM

TABLE 8-1

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP. CHEEKTOWAGA, NEW YORK

COST ESTIMATE FOR IRM & IMPLEMENTATION OF A SITE MANAGEMENT PLAN

Direct Capital Cost ($)

Item	Unit Cost	Unit	Quantity	Years Incurred	Total Cost	30 Yr. Present Value @ 5%
Implementation of IRM (February -April 2010)	$420,000	LS	1	1	$420,000	$420,000
				Subtotal, Direct Capital Costs	$420,000	$420,000

Indirect Capital Costs ($)

		Total Cost	Present Value Cost @ 5%
Engineering/Administration	12% of Capital Costs	$50,400	$50,400
	Subtotal, Indirect Capital Costs	$50,400	$50,400
	Total Capital Costs (Direct and Indirect)	$470,400	$470,400

Annual Operations Maintenance & Monitoring (OM & M), Direct

Item	Unit Cost	Unit	Quantity	Years Incurred	Annual Cost	Present Value Cost @ 5%
Annual Stormwater Monitoring	$2,000	Year	1	30	$2,000	$30,304
Annual Certifications	$1,500	Year	1	30	$1,500	$22,728
				Total Annual Cost	$3,500	
				Subtotal, Direct O&M Costs (30 Years)	$105,000	$53,033

Annual Operation Maintenance & Monitoring (OM & M), Indirect		Annual Cost	Present Value Cost @ 5%
Engineering/Administration	12% of O&M Costs	$420	$6,364
Contingencies	25% of O&M Costs	$875	$13,258
	Subtotal, Indirect O&M Costs	$1,295	$19,622
	Total Annual O&M Cost (Direct and Indirect)	$4,795	
	Total O&M Costs (Direct and Indirect)	$143,850	$72,655

Total Present Worth (PW): IRM Costs + OM & M PW

	Total 30 Year Cost	Present Value Cost @ 5%
Total Cost of Alternative	$614,250	$543,055

Notes/Assumptions:

A 5% rate of return was used for calculating present value costs.

TABLE 8-2

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP. CHEEKTOWAGA, NEW YORK

COST ESTIMATE FOR RESTRICTED COMMERCIAL USE & IMPLEMENTATION OF A SITE MANAGEMENT PLAN

Direct Capital Cost ($)

Item	Unit Cost	Unit	Quantity	Years Incurred	Total Cost	30 Yr. Present Value @ 5%
Implementation of IRM (February -April 2010)	$420,000	LS	1	1	$420,000	$420,000
Impacted Soil/Fill Excavation, Staging & Hauling	$25	CY	2500	1	$62,500	$62,500
PCB-Imapcted Non-Hazardous Soil/Fill Disposal	$80	TON	3750	1	$300,000	$300,000
Verification Sampling	$120	EA	25	1	$3,000	$3,000
				Subtotal, Direct Capital Costs	$785,500	$785,500

Indirect Capital Costs ($)

		Total Cost	Present Value Cost @ 5%
Engineering/Administration	12% of Capital Costs	$94,260	$94,260
	Subtotal, Indirect Capital Costs	$94,260	$94,260
	Total Capital Costs (Direct and Indirect)	$879,760	$879,760

Annual Operations Maintenance & Monitoring (OM & M), Direct

Item	Unit Cost	Unit	Quantity	Years Incurred	Annual Cost	Present Value Cost @ 5%
Annual Stormwater Monitoring	$2,000	Year	1	30	$2,000	$30,304
Annual Certifications	$1,500	Year	1	30	$1,500	$22,728
				Total Annual Cost	$3,500	
				Subtotal, Direct O&M Costs (30 Years)	$105,000	$53,033

Annual Operation Maintenance & Monitoring (OM & M), Indirect		Annual Cost	Present Value Cost @ 5%
Engineering/Administration	12% of O&M Costs	$420	$6,364
Contingencies	25% of O&M Costs	$875	$13,258
	Subtotal, Indirect O&M Costs	$1,295	$19,622
	Total Annual O&M Cost (Direct and Indirect)	$4,795	
	Total O&M Costs (Direct and Indirect)	$143,850	$72,655

Total Present Worth (PW): IRM Costs + OM & M PW

	Total 30 Year Cost	Present Value Cost @ 5%
Total Cost of Alternative	$1,023,610	$952,415

Notes/Assumptions:

A 5% rate of return was used for calculating present value costs.

