Remedial Investigation / Interim Remedial Measures / Alternatives Analysis Work Plan

1050-1088 Niagara Street Site
Buffalo, New York

Revised May 2014 0136-013-005

Prepared For:

9271 Group, LLC

Prepared By:

TurnKey Environmental Restoration, LLC

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WORK PLAN
FOR
REMEDIAL INVESTIGATION/INTERIM REMEDIAL MEASURES/ALTERNATIVES ANALYSIS

1050-1088 NIAGARA STREET SITE
BUFFALO, NEW YORK

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RI/IRM/AA WORK PLAN

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1.0 INTRODUCTION

This document presents the proposed scope of work and implementation procedures for completion of a Remedial Investigation (RI), Interim Remedial Measures (IRM), and Alternatives Analysis (AA) at the 1050-1088 Niagara Street Site (Site), located from 1050-1088 Niagara Street, Buffalo, New York (see Figures 1 and 2).

The Applicant, 9271 Group, LLC, has elected to pursue cleanup and redevelopment of the Site under the New York State Brownfield Cleanup Program (BCP) and has entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC).

The RI/IRM/AAR will be completed by TurnKey Environmental Restoration, LLC (TurnKey), in association with Benchmark Environmental Engineering & Science, PLLC (Benchmark), on behalf of the Applicant. The work will be completed in accordance with NYSDEC DER-10 guidelines.

1.1 Background

The Site consists of three adjoining parcels, identified as 1050, 1054, and 1088 Niagara Street, totaling approximately 2.7 acres, located in the City of Buffalo, Erie County, New York. The Site is currently improved with a one three-story building, located on the 1050 Niagara Street parcel, with the remainder of the Site primarily vacant.

The Site has a long history of being utilized for commercial and industrial operations (since at least 1889). The International Brewing Company and American Gelatine Corp. operated on-Site in the early 1900s. The northern portion of the Site (1088 Niagara St. parcel) included a filling station from at least the 1920s through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site building), a commercial printing company, was located on the 1050 Niagara Street parcel of the Site from at least 1930 through at least 1990; and Miken Companies, also a commercial printing company, was located on-Site until at least 2000.

1.2 Project Objectives

For sites entering the BCP at the point of investigation, NYSDEC requires completion of a RI/IRM/AA. The primary objectives of the RI/IRM/AA are to:

- Collect additional soil/fill, groundwater, and sub-slab vapor samples, under appropriate quality assurance/quality control criteria, to better delineate the nature and extent of contamination;
- Determine if the concentrations of constituents of concern in site soil, groundwater, and/or soil gas pose potential unacceptable risks to human health and the environment; and
- Provide the data needed to evaluate potential remedial measures and determine appropriate actions to address potential significant risks.

As part of the RI/IRM/AA, sampling data will be used to evaluate whether remedial alternatives can meet the objectives. The intended uses of these data dictate the confidence levels. 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 photoionization detector (PID) measurements, groundwater elevation measurements, and field analyses (i.e., pH, temperature, dissolved oxygen, specific conductivity, and turbidity). Definitive level confidence will apply to samples for chemical analysis. The applicability of these levels of data will be further specified in the Quality Assurance Project Plan (QAPP) in Section 5.0. Sampling and analytical acceptance and performance criteria such as precision, accuracy, representativeness, comparability, completeness, and sensitivity, are defined in the QAPP.

IRMs will be completed to immediately address known environmental impacts related to past use of the Site. An IRM will quickly mitigate risks to public health and the environment. In general, IRM activities may include: excavation of underground storage tanks (USTs) and in-ground hydraulic lift(s); excavation of petroleum and/or VOC-impacted soil/fill; implementation of a Soil/Fill Management Plan (SFMP) during intrusive activities; and off-Site disposal and/or bio-treatment of impacted soil/fill. This Work Plan includes anticipated IRM activities based on current information and may be modified, subject to NYSDEC approval, immediately after the RI fieldwork is completed.

The Volunteers intent is for the IRMs to substantially or completely constitute the final NYSDEC-approved remedy for the Site. The cleanup objectives employed during the IRM and any subsequent remedial measures, if required based on the findings of the RI, will be a Track 4 commercial cleanup utilizing 6NYCRR Part 375 Commercial Use soil cleanup objectives (SCOs); however, the applicant may choose to remediate to a higher level of cleanup (e.g., unrestricted, residential, restricted residential) during the course of remedial work. Details of anticipated IRM activities are included in Section 4.0

1.3 Project Organization and Responsibilities

The Applicant, 9271 Group, LLC, has applied to the New York State BCP, and been accepted as a non-responsible party (volunteer) per ECL§27-1405. Benchmark, in association with TurnKey, will manage the brownfield cleanup on behalf of the Applicant. The NYSDEC Division of Environmental Remediation (Region 9), in consultation with the New York State Department of Health (NYSDOH) shall monitor the remedial actions to verify that the work is performed in accordance with the Brownfield Cleanup Agreement, the approved RI/IRM/AA Work Plan, and NYSDEC DER-10 guidance (May 2010).

TurnKey personnel as well as subcontractors for this project have not been determined at this time. Once pricing is secured, subcontract agreements are in place, and a field schedule determined, resumes for the selected project team will be provided to the Department, if requested. TurnKey's Project Manager's résumé, however, has been included in Appendix A. The table below presents the planned project team.

Company	Role	Name	Contact Information
Benchmark/TurnKey	Project Manager	Mike Lesakowski	(716) 856-0635
Benchmark/TurnKey	Qualified Env. Prof.	TBD	(716) 856-0635
9271 Group, LLC	Facility Contact	TBD	(716) 854-0060
TBD	Analytical Testing	TBD	TBD
TBD	Geoprobe Drilling Services	TBD	TBD
TBD	Drilling Services	TBD	TBD
TBD	Excavation Services	TBD	TBD
TBD	DUSR	TBD	TBD

2.0 SITE DESCRIPTION

2.1 General

The Site is comprised of three adjoining parcels totaling approximate 2.7 acres, located at 1050-1088 Niagara Street, in the City of Buffalo, Erie County, New York. The Site is bound by former Albany Street and commercial property to the north, commercial property to the south, Niagara Street to the east, and railroad corridor and interstate I-190 to the west. The Site includes a single three story building and associated gravel/asphalt parking and vacant areas (see Figure 2).

2.2 Site Topography and Drainage

The Site is generally flat lying with limited topographic features. The surface of the Site is covered with buildings, asphalt, and gravel. The northwest boundary of the Site is steeply graded, likely related to the former rail lines and storage areas.

Precipitation (i.e., rain or melting snow) moves to the storm drains in the roadways via overland flow. Surface and shallow groundwater flow are likely affected by various cycles of development and filling, as well as utilities and foundations.

2.3 Geology and Hydrogeology

2.3.1 Overburden

The U.S. Department of Agriculture Soil Conservation Service soil survey map of Erie County describes the general soil type at the Site as Urban Land (Ud) which indicates level to gently sloping land with at least 60 percent of the soil surface covered by asphalt, concrete, buildings, or other impervious structures typical of an urban environment. The presence of overburden fill material is widespread and common throughout the City of Buffalo. The geology of the Site will be investigated as part of the RI activities.

2.3.2 Bedrock

Based on the bedrock geologic map of Erie County, the Site is situated over the Onondaga Formation of the Middle Devonian Series. The Onondaga Formation is comprised of a varying texture from coarse to very finely crystalline with a dark gray to tan color and chert and fossils within. The unit has an approximate thickness of 110 to 160 feet.

Structurally, the bedrock formations strike in an east-west direction and exhibit a regional dip that approximates 40 feet per mile (3 to 5 degrees) toward the south and southwest. As a result of this dip, the older Onondaga limestone outcrops or subcrops north of the Hamilton Group. An intersecting, orthogonal patter of fractures and joint sets are common throughout the bedrock strata. The surficial geomorphology of the bedrock strata was modified by period sub-aerial erosion and continental glaciation. Depth to and type of bedrock below the Site has not been determined by drilling.

2.3.3 Hydrogeology

The Site is located in the Erie-Niagara River Basin. In the Erie-Niagara Basin, the major areas of groundwater are within coarser overburden deposits and limestone and shale bedrock. Regional groundwater appears to flow west towards the Niagara River and Lake Erie. Localized on-Site groundwater flow will be confirmed during the RI.

2.4 Climate

Western New York has a cold continental climate, with moisture from Lake Erie causing increased precipitation. Average annual precipitation is reportedly 32.8 inches and snowfall is 58.8 inches. Average monthly temperatures range from 25 degrees Fahrenheit in January to 71 degrees Fahrenheit in July. The ground and lakes typically remain frozen from December to March. Winds are generally from the southwest (National Weather Service, 2013).

2.5 Population and Land Use

The City of Buffalo, encompassing 40 square miles, has a population of 276,059 (2006 US Census Bureau), a decrease of 5.7% from 2000 U.S. Census. The population density in the City is 7,206.3 people per square mile. The Site is located in Census Tract 71.02, in the area of the city zoned for commercial/residential.

The surrounding land-use is mixed use, including commercial, residential and vacant. Properties adjacent to the Site include primarily include commercial with residential properties beyond.

2.6 Utilities and Groundwater Use

The subject property has access to all major public and private utilities, including potable water (Buffalo Water Authority), sanitary and storm sewers (Buffalo Sewer Authority), electric (National Grid), and natural gas (National Fuel Gas).

Groundwater at the Site is assigned Class "GA" by 6NYCRR Part 701.15. Currently, there are no deed restrictions on the use of groundwater at the Site; however, there are no groundwater supply wells on the property. Regionally, groundwater in the area has not been developed for industrial, agriculture, or public supply purposes. Municipal potable water service is provided on-site and off-site.

2.7 Wetlands and Floodplains

There are no State or Federal wetlands or floodplains located on Site. Per the Erie County GIS On-Line Mapping System, the Niagara River is located approximately 125-feet to the west of the site, and a NYSDEC regulated freshwater wetland (BU-3) is located approximately 2.5-mile to the south of the site. Referenced floodplains are shown on Figure 3.

2.8 Previous Investigations

A summary of the investigations that have occurred at the Site are presented below. These reports are attached in Appendix B.

2.8.1 June 2012 – Phase I Environmental Site Assessment

TurnKey Environmental Restoration, LLC (TurnKey) completed a Phase I ESA in June 2012. Findings of the Phase I report are summarized below:

- Historic operators on-Site included commercial printing from at least 1930 through at least 2000, and the American Gelatine Company and the International Brewing Company in the early 1900s
- Two historic 25,000 gallon tanks were noted in the basement of 1050 Niagara Street based on historic Sanborn maps; contents unknown.
- Potential tank vents were noted on the west side of the building on the 1050 Niagara Street parcel and potential tank fill ports were noted on the surface in the southeast portion of the 1088 Niagara Street parcel.

- Building-mounted transformers were noted along the south side of the 1050 Niagara Street building.
- Gulf Oil Corporation operated on-Site from the 1920s through the 1960s, Hygrade Oil and Fuel Corp./Hygrade Petroleum Co. operated on-Site from the 1920s through the 1940s.
- The Site included a filling station from the 1920s through the 1960s. Multiple gasoline tanks, assumed to be USTs, were identified on the northern portion of the site in at least 1925 and 1951 based on historic Sanborn maps.
- Numerous closed/inactive spills were identified in connection with adjacent/nearby properties in the regulatory database.

2.8.2 July 2012 Limited Phase II Environmental Investigation Report

TurnKey Environmental Restoration, LLC (TurnKey) completed a Limited Phase II Environmental Investigation Report in July 2012. Findings of the Limited Phase II investigation are detailed below:

- Three (3) abandoned USTs were encountered during the advancement of TP-4. The USTs appear to be associated with the former services station noted in the Phase I ESA;
- In-ground hydraulic lifts were discovered on-Site;
- Field observations of apparent petroleum contamination, including elevated PID readings and petroleum odors, were observed in TP-3, TP-4 and TP-10. Apparent petroleum-stained soil was also noted in TP-4;
- Black sand (potential foundry sand) was noted in test pits TP-1 and TP-5;
- Elevated VOCs, some exceeding Commercial Use SCOs were detected;
- Several metals were detected above their respective Unrestricted Use SCOs, including arsenic, cadmium, and lead above their respective Commercial Use SCOs;
- Based on the findings of the investigation NYSDEC Spill file No. 1201545 was opened for the Site [It should be noted that the Spill file was administratively closed upon acceptance into the BCP, and further investigation and remediation of the Site will be conducted under the guidance of the BCP].

2.8.3 August 2013 – Supplemental Phase II Site Investigation

TurnKey Environmental Restoration, LLC (TurnKey) completed a Supplemental Phase II Environmental Investigation Report in August 2013. Findings of the Supplemental Phase II investigation are detailed below:

- Eight (8) shallow soil borings were advanced to further investigate the southern portion (1050 Niagara Street) site.
- Approximately half of the floor areas of the basement and sub-basement had visible evidence of apparent oil staining; some areas contained standing oil; oil staining was also noted proximate compressors, former oil storage/hazardous waste storage areas and one utility sink in the basement;
- A floor drain with standing oil was noted in the central portion of the building.
- Some of the soils exhibited visible (black staining) olfactory (petroleum odors) evidence of subsurface contamination;
- Subsurface soil analytical results indicate select SVOCs and metals exceed Unrestricted, Residential, Restricted Residential, and Commercial Use SCOs.

2.9 Primary Constituents of Potential Concern (COPCs)

Based on findings to date, the Constituents of Potential Concern (COPCs) are presented by media below:

- ***Soil:*** VOCs, SVOCs and metals
- ***Groundwater and Sub-slab Vapor:*** VOCs

3.0 REMEDIAL INVESTIGATION SCOPE OF WORK

The Remedial Investigation scope of work is focused on defining the nature and extent of contamination on-site, identifying the source of contamination, defining chemical constituent migration pathways, qualitatively assessing human health and ecological risks (if necessary), and obtaining data of sufficient quantity and quality to perform the alternatives analysis report.

Field team personnel will collect environmental samples in accordance with the rationale and protocols described in the QAPP in Section 5. 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 with an equivalent Category B deliverable package to meet the definitive-level data requirements. Analytical results will be evaluated by a third-party data validation expert in accordance with provisions described in the QAPP. Data submittals will be provided to the NYSDEC in accordance with the most current electronic data deliverables (EDD) protocols.

During intrusive outdoor RI activities, a Community Air Monitoring Plan (CAMP) will be followed. 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 NYSDEC's DER-10 (May 2010) Appendix 1A (NYSDOH's Generic Community Air Monitoring Plan) and Appendix 1B (Fugitive Dust and Particulate Monitoring).

The investigation approach is described below. The proposed RI sample locations are presented on Figure 5 and the planned sampling and analytical program is identified on Table 1.

3.1 Interior Building Inspection and Inventory

An assessment of the basement (and/or lowest level floor) of the building will be completed to inspect for features including floor drains, trenches, and sumps to guide potential areas for investigation. Based on the findings of the interior assessment, the planned RI approach will be reviewed. Locations of the interior soil borings and subslab vapor sample locations may be adjusted, with concurrence from the Department, based on the findings of the building assessment.

3.2 Field Investigation Activities

A site investigation will be completed across the Site to further assess potential impacts related to the historic use of the Site. The site investigation will include the collection of soil, groundwater and air samples, excavation of exploratory test pits (TPs), the advancement boreholes and groundwater monitoring wells. All soil samples will be collected using dedicated stainless steel sampling tools. Representative soil, groundwater and air samples will be placed in pre-cleaned laboratory provided sample bottles/containers, cooled to 4ºC in the field (as appropriate), and transported under chain-of-custody command to a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory. The proposed RI sample locations are presented on Figure 5 and a summary of the Sampling and Analytical Program is included on Table 1. Investigation samples will be reported by the laboratory with equivalent NYSDEC Category B deliverables to allow for independent third-party data usability assessment.

3.2.1 Utility Clearance

Prior to any intrusive activities, Dig Safely New York (Call 811) will be contacted by the site contractor a minimum of three business days in advance of the work and informed of the intent to perform excavation work at the Site. If underground utilities are present on the property and are anticipated to interfere with intrusive activities, the Applicant and the NYSDEC will be contacted to discuss mitigating measures.

3.2.2 Surface Soil/Fill Investigation

Based on the current Site configuration, with the majority of the southern portion of the Site covered by the existing building, the surface soil samples will be collected from the northern portion of the Site and along a narrow strip of vegetation/grass located along the southern and western boundary. Six (6) surface soil samples, identified as SS-1 through SS-6, will be collected from the upper 0-2-inch soil/fill layer across the Site. Additional depth may be required to collect sufficient volume for laboratory analysis, but sample depth will not exceed six inches. Surface soil samples will be analyzed in accordance with the sampling and analytical plan (see Table 1). Additional samples may be collected for TCL VOCs, in accordance with DER-10, to allow for evaluation of potential on-Site reuse of surface soils.

3.2.3 Near Surface Soil/Fill Investigation

Five (5) near surface samples, identified as NS-1 through NS-5, will be collected from the upper 0-2-feet of the soil/fill layer across the Site. Near surface soil/fill samples will be analyzed in accordance with the sampling and analysis plan (see Table 1). If elevated PID readings are noted during field screening, additional samples may be collected for analysis of VOCs, in consultation with the Department.

3.2.4 Subsurface Soil/Fill Investigation

A total of eighteen (18) additional subsurface soil/fill exploratory locations will be assessed across the site, including the advancement of fourteen (14) borings, identified as SB-9 through SB-16, and MW-1 through MW-6; and four (4) test pits, identified as TP-11 through TP-14, will be advanced to characterize the subsurface soil/fill across the Site. Exterior borings, identified as MW-1 through MW-6 will be advanced to approximately 12-16 feet below ground surface (fbgs), or refusal. Interior borings, identified as SB-9 through SB-16 will be advanced to approximately 6-8 feet below the concrete slab, or refusal. Each TP will be approximately 2-3 feet in width, 8-10 feet in length, and will be advanced to an approximate depth of 12 to 15 feet below ground surface (fbgs), the extent of the excavator arm, or refusal. All soil samples will be field screened for the presence of VOCs using a field PID with a minimum IP of 10.6 eV, as a procedure for ensuring the health and safety of personnel at the Site, and to identify potential impacts in soil samples for laboratory analysis.

Upon reaching the completion depth of each SB and TP, PID and visual/olfactory results will be reviewed. The sample interval identified as the most impacted (i.e., greatest PID scan result and/or evidence of visual/olfactory impact) will be selected for analysis. If differentiable impacts are noted within a particular SB/TP, additional samples may be collected from more than one depth interval to characterize the differentiable impacts in that location. In the event that either the impacts are ubiquitous from grade to final depth or no impacts were identified, the native soils directly above water table will be selected for analysis. If the impacts are ubiquitous from grade to final depth or no impacts were identified and water is not encountered at a particular sample location, the sample interval will be selected based on the discretion of the field personnel and in consultation with the NYSDEC.

Subsurface soil/fill samples will be analyzed in accordance with the sampling and analysis plan (see Table 1). In the absence of visual, olfactory and/or elevated PID

readings, VOC samples will not be collected. At a minimum, seven (7) VOC soil samples will be collected regardless of field screening results, for site characterization purposes. Field personnel will be prepared to collect additional VOC samples, in consultation with the Applicant and the Department, if additional potential impacts are noted during the RI.

3.2.5 Groundwater Investigation

Six (6) groundwater monitoring wells will be advanced across the Site to assess groundwater flow direction and groundwater quality data. Proposed groundwater monitoring well locations are identified on Figure 5. Monitoring well installation, well development, and groundwater sample collection details are discussed in the following sections.

3.2.5.1 Monitoring Well Installation

After completion of the boring investigation, drill rig capable of advancing hollow-stem augers will be employed to install 2-inch inside diameter (ID) monitoring wells. Each well location will be advanced to approximately 14-16 fbgs, or refusal, with a target minimum of 5 feet below the first encountered groundwater. Each boring location will be advanced to approximately 20 fbgs, or refusal, with a target minimum of 5 feet below the first encountered groundwater. In the absences of groundwater contact during boring advancement within the upper 20 feet, no well will be placed. All non-dedicated drilling tools and equipment will be decontaminated between boring locations using potable tap water and a phosphate-free detergent (e.g., Alconox).

Subsequent to boring completion, a 2-inch ID diameter flush-joint Schedule 40 PVC monitoring well will be installed at the boring locations. Each well will be constructed with a minimum 5-foot flush-joint Schedule 40 PVC, 0.010-inch machine slotted well screen. Each well screen and attached riser will be placed at the bottom of each borehole and a silica sand filter pack (size #0) will be installed from the base of the well to a maximum of 2 feet above the top of the screen. A bentonite chip seal will then be installed and allowed to hydrate sufficiently to mitigate the potential for downhole grout contamination. The newly installed monitoring wells will be completed with keyed-alike locks, a lockable J-plug, and a steel flush mounted road box.

Drill cuttings will be spread onsite unless gross contamination (i.e., visible product) is encountered, in which case they will be placed in sealed NYSDOT-approved drums and labeled for subsequent characterization and disposal, if necessary.

3.2.5.2 Well Development

After installation, but not within 24 hours, newly installed monitoring wells will be developed in accordance with TurnKey and NYSDEC protocols. Development of the monitoring wells will be accomplished with dedicated disposable polyethylene bailers via surge and purge methodology. Field parameters including pH, temperature, turbidity, dissolved oxygen, oxidation-reduction potential (ORP) and specific conductance will be measured periodically (i.e., every well volume or as necessary) during development. Field measurements will continue until they became relatively stable. Stability will be defined as variation between measurements of approximately 10 percent or less with no overall upward or downward trend in the measurements. A minimum of three well volumes will be evacuated from each monitoring well. Development water from the monitoring wells will be discharged to the ground surface in the vicinity of the monitoring well being developed. If light non-aqueous phase liquid (LNAPL), dense non-aqueous phase liquid (DNAPL), odors, or sheen are encountered during well development water will be containerized in NYSDOT-approved drums and labeled per monitoring well location. Based on the RI groundwater analytical results, it will be determined, in consultation with the Department, if the containerized development water is acceptable for surface discharge, or requires subsequent on-Site treatment and/or off-Site disposal.

3.2.5.3 Groundwater Sample Collection

Prior to sample collection, static water levels will be measured and recorded from all on-Site monitoring wells to facilitate the preparation of a Site-wide isopotential map. Following water level measurement, field personnel will purge and sample monitoring wells using a submersible pump with dedicated pump tubing following low-flow/minimal drawdown purge and sample collection procedures. In the event of pump failure or the saturated unit does not permit the proper implementation of low-flow sampling, a dedicated polyethylene bailer will be used to purge and sample the well. Prior to sample collection via low-flow methodology, groundwater will be evacuated from each well at a low-flow rate (typically less than 0.1 L/min) while maintaining a generally consistent water level. Field

measurements for pH, temperature, turbidity, DO, ORP, specific conductance and water level, as well as visual and olfactory field observations will be periodically recorded and monitored for stabilization. Low-flow purging will be considered complete when pH, specific conductivity, DO, ORP, and temperature stabilize and when turbidity measurements fall below 50 Nephelometric Turbidity Units (NTU), or become stable above 50 NTU regardless of volume purged. Purging via disposable bailer, if necessary, will be considered complete following the removal of three well volumes and field parameter stabilization or to dryness, whichever occurs first. In general, stability is defined as variation between field measurements of 10 percent or less and no overall upward or downward trend in the measurements. Upon stabilization of field parameters, groundwater samples will be collected and analyzed as discussed below.

Sample collection methods that will be implemented during the RI include:

- **Submersible Pump with Dedicated Pump Tubing**

  All monitoring wells will be purged and sampled using a non-dedicated submersible pump and dedicated pump tubing following low-flow (minimal drawdown) purge and sample collection procedures, as described above. Non-dedicated pumps will require decontamination prior to use at each well location and the collection of an equipment blank.

- **Polyethylene Disposable Bailer**

  Wells of any depth (up to 100 fbgs) may be purged and sampled using a polyethylene disposable bailer via direct grab. In general, a bottom filling dedicated polyethylene bailer is attached to a length of dedicated hollow-braid polypropylene rope and lowered into the well smoothly and slowly as not to agitate the groundwater or damage the well. Purging continues until a predetermined volume of water has been removed (typically three well volumes) or to dryness. Measurements for pH, temperature, specific conductance, dissolved oxygen and turbidity are recorded following removal of each well volume. The well is purged until the readings for indicator parameters stabilize or the well is purged to dryness.

Prior to, and immediately following collection of groundwater samples, field measurements for pH, specific conductance, temperature, dissolved oxygen, turbidity and water level, as well as visual and olfactory field observations will be recorded. All collected groundwater samples will be placed in pre-cleaned, pre-preserved laboratory provided

sample bottles, cooled to 4°C in the field, and transported under chain-of-custody command to a NYSDOH-approved laboratory for analysis.

3.2.5.4 Groundwater Sample Analyses

A total of five (5) groundwater samples will be collected and analyzed for TCL plus CP-51 List VOCs, TCL SVOCs, TAL Metals, PCBs, pesticides and herbicides in accordance with USEPA SW 846 methodology with equivalent NYSDEC Category B deliverables to allow for independent third-party data usability assessment. In the event groundwater sample turbidity levels exceed 50 NTUs, an additional groundwater sample will be collected and field filtered (or filtered in the laboratory) for TAL Dissolved Metals analysis.

3.2.6 Subslab Vapor Assessment

To evaluate the potential vapor intrusion into the existing building, four (4) subslab vapor (SV) samples, two (2) interior ambient air samples, and one outdoor ambient air (i.e., background) sample will be collected. One duplicate SV sample will be collected for each day of SV sampling. The sampling will be completed in general conformance with the New York State Department of Health (NYSDOH) Soil Vapor Intrusion Guidance (October 2006) and TurnKey's *Ambient Air/Subslab Vapor Sampling* Field Operating Procedure (FOP 004.3 - see Appendix F). Soil vapor samples will be collected and sent to a NYSDOH-approved laboratory for analysis of USEPA TCL VOCs and SVOCs in accordance with USEPA Method TO-15.

3.2.6.1 Subslab Vapor Pre-Sample Assessment

Prior to initiation of SV sampling, a pre-sampling inspection will be performed prior to each sampling event to identify and minimize conditions that may interfere with the proposed testing. The inspection will evaluate the type of structure, floor layout, airflows and physical conditions of the building. This information, along with information on sources of potential indoor air contamination, will be identified on a building inventory form.

3.2.6.2 Subslab Vapor Sample Collection

At each SV sampling location, TurnKey personnel will drill a hole through the concrete slab using a hand-held hammer drill. Temporary subslab vapor probes and tubing will utilized for the sample collection. Holes in the concrete slab will be filled and sealed

after completion of the sampling event. Sub-slab vapor samples will be collected in the following manner:

- After installation of the probes, one to three volumes (i.e., the volume of the sample probe and tube) will be purged prior to collecting the samples to ensure samples collected are representative;
- The subslab vapor probes will be sealed to the surface with permagum grout, melted beeswax, putty, or other non-VOC containing and non-shrinking products for temporary installation;
- Flow rates for both purging and collecting will not exceed 0.2 liters per minute to minimize outdoor air infiltration during sampling;
- Subslab vapor sample canisters will be equipped with an eight-hour regulator to allow the sample to be collected over an approximate eight-hour period; and,
- Samples will be collected, using conventional sampling methods, in an appropriate container — one which meets the requirements of the sampling and analytical methods (e.g., low flow rate; Summa® canisters if analyzed by EPA Method TO-15), and is certified clean by the laboratory.

Concurrent with the subslab samples, indoor ambient air and outdoor air samples will be collected. Indoor ambient air samples will be collected adjacent to each sub-slab vapor location based upon accessibility within the building. One outdoor, field located air sample will also be collected from a ground level location upwind of the facility, as determined on the day of sub-slab vapor sampling field activities. Indoor and outdoor air sample canisters will also be equipped with an eight-hour regulator to allow the sample to be collected over the same approximate eight-hour period as the subslab vapor samples.

Each canister, with an initial pressure of approximately 50 millitorr (compared to 760 torr of pressure in the atmosphere at sea level), will be fitted with a sampling valve that uses a critical orifice and mass flow controller to regulate the air flow into the canister for the selected sampling period. The mass flow controller will maintain a relative constant air flow rate throughout the sampling period. All Summa canister valves will remain closed until the sample holes are complete and all of the canisters are in their respective positions. The valves will then be opened for the designated collection period.

3.2.6.3 Sub-slab Vapor Sample Analysis

Soil vapor samples will be collected in Summa® canisters, and once filled will be transported under chain-of-custody command to a NYSDOH-approved laboratory for analysis of USEPA TCL VOCs in accordance with USEPA Method TO-15. Field documentation of sub-slab vapor investigation sampling activities will be consistent with the NYSDOH guidance.

3.3 Field Specific Quality Assurance/Quality Control Sampling

In addition to the soil/fill, groundwater and sub-slab vapor samples described above, field-specific quality assurance/quality control (QA/QC) samples will be collected and analyzed to ensure the reliability of the generated data as described in the QAPP (see Section 5.0) and to support the required third-party data usability assessment effort. Site-specific QA/QC samples will include matrix spikes, matrix spike duplicates, blind duplicates, and trip blanks.

3.4 Decontamination and Investigation-Derived Waste Management

Every attempt will be made to utilize dedicated sampling equipment during the RI, however if non-dedicated equipment is required and/or used, the equipment will be decontaminated, at a minimum, with a non-phosphate detergent (i.e., Alconox®) and potable water mixture, rinsed with distilled water, and air-dried before each use in accordance with TurnKey's field operating procedures presented in Appendix F. All decontaminated sampling equipment will be kept in a clean environment prior to sample collection. Heavy equipment, such as an excavator (if used) and drilling tools, will be decontaminated by the subcontractor, as necessary.

RI generated drilling spoils, groundwater, or decontamination rinse water not exhibiting gross contamination (i.e., visible product, odor, sheen, etc.) will be either returned to the borehole from which it was removed (soil/fill) or discharged to the ground surface (groundwater and rinse water). Investigative-Derived Waste (IDW) or those materials exhibiting gross contamination will be placed in sealed NYSDOT-approved drums and labeled for subsequent characterization and disposal. All generated IDW drums will be labeled alpha-numerically with regard to contents, origin, and date of generation using a paint stick marker on two sides and the top of each drum. Characterization analytical results

of containerized IDW material will be used to determine if spoils can be returned to the ground surface, utilized on-Site, or require treatment and/or off-Site disposal. Drums will be securely staged on-site pending characterization analyses and remedial measures assessment. Field personnel will coordinate the on-site handling and temporary storage of IDW drums, including transportation, characterization sampling, and offsite disposal arrangements, as necessary.

Discarded personal protective equipment (PPE) (i.e., latex gloves, Tyvek, paper towels, etc.) and disposable sampling equipment (i.e., bailers or stainless steel spoons) will be placed in sealed plastic garbage bags and disposed of as municipal solid waste.

3.5 Site Mapping

A Site map will be developed during the field investigation. All sample points and relevant Site features will be located on the map. TurnKey will employ a Trimble GeoXT handheld GPS unit to identify the locations of all soil borings and newly installed wells relative to State planar grid coordinates. Monitoring well elevations will be measured by TurnKey's surveyor. An isopotential map showing the general direction of groundwater flow will be prepared based on water level measurements relative to USGS vertical datum. Maps will be provided with the RI report.

4.0 INTERIM REMEDIAL MEASURES

9271 Group, LLC submitted a draft interim remedial measures (IRM) work plan (May 2013) with the BCP application to address remedial measures related to NYS Spill No. 1201545. The draft IRM work plan was specific to IRMs planned for the discovered USTs in the TP-4 area (see Figure 6). This section of the work plan has been prepared to replace the previously submitted draft IRM work plan, incorporating the Department's comments, and completing the proposed IRMs under the BCP.

This section of the Work Plan includes anticipated IRM activities based on current information and may be modified, subject to NYSDEC approval, after the RI fieldwork is completed (see Figure 6). The IRM may address some or all of the following Site conditions as more fully defined in the RI:

- Removal of USTs and hydraulic lifts;
- Excavation of petroleum impacted soil/fill;
- Removal of PAH impacted soils in the vicinity of SB-3;
- Collection of post-excavation confirmatory samples, and,
- Implementation of a SFMP during remedial and redevelopment activities.

The IRMs are intended to constitute the NYSDEC-approved final remedy for the Site along with the filing of an environmental easement detailing the Institutional and Engineering Controls (IC/EC), and compliance with the post-remedial requirements of the Site Management Plan (SMP). The final remedy for the Site will be determined in the Alternatives Analysis Report (AAR) for the project.

4.1 Utility Clearance

Prior to any intrusive activities, Dig Safely New York (Call 811) will be contacted by the site contractor a minimum of three business days in advance of the work and informed of the intent to perform excavation work at the Site. If underground utilities are present on the property and are anticipated to interfere with intrusive activities, the Applicant and the NYSDEC will be contacted to discuss mitigating measures.

4.2 Waste Characterization

Waste characterization samples will be collected in accordance with the disposal and/or recycling facilities requirements. Pre-characterization of the soil will allow for direct loading and off-site transportation at the time of the impacted soil removal. Based on the results of the waste characterization sampling, impacted soil will be managed according to all federal, state and local waste disposal regulations.

4.3 UST and Residual Contents Removal

Prior to excavation of the USTs, the tops of the tanks will be fully exposed using an excavator. Upon completion of uncovering the tanks will be opened and inspected to determine proper handling of any residual contents.

If residual contents are discovered, a properly licensed vacuum truck operator will be employed to remove the contents of the tanks and clean the interior of the tanks. All tanks contents and residual cleaning materials will be properly characterized and disposed of off-site at a licensed disposal facility.

Once tank contents are removed, USTs will be removed from the ground, cleaned of residual soil and transported off-site for disposal as scrap. Any appurtenant piping attached to the USTs will be removed during tank excavation.

4.4 Hydraulic Lift Removal

The hydraulic lift and reservoir will be excavated and staged on plastic sheeting to allow for the removal and cleaning of any residual contents by the vacuum truck operator, as described above. After removal of any contents, the hydraulic lift and reservoir will be cleared of residual soil and transported off-site for scrap.

4.5 Removal of Petroleum Impacted Soils (TP-4 Excavation Area)

Immediately following removal of UST and hydraulic lifts, impacted soil/fill or other grossly contaminated media, as defined in 6 NYCRR Part 375-1.2(u), located beneath and immediately adjacent to the USTs and hydraulic lifts will be excavated and transported off-site for disposal and/or biotreatment.

A PID and visual/olfactory observations will be used to screen soil/fill materials and assist in verifying removal of impacted soil/fill. All excavation work will be directed by an

experienced TurnKey professional to remove impacted material. Lateral and vertical excavation will continue, as described above, until suspected source area soils and visually impacted soil/fill is removed, Part 375 Commercial Use SCOs are met, excavation has reached the property line, or NYSDEC agrees that no further excavation is required. Based on the findings of the RI and field observations, an evaluation to clean up the BCP Site to a less restrictive level (i.e., Restricted Residential, Residential, or Unrestricted SCOs) may be conducted.

4.6 Removal of PAH Impacted Soils (West Excavation Area)

Based on the previous investigation results, shallow soil/fill in the vicinity of SB-3 (i.e., west excavation area) exceeds CSCOs and total PAHs above 500 mg/Kg. A summary of the analytical results from the previous investigations is provided in Appendix C.

The shallow excavation will be completed to approximately two (2) feet below grade, or refusal (e.g., former concrete loading dock). A PID and visual/olfactory observations will be used to screen soil/fill materials and assist in verifying removal of impacted soil/fill. All excavation work will be directed by an experienced TurnKey professional to remove impacted material. Lateral and vertical excavation will continue until impacted soil/fill is removed, Part 375 Commercial Use SCOs are met, excavation has reached the property line and/or building, or NYSDEC agrees that no further excavation is required.

4.7 Excavation Confirmation Sampling

Post excavation confirmatory samples will be collected from the excavated areas, with bias toward material exhibiting evidence of visual and olfactory contamination, if remaining. Sample locations from excavated areas will include samples from excavation sidewalls and bottom. A minimum of one sample per 30 linear feet of sidewall and one sample for each 900 square feet of excavation bottom will be collected in accordance with DER-10.

Samples from the excavations will be analyzed for TCL plus CP-51 List VOCs and SVOCs in the TP-4 area; and TCL SVOCs in the West Excavation Area, in accordance with USEPA Methodology with an equivalent Category B deliverables package to facilitate data evaluation by a third-party validation expert. Expedited turnaround times may be requested for the analytical results to minimize the time that the excavation(s) remains open.

Additional analytical parameters may be analyzed from post-excavation confirmatory samples, based on the results of the RI and consultation with the Department.

4.8 Groundwater Management

Water removed from excavations and surface water run-in to excavations during the impacted soil removal will be handled on-site prior to discharge to the municipal sewer. In general, water removed from excavations will be stored/settled in a portable 21,000-gallon storage tank, and if deemed necessary, will be pumped through a bag or cartridge filter prior to treatment using granular activated carbon (GAC). Following completion of excavation work, settled solids remaining in the tank and spent filter bags will be disposed of off-site.

If the accumulated waters required treatment, the spent GAC will be characterized and regenerated off-site, or disposed at a permitted disposal facility in accordance with applicable federal and state regulations. The storage tank will be decontaminated via pressure washing. TurnKey or the Site owner will coordinate with the City of Buffalo to obtain any necessary temporary sewer discharge permits.

4.9 Excavation Backfill

Following NYSDEC concurrence that the remedial excavation is complete, the excavation will be backfilled with approved backfill material. Prior to backfilling, a demarcation layer (e.g., orange plastic snow fencing) will be placed on top of the remaining in-place soil/fill and the clean approved backfill material.

The backfill material will be placed into the excavations and compacted with the excavator/backhoe bucket in 2-foot lifts to match the existing grade of the Site and minimize settling. Alternatively, the applicant's redevelopment plans may require that select backfill be placed in accordance with certain geotechnical requirements (e.g., 95% of a standard Proctor test). Specific details regarding acceptable backfill materials, test requirements and handling is presented in the Soil-Fill Management Plan, included in Appendix E. Table 2 includes the chemical criteria for import of backfill material to the Site. Backfill material will comply with DER-10 guidance.

4.10 Cover System

During the planned remedial work, certain areas of the Site will be excavated and the impacted materials transported off-site for proper disposal as discussed above. However, the planned IRM excavations will not remove all soil/fill exceeding Part 375 CSCOs. Therefore, with the planned commercial use of the Site, a cover system will be installed as an engineering control as part of the overall remedy to protect human health and the environment. A cover system will be comprised of:

- A minimum of 12 inches of clean imported backfill, in areas of the Site not covered by impermeable cover components (e.g., asphalt, concrete, building). In vegetated and/or landscaped areas, the uppermost approximate three inches will be comprised of soil capable of sustaining vegetative growth. Any imported material to be used in the soil cover system will meet the backfill criteria (Table 2).

- A demarcation layer that will be placed between in-place soil/fill and imported clean cover material in areas outside of the IRM excavation footprint (as described above, demarcation fabric will be placed in the IRM excavations prior to backfill with clean material), and where hardscape surfaces are not present. The demarcation material will be comprised of a plastic mesh, or similar material.

A description of any engineering control(s), if necessary, including design drawings will be provided to the Department in the Alternatives Analysis Report (AAR) and Remedial Action Work Plan.

5.0 QUALITY ASSURANCE PROJECT PLAN

A Quality Assurance Project Plan (QAPP) has been prepared in support of the RI/IRM activities. 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 below.

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 allow for independent data validation. The QAPP has been prepared in accordance with USEPA's Requirements for Quality Assurance Project Plans for Environmental Data Operations; the EPA Region II CERCLA Quality Assurance Manual, and NYSDEC's DER-10 Technical Guidance for Site Investigation and Remediation (May 2010).

5.1 Scope of the QAPP

This QAPP was prepared to provide quality assurance (QA) guidelines to be implemented during the RI/IRM activities. This document may be modified for subsequent phases of investigative work, as necessary. The QAPP provides:

- A means to communicate to the persons executing the various activities exactly what is to be done, by whom, and when.
- A culmination to the planning process that ensures that the program includes provisions for obtaining quality data (e.g., suitable methods of field operations).
- A historical record that documents the investigation in terms of the methods used, calibration standards and frequencies planned, and auditing planned.
- A document that can be used by the Project Manager's and QA Officer to assess if the activities planned are being implemented and their importance for accomplishing the goal of quality data.
- A plan to document and track project data and results.

- Detailed descriptions of the data documentation materials and procedures, project files, and tabular and graphical reports.

The QAPP is primarily concerned with the quality assurance and quality control aspects of the procedures involved in the collection, preservation, packaging, and transportation of samples; field testing; record keeping; data management; chain-of-custody procedures; laboratory analyses; and other necessary matters to assure that the investigation activities, once completed, will yield data whose integrity can be defended.

QA refers to the conduct of all planned and systematic actions necessary to perform satisfactorily all task-specific activities and to provide information and data confidence as a result of such activities. The QA for task-specific activities includes the development of procedures, auditing, monitoring and surveillance of the performance.

QC refers to the activity performed to determine if the work activities conform to the requirements. This includes activities such as inspections of the work activities in the field (e.g., verification that the items and materials installed conform to applicable codes and design specifications). QA is an overview monitoring of the performance of QC activities through audits rather than first time inspections.

5.2 QAPP Organization and Responsibility

The principal organizations involved in verifying achievement of data collection goals for the 1050-1088 Niagara Street Site include: the New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), 9271 Group, LLC (Volunteer), TurnKey Environmental Restoration, LLC (Volunteer's Consultant), the drilling subcontractor(s), the independent environmental laboratory, and the independent third party data validator. Roles, responsibilities, and required qualifications of these organizations are discussed in the following subsections. Resumes are included in Appendix A.

5.2.1 NYSDEC and NYSDOH

It is the responsibility of the New York State Department of Environmental Conservation (NYSDEC), in conjunction with the New York State Department of Health, to review the RI/IRM Work Plan and supporting documents, for completeness and conformance with the site-specific cleanup objectives and to make a decision to accept or

reject these documents based on this review. The NYSDEC also has the responsibility and authority to review and approve all QA documentation collected during brownfield cleanup construction and to confirm that the QA Plan was followed.

5.2.2 Volunteer

9271 Group, LLC ("Volunteer") will be responsible for complying with the QA requirements as specified herein and for monitoring and controlling the quality of the Brownfield cleanup construction either directly or through their designated environmental consultant and/or legal counsel. The Applicants will also have the authority to select Remedial Action Contractor(s) to assist them in fulfilling these responsibilities. The designated Project Manager is responsible for implementing the project, and has the authority to commit the resources necessary to meet project objectives and requirements.

5.2.3 TurnKey Environmental Restoration, LLC

TurnKey Environmental Restoration, LLC (TurnKey) is the prime consultant on this project and is responsible for the performance of all services required to implement each phase of the RI/IRM Work Plan, including, but not limited to, field operations, laboratory testing, data management, data analysis and reporting. Any one member of TurnKey's staff may fill more than one of the identified project positions (e.g., field team leader and site safety and health officer). The various quality assurances, field, laboratory and management responsibilities of key project personnel are defined below.

- *TurnKey Project Manager (PM):* *Michael Lesakowski*

  The TurnKey PM has the responsibility for ensuring that the project meets the Work Plan objectives. The PM will report directly to the Applicant Project Coordinator and the NYSDEC/NYSDOH Project Coordinators and is responsible for technical and project oversight. The PM will:

  - Define project objectives and develop a detailed work plan schedule.
  - Establish project policy and procedures to address the specific needs of the project as a whole, as well as the objectives of each task.
  - Acquire and apply technical and corporate resources as needed to assure performance within budget and schedule constraints.

- Develop and meet ongoing project and/or task staffing requirements, including mechanisms to review and evaluate each task product.
- Review the work performed on each task to assure its quality, responsiveness, and timeliness.
- Review and analyze overall task performance with respect to planned requirements and authorizations.
- Review and approve all deliverables before their submission to NYSDEC.
- Develop and meet ongoing project and/or task staffing requirements, including mechanisms to review and evaluate each task product.
- Ultimately be responsible for the preparation and quality of interim and final reports.
- Represent the project team at meetings.

- *TurnKey FTL/SSHO:* *Nathan Munley*

The Field Team Leader (FTL) has the responsibility for implementation of specific project tasks identified at the Site, and is responsible for the supervision of project field personnel, subconsultants, and subcontractors. The FTL reports directly to the Project Manager. The FTL will:

- Define daily work activities.
- Orient field staff concerning the project's special considerations.
- Monitor and direct subcontractor personnel.
- Review the work performed on each task to ensure its quality, responsiveness, and timeliness.
- Assure that field activities, including sample collection and handling, are carried out in accordance with this QAPP.

For this project the FTL will also serve as the Site Safety and Health Officer (SSHO). As such, he is responsible for implementing the procedures and required components of the Site Health and Safety Plan (HASP), determining levels of protection needed during field tasks, controlling site entry/exit, briefing the field team and subcontractors on site-specific health and safety issues, and all other responsibilities as identified in the HASP.

5.3 Quality Assurance (QA) Responsibilities

The QA Officer will have direct access to corporate executive staff as necessary, to resolve any QA dispute, and is responsible for auditing the implementation of the QA program in conformance with the demands of specific investigations and TurnKey policies, and NYSDEC requirements. The QA Officer has sufficient authority to stop work on the investigation as deemed necessary in the event of serious QA issues.

