REPORT

REMEDIAL INVESTIGATION & INTERIM REMEDIAL MEASURES WORK PLAN

Niagara Transformer Corporation – 1755 Dale Road
Cheektowaga, New York
Brownfield Cleanup Program

Submitted To: Chief, Site Control Section
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Division of Environmental Conservation
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Table of Contents

List of Tables

List of Figures

List of Appendices

1.0 INTRODUCTION

Niagara Transformer Corporation (NTC) has prepared this Remedial Investigation/Interim Remedial Measures (RI/IRM) Work Plan in support of the submittal of a Brownfield Cleanup Program (BCP) application in accordance with the provisions of the New York State Department of Environmental Conservation's (NYSDEC) Subpart 375-3. The BCP application is requesting entry into the BCP for NTC's property located at 1755 Dale Road in the Town of Cheektowaga, New York (Site). 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). 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.

The Site development uses will encompass industrial manufacturing, support facilities, parking and vehicle access infrastructure. Golder Associates Inc. (Golder) was retained by NTC to prepare this RI/IRM Work Plan to address the NYSDEC BCP requirements.

1.1 Site History

A review of both aerial photos and Sanborn Fire Insurance Maps indicates that the Site has been vacant of any improvements since 1958 to the present time. Between 1958 and 1939, north to south railroad sidings were the only documented structures on the property. Between 1924 (the earliest map documentation available) and 1939 the railroad tracks were present running north-south across the property and several structures (unidentified) were noted in the northwest corner of the property. During this time frame, the southern half of the site was also identified as containing the A.A. Morrison & Co junk yard (1924 Sanborn Map) and later an unnamed “contractor's yard” (1939 Sanborn Map). In each case a small shed and office structure were noted in the same location in the southwest portion of the Site.

During the 1960s and 1970s, evidence of unpaved roadways and associated vehicular traffic was noted on the aerial photos covering much of the Site. The purpose and use of these access roads is unknown. NTC purchased the Site and an adjacent smaller vacant parcel to the east of the Site in 1983.

In 1996 the NYSDEC initiated a remedial action on the adjacent NTC manufacturing site located at 1747 Dale Rd as a result of historical impacts from manufacturing operations dating back to the 1950s on this parcel. NTC agreed to allow the remedial contractor performing the work to utilize the south western portion of the Site for staging and storage of remedial cleanup equipment. The remedial contractor was permitted to access this area directly from Dale Road via a temporary north-south access road. These activities continued on the Site until completion of the project in 1997.

In 2004 the NYSDEC performed a supplemental Interim Remedial Measure to mitigate ongoing polychlorinated biphenyl (PCB) impacts associated with stormwater storm drainage systems on the 1747 Dale Road property and along the CSX rail corridor to the south. As part of the IRM activities, the remedial contractor was allowed to use the Site as a staging area for equipment decontamination activities.

Recently, NTC has utilized a small portion of the Site directly adjacent to their South parking lot/truck access road at 1747 Dale Road for staging of four temporary storage containers for storage of files and parts

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, CSX Railroad to the south, and an undeveloped 1.5 acre parcel of land to the east also owned by NTC.

1.2 Purpose and Scope

The Site has not been comprehensively characterized, therefore NTC intends to investigate soil/fill and groundwater within the Site for the purpose of more fully characterizing the Site and identifying/evaluating remedial alternatives under the New York State BCP. Data collected during the RI will be used to identify potential health risks and to evaluate remedial alternatives other than those already planned as interim remedial measures (IRMs). Implementation of the anticipated IRM(s) is based on the analytical results from a NTC initiated investigation (performed by Benchmark Environmental Engineering & Science) that identified elevated PCB concentrations in surface soil samples (0-6 inches) across potions of the Site in November/December of 2007.

The Work Plan proposes the following activities to identify and delineate, if present, soil/fill and groundwater impacts on the Site:

- Advancement of ten (10) subsurface soil borings to a depth of approximately 6 feet below ground surface (bgs) and collection/analysis of representative soil/fill samples to establish concentrations of Target Compound List parameters.
- Manual collection of four (4) surface soil samples using a hand –held auger to a depth of four to six inches bgs in the northwest and northeast areas of the site (not previously sampled during the November/December 2007 soil investigation) for analysis of PCBs
- Installation of five (5) on-site upgradient and downgradient monitoring wells and collection/analysis for Target Compound List parameters of on-site groundwater samples to assess Site groundwater quality. Collection of groundwater potentiometric data will also be performed in conjunction with the sampling activities.

The data obtained from this RI, with the results of previous investigations (presented in Section 1.3) will be used to:

- Describe the amount, concentration, persistence, mobility, state (e.g., solid, liquid), and other relevant characteristics of the contaminants present.
- Define hydrogeological factors (i.e., depth to saturated zone, groundwater gradients, proximity to wetlands, etc).

- Define the potential human and environmental exposure pathways from the Site and the extent to which contaminants of concern from these pathways have the potential to pose a threat to human health or the environment.
- Determine the extent to which contaminant levels on the Site, if applicable, pose an unacceptable risk to human health or the environment.
- Develop Remedial Action Objectives (RAOs for the Site based on the contaminant characterization results, exposure pathways and risk valuation data.
- Provide sufficient information to allow for the identification of potentially feasible remedial alternatives.

Based on the current knowledge of potential Site impacts, the RAOs for the Site may require implementation of remedial actions designed to remove or cover impacted soil/fill material. It is NTC's intent to propose an IRM consisting of soil/fill excavation of known surficial soils that exceed Part 375 restricted industrial Soil Cleanup Objectives (SCOs) for PCBs. The IRM may ultimately fulfill the requirements of a final remedy for the Site or be a component of one of remedial alternatives, depending on the results of the RI. A detailed discussion of the proposed IRM is presented in Section 4.0 of this Work Plan.

1.3 Summary of Previous Investigations

A Phase I Environmental Site Assessment (ESA) was completed and three previous limited surface and subsurface soil investigations were conducted on the Site. The three previous investigations were limited to characterization of PCBs in the soil/fill only.

1.3.1 Phase I ESA

A Phase I ESA was completed by Golder Associates Inc. in August 2009 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.

1.3.2 Soil Investigations – PCB Assessments

1.3.2.1 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.1) 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 1,330.56 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. The excerpt of Section 2.5.9 ("Staging Area") describing the activities performed and remediation conducted in this area from December 1997 "Remediation Summary Report" and referenced sampling data tables from the report are provided in Appendix A.

1.3.2.2 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. 2). The excerpt of Section 6.4 from this report and portions of the referenced Site Plan drawings are provided in Appendix A.

1.3.2.3 2007 NTC Soil Investigation

In November and December of 2007, NTC performed a more comprehensive soil sampling program on the Site in order to characterize surface and selected subsurface soils for PCB impacts in anticipation of a potential building expansion for the Site.

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.

A summary table (Table 1) of the 2007 sampling results for PCBs in the surface soils and boring locations and a site map (Sheet 1) illustrating sample locations on the Site is included in Appendix A.

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. No other parameters or media were evaluated as part of this investigation and no additional investigations were subsequently performed on the Site.

1.4 Project Organization and Responsibilities

Niagara Transformer Corporation has submitted the 1755 Dale Rd Site for entrance into the BCP as a participant per ECL§27-1405. Golder Associates Inc. (Golder) will manage the brownfield cleanup on behalf of Niagara Transformer Corp. The proposed responsibilities of the key staff are summarized below:

Partick T. Martin, P.E., will be the Project Manager for the BCP program. In this capacity Mr. Martin will be responsible for overall coordination of all phases of the project from implementation of the Work Plan to completion of proposed Interim Remedial Measures and subsequent reporting and documentation of the work performed.

Russell Marchese, will be the Project Geologist, responsible for the implementing the remedial investigation and IRM tasks. Responsibilities will include sample collection, well development and directing drilling subcontractors and oversight of IRM activities.

Brian C. Senefelder, CHMM, will serve as Project Director and be responsible for the overall quality assurance and review of all project deliverables. He will interface with the Project Manager to address any technical issues and provide quality control for the entire project.

2.0 DATA OBJECTIVES

2.1 Acceptance or Performance Criteria

Acceptance or performance criteria specify the quality of data required to support decisions regarding remedial response activities and are based on the data quality objectives. The data quality and level of analytical documentation necessary for a given set of samples will vary depending on the intended use of the data.

Site-specific remedial action objectives will be developed during the RI process. Sampling data will be used to evaluate whether or not remedial alternatives can meet the objectives. Two data confidence levels will be employed in the RI: screening level data and definitive level data. In general, screening level confidence will apply to field measurements, including photo-ionization detector (PID) measurements, groundwater elevation measurements, and field analyses (i.e., pH, temperature, specific conductivity, and turbidity). Definitive level confidence will apply to samples submitted to an independent laboratory for chemical analysis.

Sampling and analytical acceptance and performance criteria such as precision, accuracy, representativeness, comparability, completeness, and sensitivity, will be defined in the QAPP (refer to Appendix B).

2.2 Data Evaluation Procedures

The RI scope of work is focused on providing reliable data to identify areas of the Site potentially requiring remediation, defining chemical constituent migration pathways, qualitatively assessing human health and ecological risks, and performing the remedial alternatives evaluation. The investigation will include the collection and analysis of soil/fill and groundwater samples to support remedial action objectives. Definitive level data quality will be required for chemical analysis of groundwater and soil/fill samples.

Field team personnel will collect environmental samples in accordance with the rationale and protocols described in the QAPP. United States Environmental Protection Agency (USEPA) and NYSDEC-approved sample collection and handling techniques will be used. Samples for chemical analysis will be analyzed, in accordance with USEPA SW-846 methodology to meet the definitive-level data requirements, by a New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP) Contract Laboratory Protocol (CLP)-certified laboratory. A full (Category B) deliverables package will be provided for all site characterization samples (i.e., excluding waste profile samples). Analytical results for site characterization samples will be evaluated by a third-party data validation expert for evaluation of the accuracy and precision of the analytical results. A Data Usability Summary Report (DUSR) will be prepared to describe the compliance of the analyses with the analytical method protocols detailed in the NYSDEC Analytical Services Protocol (ASP). The DUSR will provide a determination of whether the data meets the project-specific criteria for data quality and data use. The validation effort will be completed in accordance with NYSDEC Division of Environmental Remediation DUSR guidelines.

3.0 INVESTIGATION SCOPE

The proposed RI will focus on investigating the Site for potential contaminants in soil/fill and groundwater that have not previously been characterized through the previous soil/fill only PCB-focused investigations.

The proposed RI investigation of the approximately 3-acre Site will also supplement the surficial soil/fill PCB data for areas in the northwest and northeast portions of the Site were data gaps from the 2007 investigation exist. A total of four (4) surface soil locations, ten (10) subsurface soil borings, and five (5) groundwater monitoring locations are proposed for collection of representative soil/fill and groundwater samples for the RI.

Subsequent to receiving NYSDEC approval for the RI Work Plan, NTC will conduct the RI and prepare a report on the findings. The major components of the proposed RI tasks are described in detail below. Proposed RI sample and groundwater monitoring well locations are illustrated on Figure 3-1. Table 3-1 provides a summary of the proposed samples and analyses to be collected/performed as part of the RI.