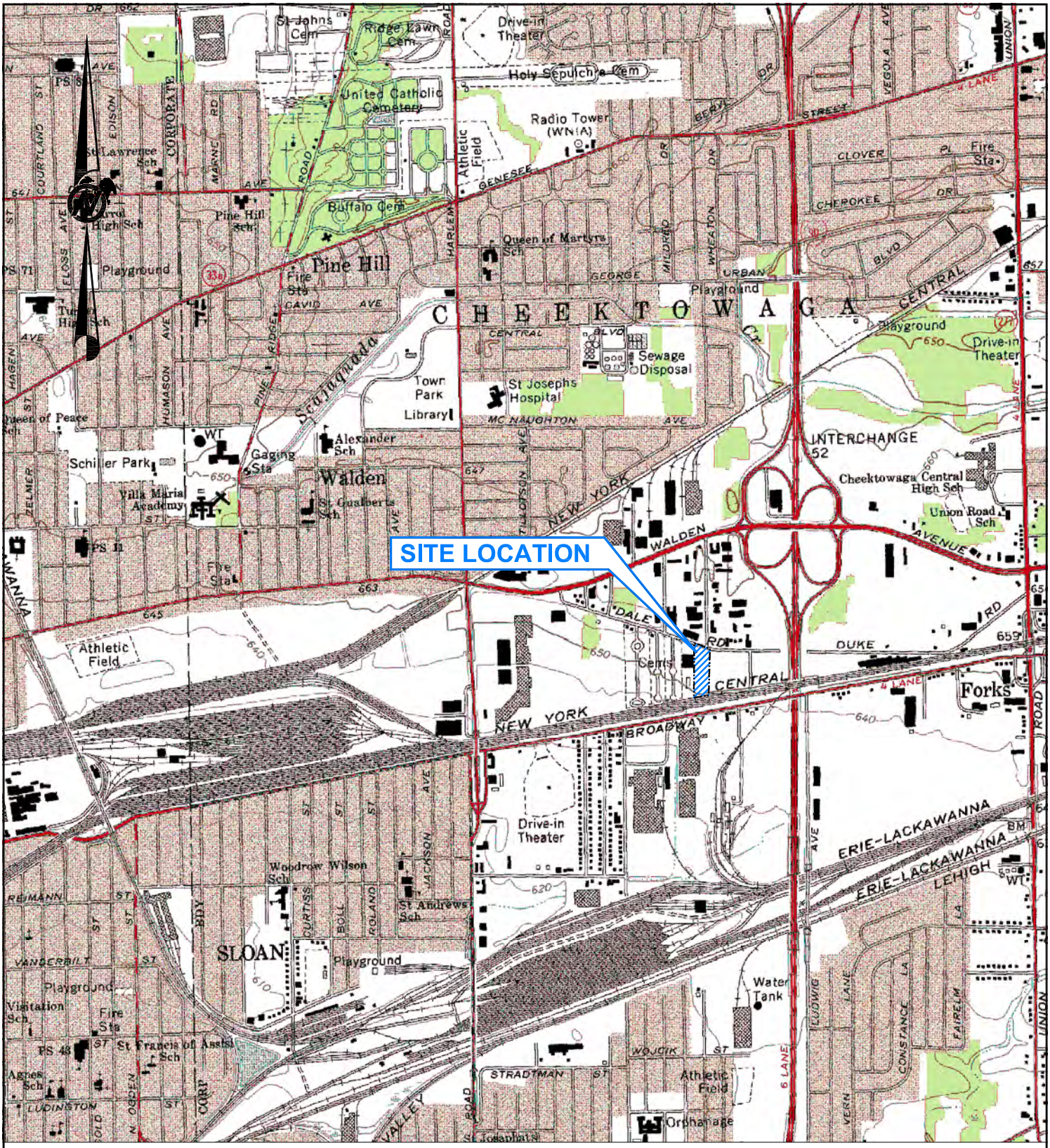
TABLE 8-3

1755 DALE RD. BCP SITE # C915234 - NIAGARA TRANSFORMER CORP. CHEEKTOWAGA, NEW YORK

SUMMARY OF REMEDIAL COST ALTERNATIVES

REMEDIAL ALTERNATIVE	ESTIMATED 30 YR PRESENT WORTH COST
No Further Action (Cost of Completed IRM)	**$470,400**
IRM & Implementation of Site Management Plan (SMP) (Cost of Completed IRM, plus SMP and Future OM & M)	**$543,500**
Restricted Commercial Use Cleanup & Implementation of SMP (Cost of Completed IRM, restricted commercial cleanup plus SMP and Future OM & M)	**$952,500**