- *Project QA Officer:* *Lori E. Riker*

  Specific function and duties include:
  - Performing QA audits on various phases of the field operations
  - Reviewing and approving QA plans and procedures
  - Providing QA technical assistance to project staff
  - Reporting on the adequacy, status, and effectiveness of the QA program on a regular basis to the Project Manager for technical operations
  - Responsible for assuring third party data review of all sample results from the analytical laboratory

5.4 Field Responsibilities

TurnKey field staff for this project is drawn from a pool of qualified resources. The Project Manager will use staff to gather and analyze data, and to prepare various task reports and support materials. All of the designated technical team members are experienced professionals who possess the degree of specialization and technical competence required to effectively and efficiently perform the required work.

5.5 Quality Assurance Objectives for Measurement Data

The overall objectives and criteria for assuring quality for this effort are discussed below. This QAPP addresses how the acquisition and handling of samples and the review and reporting of data will be documented. The objectives of this QAPP are to address the following:

- The procedures to be used to collect, preserve, package, and transport groundwater samples.
- Field data collection.
- Record keeping.
- Data management.
- Chain-of-custody procedures.
- Precision, accuracy, completeness, representativeness, decision rules, comparability and level of quality control effort conformance for sample analysis and data management by TestAmerica under EPA analytical methods.

5.6 Level of QC Effort for Sample Parameters

Field blank, method blank, trip blank, field duplicate, laboratory duplicate, laboratory control, standard reference materials (SRM) and matrix spike samples will be analyzed to assess the quality of the data resulting from the field sampling and analytical programs. QC samples are discussed below.

- Field and trip blanks consisting of distilled water will be submitted to the analytical laboratories to provide the means to assess the quality of the data resulting from the field-sampling program. Field (equipment) blank samples are analyzed to check for procedural chemical constituents at the facility that may cause sample contamination. Trip blanks are used to assess the potential for contamination of samples due to contaminant migration during sample shipment and storage.
- Method blank samples are generated within the laboratory and used to assess contamination resulting from laboratory procedures.
- Duplicate samples are analyzed to check for sampling and analytical reproducibility.
- MS/MSD and MS/Duplicate samples provide information about the effect of the sample matrix on the digestion and measurement methodology. Depending on site-specific circumstances, one MS/MSD or MS/Duplicate should be

collected for every 20 or fewer investigative samples to be analyzed for organic and inorganic chemicals of a given matrix (see Table 1).

The general level of QC effort will be one field (blind) duplicate and one field blank (when non-dedicated equipment is used) for every 20 or fewer investigative samples of a given matrix. Additional sample volume will also be provided to the laboratory to allow one site-specific MS/MSD or MS/Duplicate for every 20 or fewer investigative samples of a given matrix. One trip blank consisting of distilled, deionized water will be included along with each sample delivery group of aqueous VOC samples.

5.7 Sampling and Analysis Plan

Methods and protocol to be used to collect environmental samples (i.e., soil, groundwater, and sub-slab vapor) for this investigation are described in the TurnKey Field Operating Procedures (FOPs), summarized on Table 4 and presented in Appendix F.

The number and types of environmental samples to be collected is summarized on Table 1. Sample parameter lists, holding times and sample container requirements are summarized on Table 3. The sampling program and related site activities are discussed below. To the extent allowed by existing physical conditions at the facility, sample collection efforts will adhere to the specific methods presented herein. If alternative sampling locations or procedures are implemented in response to facility specific constraints, each will be selected on the basis of meeting data objectives. Such alternatives will be approved by NYSDEC before implementation and subsequently documented for inclusion in the project file.

5.7.1 Custody Procedures

Sample custody is controlled and maintained through the chain-of-custody procedures. Chain of custody is the means by which the possession and handling of samples will be tracked from the source (field) to their final disposition, the laboratory. A sample is considered to be in a person's custody if it is in the person's possession or it is in the person's view after being in his or her possession or it was in that person's possession and that person has locked it in a vehicle or room. Sample containers will be cleaned and preserved at the laboratory before shipment to the Site. The following section and FOPs for Sampling, Labeling, Storage, and Shipment, located in Appendix F, describe procedures for

maintaining sample custody from the time samples are collected to the time they are received by the analytical laboratory.

5.7.2 Sample Storage

Samples are stored in secure limited-access areas. Walk-in coolers or refrigerators are maintained at 4°C, ± 2°C, or as required by the applicable regulatory program. The temperatures of all refrigerated storage areas are monitored and recorded a minimum of once per day. Deviations of temperature from the applicable range require corrective action, including moving samples to another storage location if necessary.

5.7.3 Sample Custody

Sample custody is defined by this document as when any of the following occur:

- It is in someone's actual possession.
- It is in someone's view after being in his or her physical possession.
- It was in someone's possession and then locked, sealed, or secured in a manner that prevents unsuspected tampering.
- It is placed in a designated and secured area.

Samples are removed from storage areas by the sample custodian or analysts and transported to secure laboratory areas for analysis. Access to the laboratory and sample storage areas is restricted to laboratory personnel and escorted visitors only; all areas of the laboratory are therefore considered secure. If required by the applicable regulatory program, internal chain-of-custody is documented in a log by the person moving the samples between laboratory and storage areas.

Laboratory documentation used to establish COC and sample identification may include the following:

- Field COC forms or other paperwork that arrives with the sample.
- The laboratory COC.
- Sample labels or tags are attached to each sample container.

- Sample custody seals.
- Sample preparation logs (i.e., extraction and digestion information) recorded in hardbound laboratory books that are filled out in legible handwriting, and signed and dated by the chemist.
- Sample analysis logs (e.g., metals, GC/MS, etc.) information recorded in hardbound laboratory books that are filled out in legible handwriting, and signed and dated by the chemist.
- Sample storage log (same as the laboratory COC).
- Sample disposition log, which documents sample disposal by a contracted waste disposal company.

5.7.4 Sample Tracking

All samples are maintained in the appropriate coolers prior to and after analysis. The analysts remove and return their samples as needed. Samples that require internal COC are relinquished to the analysts by the sample custodians. The analyst and sample custodian must sign the original COC relinquishing custody of the samples from the sample custodian to the analyst. When the samples are returned, the analyst will sign the original COC returning sample custody to the sample custodian. Sample extracts are relinquished to the instrumentation analysts by the preparatory analysts. Each preparation department tracks internal COC through their logbooks/spreadsheets.

Any change in the sample during the time of custody will be noted on the COC (e.g., sample breakage or depletion).

5.8 Calibration Procedures and Frequency

This section describes the calibration procedures and the frequency at which these procedures will be performed for both field and laboratory instruments.

5.8.1 Field Instrument Calibration

Quantitative field data to be obtained during groundwater sampling include pH, turbidity, specific conductance, temperature, and depth to groundwater. Quantitative water

level measurements will be obtained with an electronic sounder or steel tape, which require no calibration. Quantitative field data to be obtained during soil sampling include screening for the presence of volatile organic constituents using a photoionization detector (PID).

FOPs located in Appendix F describe the field instruments used to monitor for these parameters and the calibration methods, standards, and frequency requirements for each instrument. Calibration results will be recorded on the appropriate field forms and in the Project Field Book.

5.9 Analytical Procedures

Samples collected during this investigation field sampling activities will be analyzed by a NYSDOH-approved laboratory.

5.9.1 Field Analytical Procedures

Field procedures for collecting and preserving groundwater and soil samples are described in FOPs located in Appendix F. A summary of the FOPs is presented on Table 4.

5.10 Data Usability Evaluation

Data usability evaluation procedures shall be performed for both field and laboratory operations as described below.

5.10.1 Procedures Used to Evaluate Field Data Usability

Procedures to validate field data for this project will be facilitated by adherence to the FOPs identified in Appendix F. The performance of all field activities, calibration checks on all field instruments at the beginning of each day of use, manual checks of field calculations, checking for transcription errors and review of field log books is the responsibility of the Field Team Leader.

5.10.2 Procedures Used to Evaluate Laboratory Data Usability

Data evaluation will be performed by the third party data validator using the most current methods and quality control criteria from the USEPA's Contract Laboratory Program (CLP) *National Functional Guidelines for Organic Data Review*, and Contract Laboratory Program*, National Functional Guidelines for Inorganic Data Review*. The data review guidance will

be used only to the extent that it is applicable to the SW-846 methods; SW-846 methodologies will be followed primarily and given preference over CLP when differences occur. Also, results of blanks, surrogate spikes, MS/MSDs, and laboratory control samples will be reviewed/evaluated by the data validator. All sample analytical data for each sample matrix shall be evaluated. The third party data validation expert will also evaluate the overall completeness of the data package. Completeness checks will be administered on all data to determine whether deliverables specified in this QAPP are present. The reviewer will determine whether all required items are present and request copies of missing deliverables.

6.0 INVESTIGATION SUPPORT DOCUMENTS

6.1 Health and Safety Protocols

TurnKey Environmental Restoration has prepared a Site-Specific Health and Safety Plan (HASP) for use by our employees in accordance with 40 CFR 300.150 of the NCP and 29 CFR 1910.120. The HASP, provided in Appendix C, includes the following site-specific information:

- A hazard assessment.
- Training requirements.
- Definition of exclusion, contaminant reduction, and other work zones.
- Monitoring procedures for site operations.
- Safety procedures.
- Personal protective clothing and equipment requirements for various field operations.
- Disposal and decontamination procedures.

The HASP also includes a contingency plan that addresses potential site-specific emergencies, and a Community Air Monitoring Plan that describes required particulate and vapor monitoring to protect the neighboring community during intrusive site investigation and remediation activities.

Health and safety activities will be monitored throughout the field investigation and IRM. 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 and/or remedial activities.

6.1.1 Community Air Monitoring

Real-time community air monitoring will be performed during IRM activities at the Site. A CAMP is included within TurnKey's HASP (see HASP Appendix C). Particulate and VOC monitoring will be performed along the downwind perimeter of the work area during subgrade excavation, grading and soil/fill handling activities in accordance with this plan. 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 NYSDEC's DER-10 (May 2010) Appendix 1A (NYSDOH's Generic Community Air Monitoring Plan) and Appendix 1B (Fugitive Dust and Particulate Monitoring).

6.2 Soil/Fill Management Plan (SFMP)

The purpose of the Soil/Fill Management Plan (SFMP) is to protect both the environment and human health during redevelopment and post-development maintenance activities of the Site, subsequent to completion of Brownfield cleanup activities. The SFMP will be modified/expanded as appropriate based on the results of the RI. The SFMP is included in Appendix E.

While an assessment of surface and subsurface soil/fill and groundwater at the Site will be performed during the RI, subsurface information is never 100 percent complete or accurate, especially on a large Site with a long and diverse manufacturing history. As such, it is not unreasonable to anticipate the possibility that some quantity of subsurface soil/fill contamination may be encountered after completion of the Brownfield cleanup. In particular, soil/fill contamination may be encountered during post-development activities such as utility maintenance.

Compliance with the SFMP is required to properly manage subsurface soil contamination. The SFMP was developed and incorporated into this Work Plan with the express purpose of addressing unknown subsurface contamination if and when encountered. The SFMP also facilitates the transfer of responsibilities with property ownership, which is why the SFMP is a separate, standalone document.

This SFMP provides protocols for the proper handling of Site soil/fill during development activities, including:

- Excavation, grading, sampling and handling of site soils.
- Acceptability of soils/fill from off-site sources for backfill or subgrade fill.
- Erosion and dust control measures.
- Access controls.
- Health and safety procedures for subsurface construction work and the protection of the surrounding community.

6.3 Citizen Participation Activities

NYSDEC will coordinate and lead community relations throughout the course of the project. TurnKey will support NYSDEC's community relations activities, as necessary. A Citizen Participation Plan will be prepared by TurnKey and submitted to NYSDEC under separate cover. The Citizen Participation Plan will follow NYSDEC's Citizen Participation Plans template for Brownfield Cleanup Program sites entering the BCP at the point of site investigation.

7.0 REPORTING AND SCHEDULE

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

7.1 Remedial Investigation Reporting

The RI 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 (May 2010).

- Introduction and background;
- A description of the site and the investigation areas;
- A description of the field procedures and methods used during the RI;
- A discussion of the nature and rationale for any significant variances from the scope of work described in this RI Work Plan;
- The data obtained during the RI and historical data considered by TurnKey to be of useable quality. This will include geochemical data, field measurements, etc;
- 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 human health and environmental risk assessments, including any recommendations for more detailed assessments, if applicable; and
- Supporting materials for RI data. These will include boring logs, monitoring well construction diagrams, laboratory analytical reports, and similar information.

In addition, TurnKey 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 May 2010 DER-10 guidance. The DUSR and any necessary qualifications to the data will be appended to the RI report.

7.2 IRM Reporting

TurnKey environmental professional will be on-site to document IRM activities. Such documentation will include, at minimum, daily reports of IRM activities, community air monitoring results, photographs and corrective measures report, if necessary.

A summary of the IRM activities will be included in the RI/IRM/AA report submitted to the NYSDEC, with full details of the IRM activities included in the Final Engineering Report. At a minimum, the IRM section of the report will include:

- A Site or area planimetric map showing the parcel(s) remediated;
- A map showing the lateral limits of excavation;
- Summaries of unit quantities, including: volume of soil/fill excavated; disposition of excavated soil/fill and collected ground/surface water; volume/type/source of backfill; and volume of ground/surface water pumped and treated;
- Planimetric map showing location of all verification and other sampling locations with sample identification labels/codes;
- Tabular comparison of verification and other sample analytical results to SCOs. An explanation shall be provided for all results exceeding acceptance criteria; and
- Text describing that the excavation activities were performed in accordance with this Work Plan.

7.3 Alternatives Analysis Report

An alternatives analysis report (AAR) is typically developed to provide a forum for evaluating and selecting a recommended remedial approach, in accordance with DER-10. However, the planned IRM may effectively remove contaminants from the Site. If additional

contamination is discovered during RI site characterization activities, the AAR may need to evaluate additional remedial measures beyond the IRM activities. If the IRM effectively removes site contaminants, the AAR will evaluate the IRM as the final remedy.

A list of remedial action objectives will be developed based on findings of the RI and IRM and the requirement for the selected remedial measures to be protective of human health and the environment under the proposed future use scenario. Proposed soil cleanup objectives (SCOs) for the property will also be presented based on the proposed future use of the Site. SCOs will be based on published standards, criteria, and guidance (SCGs) and other NYSDEC and NYSDOH-accepted values.

Based on the remedial action objectives and SCOs, volumes and areas of media potentially requiring additional remediation will be calculated. 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) and DER-10-4.2:

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

In addition, the criteria of community acceptance will be considered based on public comments on the AAR 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 identification of a recommended remedial approach.

8.0 PROJECT SCHEDULE

A tentative project schedule for the major tasks to be performed in support of the RI/ IRM/AA is presented as Figure 7.

9.0 REFERENCES

1. New York State Department of Environmental Conservation. *DER-10; Technical Guidance for Site Investigation and Remediation.* May 2010.

2. United States Department of Agriculture (USDA), Soil Conservation Service. *Soil Survey of Erie County, New York.* December 1986.

3. National Oceanic & Atmospheric Administration (NOAA) Satellites and Information. Data Tables through 2013.

4. TurnKey Environmental Restoration, LLC. *Phase I Environmental Site Assessment, 1050-1088 Niagara Street, Buffalo, New York.* June 2012.

5. TurnKey Environmental Restoration, LLC. *Limited Phase II Environmental Investigation Report, 1050-1088 Niagara Street, Buffalo, New York.* July 2012.

6. TurnKey Environmental Restoration, LLC. Supplemental *Phase II Site Investigation Report, 1050-1088 Niagara Street, Buffalo, New York.* August 2013.

7. U.S. Environmental Protection Agency. *Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QA/R-5).* October 1998.

8. U.S. Environmental Protection Agency, Region II. *CERCLA Quality Assurance Manual, Revision I.* October 1989.

9. U.S. Environmental Protection Agency, *Methods for Chemical Analysis of Water and Wastes*, EPA 600/4-70-020. 1983b.

10. U.S. Environmental Protection Agency. National Functional Guidelines for Organic Data Review (EPA-540/R-94-012), 1994a.

11. U.S. Environmental Protection Agency. National Functional Guidelines for Inorganic Data Review (EPA-540/R-94-013), 1994b.

TABLES

TABLE 1

SAMPLING AND ANALYSIS PLAN

RI-IRM-AA WORK PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Matrix	Investigation Location		Estimated Number of Samples	Full List VOCs [1]	TCL SVOCs	SVOCs (BN only)	TAL Metals	RCRA Metals	PCBs	Pesticide	Herbicide
Soil/Fill	SS-1	Surface	1		1		1		1	1	1
	SS-2		1		1		1				
	SS-3		1		1		1		1	1	1
	SS-4		1		1		1				
	SS-5		1		1		1		1	1	1
	SS-6		1		1		1				
	NS-1	Near Surface	1		1		1		1	1	1
	NS-2		1		1		1				
	NS-3		1		1		1		1	1	1
	NS-4		1			1		1			
	NS-5		1		1		1		1	1	1
	TP-11	Exterior Subsurface	1	1	1		1		1	1	1
	TP-12		1		1		1		1	1	1
	TP-13		1			1		1			
	TP-14		1	1		1		1			
	MW-1		1		1		1		1	1	1
	MW-2		1	1		1		1			
	MW-3		1		1		1		1	1	1
	MW-4		1		1		1				
	MW-5		1	1		1		1			
	MW-6		1		1		1		1	1	1
	SB-9	Interior Subsurface	1	1		1		1			
	SB-10		1		1		1		1	1	1
	SB-11		1			1		1			
	SB-12		1		1		1				
	SB-13		1	1	1		1				
	SB-14		1			1					
	SB-15		1	1	1		1		1	1	1
	SB-16		1			1		1			
SV	SV-1	Subsurface Vapor	1	1							
	SV-2		1	1							
	SV-3		1	1							
	SV-4		1	1							
	Ambient-1	Ambient Air	1	1							
	Ambient-2		1	1							
	Outdoor Air Sample	Ouitdoor Air	1	1							
QA/QC	Soil	MS	1	1	2		2		1	1	1
		MSD	1	1	2		2		1	1	1
		Blind Dup	1	1	2		2		1	1	1
	SV	Blind Dup	1	1							
			40	**18**	**26**	**9**	**26**	**8**	**16**	**16**	**16**
Groundwater	MW-1	Groundwater	1	1	1		1		1	1	1
	MW-2		1	1	1		1		1	1	1
	MW-3		1	1	1		1		1	1	1
	MW-4		1	1	1		1		1	1	1
	MW-5		1	1	1		1		1	1	1
	MW-6		1	1	1		1		1	1	1
QA/QC	Groundwater	MS	1	1	1		1		1	1	1
		MSD	1	1	1		1		1	1	1
		Blind Dup	1	1	1		1		1	1	1
	Submersible Pump	Equipment Blank	1	1	1		1		1	1	1
			10	**10**	**10**	**0**	**10**	**0**	**10**	**10**	**10**

Notes:

1. Full List VOCs = TCL plus CP-51 VOCs via EPA Method 8260.
2. All locations shall be sampled and archived by the laboratory for potential analysis / reanalysis.
3. GW field parameters including: pH, specific conductance, temperature, DO, ORP, and turbidity will be collected and recorded.
4. Additional samples may be collected if field screening results indicate potential contamination (e.g., elevated PID readings above 5 ppm).

Acronyms:

VOCs = volatile organic compounds
SVOCs = semi-volatile organic compounds
TCL = Target Compound List
TAL = Target Analyte List
BN = Base Neutrals
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act

TABLE 2

CRITERIA FOR USE OF OFF-SITE SOIL

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Parameter	Allowable Concentration for Use of Off-Site Soil
Volatile Organic Compounds (mg/kg)	
1,1,1-Trichloroethane	0.68
1,1-Dichloroethane	0.27
1,1-Dichloroethene	0.33
1,2-Dichlorobenzene	1.1
1,2-Dichloroethane	0.02
1,2-Dichloroethene(cis)	0.25
1,2-Dichloroethene(trans)	0.19
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1
Acetone	0.05
Benzene	0.06
Butylbenzene	12
Carbon tetrachloride	0.76
Chlorobenzene	1.1
Chloroform	0.37
Ethylbenzene	1
Hexachlorobenzene	3.2
Methyl ethyl ketone	0.12
Methyl tert-butyl ether	0.93
Methylene chloride	0.05
Propylbenzene-n	3.9
Sec-Butylbenzene	11
Tert-Butylbenzene	5.9
Tetrachloroethene	1.3
Toluene	0.7
Trichloroethene	0.47

TABLE 2

CRITERIA FOR USE OF OFF-SITE SOIL

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Parameter	Allowable Concentration for Use of Off-Site Soil
Volatile Organic Compounds (mg/kg)	
Trimethylbenzene-1,2,4	3.6
Trimethylbenzene-1,3,5	8.4
Vinyl chloride	0.02
Xylene (mixed)	1.6
Semi-Volatile Organic Compounds (mg/kg)	
Acenaphthene	98
Acenaphthylene	107
Anthracene	500
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1.7
Benzo(g,h,i)perylene	500
Benzo(k)fluoranthene	1.7
Chrysene	1
Dibenz(a,h)anthracene	0.56
Fluoranthene	500
Fluorene	386
Indeno(1,2,3-cd)pyrene	5.6
m-Cresol(s)	0.33
Naphthalene	12
o-Cresol(s)	0.33
p-Cresol(s)	0.33
Pentachlorophenol	0.8
Phenanthrene	500
Phenol	0.33
Pyrene	500

TABLE 2

CRITERIA FOR USE OF OFF-SITE SOIL

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Parameter	Allowable Concentration for Use of Off-Site Soil
Metals (mg/kg)	
Arsenic	16
Barium	400
Beryllium	47
Cadmium	7.5
Chromium, Hexavalent[1]	19
Chromium, Trivalent[1]	1500
Copper	270
Cyanide	27
Lead	450
Manganese	2000
Mercury (total)	0.73
Nickel	130
Selenium	4
Silver	8.3
Zinc	2480
PCBs/Pesticides (mg/kg)	
2,4,5-TP Acid (Silvex)	3.8
4,4'-DDE	17
4,4'-DDT	47
4,4'-DDD	14
Aldrin	0.19
Alpha-BHC	0.02
Beta-BHC	0.09
Chlordane (alpha)	2.9
Delta-BHC	0.25
Dibenzofuran	210
Dieldrin	0.1
Endosulfan I	102
Endosulfan II	102

TABLE 2

CRITERIA FOR USE OF OFF-SITE SOIL

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Parameter	Allowable Concentration for Use of Off-Site Soil
PCBs/Pesticides (mg/kg)	
Endosulfan sulfate	200
Endrin	0.06
Heptachlor	0.38
Lindane	0.1
Polychlorinated biphenyls	1

Notes:

1. The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

TABLE 3

SAMPLE CONTAINER, VOLUME, PRESERVATION &
HOLDING TIME REQUIREMENTS

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Matrix	Parameter [1]	Method [1]	Container Type	Minimum Volume	Preservation (Cool to 2-4 °C for all samples)	Holding Time from Sample Date
Soil/Sediment	TCL + STARS VOCs	8260B	WMG	16 oz.	Cool to 2-4 °C, Zero Headspace	14 days
	TCL SVOCs	8270C	WMG	16 oz.	Cool to 2-4 °C	14 days extrac./40 days
	TAL Metals	6010B	WMG	4 oz.	Cool to 2-4 °C	6 months/Hg 28 days
	Pesticides	8081	WMG	8oz	Cool to 2-4 °C	14 days extrac./40 days
	Herbicides	8151	WMG	8oz	Cool to 2-4 °C	14 days extrac./40 days
	PCBs	8082	WMG	4 oz.	Cool to 2-4 °C	14 days extrac./40 days
Groundwater	TCL + STARS VOCs	8260B	glass vial	3 - 4 oz.	HCl to pH<2, Zero Headspace, Cool to 2-4 °C	14 days
	TCL SVOCs	8270C	amber glass	1000 ml	Cool to 2-4 °C	7 days extrac/40 days
	TAL Metals	6010B	plastic	600 ml	HNO_3 to pH<2, Cool to 2-4 °C	6 months/Hg 28 days
	PCBs	8082	amber glass	1000 ml	Cool to 2-4 °C	7 days extrac/40 days
Air/Soil Vapor	TCL VOCs	TO-15	Summa Cannister	6 liters	None	Analyze within 14 days of sample date of collection

References:
1. Test Methods for Evaluating Solid Wastes, USEPA SW-846, Update III, 1991.

Notes:
1. EPA-approved methods published in Reference 1 above may be used. The list of analytes, laboratory method and the method detection limit for each parameter are included in Tables 1 and 2 of the QAPP.

Acronyms:
VOCs = Volatile Organic Compounds
SVOCs = Semi-Volatile Organic Compounds
TCL = Target Compound List
TAL = Target Analyte List
WMG = Wide Mouth Glass

TABLE 4

SUMMARY OF FIELD OPERATING PROCEDURES

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

TurnKey FOP No.	Procedure
001.1	Abandonment of Borehole Procedures
004.3	Ambient Air/Subslab Vapor Sample Collection Procedure
007.0	Calibration and Maintenance of Portable Dissolved Oxygen Meter
008.0	Calibration and Maintenance of Portable Field pH/Eh Meter
009.0	Calibration and Maintenance of Portable Field Turbidity Meter
011.0	Calibration and Maintenance of Portable Photoionization Detector
012.0	Calibration and Maintenance of Portable Specific Conductance Meter
015.0	Documentation Requirements for Drilling and Well Installation
017.0	Drill Site Selection Procedure
018.0	Drilling and Excavation Equipment Decontamination Procedures
021.0	Establishing Horizontal and Vertical Control
022.0	Groundwater Level Measurement
024.0	Groundwater Sample Collection Procedures
026.1	Hollow Stem Auger (HSA) Drilling Procedures
031.1	Low Flow (Minimal Drawdown) Groundwater Purging & Sampling Procedure
032.1	Management of Investigation-Derived Waste (IDW)
033.0	Monitoring Well Construction for Hollow Stem Auger Boreholes
036.0	Monitoring Well Development Procedures
046.0	Sample Labeling, Storage and Shipment Procedures
047.0	Screening of Soil Samples for Organic Vapors During Drilling Activities
054.0	Soil Description Procedures Using The USCS
063.2	Surface and Subsurface Soil Sampling Procedures
065.1	Test Pit Excavation & Logging Procedures
073.1	Real-Time Air Monitoring During Intrusive Activities
076.0	"Before Going Into the Field" Procedure
078.0	Geoprobe Drilling Procedure
084.0	Calibration and Maintenance of Portable Particulate Meter

TABLE 5

SUMMARY OF PREVIOUS INVESTIGATION ANALYTICAL RESULTS

1050-1088 NIAGARA STREET

BUFFALO, NEW YORK

Parameter [1]	Unrestricted Use SCOs[2]	Commercial Use SCOs[3]	Sample Location (Depth)													
			TP-1 (7-9)	TP-3 (4-5)	TP-4 (3-5)	TP-5 (7-9)	TP-10 (9-11)	SB-1 (0.5-1)	SB-2 (0.5-1)	SB-3 (0-0.5)	SB-4 (0-0.5)	SB-5 (0.5-1) [5]	SB-6 (0.5-1)	SB-7 (0.5-1)	SB-8 (0.5-1)
			5/16/2012					7/15/2013							
Volatile Organic Compounds (VOCs) - mg/Kg [3]															
2-Butanone (MEK) [5]	--	--	--	0.026 J	ND	--	0.006 J	--	--	--	--	--	--	--	--
Acetone	**0.05**	**500**	--	0.17	ND	--	0.042	--	--	--	--	--	--	--	--
Ethylbenzene	**1**	**390**	--	ND	**23**	--	ND	--	--	--	--	--	--	--	--
Cyclohexane	--	--	--	0.27	19	--	ND	--	--	--	--	--	--	--	--
Isopropylbenzene (Cumene)	**2.3**	**2.3**	--	0.25	**9.6**	--	ND	--	--	--	--	--	--	--	--
n-Butylbenzene	**12**	**500**	--	ND	7.7	--	ND	--	--	--	--	--	--	--	--
n-Propylbenzene	**3.9**	**500**	--	0.38	**130**	--	ND	--	--	--	--	--	--	--	--
sec-Butylbenzene	**11**	**500**	--	ND	3.3	--	ND	--	--	--	--	--	--	--	--
tert-Butylbenzene	**5.9**	**500**	--	0.019 J	ND	--	ND	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	**3.6**	**190**	--	0.7 B	**85**	--	0.0012 J	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	**8.4**	**190**	--	ND	**35**	--	ND	--	--	--	--	--	--	--	--
p-Isopropyltoluene	**10**	**10**	--	ND	7.2	--	ND	--	--	--	--	--	--	--	--
Total Xylene	**0.26**	**500**	--	0.091 B	**100**	--	0.003 J	--	--	--	--	--	--	--	--
Methylcyclohexane	--	--	--	0.55	120	--	ND	--	--	--	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg [3]															
1,2-Dichlorobenzene	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.069 J	ND
1,3-Dichlorobenzene	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.08 J	ND
2-Methylnaphthalene	--	--	ND	ND	ND	ND	ND	ND	ND	25	5.9	1.3 J	ND	ND	ND
Acenaphthylene	**100**	**500**	0.01 J	ND	ND	ND	ND	ND	ND	ND	6.2	1.2 J	ND	ND	ND
Acenaphthene	**20**	**500**	0.025 J	ND	ND	ND	ND	ND	ND	**39**	7	7.3	ND	0.096 J	ND
Anthracene	**100**	**500**	0.047 J	ND	ND	0.11 J	ND	ND	ND	60	18	15	ND	0.18	ND
Benzo(a)anthracene	**1**	**5.6**	0.17 BJ	ND	ND	0.61 BJ	ND	ND	ND	**130**	**46**	**40**	ND	0.59	ND
Benzzo(a)pyrene	**1**	**1**	0.18 BJ	ND	ND	0.58 BJ	ND	ND	ND	**120**	**39**	**40**	ND	0.4	ND
Benzo(b)fluoranthene	**1**	**5.6**	0.2 B	ND	ND	0.72 BJ	ND	ND	ND	**120**	**36**	**55**	ND	0.65	ND
Benzo(k)fluoranthene	**0.8**	**56**	0.08 BJ	ND	ND	0.32 BJ	ND	ND	ND	**110**	**33**	**19**	ND	0.22	ND
Benzo(g,h,i)perylene	**100**	**500**	0.11 BJ	ND	ND	0.4 BJ	ND	ND	ND	67	21	26	ND	0.3	ND
Benzoic acid	--	--	ND	ND	ND	ND	ND	5.2 J	ND	ND	ND	ND	ND	ND	ND
Biphenyl	--	--	ND	ND	ND	ND	ND	ND	ND	5.1 J	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)pht	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4 J	ND	ND	ND
Butyl benzyl phthalate	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1 J	ND	ND	ND
Carbazole	--	--	ND	ND	ND	ND	ND	ND	ND	41	10	13	ND	0.13 J	ND
Chrysene	**1**	**56**	0.15 BJ	ND	ND	0.6 BJ	ND	ND	ND	**120**	**44**	**45**	ND	0.63	ND
Dibenzo(a,h)anthracene	**0.33**	**0.56**	0.035 J	ND	ND	ND	ND	ND	ND	**12**	**6.6**	ND	ND	0.1 J	ND
Dibenzofuran	--	--	ND	ND	ND	ND	ND	ND	ND	38	7.9	4.4	ND	ND	ND
Diethyl phthalate	--	--	ND	ND	ND	ND	ND	ND	0.086 J	ND	ND	ND	ND	ND	ND
Fluoranthene	**100**	**500**	0.22 B	ND	ND	0.96 BJ	ND	ND	ND	**300**	97	85	ND	1.4	ND
Fluorene	**30**	**500**	0.016 J	ND	ND	ND	ND	ND	ND	**43**	9	ND	ND	0.08 J	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	0.092 J B	ND	ND	0.31 BJ	ND	ND	ND	**85**	**24**	ND	ND	0.25	ND
Naphthalene	**12**	**500**	0.1 J	0.0052 J	4.4 J	ND	ND	ND	ND	**51**	**15**	2.2 J	ND	ND	ND
Phenanthrene	**100**	**500**	0.22 B	ND	ND	0.66 BJ	ND	ND	0.17	**300**	67	ND	0.072 J	1.2	ND
Pyrene	**100**	**500**	0.22 B	ND	ND	1 BJ	ND	ND	ND	**210**	84	69	ND	1	ND
Metals - mg/Kg															
Aluminum	--	--	--	--	--	--	--	2000	5400	4300	4500	--	--	10000	--
Antimony	--	--	--	--	--	--	--	ND	2 J	5.8	9.4	--	--	ND	--
Arsenic	**13**	**16**	8.8	4.5	4.3	5.9	5.1	3.2	3.4	**42**	**86**	--	--	5.9	--
Barium	**350**	**400**	133	112	117	**375**	76.7	83	100	220	240	--	--	61	--
Beryllium	**7.2**	**590**	--	--	--	--	--	0.18 J	0.57	0.57	0.45 J	--	--	0.41 J	--
Cadmium	**2.5**	**9.3**	1.7	ND	0.33	**6**	0.25	0.34 J	0.78 J	**3.4**	**15**	--	--	0.52 J	--
Calcium	--	--	--	--	--	--	--	12000	21000	6200	23000	--	--	73000	--
Chromium	**30**	**1500**	**77.3**	18.8	14.4	**67.6**	15.3	4	12	**57**	**44**	--	--	13	--
Cobalt	--	--	--	--	--	--	--	62	140	18	8.6	--	--	21	--
Copper	**50**	**270**	--	--	--	--	--	29	**87**	**660**	**320**	--	--	36	--
Iron	--	--	--	--	--	--	--	9300	12000	100000	41000	--	--	15000	--
Lead	**63**	**1000**	**1160**	19	1.3	**292**	14	16	48	**670**	**550**	--	--	36	--
Magnesium	--	--	--	--	--	--	--	2700	5200	790	2000	--	--	31000	--
Manganese	**1600**	**10000**	--	--	--	--	--	47	120	530	380	--	--	460	--
Mercury	**0.18**	**2.8**	**4**	ND	0.083	**0.35**	ND	ND	0.03 J	**0.99**	**2.2**	--	--	ND	--
Nickel	**30**	**310**	--	--	--	--	--	13	48	30	28	--	--	19	--
Potassium	--	--	--	--	--	--	--	380	950	320	540	--	--	1400	--
Selenium	**3.9**	**1500**	ND	ND	ND	ND	ND	1.2 J	0.36 J	2.1	**6.2**	--	--	0.35 J	--
Silver	**2**	**1500**	ND	ND	ND	0.73	ND	1.6	**9**	**11**	**8**	--	--	0.32 J	--
Sodium	--	--	--	--	--	--	--	150 J	220	140 J	320 J	--	--	190 J	--
Vandium	--	--	--	--	--	--	--	8.3	16	11	15	--	--	20	--
Zinc	**109**	**10000**	--	--	--	--	--	39	80	**410**	**670**	--	--	68	--

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375.6.8 (a) Soil Cleanup Objectives - Unrestricted (December 2006)
3. Values per 6NYCRR Part 375.6.8 (b) Soil Cleanup Objectives - Commercial (December 2006).
4. Sample results were reported by the laboratory in ug/kg and converted to mg/Kg for comparison to SCOs.
5. Sample SB-5 was aslo analyzed for polychlorinated biphenyls (PCBs), which were reported as non-detect.

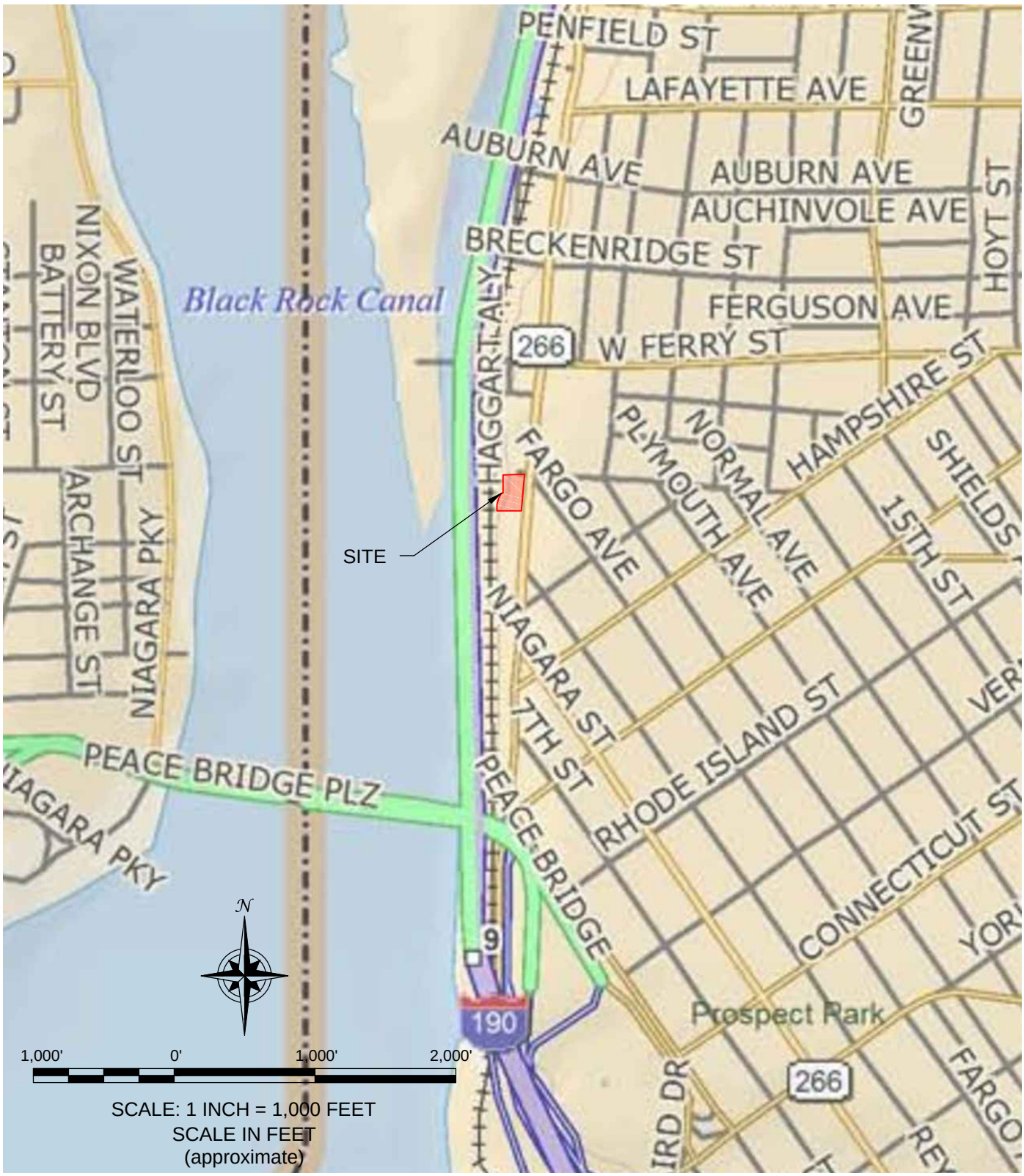
Definitions:

ND = Parameter not detected above laboratory detection limit.
NA = Parameter not Analysed.
"--" = No SCO available.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
* = Indicates the spike or duplicate analysis is not within the quality control limits.
D = Analyte was detected after laboratory dilution.

BOLD = Exceeds NYSDEC Unrestricted Use SCOs.
BOLD = Exceeds NYSDEC Commercial Use SCOs.