3.1 Soil/Fill Investigation

3.1.1 Supplemental Surface Soil Sampling Program

As previously noted the surficial soil sampling program performed by NTC on the Site in 2007 provided extensive characterization of PCB concentrations in the upper 6-inches of soil/fill across the site on a 50 foot sampling grid spacing basis. However, no samples were collected at that time from the northeast and northwest corners of the Site (refer to Sheet 1 in Appendix A). Therefore, to complete the characterization of the primary contaminant of concern on the Site, four additional surficial soil samples (0-6 inches below grade) will be collected and analyzed for total PCBs at the locations designated as SS-1 through SS-4 on Figure 3-1. The samples will be collected via a hand auger, stainless steel trowel or other equivalent hand-held implement.

3.1.2 Subsurface Investigation

A soil boring program will be implemented to thoroughly characterize the subsurface soil/fill and groundwater media to better characterize the overall Site soil/fill overburden material and shallow groundwater, where present, for other potential contaminants of concern. The subsurface soil sampling program proposes a total of ten (10) soil samples (B-1 through B-10) at evenly spaced intervals across the Site. Proposed borehole locations as depicted in Figure 3-1 may be adjusted in the field based on Site conditions, accessibility, NYSDEC preferences or other logistical concerns. Five of the proposed borehole locations will be completed as temporary monitoring wells (MW-1 through MW-5) for characterization of Site groundwater.

3.1.2.1 Soil/Fill Sampling

A drilling rig capable of advancing a borehole using direct push drilling methods via a Geoprobe® drill rig equipped with a concrete core barrel will be used to advance the five subsurface soil borings that will not be 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. The depth of the native soil material in the proposed area(s) of investigation is anticipated to vary between 2-4 feet below grade surface (bgs). The planned drilling method uses 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. Therefore the total depth of the borings is anticipated to be a maximum of eight feet. However, if contaminant impacts or saturated conditions warrant, select borings may be advanced deeper to better characterize subsurface conditions.

Five other soil/fill boring locations (B-1, B-5, B-6, B-9 and B-10) will be completed as monitoring wells and will be advanced and sampled using standard drill-rig mounted hollow stem auger methods. The drilling and sampling approach for these locations is described in detail in Section 3.1.2.2.2 below. The sample selection criteria however will be identical to the approach discussed below for the direct push soil/fill sampling locations.

Upon retrieval of each soil/fill core, the soil/fill samples will be screened for total organic vapors using a photo-ionization detector (PID). The organic vapor measurements will be recorded and the soil/fill material described on boring logs by a Golder field representative. The recovered soils will be characterized/classified by visual observation in accordance with ASTM Method D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). Subsurface soil samples will be collected for chemical analysis at the boring locations shown on Figure 3-1. The depth from which samples are collected will be determined based on screening results of visual and olfactory observations and PID measurements. Samples will be collected from the discrete depth interval that displays the greatest evidence of contamination, if present. If there is no discernable difference across the entire boring depth based on the visual, olfactory or PID screening methods, the default sample collection approach will consist of collecting a composite from the 0 to 4 feet bgs strata. Subsurface soil/fill samples will be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), target compound list (TCL) pesticides, PCBs, target analyte list (TAL) metals, and cyanide. A summary of proposed samples and analyses is provided in Table 3 -1.

All non-dedicated, downhole sampling equipment will be decontaminated between soil boring locations in accordance with accepted drilling practices using a high-pressure hotwater “steam” cleaner or scrubbed using Alconox® and a hot water wash followed by clean potable water rinse. Subsequent to borehole advancement and soil/fill sampling at boring locations B-1, B-5, B-6, B-9 and B-10, a temporary monitoring well will be installed if saturated conditions are identified within the planned 8-foot boring depth or the boring will continue until saturated conditions are encountered or a maximum depth of 16 feet bgs is reached. If saturated conditions are not encountered within the 16 foot boring depth the boring will be grouted from total depth to ground level with a grout mixture of 95%cement and 5% bentonite. All other boring locations advanced only for soil/fill sampling purposes will also be grouted in the same manner.

3.1.2.2 Groundwater Monitoring Well Installation and Sampling

3.1.2.2.1 Site Hydrogeology

Borings advanced on the Site during the 2007 soil/fill investigation were completed to a depth of 6 feet bgs and provided limited information with respect to saturated soil conditions and depth to groundwater. A review of historical groundwater elevation and gradient information from the adjacent 1747 Dale Road parcel to the west of the Site indicate that 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. Reliable correlation of groundwater depth on the Site is complicated by the elevation differential that exists between the two parcels due primarily to the constructed access road along the eastern boundary of the 1747 Dale Road parcel and other elevation changes that were incorporated into the manufacturing complex to facilitate construction of the main building and rear loading dock access. In general, the Site elevation rises above the 1747 Dale Road parcel by 3 to 5 feet along the majority of the joint property boundary.

Soil boring logs from the 1747 Dale Road parcel indicate a 2 to 3 feet fill layer followed by varying layers of native soils comprising 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 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.

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 inferred to be to the south and south east.

3.1.2.2.2 Monitoring Well Installation

As noted in Section 3.1.2.1, five soil borings will be advanced using a standard drilling rig employing hollow-stem auger and completed as 2-inch wells to be used for measuring water levels and collecting groundwater samples. The proposed locations (B-1, B-5, B-6, B-9 and B-10) are illustrated on Figure 3-1. The final well locations will also depend on the presence of saturated soils in the soil/fill unit at the proposed monitoring well locations. The wells will be installed after the soil borings have established the presence of saturated conditions (and any soil samples have been collected from the selected borings).

Shallow overburden well borings will be advanced using 4.25-inch I.D. hollow stem augers (HSA). A 2-inch diameter, 2-foot long split spoon sampler will be advanced ahead of the auger string with a standard 140-pound hammer. Recovered samples will be 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 (or equivalent), and characterized for impacts via visual and/or olfactory observations. All non-dedicated drilling tools and equipment will be decontaminated between boring locations using potable tap water and a phosphate-free detergent (i.e., Alconox).

Soil/fill samples from each boring will be collected from the discrete depth interval that displays the greatest evidence of contamination, if present. Subsurface soil/fill samples will be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), target compound list (TCL) pesticides, PCBs, target analyte list (TAL) metals, and cyanide. A summary of proposed samples and analyses is provided in Table 3 -1.

Subsequent to boring completion, each monitoring well will be 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 will be approximately 10 feet in length. Approximately 6 inches of silica sand will be 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 will be placed within the borehole on top of the 6-inch sand layer and the remainder of the sand pack will be 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) will be installed immediately above the sand layer. The bentonite seal will be 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 pipe will extend approximately 3 feet above grade and will be fitted with a lockable J-plug.

Provided that each of the wells yields sufficient water, groundwater samples will be collected from each of the wells using low flow sampling methods. The total depth of the wells is expected to be within 16 feet of ground surface.

3.1.2.2.3 Well Development

The newly installed monitoring wells will be developed no sooner than 24 hours after construction has been completed. The development procedure will require purging of the groundwater and periodically surging the water 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 will be recorded at regular intervals throughout the development process.

Development will continue until water quality measurements stabilize to within 10 percent of the previous measurement.

3.1.2.2.4 Groundwater Sample Collection

Groundwater will 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. If low-flow sampling is not feasible due to insufficient groundwater recharge rate, new and dedicated disposable bailers may be used to collect the groundwater samples. If sufficient groundwater volume is available, each well will be sampled for VOCs, SVOCs, TCL Pesticides, PCBs, TAL metals, and cyanide.

Field measurements for pH, specific conductivity, temperature, turbidity and water level as well as visual and olfactory field observations will be periodically recorded and monitored for stabilization during well purging prior to sampling. Purging will be considered complete when pH, specific conductivity and temperature stabilize and when turbidity measurements fall below 50 NTU or become stable above 50 NTU. Stability is defined as variation of between field measurements of 10 percent or less and no overall upward or downward trend in the measurements.

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 will be recorded. All groundwater samples will be collected in the pre-cleaned and pre-preserved laboratory sample bottles in accordance with protocols for analyses shown on Table 3-1. Quality Assurance/Quality Control (QA/QC) samples will be collected for the groundwater sampling event in accordance with the QAPP (Appendix B) including one trip blank (accompanying VOC samples only), one matrix spike (MS), one matrix spike duplicate (MSD), and one field duplicate sample. Subsequent to sample collection all groundwater samples will be placed on ice and shipped under chain of custody to the selected analytical laboratory.

The laboratory will be 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 will be analyzed by an NYSDOH ELAP-approved laboratory certified to perform CLP work.

3.2 Site Mapping and Survey

A topographic base map of the Site will be prepared to locate the pertinent features of the Site as well as monitoring well and sample locations. Soil/fill surface and boring locations will be 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 and elevations will be surveyed after installation.

The Site map will be prepared by a New York State licensed surveyor. The surveyor will establish 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 will be measured and recorded for each monitoring well.

4.0 INTERIM REMEDIAL MEASURES SCOPE OF WORK

As described in Section 1.3.2, analytical results from the 2007 soil/fill investigation identified elevated PCB concentrations in soil/fill in the southwestern and central portions of the Site. Impacted soil/fill was found to be predominantly concentrated in the upper six inches of the soil/fill in ten 50 foot by 50 foot grids in these areas. In each of these grids the concentrations exceeded the 6NYCRR Part 375 SCO of 25 ppm for PCBs for restricted industrial use. The delineation of the impacted grids are illustrated on Figure 4-1.

The remediation of these impacted areas is proposed to be completed as an Interim Remedial Measure (IRM).

4.1 Objectives

The objective of the IRM is to:

- Reduce the potential for exposure to PCB impacted soil/fill;
- Reduce the potential for Site PCBs to impact groundwater beneath the Site and off Site locations.

The proposed approach for the implementation of the IRM includes:

A. Removal and off-site disposal of impacted soil/fill within the designated IRM grid area(s)

B. Post-excavation sampling to establish that the restricted industrial SCO for PCBs has been achieved

C. Backfill placement (if required)

Each of these tasks is discussed below:

4.1.1 Removal of Impacted Soil/Fill

The initial areas identified for impacted soil/fill excavation are based on the surficial soil (0 to 6 inch) analytical results obtained during the 2007 investigation. The areas selected for excavation encompass fifty by fifty foot grid areas centered on the soil sampling location where the PCB concentration in the upper 6 inches of soil/fill exceeded 25 ppm. The grids that border the western property line of the parcel are slightly narrower and less than 50 fifty feet wide in the east –west direction. As shown on Figure 4-1, a total excavation area encompassing approximately 32,000 square feet (thirteen 50 x 50 grids) is proposed In general, if the PCB concentration in the adjoining grid exceeded 25 ppm (mg/kg) the excavation of the adjoining grid(s) would be conducted as one contiguous area. In cases where the concentration of PCBs at an adjacent grid sampling location did not exceed 25 ppm, the excavation area is confined to a distance halfway between the sample location exhibiting the exceedence and the sample location with a concentration below 25 ppm , or approximately 25 feet.