FIGURES



REFERENCE

1.) BASE FROM 7.5 MINUTE QUADRANGLE OF BUFFALO NORTHEAST, NEW YORK DATED 1965.

2000 0 2000
SCALE FEET

Golder Associates
Mt. Laurel, New Jersey

SCALE	AS SHOWN
DATE	07/06/09
DESIGN	PTM
CADD	GLS
CHECK	
REVIEW	

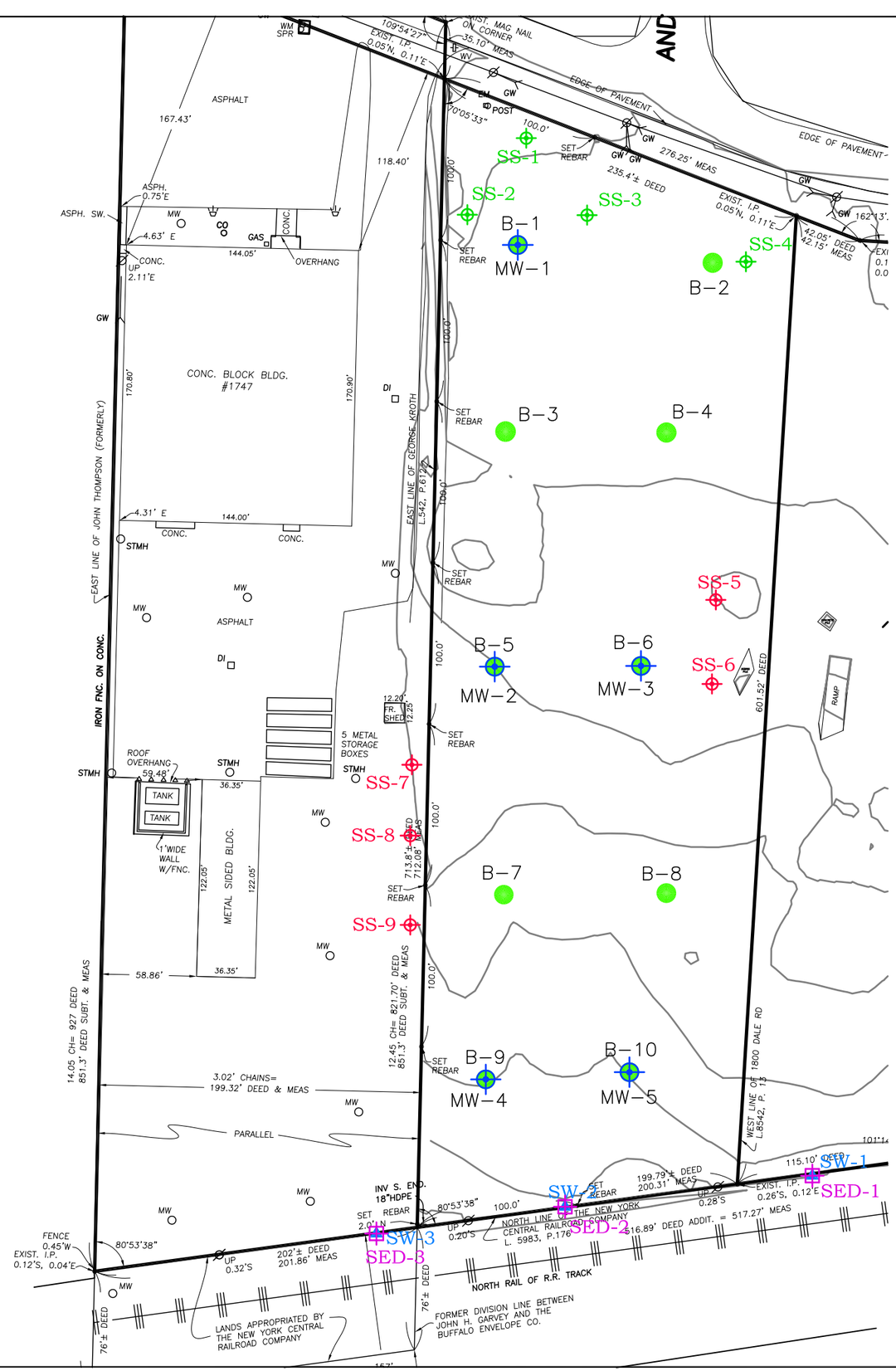
FILE No. 0938914402A001
PROJECT No. 093-89144-02 REV. 0