FIGURES

FIGURE 1



TurnKey Environmental Restoration, LLC

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SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0136-013-005

DATE: NOVEMBER 2013

DRAFTED BY: JGT

SITE LOCATION AND VICINITY MAP

RI-IRM-AA WORK PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

DATE: NOVEMBER 2013
DRAFTED BY: JGT

FIGURE 2

SITE PLAN (AERIAL)

RI-IRM-AA WORK PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
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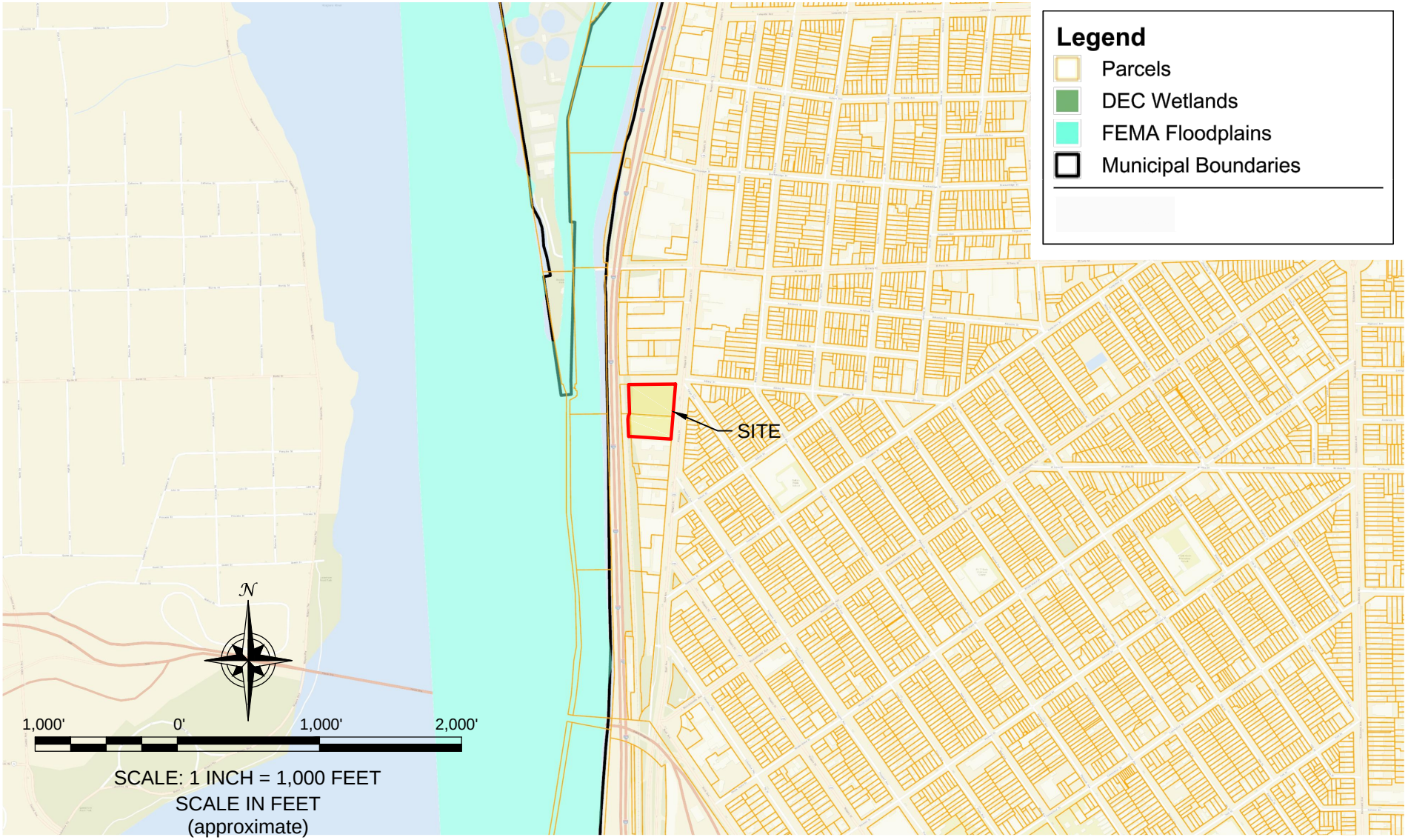
(716) 856-0635

JOB NO.: 0136-013-005



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DATE: NOVEMBER 2013

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REGIONAL FLOODPLAINS MAP

RI-IRM-AA WORK PLAN

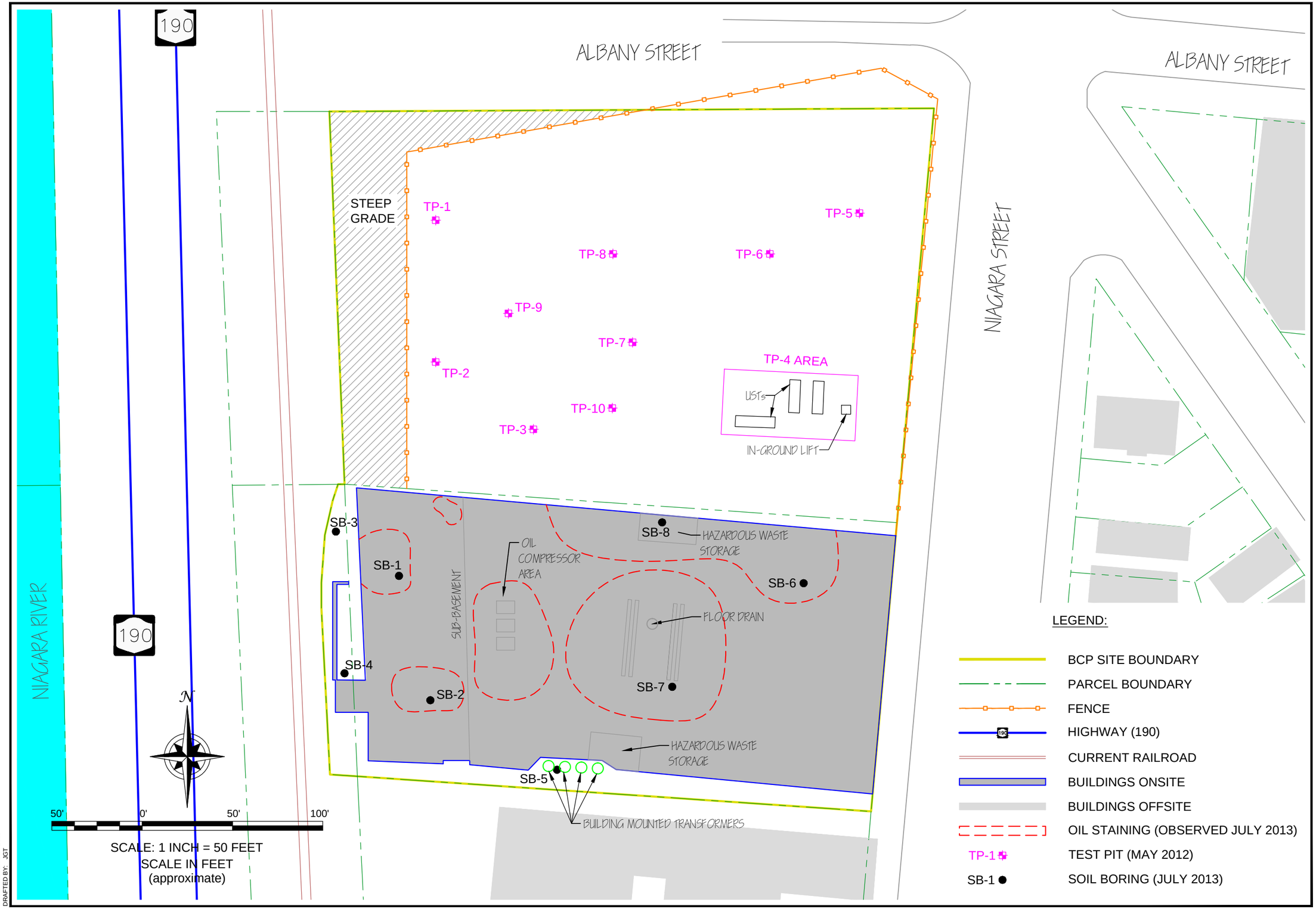
1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

FIGURE 3



DATE: NOVEMBER 2013
DRAFTED BY: JGT

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JOB NO.: 0136-013-005

PREVIOUS INVESTIGATION SAMPLE LOCATIONS

RI-IRM-AA WORK PLAN
1050-1088 NIAGARA STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

FIGURE 4

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\RI-IRM Work Plan - November 2013\1050-1088 Niagara RI IRM Work Plan Figures.dwg

ALBANY STREET

ALBANY STREET

NIAGARA STREET

190

190

STEEP GRADE

TP-11 NS-1

SS-2 MW-2

TP-12 NS-2

TP-1

TP-5

SS-1 MW-1

TP-8

TP-6

MW-3 SS-3

TP-14

TP-9

TP-7

TP-2

TP-4 AREA

USTs

IN-GROUND LIFT

TP-10

SS-4 MW-4

TP-3

MW-5 SS-5

TP-13 NS-3

Outdoor

SB-15

SB-3

SV-3

NS-4

SB-1

SB-13

OIL COMPRESSOR AREA

HAZARDOUS WASTE STORAGE

SUB-BASEMENT

SB-6

SB-10

SB-14

FLOOR DRAIN

SV-1

Ambient-2

SB-12

SV-2

Ambient-1

SB-9

SB-4

SB-7

SB-16

SB-2

SB-11

NS-5

SV-4

SB-8

HAZARDOUS WASTE STORAGE

SB-5

MW-6 SS-6

BUILDING MOUNTED TRANSFORMERS

N

50' 0' 50' 100'

SCALE: 1 INCH = 50 FEET
SCALE IN FEET
(approximate)

DATE: APRIL 2014
DRAFTED BY: BLR

LEGEND:

- BCP SITE BOUNDARY
- PARCEL BOUNDARY
- FENCE
- HIGHWAY (190)
- CURRENT RAILROAD
- BUILDINGS ONSITE
- BUILDINGS OFFSITE
- TP-1 TEST PIT (MAY 2012)
- SB-1 SOIL BORING (JULY 2013)
- SS-1 PLANNED SURFACE SOIL SAMPLE LOCATION
- NS-1 PLANNED NEAR SURFACE SOIL SAMPLE LOCATION
- SB-9 PLANNED SOIL BORING LOCATION
- TP-11 PLANNED TEST PIT LOCATION
- MW-1 PLANNED MONITORING WELL LOCATION
- SV-1 PLANNED SUBSLAB VAPOR LOCATION

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TURNKEY ENVIRONMENTAL RESTORATION, LLC

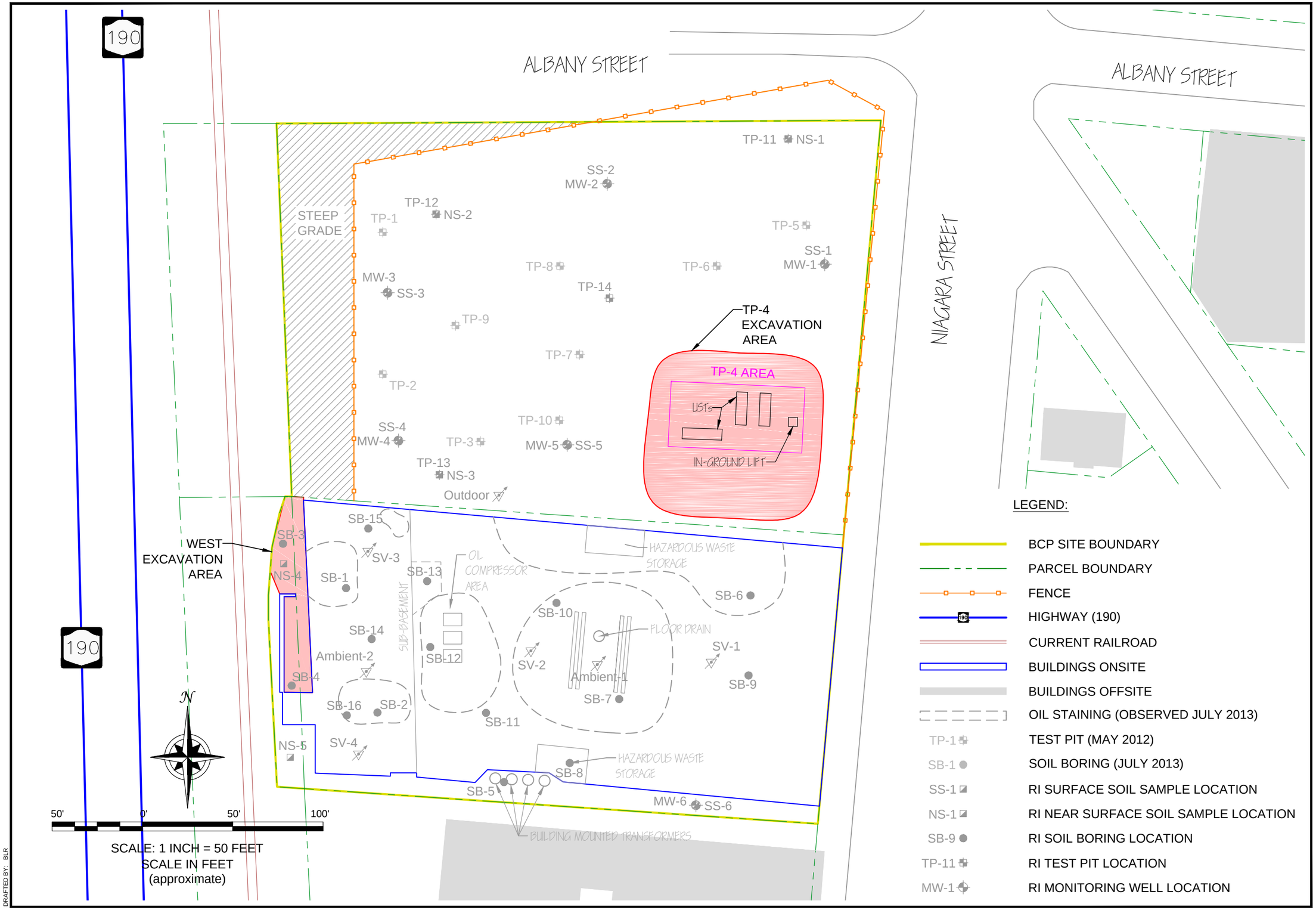
JOB NO.: 0136-013-005

PROPOSED RI SAMPLE LOCATIONS

RI-IRM-AA WORK PLAN
1050-1088 NIAGARA STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

FIGURE 5

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\RI-IRM Work Plan - November 2013\1050-1088 Niagara RI IRM Work Plan Figures.dwg



LEGEND:

- BCP SITE BOUNDARY
- PARCEL BOUNDARY
- FENCE
- HIGHWAY (190)
- CURRENT RAILROAD
- BUILDINGS ONSITE
- BUILDINGS OFFSITE
- OIL STAINING (OBSERVED JULY 2013)
- TP-1 TEST PIT (MAY 2012)
- SB-1 SOIL BORING (JULY 2013)
- SS-1 RI SURFACE SOIL SAMPLE LOCATION
- NS-1 RI NEAR SURFACE SOIL SAMPLE LOCATION
- SB-9 RI SOIL BORING LOCATION
- TP-11 RI TEST PIT LOCATION
- MW-1 RI MONITORING WELL LOCATION

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JOB NO.: 0136-013-005

PROPOSED IRM ACTIVITIES

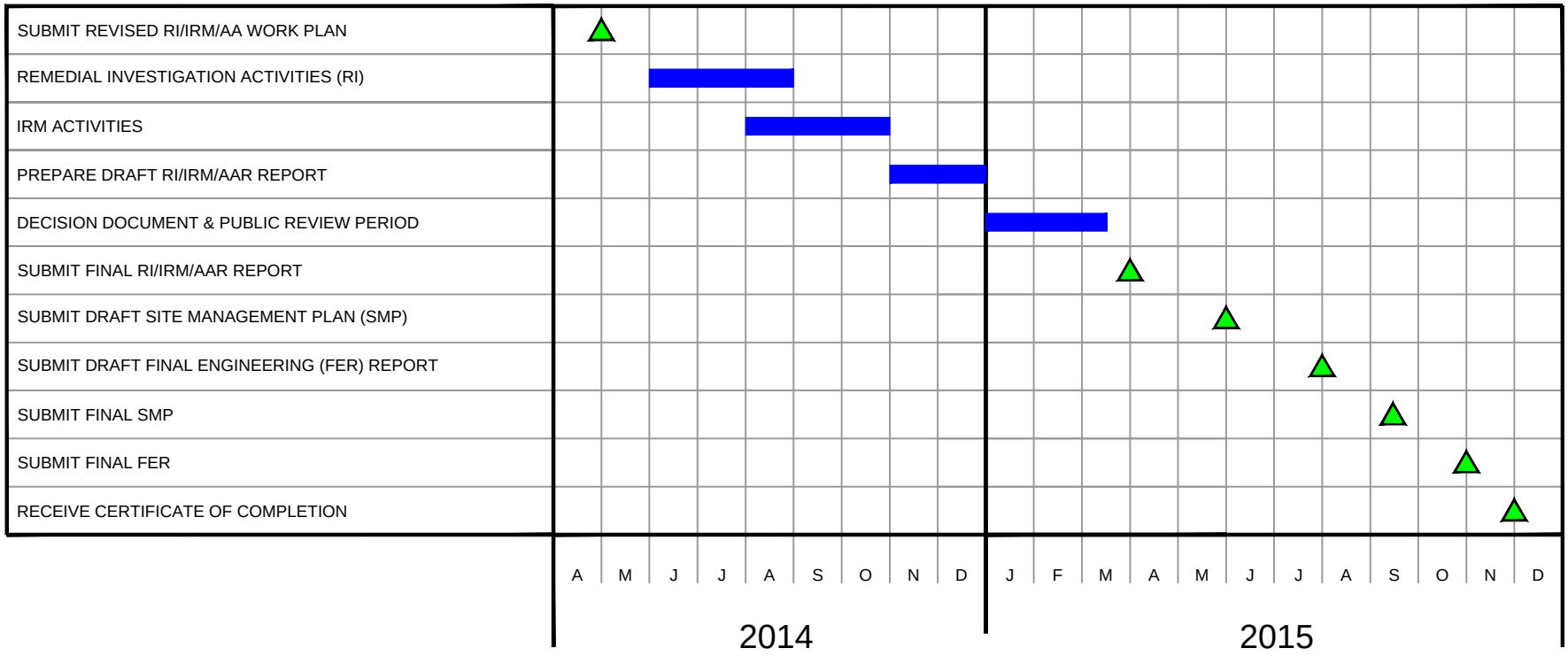
RI-IRM-AA WORK PLAN
1050-1088 NIAGARA STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
9271 GROUP, LLC

FIGURE 6

DATE: MAY 2014
DRAFTED BY: BLR

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\RI-IRM Work Plan - November 2013\Figure 7; Project Schedule.dwg

PROJECT TASKS:



TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
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(716) 856-0635

PROJECT NO.: 0136-013-005

DATE: NOVEMBER 2013 (REV. MAY 2014)

DRAFTED BY: BLR

PROJECT SCHEDULE

RI-IRM-AA WORK PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

FIGURE 7

APPENDIX A

RESUMES

MICHAEL LESAKOWKSI
PROJECT MANAGER

EDUCATION

Master of Science (Environmental Engineering Science), University of Buffalo, 2008
Bachelor of Science (Biology), State University of New York at Fredonia, 1994

REGISTRATION

40-Hour OSHA Health and Safety Training
Annual 8 Hour OSHA Refreshers
ASTM Training for Commercial Property Transaction Due Diligence

SUMMARY OF EXPERIENCE

Mr. Lesakowski has over 12 years experience in the environmental consulting field at numerous industrial, commercial and hazardous waste sites throughout the northeast United States. A summary of projects Mr. Lesakowski has been involved with include all aspects of New York Brownfield Cleanup Program projects, New York State Superfund Program projects, New York Petroleum Spills Department projects, over 1,000 Phase I Environmental Site Assessments and more than 200 Phase II Site Investigations associated with property acquisition and divestiture and numerous remediation projects ranging from simple underground storage tank (UST) removals to complex groundwater remediation programs. Mr. Lesakowski is proficient in vapor intrusion modeling of chlorinated solvent and petroleum volatile organic compound (VOC) impacted sites. Mr. Lesakowski also has project management and technical consulting experience on several multi-site portfolio environmental due diligence assignments, working with purchasers and lenders to facilitate multi-million dollar real estate transactions. Prior to joining Benchmark, Mr. Lesakowski was a principal in an environmental consulting firm with offices in New York, Pennsylvania, Ohio and Maryland. Mr. Lesakowski is currently managing ten New York Brownfield Cleanup Program sites and several New York Spill Sites. He has managed assessments, investigations and remediation projects on properties with a multitude of historic uses (e.g., petroleum storage terminals, gas stations, automobile dealerships, rail yards, foundries, drycleaners, steel manufacturing, metallurgical plants, metal plating operations, junk yards), media types (surface and subsurface soil, groundwater, sediments, soil vapor, indoor air, building materials) and contaminants (e.g, VOCs, semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), heavy metals).

DETAILED EXPERIENCE

May 2006 –present Project Manager, Benchmark Environmental Engineering and Science, PLLC

- Recently completed a Remedial Investigation (RI), Interim Remedial Measures (IRM) and Remedial Alternatives Analysis under the NYSDEC Brownfield Cleanup Program for two former gasoline station and automotive repair facilities with significant soil and groundwater petroleum VOC impact. The remediation approach for both sites involves removal of abandoned underground storage tanks,

product dispensers and piping, removal of in-ground hydraulic lifts, soil excavation, and extraction and treatment of impacted groundwater. Final Engineering Reports and Site Management Plans were approved by the NYSDEC in December 2009 and Certificates of Completion were also issued in December 2009.

- Currently managing a Remedial Investigation (RI), Interim Remedial Measures (IRM) and Remedial Alternatives Analysis under the NYSDEC Brownfield Cleanup Program sites at two historic heavy industrial facilities in Niagara Falls, NY. The Remedial Investigations involve collecting over 100 surface and subsurface soil and sediment samples and installing and sampling groundwater monitoring wells on each approximate 15-acre parcel slated for future mixed used commercial and industrial development. IRMs include excavation of chromium-impacted, arsenic-impacted and SVOC-impacted soil in several areas of the Site, drum and tank removal, catch basin and sump cleaning, smoke stack deposits remediation, and chemical waste removal. Certificates of completion are anticipated in 2010.

- Currently managing a NYSDEC Brownfield Cleanup Program site formerly used as drycleaner in western New York with significant soil and groundwater chlorinated VOC impact. Soil was successfully remediated using soil vapor extraction (SVE) to unrestricted soil cleanup objectives (SCOs) and groundwater remediation involves in-situ treatment of impacted groundwater. An active sub-slab depressurization system design and installation is planned in the new building during construction.

- Managed a site assessment and site investigations for a portfolio of retail gasoline stations in western New York. Project tasks include a historical review to determine sites' histories, review of previous technical reports, soil and groundwater investigations and remediation cost estimating for site cleanups. This project also involves forensic analyses of soil and groundwater samples to estimate the relative time of historic spills to determine the liability and responsibility for remediation of historic petroleum spills on-site.

- Managed a Phase I/Phase II site investigations for the Buffalo Urban Development Corporation for two parcels in the City of Buffalo encompassing approximately 100-acres. The project involves Phase I ESAs to assess potential historic concerns in a historic heavy industrial area and subsequent soil and groundwater investigations to investigate subsurface environmental conditions.

- Managed a Remedial Investigation (RI) and Remedial Alternatives Analysis under the NYSDEC Brownfield Cleanup Program for a small-arms shooting range with significant lead and semi-volatile organic compound (SVOC) impact. The RI involved collecting over 1,000 soil samples on 26-acre parcel slated for future mixed-use commercial and residential development. Bench-scale testing was completed to select a substrate to treat the characteristic hazardous soil to below toxicity characteristic leaching procedure (TCLP) thresholds. A Remedial Action Work Plan, which called for in-situ stabilization of characteristic hazardous soil and off-site disposal was prepared and approved by the NYSDEC. The remediation is planned for Spring 2010.

- Managed Site Remediation at a former drycleaner, bus garage and asphalt plant under the NYSDEC Brownfield Cleanup Program with significant chlorinated volatile organic compound (cVOC) impact.

The remediation approach involved underground tank removal, in-ground hydraulic lift removal, hazardous soil excavation, and enhanced biodegradation of groundwater. The Site received its certificate of completion in December 2008. The Property is currently developed with an up-scale hotel. The project is highlighted on NYSDEC website as a Brownfield Success Story.

- Managed a Remedial Investigation (RI), Interim Remedial Measure (IRM) and Remedial Alternatives Analysis under the NYSDEC Brownfield Cleanup Program for a former automotive repair facility with significant soil and groundwater chlorinated VOC impact. The remediation approach involved negotiated soil and groundwater cleanup objectives, limited soil excavation and enhanced biodegradation of groundwater. The Site received its certificate of completion in February 2008.

- Managed Remedial Investigation (RI), Interim Remedial Measure (IRM) and Remedial Alternatives Analysis under the NYSDEC Brownfield Cleanup Program at a former lumber yard with chromium impact in Niagara Falls, NY. The remediation approach involved excavation and off-Site disposal of hazardous and non-hazardous soil. The Site received its certificate of completion in December 2007.

December 2000 - April 2006
April 1999 - April 2000 EVP, Environmental Scientist, LCS, Inc., Buffalo, New York

- Managed the investigation of a former gasoline station and adjacent manufactured gas plant (MGP) as part of one of the largest Brownfield redevelopment projects in western New York. The project involves site redevelopment from a historic MGP site and adjacent gasoline station to a multi-million dollar commercial office complex. Acting on behalf of the developer (Duke Realty) and future tenant (HealthNow New York), preliminary investigations were completed to evaluate the nature and location of contaminants. Subsequent site investigation and remediation was completed via a Remedial Investigation (RI) and Interim Remedial Measures (IRM) under the New York State Brownfield Cleanup Program, saving months and significant cost. As a concurrent assignment, acted as a technical consultant to the developer and future tenant on negotiations and advisement on development of an environmental liability transfer arrangement between the purchaser/tenant (client), seller and a national remediation contractor.

- Managed investigation and remediation of former filling station and service station in western New York. Site investigations indicated that impacted soil and groundwater was present as a result of former gasoline and waste oil USTs and hydraulic lifts. Remedial work included removal of four USTs, two hydraulic lifts and 500 cubic yards of petroleum impacted soil.

- Managed investigation and remediation of a dry-cleaning facility located in central New York. Task included soil and groundwater sampling proximate the dry-cleaning facility (exterior) and within the dry-cleaner and adjacent tenants. Sub-slab and indoor air testing was also completed. Remedial work involved removal of hazardous soil, in-situ groundwater remediation via enhanced bioremediation and long-term monitoring.

- Senior project management/technical oversight of all investigation and remediation projects completed in New York, Pennsylvania, Maryland and Ohio.

- Managed due diligence activities as agent for a purchaser of 48 gasoline service stations in Illinois. Tasks included Phase I ESAs, compliance auditing of current UST systems to Illinois and USEPA regulations and remediation cost estimating for sites with known impacts and/or on-going remediation.

- Managed environmental consulting and due diligence activities for a purchaser of 182 gasoline service stations in Maryland, Virginia and Washington, DC. Tasks included Phase I ESAs, remediation cost estimating for sites with known impacts and/or on-going remediation and interfacing with the client's lenders to facilitate a $110 million dollar real estate transaction.

- Played a key role in developing a liability transfer agreement for the transfer of a portfolio of gasoline stations with known petroleum impact. Tasks included oversight of remediation cost estimates and interfacing with the attorneys, insurance brokers, client and property sellers to develop and present the liability transfer arrangement.

- Managed investigation and remediation of former filling station and service station in Syracuse, New York. Site investigations indicated that impacted soil and groundwater was present as a result of former gasoline USTs. Remedial work included removal of 1,200 cubic yards of petroleum impacted soil in three areas of the site. Negotiated cleanup objectives allowed the site to be considered "inactive," and the NYSDEC did not further remedial action.

- Managed environmental due diligence, including Phase I/Phase II investigations of five active service stations in central and eastern upstate New York for a potential purchaser. Phase I ESAs indicated a history of gasoline stations on-site. In conjunction with the purchaser and seller, it was negotiated that a baseline assessment of soil and groundwater impact would be completed to establish responsibility for addressing contamination going forward. The purchaser was able to purchase the sites with no liability for historic petroleum spills on-site.

- Managed investigation and remediation of a former automobile dealership in Rochester, New York. Site investigations, competed with oversight of NYSDEC Spills division, indicated soil impact as a result of leaking gasoline, diesel and waste oil USTs and floor drain discharges. Remedial tasks included a removal of four USTs and associated pump dispensers, closing/sealing interior floor drains and excavation and off-site disposal of 1,500 cubic yards of impacted soil.

- Performed fieldwork at a 50-acre industrial park in western New York. Task included a soil boring and monitoring well installation program, development and sampling of monitoring wells and a hydraulic conductivity assessment. Subsequent remedial tasks included removal of six underground storage tanks and petroleum-impacted soil and a long-term groundwater monitoring plan.

April 2000 to December 2000
Environmental Scientist, GZA GeoEnvironmental, Buffalo, New York

- Performed fieldwork and reporting for RI/FS of NYSDEC superfund site in Long Island, NY. Investigation activities at this former metal plating facility included soil investigation, monitoring well installation and groundwater sampling, hydraulic conductivity testing, and floor drain/cess pool investigation. IRM activities included closure of interior floor drains and removal of heavy metals impacted soil.

- Soil and groundwater investigation at a former dry-cleaning facility in Buffalo, New York. Site investigations included exterior and interior soil borings and monitoring well installations. The negotiated cleanup plan, based on future site use and the urban location of the site, allowed the site owner to address low-level groundwater impact via monitored natural attenuation and long-term monitoring.

APPENDIX B

PREVIOUS INVESTIGATION

(PROVIDED ELECTRONICALLY)

Phase I Environmental Site Assessment (ESA)

1050-1088 Niagara Street Site
Buffalo, New York

June 2012 0136-012-004

Prepared For:

9271 Group, LLC

Prepared By:

TurnKey Environmental Restoration, LLC

2558 Hamburg Turnpike, Suite 300, Buffalo, New York | phone: (716) 856-0635 | fax: (716) 856-0583

PHASE I ENVIRONMENTAL SITE ASSESSMENT

FOR

1050-1088 NIAGARA STREET

BUFFALO, NEW YORK

June 2012 Job Number 0136-012-004

Prepared for:

9271 Group, LLC

PHASE I ENVIRONMENTAL SITE ASSESSMENT
1050-1088 NIAGARA STREET
BUFFALO, NEW YORK

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Table of Contents

PHASE I ENVIRONMENTAL SITE ASSESSMENT
1050-1088 NIAGARA STREET
BUFFALO, NEW YORK

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LIST OF FIGURES

LIST OF APPENDICES

1.0 EXECUTIVE SUMMARY

1.1 REPORT FINDINGS

The following details the findings of TurnKey Environmental Restoration, LLC (TurnKey), relative to identifying recognized environmental conditions (RECs) for the properties addressed from 1050-1088 Niagara Street, City of Buffalo, Erie County, New York (Site, or Subject Property).

1.1.1 Site Description

The subject property is included on the USGS Topographic Map, Buffalo Northeast Quadrangle (see Figure 1). The subject property is located in a highly developed commercial, industrial, and residential area of Buffalo, New York. The subject Site, addressed from 1050-1088 Niagara Street, is also identified as Tax ID Nos. 99.41-1-15, 99.49-6-2, and 99.41-6-10. The Site, totaling approximately 2.7-acres, is bordered by Albany Street to the north, a manufacturing facility to the south, Niagara Street to the east, and railroad tracks and Interstate 190 to the west. The Site is improved with one three-story building on the 1050 Niagara Parcel.

1.1.2 Site Reconnaissance

A visual site review of the subject property was completed to document site conditions and to identify potential recognized environmental conditions. The site reconnaissance included a walkover of all accessible areas. TurnKey's representative, Mr. Nathan T. Munley, performed the site reconnaissance on May 10, 2012.

Based on observations and information obtained during the Site inspection, the following conditions were identified:

- Potential tank vents on west side of building on the 1050 Niagara St. parcel.
- Evidence of possible former tanks in basement on the 1050 Niagara St. parcel.
- Potential tank fill ports on the southeast portion of 1088 Niagara St. parcel.
- Evidence of fill/grading on 1088 Niagara parcel.

- Two pole mounted transformers were noted to the north and on the south ends of the Site, and four pad-mounted transformers on the south side of the 1050 parcel were noted. No observable issues were identified.

1.1.3 Site History

The historical use of the Site has been researched through review of historic maps, historic aerial photographs, municipal records and/or other reasonably obtainable documents. The following provides a summary relative to historic uses of the Site.

The Site has a long history of being utilized for industrial operations (since at least 1889). The International Brewing Company and American Gelatine Corp. operated on-Site in the early 1900s. The northern portion of the Site included a filling station from at least the 1920s through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site building), a commercial printing company, was located on the 1050 Niagara Street parcel of the Site from at least 1930 through at least 1990 and Miken Companies, also a commercial printing company, until at least 2000. Two 25,000 gallon tanks were noted in the basement of 1050 Niagara Street. Residential, industrial, and commercial operations were identified for adjacent properties through the years.

1.1.4 Regulatory Information

Based on the Environmental FirstSearch report, the Site, addressed at 1050 Niagara Street (Al's Leasing), is identified in the spills database.

- Spill No. 9200952, dated April 24, 1992, involved the release of approximately 50 gallons of petroleum onto the street from a truck. The spill was cleaned up with absorbents and was properly disposed of and is classified as "closed" by the New York State Department of Environmental Conservation (NYSDEC).

Numerous releases were identified with adjacent/nearby properties. Listings suggest the area of the Site may have been impacted by commercial/industrial operations.

1.1.5 Interviews

Interviews were conducted with various persons knowledgeable about the subject property and/or municipal representatives familiar with the subject property. No conditions indicative of releases or threatened releases of hazardous substances and/or petroleum products on, at, in, or to the subject property were identified based on information gathered from interviews.

1.2 DATA GAPS

The following data gaps[1] were encountered in completion of this inquiry.

Type of Data Gap	Details of Data Gap	Sources Consulted	Significance
Historical Information	Historical information for the subject property was not available at five year intervals.	City Directories, Sanborn maps, topographic maps and municipal information.	This data gap did not limit TurnKey's ability to provide an opinion on RECs related to the subject property.
Abstract of Title	The abstract of title was not available for review at the time of report preparation.	Owner (i.e., user of this report).	This data gap did not limit TurnKey's ability to provide an opinion on RECs related to the subject property.
Regulatory Review	The New York State Department of Environmental Conservation (NYSDEC) files were not available for review at the time of report preparation.	NYSDEC	This data gap did not limit TurnKey's ability to provide an opinion on RECs related to the subject property.

1.3 LIMITATIONS

To the best of our knowledge, the information contained in this report is true and accurate. TurnKey personnel have exercised due diligence in the compilation of the information contained herein appropriate to environmental professionals engaged in

[1] A data gap is defined by 40 CFR 312.10 as "a lack of or inability to obtain information required by the standards and practices" of preparation of this document "despite good faith efforts by the environmental professional" or others to gather such information

investigations of this sort. TurnKey makes no guarantees regarding the accuracy of information gained from other sources. Refer to Appendix K for additional limitations.

1.4 CONCLUSIONS

TurnKey has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527 for 1050-1088 Niagara Street, Buffalo, Erie County, New York and the protocols required by the 9271 Group, LLC. This assessment has revealed no evidence of recognized environmental conditions in connection with the property, except for the following:

Recognized Environmental Conditions (RECs)

Per ASTM E1527, RECs are conditions that indicate the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. TurnKey's investigation did not identify any RECs in connection with the subject property with the exception of the following.

- The Site is located in a current and historical industrial area.
- Historic operators on-Site included the Niagara Lithograph Company and Miken Companies (commercial printers) from at least 1930 through at least 2000, Gulf Oil Corporation from the 1920s through the 1960s, Hygrade Oil and Fuel Corp./Hygrade Petroleum Co. from the 1920s through the 1940s, and the American Gelatine Company and the International Brewing Company in the early 1900s.
- The Site included a filling station from the 1920s through the 1960s. Multiple gasoline tanks, assumed to be USTs, were identified on the northern portion of the site in at least 1925 and 1951 based on historic Sanborn maps.
- Two 25,000 gallon tanks were noted in the basement of 1050 Niagara Street based on historic Sanborn maps.

- Potential tank vents were noted on the west side of the building on the 1050 Niagara Street parcel and potential tank fill ports were noted on the surface in the southeast portion of the 1088 Niagara Street parcel.
- Pad-mounted transformers were noted south of the 1050 Niagara Street building.
- Numerous releases were identified with adjacent/nearby properties. Listings suggest the area of the Site may have been impacted by industrial operations.

Historic RECs

Per ASTM E1527, historic recognized environmental conditions are conditions, which in the past would have been considered a REC, but which may have been previously addressed and may or may not be considered a REC currently. TurnKey's investigation identified the following historic RECs:

- Spill No. 9200952 is classified as "closed" by the NYSDEC.
- Numerous closed/inactive spills were identified in connection with adjacent/nearby properties in the regulatory database.

De-minimis Conditions

In accordance with ASTM E-1527, de-minimis conditions are conditions that generally do not present a threat to human health or the environment and generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. TurnKey's investigation did not identify de-minimis conditions.

1.5 OPINION

Based on the historic Site operations along with possible presence of tanks on Site, it is the opinion of the environmental professional preparing this report than an intrusive Phase II (intrusive) study is warranted to assess subsurface conditions.

1.6 CERTIFICATION, RELIANCE, AND DECLARATION

TurnKey authorizes Ellicott Development Company and 9271 Group, LLC to use this report in reference to the subject property. We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in 40 CFR 312.10. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. We have developed and performed the all-appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared by:

Jonathan Taylor
Engineer

Reviewed by:

Michael A. Lesakowski
Project Manager

2.0 PURPOSE and SCOPE OF WORK

The primary purpose of this assessment was to document the inquiry of the environmental professional for all appropriate inquiries for the subject property. Specifically, this document is intended to provide the "all appropriate inquiries" for the purposes of CERCLA Section 101(35) (B). Such is applicable to persons seeking to qualify for (i) the innocent landowner defense pursuant to CERCLA Sections 101(35) and 107(b)(3); (ii) the bona fide prospective purchaser liability protection pursuant to CERCLA Sections 101(40) and 107(r); and, (iii) the contiguous property owner liability protection pursuant to CERCLA Section 107(q). This report was not intended as part of the site characterization and assessment with use of a grant awarded under CERCLA Section 104(k)(2)(B). More specifically, the scope is intended to identify conditions indicative of releases or threatened releases of hazardous substances on, at, in, or to the subject property.

The scope of work is intended to identify recognized environmental conditions at the subject property, via the following tasks.

A) Review of information provided by the User of this report regarding commonly known or reasonably available information about the subject property.

B) Interviews with past and present owners, operators and occupants (if available).

C) Review of historical sources of information documenting the subject property's use.

D) Review of Federal, State, tribal and local government records.

E) A visual inspection of the subject property and adjoining properties (to the extent possible).

F) Preparation of this written report.

3.0 SUBJECT PROPERTY/VICINITY DESCRIPTION

3.1 PHYSICAL SITE SETTING

The subject property is included on the USGS Topographic Map, Buffalo Quadrangle (see Figure 1). The subject Site is located in a commercial, industrial, and residential area of Buffalo, New York. The subject property, addressed from 1050-1088 Niagara, is also identified as Tax ID Nos. 99.41-1-15, 99.49-6-2, and 99.41-6-10. The Site, totaling approximately 2.7-acres, is bordered by Albany Street to the north, a manufacturing facility to the south, Niagara Street to the east, and railroad tracks and Interstate 190 to the west.

Land use surrounding the subject property generally includes former commercial/industrial operations to the north, commercial operations to the south, commercial and residential to the east, and railroad line to the west.

3.1.1 Geology/Hydrogeology

The property is located within the Erie-Ontario lake plain physiographic province, which is typified by little topographic relief, except in the immediate vicinity of major drainage ways. Surface soils are generally characterized as urban land with level to gently sloping land in which 80 percent or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures typical of an urban environment. In addition, the presence of overburden fill material is widespread and common throughout the City of Buffalo.

Groundwater flow direction likely follows regional topography in the vicinity of the subject property and is to the west toward the Niagara River. Local groundwater flows, however, may be influenced by subsurface features, such as excavations, utilities, and localized fill-conditions.

3.2 SITE DESCRIPTION

As indicated above, the subject property is located in a commercial, industrial, and residential area of Buffalo, New York (see Figure 1). The subject Site, addressed from 1050-1088 Niagara Street, also identified as Tax ID Nos. 99.41-1-15, 99.49-6-2, and 99.41-6-10.

The Site is currently vacant and improved with one three story building on the 1050 Niagara Street Parcel.

3.3 SITE RECONNAISSANCE

A visual site review of the subject property was completed to document site conditions and to identify potential recognized environmental conditions. The site reconnaissance included a walkover of all accessible areas. TurnKey's representative, Mr. Nathan T. Munley, performed the site reconnaissance on May 10, 2012. The following summarizes TurnKey's observations and information provided by the site contact.

3.3.1 Overview

General Site Information	
Site Addresses	1050 – 1088 Niagara Street
Municipality, County, State	Buffalo, Erie County, New York
Fronting Streets	Niagara Street (Route 266)
Site Size (acres)	Approx. 2.7 acres
Site Topography	Slopes to the north and west
Nearest Water Body	Buffalo River, Lake Erie
Exterior Conditions/Improvements	Transformers on south side of building, scrub brush, possible tank vents on west side of building, and obvious fill.

3.3.2 Storage Tanks and Containers

Potential tank vents noted on the west side of the building on the 1050 Niagara Street parcel and potential tank fill ports noted on the surface in the southeast portion of the 1088 Niagara Street parcel are evidence of possible ASTs or USTs present or formerly on-site.

3.3.3 Hazardous or Regulated Materials

Miscellaneous maintenance materials including paint cans were noted in various locations in the building on-Site during the inspection. No environmental concerns (staining, odors, etc.) were noted proximate to these materials.

3.3.4 Solid, Hazardous or Regulated Waste

Miscellaneous maintenance materials including paint cans were noted in various locations in the building on-Site during the inspection. No environmental concerns (staining, odors, etc.) were noted proximate to these materials.

3.3.5 Fill

Obvious fill activity on the 1088 Niagara Street parcel was noted at the time of the site inspection.

3.3.6 Staining, Corrosion, Stressed Vegetation and/or Dead Vegetation

There was no visible evidence of stressed and/or dead vegetation during the site reconnaissance.

3.3.7 Wastewaters

The subject property has access to the municipal sanitary sewer system.

3.3.8 Potable Water Supply/Wells

The subject property has access to the municipal water supply.

3.3.9 Drains

No drains were noted during the Site reconnaissance.

3.3.10 Air Emissions

No process exhaust systems were noted on-site at the time of the subject property inspection.

3.3.11 PCBs

Two pole-mounted transformers were noted on the north and south edge of the property. Four pad-mounted transformers were noted on the south exterior wall of the

building on the 1050 Niagara parcel. No environmental concerns (staining, odors, etc.) were noted proximate the transformers.

3.3.12 Monitoring Wells

No monitoring wells were noted during the Site reconnaissance.

3.4 ADJACENT SITE USE

The adjacent properties were visually inspected from the subject property at the time of the site reconnaissance. The surrounding property uses include the following:

Direction	Owner/Current Use	Apparent Past Use	Comments/Concerns
North	Vacant commercial/industrial	Industrial	Adjacent historic industrial operations could have impacted the Site.
South:	Commercial	Commercial/Industrial	Adjacent historic industrial operations could have impacted the Site.
East:	Residential/Auto repair shop	Same/Gasoline Station at 1073 Niagara Street	Adjacent historic auto repair/gasoline station operations could have impacted the Site.
West:	Railroad tracks, Route 190 and the Niagara River	Same	Adjacent railroad track operations could have impacted the Site.

3.5 SUBJECT SITE PHOTOGRAPHS

Photographs of the subject property were taken by TurnKey during the site reconnaissance on May 10, 2012. Photographs were taken with the objective of documenting the physical condition of the subject property and any improvements thereon. Photographs are included in Appendix A.

4.0 SUBJECT PROPERTY HISTORY AND USE

The historical use of the subject property has been researched through review of historic maps, historic aerial photographs, municipal records, historic topographic maps, and/or other reasonably obtainable documents. The following summarizes TurnKey's research.

4.1 HISTORIC AERIAL PHOTOGRAPHS

Historical aerial photographs serve to reveal former topography, buildings, structures and man-made works such as canals, lagoons and railroads that may have been altered or may no longer be in existence. Historical aerial photographs were obtained for additional historical information relative to the subject property and surrounding area. Copies of the aerial photographs are included in Appendix B.

YEAR	OBSERVATIONS
1927	
Subject Property	The Site appears to be developed with the existing building. In addition, former structures, likely industrial in nature, is located on the northern portion of the Site.
North	Industrial
South	Industrial
East	Residential
West	Railroad tracks, residential and the Niagara River
1951	
Subject Property	The Site appears as described above.
North	Industrial
South	Industrial
East	Residential
West	Railroad tracks, residential and the Niagara River

4.2 HISTORICAL SANBORN MAPS

A Sanborn map was obtained for additional historical information relative to the subject property and surrounding area. Sanborn maps serve to reveal former buildings, building uses, and man-made works such as canals, lagoons and railroads that may have been

altered or may no longer be in existence. The following table summarizes the map. Copies of the Sanborn Map are included in Appendix C.

YEAR	OBSERVATIONS
1889	
Subject Property	The Site appears to be developed with a former industrial structure on the northern portion of the Site. The operation is identified as the International Brewing Company. On-site operations include bottling, fermenting areas, warehousing as well as making and cooling of beer. In addition, a railroad spur was noted on the north-west portion of the Site. A "coal dump" was located under the trestle. A portion of a small ice house appears on the northwestern portion of the Site. The southern portion of the Site is undeveloped land.
North	Not covered
South	Undeveloped land followed by the International Traction Company and Power House Car Storage
East	Residential, commercial (blacksmith shop) and Manufacturing (The Favorite Manufacturing Company)
West	Railroad tracks, residential followed by the Erie Canal
1925	
Subject Property	The Site is developed with the current on-site building and a historic industrial building. The current on-site building is occupied by Niagara Lithograph Company; operations included office, storage, printing and binding. A notation on the Sanborns indicates that two 25,000-gallon tanks, contents not noted, are located in the basement. The former industrial building, located on the northern portion of the Site, is occupied by Hygrade Oil Company and various occupants; operations include offices, tank wagon loading area, garage, Monroe Metal Products Corporation, service station and storage. Multiple gasoline USTs are associated with these operations (three USTs are located to the west of the former structure an additional three USTs are located in Niagara Street, east of the on-site building). A railroad spur is noted on the western portion of the Site. Lastly, coal is stored on the northwest portion of the Site.
North	Commercial (Co-operative Grange League Federation Exchange Inc. (grain and feed supply house)). A railroad turntable is also noted.
South	Not covered
East	Not covered
West	Railroad tracks, residential followed by the Erie Canal
1951	
Subject property	The Site is developed with the current on-site building and a historic industrial building.

	The majority of the Site appears as described above. The former industrial building, located on the northern portion of the Site, is occupied by Gulf Oil Corporation. A filling station is located on the southeast corner of this structure. Multiple oil storage areas are identified in the southern portion of the on-site structure. The tanks identified in Niagara Street east adjacent to the Site are no longer depicted on the map. Twelve gasoline USTs are located proximate to the western property boundary approximate to the former structure. Lastly, coal is no longer stored on the Site.
North	Commercial (Co-Operative G.L.F Mills Inc. (seed warehouse)). A railroad turntable is also noted.
South	Not covered
East	Not covered
West	Railroad tracks, residential followed by the Erie Canal

4.3 HISTORICAL CITY DIRECTORIES

Historic Directories, dated between 1930 and 2010, were reviewed (generally in five year intervals) at the Buffalo and Erie County Public Library for additional information regarding the subject property. Copies of the directories are provided in Appendix D.

It should be noted that historic addresses identified through review of historic Sanborn maps included 1050-1088 Niagara Street.

Years	Property Use
1930	The Site – 1050 Niagara Lithograph, 1070 Harbor Plywood Corp veneer manufacturers, Hygrade Petroleum Corp, Mohn & Hunter Laundry branch, and Munro Metal Products Corp, 1088 Anderson Service Inc filling station Adjacent/Nearby Properties – 1073 Penman's Garage, 1095 Keystone Chromium Corp, commercial and residential
1935	The Site – 1050 Niagara Lithograph, 1070 Hygrade Petroleum Corp, Buffalo Plywood Corp, Hygrade Fuel Corp oils and lubricants, Kraft Associated Distributors, Munro Metal Products Corp Adjacent/Nearby Properties – 1073 David Morgan filling station, 1095 Keystone Chromium Corp, commercial and residential
1940	The Site – 1050 Niagara Lithograph Co, 1070 Hygrade Oil and Fuel Corp

	Adjacent/Nearby Properties – 1073 David Morgan filling station, 1095 Keystone Chromium Corp, commercial and residential
1946	The Site – 1050 Niagara Lithograph, 1070 Gulf Oil Corp, 1088 vacant Adjacent/Nearby Properties – 1073 David Morgan filling station, 1095 Keystone Chromium Corp, commercial and residential
1950	The Site – 1050-1062 Niagara Lithograph, 1070-1088 Gulf Oil Corp dist office and Anthony Lazarony filling station Adjacent/Nearby Properties – 1073 David Morgan filling station and M&R auto service, 1095 Keystone Chromium Corp, commercial and residential
1956	The Site – 1050-1062 Niagara Lithograph Co, 1070-1088 Gulf Oil Corp distribution office 3 Allied Automotive Adjacent/Nearby Properties – 1048 Abrandt Products Inc soap manufacturer, 1073 Ipplotio's service station, 1095 Keystone Chromium Corp platers, commercial and residential
1960	The Site – 1050-1068 Niagara Lithograph Co, 1070-1088 Lazarony Anthony H Gulf Service gas station and Allied Automotive Supply Inc auto parts Adjacent/Nearby Properties – 1048 Cling Surface Co, 1095 Keystone Chromium Corp platers, commercial and residential
1965	The Site – 1050-1068 Niagara Lithograph, 1070 Arena Tile Distributors Inc and Manson Judo Club Adjacent/Nearby Properties – 1073 Mike's Service gas station, 1095 Keystone Corp, commercial and residential
1969-1970	The Site – 1050 Sale Niagara Inc, Royton Paper Products, 1070 Arena Tile Distributors Inc Tile Paint and Manson Judo Club Adjacent/Nearby Properties – 1048 Cling Surface Co belt dressing, 1095 Keystone Corp commercial platers and finishers, commercial and residential
1975	The Site – 1050 Sale- Niagara Inc, Royton Paper Products Co Inc Adjacent/Nearby Properties – 1048 Cling Surface Co belt dressing, 1073 Niagara Fargo Texaco gas station, commercial and residential
1980	The Site – 1050 Sale-Niagara Inc, Mikon Systems die cutters, and Newtron Label Corp label printing Adjacent/Nearby Properties – 1048 Plastic Net Corp plastic product manufacturer, 1073 Niagara Fargo Sunoco, 1095 Keystone Corp commercial platers and finishers, commercial and residential
1985	The Site – 1050 Sale Niagara Inc. lithographers and Miken Systems, Inc., die cutters

	Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco, 1095 Keystone Corp. commercial platers and finishers, commercial and residential
1990	The Site – 1050 Sale Niagara Inc. lithographers Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco, 1095 Keystone Corp. commercial platers and finishers, commercial and residential
1995	The Site – 1050 Miken Systems Ten Fifty Design, Inc. Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco
2000	The Site – 1050 Miken Companies commercial printing Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco
2005	The Site – 1050 NBBC Association Inc Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco service station, commercial
2010	The Site – no listing for the site range of addresses Adjacent/Nearby Properties – 1073 Cosuma auto repair and service, commercial and residential

4.4 HISTORICAL TOPOGRAPHIC MAPS

Historical topographic maps, available on-line through http://historical.mytopo.com, were reviewed for additional information regarding the subject property. Copies of the maps are included in Appendix E. Observations of the subject property and surrounding properties are detailed below.