Three exceptions to the areas selected for excavation were made in the case of the grids identified as Nos. 3, 4 and 7. Although the sample results in these grids did not exceed the 25 ppm SCO, it was not deemed to be practical from an excavation sequencing and cross-contamination perspective to exclude these three grids from excavation associated with the contiguous impacted grids that surround these three grids to the east, west, north and south. The depth of the proposed excavation grids will be limited to approximately 12 inches below grade surface.

The impacted soil/fill will be removed using an excavator and placed either directly into trucks for off-site disposal, or stockpiled on 6-mil polyethylene sheeting adjacent to the excavation pending characterization and subsequent disposal. To prevent potential run-off in the event of precipitation, stockpiled soil/fill will be covered at the end of each day's excavation activities with 6-mil polyethylene sheeting. In the event the stockpiled material remains on site for more than 5 days pending receipt of analytical data, erosion control silt fencing will be installed around the perimeter of the stockpile.

4.1.2 Post Excavation Soil Sampling

Upon completion of excavation of the proposed grid areas, soil samples will be collected from the bottom of each of the thirteen grid areas at the same locations (approximate) that were sampled during the 2007 soil/fill investigation. These verification samples will confirm achievement of remedial objectives for subsurface soils relative to the Restricted Industrial Use SCO for PCBs (25 ppm). A representative soil sample will be collected from the upper 3-inches of the base of the excavation and analyzed for total PCBs (Method 8082). If analytical results at any of the grid sampling location detect concentrations in excess of 25 ppm, an additional 6-inch layer of soil will be removed from the bottom of the grid in which the sample was located and the bottom will be re-sampled for PCBs. Table 4-1 presents the proposed minimum number of environmental and quality control samples to be collected and analyzed as part of the post-excavation verification sampling program of the excavated grid areas.

TABLE 4-1
1755 Dale Road BCP Parcel
IRM Post-Excavation Verification Soil Samples

Parameter	Method	Soil	Matrix Spike	Matrix Spike Duplicate	Duplicate	Total
PCBs (total)	8082	13	1	1	1	16

4.1.3 Backfill Placement

The proposed building expansion and associated access roads may require that the finished elevation of the subgrade be at or below the final excavation depth of the proposed IRM area, therefore the need for backfilling of these grids is unknown at this time. If clean backfill is required based on the final design requirements, material imported to the Site for use as backfill shall be comprised of soil or other unregulated materials as defined in NYCRR Part 375 6.7(d) which states that the soil not exceed the applicable soil cleanup objectives for the use of the Site, as set forth in Tables 375-6.8(b), the lower of the protection of groundwater or the protection of public health soil cleanup objectives, for the identified use of the Site.

Analytical data is required to demonstrate that the material complies with these requirements. The number of samples required to confirm compliance is as follows:

- Virgin soils (soils that are known to have not been developed upon or moved since their formation) should be subject to collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, and TAL metals plus cyanide.
- Non-virgin soils will be tested via collection of one composite sample per 500 cubic yards of material from each source area. If more than 1,000 cubic yards of soil are imported from a single off-Site, non-virgin soil source area and both samples of the first 1,000 cubic yards meet the criteria specified above, the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the specified criteria.

Site specific exemptions for the analytical testing requirements described above may be possible, based upon documentation of the origin and composition of the proposed imported material.

5.0 REMEDIAL INVESTIGATION/ALTERNATIVES ANALYSIS REPORT

Upon completion of the RI/IRM fieldwork, a comprehensive RI/IRM/AA Report will be completed summarizing the tasks completed as described below.

5.1 Remedial Investigation/Interim Remedial Measures Report

The RI/IRM section of the RI/IRM/AA Report will include the following information and documentation, consistent with the NYSDEC's DER-10 Technical Guidance for Site Investigation and Remediation (Ref. 3).

- Introduction and background.
- A description of the site and the overall scope of the investigation and interim remedial activities.
- A description of the field procedures, methods and remediation performed during the RI/IRM.
- A discussion of the nature and rationale for any significant variances from the scope of work described in this Work Plan.
- The data obtained during the RI and historical data considered to be of useable quality.
- The results of an assessment of the achievement of RI acceptance/performance criteria as specified in the QAPP.
- Comparative criteria that may be used to calculate cleanup levels during the alternatives analysis report (AAR) process, such as NYSDEC Soil Cleanup Objectives and other pertinent regulatory standards or criteria.
- A discussion of contaminant fate and transport. This will provide a description of the hydrologic parameters of the Site, and an evaluation of the lateral and vertical movement of groundwater.
- Conclusions regarding the extent and character of environmental impact in the media being investigated.
- The conclusions of the qualitative exposure assessment and fish and wildlife impact analysis, if applicable.
- Conclusions regarding the effectiveness of the Interim Remedial Measures conducted with respect to the comparative criteria and remedial action objectives (RAOs) established for the Site.
- Supporting RI/IRM data. These will include boring logs, monitoring well construction diagrams, laboratory analytical reports, field inspection forms, disposal documentation, etc.

In addition, Golder will require third-party data review by a qualified, independent data validation expert. Specifically, a Data Usability Summary Report (DUSR) will be prepared, with appropriate data qualifiers added to the results. The DUSR will follow NYSDEC format per the NYSDEC's September 1997 DUSR guidelines and draft DER-10 guidance. The DUSR and any necessary qualifications to the data will be appended to the RI/IRM report.

5.2 Alternative Analysis Report

The Alternative Analysis Report (AAR) will include a remedial alternatives evaluation for on-site groundwater and soil/fill on portions of the Site if determined, based on the results of the Remedial Investigation and the Interim Remedial Measures and reasonably anticipated future Site use, to exhibit elevated concentrations of constituents of concern.

The AAR will meet the requirements identified in NYSDEC Standards, Criteria, and Guidance (SCGs) (e.g., Part 375 SCO's and GA Groundwater Quality Standards).

Based on the remedial action objectives (RAOs) and cleanup goals established for the Site, volumes and areas of media potentially requiring remediation will be calculated/estimated. General Response Actions will then be delineated to address each of the Site problem areas. These response actions will form the foundation for the development and screening of applicable remedial alternatives against the following criteria as described in 6NYCRR 375-1.8(f):

- Protection of Human Health and the Environment
- Compliance with Standards, Criteria, & Guidance (SCGs)
- Short-term Effectiveness & Impacts
- Long-term Effectiveness & Permanence
- Reduction of Toxicity, Mobility, or Volume
- Implementability
- Cost
- Land Use

In addition, the criteria of Community Acceptance will be considered based on public comments on the RI/IRM/AAR Report and proposed remedial action. Following the screening of alternatives, a comparative analysis will be performed against the above criteria. The comparative analysis will allow for better understanding of the relative advantages and disadvantages of each of the alternatives, and will facilitate recommendation of further remedial action, if required.

6.0 INVESTIGATION SUPPORT DOCUMENTS

6.1 Quality Assurance Project Plan (QAPP)

A Quality Assurance Project Plan (QAPP) will be prepared as a stand-alone document (under separate cover) for the RI activities described herein. The QAPP dictates implementation of the investigation tasks delineated in this Work Plan. A Sampling and Analysis Plan (SAP) identifying methods for sample collection, decontamination, handling, and shipping, is provided as Section 4.0 of the QAPP. The RI project management methods, organizational structure, and schedule are also included in the QAPP.

The QAPP will assure the accuracy and precision of data collection during the site characterization and data interpretation periods. The QAPP identifies procedures for sample collection to mitigate the potential for cross-contamination, as well as analytical requirements necessary to assure compliance with USEPA SW-846 methodology. The QAPP has been prepared in accordance with USEPA's Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QA/R-5); the EPA Region II

CERCLA Quality Assurance Manual, and NYSDEC's December 2002 draft DER-10 Technical Guidance for Site Investigation and Remediation.

6.2 Health and Safety Plan (HASP)

A Site Health and Safety Plan (HASP) has been prepared in accordance with 40 CFR 300.150 of the NCP and 29 CFR 1910.120 for the proposed BCP RI and IRM activities. A copy of the HASP is included as Appendix C of this Work Plan. The HASP will be enforced by Golder and any Golder subcontractors engaged in RI/IRM field activities in accordance with the requirements of 29 CFR 1910.120. The HASP covers on-site investigation and interim remedial activities. Golder's HASP is provided for informational purposes in Appendix C. Subcontractors will be required to develop and implement a HASP as or more stringent than Golder's HASP. Health and safety activities will be monitored throughout the Remedial Investigation. A member of the field team will be designated to serve as the on-site Health and Safety Officer throughout the field program. This person will report directly to the Project Manager and the Corporate Health and Safety Coordinator. The HASP will be subject to revision as necessary, based on new information that is discovered during the field investigation.

The HASP also includes a contingency plan that addresses potential site-specific emergencies, and a Community Air Monitoring Plan (CAMP) that describes required particulate and vapor monitoring to protect the neighboring community during intrusive site investigation activities. The CAMP is consistent with the requirements for community air monitoring at remediation sites as established by the New York State Department of Health (NYSDOH) and NYSDEC. Accordingly, it follows procedures and practices outlined under NYSDOH's Generic Community Air Monitoring Plan (dated December 2002) and NYSDEC Technical Assistance and Guidance Memorandum (TAGM) 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

6.3 Community Participation Plan (CPP)

In accordance with NYSDEC's Brownfield Cleanup Program guidance, a Citizen Participation Plan (CPP) is required for the 1755 Dale Road investigative and interim remedial measures activities. The CPP, included as Appendix D, meets the requirements of Attachment 2 of the NYSDEC Technical Administrative Guidance Memorandum (TAGM) DER-97-4058 and NYSDEC's Draft DER-10 guidance. Golder will coordinate and assist Niagara Transformer Corp with community relations throughout the course of the project.

7.0 PROJECT SCHEDULE AND SEQUENCE OF THE WORK

Figure 7-1 presents the tentative schedule for planned remedial investigation, interim remedial measures and assessment of remedial alternatives. As noted, the start of field activities is dependent on NYSDEC approval of the RI/IRM Work Plan.

8.0 REFERENCES

1. 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.

2. 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.

3. New York State Department of Environmental Conservation, *Draft DER-10; Technical Guidance for Site Investigation and Remediation*, December 2002.