TITLE

SITE VICINITY MAP
1755 DALE ROAD BCP PARCEL
CHEEKTOWAGA, NEW YORK

NIAGARA TRANSFORMER CORP.

FIGURE 1-1



LEGEND

- RI BORING SAMPLE
- SS-1 RI SURFACE SAMPLE
- MW-1 RI MONITORING WELL
- SS-1 SUPPLIMENTAL RI SURFACE SAMPLE
- SW-1 SUPPLIMENTAL RI SURFACEWATER SAMPLE
- SED-1 SUPPLIMENTAL RI SEDIMENT SAMPLE

LEGEND		
ASPH		ASPHALT
BLDG		BUILDING
CLF	—×—	CHAIN LINK FENCE
CO	○	CLEAN OUT
CONC		CONCRETE
D		DEED
DI	□	DRAINAGE INLET
EM	□	ELECTRIC METER
FLT		FLOOD LIGHT
GAS	□	GAS METER
GP	△	GUIDE POST
GW	>—	GUY WIRE
HYD		HYDRANT
INV		INVERT ELEVATION
L		LIBER
MB	□	MAILBOX
MW	○	MONITORING WELL
P.		PAGE
SA MH	○	SANITARY MANHOLE
ST MH	○	STORM MANHOLE
SW		SIDEWALK
UP	⌀	UTILITY POLE
WV	⊕	WATER VALVE
		PROPERTY BOUNDARY

REFERENCE

1.) BOUNDARY SURVEY AND BUILDING STRUCTURES PROVIDED BY DEBORAH A. NAYBOR PLS, P.C. LAND SURVEYING – LAND PLANNING DATED 11/15/2007 (REVISED 12/11/2007).

SCALE 40 0 40 80 FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

RI/AAR/IRM REPORT
NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NEW YORK

TITLE

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No. 093–8914402			FILE No. 0938914402A014		
DESIGN	AML	08/12/09	SCALE AS SHOWN	REV.	0
CADD	AML	1/11/10			
CHECK					
REVIEW					

FIGURE 3-1

LEGEND

1	GRID LOCATION NUMBER
654.12 TC 650.47 BC	BC = BOTTOM OF EXCAVATION CUT TC = TOP OF EXCAVATION CUT
	DITCH
E. / ELEV.	EAST ELEVATION
	LIMITS OF EXCAVATION 3-23-2010
	LIMITS OF TOPO SURVEY (2-8-2010)
MON. WELL	MONITORING WELL
N.	NORTH
	PROPERTY LINE (APPROXIMATE)
	RAILROAD TRACKS
S.	SOUTH
+650.42	SPOT ELEVATION
UP	UTILITY POLE
651	1' MINOR CONTOUR INTERVAL
650	5' MAJOR CONTOUR INTERVAL

NOTES

1.) BOUNDARY SURVEY AND BUILDING STRUCTURES PROVIDED BY DEBORAH A. NAYBOR PLS, P.C. LAND SURVEYING – LAND PLANNING DATED 11/15/2007 (REVISED 12/11/2007).

2.) HATCHED GRIDS TO BE EXCAVATED TO A DEPTH OF 1 FOOT BELOW GRADE SURFACE.

REFERENCES

1.) MAP FROM DIGITAL CAD FILE NEW AML SAMPLING RESULTS.DWG ENTITLED "PROPOSED IRM EXCAVATION PLAN," DATED DECEMBER 13, 2007, PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.