YEAR	OBSERVATIONS
1901	
Subject Property and Adjoining Properties	The Site appears to be developed with a former structure.
1948	
Subject Property and Adjoining Properties	The Site appears to be developed with the current on-site building and a former structure.

4.5 HISTORICAL MUNICIPAL RECORDS

4.5.1 City of Buffalo Historical Records/Interviews

Records available at the City of Buffalo Assessor's Office and Building Department were reviewed for additional information relative to the subject property.

The following summarizes those records; copies of the records are included in Appendix F.

- The Site, SBL Nos. 99.41-1-15, 94.49-6-2, and 94.49-6-10, measures approximately 2.7-acres.
- The current owner is the 9271 Group, LLC.
- The Site is developed with a 52,623 square foot industrial building that was built in 1930.
- The Site is supplied with natural-gas, municipal sewer, public water and electric.
- General maintenance permits are on file (i.e., fixture replacement, demolishing a wall, etc) for the Site. Of note, permits were issued to Niagara Lithograph Company, Gulf Oil Company, Hygrade Petroleum Co., Hygrade Oil & Fuel Corp., International Brewing Company and American Gelatine Company.
- Permit #25675 dated November 16, 1933, references the installation of additional steel 550-gallon gasoline tanks at 1070 Niagara Street.
- Permit # 18320 dated October 2, 1961, references the razing of a three-story brick building (likely an original portion of the existing building) addressed at 1070 Niagara Street. This area is to be used as a parking lot.

4.5.2 Abstract of Title

Abstract of Title information was not made available to TurnKey for review.

4.6 SUMMARY OF HISTORIC USES

As detailed above, the historical use of the subject property has been researched through review of historic maps, municipal records and/or other reasonably obtainable documents. The following provides a summary relative to historic uses of the subject property.

The Site has a long history of being utilized for industrial operations (since at least 1889). The northern portion of the Site included a filling station from at least 1930 through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site building), a commercial printing company, was located on the southern portion of the Site from at least 1930 through at least 1990 and Miken Companies, also a commercial printing company, until at least 2000. Lastly, it should be noted that two 25,000 gallon tanks were noted in the basement of 1050 Niagara Street and coal was historically stored on the western portion of the Site.

5.0 REGULATORY/GOVERNMENT INFORMATION

Regulatory information involving the subject property was obtained through a commercial database search company, interviews with local municipalities and/or other knowledgeable persons, NYSDEC freedom of information act (FOIA) request, and user-supplied information. The following summarizes the regulatory research.

5.1 ENVIRONMENTAL RECORDS DATABASE

Federal and state environmental regulatory information provided by Environmental FirstSearch. Databases were reviewed at the radii defined in 40 CFR 312.26 (See Appendix G).

Any sites unplottable by Environmental FirstSearch were also reviewed, to the extent practical based on the site name and address, to assess whether they are also present within their appropriate radii. Any listings for the subject property or any adjacent sites are included in the details below.

5.1.1 Subject property

Based on the Environmental FirstSearch report, the Site, addressed at 1050 Niagara Street (Al's Leasing), is identified in the spills database.

- Spill No. 9200952, dated April 24, 1992, involved the release of approximately 50-gallons of petroleum onto the street from a truck. The spill was cleaned up with absorbents and was properly disposed of and is classified as "closed" by the NYSDEC.

5.1.2 Adjacent Properties

Based on the Environmental FirstSearch report, an adjacent property, addressed at 1030 Niagara Street (Miken Company, Inc., a former Site occupant), is listed as a Spills site.

- Spill No. 9875035, dated September 16, 1998, involved machinery leaking lubricating oil onto floor which collected in the basement and is classified as "closed" by the NYSDEC.

Based on the Environmental FirstSearch report, an adjacent property, addressed at 1073 Niagara Street (Cosuma and Niagara Fargo), is listed as a Spills and Leaking Underground Storage Tank (LUST) site. In addition, this property is also a registered UST facility.

- LUST/Spill No. 0750746, dated August 22, 2007, involved a tank test failure and is associated with Spill No. 0175514.
- Spill No. 0175514, dated February 26, 2002, involved leaking tanks and multiple drums of waste oil with spillage around them. Multiple inspections and cleanups have been performed and are ongoing at this property. This incident is classified as "active" by the NYSDEC.
- Multiple tanks are on-file for this property.
    - Three 6,000-gallon USTs, installed December 1, 1986, identified as in service.
    - One 275-gallon AST identified as in service.
    - Two 275-gallon ASTs identified as "closed-removed."

Based on the Environmental FirstSearch report, an adjacent property, addressed at 1055 Niagara Street (Niagara-Fargo Sunoco), is listed as a LUST site.

- Spill No. 8605868, dated December 16, 1986, involved contamination due to a leaking UST and is classified as "closed" by the NYSDEC.

Based on the Environmental FirstSearch report, an adjacent property, addressed at Niagara Street and Albany Street (Castricone Concrete and Keystone Corporation), is listed as a spill site.

- Spill No. 0512643, dated February 1, 2006, involved the disposal of five-gallons of cure and seal into the sewer system and is classified as "closed" by the NYSDEC.
- Spill No. 9505138, dated July 26, 1995, involved a report from the Buffalo Police Department of yellow smoke coming from the stack and is classified as "closed" by the NYSDEC.

Based on the Environmental FirstSearch report, an adjacent property, addressed at Fargo Avenue and Niagara Street (Roadside), is listed as a Spills site.

- Spill No. 0550754, dated August 4, 2005, involved the report of a "large amount of oil" in the road and is classified as "closed" by the NYSDEC.

Based on the Environmental FirstSearch report, an adjacent property, addressed at 1095 Niagara Street (Keystone Corp.), is listed as a Spills and Resource Conservation and Recovery Act Generator (RCRAGN) site.

- Spill No. 9206401, dated August 31, 1992, involved a heat exchange unit spill and is classified as "closed" by the NYSEDEC.
- Spill No. 0751281, dated January 2, 2008, involved the dumping of two 55-gallon drums containing anti-freeze and waste oil and is classified as "closed" by the NYSDEC.
- This property is listed as a Resource Conservation and Recovery Act (RCRA) generator. Such is not anticipated to pose as a concern to the Site.

Based on the Environmental FirstSearch report, an adjacent property, addressed at 111 Niagara Street (Modern Heat), is a registered UST facility.

- One 1,400 and one 1,000-gallon methanol UST is identified as "closed-in place" by the NYSDEC.

5.1.3 Nearby Properties

In addition to the adjacent site listed above, several additional sites listed on one or more environmental databases are located in the vicinity of the subject property. A brief summary is provided below.

Based on the Environmental FirstSearch report, an adjacent property, addressed at 1010 Niagara Street (A N Deringer Inc.), is listed as a RCRAGN Site.

In addition to the sites listed above, several additional sites listed on one or more environmental databases are located proximate to the subject property. However, based on TurnKey's review, each of these additional sites falls in to one or more of the following categories:

- It is listed on databases that indicate a potential for, but not an actual documented current or historical release (e.g., RCRA small quantity generator or large quantity generator; registered chemical bulk storage or petroleum bulk storage sites). As such, these sites are not considered to pose a recognized environmental condition at the subject property due to absence of a documented release.
- It is located greater than one-quarter mile from the subject property, and is not considered a recognized environmental condition at the subject property based on the distance to the subject property.
- It is present at a location that is not expected to pose potential for impact on the subject property due to topography and likely groundwater flow direction, and is not considered a recognized environmental condition at the subject property based on unlikelihood for impacts associated with migration of contaminants onto the subject property.

The discussion included above regarding adjacent and surrounding properties is based on information supplied to TurnKey as well as observations of nearby properties at the time of the site reconnaissance. Further study would be required to positively confirm whether the subject property has been impacted by nearby properties. It is also important to note that the environmental history and status of nearby properties, real or perceived, can affect the valuation of the target property.

5.2 ADDITIONAL ENVIRONMENTAL RECORDS REVIEW

5.2.1 NYSDEC

To augment the information provided by Environmental FirstSearch, a FOIA request was forwarded to the NYSDEC, for information concerning the subject property (see Appendix H).

This letter was acknowledged by the NYSDEC on May 9, 2012 and a response received May 14, 2012, consisting of Spill report No. 9200952 for the 1050 Niagara Street parcel, included in Appendix H.

5.3 ENFORCEMENTACTIONS/PERMITTED ACTIVITIES/INSTITUTIONAL CONTROLS

TurnKey is not aware of any formal enforcement action, civil judicial or administrative enforcement cases in connection with the subject property. In addition, based on information gathered to date, there are no institutional controls imposed against the referenced site.

5.4 INTERVIEWS/USER PROVIDED INFORMATION

5.4.1 Site Owner

TurnKey requested information from the current property owner(s) and Site contact relative to pending, threatened or past litigation, administrative proceedings or any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

No response has been received from the owner at this time. A copy of the questionnaire is included in Appendix I.

5.3.1 User Information

As required under 40 CFR 312, those seeking liability protection under CERCLA, for which this report is prepared, must provide the environmental professional certain information and documentation. TurnKey requested information from Mr. Cory Stewart, representing the User, with responses to that inquiry as follows (See Appendix J).

Environmental Liens

According to Mr. Stewart, there are no environmental cleanup liens against the subject property that are filed or recorded under federal, tribal, state or local law; the subject property has been parceled out as a clean property.

Activity Use Limitations

According to Mr. Stewart, there are no engineering controls, land use restrictions or institutional controls in place, filed or recorded under federal, tribal, state or local law.

Specialized knowledge or experience

Mr. Stewart does not have any specialized knowledge or experience regarding the environmental impacts and associated regulatory listings for the site.

Commonly Known or Reasonably Ascertainable Information

Mr. Stewart is not aware of any additional commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases at the subject property other than that noted above.

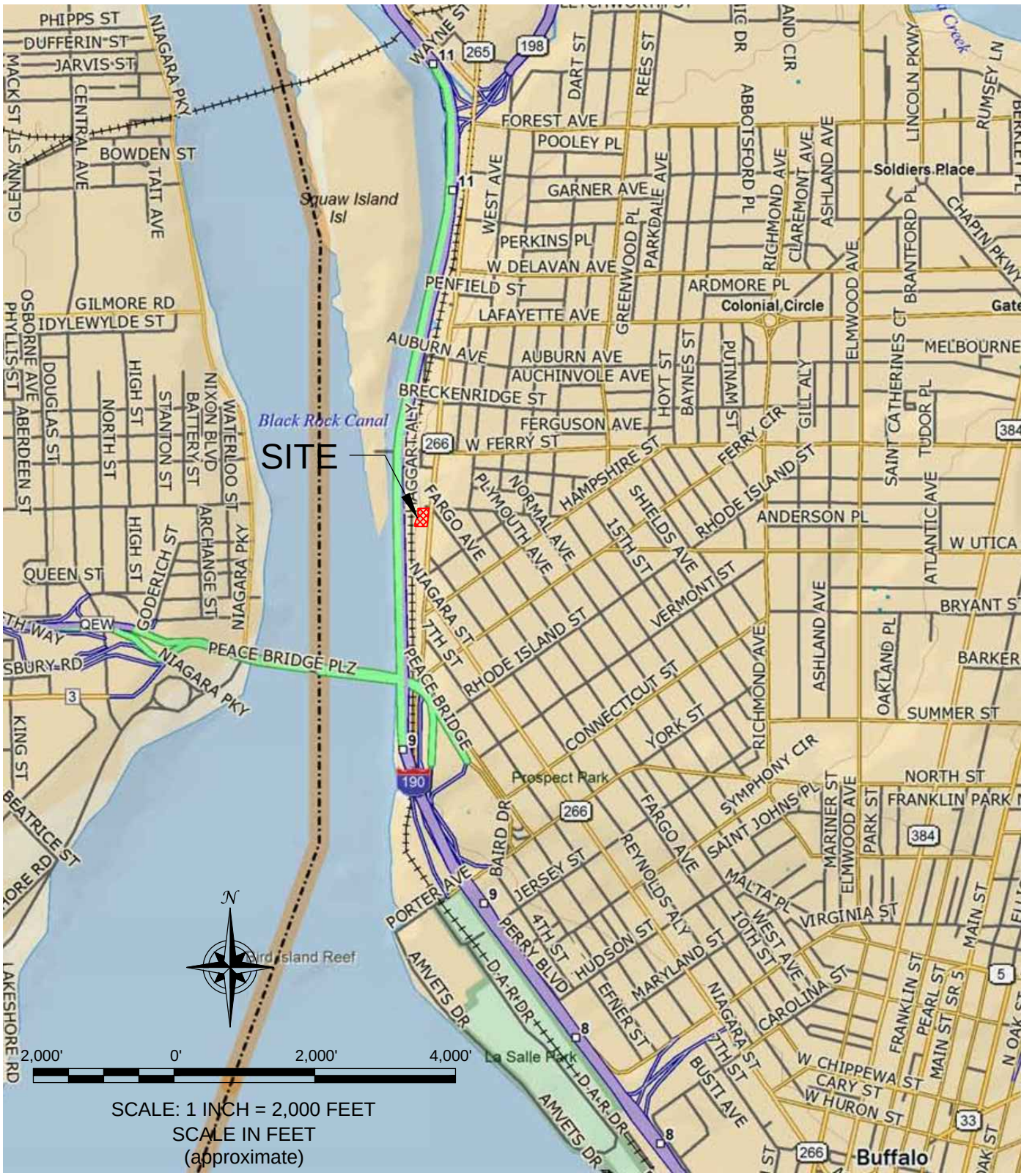
Obvious Indicators

Mr. Stewart is not aware of conditions that point to the presence or likely presence of contamination at the subject property.

FIGURES

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Phase I ESA\Figure 1; Site Location and Vicinity Map.dwg

FIGURE 1



SCALE: 1 INCH = 2,000 FEET
SCALE IN FEET
(approximate)

TurnKey Environmental Restoration, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0136-012-004

DATE: JUNE 2012

DRAFTED BY: JGT

SITE LOCATION AND VICINITY MAP

PHASE I ENVRIONMENTAL SITE ASSESSMENT

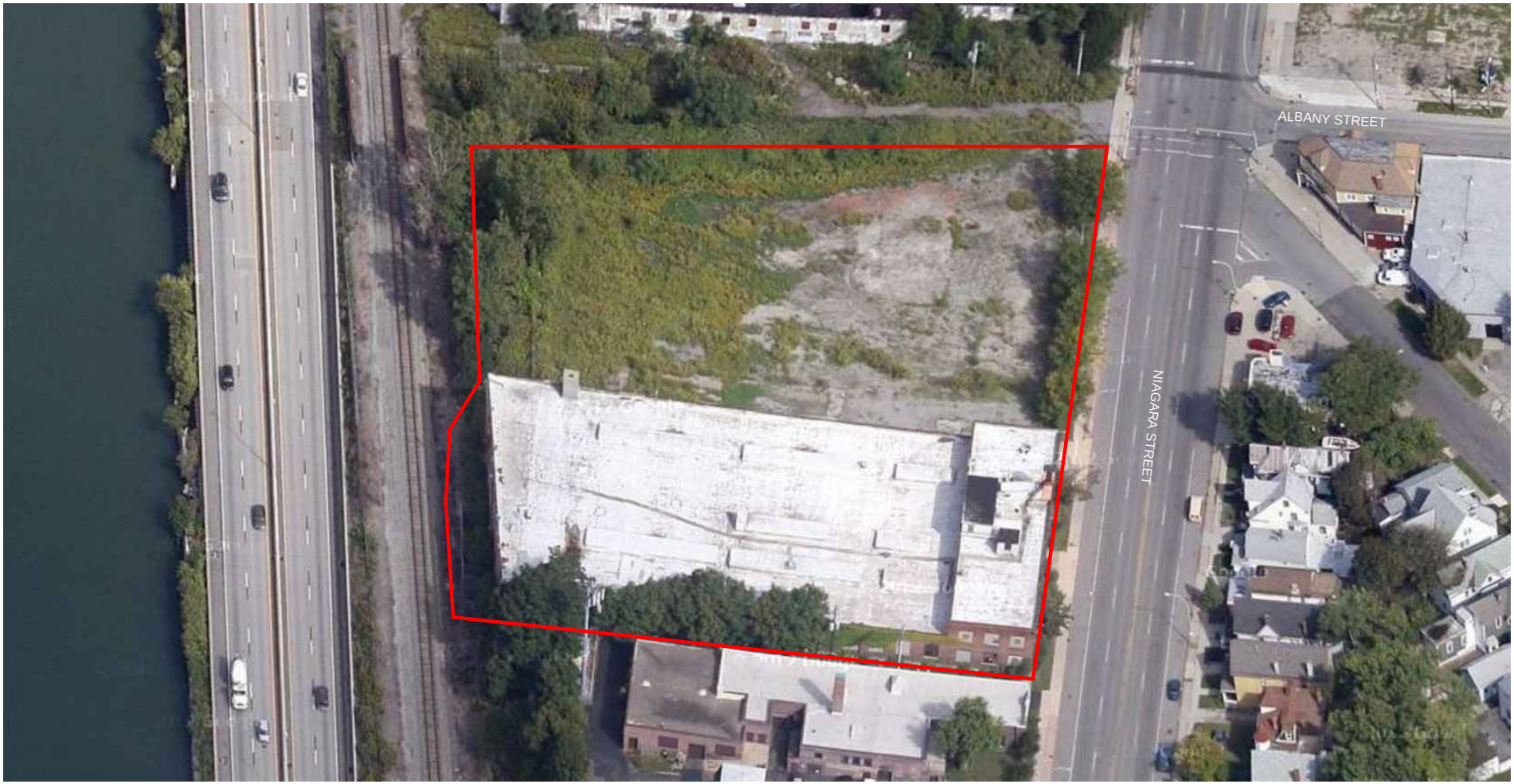
1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

ELLICOTT DEVELOPMENT

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Phase I ESA\Figure 2- Site Plan (Aerial).dwg



BASE IMAGE PER GOOGLE MAPS

PARCEL BOUNDARIES PER GIS (APPROXIMATE)

NOT TO SCALE

TurnKey Environmental Restoration, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0136-012-004

DATE: JUNE 2012

DRAFTED BY: JGT

SITE PLAN (AERIAL)

PHASE I ENVIRONMENTAL SITE ASSESSMENT

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

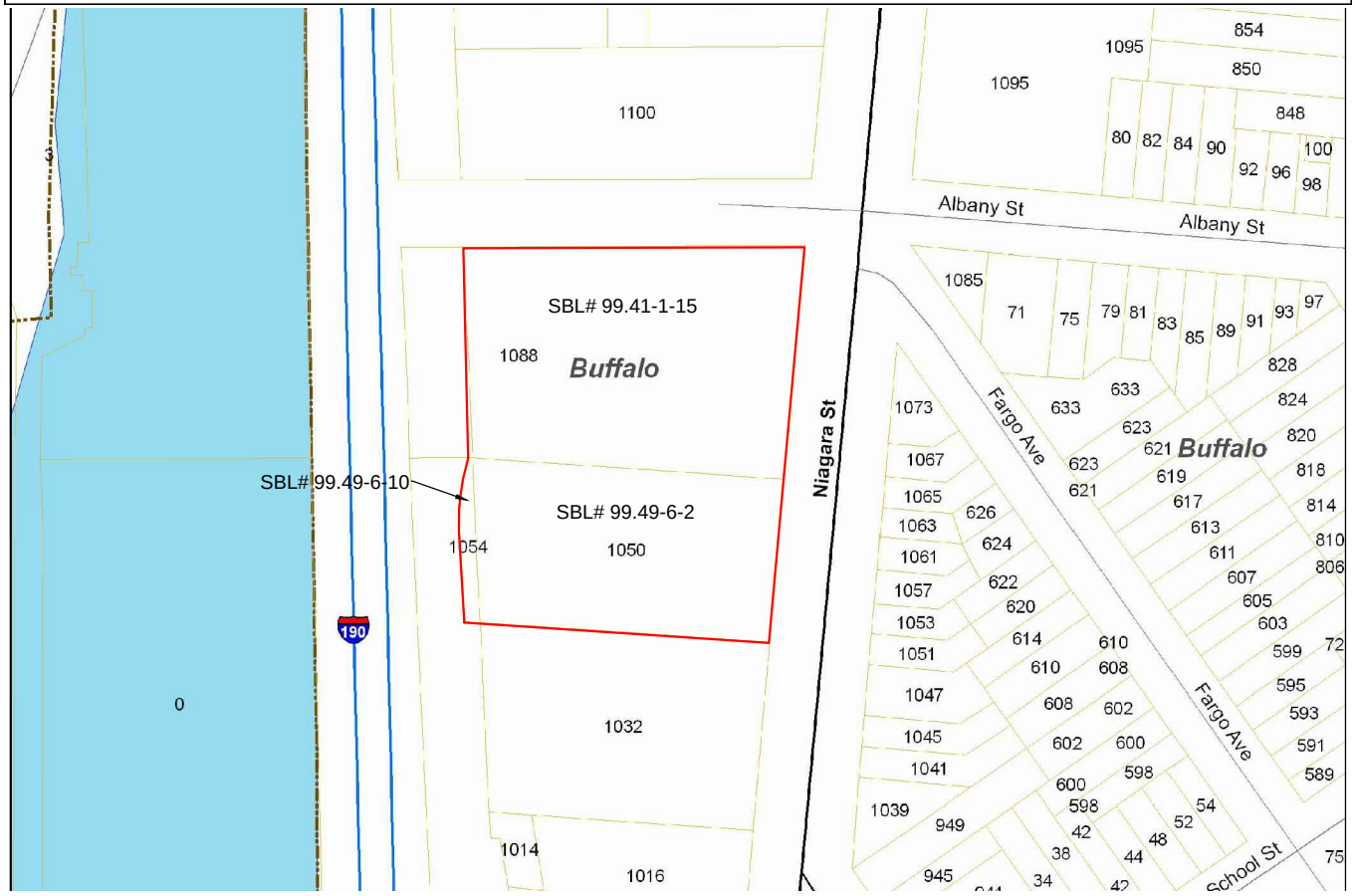
PREPARED FOR

ELLICOTT DEVELOPMENT

FIGURE 2

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Phase I ESA\Figure 3; Tax Map.dwg

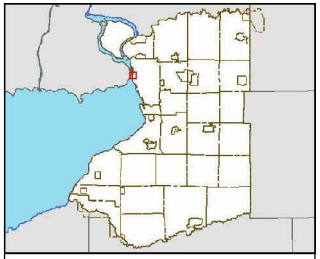
Erie County On-Line Mapping System



0.1 0 0.03 0.1 Miles

Erie County and its officials and employees assume no responsibility or legal liability for the accuracy, completeness, reliability, timeliness, or usefulness of any information provided. Tax parcel data was prepared for tax purposes only and is not to be reproduced or used for surveying or conveyancing.

ERIE COUNTY, NEW YORK
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GEOGRAPHIC INFORMATION SERVICES



Legend

Streets and Highways
- Interstate
- Primary State Road
- Secondary State Road
- County Road
- Local Road

Parcels

N

1: 1,868

TurnKey Environmental Restoration, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0136-012-004

DATE: JUNE 2012

DRAFTED BY: JGT

TAX MAP

PHASE I ENVIRONMENTAL SITE ASSESSMENT

1050-1088 NIAGARA STREET

BUFFALO, NEW YORK

PREPARED FOR

ELLICOTT DEVELOPMENT

FIGURE 3

APPENDIX A

SITE RECONNAISSANCE PHOTOGRAPH

SITE PHOTOGRAPHS

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 1: Subject property – 1050 Niagara Street building entrance (looking northwest).

Photo 2: Subject Property – 1088 Niagara Street parcel (looking west).

Photo 3: Subject Property – 1054 Niagara Street parcel (looking south).

Photo 4: Adjacent Property – 1048 Niagara Street (looking southwest) .

SITE PHOTOGRAPHS

Photo 5:

Photo 6:

Photo 7:

Photo 8:

Photo 5: Adjacent Property – Residential housing across Niagara Street (looking northeast).

Photo 6: Adjacent Property – Marco's Italian Restaurant (looking east).

Photo 7: Adjacent Property – building to north across former Albany Street (looking north).

Photo 8: Adjacent Property – Pole mounted transformer (looking northwest).

SITE PHOTOGRAPHS

Photo 9:

Photo 10:

Photo 11:

Photo 12:

Photo 9: Subject Property – Pole mounted transformer (looking east).

Photo 10: Subject Property – Building mounted transformers, along south wall (looking north).

Photo 11: Subject Property – Hole in surface of 1088 parcel (northeast quadrant of Site).

Photo 12: Subject Property – Hole in surface of 1088 parcel.

SITE PHOTOGRAPHS

Photo 13:

Photo 14:

Photo 15:

Photo 16:

Photo 13: Subject Property – Suspected in ground hydraulic lift (on 1088 parcel).

Photo 14: Subject Property – Concrete addition and possible tank vents on building (looking southeast).

Photo 15: Subject Property – Typical office space (1050 Niagara interior).

Photo 16: Subject Property – Utility elevator (1050 Niagara interior).

SITE PHOTOGRAPHS

Photo 17:

Photo 18:

Photo 19:

Photo 20:

Photo 17: Subject Property – Furnace (1050 Niagara interior).

Photo 18: Subject Property – Boiler (1050 Niagara interior).

Photo 19: Subject Property – Pants and maintenance supplies (1050 Niagara interior).

Photo 20: Subject Property – Fuse box (1050 Niagara interior).

SITE PHOTOGRAPHS

Photo 21:

Photo 22:

Photo 23:

Photo 24:

Photo 21: Subject Property – Building basement, possible former tank pad (1050 Niagara interior)

Photo 22: Subject Property – Building basement, possible former containment area (1050 Niagara interior)

Photo 23: Subject Property – Fuse box, staining on floor (1050 Niagara interior).

Photo 24: Subject Property – Building roof condition (looking west).

APPENDIX B

HISTORICAL AERIAL PHOTOGRAPHS

AERIAL WORK BY RONNE & WASHBURN BUFFALO NEW YORK
ENGINEERING & MAP BY FAIRCHILD AERIAL SURVEYS INC. NEW YORK

ERIE COUNTY NEW YORK

OFFICE OF THE COUNTY ENGINEER

GREATER MOTORWAY SYSTEM

JUNE 1ST 1927

SCALE

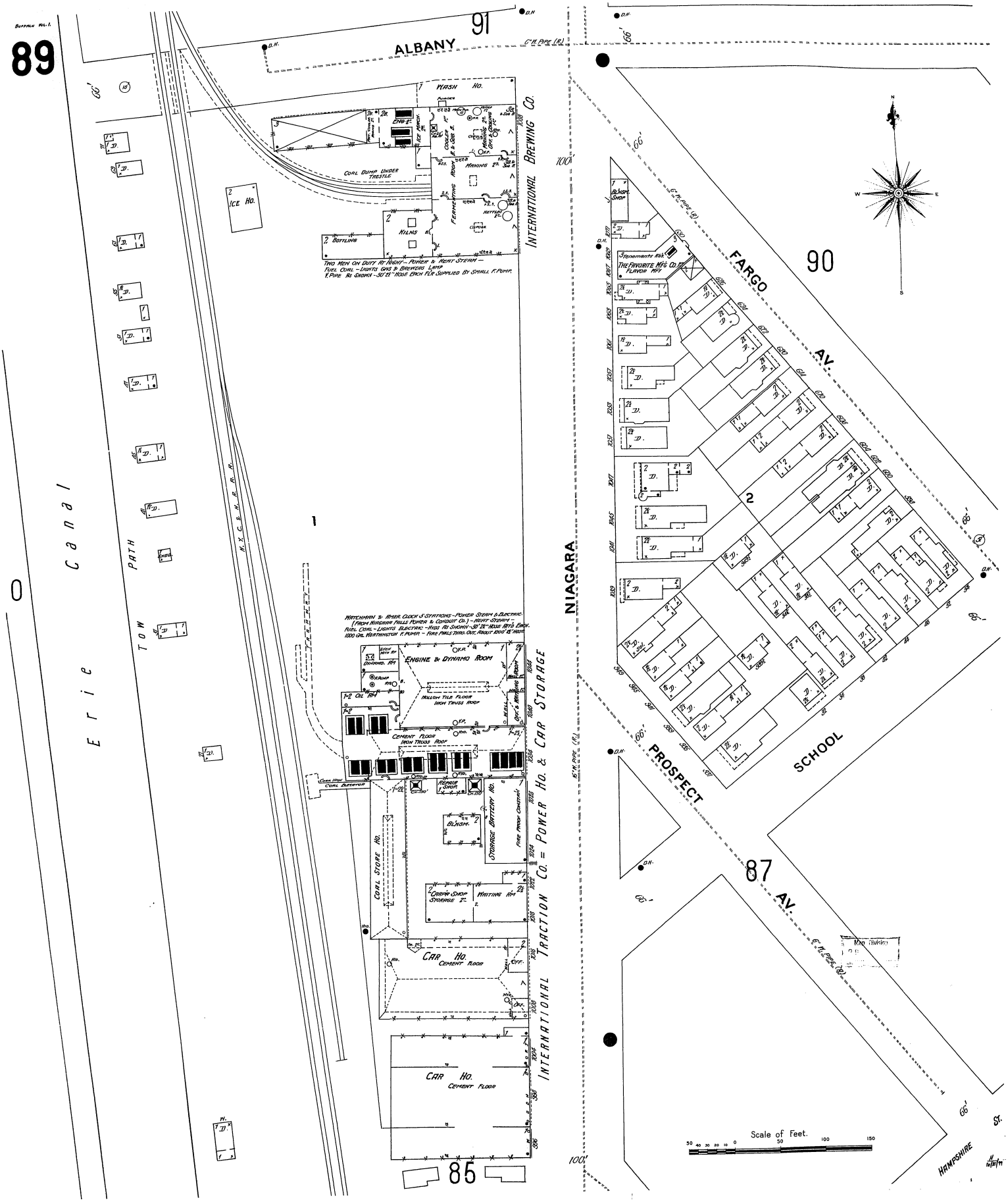
1951 - Aerial Photo


6-12-66
ARF- 1GG-166

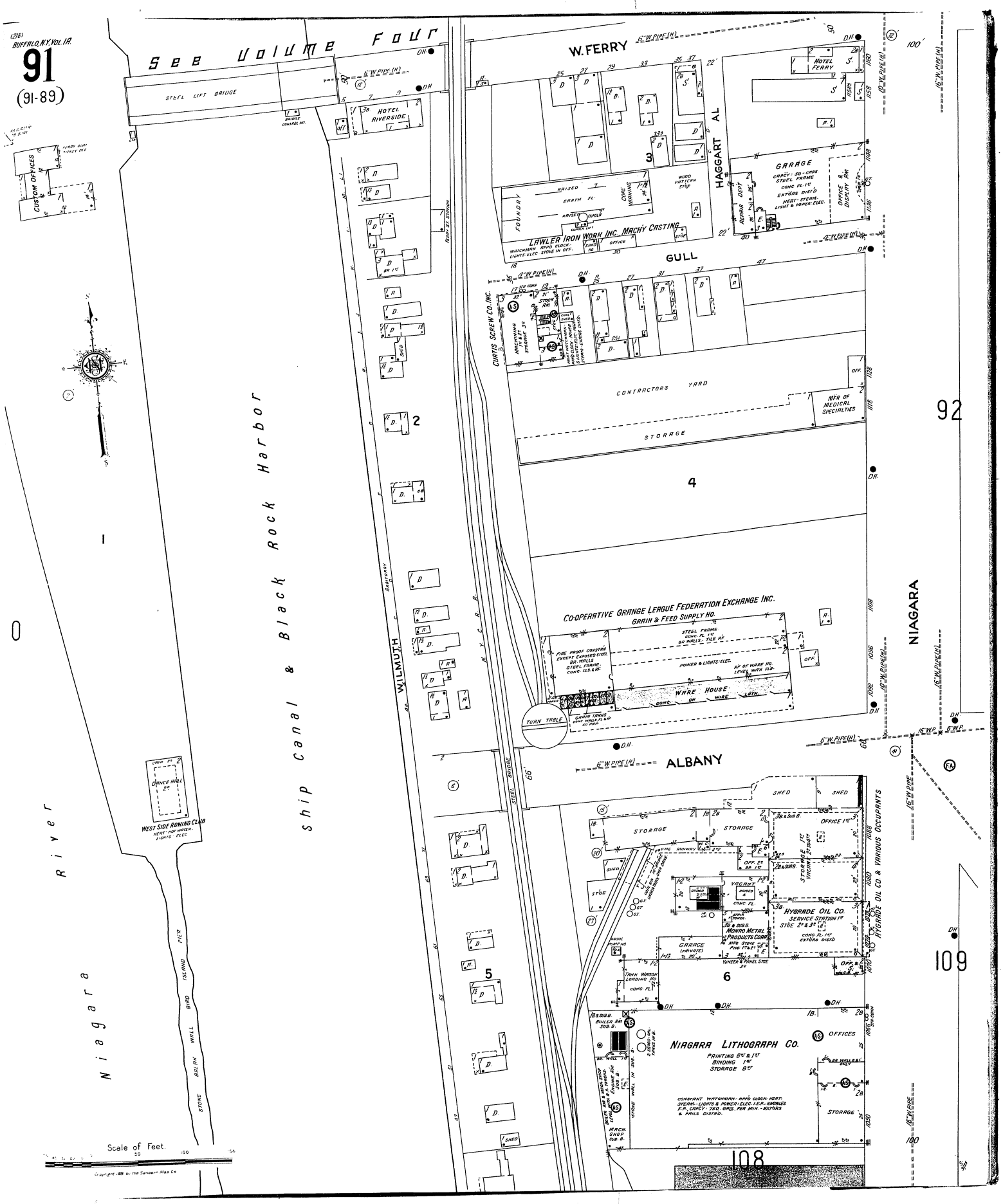
APPENDIX C

SANBORN MAPS

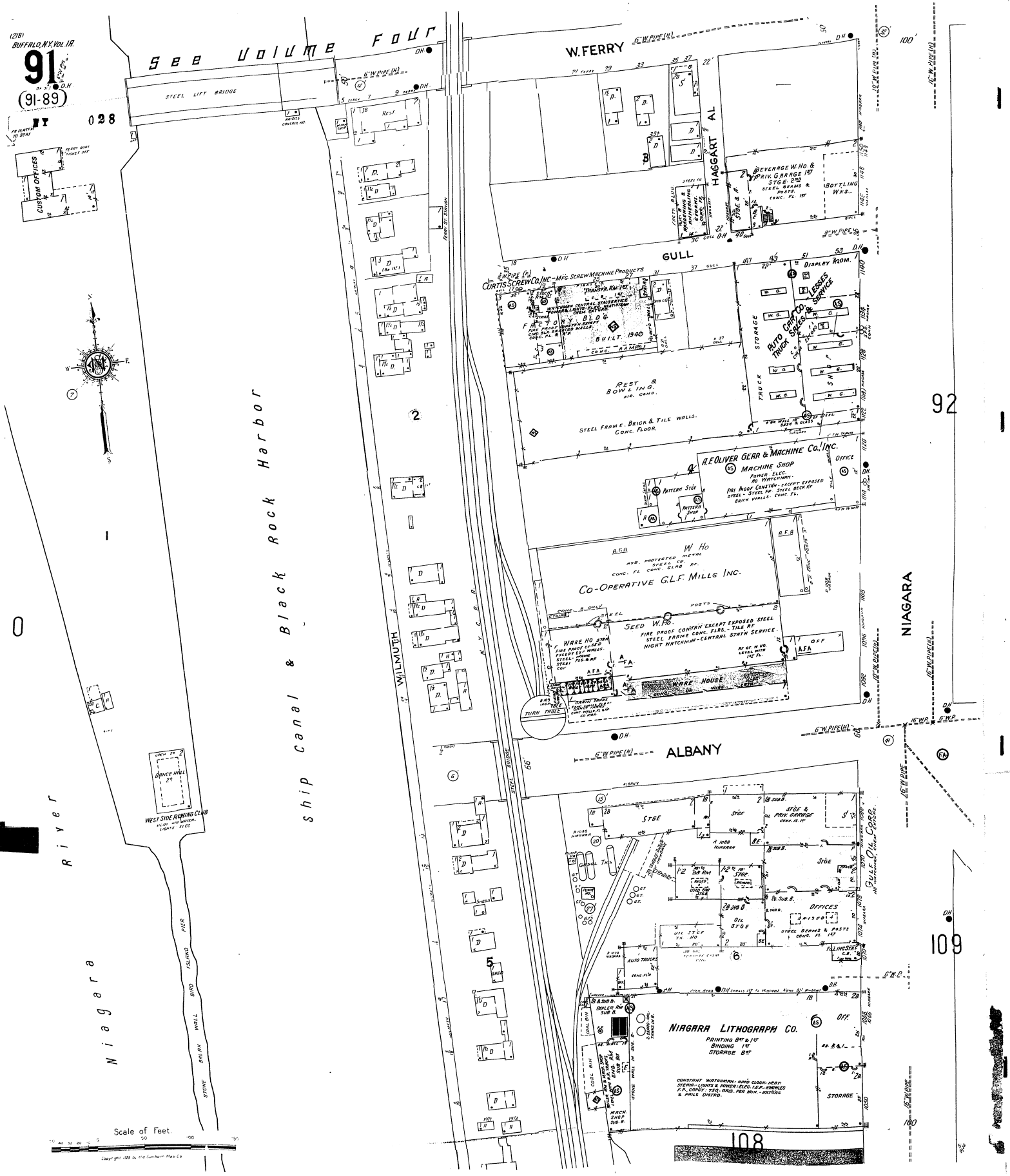
1899 - Sanborn Map



1925 - Sanborn Map



1951 - Sanborn Map



APPENDIX D

HISTORICAL CITY DIRECTORIES

POLK DIRECTORY AND ATLAS REVIEWS

Site Address (be sure to research multiple and historic addresses if applicable):
_1050, 1054, and 1088 Niagara Street
Historic Addresses: 1066, 1068, 1070, 1074, 1078, and 1080 Niagara Street_____

Location of documentation review (name, city and state):
Buffalo and Erie County Public Library – Central Branch

Year(s) – **Update as needed**	Property Use
1930	The Site – 1050 Niagara Lithograph, 1070 Harbor Plywood Corp veneer manufacturers, Hygrade Petroleum Corp, Mohn & Hunter Laundry branch, and Munro Metal Products Corp, 1088 Anderson Service Inc filling station Adjacent/Nearby Properties – 1073 Penman's Garage, 1095 Keystone Chromium Corp, commercial and residential
1935	The Site – 1050 Niagara Lithograph, 1070 Hygrade Petroleum Corp, Buffalo Plywood Corp, Hygrade Fuel Corp oils and lubricants, Kraft Associated Distributors, Munro Metal Products Corp Adjacent/Nearby Properties – 1073 David Morgan filling station, 1095 Keystone Chromium Corp, commercial and residential
1940	The Site – 1050 Niagara Lithograph Co, 1070 Hygrade Oil and Fuel Corp Adjacent/Nearby Properties – 1073 David Morgan filling station, 1095 Keystone Chromium Corp, commercial and residential
1946	The Site – 1050 Niagara Lithograph, 1070 Gulf Oil Corp, 1088 vacant Adjacent/Nearby Properties – 1073 David Morgan filling station, 1095 Keystone Chromium Corp, commercial and residential
1950	The Site – 1050-1062 Niagara Lithograph, 1070-1088 Gulf Oil Corp dist office and Anthony Lazarony filling station Adjacent/Nearby Properties – 1073 David Morgan filling station and M&R auto service, 1095 Keystone Chromium Corp, commercial and residential
1956	The Site – 1050-1062 Niagara Lithograph Co, 1070-1088 Gulf Oil Corp distribution office 3 Allied Automotive Adjacent/Nearby Properties – 1048 Abrandt Products Inc soap manufacturer, 1073

	Ipplotio's service station, 1095 Keystone Chromium Corp platers, commercial and residential
1960	The Site – 1050-1068 Niagara Lithograph Co, 1070-1088 Lazarony Anthony H Gulf Service gas station and Allied Automotive Supply Inc auto parts Adjacent/Nearby Properties – 1048 Cling Surface Co, 1095 Kestone Chromium Corp platers, commercial and residential
1965	The Site – 1050-1068 Niagara Lithograph, 1070 Arena Tile Distributors Inc and Manson Judo Club Adjacent/Nearby Properties – 1073 Mike's Service gas station, 1095 Keystone Corp, commercial and residential
1969-1970	The Site – 1050 Sale Niagara Inc, Royton Paper Products, 1070 Arena Tile Distributors Inc Tile Paint and Manson Judo Club Adjacent/Nearby Properties – 1048 Cling Surface Co belt dressing, 1095 Keystone Corp commercial platers and finishers, commercial and residential
1975	The Site – 1050 Sale- Niagara Inc, Royton Paper Products Co Inc Adjacent/Nearby Properties – 1048 Cling Surface Co belt dressing, 1073 Niagara Fargo Texaco gas station, commercial and residential
1980	The Site – 1050 Sale-Niagara Inc, Mikon Systems die cutters, and Newtron Label Corp label printing Adjacent/Nearby Properties – 1048 Plastic Net Corp plastic product manufacturer, 1073 Niagara Fargo Sunoco, 1095 Keystone Corp commercial platers and finishers, commercial and residential
1985	The Site – 1050 Sale Niagara Inc lithographers and Miken Systems Inc die cutters Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco, 1095 Keystone Corp commercial platers and finishers, commercial and residential
1990	The Site – 1050 Sale Niagara Inc lithographers Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco, 1095 Keystone Corp commercial platers and finishers, commercial and residential
1995	The Site – 1050 Miken Systems Ten Fifty Design Inc Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco

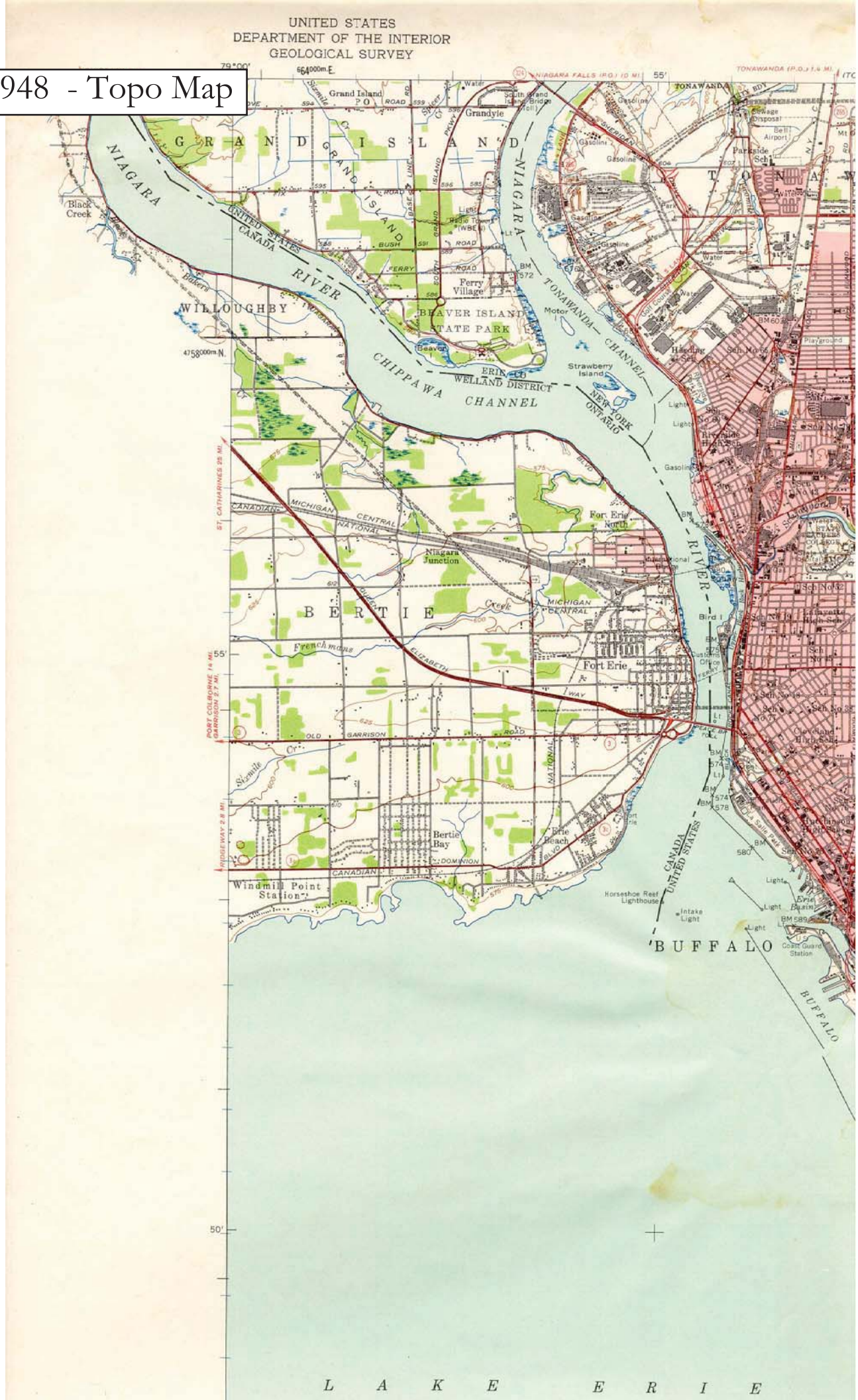
2000	The Site – 1050 Miken Companies commercial printing Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco
2005	The Site – 1050 NBBC Association Inc Adjacent/Nearby Properties – 1073 Niagara Fargo Sunoco service station, commercial
2010	The Site – no listing for the site range of addresses Adjacent/Nearby Properties – 1073 Cosuma auto repair and service, commercial and residential