TABLES

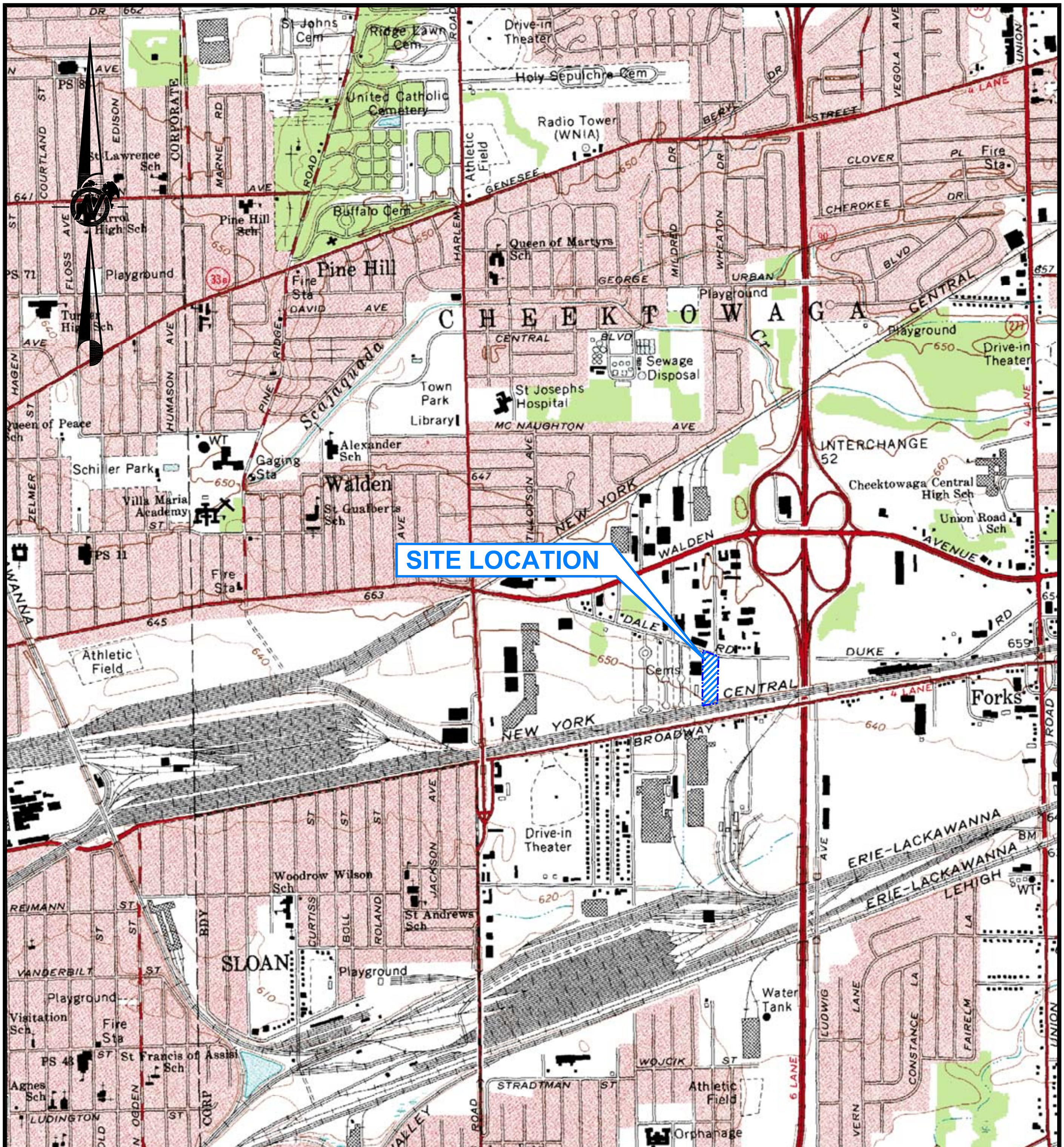
TABLE 3-1

Analytical Program Summary
Remedial Investigation
Niagara Transformer - 1755 Dale Road BCP Site

Sample Media	Number of Samples				Analyses
	Field Samples	Duplicates	MS/MSD Samples	Trip Blanks	
Surface Soil Samples	4	1	1/1	0	Total PCBs
Subsurface Soil/Fill	10	1	1/1	1	TCL VOCs TCL SVOCs Total PCBs TAL Metals and cyanide TCL Pesticides
IRM Confirmation Samples (Estimated) (one per excavated grid area)	13	1	1/1	0	Total PCBs
Groundwater (5 temporary monitoring wells)	5	1	1/1	1	TCL VOCs TCL SVOCs TCL Pesticides, Total PCBs TAL Total Metals and cyanide

Notes:
MS = Matrix Spike
MSD = Matrix Spike Duplicate
SVOCs = Semivolatile Organic Compounds
TAL = Target Analyte List
TCL = Target Compound List
VOCs = Volatile Organic Compounds

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

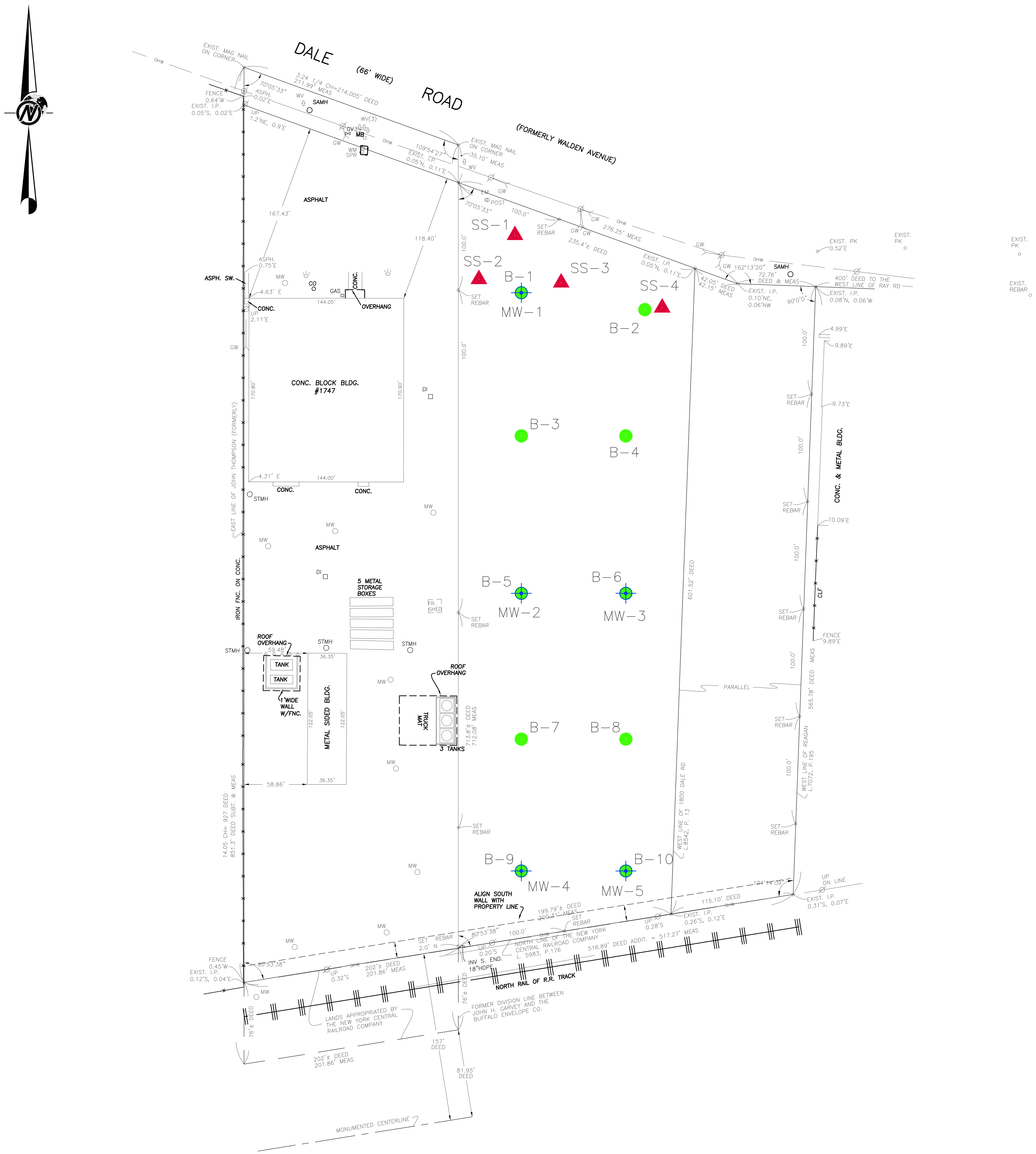
TITLE

SITE VICINITY MAP
RI/IRM WORK PLAN
NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NEW YORK

NIAGARA TRANSFORMER CORP.

FIGURE 1-1

Drawing file: 0938914402A001 RI IRM Site Layout.dwg Aug 12, 2009 - 3:53pm



LEGEND

ASPH		ASPHALT
BLDG		BUILDING
CLF	—x—	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	Ø	UTILITY POLE
WV		WATER VALVE
	●	BORING SAMPLE
	▲	SURFACE SAMPLE
	⊕	MONITORING WELL

REFERENCE

1.) TOPOGRAPHIC BASE MAP TAKE FROM DRAWING ENTITLED "SURVEY – PART OF LOT 24, TOWNSHIP 11, RANGE 7" DRAWING FILENAME 2007101.dwg, DATED 11/15/2007 AND PROVIDED BY DEBORAH A. NAYBOR PLS, P.C. LAND SURVEYING – LAND PLANING.

SCALE 50 0 50 100 FEET

Golder Associates Philadelphia USA

PROJECT

RI/IRM WORK PLAN
NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NEW YORK

TITLE

PROPOSED RI SAMPLE LOCATIONS
1755 DALE ROAD BCP SITE

PROJECT No.	093-8914402	
FILE No.	0938914402A006	
REV. 0	SCALE	AS SHOWN
DESIGN	AL	07/22/09
CADD	GLS	07/22/09
CHECK		
REVIEW		

FIGURE 3-1

LEGEND

⊕62 SOIL BORING/TEST PIT

⊕53 SURFACE SAMPLE

LEGEND		
ASPH		ASPHALT
BLDG		BUILDING
CLF	—x—	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	Ø	UTILITY POLE
WV		WATER VALVE
	———	PROPERTY BOUNDARY

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.

3.) SURFACE SAMPLES & SOIL BORING SAMPLES COLLECTED IN NOV./DEC. 2007

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.