2.) EXCAVATION SURVEY FROM DIGITAL CAD FILE EXCAVATION SURVEY WITH GRID LAYOUT PLAN.DWG, ENTITLED "BOTTOM OF EXCAVATION CONTOUR MAP," PREPARED BY WENDEL DUCHSCHERE SURVEY DATED MARCH 23, 2010.

40 0 40 80
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NEW YORK

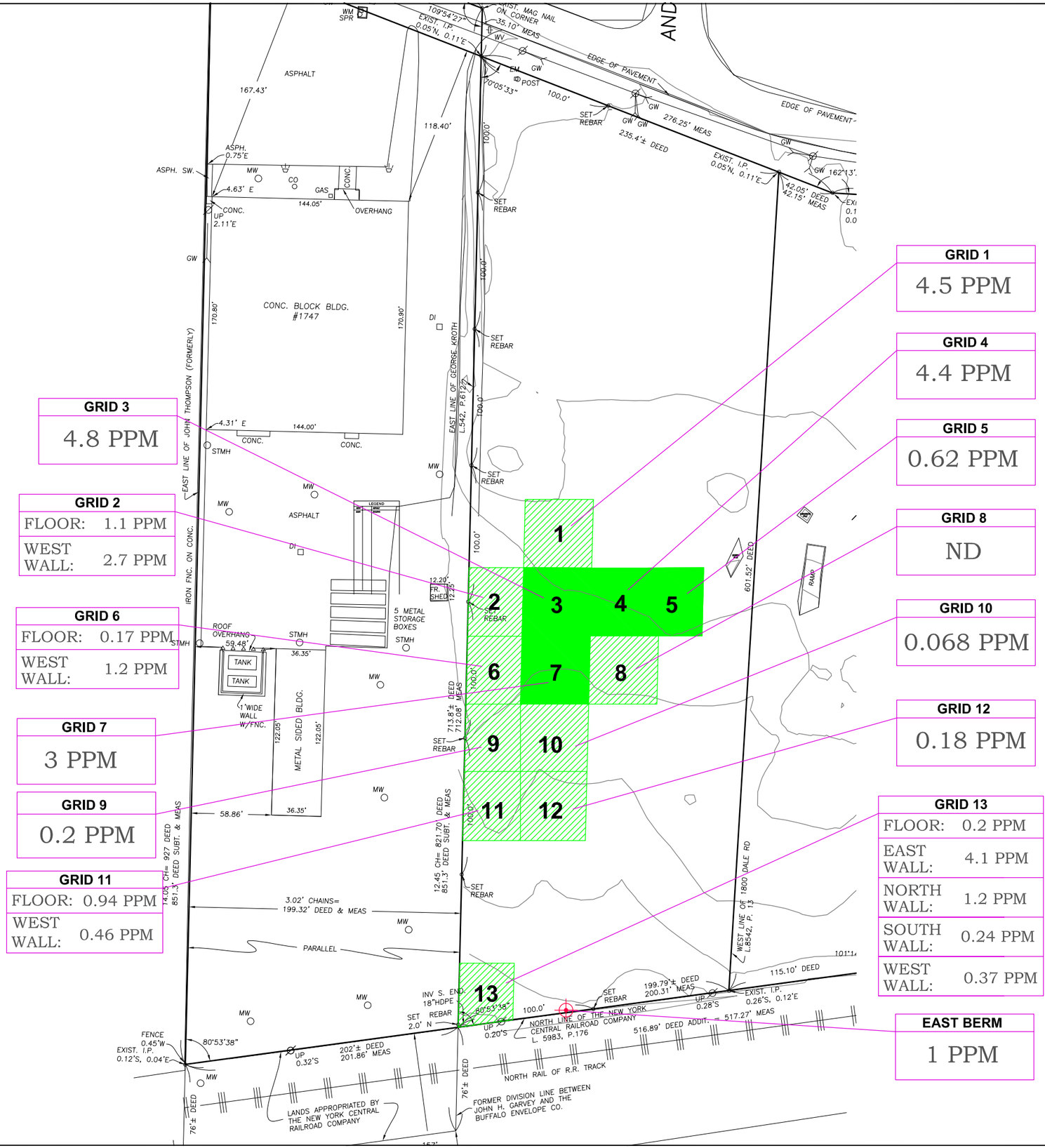
TITLE

EXCAVATION SURVEY

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	093-8914402		FILE No.	Figure 5-1	
DESIGN	AL	08/12/09	SCALE	AS SHOWN	REV. 0
CADD	AM	04/09/10			
CHECK					
REVIEW					