APPENDIX E

HISTORICAL TOPOGRAPHIC MAPS

1901 - Topo Map

1948 - Topo Map



APPENDIX F

MUNICIPAL RECORDS

MUNICIPAL RECORD REVIEW INFORMATION

DATE ________

COMPLETE SITE ADDRESS(S) 1050 + 1088 Niagara St

MUNICIPALITY: (City), Town, Village, Township of Buffalo

HISTORIC or AKA ADDRESS(s): 1050, 1068, 1066, 1070, 1074, 1078, 1080, 1088

Assessor's Office (*Obtain Copy of Tax Map*) DATE:	
SBL No./Parcel ID	(1) 99.41-1-15, 99.49-6-2, 99.49-6-10
Current Owner(s):	(1) 9271 Group LLC (2) SAA (3) SAA
Past Owner(s)	(1) Gimmelli International Services + Miken Companies (2) Gimmelli International services (3) SAA
Parcel Size (acres)	
Natural-gas, sewer, electric, water (circle those that apply) — circled: Natural-gas, sewer, electric, water	
Additional site info. (include building construction dates, sizes, etc.)	
(2) Bldg built 1930 52623 ft² + 13590 ft² basement 55,505 ft² manufacture, 3956 ft² storage, 3752 ft² roller port	
(1) + (3) vacant	

Building/Zoning/Code Enforcement (review entire property file and make copies where appropriate (i.e., tanks) Provide documentation summary below. DATE:
On computer – 1050 general permits

Parcel Information

Curr Owner: 9271 Group, LLC
Location: S
1050 Niagara
Buffalo, NY 14213

Acct #: 00730500
School Cd: 140200 Buffalo School
Roll Sect: 1 Taxable RS/S: B
Prop Class: 710 Manufacture

Parcel Land Size

Front: 159.95 Acres: 0.00
Depth: 300.00 Sq Ft: 0

Grid Coordinates

East: 1063313 North: 1061212

File Maintenance/Sales Info

Created: 06/16/1983 Book: 11143
Modified: 02/14/2012 05:43 PM
By: judie Page: 1918
Folder: u_assmt_tab

Property Description

Owner Cd:
Cons School:
Ag District: 0
Easmnt Cd:

Alloc Factor: 0.0000
Land Com Yr/Cd:
Ag District Cd:
SSI: 0

Tax Code: N Non-Homestead
Mtg No:
Bank Cd:
Arrears: 0

Desc 1: 231.77 S Albany
Desc 2:
Desc 3:
Desc Print Cd: P

Assessment Data

Curr Land AV: 23,900
Curr Total AV: 260,000
Reval Land:
Reval Total:
Disclos Total:

Orig Value Type:
Rev Value Type: G Grievance
Residential Pct:
Uniform Pct: 99.00
Full Mkt Value: 262,626

Prior Land AV: 23,900
Prior Total AV: 370,000

Relevies

School: 0.00
Village: 0.00

Taxable Values

County: 260,000
Muni: 260,000
School: 260,000
Village:
Star Sch: 260,000

AR Information

Equal Inc:
Equal Dec: 110,000
Phys Inc:
Phys Dec:
Split Merge:

Current Owners

Name / Street No./Prefix Dir/Street Name/Suffix/Post Dir	Attention To/In Care Of / Unit Name	Unit No.	P.O. Box	City	Additional Address / St	Zip Code	Country	Bar Cd	Owner Type
9271 Group, LLC 210 Ellicott Square Bldg				Buffalo	NY	14203			Primary

Special Districts

Code	Name	Primary Units	Secondary Units	Pct	Type	Value	Move Tax / Credit
SEWER	Sewer	0.00	0.00	0.00		0	0.00

User Defined Fields

Table Name	Field Name	Value	Table Name	Field Name	Value
Parcel	Parcel_Create_Date	6/16/1983			

Subject Property Inventory Summary
For Current Year File 2012
Parcel ID: 99.49-6-2
Active

Parcel Information

Curr Owner: 9271 Group, LLC
Location: S
1050 Niagara
Buffalo, NY 14213

Acct #: 00730500
School Cd: 140200 Buffalo School
Roll Sect: 1 Taxable RS/S: B
Prop Class: 710 Manufacture

Parcel Land Size

Front: 159.95 Acres: 0.00
Depth: 300.00 Sq Ft: 0

Grid Coordinates

East: 1063313 North: 1061212

File Maintenance Info

Created: 06/16/1983
Modified: 02/14/2012 05:43 PM
By: judie
Folder: u_assmt_tab

Site Characteristics

Site No: 1
Site Type: C Commercial
Prop Class: 710 Manufacture
Route No: 000002043

Nbhd Cd: 5000
Sewer Type: 3 Comm/public
Water Supply: 3 Comm/public
Utilities: 4 Gas & elec

Used As: F09 Light mfg
Overall Eff Yr: 1930
Overall Desire: 3 Normal
Overall Cond: 2 Fair

DC Entry Type:
Zoning Cd:
Valuation Dist: 3
Overall Grade: C Average

Economic Obs: 0
Data Mailer: No
Last Phy Insp:
Reappraisal: 08/25/2010

Commercial Building Information

Bldg No.	Bldg Sec	No. Ident Bldgs	Boeckh Mdl No.	Act Yr Blt / Eff Yr Blt	Quality	Cond	Perim	GFA	# Sty	StyHt	Wall A / Wall B / Wall C	Air % / Sprn % / Alarm %	No. Elev	Bsmt Type / Bsmt Perim / Bsmt Sq Ft	Func Obs	Phys Depr	Depr Adj	RCN/ RCNLD
1	1	1	0811	1930	2.0 Average	2 Fair	1425	52623	2.0	16	0	100	3	2 Partial fin	0	0	0	4649099
				1930							0	100		872				1906131
											100	0		13590				

Commercial Use Information

Used As Code	Val Dist	Rentbl SqFt	Unit Code Descr	Total Units	Total Rent	Rent Type	1 Bed Sq Ft	1Bed # Units	Ann 1 Bed Rent/Unit	2 Bed Sq Ft	2 Bed # Units	Ann 2 Bed Rent/Unit	3 Bed Sq Ft	3 Bed # Units	Ann 3 Bed Rent/Unit
E02 Walk-up off	0	3752	Square feet												
F09 Light mfg	0	58505	Square feet												
F05 Row storage	0	3956	Square feet												

Land Breakdowns

Land Type	Front	Depth	Acres	Sq Ft	Soil Rating	Wtrfrt Type	Depth Factor	Infl Pct	Infl Cd 1	Infl Cd 2	Infl Cd 3	Land Value	Unit Price	Dim Code
01 Primary	0.00	0.00	0.00	47,700			0	0				0	0	

Assessment Summary
For Current Year File 2012
Parcel ID: 99.49-6-10
Active

Parcel Information
Curr Owner: 9271 Group, LLC
Location: W
1054 Niagara
Buffalo, NY 14213

Acct #: 00730522
School Cd: 140200 Buffalo School
Roll Sect: 1 Taxable RS/S: B
Prop Class: 330 Vacant comm

Parcel Land Size
Front: 157.00 Acres: 0.00 Irreg
Depth: 15.00 Sq Ft: 0

Grid Coordinates
East: 1063158 North: 1061222

File Maintenance/Sales Info
Created: 09/17/2008 Book: 11143
Modified: 12/01/2011 02:45 PM
By: Batch FM by orps Page: 1918
Folder: SPEC_DIST

Property Description
Owner Cd:
Cons School:
Ag District: 0
Easmnt Cd:

Alloc Factor: 0.0000
Land Com Yr/Cd:
Ag District Cd:
SSI: 0

Tax Code: N Non-Homestead
Mtg No:
Bank Cd:
Arrears: 0

Desc 1: 231.77 S Albany
Desc 2: 279.20 W Of
Desc 3:
Desc Print Cd: P

Assessment Data
Curr Land AV: 1,800
Curr Total AV: 1,800
Reval Land:
Reval Total:
Disclos Total:

Orig Value Type:
Rev Value Type:
Residential Pct:
Uniform Pct: 99.00
Full Mkt Value: 1,818

Prior Land AV: 1,800
Prior Total AV: 1,800

Relevies
School: 0.00
Village: 0.00

Taxable Values
County: 1,800
Muni: 1,800
School: 1,800
Village:
Star Sch: 1,800

AR Information
Equal Inc:
Equal Dec:
Phys Inc:
Phys Dec:
Split Merge:

Current Owners

Name / Street No./Prefix Dir/Street Name/Suffix/Post Dir	Attention To/In Care Of / Unit Name	Unit No.	P.O. Box	City	St	Zip Code	Country	Bar Cd	Owner Type
9271 Group, LLC 210 Ellicott Square Bldg				Buffalo	NY	14203			Primary

Special Districts

Code	Name	Primary Units	Secondary Units	Pct	Type	Value	Move Tax / Credit
SEWER	Sewer	0.00	0.00	0.00		0	0.00

User Defined Fields

Table Name	Field Name	Value
Parcel	Parcel_Create_Date	12/01/2008

Parcel Information

Curr Owner: 9271 Group, LLC
Location: W
1054 Niagara
Buffalo, NY 14213

Acct #: 00730522
School Cd: 140200 Buffalo School
Roll Sect: 1 Taxable RS/S: B
Prop Class: 330 Vacant comm

Parcel Land Size

Front: 157.00 Acres: 0.00 Irreg
Depth: 15.00 Sq Ft: 0

Grid Coordinates

East: 1063158 North: 1061222

File Maintenance Info

Created: 09/17/2008
Modified: 12/01/2011 02:45 PM
By: Batch FM by orps
Folder: SPEC_DIST

Site Characteristics

Site No:	1	Nbhd Cd:	360	Used As:	Z98 Non-contrib	DC Entry Type:	Economic Obs: 0
Site Type:	C Commercial	Sewer Type:	3 Comm/public	Overall Eff Yr:	0	Zoning Cd:	Data Mailer: No
Prop Class:	330 Vacant comm	Water Supply:	3 Comm/public	Overall Desire:	2 Fair	Valuation Dist: 3	Last Phy Insp:
Route No:		Utilities:	4 Gas & elec	Overall Cond:	3 Normal	Overall Grade: C Average	Reappraisal:

Land Breakdowns

Land Type	Front	Depth	Acres	Sq Ft	Soil Rating	Wtrfrt Type	Depth Factor	Infl Pct	Infl Cd 1	Infl Cd 2	Infl Cd 3	Land Value	Unit Price	Dim Code
01 Primary	0.00	0.00	0.00	1,880			0	0				0	0	

Inventory Cross Edit Detail Report
2012 - Current Year File
Edits applied to Parcel and Subject Inventory Files

Parcel ID	Parcel Prop Class	Site Prop Class	Site Nbr	Edit Nbr	Edit Message
99.41-1-15	331			010:	Parcel acreage 1.77 not equal to sum of all land types 1.76
	331	331	C1	007:	Site is missing its zoning code

Assessment Summary
For Current Year File 2012
Parcel ID: 99.41-1-15
Active

Parcel Information
Curr Owner: 9271 Group, LLC
Location: S
1088 Niagara
Buffalo, NY 14213

Acct #: 00730600
School Cd: 140200 Buffalo School
Roll Sect: 1 Taxable RS/S: B
Prop Class: 331 Com vac w/imp

Parcel Land Size
Front: 231.77 Acres: 0.00
Depth: 332.32 Sq Ft: 0

Grid Coordinates
East: 1063318 North: 1061396

File Maintenance/Sales Info
Created: 06/16/1983 Book: 11143
Modified: 02/14/2012 04:58 PM
By: judie Page: 1918
Folder: u_assmt_tab

Property Description
Owner Cd:
Cons School:
Ag District: 0
Easmnt Cd:

Alloc Factor: 0.0000
Land Com Yr/Cd:
Ag District Cd:
SSI: 0

Tax Code: N Non-Homestead
Mtg No:
Bank Cd:
Arrears: 0

Desc 1: South Cor Albany
Desc 2: To NYC RR Lands
Desc 3:
Desc Print Cd: P

Assessment Data
Curr Land AV: 77,000
Curr Total AV: 100,000
Reval Land:
Reval Total:
Disclos Total:

Orig Value Type:
Rev Value Type: G Grievance
Residential Pct:
Uniform Pct: 99.00
Full Mkt Value: 101,010

Prior Land AV: 130,400
Prior Total AV: 153,400

Relevies
School: 0.00
Village: 0.00

Taxable Values
County: 100,000
Muni: 100,000
School: 100,000
Village:
Star Sch: 100,000

AR Information
Equal Inc:
Equal Dec: 53,400
Phys Inc:
Phys Dec:
Split Merge:

Current Owners

Name / Street No./Prefix Dir/Street Name/Suffix/Post Dir	Attention To/In Care Of / Unit Name	Unit No.	P.O. Box	City	Additional Address / St	Zip Code	Country	Bar Cd	Owner Type
9271 Group, LLC 210 Ellicott Square Bldg				Buffalo	NY	14203			Primary

Special Districts

Code	Name	Primary Units	Secondary Units	Pct	Type	Value	Move Tax / Credit
SEWER	Sewer	0.00	0.00	0.00		0	0.00

User Defined Fields

Table Name	Field Name	Value	Table Name	Field Name	Value
Parcel	Parcel_Create_Date	6/16/1983			

Subject Property Inventory Summary
For Current Year File 2012
Parcel ID: 99.41-1-15
Active

Parcel Information

Curr Owner: 9271 Group, LLC
Location: S
1088 Niagara
Buffalo, NY 14213

Acct #: 00730600
School Cd: 140200 Buffalo School
Roll Sect: 1 Taxable RS/S: B
Prop Class: 331 Com vac w/imp

Parcel Land Size

Front: 231.77 Acres: 0.00
Depth: 332.32 Sq Ft: 0

Grid Coordinates

East: 1063318 North: 1061396

File Maintenance Info

Created: 06/16/1983
Modified: 02/14/2012 04:58 PM
By: judie
Folder: u_assmt_tab

Site Characteristics

Site No:	1	Nbhd Cd:	5000	Used As:	Z98 Non-contrib	DC Entry Type:	Economic Obs: 0
Site Type:	C Commercial	Sewer Type:	3 Comm/public	Overall Eff Yr:	0	Zoning Cd:	Data Mailer: No
Prop Class:	331 Com vac w/imp	Water Supply:	3 Comm/public	Overall Desire:	3 Normal	Valuation Dist: 3	Last Phy Insp:
Route No:	000002043	Utilities:	4 Gas & elec	Overall Cond:		Overall Grade:	Reappraisal:

Commercial Use Information

Used As Code	Val Dist	Rentbl SqFt	Unit Code Descr	Total Units	Total Rent	Rent Type	1 Bed Sq Ft	1Bed # Units	Ann 1 Bed Rent/Unit	2 Bed Sq Ft	2 Bed # Units	Ann 2 Bed Rent/Unit	3 Bed Sq Ft	3 Bed # Units	Ann 3 Bed Rent/Unit
J03 Parking lot	0	76692	Square feet	1											

Land Breakdowns

Land Type	Front	Depth	Acres	Sq Ft	Soil Rating	Wtrfrt Type	Depth Factor	Infl Pct	Infl Cd 1	Infl Cd 2	Infl Cd 3	Land Value	Unit Price	Dim Code
01 Primary	0.00	0.00	0.00	76,692			0	0				0	0	

Additional Improvements

Structure Code	Measure Code	Dim1	Dim2	SQFT MISC	Qty	Grd	Overall Cond	Act Yr	Eff Yr Built	Pct Gd	Func Obs	Srv Life	RCN	Unit RCNLD	Bld No.	Bld Sec
LP4 Driveway, Asphalt	Dimension	76,692.00	4.00	.00	1.00	D	Norm	1960		0	0	0	0	0	0	0

Parcel Information

Curr Owner: 9271 Group, LLC
Location: S
1088 Niagara
Buffalo, NY 14213

Acct #:
School Cd: 140200 Buffalo School
Roll Sect: 1 Taxable RS/S: B
Prop Class: 331 Com vac w/imp

Parcel Land Size

Front: Acres:
Depth: Sq Ft:

Grid Coordinates

East: 1063318 North: 1061396

File Maintenance Info

Created: 06/16/1983
Modified: 02/14/2012 04:58 PM
By: judie
Folder: u_assmt_tab

Sale Information

Deed Date:	06/30/1998	Val Usable:	No	Document No.:	0	Planning board/subdivision authority:	No
Deed Book:	10935	No.Parcels:	3	Transmittal Date:		Subdivision approval required for transfer:	No
Deed Page:	314	Part Parcel:	No	TOS Prop Class:	438 Parking lot	Parcel apprvd subdivision map provided:	No
Cntrct Date:		Sale Type:	3 Land & Building	TOS Land A/V:	102,300	Ownership type is condominium:	No
Sale Date:	06/30/1998	Deed Type:	W Warranty	TOS Total A/V:	121,400	New Construction on vacant land:	No
Sale Price:	500,000	Sale Status:	T Transmitted	Corrected Book:		Property located in agricultural district:	No
Pers Prop:	0	Alt SWIS:		Corrected Page:		Buyer rcvd agricultural district disclosure:	No

Prior Owner: Miken Companies Inc,

Attorney Info

First:
Last:
Phone:

Corrections Data

Verify:

Sale Conditions

J None

Sale Owners

Name / Street No./Prefix Dir/Street Name/Suffix/Post Dir	Attention To/In Care Of / Unit Name	Unit No.	P.O. Box	City	Additional Address / St	Zip Code	Country	Bar Cd	Owner Type
Ciminelli International	Attn: Ciminelli				Construction Co Inc				
350 Essjay Rd-Ste 100				Williamsville	NY	14221			Primary
Services Llc					Construction Co Inc				
350 Essjay Rd-Ste 100				Williamsville	NY	14221			Additional

LOCATION 1050 Niagara St. DATE April 21, 1976
OWNER Sale Niagara
ADDRESS 1050 Niagara

CONTRACTOR Johnson Controls Inc.
DESCRIPTION OF WORK Lithographers- Replace 4 motor starters and temperature control woring for 1st floor air handling lmits.
CONDITIONS

VALUE FEE $10.00 check

PLAN FILE #

ELECTRICAL PERMIT # E 02290

LOCATION 1050 Niagara St. DATE 10/20/80
OWNER Sale-Niagara
ADDRESS Same

CONTRACTOR Truscott-Woodard Electric
DESCRIPTION OF WORK Print shop - (1) feeder only 4/0, (1) feeder #8 and load center only, (1) load center only in ~~[illegible]~~ future machine
CONDITIONS shop.

VALUE FEE $50.00 ck.

PLAN FILE #

ELECTRICAL PERMIT # E 14487

LOCATION 1056-1068 Niagara St
PERMIT NO. 37798 DATE OCT 29 1912
OWNER Mary McWilliams Reed
DESCRIPTION Frame add. to roof of Brick Building

YAWMAN & ERBE MFG CO., ROCHESTER AND BUFFALO 4286 5M 10-12

LOCATION— 1066 Niagara Street
PERMIT No. 16254 DATE July 23 1904 N.S. 200 ft ... of Albany PLAN FILE D-2-4
OWNER Niagara Lithograph Co.
DESCRIPTION— 1 (?) 2 STORY Brick USE Lithograph Manufactory.
PERMIT No. DATE 190 . PLAN FILE F-34
OWNER
DESCRIPTION— STORY USE
Vault #2

LOCKWOOD, STATIONER, BUFFALO. 22198.

LOCATION 1056 1068 Niagara St
PERMIT NO. 37798 DATE OCT 29 1912
OWNER Mary McWilliams Reed
DESCRIPTION Frame add. on roof of Brick Building

YAWMAN & ERBE MFG CO., ROCHESTER AND BUFFALO 4286 5M 10-12

C-124

LOCATION 1070 Niagara St.

PERMIT NO. RA 12644 DATE MAY 3 1920

OWNER American Gelatine Co.

DESCRIPTION add. & alt. to S. Br. & stone storage bldg.

YAWMAN & ERBE MFG. CO., ROCHESTER AND BUFFALO ~1565~

ADDRESS 1070 Niagara St.,

OWNER Gulf Oil Corp.,

ADDRESS 1070 Niagara St.,

CONTRACTOR Schwab Bros. Mfg. Inc.,

ADDRESS 370 Sawyer Ave., Tonawanda, N.Y.,

DATE 12/2/41 19 APPLICATION NO. 6493

Remain 1 sty. brick bldg. - reduce to grade - future use - parking.

PLAN FILE NO. 34,000.00

PERMIT No. A 18320

LOCATION 1070 Niagara St

PERMIT NO. 68966 DATE 3/21/22

OWNER Hygrade Oil & Fuell Corp

DESCRIPTION alter interior of 2 str. brick factory.

YAWMAN & ERBE MFG. CO., ROCHESTER AND BUFFALO ~1565~

LOCATION 1070 Niagara St.

PERMIT No. 25675 DATE November 16, 1933

OWNER Hygrade Petroleum Co.

DESCRIPTION Place additional steel gasoline tank. 550 gallons.

"Y AND E" BUFFALO & ROCHESTER, N. Y. 10M 9-30 18021 B-1

LOCATION 1070 Niagara St.

PERMIT No. R028044 DATE January 13, 1937

OWNER Gulf Oil Co.

DESCRIPTION Alter and repair brick offices and garage.

"Y AND E" 5687

LOCATION 1070 Niagara St.

PERMIT No. 20336 DATE OCT 3 - 1930

OWNER Hygrade Petroleum Co.

DESCRIPTION Use brick bldg for indoor golf course

"Y AND E" BUFFALO & ROCHESTER, N. Y. 10M 5-28 10140

LOCATION 1070 Niagara St.

PERMIT No. R023791 DATE October 26, 1932

OWNER Hygrade Oil Corp.

DESCRIPTION New 8x10 door.

"Y AND E" BUFFALO & ROCHESTER, N. Y. 10M 9-30 18021 B-1

LOCATION 1070 Niagara St.

PERMIT No. 17521 R.O. DATE 5/18/25

OWNER Niagara Terminal Bldgs. Corp.

DESCRIPTION alter 2½ story brick storate building

LOCATION 1070 Niagara St.

PERMIT No. R028232 DATE March 29, 1937

OWNER Gulf Oil Corp.

DESCRIPTION Build fire vault.

"Y AND E" 6687

LOCATION 1070 Niagara St.

PERMIT No. 68965 DATE 3/21/22

OWNER Hygrade Oil & Fuel Corp.

DESCRIPTION 2 conc. block & stucco office str.

YAWMAN & ERBE MFG. CO., ROCHESTER AND BUFFALO

~1565~

D-135

LOCATION 1070 Niagara St.

PERMIT No. 18780 R.O. DATE 7/21/26

OWNER Niagara Terminals Bldg.

DESCRIPTION rebuild part of floor 2d. story

PLUMBING PERMIT #P 6059

LOCATION 1070 Niagara St. DATE 12/4/79

OWNER Mr. Neunder ADDRESS Same

CONTRACTOR Roberts Plumbing

DESCRIPTION OF WORK Commercial- 1 sink, 1laundry tray, 1 water heater (40 Gal)

CONDITIONS

FEE 9.00 ck.

APPLICATION# PLAN FILED no.

LOCATION 1088 Niagara St.

PERMIT NO. R.O. 12450 DATE JAN 30 1920

OWNER American Gelatine Corp

DESCRIPTION Alt floors of brick bldg.

YAWMAN & ERBE MFG. CO., ROCHESTER AND BUFFALO ~1565~

LOCATION 1088 Niagara St.

PERMIT NO. 7459 DATE NOV 19 1912

OWNER International Brewing Co.

DESCRIPTION Make Alts to Brick Bldg.

YAWMAN & ERBE MFG. CO., ROCHESTER AND BUFFALO 4286 5M 10-12

LOCATION 1088 Niagara

PERMIT NO. 9707 DATE Mar 31 1916

OWNER International Brewing Co.

DESCRIPTION alter bottling works

YAWMAN & ERBE MFG. CO., ROCHESTER AND BUFFALO ~1565~

LOCATION 1088 Niagara

PERMIT NO. 10690 DATE June 20 1917

OWNER International Brew Co.

DESCRIPTION alt. 1st. br. wagon shed.

YAWMAN & ERBE MFG. CO., ROCHESTER AND BUFFALO ~1565~

LOCATION 1088 NIAGARA ST

PERMIT NO. 40863 DATE DEC 3 - 1913

OWNER INTERNATIONAL BREWG. CO

DESCRIPTION ALT. INT. 2 S. BR. BLDG.

YAWMAN & ERBE MFG. CO., ROCHESTER AND BUFFALO ~1565~ 5039 10M. 3-1

LOCATION 1088 Niagara St. DATE 6/20/80

OWNER Walter Jaworski

ADDRESS 1050 Niagara

CONTRACTOR -

DESCRIPTION OF WORK Use parking lot
(lot has existing drainage)
Apvd. by ZBA 6/18/80 no conditions

CONDITIONS

VALUE $- FEE $35.00

APPLICATION # 162166 PLAN FILE #

BUILDING PERMIT # B 23312

APPENDIX G

ENVIRONMENTAL DATABASE REPORT

FIRSTSEARCH

ENVIRONMENTAL FIRSTSEARCH REPORT

TARGET PROPERTY:

1050-1088 NIAGARA STREET

1055 NIAGARA ST

BUFFALO, NY 14213

JOB NUMBER: 0136-012-004

PREPARED FOR:

Benchmark Environmental Engineering and Science

2558 Hamburg Turnpike, Suite 300

Lackawanna, NY 14218

May 8, 2012

Environmental FirstSearch
Search Summary Report

Target Site: 1055 NIAGARA ST
BUFFALO, NY 14213

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	02-01-12	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	02-01-12	0.50	0	0	0	0	-	0	0
CERCLIS	Y	02-27-12	0.50	0	0	0	0	-	0	0
NFRAP	Y	02-27-12	0.50	0	0	0	0	-	0	0
RCRA COR ACT	Y	03-13-12	1.00	0	0	0	0	0	0	0
RCRA TSD	Y	03-13-12	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	03-13-12	0.25	0	2	6	-	-	2	10
Federal Brownfield	Y	02-01-12	0.50	0	0	0	0	-	3	3
ERNS	Y	04-13-12	0.12	0	0	-	-	-	107	107
Tribal Lands	Y	12-15-08	1.00	0	0	0	0	0	1	1
State/Tribal Sites	Y	04-05-12	1.00	0	0	0	0	1	0	1
State Spills 90	Y	01-10-12	0.12	0	9	-	-	-	475	484
State/Tribal SWL	Y	01-11-12	0.50	0	0	0	2	-	0	2
State/Tribal LUST	Y	04-05-12	0.50	0	2	5	9	-	5	21
State/Tribal UST/AST	Y	04-05-12	0.25	0	1	9	-	-	0	10
State/Tribal EC	Y	04-05-12	0.50	0	0	0	0	-	1	1
State/Tribal IC	Y	04-05-12	0.25	0	0	0	-	-	0	0
State/Tribal VCP	Y	04-05-12	0.50	0	0	0	0	-	0	0
State/Tribal Brownfields	Y	04-05-12	0.50	0	0	0	0	-	0	0
Federal IC/EC	Y	03-13-12	0.50	0	0	0	0	-	0	0
-TOTALS-				0	14	20	11	1	594	640

Notice of Disclaimer

Due to the limitations, constraints, and inaccuracies and incompleteness of government information and computer mapping data currently available to FirstSearch Technology Corp., certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in FirstSearch Technology Corp.'s databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although FirstSearch Technology Corp. uses its best efforts to research the actual location of each site, FirstSearch Technology Corp. does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of FirstSearch Technology Corp.'s services proceeding are signifying an understanding of FirstSeaarch Technology Corp.'s searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch
Site Information Report

Request Date:	05-08-12	**Search Type:**	COORD
Requestor Name:	Jonathan Taylor	**Job Number:**	0136-012-004
Standard:	AAI		

Target Site: 1055 NIAGARA ST
BUFFALO, NY 14213

Demographics

Sites:	640	**Non-Geocoded:**	594	**Population:**	NA

Radon: OF THE 33 HOMES TESTED, THE AVG. PCI/L LEVEL WAS .8

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)		UTMs
Longitude:	-78.899804	-78:53:59	**Easting:**	671435.77
Latitude:	42.912005	42:54:43	**Northing:**	4752968.124
Elevation:	620		**Zone:**	17

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes:

ZIP Code	City Name	ST	Dist/Dir	Sel

Services:

	Requested?	Date
Fire Insurance Maps	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search	No	
Municipal Reports	No	
Liens	No	
Historic Map Works	No	
Online Topos	No	

Environmental FirstSearch
Target Site Summary Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

TOTAL:	640	GEOCODED:	46	NON GEOCODED:	594	SELECTED:	0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.

No sites found for target address

Environmental FirstSearch
Sites Summary Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

TOTAL: 640 **GEOCODED:** 46 **NON GEOCODED:** 594 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
1	SPILLS	MIKEN CO., INC. 9875035/CLOSED	1030 NIAGARA ST BUFFALO NY	0.01 SW	0	1
2	SPILLS	AL S LEASING 9200952/CLOSED	1050 NIAGARA ST BUFFALO NY	0.04 NW	- 4	2
3	SPILLS	COSUMA 0750746/CLOSED	1073 NIAGARA ST BUFFALO NY	0.04 NE	0	3
3	SPILLS	NIAGARA FARGO 0175514/ACTIVE	1073 NIAGARA ST BUFFALO NY	0.04 NE	0	4
3	UST	NIAGARA FARGO SERVICE, INC. PBS9-222763/ACTIVE	1073 NIAGARA ST BUFFALO NY 14213	0.04 NE	0	6
3	LUST	COSUMA 0750746/CLOSED	1073 NIAGARA ST BUFFALO NY	0.04 NE	0	9
3	LUST	NIAGARA-FARGO SUNOCO 8605868/CLOSED	1073 NIAGARA ST BUFFALO NY	0.04 NE	0	10
4	SPILLS	CASTRICONE CONCRETE 0512643/CLOSED	NIAGARA ST & ALBANY ST BUFFALO NY	0.07 NE	- 3	11
4	SPILLS	KEYSTONE CORP. 9505138/CLOSED	ALBANY ST & NIAGARA ST BUFFALO NY	0.07 NE	- 3	13
4	SPILLS	ROADSIDE 0550754/CLOSED	FARGO AVE & NIAGARA ST BUFFALO NY	0.07 NE	- 3	14
5	RCRAGN	A N DERINGER INC NYR000018119/VGN	1010 NIAGARA ST BUFFALO NY 14213	0.09 SW	+ 3	15
6	RCRAGN	KEYSTONE CORP NYD002105765/LGN	1095 NIAGARA ST BUFFALO NY 14213	0.10 NE	0	16
6	SPILLS	KEYSTONE CORP 9206401/CLOSED	1095 NIAGARA ST BUFFALO NY	0.10 NE	0	19
6	SPILLS	NEAR THE CORNER 0751281/CLOSED	1095 NIAGARA ST BUFFALO NY	0.10 NE	0	20
7	RCRAGN	OLIVER GEAR INC NYR000070938/VGN	1120 NIAGARA ST BUFFALO NY 14213	0.13 NE	- 4	22
8	UST	MODERN HEAT TREATING & FORGING PBS9-438197/	1112 NIAGARA ST BUFFALO NY 14213	0.13 NW	- 10	24
8	UST	MODERN HEAT TREATING INC. CBS9-000016/UNREGULATED	1112 NIAGARA ST BUFFALO NY 14213	0.13 NW	- 10	25
9	RCRAGN	CURTIS SCREW CO INC NYD002106599/SGN	1130 NIAGARA ST BUFFALO NY 14213	0.16 NE	- 4	27
9	UST	CURTIS SCREW CO INC PBS9-002577/UNREGULATED	1130 NIAGARA ST BUFFALO NY 14213	0.16 NE	- 4	29
9	UST	CURTIS SCREW CO. INC. CBS9-000154/UNREGULATED	1130 NIAGARA ST BUFFALO NY 14213	0.16 NE	- 4	32

Environmental FirstSearch
Sites Summary Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

TOTAL: 640 **GEOCODED:** 46 **NON GEOCODED:** 594 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
9	LUST	CURTIS SCREW 9504353/CLOSED	1130 NIAGARA ST BUFFALO NY	0.16 NE	- 4	33
9	LUST	CURTIS SCREW COMPANY 8707193/CLOSED	1130 NIAGARA ST BUFFALO NY	0.16 NE	- 4	34
10	RCRAGN	C F M FRANCHISING CO NYD986934578/VGN	959 NIAGARA ST BUFFALO NY 14213	0.17 SE	+ 9	35
10	UST	7-ELEVEN PBS9-600051/ACTIVE	959 NIAGARA ST BUFFALO NY 14213	0.17 SE	+ 9	36
11	RCRAGN	TERMINAL STATION B SUB NYD980783468/SGN	996 BUSTI AVE BUFFALO NY 14213	0.17 SW	+ 5	39
12	RCRAGN	NIAGARA MOHAWK MANHOLE 760 WEST AV NYP000964675/LGN	760 WEST AVE BUFFALO NY 14213	0.18 SE	+ 4	41
13	RCRAGN	RICH PRODUCTS CORP NYD002108371/VGN	1145 NIAGARA ST BUFFALO NY 14213	0.19 NE	- 4	43
13	UST	RICH PRODUCTS CORPORATION CBS9-000322/UNREGULATED	1145 NIAGARA ST BUFFALO NY 14213	0.19 NE	- 4	45
14	UST	SCHOOL #18 PBS9-423637/UNREGULATED	118 HAMPSHIRE ST BUFFALO NY 14213	0.19 SE	+ 4	47
14	LUST	SCHOOL 18 0375439/CLOSED	118 HAMPSHIRE ST BUFFALO NY	0.19 SE	+ 4	49
15	LUST	ULTIMATE AUTO SERVICE 8606136/CLOSED	35 HAMPSHIRE ST BUFFALO NY	0.19 SE	+ 10	50
16	UST	MULTIFORM DESICCANTS INC PBS9-600780/UNREGULATED	960 BUSTI AVE BUFFALO NY 14213	0.20 SW	+ 8	51
17	UST	COLE MUFFLER INC PBS9-600787/UNREGULATED	954 NIAGARA ST BUFFALO NY 14213	0.22 SE	+ 11	53
17	LUST	COLE MUFFLER 8601635/CLOSED	954 NIAGARA ST BUFFALO NY	0.22 SE	+ 11	56
18	LUST	AIR RELEASE 0311359/CLOSED	W FERRY ST BUFFALO NY	0.27 NW	- 50	57
18	LUST	BUFFALO SEWER AUTHORITY 9805826/CLOSED	BIRD ISLAND BUFFALO NY	0.27 NW	- 50	58
19	SWL	SQUAW ISLAND SLF 9-15T07/INACTIVE	BUFFALO NY 14202	0.38 NW	N/A	59
19	SWL	SQUAW ISLAND SLF 9-15Y17/INACTIVE	NIAGARA ST BUFFALO NY 14202	0.38 NW	N/A	60
20	LUST	MASSACHUSETTS PUMPING ST 9711598/CLOSED	MASSACHUSETTS AVE BUFFALO NY	0.41 SW	+ 18	61
21	LUST	PEACE BRIDGE SHOP 8705888/CLOSED	VERMONT ST BUFFALO NY	0.42 SE	+ 18	62

Environmental FirstSearch
Sites Summary Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

TOTAL: 640 **GEOCODED:** 46 **NON GEOCODED:** 594 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
22	LUST	CARUSO S SERVICE 8708233/CLOSED	617 WEST AVE BUFFALO NY	0.42 SE	+ 9	63
22	LUST	CARUSO SUNOCO 8908639/CLOSED	617 WEST AVE BUFFALO NY	0.42 SE	+ 9	64
23	LUST	EPISCOPAL FACILITY 0806256/CLOSED	24 RHODE ISLAND ST BUFFALO NY 14213	0.45 SE	+ 20	65
24	LUST	EPISCOPAL CHURCH 9300635/CLOSED	34 RHODE ISLAND ST BUFFALO NY	0.46 SE	+ 20	66
25	LUST	DEMOLITION PROJECT 9975741/CLOSED	ARKANSAS ST & GRANT ST BUFFALO NY	0.50 NE	+ 10	67
26	STATE	CHEMCORE 915176/	1382 NIAGARA ST BUFFALO NY 14213	0.68 NE	- 23	68

Environmental FirstSearch
Sites Summary Report

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BUFFALO, NY 14213

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	RCRAGN	NEW YORK STATE THRUWAY AUTHORIY/CA NYR000127704/SGN	SCAJAQUADA CRK EXPWY INT BUFFALO NY 14213	NON GC	N/A	N/A
	RCRAGN	NYSDOT BIN 103989A NYR000127738/LGN	SCAJAQUADA CRK EXPWY INT BUFFALO NY 14207	NON GC	N/A	N/A
	ERNS	1 BADCOCK AND MAIN ST BUFFALO RIVE NRC-976837/MOBILE	BABCOCK ST & MAIN ST BUFFALO NY	NON GC	N/A	N/A
	ERNS	118 WENDOVER NRC-919778/FIXED	118 WENDOVER BUFFALO NY	NON GC	N/A	N/A
	ERNS	1907 JAMES CASEY DRIVE NRC-911697/MOBILE	1907 JAMES CASEY DR BUFFALO NY	NON GC	N/A	N/A
	ERNS	200 SON WELL DRIVE NRC-956678/MOBILE	200 WELL DR BUFFALO NY	NON GC	N/A	N/A
	ERNS	4353 PAILIY NRC-814665/FIXED	BUFFALO NY	NON GC	N/A	N/A
	ERNS	665 TERRY STREET NRC-891811/FIXED	665 TERRY ST BUFFALO NY	NON GC	N/A	N/A
	ERNS	85 WEBBER AVE. NRC-861935/FIXED	85 WEBBER AVE BUFFALO NY	NON GC	N/A	N/A
	ERNS	ASPHALT & SOIL SHOULDER AND STORM NRC-999364/MOBILE	ASPHALT & SOIL SHOULDER & BUFFALO NY	NON GC	N/A	N/A
	ERNS	AT THE RIVER ROAD I-90 BRIDGE (SOU NRC-921236/FIXED	AT THE RIVER I-90 BRIDGE (BUFFALO NY	NON GC	N/A	N/A
	ERNS	AUTO TRANS LOADING RAMP AT BISON Y NRC-927246/MOBILE	65 GRUNERT RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	ERNS	BEST WAY INDUSTRY, TRACK 4 NRC-637126/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	BISON RAIL YARD (MP: SR419, SUB: H NRC-936924/MOBILE	BISON RAIL YARD (MP: SR419 BUFFALO NY	NON GC	N/A	N/A
	ERNS	BISON RAIL YARD, MILEPOST: SR419, NRC-953949/MOBILE	BISON RAIL YARD, MILEPOST: CHEEKTOWAGA NY	NON GC	N/A	N/A
	ERNS	BISON YARD / MILE POST SR 419 NRC-939897/RAILROAD	BISON YARD / MILE POST BUFFALO NY	NON GC	N/A	N/A
	ERNS	BUFFALO NEW YORK NRC-968662/RAILROAD	BUFFALO NEW YORK BUFFALO NY	NON GC	N/A	N/A
	ERNS	BUFFALO RAIL YARD NRC-766583/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	BUFFALO RAIL YARD, MILEPOST: SR419 NRC-931366/MOBILE	BUFFALO RAIL YARD, MILEPOS BUFFALO NY	NON GC	N/A	N/A
	ERNS	BUFFALO RIVER NRC-637974/STORAGE TANK	BUFFALO NY	NON GC	N/A	N/A

Environmental FirstSearch
Sites Summary Report

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	ERNS	BUFFALO RIVER NRC-727458/STORAGE TANK	BUFFALO NY	NON GC	N/A	N/A
	ERNS	BUFFALO TERMINAL SUBDIVISION NRC-785974/RAILROAD NON-RELEASE	MILEPOST QD2 BUFFALO NY	NON GC	N/A	N/A
	ERNS	BUFFALO TO SYRACUSE PIPELINE NRC-700739/PIPELINE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	BY THE SAND PILE 251 CAYUGA ST NRC-903463/FIXED	251 CAYUGA ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	ERNS	CENTER LINE OF DINGENS RD NRC-953852/PIPELINE	CENTER LINE OF DINGENS CHEEKTOWAGA NY	NON GC	N/A	N/A
	ERNS	CG MSO BUFFALO 515378/UNKNOWN	SMOKES CREEK BUFFALO NY	NON GC	N/A	N/A
	ERNS	COLLINS AVENUE NRC-911167/PIPELINE	COLLINS AVE WEST SENECA NY	NON GC	N/A	N/A
	ERNS	COUNTY LINE ROAD NRC-791055/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	CSX RAIL ROAD NRC-805180/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	CSX MILE POST QDN4 NRC-751329/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	CSX RAILROAD / MILE 16.51 / NIAGRA NRC-793434/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	DP YARD NRC-603112/RAILROAD	BUFFALO NY	NON GC	N/A	N/A
	ERNS	FRONTIER YARD 1250 WILLIAMS ST. NRC-1005763/RAILROAD	1250 WILLIAMS St BUFFALO NY	NON GC	N/A	N/A
	ERNS	HARRISBURG DIVISION / IN RAILYARD NRC-657054/RAILROAD	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	HARRISBURG SUBDIVISION, MILEPOST S NRC-642313/RAILROAD	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	I 190 MILE MARKER 0.2 NORTHBOUND NRC-955997/MOBILE	I 190 MILE MARKER 0.2 NORT CHEEKTOWAGA NY	NON GC	N/A	N/A
	ERNS	I-190 NRC-896750/MOBILE	I-190 BUFFALO NY	NON GC	N/A	N/A
	ERNS	I-290 AT MAIN STREET EXIT NRC-917453/MOBILE	I 290 & MAIN ST AMHERST NY	NON GC	N/A	N/A
	ERNS	IN THE RAIL YARD NRC-985237/RAILROAD	IN THE RAIL YARD CHEEKTOWAGA NY	NON GC	N/A	N/A
	ERNS	INTER MODULE YARD, MILEPOST: SR419 NRC-949286/MOBILE	INTER MODULE YARD, MILEPOS CHEEKTOWAGA NY	NON GC	N/A	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

TOTAL: 640 **GEOCODED:** 46 **NON GEOCODED:** 594 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
	ERNS	INTERNATIONAL RAILROAD BRIDGE NRC-851221/RAILROAD	INTERNATIONAL RR BRIDGE BL BUFFALO NY	NON GC	N/A	N/A
	ERNS	INTERSTATE 190 MILE POST 4 NORTHBO NRC-713050/MOBILE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	INTERSTATE 90 MILEMARKER 417 NRC-946802/MOBILE	INTERSTATE 90 MILEMARKER 4 BUFFALO NY	NON GC	N/A	N/A
	ERNS	LEAD TRACK NRC-565082/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	LOWER NIAGRA RIVER NRC-900632/STORAGE TANK	LOWER NIAGRA RIVER BUFFALO NY	NON GC	N/A	N/A
	ERNS	MAIN LINE NRC-941175/RAILROAD NON-RELEASE	MAIN LINE BUFFALO NY	NON GC	N/A	N/A
	ERNS	MAIN LINE MILEPOST: FR419 S/D: HAR NRC-958096/RAILROAD	MAIN LINE MILEPOST: FR419 CHECKTWAGA NY	NON GC	N/A	N/A
	ERNS	MAIN ST OVERPASS TO I-290 BUFFALO- NRC-917445/MOBILE	MAIN OVERPASS TO I-290 BUF AMHERST NY	NON GC	N/A	N/A
	ERNS	MILE POST - QDB2.8 BEL NRC-891108/RAILROAD NON-RELEASE	MILE POST - QDB2.8 BELT BE BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILE POST 6.36 NRC-801949/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILE POST QC 434.5 NRC-772147/RAILROAD	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILE POST QDN3.4 NRC-645465/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILE POST SR 419 NRC-952942/MOBILE	MILE POST SR 419 BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILE POST SR419 NRC-996861/RAILROAD	MM SR419 BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILE QC434 / BUFFALO TERMINAL NRC-780716/MOBILE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILEPOST 00003 SUBDIVISION HARRISB NRC-932221/MOBILE	MILEPOST 00003 SUBDIVISION BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILEPOST QC431.7 55 DICK ROAD NRC-979284/RAILROAD	55 DICK RD BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILEPOST QC434 NRC-992734/RAILROAD	MILEPOST QC434 BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILEPOST SR 419 - NEAR BISON RAIL NRC-933337/MOBILE	MILEPOST SR 419 - NEAR BIS BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILEPOST SR419 NRC-950318/MOBILE	MILEPOST SR419 BUFFALO NY	NON GC	N/A	N/A