SCALE 40 0 40 80 FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

RI/IRM WORK PLAN
NIAGARA TRANSFORMER CORP.
CHEEKTOWAGA, NEW YORK

TITLE

PROPOSED IRM EXCAVATION PLAN

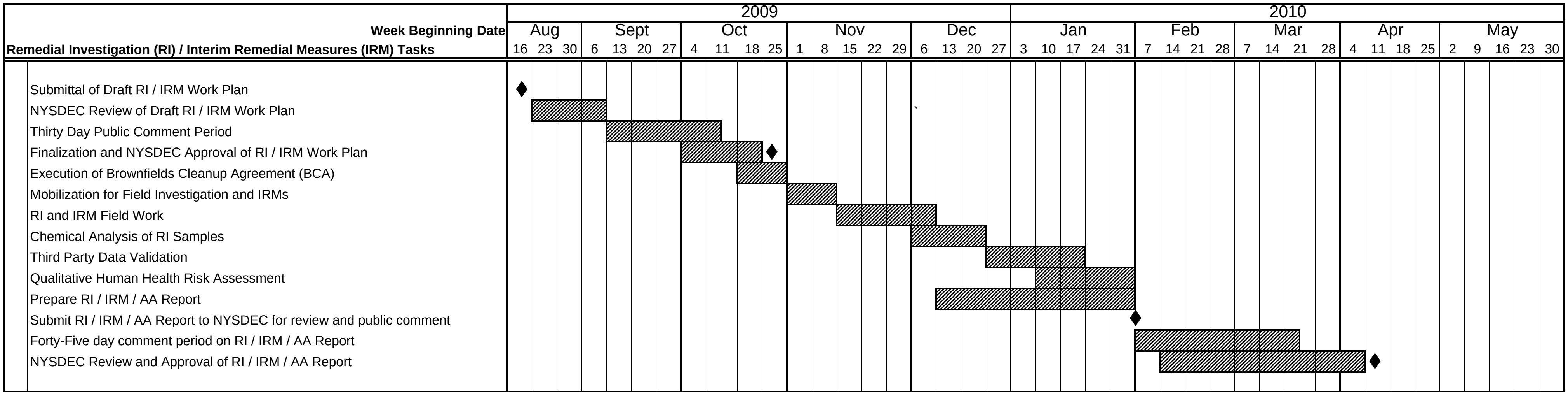
Golder Associates
Mt. Laurel, New Jersey

NJ Authorization #24GA28029100

PROJECT No.	093-8914402		FILE No.	0938914402A002
DESIGN	AL	08/12/09	SCALE AS SHOWN	REV. 0
CADD	AM	08/13/09		
CHECK			FIGURE 4-1	
REVIEW				

Drawing file: Figure 4-1 0938914402A002 rev2.dwg Aug 13, 2009 - 9:18am

FIGURE 7-1
SCHEDULE OF PLANNED REMEDIAL INVESTIGATION / INTERIM REMEDIAL MEASURES ACTIVITIES
RI / IRM WORK PLAN
1755 DALE ROAD BCP SITE
NIAGARA TRANSFORMER CORPORATION



APPENDIX A

EXCERPTS OF PREVIOUS INVESTIGATION REPORTS & PHASE I ESA REPORT (GOLDER ASSOCIATES, AUGUST 2009)

NIAGARA TRANSFORMER CORPORATION SITE

1755 DALE ROAD PARCEL

LIMITED SITE INVESTIGATION

DECEMBER 2007

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

SOIL SAMPLING RESULTS

Dale Road Expansion Site
Niagara Transformer Corporation

Sample Location	Sample Description[1]	Sample Result (mg/Kg)[2]
1	Surface Sample	ND
2	Surface Sample	2.96
3	Surface Sample	0.819
4	Surface Sample	1.12
5	Surface Sample	0.423
6	Surface Sample	ND
7	Surface Sample	0.610
8	Surface Sample	0.678
9	Surface Sample	0.705
10	Surface Sample	0.515
11	Surface Sample	0.628
12	Surface Sample	2.31
13	Surface Sample	0.594
14	Surface Sample	0.509
15	Surface Sample	0.670
16	Surface Sample	2.08
17	Surface Sample	2.23
18	Surface Sample	7.61
19	Surface Sample	7.62
20	Surface Sample	0.809
21	Surface Sample	ND
22	Surface Sample	ND
23	Soil Boring	ND
24	Soil Boring	ND
25	Surface Sample	1.65
26	Soil Boring	1.65
27	Soil Boring	92.1
28	Surface Sample	2.26
29	Surface Sample	33.0
30	Surface Sample	6.99
31	Surface Sample	2.13
32	Surface Sample	28.4
33	Surface Sample	1.18
34	Test Pit (0-6.5')	ND
35	Surface Sample	0.683
36	Surface Sample	0.721
37	Surface Sample	1.27
38	Test Pit (0-6.5')	ND
39	Surface Sample	0.735
40	Surface Sample	138

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

SOIL SAMPLING RESULTS

Dale Road Expansion Site
Niagara Transformer Corporation

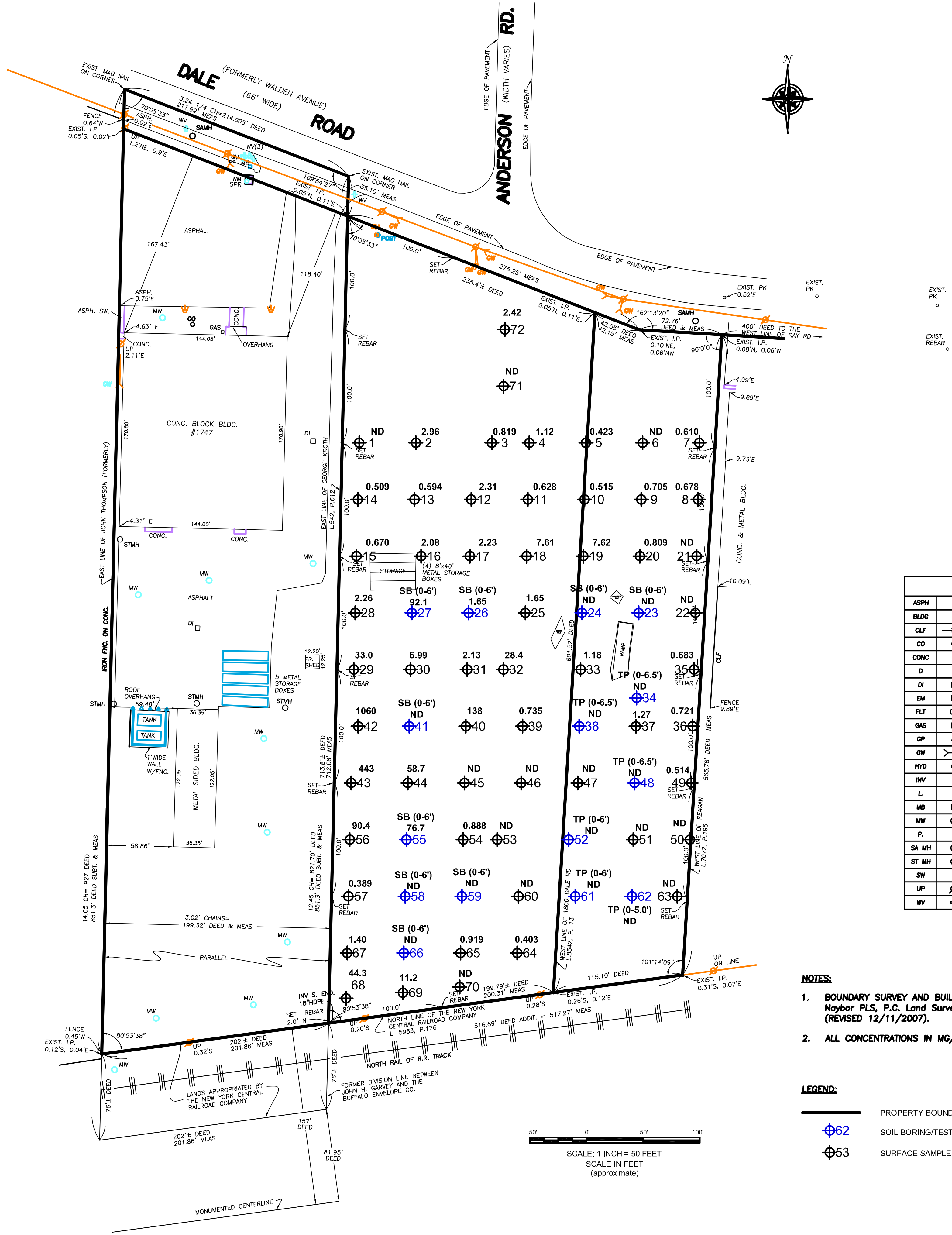
Sample Location	Sample Description[1]	Sample Result (mg/Kg)[2]
41	Soil Boring	ND
42	Surface Sample	1,060
43	Surface Sample	443
44	Surface Sample	58.7
45	Surface Sample	ND
46	Surface Sample	ND
47	Surface Sample	ND
48	Test Pit (0-6.5')	ND
49	Surface Sample	0.514
50	Surface Sample	ND
51	Surface Sample	ND
52	Test Pit (0-6')	ND
53	Surface Sample	ND
54	Surface Sample	0.888
55	Soil Boring	76.7
56	Surface Sample	90.4
57	Surface Sample	0.389
58	Soil Boring	ND
59	Soil Boring	ND
60	Surface Sample	ND
61	Test Pit (0-6')	ND
62	Test Pit (0-5')	ND
63	Surface Sample	ND
64	Surface Sample	0.403
65	Surface Sample	0.919
66	Soil Boring	ND
67	Surface Sample	1.40
68	Surface Sample	44.3
69	Surface Sample	11.2
70	Surface Sample	ND
71	Surface Sample	ND
72	Surface Sample	2.42

Notes:

1. Samples consisted of: Surface Sample (0-6"), or Test Pit
   a.) Surface sample (composite of upper 6 inches of soil)
   b.) Soil Boring (0-6 feet composite)
   c.) Test pit (composite at depths noted). Test pits were performed in lieu of geoprobe at locations were acces was restricted
2. Aroclor 1260 (No other aroclors were detected).

Definitions:

ND = Not detected above the laboratory method detection limit.



LEGEND		
ASPH		ASPHALT
BLDG		BUILDING
CLF	—x—	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	Ø	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
BUFFALO, NEW YORK 14210
(716) 856-0599

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

NIAGARA TRANSFORMER CORPORATION SITE

PHASE I ESA ON VACANT PARCEL

1755 DALE ROAD, CHEEKTOWAGA, NEW YORK

AUGUST 25, 2009

APPENDIX B

QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN

1.0 INTRODUCTION

This Quality Assurance/Quality Control Plan is designed to provide an overview of QA/QC procedures. It will give specific methods and QA/QC procedures for chemical testing of environmental samples obtained from the site. In addition, it will ensure the quality of the data produced.

The organizational structure with the names of key project personnel for this project is presented in Section 1.4 of the RI/IRM Work Plan. The Project Manager will be responsible for verifying that QA procedures are followed in the field. This will provide for the valid collection of representative samples. The Project Manger will be in direct contact with the analytical laboratory to monitor laboratory activities to help ensure that holding times and other QA/QC requirements are met. The number of proposed RI soil/fill and groundwater samples and corresponding analytical parameters/methods are provided in Table 1.

In addition to overall project coordination, the Project Manager will be responsible for overseeing both the analytical and field QA/QC activities. The ultimate responsibility for maintaining quality throughout the project rests with the Project Manager.

TABLE 1
ANALYTICAL SUMMARY TABLE – SOIL/GROUNDWATER

PARAMETER	EPA METHOD	SOIL SAMPLES (1)	WATER SAMPLES (2)
TCL Volatiles	8260	14	8
TCL Semi-Volatiles	8270	14	7
TCL Pesticides	8081	14	7
Total PCBs	8082	34	7
TAL Metals	6010	14	7

(1) – Includes 2 MS/MSD and 2 duplicate samples
(2) – Includes 1 MS/MSD, 1 Duplicate sample and 1 Trip Blank (Volatiles Only)

The analytical laboratory proposed for use for the analysis of samples will be a certified NYSDOH ELAP laboratory for the appropriate categories. The QA Manager of the laboratory will be responsible for performing project-specific audits and for overseeing the quality control data generated.