FIGURE 5-1



LEGEND

0.2	FINAL SOIL SAMPLE PCB CONCENTRATION (PPM)
13	GRID LOCATION NUMBER

LEGEND		
ASPH		ASPHALT
BLDG		BUILDING
CLF	—×—	CHAIN LINK FENCE
CO	○	CLEAN OUT
CONC		CONCRETE
D		DEED
DI	□	DRAINAGE INLET
EM	□	ELECTRIC METER
FLT	□	FLOOD LIGHT
GAS	□	GAS METER
GP	△	GUIDE POST
GW	—>—	GUY WIRE
HYD		HYDRANT
INV	(	INVERT ELEVATION
L.		LIBER
MB	□	MAILBOX
MW	○	MONITORING WELL
P.		PAGE
SA MH	○	SANITARY MANHOLE
ST MH	○	STORM MANHOLE
SW		SIDEWALK
UP	⌀	UTILITY POLE
WV	⌖	WATER VALVE
		PROPERTY BOUNDARY

GENERAL NOTES

1.) BOUNDARY SURVEY AND BUILDING STRUCTURES PROVIDED BY DEBORAH A. NAYBOR PLS, P.C. LAND SURVEYING – LAND PLANNING DATED 11/15/2007 (REVISED 12/11/2007).

2.) ALL CONFIRMATORY SAMPLES COLLECTED FROM FLOOR OF EACH GRID, UNLESS OTHERWISE NOTED, FOLLOWING EXCAVATION.

REFERENCE

1.) MAP FROM DIGITAL CAD FILE NEW AML SAMPLING RESULTS.DWG ENTITLED "PROPOSED IRM EXCAVATION PLAN," DATED DECEMBER 13, 2007, PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC.

40 0 40 80
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

BCP INTERIM REMEDIAL MEASURES
NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NEW YORK