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	ERNS	MILEPOST SR420.0 NRC-901222/RAILROAD	MILEPOST SR420.0 BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILEPOST: QC437.0 NRC-924925/RAILROAD NON-RELEASE	MILEPOST: QC437.0 BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILEPOST: SR 419 / SUBDIVISION: HA NRC-958357/MOBILE	MILEPOST: SR 419 / SUBDIVI CHEEKTOWAGA NY	NON GC	N/A	N/A
	ERNS	MILITARY ROAD & CHANDLER ST. NRC-902976/MOBILE	MILITARY RD & CHANDLER ST. BUFFALO NY	NON GC	N/A	N/A
	ERNS	MILPOST 4019 - HARRISBURG SUBDIVIS NRC-950086/MOBILE	MILPOST 4019 - HARRISBURG CHEEKTOWAGA NY	NON GC	N/A	N/A
	ERNS	MP QC 434.5 NRC-772140/RAILROAD	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	MP QC434 NRC-986661/RAILROAD	MP QC434 BUFFALO NY	NON GC	N/A	N/A
	ERNS	MP: QRN 2.1 NRC-725563/RAILROAD NON-RELEASE	NEAR EXCHANGE STATION ST BUFFALO NY	NON GC	N/A	N/A
	ERNS	MP: SR419 NRC-843882/RAILROAD	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	NIAGARA BRANCH NRC-798973/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	NIAGRA RIVER NRC-858144/MOBILE	NEAR SQAW ISLAND BUFFALO NY	NON GC	N/A	N/A
	ERNS	NORFOLK SOUTHERN RAILROAD NRC-799746/RAILROAD	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	ON THE #2 LOOP TRACK MILEPOST QC43 NRC-982225/RAILROAD	ON THE #2 LOOP TRACK MILEP BUFFALO NY	NON GC	N/A	N/A
	ERNS	ON THE MAIN LINE NRC-816278/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	ON THE MAIN LINE NRC-872803/RAILROAD NON-RELEASE	ON THE MAIN LINE BUFFALO NY	NON GC	N/A	N/A
	ERNS	ON USCG PROPERTY 1 FURMAN BLVD NRC-974057/STORAGE TANK	1 FURMAN Blvd BUFFALO NY	NON GC	N/A	N/A
	ERNS	OVERPASS OVER I 90 NEAR EXIT 50A C NRC-917457/MOBILE	OVERPASS & I 90 NEAR EXIT BUFFALO NY	NON GC	N/A	N/A
	ERNS	PARKING AREA OF THE SCHOOL IROQUOI NRC-921860/MOBILE	PARKING AREA OF THE SCHOOL BUFFALO NY	NON GC	N/A	N/A
	ERNS	POLE #26 R NRC-822914/FIXED	CLEVELAND DR BUFFALO NY	NON GC	N/A	N/A
	ERNS	POLE 124 NRC-814708/FIXED	NORTH ST BUFFALO NY	NON GC	N/A	N/A

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	ERNS	QC434.6 NRC-956154/RAILROAD	QC434.6 BUFFALO NY	NON GC	N/A	N/A
	ERNS	RAIL YARD NRC-854779/RAILROAD	MILEPOST: N0003 SUBDIVISIO BUFFALO NY	NON GC	N/A	N/A
	ERNS	RICH MARINE LAKE ERIE DOCK 6 SIDE NRC-872061/MOBILE	RICH MARINE LAKE ERIE DOCK BUFFALO NY	NON GC	N/A	N/A
	ERNS	ROSEWEL PARK CANCER INSTITUTE ELM NRC-935084/FIXED	ROSEWEL PARK CANCER INSTIT BUFFALO NY	NON GC	N/A	N/A
	ERNS	SEE BELOW NRC-843828/VESSEL	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	SK RAIL YARD, MILEPOST: SR421 NRC-945144/RAILROAD	SK RAIL YARD, MILEPOST: SR BUFFALO NY	NON GC	N/A	N/A
	ERNS	SOUTH MICHIGAN AVE MP QD 2.0 NRC-940811/FIXED	SOUTH MICHIGAN AVE MP QD 2 BUFFALO NY	NON GC	N/A	N/A
	ERNS	SOUTH PARK FINANCE STATION NRC-724676/RAILROAD	MILEPOST B4.0 BUFFALO NY	NON GC	N/A	N/A
	ERNS	SOUTHBOUND I-190 BETWEEN EXITS 4 A NRC-859177/MOBILE	SOUTHBOUND I-190 BETWEEN E BUFFALO NY	NON GC	N/A	N/A
	ERNS	SUBDIVISION: HARRISBURG / MILEPOST NRC-974114/RAILROAD	SUBDIVISION: HARRISBURG / BUFFALO NY	NON GC	N/A	N/A
	ERNS	TONAWANDA ENGINE PLANT NRC-888936/FIXED	TONAWANDA ENGINE PLANT BUFFALO NY	NON GC	N/A	N/A
	ERNS	TRANSFER YARD NRC-820582/RAILROAD NON-RELEASE	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	ERNS	UNIVERSITY OF BUFFALO SOUTH CAMPUS NRC-934420/MOBILE	UNIVERSITY OF BUFFALO SOUT BUFFALO NY	NON GC	N/A	N/A
	ERNS	UNKNOWN 235502/UNKNOWN	GENESSE RIVER BUFFALO NY	NON GC	N/A	N/A
	ERNS	UPPER NIAGRA RIVER, NORTH OF INT L NRC-958216/STORAGE TANK	UPPER NIAGRA RIVER, NORTH BUFFALO NY	NON GC	N/A	N/A
	ERNS	221664/UNKNOWN	IN THE SHIP CANAL AND IN T BUFFALO NY	NON GC	N/A	N/A
	ERNS	NRC-835266/STORAGE TANK	1 FERMAN BLVD BUFFALO NY	NON GC	N/A	N/A
	ERNS	NRC-814720/FIXED	GLIDER DELAVAN (CORNER AVE BUFFALO NY	NON GC	N/A	N/A
	ERNS	NRC-642344/FIXED	20460 CHANDLER ST BUFFALO NY	NON GC	N/A	N/A
	ERNS	NRC-851958/MOBILE	190 S BOUND NIAGRA ON RAMP BUFFALO NY	NON GC	N/A	N/A

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	ERNS	NRC-849320/MOBILE	1800 BLOCK OF SOUTH PARK A BUFFALO NY	NON GC	N/A	N/A
	ERNS	NRC-820506/RAILROAD NON-RELEASE	UNION RD BUFFALO NY	NON GC	N/A	N/A
	ERNS	NRC-598687/RAILROAD NON-RELEASE	N/A BUFFALO NY	NON GC	N/A	N/A
	ERNS	458315/UNKNOWN	BUFFALO RIVER BUFFALO NY	NON GC	N/A	N/A
	ERNS	NRC-648624/RAILROAD	LAKE AVE BUFFALO NY	NON GC	N/A	N/A
	ERNS	342873/UNKNOWN	LITTLE NIAGRA RIVER BUFFALO NY	NON GC	N/A	N/A
	ERNS	336623/UNKNOWN	BLACK ROCK CANAL BUFFALO NY	NON GC	N/A	N/A
	ERNS	239679/UNKNOWN	BUFFALO RIVER BUFFALO NY	NON GC	N/A	N/A
	ERNS	228451/UNKNOWN	BUFFALO SHIP CANAL BUFFALO NY	NON GC	N/A	N/A
	SPILLS	115 WELLWORTH RD 0907630/CLOSED	115 WELLWORTH RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	1720 SOUTH WESTERN BLVD 0911166/CLOSED	1720 S WESTERN BLVD WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	190 NORTH 1008241/CLOSED	I-190 & HAMBURG ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	190 STH BOUND 1103547/CLOSED	MM 9.4- 6.8 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	2 MANHOLES 50 FEET APART 1008817/CLOSED	6 YVETTE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	200 FEET NORTH OF MINERAL SPRINGS 0904187/CLOSED	COLLINS AVE & MINERAL SPRI WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	2310 GENESEE ST 1002745/CLOSED	GENESEE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	3 PHSE TRANSFORMER #14 0711416/CLOSED	FEDERAL AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	417 MILE MARKER 1003818/CLOSED	I-90 CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	426.3 E NY THRUWAY 1111610/CLOSED	I90 EASTBOUND MILE POST 42 CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	8310 ENGLEWOOD AVE 0906737/CLOSED	8310 ENGLEWOOD AVE BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	8552 STATE ROUTE 13 1103939/CLOSED	8552 STATE ROUTE 13 LENOX NY	NON GC	N/A	N/A
	SPILLS	ABANDONED 55 GALLON DRUM 1100985/CLOSED	SEWARD AVE BTWN S PIERCE & BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ABANDONED BATTERIES 9509514/CLOSED	FUHRMANN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ABANDONED DRUM 9003482/CLOSED	FUHRMANN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ABANDONED DRUMS 1112116/ACTIVE	ELK NEAR VAN RESSELAER BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ACTION FINANCIAL 0808117/CLOSED	165 LAWERENCE BELL DR AMHERST NY	NON GC	N/A	N/A
	SPILLS	ADBI FACILTY /FSR 419 0910582/CLOSED	65 GRUNNER RD CHEEKTOWAGA NY 14227	NON GC	N/A	N/A
	SPILLS	AIR COMPLAINT ODORS 9104271/CLOSED	609 CURRIER ST KENMORE NY	NON GC	N/A	N/A
	SPILLS	ALA GATE 9 0813013/CLOSED	GENESSEE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	ALFA 1 TAXI WAY OFF RUNWAY 0901743/CLOSED	GENESEE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	AMHERST STATE PARK 0801299/CLOSED	E BANK OF CREEK AMHERST NY	NON GC	N/A	N/A
	SPILLS	APARTMENT COMPLEX 0809238/CLOSED	51 WILLIAMS TOWN APTS. CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	AROUND 0511290/CLOSED	PURDY ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	AT A RESTAURANT 1009803/CLOSED	CHIPPEWA ST & FRANKLIN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	AT CORNER OF 1012421/CLOSED	RICH ST & GENESSEE ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	AT INTERSECTION 1113261/CLOSED	EXETER ST & ANDOVER LN AMHERST NY	NON GC	N/A	N/A
	SPILLS	AT RESIDENCE IN BACK LOT 1110341/CLOSED	159 CLAREMONT AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	AT WATER INTAKE 0275390/CLOSED	FUHRMANN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	AT-6 AIRCRAFT 9004216/CLOSED	RT 5 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	AUTO PART STORE SIDEWALK 0514697/CLOSED	OAKMONT AVE BUFFALO NY 14215	NON GC	N/A	N/A

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	SPILLS	AVON STREET AND KENT 0808983/CLOSED	AVON ST & KENT BLASDALE NY	NON GC	N/A	N/A
	SPILLS	AVON STREET AT KENT ST 0810712/CLOSED	AVON ST & KENT ST BLASDELL NY	NON GC	N/A	N/A
	SPILLS	B/W GATES 15 AND 16 1004383/CLOSED	BUFFALO AIRPORT CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	BARRELS IN EMPTY LOT 0906334/CLOSED	SMITH NEAR LORD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BASEMENT 1011847/CLOSED	37 HOLBART ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BASKET BALL COURT 1012507/CLOSED	TRINIDAD ACROSS FROM NATIO BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BATTENFELD AMERICAN 0808322/CLOSED	CLINTON & BAILEY BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BEHIND 68 EAST WINDWOOD CT 0809924/CLOSED	68 E WINDWOOD CT CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	BEHIND LAFAYETTE TAP RM ON ELLICOT 0650101/CLOSED	ELLICOTT ST BUFFALO NY 14203	NON GC	N/A	N/A
	SPILLS	BENCHMARK 9506014/CLOSED	ELMWOOD AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BETH. STL. OLD FIREHOUSE AT 1 GATE 0551524/CLOSED	HAMBURG TURNPIKE LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	BETWEEN SMITH AND DANN 0813011/CLOSED	ROUTE 78 AMHERST NY	NON GC	N/A	N/A
	SPILLS	BLASDAL PUMP STATION 0506679/CLOSED	270 MILESTRIP RD BLASDELL NY	NON GC	N/A	N/A
	SPILLS	BLASDALLE PUMP STATION 0810760/CLOSED	NOT AVIALABLE & THIS TIME BLASDALLE NY	NON GC	N/A	N/A
	SPILLS	BLASDELL PUMP STATION 0810088/CLOSED	MILE STRIP RD BLASDELL NY	NON GC	N/A	N/A
	SPILLS	BLASDELL PUMP STATION 0812328/CLOSED	270 OLD MILE STRIP RD BLASDELL NY	NON GC	N/A	N/A
	SPILLS	BLASDELL PUMP STATION 0813179/CLOSED	VILLAGE OF BLASDELL BLASDELL NY	NON GC	N/A	N/A
	SPILLS	BLASDELL PUMP STATION 0608009/CLOSED	270 MILESTRIP RD BLASDELL NY	NON GC	N/A	N/A
	SPILLS	BLASDELL PUMP STATION 0805391/CLOSED	270 MILE STRIPE RD BLASDELL NY	NON GC	N/A	N/A
	SPILLS	BLASEDALE PUMP STATION 0911406/CLOSED	UNK BLASEDALE NY	NON GC	N/A	N/A

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	SPILLS	BLASEDELL PUMP STATION 1002554/CLOSED	270 OLD MILE STRIP BLASEDELL NY	NON GC	N/A	N/A
	SPILLS	BLD SITE OF GENERAL HOSPITAL 0910563/CLOSED	CORNER NORTH ST AND ELLICO BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BRIDGE OVER ONEIDA CREEK 1003124/CLOSED	ROUTE 13 LENOX NY	NON GC	N/A	N/A
	SPILLS	BUBBLES IN CREEK 9975064/CLOSED	BRENTWOOD DR & TRANSIT RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	BUFFALO AIRPORT 0812787/CLOSED	W END TANK FIELD SIDE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO AIRPORT 0900973/CLOSED	GATE 7 & 8 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO AIRPORT 1105604/CLOSED	GENESSEE CHEEKTOWAGA NY 14225	NON GC	N/A	N/A
	SPILLS	BUFFALO AIRPORT FUEL FARM 0713181/CLOSED	4200 GENNESE ST CHEEKGOWAGA NY	NON GC	N/A	N/A
	SPILLS	BUFFALO AUTO WRECKING 1102946/CLOSED	HERTLE AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO CEMENT COMPANY 0608250/CLOSED	EAST MAIN POLE ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO CREEK ROAD 0201468/CLOSED	S STATION BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO CRUSH QUARRY 0901101/CLOSED	COMO PARK BLVD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	BUFFALO FIRE DEPT LADDER 12 0809549/CLOSED	AMHERST NEAR GRANT BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO FUEL TRUCK 9802486/CLOSED	ELMWOOD AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO NIAGARA AIRPORT 0809506/CLOSED	GENESEE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	BUFFALO NIAGARA INT AIRPORT 1110823/CLOSED	CAYUGA ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	BUFFALO NIAGARA INTERNATIONAL AIRP 0808159/CLOSED	TAXI WAYS CHEEKTOWAGA NY 14225	NON GC	N/A	N/A
	SPILLS	BUFFALO RIVER 1101886/CLOSED	1 BABCOCK RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO RIVER/SHIP CANAL 9103435/CLOSED	FUHRMANN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO SCHOOL DISTRICT # 31 0809102/CLOSED	212 SCRANTON ST BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	BUFFALO SEMINARY 1005533/CLOSED	LINCOLN PKWY BETWEEN FORES BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO SHIP CANAL 1006594/CLOSED	LAT. 42 52.279N 078. . 52. BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO STATE COLLEGE 0911317/CLOSED	ELMWOOD AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BUFFALO TUNGSTEN (NIAGARA REFININ 1111186/CLOSED	TRANSIT ROAD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	BUILDING SUPPLY 0890658/CLOSED	3401 GENESEE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	BURIED DRUMS AT OUTER HARBOR 0850260/CLOSED	FUHRMANN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	BURKE RESIDENCE 0808487/CLOSED	58 GRESHAM RD AMHERST NY	NON GC	N/A	N/A
	SPILLS	CAYUGA CREEK 0908959/CLOSED	CLINTON ST & HARLEM RD WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	CENTER MEDIUM 0551510/CLOSED	RT.400 WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	CENTRAL LIBRARY 0901475/CLOSED	OAK BTN WILLIAM & CLINTON BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CENTRAL TERMINAL 1005262/CLOSED	CENTRAL PLZ BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CID REFUSE 9501629/CLOSED	ELMWOOD AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CITGO STATION 0814076/CLOSED	GEORGE URBAN AVE & DICK RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	CITY OF BFLO PARKS DEPT 0075655/CLOSED	SCAJAQUADA EXPY BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CITY OF LACKAWANNA DPW 0905135/CLOSED	67 REDDING LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	COLLAPSED CREEK BANK 0900870/CLOSED	4250 TONAWANDA CREEK RD AMHERST NY	NON GC	N/A	N/A
	SPILLS	COLLISION SHOP 1003203/CLOSED	BROADWAY & RAYMOND AVE SLOAN NY	NON GC	N/A	N/A
	SPILLS	COMMERCIAL PROP 0713835/CLOSED	333 GANSEN ST BUFFALO NY 14203	NON GC	N/A	N/A
	SPILLS	COMMERCIAL PROPERTY POLE NUMBER 25 1104226/CLOSED	253 DELWOOD AVE AMHERST NY	NON GC	N/A	N/A
	SPILLS	COMPANY 0809969/CLOSED	665 TERRY ST BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	CORNELIUS CREEK 0750733/CLOSED	FOOT OF ONTARIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CORNELIUS CREEK 0806780/CLOSED	FOOT OF ONTARIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CORNIELUS CREEK 0504435/CLOSED	ONTARIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CSX BUFFALO RAILYARD 1008475/CLOSED	1384 WILLIAMS ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CSX- CP1 DRAWBRIDGE 0708610/CLOSED	QD MILE POST 1 TRACK 3 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	CYLINDER FROM ESTATE 0075286/CLOSED	UNION RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	DAVE THE HANDYMAN 9312535/CLOSED	NIAGARA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	DAYS PARK SCHOOL 0911848/CLOSED	10 DAYS PARK BUFFALO NY	NON GC	N/A	N/A
	SPILLS	DEACONESS HOSPITAL 1111711/ACTIVE	1001 HUMBLE PKWY BUFFALO NY	NON GC	N/A	N/A
	SPILLS	DEAD END STREET 0890686/CLOSED	END OF BARNETT ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	DELAWARE HERTEL PLAZA 0890506/CLOSED	2304 DELAWARE AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	DEPEW ORF 0812394/CLOSED	0 BORDEN RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	DIAMOND HURWITZ JUNKYARD 0913206/CLOSED	MARILLA BUFFALO NY	NON GC	N/A	N/A
	SPILLS	DIRT / CRUSHER RUN 1108530/CLOSED	670 E DELEVAN SENECA AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	DRUM 0475179/CLOSED	BUFFALO RIVER BUFFALO NY	NON GC	N/A	N/A
	SPILLS	DRUM ON LAKE ERIE 9209900/CLOSED	RT 5 LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	EBENEZER BROOK 0701487/CLOSED	MILTON ST WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	ELC. AVE. PUMP STATION 0806657/CLOSED	2477 ELC. AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	ELECTRIC AVE PUMP STATION 0905925/CLOSED	2477 ELETRIC AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	ELLICOTT CREEK 9209190/CLOSED	UNKNOWN WILLIAMSVILLE NY	NON GC	N/A	N/A

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TOTAL: 640 **GEOCODED:** 46 **NON GEOCODED:** 594 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
	SPILLS	ELLICOTT CREEK 0806101/CLOSED	SOUTH ELLICOTT CREEK RD AN AMHERST NY	NON GC	N/A	N/A
	SPILLS	ELLICOTT DEVELOPMENT 0806625/CLOSED	175 S DIVISION BUFFALO NY	NON GC	N/A	N/A
	SPILLS	EMPTY LOT 0501172/CLOSED	DETROIT ST & TOWNSEND ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	EMPTY LOT 0901540/CLOSED	380 ROEHRER ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ERIE CO SEWER 0500144/CLOSED	270 MILE STRIP RD HAMBURG NY	NON GC	N/A	N/A
	SPILLS	ERIE COUNTY SEWER 0911399/CLOSED	AVON ST & KENT ST BLASDELL NY	NON GC	N/A	N/A
	SPILLS	EXCELL FUELS 0900068/CLOSED	2368 HAMBURG TURNPIKE RD LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	FLYING H BETWEEN TRANSIT RD. AND T 1005156/CLOSED	I-90 AMHERST NY	NON GC	N/A	N/A
	SPILLS	FOAM IN NIAGARA RIVER 9806690/CLOSED	E FERRY ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	FORMER AMES PLAZA 0750035/CLOSED	LAKE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	FORMER ED TAYLOR LINCOLN MERCURY 1001596/CLOSED	3900 MAPLE ST AMHERST NY 14226	NON GC	N/A	N/A
	SPILLS	FORMER MCKESSON CHEMICAL 0890829/ACTIVE	803 D WALDEN AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	FORMERLY HEIDIS TUXEDO 1101572/CLOSED	FAIRVIEW AVE & SENECA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	FROM THE BASEMENT 1012106/CLOSED	211 GARY ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	FRONTIER YARD 1113927/CLOSED	1250 WILLIAMS ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	FRONTIER YARD 0890826/CLOSED	HARLEM CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	FUEL OIL TANKS 0712586/CLOSED	250 RAMSDELL RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	GAIL WINNS 9004824/CLOSED	I-190 & BLACK ROCK CANAL BUFFALO NY	NON GC	N/A	N/A
	SPILLS	GARBAGE TRUCK 0908274/CLOSED	HERTEL & TONAWANDA BUFFALO NY	NON GC	N/A	N/A
	SPILLS	GAS STATION 1006881/CLOSED	5115 GENEESE ST CHEEKTOWAGA NY	NON GC	N/A	N/A

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	SPILLS	GAS TANK FELL OFF OF A VEHICLE 0800202/CLOSED	ROUTE 400 S/B WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	GATE 15 0909833/CLOSED	BUFFALO AIRPORT CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	GATE 16 0908045/CLOSED	4200 GENESSE ST CHEECKTAWAGA NY	NON GC	N/A	N/A
	SPILLS	GATE 3 0710129/CLOSED	GENESEE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	GATE 3 0801868/CLOSED	4200 GENNESE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	GATE 9 1004427/CLOSED	BUFFALO NIAGARA AP CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	GBIA (NEW REMOTE) 0275283/CLOSED	GENESSEE ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	GENERAL MILLS 0811402/CLOSED	54 MICHIGAN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	GLYCOL ODORS 0811913/CLOSED	293 CHAPEL CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	GPS 42.834N 78.78O/ TOWER 50 0910438/CLOSED	NORTH ORCHARD PARK RD/ STH WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	GRAESSER RESIDENCE 0890507/CLOSED	39 SUMMERVIEW AMHERST NY	NON GC	N/A	N/A
	SPILLS	GRANT AUTOMOTIVE 1006948/CLOSED	BROADWAY & BAILEY AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	GREEN MATERIAL IN CREEK 9101245/CLOSED	HERITAGE ST WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	GRIFFITH 290 EAST AT 5E 0906638/CLOSED	290 KG AMHERST NY 14226	NON GC	N/A	N/A
	SPILLS	HANNAH PAPER 1002538/CLOSED	475 LUDWIG ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	HAWKEYE LLC TRUCK 0803225/CLOSED	173 DINGES STRETT BUFFALO NY	NON GC	N/A	N/A
	SPILLS	HERTZ PARKING LOT 0803058/CLOSED	4200 GENNESE ST CHECKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	HOUSE 0812227/CLOSED	295 FILMORE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	HOYT LAKE 1008362/CLOSED	NOTTINGHAM TER & DELAWARE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	HSBC BANK USA 1006529/CLOSED	95 W WASHINGTON BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	HYDRAULIC FLUID LEAK FROM TRUCK 0806426/CLOSED	625 W W. FERRY BUFFALO NY	NON GC	N/A	N/A
	SPILLS	HYDRAULIC LINE BREAK 1101852/CLOSED	305 HERKIMER AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	HYDRAULIC SPILL 1003637/CLOSED	BARTHEL ST & GENESEE ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	HYDRAULIC SPILL FROM SWEEPER 0750523/CLOSED	PENNSYLVANIA & ORTON HUDSO BUFFALO NY	NON GC	N/A	N/A
	SPILLS	I-290 E/B EXIT RAMP 7C 0906639/CLOSED	I-290 E/B EXIT RAMP AMHERST NY	NON GC	N/A	N/A
	SPILLS	I-90 DRUM SPILL 0275364/CLOSED	I-90 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	I-90 MM 427.2 WESTBOUND 0904628/CLOSED	EXITS 54 & 55 WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	I/A/O BOTSFORD PL & HERTLE AVE 0906333/CLOSED	BOTSFORD PL BUFFALO NY	NON GC	N/A	N/A
	SPILLS	I/A/O I290 W/B EXIT 6 0908732/CLOSED	I290 W/B EXIT AMHERST NY	NON GC	N/A	N/A
	SPILLS	I/A/O SENECA & PAMONA ST 0900956/CLOSED	SENECA ST & PAMONA PL BUFFALO NY	NON GC	N/A	N/A
	SPILLS	I/A/O SOUTH MICHIGAN RAIL CROSSING 1001893/CLOSED	S MICHIGAN AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	I/F/O FRIDAYS 0807077/CLOSED	WALDEN AVE & GALLERIA DR CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	I90 WEST BOUND MILE 417 1003816/CLOSED	I-90 CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	IFO FORMER POHLMAN FOUNDRY 0813990/CLOSED	MANITOBA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN A DITCH 0713714/CLOSED	RT 400 SOUTHBOUND WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	IN BACK YARD 0904333/CLOSED	34 PARKVIEW ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN BUILDING 0806183/CLOSED	4357 HARLEM AMHERST NY	NON GC	N/A	N/A
	SPILLS	IN CREEK 0911772/CLOSED	289 CHAPEL ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	IN DITCH LINE 1003048/CLOSED	MICHIGAN AVE & CARLTON ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN FRONT OF ROBO MINI MART 0850125/ACTIVE	727 N MAPLE & FOREST AMHERST NY	NON GC	N/A	N/A

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	SPILLS	IN INTERSECTION 0890593/CLOSED	RT. 240 & KENSINGTON ST. AMHERST NY	NON GC	N/A	N/A
	SPILLS	IN INTERSECTION 0909200/CLOSED	LOUISIANA ST & OHIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN LAWN IN FRONT OF HOUSE 0908622/CLOSED	4928 SENCA ST T/O WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	IN NATIONAL GRID FACILITY 1100015/CLOSED	3155 BROADWAY RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	IN ROAD 0550698/CLOSED	WASHINGTON BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN ROAD 0807970/CLOSED	381 LISBON ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN ROADWAY 1000706/CLOSED	579 ELMWOOD AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN SEWER 0906846/CLOSED	CASEY RD & BERWICK LANE AMHERST NY	NON GC	N/A	N/A
	SPILLS	IN STREET 0750398/CLOSED	ELLICOTT ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN STREET & PARKING LOT 1007254/CLOSED	MAIN ST & CHIPPEWA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN THE ROADWAY 0751509/CLOSED	KENMORE & HARVEST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	IN TRENCH 1001401/CLOSED	241 UTICA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	INSIDE SALT BARN 0608813/CLOSED	SWEET HOME RD AMHERST NY	NON GC	N/A	N/A
	SPILLS	INTEGRATED TIRE 0103501/CLOSED	MILLERS CT & TONAWANDA CR LOCKPORT NY	NON GC	N/A	N/A
	SPILLS	INTERSTATE 290 WESTBOUND EXIT 3 0909498/CLOSED	INTERSTATE 290 WESTBOUND E BUFFALO NY	NON GC	N/A	N/A
	SPILLS	INTO THE AIR 1012180/CLOSED	665 TERRY ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	JB HUNT 0710654/CLOSED	INTERSTATE 190 EXIT BUFFALO NY	NON GC	N/A	N/A
	SPILLS	JUST WEST OF WILLIAMSVILLE TOLL BO 0850294/CLOSED	I90 WESTBOUND AMHERST NY	NON GC	N/A	N/A
	SPILLS	KENZINGTON SUB STATION 1008756/CLOSED	366 SCAJAQU ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	KINSMAN INDEPENDENT 9416562/CLOSED	HAMBURG ST BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	LABELL AVE PUMP STA 0808982/CLOSED	51 LABELL AVE BLASDALE NY	NON GC	N/A	N/A
	SPILLS	LABELL AVE PUMP STA 0810720/CLOSED	LABELLE AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	LABELL AVE PUMP STA 0812338/CLOSED	LABELLE AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	LABELL AVE PUMP STATION 0813182/CLOSED	51 LABELL AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	LABELLE AVE PUMP STAION 0805392/CLOSED	LABELLE AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	LABELLE AVE PUMP STATION 0907513/CLOSED	LABELLE AVE BLADESDELL NY	NON GC	N/A	N/A
	SPILLS	LABELLE AVENUE PUMP STATION 0810762/CLOSED	LABELLE AVE BLASDALLE NY	NON GC	N/A	N/A
	SPILLS	LABELLE PUMP STATION 0812130/CLOSED	51 LABELLE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	LACKAWANNA CANAL 0901637/CLOSED	RT 5 LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	LACKAWANNA TOLL BOOTH PARKING AREA 0909575/CLOSED	MILE MARKER 431.5 EAST ON WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	LAKE ERIE 9402329/CLOSED	LAKE ERIE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	LEAKING FORD VAN 0890549/CLOSED	WESTLAND PKWY CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	LEHIGH GAS CORP 0901180/CLOSED	MULTIPLE LOCATIONS - SEE N AMHERST NY	NON GC	N/A	N/A
	SPILLS	LUCARELLI S 0550573/CLOSED	RIDGE RD LACKAWANNA NY 14218	NON GC	N/A	N/A
	SPILLS	LUVATA BUFFALO INC 1004775/CLOSED	70 SAYER ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	MAIN LINE ON UNION ROAD 0709419/CLOSED	MILE MARKER QC433 CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	MAN HOLE 112463 0813173/CLOSED	MILLER AVE & LABELL AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MAN HOLE INTO RUSH CREEK 1110420/CLOSED	ELECTRIC AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 0810094/CLOSED	AVON ST & KENT ST BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 0712687/CLOSED	MILLER/LABELLE BLASDELL NY	NON GC	N/A	N/A

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	SPILLS	MANHOLE 0805393/CLOSED	AVON ST/KENT ST BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 0805394/CLOSED	MILLER AV/LABELL AV BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 112463 0803718/CLOSED	MILLER AVE/LABELLE AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 112463 0911400/CLOSED	MILLER AVE & LABELLE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 112483 0803717/CLOSED	AVON ST/KENT ST BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 1124A3 0813170/CLOSED	AVON ST & 10TH ST BLASDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 1124A3 1002557/CLOSED	AVON ST & KENT ST BLASEDELL NY	NON GC	N/A	N/A
	SPILLS	MANHOLE 683 1105868/CLOSED	ELK ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	MANHOLE#232 0703844/CLOSED	PERRY ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	MANHOLE1124A3 0813316/CLOSED	AVON ST & KENT ST BLADESDALL NY	NON GC	N/A	N/A
	SPILLS	MARK TWAIN MV NY9104GH 9105876/CLOSED	FUHRMANN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	MARYVALE HIGH SCHOOL 0809901/CLOSED	1050 MAPLE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	MARYVALE SCHOOL 0850278/CLOSED	1050 MAPLE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	MEMORIAL AUD 0812894/CLOSED	MAIN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	MEMORIAL AUDITORIUM 0902966/CLOSED	MAIN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	METRO PORT 0503643/CLOSED	FUHRMAN BLVD LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	MILE POST QC433.0 1104228/ACTIVE	UNION CROSSING RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	MODERN DISPOSAL 1932 GENESSE ST 0905492/CLOSED	1932 GENESSE ST BUFFALO NY 14203	NON GC	N/A	N/A
	SPILLS	MODERN DISPOSAL ROADSIDE 0905491/CLOSED	GENESEE STREET EAST OF FIL BUFFALO NY 14203	NON GC	N/A	N/A
	SPILLS	MODERN TRANSFER STATION 1107466/CLOSED	S OGDEN BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	MUD IN ROAD 0711292/CLOSED	WALDEN AVE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	MULTIPLE CAR/TRUCK ACCIDENT 1108571/CLOSED	OAK ST & I-190 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	MURIATIC ACID 0275194/CLOSED	GRANT ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	MVA NATIONAL GRID 1103940/CLOSED	RT 990 N & N FRENCH CREEK AMHERST NY 14226	NON GC	N/A	N/A
	SPILLS	NAT GRID 0608064/CLOSED	1023 COLLINGWOOD AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NAT GRID BUFFALO 1008220/CLOSED	144 KENZINGTON AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NAT GRID FACILITY 0908568/CLOSED	93 DEWEY RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID 0712923/CLOSED	48 BRAMBLEWOOD LN AMHERST NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID - RIGHT OF WAY 0510971/CLOSED	LINE 145/146 LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID CRANE 0800538/CLOSED	WEHRLE POLE#2154 DR WILLIAMSVILLE NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID DEWEY KENSINGTON CEN 0812439/CLOSED	144 KENSINGTON DR BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID FACILITY 1103767/CLOSED	144 KENTINGTON AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID FACILITY (UNDERGROUN 0901231/CLOSED	S DIVISION ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID HQ 0911052/CLOSED	144 KENZINGTON AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID POLE NUMBER 52R 1101145/CLOSED	52 WELLINGWOOD DR AMHERST NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID STATION 53 SUBSTATIO 1111498/CLOSED	3210 DALEY AVE BUFFALO NY 14203	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID TRUCK 0702184/CLOSED	PERRY ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NATIONAL GRID TRUCK 0802205/CLOSED	ROSEVILLE & LARKIN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NEAR RESIDENCE 0804665/CLOSED	22 CLAIRE ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NEAR THE BUFFALO PUBLIC LIBRARY 0900903/CLOSED	ELLICOTT AVE & CLINTON ST BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	NERVE GAS BOTTLE 9004149/CLOSED	S PARK AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NEW GARDENVILLE TRANSMISSION SUBST 0700816/CLOSED	INDIAN CHURCH RD & JENNING WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	NFTA BOAT HARBOR 0904424/CLOSED	FUHRHAN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NFTA BUS 0275121/CLOSED	RILEY ST & SENECA WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	NFTA BUS ROADSIDE 0901458/CLOSED	S HARLEM 1/2 MILE OF WALDE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	NI MO - POLE 530R 0107037/CLOSED	AUBURN AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NIAGARA FRONTIER TRANSPORTATION AU 0900895/CLOSED	251 CAYUGA ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	NIAGARA MOHAWK 0406917/CLOSED	SOUTH PARK AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NIAGARA RIVER 0906102/CLOSED	30 WATERFRONT VILLAGE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NIAGARA STREET PLAZA 0650684/CLOSED	NIAGARA BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NICHOLS SCHOOL 0850221/CLOSED	AMHERST AT COLVIN BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NIMO TRUCK 0504678/CLOSED	EMZINGE & SHERATON PARKSID KENMORE NY	NON GC	N/A	N/A
	SPILLS	NIMO VAULT 0501616/CLOSED	MAIN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NIMO VEHICLE # 4794 0500832/CLOSED	WILLET RD LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	NOCO 1111648/ACTIVE	FRENCH & BORDEN CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	NYS POLICE BARRACKS 1002223/CLOSED	3301 PAUL KURDYS WAY BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NYS THRUWAY EASTBOUD 0803105/CLOSED	MILE MARK 426.17 EXIT CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	NYSDOT 0890499/CLOSED	S RESIDENCE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	NYSDOT - RTE 33 0375117/CLOSED	RTE 33 CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	NYSDOT BORING 0550368/CLOSED	OHIO ST BUFFALO NY	NON GC	N/A	N/A

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TOTAL: 640 **GEOCODED:** 46 **NON GEOCODED:** 594 **SELECTED:** 0

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	SPILLS	NYSDOT GENESEE ST. 0175479/CLOSED	GENESEE CORRIDOR PROJ ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	NYSDOT ROAD WORK 0904118/CLOSED	ROUTE 5 & LAKE AVE LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	NYSEG SPILL 0711461/CLOSED	TADIO PKWY CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	OHIO ST BOAT LAUNCH 1105076/CLOSED	OHIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	OHIO ST PUBLIC ACCESS SITE IN BAY 0909321/CLOSED	OHIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	OHIO ST YARD 1000851/CLOSED	OHIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	OHIO STREET CANOE LAUNCH 1002364/CLOSED	OHIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	OIL IN A STREAM 9702688/CLOSED	RT 33 & GENESEE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	OIL IN CAYUGA CREEK 9709266/CLOSED	UNKNOWN WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	OIL IN CAZENOVIA CREEK 9610264/CLOSED	SENECA ST WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	OIL IN HARBOUR POINT COM 9905868/CLOSED	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	SPILLS	OIL IN NIAGARA RIVER 9505576/CLOSED	ONTARIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	OIL ON ROAD 0900553/CLOSED	STATE HIGHWAY 33 & HUMBOLD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	OIL SPILL ON ROAD 0902002/CLOSED	SWAN BTWN OAK & MICHIGAN BUFFALO NY	NON GC	N/A	N/A
	SPILLS	OLD BETHLEHEM STEEL PLANT 0507604/CLOSED	HAMBURG TPKE LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	ON EDGE OF BUFFALO RIVER 0890639/CLOSED	237 OHIO BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ON RAILROAD TRACKS 1100949/CLOSED	LINE LOVE RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ON ROADWAY 0514998/CLOSED	N LEGION ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ON ROADWAY & SIDEWALK 0511858/CLOSED	MILITARY RD KENMORE NY	NON GC	N/A	N/A
	SPILLS	ON THE ROAD 0705406/CLOSED	CHADDUCK ST BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	ON THE STREET 0750185/CLOSED	EUGENE AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ON THE STREET IFO MOBIL OIL FACILI 0850029/CLOSED	ELK ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ON VACANT LOT 0902454/CLOSED	186 STOCKBRIDGE ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	P & P TRANSPORT 0701920/CLOSED	BAILEY & OLD BAILEY AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PAD MOUNT 31-R 1006198/CLOSED	31 BRENRIDGE DR AMHERST NY	NON GC	N/A	N/A
	SPILLS	PAD MOUNT 6-1/APPLE TREE MALL 1102081/ACTIVE	COMO PARK DR CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	PAD MOUNT TRANS. 75R 1001219/CLOSED	67 MOORGATE CT AMHERST NY	NON GC	N/A	N/A
	SPILLS	PAD MOUNT TRANSFORMER 45R 1000638/CLOSED	45 TUDOR CT AMHERST NY	NON GC	N/A	N/A
	SPILLS	PADMOUNT 0800642/CLOSED	740 ROBBIN RD AMHERST NY	NON GC	N/A	N/A
	SPILLS	PADMOUNT 0800721/CLOSED	134 HICKORY HILL RD AMHERST NY	NON GC	N/A	N/A
	SPILLS	PADMOUNT 184R1 0805065/CLOSED	WATER FRONT CIR BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PADMOUNT 81R 1104508/CLOSED	81 DINGENS RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PARKING LOT 1004339/CLOSED	1042 WEHLRE DR BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PARKING LOT 1006791/CLOSED	4555 SPENDRIFT AMHERST NY	NON GC	N/A	N/A
	SPILLS	PARKING LOT 0906550/CLOSED	EAST SIDE OF GROVE ST BTW BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PARKING LOT 0910984/CLOSED	20 FRENCH ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	PARKING LOT UTICA STATION 0902380/CLOSED	UTICA STATION BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PEACE BRIDGE 0908724/CLOSED	NIAGARA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PILOT AIR FREIGHT 9100978/CLOSED	BUFFALO AIRPORT CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	PIPE LINE EXCAVATION 1006404/CLOSED	DINGES STREET 1/2 MILE WES CHEEKTOWAGA NY	NON GC	N/A	N/A

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	SPILLS	PLANE CRASH 0475152/CLOSED	LAKE ERIE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE # 170 0411824/CLOSED	CHELSEA BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE # 21 0910378/CLOSED	R LINE 151 WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	POLE # 224 0911801/CLOSED	TONOWANDA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE # 233R 0504074/CLOSED	UNKNOWN AMHERST NY	NON GC	N/A	N/A
	SPILLS	POLE # 25 0904570/CLOSED	VIRGINIA PL BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE #132 0803397/CLOSED	132 HELLEN AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	POLE #145 0608453/CLOSED	EAST PARADE ST/ AMS BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE #26R 0611122/CLOSED	CLEVELAND DR BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE - STORAGE YARD 0801049/CLOSED	144 KENNINGSTON AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE 11 1000003/CLOSED	HAGEN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE 124 0608047/CLOSED	NORR ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE 1854R HURTLE 1002411/CLOSED	HERTEL AVE & PARKER AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE 20R 1000470/CLOSED	20 LINDHURST AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE 2393 0807532/CLOSED	PINERIDGE RD/GENNESEE ST CHEEKTOWAGA NY 14225	NON GC	N/A	N/A
	SPILLS	POLE 240 0707943/CLOSED	GOLD ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE 304 0207758/CLOSED	BAILEY AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE 30RR1 0608357/CLOSED	GETZVILLE RD AMHERST NY	NON GC	N/A	N/A
	SPILLS	POLE 325 0912196/CLOSED	325 FOX ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE 50-1 1012157/CLOSED	299 LEY DECKER RD WEST SENECA NY	NON GC	N/A	N/A

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	SPILLS	POLE 542 1009670/CLOSED	BILL ST & SHERIDAN DR ST AMHERST NY	NON GC	N/A	N/A
	SPILLS	POLE 893 1111387/CLOSED	893 W DELEVAN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE MOUNT TRANS 1011976/CLOSED	144 KENZINGTON AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE TOP 239 1005556/CLOSED	MANHATTAN AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE TOP TRANSFORMER 0910083/CLOSED	245 KNOTTINGHAM TER BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE TRANSFORMER 0908010/CLOSED	WESTON AVE & BAILY RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	POLE#240 0709072/CLOSED	CORNWALL AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PORTABLE PUMP 0810763/CLOSED	AVON ST & KENT ST BLASDALLE NY	NON GC	N/A	N/A
	SPILLS	PORTABLE PUMP LOCATION 0812131/CLOSED	AVON ST & KENT ST BLASDELL NY	NON GC	N/A	N/A
	SPILLS	PRIOR AVIATION 0707672/CLOSED	AIRPORT DR CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	PRIOR BUFFALO NIAGARA AIRPORT 0904067/CLOSED	GATE 25 CHEEKTOWAGA NY 14225	NON GC	N/A	N/A
	SPILLS	PRIVATE RESD 1113740/CLOSED	33 LURFONG BUFFALO NY	NON GC	N/A	N/A
	SPILLS	PRIVATE RESIDENCE 1004589/CLOSED	196 RAMBLING RD AMHERST NY	NON GC	N/A	N/A
	SPILLS	PUMP STATION 0808977/CLOSED	ELECTRIC PUMPSTATION AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	PUMP STATION 0909723/CLOSED	ELECTRIC PUMP STATION AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	PUMP STATION 0911407/CLOSED	LABELLE PUMPSTATION BLASEDALE NY	NON GC	N/A	N/A
	SPILLS	PUMP STATION 0905409/CLOSED	MILLER AVE & LABELLE AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	PUMP STATION 0905408/CLOSED	AVON ST & KENT ST BLASDELL NY	NON GC	N/A	N/A
	SPILLS	PUMP STATION 0813163/CLOSED	ELETRIC AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	PUMP STATION 0810098/CLOSED	LABELLE AVE BLASDELL NY	NON GC	N/A	N/A