2.0 DATA QUALITY OBJECTIVES

2.1 Background

Data quality objectives (DQOs) are qualitative and quantitative statements, which specify the quality of data required to support the investigation of the Site. DQOs focus on the identification of the end use of the data to be collected. The project DQOs will be achieved utilizing the definitive data category, as outlined in *Guidance for the Data Quality Objectives Process*, EPA QA/G-4 (September 1994). All sample analyses will provide definitive data, which are generated using rigorous analytical methods, such as the reference methods approved by the United States Environmental Protection Agency (USEPA). The purpose of this investigation is to determine the nature and extent of contamination at the site.

Within the context of the purpose stated above, the project DQOs for data collected during this investigation are:

- To assess the nature/extent of contamination in surface and subsurface soil/fill and groundwater.
- To maintain the highest possible scientific/professional standards for each procedure.
- To develop enough information to assess if the levels of contaminates identified in the media sampled are hazardous or non-hazardous.

2.2 QA Objectives for Chemical Data Measurement

Sample analytical methodology for the media sampled and data deliverables will meet the requirements in the most recent NYSDEC Analytical Services Protocol (ASP). Laboratories will be instructed that completed **Sample Preparation and Analysis Summary forms** are to be submitted with the analytical data packages. The laboratory also will be instructed that matrix interferences must be cleaned up, to the extent practicable. Data usability summary reports (DUSRs) will be generated. In order to achieve the definitive data category described above, the data quality indicators of precision, accuracy, representativeness, comparability, and completeness will be measured during offsite chemical analysis.

2.2.1 Precision

Precision examines the distribution of the reported values about their mean. The distribution of reported values refers to how different the individual reported values are from the average reported value. Precision may be affected by the natural variation of the matrix or contamination within that matrix, as well as by errors made in field and/or laboratory handling procedures. Precision is evaluated using analyses of a laboratory matrix spike/matrix spike duplicate (for organics) and matrix duplicates (for inorganics), which not only exhibit sampling and analytical precision, but indicate analytical precision through the reproducibility of the analytical results. Relative Percent Difference (RPD) is used to evaluate precision. RPD criteria must meet the method requirements identified in Table B-1.

2.2.2 Accuracy

Accuracy measures the analytical bias in a measurement system. Sources of error are the sampling process, field contamination, preservation, handling, sample matrix, sample preparation, and analysis techniques. These data help to assess the potential concentration contribution from various outside sources. The laboratory objective for accuracy is to equal or exceeds the accuracy demonstrated for the applied analytical methods on samples of the same matrix. The percent recovery criterion is used to estimate accuracy based on recovery in the matrix spike/matrix spike duplicate and matrix spike blank samples. The spike and spike duplicate, which will give an indication of matrix effects that may be affecting target compounds is also a good gauge of method efficiency.

2.2.3 Representativeness

Representativeness expresses the degree to which the sample data accurately and precisely represent the characteristics of a population of samples, parameter variations at a sampling point, or environmental conditions. Representativeness is a qualitative parameter, which is most concerned with the proper design of the sampling program or sub-sampling of a given sample. Objectives for representativeness are defined for sampling and analysis tasks and are a function of the investigative objectives. The sampling procedures, have been selected with the goal of obtaining representative samples for the media of concern.

2.2.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. A DQO for this program is to produce data with the greatest possible degree of comparability. This goal is achieved through using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. Complete field documentation will support the assessment of comparability. Comparability is limited by the other parameters (e.g., precision, accuracy, representative-ness, completeness, comparability), because only when precision and accuracy are known can data sets be compared with confidence. In order for data sets may be comparable, it is imperative that contract-required methods and procedures be explicitly followed.

2.2.5 Completeness

Completeness is defined as a measure of the amount of valid data obtainable from a measurement system compared to the amount that was expected to be obtained under normal conditions. It is important that appropriate QA procedures be maintained to verify that valid data are obtained in order to meet project needs. For the data generated, a goal of 90% is required for completeness (or usability) of the analytical data. If this goal is not met, then NYSDEC and GOLDER project personnel will determine whether the deviations might cause the data to be rejected.

3.0 SAMPLING LOCATIONS, CUSTODY, HOLDING TIMES, & ANALYSIS

Sampling locations and procedures are discussed in Section 3.1.2 of the RI/IRM Work Plan. Procedures for chain of custody, holding times, and laboratory analyses shall be followed as per SW-846 and as per the laboratory's Quality Assurance Plan. All holding times begin with validated time of sample receipt

(VTSR) at the laboratory. The laboratory must meet the method required detection limits which are referenced within the methods.

4.0 CALIBRATION PROCEDURES AND FREQUENCY

In order to obtain a high level of precision and accuracy during sample processing procedures, laboratory instruments must be calibrated properly. Several analytical support areas must be considered so the integrity of standards and reagents is upheld prior to instrument calibration. The following sections describe the analytical support areas and laboratory instrument calibration procedures.

4.1 Analytical Support Areas

Prior to generating quality data, several analytical support areas must be considered; these are detailed in the following paragraphs.

Standard/Reagent Preparation - Primary reference standards and secondary standard solutions shall be obtained from National Institute of Standards and Technology (NIST), or other reliable commercial sources to verify the highest purity possible. The preparation and maintenance of standards and reagents will be accomplished according to the methods referenced. All standards and standard solutions are to be formally documented (i.e., in a logbook) and should identify the supplier, lot number, purity/concentration, receipt/preparation date, preparers name, method of preparation, expiration date, and any other pertinent information. All standard solutions shall be validated prior to use. Care shall be exercised in the proper storage and handling of standard solutions (e.g., separating volatile standards from nonvolatile standards). The laboratory shall continually monitor the quality of the standards and reagents through well documented procedures.

Balances - The analytical balances shall be calibrated and maintained in accordance with manufacturer specifications. Calibration is conducted with two Class AS" weights that bracket the expected balance use range. The laboratory shall check the accuracy of the balances daily and they must be properly documented in permanently bound logbooks.

Refrigerators/Freezers - The temperature of the refrigerators and freezers within the laboratory shall be monitored and recorded daily. This will verify that the quality of the standards and reagents is not compromised and the integrity of the analytical samples is upheld. Appropriate acceptance ranges (2 to 6°C for refrigerators) shall be clearly posted on each unit in service.

Water Supply System - The laboratory must maintain a sufficient water supply for all project needs. The grade of the water must be of the highest quality (analyte-free) in order to eliminate false-positives from the analytical results. Ultraviolet cartridges or carbon absorption treatments are recommended for organic analyses and ion-exchange treatment is recommended for inorganic tests. Appropriate documentation of the quality of the water supply system(s) will be performed on a regular basis.

4.2 Laboratory Instruments

Calibration of instruments is required to verify that the analytical system is operating properly and at the sensitivity necessary to meet established quantitation limits. Each instrument for organic and inorganic analyses shall be calibrated with standards appropriate to the type of instrument and linear range established within the analytical method(s). Calibration of laboratory instruments will be performed according to specified methods.

In addition to the requirements stated within the analytical methods, the contract laboratory will be required to analyze an additional low level standard at or near the detection limits. In general, standards will be used that bracket the expected concentration of the samples. This will require the use of different concentration levels, which are used to demonstrate the instrument's linear range of calibration.

Calibration of an instrument must be performed prior to the analysis of any samples and then at periodic intervals (continuing calibration) during the sample analysis to verify that the instrument is still calibrated. If the contract laboratory cannot meet the method required calibration requirements, corrective action shall be taken as discussed in Section 7.0. All corrective action procedures taken by the contract laboratory are to be documented, summarized within the case narrative, and submitted with the analytical results.

5.0 INTERNAL QUALITY CONTROL CHECKS

Internal QC checks are used to determine if analytical operations at the laboratory are in control, as well as determining the effect sample matrix may have on data being generated. Two types of internal checks are performed and are described as batch QC and matrix-specific QC procedures. The type and frequency of specific QC samples performed by the contract laboratory will be according to the specified analytical method and project specific requirements. Acceptable criteria and/or target ranges for these QC samples are presented within the referenced analytical methods.

QC results which vary from acceptable ranges shall result in the implementation of appropriate corrective measures, potential application of qualifiers, and/or an assessment of the impact these corrective measures have on the established data quality objectives. Quality control samples including any project-specific QC will be analyzed are discussed below.

5.1 Batch QC

Method Blanks - A method blank is defined as laboratory-distilled or deionized water that is carried through the entire analytical procedure. The method blank is used to determine the level of laboratory background contamination. Method blanks are analyzed at a frequency of one per analytical batch.

Matrix Spike Blank Samples - A matrix spike blank (MSB) sample is an aliquot of water spiked (fortified) with all the elements being analyzed for calculation of precision and accuracy to verify that the analysis that is being performed is in control. A MSB will be performed for each matrix and organic parameter only.

5.2 Matrix-Specific QC

Matrix Spike Samples - An aliquot of a matrix is spiked with known concentrations of specific compounds as stipulated by the methodology. The matrix spike (MS) and matrix spike duplicate (MSD) are subjected to the entire analytical procedure in order to assess both accuracy and precision of the method for the matrix by measuring the percent recovery and relative percent difference of the two spiked samples. The samples are used to assess matrix interference effects on the method, as well as to evaluate instrument performance. MS/MSDs are analyzed at a frequency of one each per 20 samples per matrix.

Matrix Duplicates - The matrix duplicate (MD) is two representative aliquots of the same sample which are prepared and analyzed identically. Collection of duplicate samples provides for the evaluation of precision both in the field and at the laboratory by comparing the analytical results of two samples taken from the same location. Obtaining duplicate samples from a soil matrix requires homogenization (except for volatile organic compounds) of the sample aliquot prior to filling sample containers, in order to best achieve representative samples. Every effort will be made to obtain replicate samples; however, due to interferences, lack of homogeneity, and the nature of the soil samples, the analytical results are not always reproducible.

Rinsate (Equipment) Blanks - A rinsate blank is a sample of laboratory demonstrated analyte free water passed through and over the cleaned sampling equipment. A rinsate blank is used to indicate potential contamination from ambient air and from sample instruments used to collect and transfer samples. This water must originate from one common source within the laboratory and must be the same water used by the laboratory performing the analysis. The rinsate blank should be collected, transported, and analyzed in the same manner as the samples acquired that day. Rinsate blanks for nonaqueous matrices should be performed at a rate of 10 percent of the total number of samples collected throughout the sampling event. Rinse blanks will not be performed on samples (i.e., groundwater) where dedicated disposable equipment is used.

Trip Blanks - Trip blanks are not required for nonaqueous matrices. Trip blanks are required for aqueous sampling events. They consist of a set of sample bottles filled at the laboratory with laboratory demonstrated analyte free water. These samples then accompany the bottles that are prepared at the lab into the field and back to the laboratory, along with the collected samples for analysis. These bottles are never opened in the field. Trip blanks must return to the lab with the same set of bottles they accompanied to the field. Trip blanks will be analyzed for volatile organic parameters. Trip blanks must be included at a rate of one per volatile sample shipment.