TITLE

SUMMARY OF IRM EXCAVATION VERIFICATION SAMPLE RESULTS

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

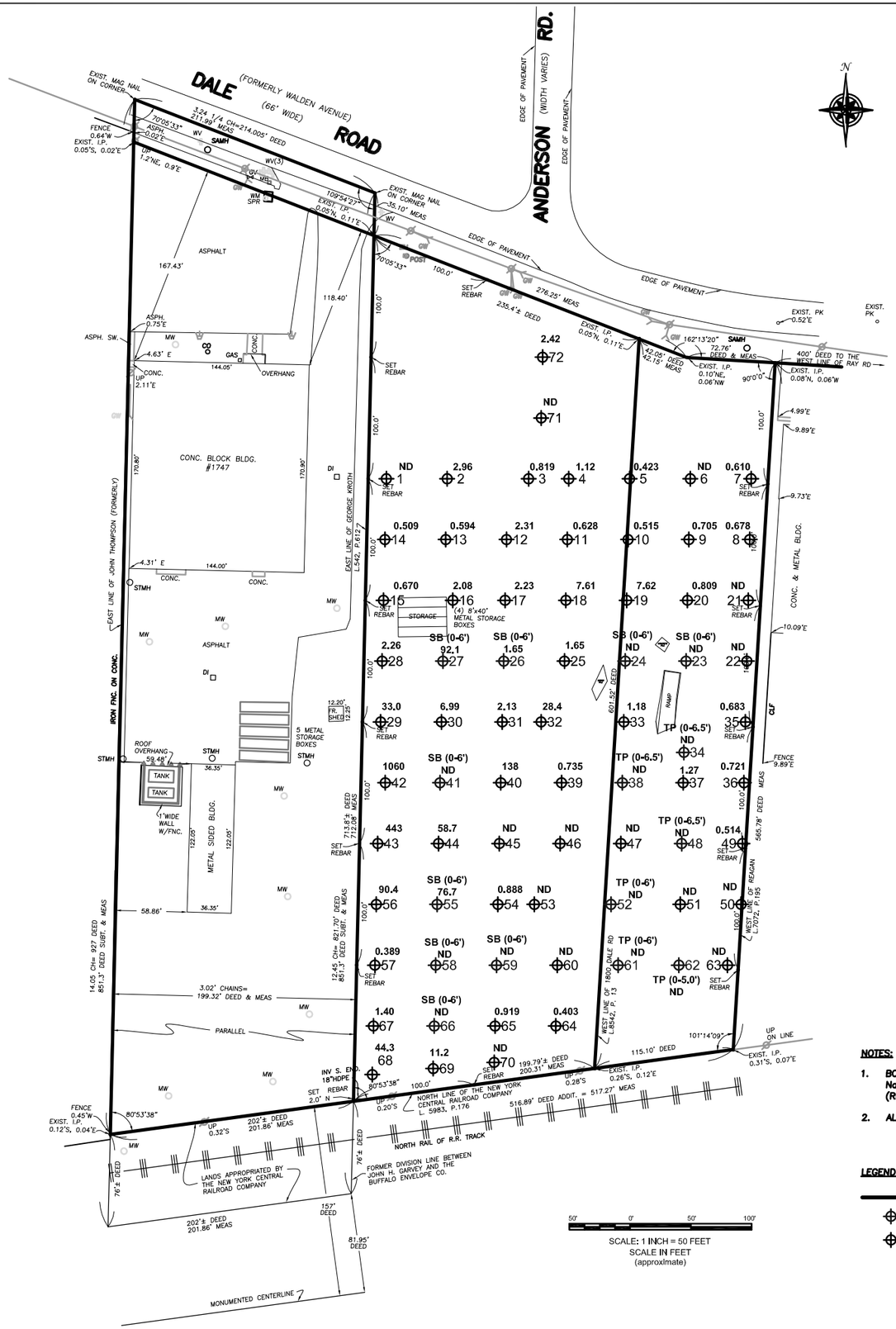
PROJECT No.	093-8914402		FILE No.	0938914402A015	
DESIGN	AML	08/12/09	SCALE	AS SHOWN	REV. 0
CADD	RJM/AML	3/9/10			
CHECK					
REVIEW					

FIGURE 5-2

APPENDIX A

SHEET 1 – DALE ROAD EXPANSION SAMPLING RESULTS

(DECEMBER 2007 INVESTIGATION)



LEGEND		
ASPH		ASPHALT
BLDG		BUILDING
CLF	—×—	CHAIN LINK FENCE
CO	○	CLEAN OUT
CONC		CONCRETE
D		DEED
DI	□	DRAINAGE INLET
EM	□	ELECTRIC METER
FLT		FLOOD LIGHT
GAS	□	GAS METER
GP	△	GUIDE POST
GW	>—	GUY WIRE
HYD		HYDRANT
INV		INVERT ELEVATION
L		LIBER
MB	□	MAILBOX
MW	○	MONITORING WELL
P.		PAGE
SA MH	○	SANITARY MANHOLE
ST MH	○	STORM MANHOLE
SW		SIDEWALK
UP	⌀	UTILITY POLE
WV	⊕	WATER VALVE

NOTES:

1. **BOUNDARY SURVEY AND BUILDING STRUCTURES PROVIDED BY Deborah A. Naybor PLS, P.C. Land Surveying – Land Planning DATED 11/15/2007 (REVISED 12/11/2007).**
2. **ALL CONCENTRATIONS IN MG/KG UNLESS NOTED OTHERWISE.**

LEGEND:

- PROPERTY BOUNDARY
- ⊕62 SOIL BORING/TEST PIT
- ⊕53 SURFACE SAMPLE

SURVEY
PART OF LOT 24, TOWNSHIP 11, RANGE 7
TOWN OF CHEEKTOWAGA
COUNTY OF ERIE
STATE OF NEW YORK

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC
726 EXCHANGE STREET
SUITE 624
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JOB NO.: 0027-012-100

REVISIONS

NO.	BY	DATE	REMARKS

SEAL

DRAWN BY: AJZ
DATE: 12/13/07
CHECKED BY:
APPROVED BY:

DALE ROAD EXPANSION SAMPLING RESULTS

NIAGARA TRANSFORMER
CHEEKTOWAGA, NEW YORK

PREPARED FOR
NIAGARA TRANSFORMER CORPORATION

SHEET - 1