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	SPILLS	PUMP STATION 0904226/CLOSED	ELECTRIC AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	PUMPING STATION 0803326/CLOSED	ELECTRIC AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	RAIL ROAD BED 0906647/CLOSED	INTERSECTION OF DESHLER & BUFFALO NY	NON GC	N/A	N/A
	SPILLS	RAILROAD -CSX - PROPERTY 0805843/CLOSED	1254 WILLIAMS ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	RAILROAD TRACKS / CSX 0805940/CLOSED	BEHIND 1836 BROADWAY CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	RAW SEWAGE IN CREEK 9304835/CLOSED	30 HIGH BANK DR WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	RED MATERIAL IN SMOKES CR 9606333/CLOSED	S PARK AVE LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	RESIDENCE 0751411/CLOSED	471 7TH AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	RIGHT OF WAY 1001346/CLOSED	MICHIGAN AVE & CHERRY ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	RIVER EDGE 1004181/CLOSED	HAMBURG ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROAD SIDE 1012808/CLOSED	ABBY ACROSS FROM OCONNOR BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 1004398/CLOSED	DEWEY AVE & HALBERT ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 1006975/CLOSED	HOOVER RD LACKAWANNA NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 1006700/CLOSED	FRANKLIN ST & CHURCH ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 0890604/CLOSED	3221 SHERIDAN AMHERST NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 0902150/CLOSED	LAFAYETTE AVE & ASHLAND AV BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 0902571/CLOSED	SHEPARD ST & PULLMAN PL BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 1000449/CLOSED	MAIN ST & WEST WINDSPEAR A BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 0913804/CLOSED	WALDEN NEAR UNION CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 0850017/CLOSED	E NEAR 550 @ JOHNSON BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	ROADSIDE 0850231/CLOSED	LUDWIG AT THE DEAD AVE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	ROADSIDE 0850257/CLOSED	43 FLORIAN NEAR HERTEL ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0713367/CLOSED	BAILEY AVE/ WILLIAMS ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0801084/CLOSED	28 ROYAL COACH DR W SENECA NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0802373/CLOSED	W I 90 MILEPOST 417.2 BOUN CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0800622/CLOSED	DELLWOOD ST/SENECA WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0890508/CLOSED	100 ROYAL ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0903899/CLOSED	S PARK AVE & HOPKINS ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0812165/CLOSED	I90 W/B MM 419.69 EAST WIL AMHERST NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0904631/CLOSED	I 90 BETWEEN MILE MARKER 5 WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 0904746/CLOSED	DICK RD & WALDEN AVE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 1003147/CLOSED	36 ERICSON ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 1008578/CLOSED	I-190 BET EXIT 3 & 4 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 1101853/CLOSED	305 HERKIMER AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 1102968/CLOSED	4154 ROUTE 31 LENOX NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 1102077/CLOSED	MAIN ST & EGGERT ST AMHERST NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 1006710/CLOSED	CHURCH ST & FRANKLIN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY 1005742/CLOSED	N LEGION DR & SOUTHSIDE PK BUFFALO NY	NON GC	N/A	N/A
	SPILLS	ROADWAY CONSTRUCTION 0651581/CLOSED	ABBY ST BUFFALO NY 14220	NON GC	N/A	N/A
	SPILLS	ROADWAY/SNOW 1011202/CLOSED	480 CROSS POINT DR AMHERST NY	NON GC	N/A	N/A

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	SPILLS	ROUTE 13 AND WILLOW GROVE TERR. 1003122/CLOSED	ROUTE 13 & WILLOW GROVE TE LENOX NY	NON GC	N/A	N/A
	SPILLS	RTE 290 WEST EXIT 6 0908740/CLOSED	RTE 290 WEST EXIT 6 AMHERST NY	NON GC	N/A	N/A
	SPILLS	RUSH CREEK 1108634/CLOSED	S3663 LAKESHORE RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SAINT BERNADETTE 1112280/CLOSED	5890 S ABBOTT Rd BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SALVAGE YARD 1105672/ACTIVE	NEW BABCOCK BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SAVAGE SERV / TRANSFLO 0908841/CLOSED	1255 WILLIAMS ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SCAJAQUADA CREEK 9104597/CLOSED	RT 198 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SCHOOL 53 1111400/CLOSED	329 ROHR ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SEEP INTO CAZENOVIA CREEK 9402884/CLOSED	HARLEM RD WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	SEWER 1010277/CLOSED	LABELLE PUMP STATION AVE BLASDELL NY	NON GC	N/A	N/A
	SPILLS	SHAUCHNESSY AUTO 9005904/CLOSED	PORTER AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SHEEN IN BLACK ROCK CANAL 9005299/CLOSED	I-190 & BLACK ROCK CANAL BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SHEEN ON BUFFALO RIVER 0551040/CLOSED	MOUTH OF THE BUFFALO RIVER BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SHERWOOD ELECTRONICS 1105836/CLOSED	BOXWOOD LN & HURDLE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SHIP SHAPES MARINA 0905296/CLOSED	CAMPBELL BLVD & TONAWANDA AMHERST NY	NON GC	N/A	N/A
	SPILLS	SHOPPING MALL/NORTH TOWNS/VAULT 20 1102329/CLOSED	3161 EGGERT RD AMHERST NY	NON GC	N/A	N/A
	SPILLS	SIDE OF ROADWAY 0711462/CLOSED	SENECA PARKSIDE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SILVER LAKE 0212346/CLOSED	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SKYWAY ROAD SPILL 0209193/CLOSED	SKYWAY RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SLOVON DRAKSIC PROPERTY 0751584/CLOSED	81 CHADDUCK ST BUFFALO NY	NON GC	N/A	N/A

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	SPILLS	SMALL BOAT HARBOR 0903159/CLOSED	FUHRMANN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SMALL BOAT HARBOR 0904373/CLOSED	1111 FUHRMAN BLVD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SOUTH EAST END AIRFIELD 0805683/CLOSED	4000 GENNESSE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	SOUTH OF MAPLE RD 0800274/CLOSED	N OFF OF FOREST WILLIAMSVILLE NY	NON GC	N/A	N/A
	SPILLS	ST. JOHNS HOSPICE SITE 0550592/CLOSED	93 MAPLE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	STATION # 229 1012878/CLOSED	510 RENASSANCE DR AMHERST NY	NON GC	N/A	N/A
	SPILLS	STRATE WELDING 0813132/CLOSED	101 COMET ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	STRAWBERRY SMOOTHIE 0890775/CLOSED	NIAGARA & FERRY ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SUB STATION 43 1003053/CLOSED	AVONDALE PL & SENECA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SUBWAY BASEMENT 1001613/CLOSED	1124 ELMWOOD AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SUNK BOAT IN LAKE ERIE 9906081/CLOSED	LAKE ERIE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	SUNOCO 03640380 0813535/CLOSED	3705 HARLEM AVE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	SUNOCO STATION 1003349/CLOSED	MAIN ST & TRANSIT ST WILLIAMSVILLE NY	NON GC	N/A	N/A
	SPILLS	SUNYAB 0375356/CLOSED	JUNKYARD NEAR DUMPSTER AMHERST NY	NON GC	N/A	N/A
	SPILLS	T-WAY/NIAGARA SECT 0312383/CLOSED	I-190 NB CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	TANK CAR 0812466/CLOSED	BROADWAY & BAILY AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	TAPESTRY CHARTER SCHOOL 0911950/CLOSED	10 DAYS PARK BUFFALO NY	NON GC	N/A	N/A
	SPILLS	TARMAC 1111601/CLOSED	3400 GENESSE ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	TEST 1110237/CLOSED	RTE 90 & RTE 400 WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	THE SULLIVAN S 0850047/CLOSED	NAVAL PARK BUFFALO NY	NON GC	N/A	N/A

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Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
	SPILLS	THIELE INC 1005135/CLOSED	3110 MILLERSPORT HWY AMHERST NY	NON GC	N/A	N/A
	SPILLS	TIRE FIRE IN CANADA 8910776/CLOSED	RT 70 HAGERSVILLE (BUFFALO NY	NON GC	N/A	N/A
	SPILLS	TONAWANDA FORGE 0911809/ACTIVE	KENMORE AVE TONAWANDA NY 14150	NON GC	N/A	N/A
	SPILLS	TONY S TREE AND LANDSCAPE 1101735/CLOSED	GENESEE ST & TRANSIT ST CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	TOWER 13- TRANSMISSION RIGHT OF WA 0911160/CLOSED	S OF SENECA ST WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	TOWER 6 151 LINE 0912661/CLOSED	996 INDIAN CHURCH RD WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	TOWN OF CHEEKTOWAGA 0475088/CLOSED	UNION RD CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	TOWN/WEST SENECA COMPOST 9975247/CLOSED	CLINTON ST & MINERAL SPRIN BUFFALO NY	NON GC	N/A	N/A
	SPILLS	TRACTOR TRAILER 0275489/CLOSED	ROUTE 219 NB (NEAR RIDGE) WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	TRANSFORMER 178 @ DELEWARE PARK 1100462/CLOSED	MAIN WALKING LOOP BUFFALO NY	NON GC	N/A	N/A
	SPILLS	TRANSFORMER VAULT 4109 0400837/CLOSED	DELAWARE AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	TRANSIT RD. RAMP ON RT.400 1000080/CLOSED	RTE 400 & TRANSIT AVE WEST SENECA NY	NON GC	N/A	N/A
	SPILLS	TRUCK 0904742/CLOSED	DICK RD & WALDEN AVE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	TRUCK 13721 1012459/CLOSED	GENESEE ST & GULFORD ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	TRUCKING COMPANY 1110380/CLOSED	84 PFOHL CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	UNDER NYSTA 190 BRIDGE 0485362/CLOSED	EXCHANGE RD BUFFALO NY 14203	NON GC	N/A	N/A
	SPILLS	UNDER SKYWAY 0550603/CLOSED	RTE 5 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	UNDER THE SKYWAY 0403156/CLOSED	RT.5 BUFFALO NY	NON GC	N/A	N/A
	SPILLS	UNKNOWN BUSINESS 1104694/CLOSED	12 ST LOUIS ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	UNKNOWN RESIDENCE 1003104/CLOSED	17 TREEBROOK CT AMHERST NY	NON GC	N/A	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

TOTAL: 640 **GEOCODED:** 46 **NON GEOCODED:** 594 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
	SPILLS	UNKNOWN RESIDENCE 1000678/CLOSED	33 DODGE ST AMHERST NY	NON GC	N/A	N/A
	SPILLS	UNKOWN POND 0905245/CLOSED	2558 HAMBURGH TPKE LACKAWANA NY	NON GC	N/A	N/A
	SPILLS	UPS CARGO BUFFALO INTERNATIONAL AI 0812445/CLOSED	265 CAYUGA DR CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	UPS FACILITY 0903565/CLOSED	1907 JAMES CASEY DR BUFFALO NY	NON GC	N/A	N/A
	SPILLS	US 219 SOUTH OF BUFFALO NY 0812401/CLOSED	54 MILE MARKER BUFFALO NY	NON GC	N/A	N/A
	SPILLS	VACANT LOT 0804839/ACTIVE	86 THRU 86-63 BROADWAY VACA AMHURST NY	NON GC	N/A	N/A
	SPILLS	VACANT LOT 0890557/CLOSED	495 JEFFERSON BUFFALO NY	NON GC	N/A	N/A
	SPILLS	VACANT LOT 1002988/CLOSED	96 COLORADO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	VALUE 1104014/CLOSED	CLINTON ST & ROSSLER AVE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	VAULT # 4-75 1103199/CLOSED	DELAWARE AVE & JOHNSON PAR BUFFALO NY	NON GC	N/A	N/A
	SPILLS	VAULT #382 0805261/CLOSED	SENECA ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	VAULT @ 355 MICHIGAN 0807149/CLOSED	355 MICHIGAN ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	VULCAN STEAM FORGE 0890595/CLOSED	195 TO 247 RANO BUFFALO NY	NON GC	N/A	N/A
	SPILLS	WALMART 0712289/CLOSED	100 THRUWAY PLZ CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	WASTE MANAGEMENT 0809062/CLOSED	DICK RD & WALDEN AVE CHEEKTOWAGA NY	NON GC	N/A	N/A
	SPILLS	WATERWAY 1102209/CLOSED	END OF ONTARIO ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	WORTHINGTON BUSINESS PARK 0751439/CLOSED	3 ROBERT AVE BUFFALO NY	NON GC	N/A	N/A
	SPILLS	YELLOW FREIGHT TRUCK 0909496/CLOSED	ROUTE 290 WB NEAR EXIT AMHERST NY	NON GC	N/A	N/A
	SPILLS	YOUNGMAN TERMINAL STA 0803092/CLOSED	1205 MILLERS PORT HWY AMHURST NY	NON GC	N/A	N/A
	SPILLS	 8503120/HISTORIC-CLOSED	DART ST BUFFALO NY 14213	NON GC	N/A	N/A

Environmental FirstSearch
Sites Summary Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

TOTAL: 640 **GEOCODED:** 46 **NON GEOCODED:** 594 **SELECTED:** 0

Map ID	DB Type	Site Name/ID/Status	Address	Dist/Dir	ElevDiff	Page No.
	SPILLS	8502685/HISTORIC-CLOSED	CAYUGA RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	8504080/HISTORIC-CLOSED	GENESEE ST BUFFALO NY	NON GC	N/A	N/A
	SPILLS	8504710/HISTORIC-CLOSED	ABBOTT RD BUFFALO NY	NON GC	N/A	N/A
	SPILLS	8504207/HISTORIC-CLOSED	FUHRMANN BLVD BUFFALO NY	NON GC	N/A	N/A
	LUST	BETH. STL. OLD FIREHOUSE AT 1 GATE 0551524/CLOSED	HAMBURG TURNPIKE LACKAWANNA NY	NON GC	N/A	N/A
	LUST	BUFFALO SCHOOL DISTRICT # 31 0809102/CLOSED	212 SCRANTON ST BUFFALO NY	NON GC	N/A	N/A
	LUST	CITY OF LACKAWANNA DPW 0905135/CLOSED	67 REDDING LACKAWANNA NY	NON GC	N/A	N/A
	LUST	NSI GAS STATION 8601579/CLOSED	ELMWOOD AVE BUFFALO NY	NON GC	N/A	N/A
	LUST	POLE 20R 1000470/CLOSED	20 LINDHURST AVE BUFFALO NY	NON GC	N/A	N/A
	TRIBALLA	BUREAU OF INDIAN AFFAIRS CONTACT I BIA-14213/	UNKNOWN NY 14213	NON GC	N/A	N/A
	FEDBROWN	452 NORTHUMBERLAND 54500924-32/EPA BROWNFIELD	452 NORTHUMBERLAND NY	NON GC	N/A	N/A
	FEDBROWN	COLD SPRINGS NEIGHBORHOOD 54500924-63/EPA BROWNFIELD	UNKNOWN BUFFALO NY	NON GC	N/A	N/A
	FEDBROWN	FOURTH STREET 54500924-37/EPA BROWNFIELD	4TH ST BUFFALO NY	NON GC	N/A	N/A
	ENGCONTR	IROQUOIS GAS/WESTWOOD PHARM. TERRE 915141A/ENGINEERING CONTROL	DART ST BUFFALO NY 14213	NON GC	N/A	N/A

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 15 **DIST/DIR:** 0.01 SW **ELEVATION:** 620 **MAP ID:** 1

NAME:	MIKEN CO., INC.	**REV:**	4/5/12
ADDRESS:	1030 NIAGARA ST	**ID1:**	9875035
	BUFFALO NY	**ID2:**	238117
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

SITE INFORMATION

SPILL DATE: 9/16/1998
DATE REPORTED: 9/16/1998
CLOSED DATE: 9/25/1998
INSP DATE: 9/25/1998
MATERIAL SPILLED: LUBE OILAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: EQUIPMENT FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: DEC
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: COOKE
SPILL CONTACT:
TELEPHONE:

SPILLER: MIKEN CO., INC.
RALPH LESKIW
ADDRESS: 1030 NIAGARA STREET.
BUFFALO, NY 14227-
TELEPHONE:

REPORTED BY:DEC

LAST DEC UPDATE: 3/17/1999
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: MACHINERY LEAKING LUBRICATING OIL. OIL IS SEEPING THROUGH THE FLOOR TO THE BASEMENT WHERE IT IS POOLED ALL OVER FLOOR. PROBLEM NOTED DURING DEC INSPECTION.

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was JDC 9/18/98: JDC TELECON WITH RALPH LEWSKIW, MIKEN CO AND DISCUSSED SITE SPILL. HE HAD HIRED A CONTRACTOR TO EVALUATE AND PREVENT FURTHER SPILLAGE FROM MACHINERY. JDC TELECON WITH MARK LAPUMA, LCS, INC. AT 827-8893, HE HAS DEVELOPED A REMEDIATION PLAN. NO CONTAMINATION WAS FOUND OFF SITE. OILS HAVE LEAKED FROM OPERATING MACHINERY TO FLOOR AND THROUGH TO BASEMENT FLOOR WHERE OILS HAVE ACCUMULATED. JDC WILL CONTACT TOM CORBETT AND ARRANGE FOR SITE VISIT OR REFERRAL. 9/24/98: UNABLE TO CONTACT TOM CORBETT. CONTACTED MR LAPUMA AND LEFT MESSAGE TO ARRANGE A SITE INSPECTION. BASED ON INSPECTION AND REMEDIATION PLAN WILL ATTEMPT TO CLOSE FILE. ACCORDING TO MR LAPUMA, MIKEN WILL BE CLOSING THEIR OPERATION OVER THE NEXT 6 MONTHS. 9/25/98: JDC MET WITH MARK LIPUMA, LCS AND RALPH LESKIW, MIKEN AND INSPECTED WORK FLOOR AND BASEMENT AREA FOR OIL SPILLAGE. FLOOR FREE OF ANY PRODUCT. SOME STAINING WAS ON FLOOR BELOW MAIN FLOOR PRESSES. ALL OIL IS SWEPT-UP ON A REGULAR BASIS AND COLLECTED IN 55 GALLON DRUMS FOR DISPOSAL THROUGH BFI. BASEMENT FLOOR SHOWED NO INDICATIONS OF CRACKING OR SEEPAGE. BASED ON THESE FINDINGS, NO FURTHER ACTION WILL BE REQUIRED. 10/2/98: RECEIVED COPY OF SITE REPORT AND FOUND SATISFACTORY.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 10 **DIST/DIR:** 0.04 NW **ELEVATION:** 616 **MAP ID:** 2

NAME:	AL S LEASING	**REV:**	4/5/12
ADDRESS:	1050 NIAGARA ST	**ID1:**	9200952
	BUFFALO NY	**ID2:**	275135
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

SITE INFORMATION

SPILL DATE: 4/24/1992
DATE REPORTED: 4/24/1992
CLOSED DATE: 8/21/1992
INSP DATE: 4/24/1992
MATERIAL SPILLED: DIESELAMOUNT SPILLED: 50 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 50 G

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:YESDRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TRAFFIC ACCIDENT
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL VEHICLE
REPORTED BY: FIRE DEPARTMENT
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: SACALAND
SPILL CONTACT:
TELEPHONE:

SPILLER: AL S LEASING

ADDRESS: 166 GRAND CENTRAL AVENUE
ELMIRA HEIGHTS, NY 14903
TELEPHONE:

REPORTED BY:FIRE DEPARTMENT

LAST DEC UPDATE: 8/25/1992
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: DIESEL SPILLED FROM TRUCK ONTO STREET

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was SAC 04/27/92: SAC INSPECT SITE,MET W/ DAN DOWD OF LAUGHLIN,ABSORBENTS APPLIED, CONTAMINATED MATERIAL TO BE STORED ONRIBCO PROPERTY IN FRONT OF WHERE SPILL OCCURRED,DISP. LETTER DRAFTED. 08/21/92: DISPOSAL RECEIPTS HAVE BEEN RECEIVED 8/21/92.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 12 **DIST/DIR:** 0.04 NE **ELEVATION:** 620 **MAP ID:** 3

NAME:	COSUMA	**REV:**	4/5/12
ADDRESS:	1073 NIAGARA ST	**ID1:**	0750746
	BUFFALO NY	**ID2:**	386235
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

SITE INFORMATION

SPILL DATE: 8/22/2007
DATE REPORTED: 8/22/2007
CLOSED DATE: 9/20/2007
INSP DATE:
MATERIAL SPILLED: GASOLINEAMOUNT SPILLED: G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: G

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: GASOLINE STATION
REPORTED BY: OTHER
REGION:
UST TRUST? YES

SPILL INVESTIGATOR: fxgalleg
SPILL CONTACT: SHARON SALONONE
TELEPHONE: (716) 775-0645

SPILLER:

ADDRESS:
,
TELEPHONE:

REPORTED BY:OTHER

LAST DEC UPDATE: 9/20/2007
CLEAN UP MEET STANDARDS? NO
PENALTY RECOMMENDED? NO

CALLER REMARKS: SUPER UNLEADED 6K TANK TEST FAILURE.

DEC REMARKS:
9/20/07 FG NOTE THAT THIS IS A REPORT ON AN ALREADY OPEN SPILL. REFER TO SPILL 0175514 FOR ALL ACTIVITY. THIS SITE IS CLOSED ELECTRONIC FILE ONLY.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 17 **DIST/DIR:** 0.04 NE **ELEVATION:** 620 **MAP ID:** 3

NAME:	NIAGARA FARGO	**REV:**	4/5/12
ADDRESS:	1073 NIAGARA ST	**ID1:**	0175514
	BUFFALO NY	**ID2:**	208150
	ERIE	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

SITE INFORMATION

SPILL DATE: 2/26/2002
DATE REPORTED: 2/26/2002
CLOSED DATE:
INSP DATE: 3/6/2009
MATERIAL SPILLED: LUBE OILAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

MATERIAL SPILLED: GASOLINEAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

MATERIAL SPILLED: WASTE OIL/USED OILAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: HOUSEKEEPING
WATERBODY AFFECTED:
SOURCE OF SPILL: GASOLINE STATION
REPORTED BY: DEC
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: FXGALLEG
SPILL CONTACT: SHARON SALAMONE
TELEPHONE: (716) 775-0645

SPILLER: SHARON SALAMONE

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 17 **DIST/DIR:** 0.04 NE **ELEVATION:** 620 **MAP ID:** 3

NAME: NIAGARA FARGO
ADDRESS: 1073 NIAGARA ST
BUFFALO NY
ERIE
CONTACT:
SOURCE: NYSDEC

REV: 4/5/12
ID1: 0175514
ID2: 208150
STATUS: ACTIVE
PHONE:

SHARON SALAMONE
ADDRESS: 2915 FIX ROAD
GRAND ISLAND, NY 14072-
TELEPHONE:

REPORTED BY:DEC

LAST DEC UPDATE: 2/7/2012
CLEAN UP MEET STANDARDS? NO
PENALTY RECOMMENDED? NO

CALLER REMARKS: INSPECTION WITH ECO PHELPS REVEALED GASOLINE SATURATION IN NORTH LINE LEAK DETECTOR PIT. MANY DRUMS OF WASTE OIL IN REAR OF PROPERTY WITH SPILLAGE AROUND THEM. OWNER CLAIMS THAT LINE LEAK DETECTOR WORK RECENTLY DONE BY REID PETROLEUM. POOR HOUSEKEEPING; PBS VIOLATIONS; NO LEAK DETECTION OR INVENTORY RECONCILIATION.

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was MF 03/08/02: MF S/I/GENE LACRESS, EMPLOYEE. MANAGER NOT ON SITE. I WAS TOLD THERE ARE 61 DRUMS ON SITE HOLDING WASTE OIL & OTHER AUTO FLUIDS. BISON OR SAFETY KLEEN HAS BEEN CONTACTED TO DISPOSE OF. SITE MEETING WITH OWNER SCHEDULED FOR 1200, 3/11/02. 03/11/02: MF SAC S/I/FRANK (SON) & SHARON SALAMONE. FRANK CLAIMED REID PET REPLACE LEAK DETECTOR ON BOTH SUB PUMPS. INSPECTION BY PAUL KUTLINA & MIKE PHELPS FOUND GASOLINE ODOR & GASOLINE SOAKED DEBRIS IN SUB PUMP MANWAY. SPILLAGE BY DRUMS, RUBBER HOSE PLUGED WITH A PIECE OF WOOD COMING OUT THE BOTTOM OF A 270 GALLON WASTE OIL TANK. TANK SITTING ON THE GROUND. 2 OLD MW S(?) ON SITE. EXPLAINED NECESSARY CLEANUP & MW SAMPLING. 03/12/02: MF T/C MIKE MCCARTHY REID PET. HE WILL GIVE SHARON SOME DIRECTION. LETTER TO RP TO ADDRESS SPILLAGE, MW SAMPLING, DRUM DISPOSAL & TO RAISE 270 GALLON WASTE OIL TANKS OFF THE GROUND ALONG WITH REMOVING RUBBER HOSE & PROPERLY PLUGGING TANK. SCHEDULE BY 3/29/02. 03/29/02: MF NO RESPONSE LETTER TO RP, RESPONSE BY 4/15/02. 03/29/02: MF FAX FROM RP. COMPANIES SHE CALLED ARE ALL VERY BUSY. SEE WILL KEEP ME ADVISED. 04/15/02: MF RECEIVED COPY OF SENTINEL S 3/29/02 PROPOSAL TO THE RP. THEY PROPOSE SAMPLING MW S & CONTAMINATED SOIL FOR DISPOSAL. NO START DATE. 08/26/02: MF S/I DRUMS GONE. SPEEDY DRY ATOP CONTAMINATION. RUBBER HOSE IN THE BOTTOM OF A AG WASTE OIL. 08/29/02: MF T/C SHARON, SHE WILL SEND DRUM DISPOSAL RECEIPT. WELLS NOT SAMPLED. SHE WILL PLUG AST. APPX 50 BARRELS DISPOSED OF. EMPTY DRUM TAKEN TO TWIN VILLAGE SALVAGE. TOLD HER MW S MUST BE SAMPLED BY 9/16/02. 11/06/03: MF S/I/SHARON SALAMONE, OWNER. SHE GAVE ME MW SAMPLE RESULTS, IN PPB. MW#1 - ETHYLBENZENE - 76 1,2,4 - 499 1,3,5 - 152 XYLENES - 110 NAPHTHALENE - 57 MTBE - 116 MW#2 - BENZENE - 267 ETHYLBENZENE - 341 ISOPB - 52 n-PB - 142 TOLUENE - 340 1,2,4 - 1060 XYLENES - 1138 NAPHTHALENE - 677 MTBE - 1820 02/13/03: MF S/I/1130 STATION CLOSED. 02/25/03: MF T/C SHARON SALAMONE, NO ANSWER AT 773-7282. 04/08/03: MF T/C SHARON SALAMONE, 775-0645 & 870-5280. SHE WILL CHECK INTO LOCATION OF MW S IN ORDER TO RESAMPLE. 05/12/03: MF LETTER TO RP, MW MUST BE RESAMPLED. SCHEDULE BY 5/30/03. 12/09/03: MF NO RESPONSE LETTER, RESPONSE BY 12/31/03. 12/29/03: MF T/C MESSAGE FROM SHARON, ASKING ME TO CALL HER. 01/02/04: MF T/C SHARON, SHE HAS PROBLEMS IN HER LIFE. MW SAMPLING WILL BE DONE POSSIBLY NEXT WEEK. SHE WILL SEND RECEIPTS FOR THE WASTE OIL DISPOSAL. 02/13/04: MF T/C SHARON, LEFT MESSAGE. 02/18/04: MF RECEIVED DISPOSAL RECEIPT FOR 2600 GALLONS OF WASTE OIL. 05/14/04: MF T/C SHARON, HAVING MEDICAL PROBLEMS (CANCER, GOING THRU CHEMO). SON SAMPLED WELLS. 05/23/05: MF DRIVE BY, STATION CLOSED. 02/23/06: MF T/C SHARON SALMONE, SHE IS UNDER GOING TREATMENT. THEY HAVE NOT SOLD GASOLINE IN YEARS. SHE WILL SEND THE LATEST SAMPLING RESULTS. 03/08/06: MF RECEIVED 8/4/04 MW SAMPLING RESULTS. IN PPB 8260 STARS TOTAL. MW#1 - 66 + 37 MTBE MW#2 - 193 + 88 MTBE 9/20/07 FG RECD A REPORT OF A TANK TEST FAILURE IN SPILL 0750746. THAT SPILL CLOSED AND REFERRED TO THIS EXISTING SPILL. FG SPOKE TO SHARON SALAMONE. SHE SAID SHE IS BATTLING CANCER RIGHT NOW AND CAN T AFFORD TO SPEND ANY MONEY AT THIS TIME. SHE SAID THE UST IS EMPTY AND NOT IN USE. SHE REQUESTED THAT WE GIVE HER ADDITIONAL TIME TO DECIDE WHAT SHE WILL DO WITH THE PROPERTY. MS. SALAMONE INDICATED THAT THIS IS IN THE PATH WHERE THE NEW PEACE BRIDGE WILL BE BUILT AND SHE IS HOPING TO SELL IT WHEN THE DECISION IS MADE TO BUILD THE BRIDGE. THE STATION IS CLOSED. MS. SALAMONE WILL UPDATE THE DEPT IN 2 MONTHS TIME. 03/06/09: MF T/C/SHARON 775-0645, LEFT MESSAGE. S/V/EDUARDO PEREZ, 362-8928/830-8181. DISPENSORS REMOVED. WASTE OIL SPILLAGE BEHIND BUILDING. UST S OVERDUE FOR TESTING. ADDITIONAL 250 GALLON AGT S ON SITE. TOLD EDUADRO TO CLEAN UP SPILLAGE. HE IS THE OPERATOR OF STATION. SUPER UNLEADED 6K UST FAILED ITS TT 9/20/07. 03/10/09: MF T/C SHARON, OTHER 2 UST PASSED TT. SHE CLAIMED PAPER WORK SENT IN. TANLS CLOSED. SHARON WILL GET ON RENTER TO CLEAN MESS & GET RID OF AGT S. 10/21/09: MF MEETING/SHARON, SHE HAS STAGE 4 CANCER & IS WAITING FOR THE PEACE BRIDGE AUTHORITY TO BY PROPERTY. SHE CLAIMS SHE HAS NO MONEY FOR ANY KIND OF SIE WORK. SHE WONT SIGN ROE. 12/30/10 FG SPOKE WITH SHARON SALAMONE 775-0645. SHE WILL CONSIDER SIGNING A RIGHT OF ENTRY TO COMPLETE THE CLEANUP. I TOLD HER I WOULD CALL HER BACK IN ONE WEEK. 1/12/11 FG SPOKE TO BILL NAPLES, ATTORNEY FOR SHARON SALAMONE 884-0077. HE SAID THEY WILL TRY TO DETERMINE EVERYTHING THAT HAS TO BE DONE AND GET IT TO THE DEPT. HE SAID A MR. JOSEPH KEEFE 683-4222 WILL BE CALLING THE DEPT WITHIN THE NEXT THREE WEEKS AND ARRANGING FOR WORK TO BE DONE. 1/28/11 FG SPOKE TO FRANK GUZZO, THE SON OF MS. SALAMONE. HE SAID HE WILL BE TAKING THE PROPERTY OVER AND IT SHOULD BE FINAL NEXT WEEK. HE HAS CONTACTED WASTE STREAM FOR ASSISTANCE WITH SAMPLING. HIS NUMBER IS 775-0645. 6/2/11 FG CALLED FRANK GUZZO AND LEFT A MESSAGE REQUESTING AN UPDATE ON THE PROPERTY. 2/7/12 CURRENT PROPERTY OWNER ACCORDING TO THE CITY OF BUFFALO REAL PROPERTY IS: NIAGARA FARGO SERVICES INC, 2915 FIX RD, GRAND ISLAND, NY 14072. LETTER SENT REQUESTING AND UPDATE BY 2/23/12.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 28 **DIST/DIR:** 0.04 NE **ELEVATION:** 620 **MAP ID:** 3

NAME: NIAGARA FARGO SERVICE, INC.
ADDRESS: 1073 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-222763
ID2:
STATUS: ACTIVE
PHONE:

PETROLEUM BULK STORAGE FACILITY INFORMATION

SITE STATUS:ACTIVE
EXPIRATION DATE:2007/08/17

CONTACT INFORMATION

COMPANY NAME:NIAGARA FARGO SERVICE, INC.
CONTACT :SHARON SALAMONE

,NY,

(716) 886-8795

COMPANY NAME:SHARON SALAMONE
CONTACT :

2915 FIX ROAD
GRAND ISLAND,NY, 14072

(716) 775-0645

COMPANY NAME:SHARON SALAMONE
CONTACT :SHARON SALAMONE

,NN,

(716) 775-0645

COMPANY NAME:
CONTACT :SHARON SALAMONE

2915 FIX ROAD
GRAND ISLAND,NY, 14072

(716) 775-0645

TANK INFORMATION

TANK NUMBER:1TANK ID:164375
TANKS STATUS:IN SERVICEINSTALL DATE:12/1/1986
CAPACITY(GAL):6000DATE OF TEST:2/13/2002
NEXT TEST:2/13/2007CLOSED DATE:
REGISTERED:YESTANK TYPE:EQUIVALENT TECHNOLOGY
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

- Continued on next page -

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 28 **DIST/DIR:** 0.04 NE **ELEVATION:** 620 **MAP ID:** 3

NAME: NIAGARA FARGO SERVICE, INC.
ADDRESS: 1073 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-222763
ID2:
STATUS: ACTIVE
PHONE:

TANK NUMBER:2TANK ID:164376
TANKS STATUS:IN SERVICEINSTALL DATE:12/1/1986
CAPACITY(GAL):6000DATE OF TEST:2/13/2002
NEXT TEST:2/13/2007CLOSED DATE:
REGISTERED:YESTANK TYPE:EQUIVALENT TECHNOLOGY
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

TANK NUMBER:3TANK ID:164377
TANKS STATUS:IN SERVICEINSTALL DATE:12/1/1986
CAPACITY(GAL):6000DATE OF TEST:2/13/2002
NEXT TEST:2/13/2007CLOSED DATE:
REGISTERED:YESTANK TYPE:EQUIVALENT TECHNOLOGY
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

TANK NUMBER:4TANK ID:171580
TANKS STATUS:IN SERVICEINSTALL DATE:
CAPACITY(GAL):275DATE OF TEST:
NEXT TEST:CLOSED DATE:
REGISTERED:YESTANK TYPE:STEEL/CARBON STEEL
TANK LOCATION:ABOVEGROUND: 10% OR MORE BELOW GROUND

TANK NUMBER:5TANK ID:171581
TANKS STATUS:CLOSED - REMOVEDINSTALL DATE:
CAPACITY(GAL):275DATE OF TEST:
NEXT TEST:CLOSED DATE:3/5/2002
REGISTERED:YESTANK TYPE:STEEL/CARBON STEEL
TANK LOCATION:ABOVEGROUND: 10% OR MORE BELOW GROUND

TANK NUMBER:6TANK ID:171582
TANKS STATUS:CLOSED - REMOVEDINSTALL DATE:
CAPACITY(GAL):275DATE OF TEST:
NEXT TEST:CLOSED DATE:3/5/2002
REGISTERED:YESTANK TYPE:STEEL/CARBON STEEL
TANK LOCATION:ABOVEGROUND: 10% OR MORE BELOW GROUND

HISTORIC TANK INFORMATION FROM 2007

TANK NUMBER: 1TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 12/1/1986
CLOSED: TANK CAPACITY: 6000 GALLONS
PRODUCT: GASOLINE

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION: FIBERGLASS LINER (FRP)
EXTERNAL PROTECTION: FIBERGLASS
EXTERNAL PROTECTION 2:

PIPE TYPE: STEEL/CARBON STEEL/IRON

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 28 **DIST/DIR:** 0.04 NE **ELEVATION:** 620 **MAP ID:** 3

NAME: NIAGARA FARGO SERVICE, INC.
ADDRESS: 1073 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-222763
ID2:
STATUS: ACTIVE
PHONE:

PIPE LOCATION: UNDERGROUND/ON-GROUND
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: NONE
SECONDARY CONTAINMENT 2:
LEAK DETECTION: GROUNDWATER WELL
LEAK DETECTION 2:

OVERFILL PROTECTION:FLOAT VENT VALVE
OVERFILL PROTECTION 2:
DISPENSER: SUBMERSIBLE
SPILL PREVENTION:CATCH BASIN
DATE TESTED: 2/13/2002
NEXT TEST: 2/13/2007
TEST METHOD: USTEST 2000/P/LL PLUS USTEST 2000/U

TANK NUMBER: 2TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 12/1/1986
CLOSED: TANK CAPACITY: 6000 GALLONS
PRODUCT: GASOLINE

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION: FIBERGLASS LINER (FRP)
EXTERNAL PROTECTION: FIBERGLASS
EXTERNAL PROTECTION 2:

PIPE TYPE: STEEL/CARBON STEEL/IRON
PIPE LOCATION: UNDERGROUND/ON-GROUND
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: NONE
SECONDARY CONTAINMENT 2:
LEAK DETECTION: GROUNDWATER WELL
LEAK DETECTION 2:

OVERFILL PROTECTION:FLOAT VENT VALVE
OVERFILL PROTECTION 2:
DISPENSER: SUBMERSIBLE
SPILL PREVENTION:CATCH BASIN
DATE TESTED: 2/13/2002
NEXT TEST: 2/13/2007
TEST METHOD: USTEST 2000/P/LL PLUS USTEST 2000/U

TANK NUMBER: 3TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 12/1/1986
CLOSED: TANK CAPACITY: 6000 GALLONS
PRODUCT: GASOLINE

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION: FIBERGLASS LINER (FRP)
EXTERNAL PROTECTION: FIBERGLASS

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID: 36 **DIST/DIR:** 0.04 NE **ELEVATION:** 620 **MAP ID:** 3

NAME:	COSUMA	**REV:**	4/5/12
ADDRESS:	1073 NIAGARA ST	**ID1:**	0750746
	BUFFALO NY	**ID2:**	386235
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 8/22/2007
DATE REPORTED: 8/22/2007
CLOSED DATE: 9/20/2007
INSP DATE:
MATERIAL SPILLED: GASOLINEAMOUNT SPILLED: G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: G

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: GASOLINE STATION
REPORTED BY: OTHER
REGION:
UST TRUST? YES

SPILL INVESTIGATOR: fxgalleg
SPILL CONTACT: SHARON SALONONE
TELEPHONE: (716) 775-0645

SPILLER:

ADDRESS:
,
TELEPHONE:

REPORTED BY:OTHER

LAST DEC UPDATE: 9/20/2007
CLEAN UP MEET STANDARDS? NO
PENALTY RECOMMENDED? NO

CALLER REMARKS: SUPER UNLEADED 6K TANK TEST FAILURE.

DEC REMARKS:
9/20/07 FG NOTE THAT THIS IS A REPORT ON AN ALREADY OPEN SPILL. REFER TO SPILL 0175514 FOR ALL ACTIVITY. THIS SITE IS CLOSED ELECTRONIC FILE ONLY.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID: 43 **DIST/DIR:** 0.04 NE **ELEVATION:** 620 **MAP ID:** 3

NAME:	NIAGARA-FARGO SUNOCO	**REV:**	4/5/12
ADDRESS:	1073 NIAGARA ST	**ID1:**	8605868
	BUFFALO NY	**ID2:**	208151
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 12/16/1986DATE REPORTED: 12/16/1986
CLOSED DATE: 5/23/1988INSP DATE: 5/4/1988

MATERIAL SPILLED: GASOLINEAMOUNT SPILLED: 100 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 100 G

CAUSE OF SPILL: TANK FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: GASOLINE STATION
REPORTED BY: OTHER
CALLER REMARKS: TANK FAILURE AND SPILLAGE FROM OIL DRUMS

REGION:
UST TRUST? YES

SPILL INVESTIGATOR: PRINGLE
SPILL CONTACT:
TELEPHONE:

SPILLER: NIAGARA FARGO SERVICE

ADDRESS: 1073 NIAGARA STREET
BUFFALO, NY 14213

TELEPHONE:

REPORTED BY:OTHER

LAST DEC UPDATE: 6/14/1988
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was MNP / / : SITE INSP. 12/16/86, CLEANUP REQUIRED AND UNDERWAY. / / : SITE INSP. 12/23/86, CLEANUP UNDERWAY, SOIL TO BE SAMPLED & DISPOSED. / / : SITE INSP. 12/23/86, CLEANUP UNDERWAY, SOIL TO BE SAMPLED & DISPOSED;TELECONS 1/12,13/87, SAMPLE RESULTS EXPECTED IN 2 WKS. / / : TELECON W/SALAMON 2/2/87, WAITING FOR SAMPLE RESULTS;NEEDS INSP. / / : MNP SITE INSP. 3/6/87, OIL FROM SLOPPY HOUSEKEEPING, CLEANUP REQUIRED;WILL CHECK MON. WELLS AFTER AREA IS BLACKTOPPED;TELECON 3/30/87. / / : TELECON W/SALAMON 2/13/87, TO SEND SAMPLE RESULTS, DIPAOLO TO DISPOSE OF CONTAM. SOIL AT CID, VERIFICATION REQUIRED;NEEDS INSP. / / : REC. SAMPLE RESULTS 02/02/87, NON-HAZ; TELECON 04/27/87, LOT TO BE PAVED. / / : 5/4/87 MNP INSP, OIL IN WASTE OIL TANK AREA COVERED W/STONE, CONTAM. MATERIAL TO BE REMOVED & DISPOSED PRIOR TO PAVING LOT;NEEDS INSP. / / : 7/22/87 MNP INSP. NO ADDITIONAL CLEANUP YET, MATERIAL TO BE SAMPLED & DISPOSED, MW - O.K.;NEEDS INSP. / / : 11/23/87 LETTER TO M. KIMMONS;12/16/87 MNP INSP. NO CLEANUP YET;12/16/87 MNP TELECON W/SALAMON, CLEANUP REQUIRED;12/24/87 LETTER TO SALAMON. / / : MNP TELECON 10/01/87, SOIL REMOVED TO MARSHALL TANK, TO BE SAMPLED. / / : 12/30/87 MNP TELECON W/SALAMON, HE IS TO ARRANGE FOR CLEANUP;1/11/88 MNP TELECON W/SALAMON, M. TANK TO DO CLEANUP, SAMPLE RESULTS TO BE SENT. / / : 4/8/88 LETTER TO SALAMON, SOIL DISPOSAL BY 4/18/88;4/11/88 MNP TELECON W/SALAMON, HE WILL HAVE M. KIMMONS DISPOSE OF SOIL;5/4/88 MNP INSP. CONTAM. SOIL REMAINS ON SITE, LEGAL REFERRAL RECOMMENDED. / / : 5/12/88 MNP TELECON W/SALAMON, DISPOSAL COMPLETED 5/6/88, DISPOSAL RECEIPTS TO BE SENT;5/19/88 RECEIVED DISPOSAL INFO. - O.K.;5/23/88 MNP & RNL DISCUSS. LEGAL ACTION TO BE DROPPED & SPILL COMPLETED. 03/29/88: 2/2/88 MNP TELECON W/SALAMON, M. KIMMONS MAKING DISPOSAL ARRANGEMENTS & WILL PERFORM CLEANUP;2/19/88 LETTER TO KIMMONS, REPLY 3/7/88;3/29/88 MNP INSP. CONTAM. SOIL EXCAVATED & ON SITE.

THERE MAYBE MORE DEC REMARKS AVAILBLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 11 **DIST/DIR:** 0.07 NE **ELEVATION:** 617 **MAP ID:** 4

NAME: CASTRICONE CONCRETE
ADDRESS: NIAGARA ST & ALBANY ST
BUFFALO NY
ERIE
CONTACT:
SOURCE: NYSDEC

REV: 4/5/12
ID1: 0512643
ID2: 358996
STATUS: CLOSED
PHONE:

SITE INFORMATION

SPILL DATE: 2/1/2006
DATE REPORTED: 2/1/2006
CLOSED DATE: 2/2/2006
INSP DATE: 2/1/2006
MATERIAL SPILLED: PAINTAMOUNT SPILLED: G
MATERIAL CLASS: OTHERAMOUNT RECOVERED: 0 G

MATERIAL SPILLED: PAINT THINNERSAMOUNT SPILLED: G
MATERIAL CLASS: OTHERAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:YESIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:YESIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: HUMAN ERROR
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: CITIZEN
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: JFOTTO
SPILL CONTACT: ALKE CASTRICONE
TELEPHONE:

SPILLER: CASTRICONE CONCRETE
ALKE CASTRICONE
ADDRESS:
BUFFALO, NY
TELEPHONE:

REPORTED BY:CITIZEN

LAST DEC UPDATE: 2/4/2006
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 11 **DIST/DIR:** 0.07 NE **ELEVATION:** 617 **MAP ID:** 4

NAME:	CASTRICONE CONCRETE	**REV:**	4/5/12
ADDRESS:	NIAGARA ST & ALBANY ST	**ID1:**	0512643
	BUFFALO NY	**ID2:**	358996
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

CALLER REMARKS:

DEC REMARKS:
02/01/06 RMC/FILE. RECEIVED CALL FROM JFO, FOUND CASTRICONE CONCRETE HAS SPILLED 5 GALLONS CURE AND SEAL. THEN WASHED WITH HOSES INTO THE SEWER. RMC NOTIFIED BUFFALO HAZ MAT. JFO NOTIFIED ECOS. SPILLER IS ALKE CASTRICONE CASTRICONE CONCRETE AND CONSTRUCTION. SPILL IS ON SITE NOW. 02/01/06 JFO ON SITE MET WITH ALKE CASTRICONE OWNER OF CASTRICONE CONCRETE. I FOUND THAT APPROX 5 GALLONS OF CONCRETE CURE AND SEAL HAD BEEN WASHED DOWN THE STORM DRAIN. PRODUCT IS GONE. NO ACTION POSSIBLE BY SPILLS. ECO PHELPS WILL FOLLOW UP WITH THIS INCIDENT. 02/02/06 JFO MET WITH ECO PHELPS. I GAVE HIM CONTACTS AT THE BSA TO DETERMINE VIOLATION. CLOSED

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 14 **DIST/DIR:** 0.07 NE **ELEVATION:** 617 **MAP ID:** 4

NAME:	KEYSTONE CORP.	**REV:**	4/5/12
ADDRESS:	ALBANY ST & NIAGARA ST	**ID1:**	9505138
	BUFFALO NY	**ID2:**	305812
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

SITE INFORMATION

SPILL DATE: 7/26/1995
DATE REPORTED: 7/26/1995
CLOSED DATE: 7/27/1995
INSP DATE:
MATERIAL SPILLED: UNKNOWN MATERIALAMOUNT SPILLED: 0
MATERIAL CLASS: OTHERAMOUNT RECOVERED: 0

RESOURCE AFFECTED
SOIL:NOAIR:YES
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: EQUIPMENT FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: POLICE DEPARTMENT
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: BRENNAN
SPILL CONTACT:
TELEPHONE:

SPILLER: KEYSTONE CORPORATION

ADDRESS:
BUFFALO, NY
TELEPHONE:

REPORTED BY:POLICE DEPARTMENT

LAST DEC UPDATE: 7/27/1995
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: BUFFALO PD NOTED YELLOW SMOKE COMING FROM STACK

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was KAH 07/27/95: KAH GAVE COPY OF SPILL REPORT TO DIVISION OF AIR RESOURCES. NO ACTION BY SPILLS POSSIBLE.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 18 **DIST/DIR:** 0.07 NE **ELEVATION:** 617 **MAP ID:** 4

NAME:	ROADSIDE	**REV:**	4/5/12
ADDRESS:	FARGO AVE & NIAGARA ST	**ID1:**	0550754
	BUFFALO NY	**ID2:**	350504
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

SITE INFORMATION

SPILL DATE: 8/4/2005
DATE REPORTED: 8/4/2005
CLOSED DATE: 8/5/2005
INSP DATE: 8/4/2005
MATERIAL SPILLED: UNKNOWN PETROLEUMAMOUNT SPILLED: G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: G

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:YESDRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:YES
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: EQUIPMENT FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: LOCAL AGENCY
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: JFOTTO
SPILL CONTACT: TOM FITZ
TELEPHONE: (716) 864-9278

SPILLER:

ADDRESS:
,
TELEPHONE:

REPORTED BY:LOCAL AGENCY

LAST DEC UPDATE: 8/5/2005
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: DISPATCH ASKED BY TOM FITZ A LARGE AMOUNT OF OIL IN ROAD. NO OTHER INFOMATION GIVEN.