6.0 CALCULATION OF DATA QUALITY INDICATORS

6.1 Precision

Precision is evaluated using analyses of a field duplicate and/or a laboratory MS/MSD which not only exhibit sampling and analytical precision, but indicate analytical precision through the reproducibility of the analytical results. RPD is used to evaluate precision by the following formula:

$$RPD = \frac{(X_1 - X_2)}{[(X_1 + X_2)/2]} \times 100\%$$

where:

X_1 = Measured value of sample or matrix spike
X_2 = Measured value of duplicate or matrix spike duplicate

Precision will be determined through the use of MS/MSD (for organics) and matrix duplicates (for inorganics) analyses.

6.2 Accuracy

Accuracy is defined as the degree of difference between the measured or calculated value and the true value. The closer the numerical value of the measurement comes to the true value or actual concentration, the more accurate the measurement is. Analytical accuracy is expressed as the percent recovery of a compound or element that has been added to the environmental sample at known concentrations before analysis. Analytical accuracy may be assessed through the use of known and unknown QC samples and spiked samples. It is presented as percent recovery. Accuracy will be determined from matrix spike, matrix spike duplicate, and matrix spike blank samples, as well as from surrogate compounds added to organic fractions (i.e., volatiles, semivolatiles, PCB), and is calculated as follows:

$$Accuracy\ (\%R) = \frac{(X_s - X_u)}{K} \times 100\%$$

where:

X_s - Measured value of the spike sample
X_u - Measured value of the unspiked sample
K - Known amount of spike in the sample

6.3 Completeness

Completeness is calculated on a per matrix basis for the project and is calculated as follows:

$$Completeness\ (\%C) = \frac{(X_v - X_n)}{N} \times 100\%$$

where:

X_v - Number of valid measurements
X_n - Number of invalid measurements
N - Number of valid measurements expected to be obtained

7.0 CORRECTIVE ACTIONS

Laboratory corrective actions shall be implemented to resolve problems and restore proper functioning to the analytical system when errors, deficiencies, or out-of-control situations exist at the laboratory. Full documentation of the corrective action procedure needed to resolve the problem shall be filed in the project records, and the information summarized in the case narrative. A discussion of the corrective actions to be taken is presented in the following sections.

7.1 Incoming Samples

Problems noted during sample receipt shall be documented by the laboratory. The Golder Associates (Golder) Project Manager shall be contacted immediately for problem resolution. All corrective actions shall be documented thoroughly.

7.2 Sample Holding Times

If any sample extraction and/or analyses exceed method holding time requirements, the Golder Project Manager shall be notified immediately for problem resolution. All corrective actions shall be documented thoroughly.

7.3 Instrument Calibration

Sample analysis shall not be allowed until all initial calibrations meet the appropriate requirements. All laboratory instrumentation must be calibrated in accordance with method requirements. If any initial/continuing calibration standards exceed method QC limits, recalibration must be performed and, if necessary, reanalysis of all samples affected back to the previous acceptable calibration check.

7.4 Reporting Limits

The laboratory must meet the method required detection limits listed in NYSDEC ASP , 10/95 criteria. If difficulties arise in achieving these limits due to a particular sample matrix, the laboratory must notify Golder project personnel for problem resolution. In order to achieve those detection limits, the laboratory must utilize all appropriate cleanup procedures in an attempt to retain the project required detection limits. When any sample requires a secondary dilution due to high levels of target analytes, the laboratory must document all initial analyses and secondary dilution results. Secondary dilution will be permitted only to bring target analytes within the linear range of calibration. If samples are analyzed at a secondary dilution with no target analytes detected, the Golder Project Manager will be immediately notified so that appropriate corrective actions can be initiated.

7.5 Method QC

All QC method-specified QC samples, shall meet the method requirements referenced in the analytical methods. Failure of method-required QC will result in the review and possible qualification of all affected data. If the laboratory cannot find any errors, the affected sample(s) shall be reanalyzed and/or re-extracted/redigested, then reanalyzed within method-required holding times to verify the presence or absence of matrix effects. If matrix effect is confirmed, the corresponding data shall be flagged accordingly using the flagging symbols and criteria. If matrix effect is not confirmed, then the entire batch of samples may have to be reanalyzed and/or re-extracted/redigested, then reanalyzed at no cost. Golder shall be notified as soon as possible to discuss possible corrective actions should unusually difficult sample matrices be encountered.

7.6 Calculation Errors

All analytical results must be reviewed systematically for accuracy prior to submittal. If upon data review calculation and/or reporting errors exist, the laboratory will be required to reissue the analytical data report with the corrective actions appropriately documented in the case narrative.

8.0 DATA REDUCTION, VALIDATION, AND USABILITY

8.1 Data Reduction

Laboratory analytical data are first generated in raw form at the instrument. These data may be either in a graphic or printed tabular format. Specific data generation procedures and calculations are found in each of the referenced methods. Analytical results must be reported consistently. Identification of all analytes must be accomplished with an authentic standard of the analyte traceable to NIST or USEPA sources. Individuals experienced with a particular analysis and knowledgeable of requirements will perform data reduction.

8.2 Data Validation

Data validation is a systematic procedure of reviewing a body of data against a set of established criteria to provide a specified level of assurance of validity prior to its intended use. All analytical samples collected will receive a limited data review. The data validation will be limited to a review of holding times, completeness of all required deliverables, review of QC results (surrogates, spikes, duplicates) and a 10% check of all samples analyzed to ensure they were analyzed properly. The methods as well as the general guidelines presented in the following documents will be used during the data review USEPA *Contract Laboratory Program (CLP) Organic Data Review, SOP Nos. HW-6, Revision #11 and USEPA*

Evaluation of Metals Data for the Contract Laboratory Program based on 3/90, SOW, Revision XI. These documents will be used with the following exceptions:

- Technical holding times will be in accordance with NYSDEC ASP, 10/95 edition.
- Organic calibration and QC criteria will be in accordance with NYSDEC ASP, 10/95 edition. Data will be qualified if it does not meet NYSDEC ASP, 10/95 criteria.

Where possible, discrepancies will be resolved by the project manager (i.e., no letters will be written to laboratories). A complete analytical data validation is not anticipated. However, if the initial limited data audit reveals significant deviations and problems with the analytical data, project personnel may recommend a complete variation of the data.

9.0 REFERENCES

Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Quality Assurance Manual, Final Copy , Revision I, October 1989.

National Enforcement Investigations Center of USEPA Office of Enforcement. *NEIC Policies and Procedures*. Washington: USEPA.

New York State Department of Environmental Conservation (NYSDEC). 1995. *Analytical Services Protocol*, (ASP) 10/95 Edition. Albany: NYSDEC.

APPENDIX C

HEALTH AND SAFETY PLAN

Project Name Niagara Transformer Corporation Vacant Parcel Investigation/Remediation

Task Field Soil Drilling/Sampling and Excavation

Requested by Niagara Transformer Corporation

Proposed Start-Up Date October 2009 Project/Task No. 093-89144-02

Prepared by/Reviewed by Health and Safety Officer

Printed Name Karin Witton, Ph.D.

Signature ______________________ Date ______________ 2009

Reviewed by Project Health and Safety Coordinator

Printed Name Patrick T. Martin, P.E.

Signature ______________________ Date ______________ 2009

Approved by Project Manager

Printed Name Patrick T. Martin, P.E.

Signature ______________________ Date ______________ 2009

Title: Senior Consultant

Note to Project Managers:

A signed and completed copy of the Health and Safety Plan and a signed and completed copy of the safety briefing must be included in the project file.

2. Project Description: Investigation and removal of contaminated soils for the vacant parcel at 1755 Dale Road, Cheektowaga, NY. Niagara Transformer Corporation (NTC) is proposing an expansion of their manufacturing operations facility on to the vacant parcel. Historical PCB contamination is known to be in the surface soils of the vacant parcel. The project scope includes 4 surface soil samples, 10 soil boring samples (Geoprobe®) and the installation and sampling of 5 temporary monitoring wells at the locations identified on Figure 3-1 of this plan.

Level D PPE will be required for all project activities. Decisions on PPE upgrades will be made in the field based on site-specific conditions. ALL Geoprobe® liners must be cut with the Geoprobe® designated liner cutter. No fixed or non-self retracting razors are allowed on the Site.

3. Location (Site):

Niagara Transformer Corporation
1755 Dale Road
Cheektowaga, New York 14225

4. Facility/Work Site Description:

The Site is a vacant parcel of land adjacent to NTC's electrical transformer manufacturing facility. Portions of the Site are impacted with PCBs. The Site is located at 1755 Dale road at the intersection of Dale Road and Anderson Road. The northern half of the Site is mostly open grasslands and the southern half is mostly densely overgrown woods. The soil and groundwater samples will be collected from throughout the site shown on Figure 3-1. The excavation will generally occur where the new building footprint will be, which is shown on Figure 4-1.

Golder will be responsible for our own personal protective equipment (PPE) and safety equipment as necessary. Golder will follow the NTC Safety Procedures and Requirements for outside Contractors and Site Conditions & General Safety Instructions for additional Health & Safety details.

5. Proposed Personnel and Tasks:

Project Manager: Patrick, T. Martin, P.E.

Field Team Leader: Patrick, T. Martin, P.E.

Proposed Field Team	Job Function/Tasks
Patrick, T. Martin, P.E.	Project Manager
Aaron Lange	Field Observations / Sampling
Russell Marchese	Drilling Oversight / Sampling

6. Confined Space Entry

A confined space is defined as any space not currently used or intended for human occupancy, having a limited means of egress, which is subject to the accumulation of toxic contaminants, a flammable or oxygen deficient atmosphere, or other hazards, such as engulfment, or electrical or mechanical hazards should equipment be inadvertently activated while an employee is in the space. Confined spaces include but are not limited to storage tanks, process vessels, bins, boilers, ventilation or exhaust ducts, air pollution control devices, smoke stacks, underground utility vaults, sewers, septic tanks, and open top spaces more than four feet in depth such as test pits, waste disposal trenches, sumps and vats.

Will this task require entry into any confined or partially confined space?

__ YES - Describe below
_X_ No

7. Cutting and Welding

Will this task involve use of a cutting torch or welding?

___ YES - Describe below
_x_ No

8. Other Potential Hazards

_X_ Chemical
___ Radiological
___ Fire/Explosion
_X_ Cold/Heat Stress
___ Electrical
_X_ Machinery/Mechanical Equipment
_X_ Trips, Slips, Falls
___ Trenching/Shoring
_X_ Heavy Equipment/Vehicular Traffic
_X_ Overhead Hazards
_X_ Unstable/Uneven Terrain
___ Other - Describe below

Description/Other

9. Chemical/Radiological Hazard Evaluation

Waste Media

_X_ Airborne Contamination
_X_ Surface Contamination
_X_ Contaminated Soil
_X_ Contaminated Groundwater
___ Contaminated Surface Water

Hazardous Characteristics

___ Ignitable
___ Corrosive
___ Reactive
___ Explosive
_X_ Toxic (non-radiological)

___ Solid Waste ___ Radioactive
___ Liquid Waste
___ Sludge

Substance

This task will involve the reasonable possibility of exposure to the substances listed below at concentrations or in quantities which may be hazardous to the health of the site personnel.

- PCBs

10. Community Air/Site Monitoring Procedures

The proposed remedial investigation (RI) work will be completed outdoors on the Site. Where intrusive drilling or excavation operations are planned, community air monitoring will be performed to protect the downwind community. A Golder representative will continually monitor the breathing air in the vicinity of the immediate work area for odors associated with PCB contamination. The air in the work zone also will be visually monitored for dust generation. If sustained organic odors are noted, or visible dust generation is observed, the intrusive work will be temporarily halted and a more rigorous monitoring of VOCs and dust using recordable meters will be implemented in accordance with the NYSDOH Generic Community Air Monitoring Plan (CAMP). A copy of the CAMP is provided as with the Health and Safety Plan in **Appendix B**.

11. Action Levels

Action levels for implementation of more stringent air monitoring and implementation of odor or dust controls will be in accordance with the provisions of the CAMP presented in Appendix B.

12. Personal Monitoring

_ Passive Dosimeter ___ Personal Air Sampling ___ Other

Description/Other:

NOT-APPLICABLE

13. Biological Monitoring/Medical Surveillance

_____ This project requires medical surveillance or biological monitoring procedures beyond the provisions of the routine medical surveillance program, see description below

Description:

NOT APPLICABLE

14. Onsite Control

The Site shall have an Exclusion Zone (the contaminated area) and a Decontamination Line. No unauthorized person shall be allowed beyond the Exclusion Zone line.

Soiled PPE and rinsate from decontaminating equipment shall be collected onsite and properly stored until disposal.

15. Personal Protective Equipment

Level D PPE will be required for all project activities. Decisions on PPE upgrades will be made in the field based on site-specific conditions.

Location	**Job Function/Task**	**Initial Level of Protection**
Exclusion Zone	Testing and Sampling	B C **D** 1 2 3 other
	____________	B C D 1 2 3 other
	If visually impacted soil is present	**B** C D 1 2 3 other
	____________	B C D 1 2 3 other
	____________	B C D 1 2 3 other
Decontamination Zone	____________	B C D 1 2 3 other
	____________	B C D 1 2 3 other
	____________	B C D 1 2 3 other

List the specific protective equipment and material (where applicable) for each of the Levels of Protection identified above

Level B _X_

___ Pressure demand airline

___ Pressure demand airline with escape provisions

___ Pressure demand SCBA

_X_ LEAVE SITE

Level _D

_X_ HARD HAT AND SAFETY GLASSES

_X_ HARD HAT AND SAFETY GLASSES

_X_ STEEL-TOED FOOTWEAR

_X_ POLYTYVEK COVERALLS (OPTIONAL)

_X_ OBERBOOTS or POLYTYVEC BOOTIES

____ INNER GLOVES (thin nitrile)

_X_ OUTER GLOVES (NITRILE) (LIGHT DUTY SAMPLING)

_X_ LEATHER GLOVES (BORING SAMPLING)

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE KNOWLEDGE AND APPROVAL OF THE HEALTH AND SAFETY OFFICER AND THE PROJECT MANAGER.

16. Decontamination

All Drilling equipment shall be decontaminated prior to entering the investigation site area and between each boring location. All Sampling equipment shall be decontaminated before / between each sampling activity or interval. All Drilling and Sampling equipment shall be decontaminated after completion of the final project related activities.

Decontamination shall be performed onsite. The following decontamination conditions shall be followed:

- A temporary de-con area will be constructed for the project at a designated site. The de-con area shall be constructed to provide for contained washing, rinsing and staging/drying of decontaminated PPE and equipment.

Personnel and equipment leaving the Exclusion Zone, if necessary, shall continue through the decontamination station and follow the procedures as follows:

Personnel Decontamination

Station	Procedure
1.	WASH BOOTS OR BOOTIES AND OUTER GLOVES
2.	REMOVE HARD HAT
3.	REMOVE AND DISPOSE OUTER GLOVES

4. REMOVE AND DISPOSE POLYTYVEK SUIT (IF APPLICABLE)
5. REMOVE AND DISPOSE OF POLYTYVEC BOOTIES

Equipment Decontamination
(TESTING AND SAMPLING EQUIPMENT ONLY)

Station	Procedure
1.	ALCONOX WASH
2.	POTABLE WATER RINSE
3.	AIR DRY

The following decontamination equipment is required:
Alconox, steam cleaner, rinse water, buckets, brushes

Emergency decontamination procedures:
Remove PPE and rinse off with water. Rinsate will be contained in wash containers at the Site.

17. Confined Entry Procedures __X__ Not Applicable

Yes N/A

_ _ Provide Forced Ventilation
_ _ Test Atmosphere For:
_ _ (a) $\%O_2$
_ _ (b) %LEL
_ _ (c) Other

Yes N/A

_ _ Refer to Personal Protective Equip. (#16)
_ _ Refer to Emergency Procedures (#24)
_ _ Other Special Procedures

Descriptions/Other:

18. Cutting/Welding Procedure __X__ Not Applicable

N/A

_ _ Relocate or Protect Combustibles

_ _ Wet Down or Cover Combustible Floor

_ _ Check Flammable Gas Concentrations (%LEL) in air

_ _ Cover Wall, Floor, Duct and Tank Openings

_ _ Provide Fire Extinguisher

Other Special Instructions:

19. Electrical __X_ Not Applicable

20. Special Instructions

Cold Stress

Frostbite results from freezing a part of the body. The nose, ears, cheeks, fingers, and toes are affected most often. Usually the frozen area is small. People with poor circulation, such as the elderly and the exhausted, are not as resistant to cold as young people. Intoxicated persons sometimes suffer extensive injury.

Just before frostbite occurs, the skin may be slightly flushed. As frostbite develops, the skin changes to white or grayish yellow. Blisters may appear later. Pain sometimes is felt at the beginning but frostbite may become less painful as the freezing goes deeper. Often there is no pain; the part feels intensely cold and numb. The victim frequently is not aware of frostbite until pale, glossy skin is observed.

Hypothermia occurs when exposure to cold or cool temperature causes the temperature of the core of the body to fall below normal. Severity of hypothermia depends on the degree of coldness to which the victim is exposed, the duration of exposure, and whether exposure was in water or air. Susceptibility to hypothermia is increased by ill health, malnutrition, and the weaknesses associated with childhood and advanced age.

Violent shivering may be the first sign of hypothermia. The victim may behave strongly, may be unusually irritable, and may have slurred speech or seem clumsy. As hypothermia becomes more and more serious, the victim has trouble seeing, moves with difficulty and may stagger or fall, becomes sleepy and numb, and finally becomes unconscious. Hypothermia can result in death.

To prevent frostbite and hypothermia, personnel should wear warm protective clothing that covers the susceptible parts of the body. Additionally, individuals should periodically take breaks in a heated area to warm themselves during periods of extreme cold.

Field Logs:

A Golder representative shall be responsible for maintaining field logs. At the end of the project, field logs are to be added to the project files. Additional considerations:

- Drilling, sampling, and air monitoring logs will be maintained in the field until project completion. Standard field entries will be recorded. Copies of these logs will be submitted to NTC at the completion of the project.

21. Sanitation Requirements

Potable water supply available on work site?	__X__ Yes ____ No
Portable toilets required on work site?	___ Yes If Yes, how many? ______ _X_ No
Temporary washing/shower facilities required at work site?	___ Yes If yes, describe below. __X_ No

Description:

22. Field Procedures Change Authorization (N/A)

Instruction Number to be changed	Duration of Authorization Requested	Date:
	___ Today only	
	___ Duration of Task	

Description of Procedures Modification:

Justification:

Person Requesting Change: Verbal Authorization Received From:

Name	Name	Time
Title	Title	
Signature	Approved By	

(Signature of person named above to be obtained within 48 hours of verbal authorization)

23. Emergency Procedures This page is to be posted at prominent location on site.

Yes	No	
☒	☐	On-site Communications Required?

Emergency Channel: Call **911** on Cell phone or contact escort. Contact Dave Wehn at the Golder office (716)-215-0650 or his cell (716)-713-6394 to report incident.

Nearest Telephone: Field crew cell phone (Patrick Martin). Cell phone number is (716) 867-2860

Nearest Hospital: Sisters of Charity Hospital - St. Joseph Campus: Phone: (716) 891-2400

SEE APPENDIX A FOR DIRECTIONS TO HOSPITAL

Fire and Explosion

In the event of a fire or explosion, if the situation can be readily controlled with available resources without jeopardizing the health and safety of yourself, the public, or other site personnel, take immediate action to do so, otherwise:

1. Notify emergency personnel by **911**.
2. If possible, isolate the fire to prevent spreading.
3. Evacuate the area.

Chemical Exposure

Site workers must notify the site health and safety officer immediately in the event of any injury or any of the signs or symptoms of overexposure to hazardous substances identified below:

On Site Injury or Illness

In the event of an injury requiring more than minor first aid or any employee reporting any sign or symptom of exposure to hazardous substances, immediately contact the Health and Safety Coordinator. In the event of life-threatening or traumatic injury, implement appropriate first-aid and immediately call for emergency medical assistance by dialing 911. Also, immediately contact the David Wehn Phone (716) 215-0650

Designated Personnel Current in First Aid/CPR (Names)

Aaron Lange

Designated Back-Up Personnel (Names)

Patrick Martin

Required Emergency Back-Up Equipment: None

Emergency Response Authority

The Site Health and Safety Coordinator shall also act as the designated site emergency coordinator and shall have final authority for initial response to on-site emergency situations.

Upon arrival of the appropriate emergency response personnel, the site health and safety coordinator shall defer all authority but shall remain on the scene if necessary to provide any and all possible assistance. At the earliest opportunity, the site health and safety coordinator shall contact the project manager or coordinator shall contact the project manager or health and safety officer.

Project Director: Patrick T. Martin, P.E. Phone (w) (716) 215-0650 (c) (716) 867-2860

Site Health and Safety Officer: Patrick T. Martin, P.E. Phone (w) (716) 215-0650 (c) (716) 867-2860

24. Safety Briefing

The following personnel were present at pre-job safety briefing conducted at __________(time) on___________(date) at _________________________(location), and have read the above plan and are familiar with its provisions:

Name	Signature
________________________	________________________
________________________	________________________
________________________	________________________
________________________	________________________
________________________	________________________
________________________	________________________
________________________	________________________
________________________	________________________
________________________	________________________

Fully charged ABC Class fire extinguisher available on site? YES ___

Fully stocked First Aid Kit available on site? YES ___

All project personnel advised of location of nearest phone? YES ___

All project personnel advised of location of designated medical facility or facilities? YES ___

____

Printed Name of Field Team Leader or Site Safety Officer

____

Signature Date

APPENDIX A

DIRECTIONS TO HOSPITAL

Driving directions to Harlem Road at St Joseph Hospital
1.2 mi – about **4 mins**

1755 Dale Rd
Buffalo, NY 14225

1. Head **west** on **Dale Rd**	0.4 mi
2. Turn **left** at **Walden Ave**	0.2 mi
3. Turn **right** at **Harlem Rd/NY-240**	0.5 mi

Harlem Road at St Joseph Hospital
2605 Harlem Rd
Cheektowaga, NY 14225-4097

APPENDIX B

NYSDOH Generic Community Air Monitoring Plan (CAMP)

APPENDIX 1A

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH. Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.