DEC REMARKS:
08/04/05 JFO ON SCENE WITH FIRE DEPT. THE SPILL WAS CAUSED BY A LEAKING RICH PRODUCTS TRUCK. IT SPILLED A MATERIAL CALLED HARD BUTTER USED IN THEIR PRODUCTS (EDIBLE). THE FIRE DEPT SPREAD SPEEDY DRY ON THE AFFECTED AREA AND THE CITY WILL SEND DOWN A STREET SWEEPER. NO FURTHER ACTION NECESSARY. CLOSED

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 1 **DIST/DIR:** 0.09 SW **ELEVATION:** 623 **MAP ID:** 5

NAME:	A N DERINGER INC	**REV:**	6/6/06
ADDRESS:	1010 NIAGARA ST	**ID1:**	NYR000018119
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	VGN
CONTACT:	MICHAEL MONTORO	**PHONE:**	7168881524
SOURCE:	EPA		

SITE INFORMATION

CONTACT INFORMATION: MICHAEL MONTORO
1010 NIAGARA ST
BUFFALO NY 14213

PHONE: 7168881524

UNIVERSE INFORMATION:

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA PERMIT:N - NO
GPRA POST CLOSURE:N - NO
GPRA CA:N - NO
GPRA COMPLIANCE MONITORING & ENFORCEMENT:N - NO

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:N - NO
SUBJCA TSD 3004:N - NO
SUBJCA NON TSD:N - NO

SIGNIFICANT NON-COMPLIANCE(SNC):N - NO
BEGINNING OF THE YEAR SNC:N - NO
PERMIT WORKLOAD:-----
CLOSURE WORKLOAD:-----
POST CLOSURE WORKLOAD:-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:-----
CORRECTIVE ACTION WORKLOAD:N - NO
GENERATOR STATUS:CEG - CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS: GENERATES LESS THAN 100 KG/MONTH OF HAZA
NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 4 **DIST/DIR:** 0.10 NE **ELEVATION:** 620 **MAP ID:** 6

NAME:	KEYSTONE CORP	**REV:**	2/14/05
ADDRESS:	1095 NIAGARA ST	**ID1:**	NYD002105765
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	LGN
CONTACT:	JACK KARET	**PHONE:**	7168856181
SOURCE:	EPA		

SITE INFORMATION

UNIVERSE INFORMATION:

SNC:N - NO
BOYSNC:N - NO
GPRA PERMIT:N - NO
GPRA POSTCLOSURE:N - NO
GPRA CA:N - NO
GPRA CME:N - NO
PERM PROG:-----
PREM WRKLD:-----
CLOSURE WRKLD:-----
P C WRKLD:-----
SUBJCA:N - NO
SUBJCA TSD 3004:N - NO
SUBJCA NON TSD:N - NO
CA WRKLD:N - NO
GEN STATUS:LQG - LARGE QUANTITY GENERATORS: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE

IMPORTER ACTIVITY:U - UNKNOWNMIX WASTE GEN:U - UNKNOWN
RECYCLER ACT:N - NOTRANS ACT:N - NO
TSD ACT:N - NOU GRND INJ ACT:N - NO
UNIV WASTE FAC:TRANSFER FAC:U - UNKNOWN
OS BURNER EXEMPT:U - UNKNOWN FURNACE EXEMP:U - UNKNOWN

IMPORTER ACTIVITY:U - UNKNOWNMIX WASTE GEN:U - UNKNOWN
RECYCLER ACT:U - UNKNOWNTRANS ACT:U - UNKNOWN
TSD ACT:N - NOU GRND INJ ACT:U - UNKNOWN
UNIV WASTE FAC:UTRANSFER FAC:U - UNKNOWN
OS BURNER EXEMPT:U - UNKNOWN FURNACE EXEMP:U - UNKNOWN

USED OIL INFORMATION

BURNER:U - UNKNOWN PROCESSOR:U - UNKNOWN
REFINER:U - UNKNOWNMARKET BURNER:U
SPEC MARKETER:U - UNKNOWNTRANSFER FAC:U - UNKNOWN
TRANSPORTER:U - UNKNOWN

BURNER:N - NO PROCESSOR:N - NO
REFINER:N - NOMARKET BURNER:N
SPEC MARKETER:N - NOTRANSFER FAC:N - NO
TRANSPORTER:N - NO

SECOND ID: OFF SITE RECEIPT:U - UNKNOWN
ACCESSIBILITY:COUNTY OWNER:
FED WSTE GEN OWNER:HQFED WASTE GEN:1

- Continued on next page -

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 4 **DIST/DIR:** 0.10 NE **ELEVATION:** 620 **MAP ID:** 6

NAME:	KEYSTONE CORP	**REV:**	2/14/05
ADDRESS:	1095 NIAGARA ST	**ID1:**	NYD002105765
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	LGN
CONTACT:	JACK KARET	**PHONE:**	7168856181
SOURCE:	EPA		

STATE WSTE GEN OWNER:STATE WSTE GEN:

SECOND ID: OFF SITE RECEIPT:U - UNKNOWN
ACCESSIBILITY:COUNTY OWNER:
FED WSTE GEN OWNER:HQFED WASTE GEN:1
STATE WSTE GEN OWNER:STATE WSTE GEN:

NAIC INFORMATION

332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING
332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING
332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING
332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING
332813 - ELECTROPLATING, PLATING, POLISHING, ANODIZING, AND COLORING

ENFORCEMENT INFORMATION:

AGENCY: S - STATEDATE: 4/3/1986
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATEDATE: 8/11/1999
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

AGENCY: S - STATEDATE: 10/12/1994
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATEDATE: 4/15/1998
TYPE: 210 - INITIAL 3008(A) COMPLIANCE ORDER

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001RESPONSIBLE: S - STATE
DETERMINED: 2/5/1986DETERMINED BY: S - STATE
CITATION: RESOLVED: 8/13/1986
TYPE: GER - GENERATOR ALL REQUIREMENTS

VIOLATION NUMBER: 0002RESPONSIBLE: S - STATE
DETERMINED: 10/12/1994DETERMINED BY: S - STATE
CITATION: RESOLVED: 1/10/1995
TYPE: GER - GENERATOR ALL REQUIREMENTS

VIOLATION NUMBER: 0003RESPONSIBLE: S - STATE
DETERMINED: 10/12/1994DETERMINED BY: S - STATE
CITATION: RESOLVED: 1/10/1995
TYPE: GLB - GENERATOR LAND BAN REQUIREMENTS

VIOLATION NUMBER: 0004RESPONSIBLE: S - STATE
DETERMINED: 1/30/1998DETERMINED BY: S - STATE

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID:	4	**DIST/DIR:**	0.10 NE	**ELEVATION:**	620	**MAP ID:**	6

NAME:	KEYSTONE CORP	**REV:**	2/14/05
ADDRESS:	1095 NIAGARA ST	**ID1:**	NYD002105765
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	LGN
CONTACT:	JACK KARET	**PHONE:**	7168856181
SOURCE:	EPA		

CITATION: RESOLVED: 10/4/2002
TYPE: GER - GENERATOR ALL REQUIREMENTS

VIOLATION NUMBER: 0005RESPONSIBLE: S - STATE
DETERMINED: 5/26/1998DETERMINED BY: S - STATE
CITATION: RESOLVED: 10/4/2002
TYPE: GER - GENERATOR ALL REQUIREMENTS

HAZARDOUS WASTE INFORMATION:

The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichlorethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride and chlorinated fluorocarbons; all spent solvent mixtures/bl
Spent stripping and cleaning bath solutions from electroplating operations in which cyanides are used in the process.
Corrosive waste

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 13 **DIST/DIR:** 0.10 NE **ELEVATION:** 620 **MAP ID:** 6

NAME:	KEYSTONE CORP	**REV:**	4/5/12
ADDRESS:	1095 NIAGARA ST	**ID1:**	9206401
	BUFFALO NY	**ID2:**	191130
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

SITE INFORMATION

SPILL DATE: 8/31/1992
DATE REPORTED: 9/2/1992
CLOSED DATE: 10/20/1992
INSP DATE:
CAUSE OF SPILL: EQUIPMENT FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: RESPONSIBLE PARTY
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: RMCROSSE
SPILL CONTACT:
TELEPHONE:

SPILLER: KEYSTONE CORPORATION

ADDRESS: 1095 NIAGARA STREET
BUFFALO, NY 14213-1796
TELEPHONE:

REPORTED BY:RESPONSIBLE PARTY

LAST DEC UPDATE: 10/28/1992
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: HEAT EXCHANGE UNIT SPILL AT KEYSTONE - BSA CONTACTED (MR. BALL - CONTACT).

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was RMC 09/03/92: CHROMIC ACID AT PLANT WASHED INTO SEWER. CONTAINED IN CONCRETE PIT AND SINCE CONTAINED IN DRUMS AND FLOOR CLEANED. 09/03/92: RMC/JACK KUVERT OWNER/ DENNIS YOUNG BSA/PHONE HAVE 7000 MORE GALLONS TO DISPOSE OF BSA WILL SEND FULL REPORT. 10/20/92: RMC/RECEIVED AND REVIEVED REPORT FROM BSA. BSA HAS THEM AS A PRETREATMENT FACILITY. NO FURTHER ACTION NEEDED...CLOSE OUT. 09/29/95: This is additional information about material spilled from the translation of the old spill file: DILUTE CHROMIC ACID.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID: 16 **DIST/DIR:** 0.10 NE **ELEVATION:** 620 **MAP ID:** 6

NAME:	NEAR THE CORNER	**REV:**	4/5/12
ADDRESS:	1095 NIAGARA ST	**ID1:**	0751281
	BUFFALO NY	**ID2:**	391698
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

SITE INFORMATION

SPILL DATE: 1/2/2008
DATE REPORTED: 1/2/2008
CLOSED DATE: 6/18/2008
INSP DATE: 1/8/2008
MATERIAL SPILLED: UNKNOWN PETROLEUMAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: DELIBERATE
WATERBODY AFFECTED:
SOURCE OF SPILL: UNKNOWN
REPORTED BY: LOCAL AGENCY
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: jfotto
SPILL CONTACT:
TELEPHONE:

SPILLER: UNKNOWN

ADDRESS:
, NY
TELEPHONE:

REPORTED BY:LOCAL AGENCY

LAST DEC UPDATE: 8/20/2008
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: TWO DRUMS WERE ABANDONED AT 1095 NIAGARA STREET, AT THE CORNER W/ALBANY STREET. ONE DRUM WAS LABELED AS ANTIFREEZE AND THE OTHER APEARS TO BE LEAKING A GASOLINE/OILY SUBSTANCE.

DEC REMARKS:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SPILLS

SEARCH ID:	16	**DIST/DIR:**	0.10 NE	**ELEVATION:**	620	**MAP ID:**	6

NAME:	NEAR THE CORNER	**REV:**	4/5/12
ADDRESS:	1095 NIAGARA ST	**ID1:**	0751281
	BUFFALO NY	**ID2:**	391698
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NYSDEC		

/02/08 JFO ON SITE MET WITH ECO LOHR. 1 DRUM IS ABOUT 1/4 FULL AND IS FROZEN. THE OTHER IS WASTE OIL WITH DIRT OR SAND, ALSO 1/4 FULL. ECO LOHR SPOKE WITH NEIGHBOR RUSS SMIRAGLIA (80 ALBANY ST. 883-0034). HE SAID HE HEARD A VEHICLE BEHIND HIS HOUSE, WHERE THE DRUMS WERE LEFT, EARLY NEW YEARS MORNING. THE PROPERTY IS OWNED ALKEY CASTRICONE 681-3305 5662 BROADWAY, LANCASTER. CALL TO MR CASTRICONE. LEFT A MESSAGE ON HIS V-MAIL. 01/04/08 JFO CALL FROM MR CASTRICONE. HE SAID HE GAVE PERMISSION TO MARCOS RESTAURANT ACROSS THE STREET TO STAGE THEIR SPENT COOKING GREASE ON THE PROPERTY. I WILL CHECK WITH MARCOS TO SEE IF THEY ARE THEIRS. 01/07/08 JFO MET WITH THE OWNER OF MARCOS. THOSE DRUMS ARE NOT HIS. HIS 2 DRUMS ARE ON THE SIDEWALK MARKED BIO-FUEL. JFO HIRED OP-TECH TO SAMPLE, OVERPACK AND DISPOSE OF THE DRUMS. 01/08/08 JFO MET WITH GARY HOUSE AND SEAN HALLEY WITH OP-TECH. THEY SAMPLED AND OVERPACKED THE 2 DRUMS AND WILL STAGE AT THE BSA UNTIL APPROVAL FOR DISPOSAL. 01/23/08 JFO REC D A COPY OF THE SAMPLE RESULTS. CONTENTS ARE NON-HAZARDOUS. 02/07/08 JFO REC D PAYMENT PACKAGE FROM THE LAB FOR $161.25. SUBMITTED TO FG. 02/13/08 JFO REC D PAY PACK FROM OP-TECH FOR WORK DONE JAN 8, 2008 FOR $497.49. SUBMITTED TO FG. 03/31/08 JFO REC D PAY PACK FROM OP-TECH FOR PREPARING SHIPPING PAPERS AND LABELS FOR DISPOSAL. ($41.15). SUBMITTED TO FG. 06/06/08 JFO REC D THE PAY PACK FROM OP-TECH FOR $125.86 FOR DISPOSAL. ALSO ATTACHED IS THE DISPOSAL RECEIPT. SUBMITTED TO FG. 06/17/08 JFO CALL TO GARY HOUSE WITH OP-TECH. ALL PAY PACKS WERE SUBMITTED AND PAID. NO FURTHER ACTION REQUIRED. CLOSED

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 6 **DIST/DIR:** 0.13 NE **ELEVATION:** 616 **MAP ID:** 7

NAME:	OLIVER GEAR INC	**REV:**	1/10/12
ADDRESS:	1120 NIAGARA ST	**ID1:**	NYR000070938
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	VGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

SITE INFORMATION

CONTACT INFORMATION: KURT LEWIS
NIAGARA ST
BUFFALO NY 14213

PHONE: 7168851080

OWNER NAME:OLIVER GEAR INC
OWNER TYPE:P-PRIVATE
OPERATOR:OLIVER GEAR INC
OPERATOR_TYPE:P-PRIVATE
MAILING ADDRESS:1120 NIAGARA ST
BUFFALO, NY 14213

UNIVERSE INFORMATION:

RECEIVED DATE:01/01/2007

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:N - NO
SUBJCA TSD 3004:N - NO
SUBJCA NON TSD:N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):N - NO
BEGINNING OF THE YEAR SNC:
PERMIT WORKLOAD:-----
CLOSURE WORKLOAD:-----
POST CLOSURE WORKLOAD:-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:-----
CORRECTIVE ACTION WORKLOAD:N - NO
GENERATOR STATUS:CEG - CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS: GENERATES LESS THAN 100 KG/MONTH OF HAZARDOUS WASTE

INSTITUTIONAL CONTROL:N-NOENGINEERING CONTROL:N
HUMAN EXPOSURE:N-NOGW CONTROLS:N- NO
LAND TYPE:P-PRIVATESHORT TERM GEN:N
TRANS FACILITY:NREC WASTE FROM OFF SITE:N

IMPORTER ACTIVITY:N - NOMIXED WASTE GEN:N - NO
TRANS ACTIVITY:N - NOTSD ACTIVITY:N - NO
RECYCLER ACTIVITY:N - NOONSITE BURNER EXEMPT:N - NO
FURNACE EXEMPTION:N - NOUNDER INJECT ACTIVITY:N - NO
REC WASTE FROM OFF SITE:N - NOUNIV WASTE DEST FAC:N
USED OIL TRANS:N - NOUSED OIL PROCESSOR:N - NO
USED OIL REFINER:N - NOUSED OIL FUEL BURNER:N - NO
UO FUEL MARKETER TO BURNER:NUSED OIL SPEC MARKETER:N - NO

NAIC INFORMATION

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 6 **DIST/DIR:** 0.13 NE **ELEVATION:** 616 **MAP ID:** 7

NAME:	OLIVER GEAR INC	**REV:**	1/10/12
ADDRESS:	1120 NIAGARA ST	**ID1:**	NYR000070938
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	VGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

D000
D001 - Ignitable waste
D008 - Lead
D018 - Benzene
D039 - Tetrachloroethylene

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 25 **DIST/DIR:** 0.13 NW **ELEVATION:** 610 **MAP ID:** 8

NAME: MODERN HEAT TREATING & FORGING
ADDRESS: 1112 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT: MODERN HEAT TREATING
SOURCE:

REV:
ID1: PBS9-438197
ID2:
STATUS:
PHONE: (716) 884-2176

Tanks Installed Capacity

CURRENT: 1 DEC 84 1400
REMOVED: 0
PERMANENT: 0
UNKNOWN: 0
TEMP: 0
CLOSED: 0

PRODUCTS: OTHER
TANK MATERIAL: FIBERGLASS/STEEL
PIPE MATERIAL:

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 26 **DIST/DIR:** 0.13 NW **ELEVATION:** 610 **MAP ID:** 8

NAME:	MODERN HEAT TREATING INC.	**REV:**	4/5/12
ADDRESS:	1112 NIAGARA ST	**ID1:**	CBS9-000016
	BUFFALO NY 14213	**ID2:**	339578.00
	ERIE	**STATUS:**	UNREGULATED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

CHEMICAL BULK STORAGE FACILITY INFORMATION

TYPE OF SITE: MANUFACTURING
TOTAL ACTIVE TANKS ON SITE: 0
TOTAL FACILITY CAPACITY: 0 GALLONS
PBS NUMBER: ICS NUMBER: 9-167999MOSF NUMBER:
ADDITIONAL ADDRESS INFO:

TYPE OF OWNER: CORPORATE/COMMERCIAL
OWNER SUB TYPE:
OWNER ADDRESS: 1112 NIAGARA ST.
BUFFALO NY 14213
PHONE: (716) 884-2176

EMERGENCY CONTACT: DOUGLAS FEIND SR.
PHONE: (716) 625-9490

MAILING NAME: MODERN HEAT TREATING INC.
ADDRESS: 1112 NIAGARA ST.
BUFFALO NY 14213
ATTENTION: DOUGLAS FEIND SR.
PHONE: (716) 884-2176

CERTIFICATE DATE: 12/14/98EXP. DATE: 2/17/01
RENEWAL DATE: 11/3/98

TANK INFORMATION

TANK NUMBER: 00001STATUS: CLOSED - IN PLACE
INSTALLED: 00/00CLOSED: 10/98
TANK CAPACITY: 1400 GALLONS
SUBSTANCE STORED: METHANOL
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 100

TANK TYPE: FIBERGLASS COATED STEEL
TANK LOCATION: UNDERGROUND, VAULTED, WITH ACCESS
INTERNAL PROTECTION: FIBERGLASS LINER (FRP)
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

PIPE TYPE: STEEL/IRON
PIPE LOCATION: ABOVEGROUND/UNDERGROUND COMBINATION
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

LEAK DETECTION: NONE
OVERFILL PROTECTION: NONE

TANK NUMBER: 2STATUS: CLOSED - IN PLACE
INSTALLED: 10/98CLOSED: 01/00
TANK CAPACITY: 1000 GALLONS
SUBSTANCE STORED: METHANOL
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 26 **DIST/DIR:** 0.13 NW **ELEVATION:** 610 **MAP ID:** 8

NAME:	MODERN HEAT TREATING INC.	**REV:**	4/5/12
ADDRESS:	1112 NIAGARA ST	**ID1:**	CBS9-000016
	BUFFALO NY 14213	**ID2:**	339578.00
	ERIE	**STATUS:**	UNREGULATED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

HAZARDOUS SUBSTANCE %: 100

TANK TYPE: OTHER
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: OTHER
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: VAULT WITHOUT ACCESS

PIPE TYPE: STEEL/IRON
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: PAINTED/ASPHALT COATING
SECONDARY CONTAINMENT: NONE

LEAK DETECTION: OTHER
OVERFILL PROTECTION: PRODUCT LEVEL GAUGE

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 3 **DIST/DIR:** 0.16 NE **ELEVATION:** 616 **MAP ID:** 9

NAME:	CURTIS SCREW CO INC	**REV:**	6/6/06
ADDRESS:	1130 NIAGARA ST	**ID1:**	NYD002106599
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	SGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

SITE INFORMATION

CONTACT INFORMATION: FRANK GURGOL
1130 NIAGARA ST
BUFFALO NY 14213

PHONE: 7168850110

UNIVERSE INFORMATION:

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA PERMIT:N - NO
GPRA POST CLOSURE:N - NO
GPRA CA:N - NO
GPRA COMPLIANCE MONITORING & ENFORCEMENT:N - NO

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:N - NO
SUBJCA TSD 3004:N - NO
SUBJCA NON TSD:N - NO

SIGNIFICANT NON-COMPLIANCE(SNC):N - NO
BEGINNING OF THE YEAR SNC:N - NO
PERMIT WORKLOAD:-----
CLOSURE WORKLOAD:-----
POST CLOSURE WORKLOAD:-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:-----
CORRECTIVE ACTION WORKLOAD:N - NO
GENERATOR STATUS:SQG - SMALL QUANTITY GENERATOR: GENERATES 100 - 1000 KG/MONTH OF HAZARDOUS WASTE

NAIC INFORMATION

332721 - PRECISION TURNED PRODUCT MANUFACTURING

ENFORCEMENT INFORMATION:

AGENCY: S - STATEDATE: 12/23/1988
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATEDATE: 3/25/1988
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATEDATE: 4/4/1995
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATEDATE: 7/7/1993
TYPE: 120 - WRITTEN INFORMAL

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Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 3 **DIST/DIR:** 0.16 NE **ELEVATION:** 616 **MAP ID:** 9

NAME:	CURTIS SCREW CO INC	**REV:**	6/6/06
ADDRESS:	1130 NIAGARA ST	**ID1:**	NYD002106599
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	SGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001RESPONSIBLE: S - STATE
DETERMINED: 3/3/1988DETERMINED BY: S - STATE
CITATION:
RESOLVED: 5/2/1988
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0002RESPONSIBLE: S - STATE
DETERMINED: 12/12/1988DETERMINED BY: S - STATE
CITATION:
RESOLVED: 2/2/1989
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0003RESPONSIBLE: S - STATE
DETERMINED: 7/7/1993DETERMINED BY: S - STATE
CITATION:
RESOLVED: 9/14/1993
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0004RESPONSIBLE: S - STATE
DETERMINED: 4/4/1995DETERMINED BY: S - STATE
CITATION:
RESOLVED: 6/5/1995
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0005RESPONSIBLE: S - STATE
DETERMINED: 4/4/1995DETERMINED BY: S - STATE
CITATION:
RESOLVED: 6/5/1995
TYPE: GENERATOR-LAND BAN REQUIREMENTS

HAZARDOUS WASTE INFORMATION:

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 23 **DIST/DIR:** 0.16 NE **ELEVATION:** 616 **MAP ID:** 9

NAME: CURTIS SCREW CO INC
ADDRESS: 1130 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-002577
ID2:
STATUS: UNREGULATED
PHONE:

PETROLEUM BULK STORAGE FACILITY INFORMATION

SITE STATUS:UNREGULATED
EXPIRATION DATE:N/A

CONTACT INFORMATION

COMPANY NAME:CURTIS SCREW CO INC
CONTACT :DAVID A. STANLEY

,NN,

(716) 885-0110

COMPANY NAME:CURTIS SCREW CO INC
CONTACT :DAVID A. STANLEY

1130 NIAGARA ST
BUFFALO,NY, 14213

(716) 885-0110

COMPANY NAME:CURTIS SCREW CO INC
CONTACT :

1130 NIAGARA ST
BUFFALO,NY, 14213

(716) 885-0110

TANK INFORMATION

TANK NUMBER:001TANK ID:172160
TANKS STATUS:CLOSED - REMOVEDINSTALL DATE:8/1/1996
CAPACITY(GAL):1500DATE OF TEST:
NEXT TEST:CLOSED DATE:1/1/2004
REGISTERED:YESTANK TYPE:99
TANK LOCATION:ABOVEGROUND

TANK NUMBER:2TANK ID:181749
TANKS STATUS:CLOSED - REMOVEDINSTALL DATE:
CAPACITY(GAL):0DATE OF TEST:
NEXT TEST:CLOSED DATE:7/1/1995
REGISTERED:YESTANK TYPE:STEEL/CARBON STEEL
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

- Continued on next page -

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 23 **DIST/DIR:** 0.16 NE **ELEVATION:** 616 **MAP ID:** 9

NAME: CURTIS SCREW CO INC
ADDRESS: 1130 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-002577
ID2:
STATUS: UNREGULATED
PHONE:

TANK NUMBER:NTANK ID:159996
TANKS STATUS:CLOSED - REMOVEDINSTALL DATE:5/1/1977
CAPACITY(GAL):10000DATE OF TEST:11/1/1992
NEXT TEST:CLOSED DATE:7/1/1995
REGISTERED:YESTANK TYPE:STEEL/CARBON STEEL
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

TANK NUMBER:STANK ID:159997
TANKS STATUS:CLOSED - REMOVEDINSTALL DATE:5/1/1977
CAPACITY(GAL):10000DATE OF TEST:11/1/1992
NEXT TEST:CLOSED DATE:7/1/1995
REGISTERED:YESTANK TYPE:STEEL/CARBON STEEL
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

HISTORIC TANK INFORMATION FROM 2007

TANK NUMBER: 001TANK STATUS: CLOSED - REMOVED
ACTIVE STATUS:INACTIVEINSTALLED: 8/1/1996
CLOSED: 1/1/2004TANK CAPACITY: 1500 GALLONS
PRODUCT: WASTE OIL/USED OIL

TANK TYPE: OTHER
TANK LOCATION: ABOVEGROUND - IN CONTACT WITH SOIL
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

PIPE TYPE: EQUIVALENT TECHNOLOGY
PIPE LOCATION: ABOVEGROUND
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: DIKING (ABOVEGROUND)
SECONDARY CONTAINMENT 2:
LEAK DETECTION: IMPERVIOUS BARRIER/CONCRETE PAD (A/G)
LEAK DETECTION 2:

OVERFILL PROTECTION:HIGH LEVEL ALARM
OVERFILL PROTECTION 2:
DISPENSER: SUCTION
SPILL PREVENTION:
DATE TESTED:
NEXT TEST:
TEST METHOD: TESTING NOT REQUIRED

TANK NUMBER: 2TANK STATUS: CLOSED - REMOVED
ACTIVE STATUS:INACTIVEINSTALLED:
CLOSED: 7/1/1995TANK CAPACITY: 0 GALLONS
PRODUCT: OTHER

TANK TYPE: STEEL/CARBON STEEL/IRON
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 23 **DIST/DIR:** 0.16 NE **ELEVATION:** 616 **MAP ID:** 9

NAME: CURTIS SCREW CO INC
ADDRESS: 1130 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-002577
ID2:
STATUS: UNREGULATED
PHONE:

EXTERNAL PROTECTION:
EXTERNAL PROTECTION 2:

PIPE TYPE:
PIPE LOCATION:
EXTERNAL PROTECTION:
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT:
SECONDARY CONTAINMENT 2:
LEAK DETECTION:
LEAK DETECTION 2:

OVERFILL PROTECTION:
OVERFILL PROTECTION 2:
DISPENSER:
SPILL PREVENTION:
DATE TESTED:
NEXT TEST:
TEST METHOD: TESTING NOT REQUIRED

TANK NUMBER: NTANK STATUS: CLOSED - REMOVED
ACTIVE STATUS:INACTIVEINSTALLED: 5/1/1977
CLOSED: 7/1/1995TANK CAPACITY: 10000 GALLONS
PRODUCT: #2 FUEL OIL

TANK TYPE: STEEL/CARBON STEEL/IRON
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: PAINTED/ASPHALT COATING
EXTERNAL PROTECTION 2:

PIPE TYPE: GALVANIZED STEEL
PIPE LOCATION: UNDERGROUND/ON-GROUND
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: NONE
SECONDARY CONTAINMENT 2:
LEAK DETECTION: NONE
LEAK DETECTION 2:

OVERFILL PROTECTION:PRODUCT LEVEL GAUGE (A/G)
OVERFILL PROTECTION 2:VENT WHISTLE
DISPENSER: SUCTION
SPILL PREVENTION:
DATE TESTED: 11/1/1992
NEXT TEST:
TEST METHOD: HORNER EZ CHECK I OR II

TANK NUMBER: STANK STATUS: CLOSED - REMOVED
ACTIVE STATUS:INACTIVEINSTALLED: 5/1/1977
CLOSED: 7/1/1995TANK CAPACITY: 10000 GALLONS
PRODUCT: #2 FUEL OIL

TANK TYPE: STEEL/CARBON STEEL/IRON

- More Details Exist For This Site; Max Page Limit Reached -

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 24 **DIST/DIR:** 0.16 NE **ELEVATION:** 616 **MAP ID:** 9

NAME:	CURTIS SCREW CO. INC.	**REV:**	4/5/12
ADDRESS:	1130 NIAGARA ST	**ID1:**	CBS9-000154
	BUFFALO NY 14213	**ID2:**	339309.00
	ERIE	**STATUS:**	UNREGULATED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

CHEMICAL BULK STORAGE FACILITY INFORMATION

TYPE OF SITE: MANUFACTURING
TOTAL ACTIVE TANKS ON SITE: 0
TOTAL FACILITY CAPACITY: 0 GALLONS
PBS NUMBER: 9-002577ICS NUMBER: 9-178236MOSF NUMBER:
ADDITIONAL ADDRESS INFO:

TYPE OF OWNER: CORPORATE/COMMERCIAL
OWNER SUB TYPE:
OWNER ADDRESS: 1130 NIAGARA ST
BUFFALO NY 14213
PHONE: (716) 885-0110

EMERGENCY CONTACT: JIM SMITH
PHONE: (716) 662-5364

MAILING NAME: CURTIS SCREW CO. INC.
ADDRESS: 1130 NIAGARA ST
BUFFALO NY 14213
ATTENTION: DAVID A STANLEY
PHONE: (716) 885-0110

CERTIFICATE DATE: 6/28/93EXP. DATE: 7/5/95
RENEWAL DATE: 4/3/95

TANK INFORMATION

TANK NUMBER: 001STATUS: TANK CONVERTED TO NON-REGULATED USE
INSTALLED: 03/78CLOSED: 01/95
TANK CAPACITY: 1200 GALLONS
SUBSTANCE STORED: 1,1,1-TRICHLOROETHANE
SUBSTANCE DESCRIPTION: MORE THAN ONE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 99

TANK TYPE: OTHER
TANK LOCATION: ABOVEGROUND ON SADDLES, LEGS, STILTS, RACK, OR CRADLE
INTERNAL PROTECTION: EPOXY LINER
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

PIPE TYPE: STEEL/IRON
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: NONE

LEAK DETECTION: NONE
OVERFILL PROTECTION: PRODUCT LEVEL GAUGE

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID: 37 **DIST/DIR:** 0.16 NE **ELEVATION:** 616 **MAP ID:** 9

NAME:	CURTIS SCREW	**REV:**	4/5/12
ADDRESS:	1130 NIAGARA ST	**ID1:**	9504353
	BUFFALO NY	**ID2:**	255872
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 7/1/1995
DATE REPORTED: 7/10/1995
CLOSED DATE: 7/17/1995
INSP DATE:
MATERIAL SPILLED: #2 FUEL OILAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: OTHER
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: RMCROSSE
SPILL CONTACT:
TELEPHONE:

SPILLER: CURTIS SCREW COMPANY

ADDRESS: 1130 NIAGARA STREET
BUFFALO, NY 14213
TELEPHONE:

REPORTED BY:OTHER

LAST DEC UPDATE: 3/15/2002
CLEAN UP MEET STANDARDS? NO
PENALTY RECOMMENDED? NO

CALLER REMARKS: CONTAMINATION FOUND IN CLEAN HOLE TEST

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was RMC 07/10/95: RMC/JIM WEINER/PHONE TO RETEST TCLP, RESULTS DUE 8/15/95. 07/14/95: RMC/RECEIVED TCLP RESAMPLE RESULTS, I PER RNL UPON RECEIPT OF LOCATION MAP FROM EPS,,,, DUE 7/31. 07/17/95: RMC/REIVED TANK LOCATION MAP, NO FURTHER ACTION, INACTIVE,.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID: 38 **DIST/DIR:** 0.16 NE **ELEVATION:** 616 **MAP ID:** 9

NAME:	CURTIS SCREW COMPANY	**REV:**	4/5/12
ADDRESS:	1130 NIAGARA ST	**ID1:**	8707193
	BUFFALO NY	**ID2:**	255871
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 11/19/1987DATE REPORTED: 11/20/1987
CLOSED DATE: 1/15/1988INSP DATE:

MATERIAL SPILLED: CUTTING OILAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: TANK TESTER
CALLER REMARKS: 6K UST FAILED TANK TEST -.19

REGION:
UST TRUST? NO

SPILL INVESTIGATOR: MXFRANKS
SPILL CONTACT:
TELEPHONE:

SPILLER: CURTIS SCREW COMPANY

ADDRESS: 1130 NIAGARA STREET
BUFFALO, NY 14213

TELEPHONE:

REPORTED BY:TANK TESTER

LAST DEC UPDATE: 3/15/2002
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was MF / / : 11/19/87 TANK EMPTIED, EXCAVATION & RETEST SCHEDULED. / / : MF 12/04/87 TELCON JIM PIATEK, LEAK FOUND FILL PIPE TOP OF TANK, WILL RETEST 12/08/87. / / : MF 12/15/87 TELECON JIM PIATEK, FOUND LEAK IN FILL PIPE, REPAIRED, RETESTED OK. WILL SEND ME REPORT. / / : MF 1/7/88 TELECON JIM PIATEK, HE DIDN T RECEIVE RETEST RESULTS YET. HE WILL CALL TESTER & HAVE RESULTS SENT TO ME. / / : MF 1/15/88 RECEIVED RETEST RESULTS, TANK PASSED.

THERE MAYBE MORE DEC REMARKS AVAILBLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID:	2	**DIST/DIR:**	0.17 SE	**ELEVATION:**	629	**MAP ID:**	10

NAME:	C F M FRANCHISING CO	**REV:**	6/6/06
ADDRESS:	959 NIAGARA ST	**ID1:**	NYD986934578
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	VGN
CONTACT:	ANDREW BURNSIDE	**PHONE:**	2169425251
SOURCE:	EPA		

SITE INFORMATION

CONTACT INFORMATION: ANDREW BURNSIDE
959 NIAGARA ST
BUFFALO NY 14213

PHONE: 2169425251

UNIVERSE INFORMATION:

GOVERNMENT PERFORMANCE AND RESULTS ACT (GPRA)

GPRA PERMIT:N - NO
GPRA POST CLOSURE:N - NO
GPRA CA:N - NO
GPRA COMPLIANCE MONITORING & ENFORCEMENT:N - NO

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:N - NO
SUBJCA TSD 3004:N - NO
SUBJCA NON TSD:N - NO

SIGNIFICANT NON-COMPLIANCE(SNC):N - NO
BEGINNING OF THE YEAR SNC:N - NO
PERMIT WORKLOAD:-----
CLOSURE WORKLOAD:-----
POST CLOSURE WORKLOAD:-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:-----
CORRECTIVE ACTION WORKLOAD:N - NO
GENERATOR STATUS:CEG - CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS: GENERATES LESS THAN 100 KG/MONTH OF HAZA
NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 21 **DIST/DIR:** 0.17 SE **ELEVATION:** 629 **MAP ID:** 10

NAME:	7-ELEVEN	**REV:**	4/5/12
ADDRESS:	959 NIAGARA ST	**ID1:**	PBS9-600051
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

PETROLEUM BULK STORAGE FACILITY INFORMATION

SITE STATUS:ACTIVE
EXPIRATION DATE:2014/11/01

CONTACT INFORMATION

COMPANY NAME:REID PETROLEUM CORPORATION
CONTACT :ENVIRONMENTAL COMPLIANCE

100 WEST GENESEE STREET P.O. BOX 967
LOCKPORT,NY, 14095

(800) 348-8400
COMPANY NAME:REID PETROLEUM CORP.
CONTACT :STEVEN WARREN
ENVIRONMENTAL AUDITOR
100 WEST GENESEE STREET, P.O. BOX 967
LOCKPORT,NY, 14095

(800) 348
COMPANY NAME:7-ELEVEN
CONTACT :MANAGER

,NN,

(716) 422-3101

COMPANY NAME:REID PETROLEUM CORP.
CONTACT :STEVEN WARREN

,NN,

(716) 512-4223

TANK INFORMATION

TANK NUMBER:1TANK ID:170114
TANKS STATUS:IN SERVICEINSTALL DATE:8/1/1986
CAPACITY(GAL):6000DATE OF TEST:2/27/2008
NEXT TEST:CLOSED DATE:
REGISTERED:YESTANK TYPE:EQUIVALENT TECHNOLOGY
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

TANK NUMBER:2TANK ID:170115
TANKS STATUS:IN SERVICEINSTALL DATE:8/1/1986
CAPACITY(GAL):6000DATE OF TEST:2/28/2008

- Continued on next page -

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 21 **DIST/DIR:** 0.17 SE **ELEVATION:** 629 **MAP ID:** 10

NAME: 7-ELEVEN
ADDRESS: 959 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-600051
ID2:
STATUS: ACTIVE
PHONE:

NEXT TEST:CLOSED DATE:
REGISTERED:YESTANK TYPE:EQUIVALENT TECHNOLOGY
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

TANK NUMBER:3TANK ID:170116
TANKS STATUS:IN SERVICEINSTALL DATE:8/1/1986
CAPACITY(GAL):4000DATE OF TEST:2/28/2008
NEXT TEST:CLOSED DATE:
REGISTERED:YESTANK TYPE:EQUIVALENT TECHNOLOGY
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

TANK NUMBER:4TANK ID:170117
TANKS STATUS:IN SERVICEINSTALL DATE:8/1/1986
CAPACITY(GAL):1000DATE OF TEST:2/28/2008
NEXT TEST:CLOSED DATE:
REGISTERED:YESTANK TYPE:FIBERGLASS COATED STEEL
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

HISTORIC TANK INFORMATION FROM 2007

TANK NUMBER: 1TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 8/1/1986
CLOSED: TANK CAPACITY: 6000 GALLONS
PRODUCT: GASOLINE

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION: FIBERGLASS LINER (FRP)
EXTERNAL PROTECTION: FIBERGLASS
EXTERNAL PROTECTION 2:

PIPE TYPE: EQUIVALENT TECHNOLOGY
PIPE LOCATION: UNDERGROUND/ON-GROUND
EXTERNAL PROTECTION: JACKETED
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: NONE
SECONDARY CONTAINMENT 2:
LEAK DETECTION: VAPOR WELL
LEAK DETECTION 2: IN-TANK SYSTEM (ATG)

OVERFILL PROTECTION:AUTOMATIC SHUT-OFF
OVERFILL PROTECTION 2:
DISPENSER: SUBMERSIBLE
SPILL PREVENTION:CATCH BASIN
DATE TESTED: 10/1/1999
NEXT TEST:
TEST METHOD: HORNER EZ CHECK I OR II

TANK NUMBER: 2TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 8/1/1986
CLOSED: TANK CAPACITY: 6000 GALLONS

- Continued on next page -

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 21 **DIST/DIR:** 0.17 SE **ELEVATION:** 629 **MAP ID:** 10

NAME: 7-ELEVEN
ADDRESS: 959 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-600051
ID2:
STATUS: ACTIVE
PHONE:

PRODUCT: GASOLINE

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION: FIBERGLASS LINER (FRP)
EXTERNAL PROTECTION: FIBERGLASS
EXTERNAL PROTECTION 2:

PIPE TYPE: EQUIVALENT TECHNOLOGY
PIPE LOCATION: UNDERGROUND/ON-GROUND
EXTERNAL PROTECTION: JACKETED
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: NONE
SECONDARY CONTAINMENT 2:
LEAK DETECTION: VAPOR WELL
LEAK DETECTION 2: IN-TANK SYSTEM (ATG)

OVERFILL PROTECTION:AUTOMATIC SHUT-OFF
OVERFILL PROTECTION 2:
DISPENSER: SUBMERSIBLE
SPILL PREVENTION:CATCH BASIN
DATE TESTED: 10/1/1999
NEXT TEST:
TEST METHOD: HORNER EZ CHECK I OR II

TANK NUMBER: 3TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 8/1/1986
CLOSED: TANK CAPACITY: 4000 GALLONS
PRODUCT: GASOLINE

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION: FIBERGLASS LINER (FRP)
EXTERNAL PROTECTION: FIBERGLASS
EXTERNAL PROTECTION 2:

PIPE TYPE: EQUIVALENT TECHNOLOGY
PIPE LOCATION: UNDERGROUND/ON-GROUND
EXTERNAL PROTECTION: JACKETED
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: NONE
SECONDARY CONTAINMENT 2:
LEAK DETECTION: VAPOR WELL
LEAK DETECTION 2: IN-TANK SYSTEM (ATG)

OVERFILL PROTECTION:AUTOMATIC SHUT-OFF
OVERFILL PROTECTION 2:
DISPENSER: SUBMERSIBLE
SPILL PREVENTION:CATCH BASIN
DATE TESTED: 10/1/1999
NEXT TEST:
TEST METHOD: HORNER EZ CHECK I OR II

TANK NUMBER: 4TANK STATUS: IN SERVICE

- More Details Exist For This Site; Max Page Limit Reached -

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 8 **DIST/DIR:** 0.17 SW **ELEVATION:** 625 **MAP ID:** 11

NAME:	TERMINAL STATION B SUB	**REV:**	1/10/12
ADDRESS:	996 BUSTI AVE	**ID1:**	NYD980783468
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	SGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

SITE INFORMATION

OWNER NAME:NIAGARA MOHAWK
OWNER TYPE:P-PRIVATE
OPERATOR:NIAGARA MOHAWK A NATIONAL GRID COMPANY
OPERATOR_TYPE:P-PRIVATE
MAILING ADDRESS: ERIE BLVD WEST
SY
UNIVERSE INFORMATION:

RECEIVED DATE:01/01/2007

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:N - NO
SUBJCA TSD 3004:N - NO
SUBJCA NON TSD:N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):N - NO
BEGINNING OF THE YEAR SNC:
PERMIT WORKLOAD:-----
CLOSURE WORKLOAD:-----
POST CLOSURE WORKLOAD:-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:-----
CORRECTIVE ACTION WORKLOAD:N - NO
GENERATOR STATUS:SQG - SMALL QUANTITY GENERATOR: GENERATES 100 - 1000 KG/MONTH OF HAZARDOUS WASTE

INSTITUTIONAL CONTROL:N-NOENGINEERING CONTROL:N
HUMAN EXPOSURE:N-NOGW CONTROLS:N- NO
LAND TYPE:P-PRIVATESHORT TERM GEN:N
TRANS FACILITY:NREC WASTE FROM OFF SITE:N

IMPORTER ACTIVITY:N - NOMIXED WASTE GEN:N - NO
TRANS ACTIVITY:N - NOTSD ACTIVITY:N - NO
RECYCLER ACTIVITY:N - NOONSITE BURNER EXEMPT:N - NO
FURNACE EXEMPTION:N - NOUNDER INJECT ACTIVITY:N - NO
REC WASTE FROM OFF SITE:N - NOUNIV WASTE DEST FAC:N
USED OIL TRANS:N - NOUSED OIL PROCESSOR:N - NO
USED OIL REFINER:N - NOUSED OIL FUEL BURNER:N - NO
UO FUEL MARKETER TO BURNER:NUSED OIL SPEC MARKETER:N - NO

NAIC INFORMATION

221121 - ELECTRIC BULK POWER TRANSMISSION AND CONTROL
221122 - ELECTRIC POWER DISTRIBUTION
22121 - NATURAL GAS DISTRIBUTION

ENFORCEMENT INFORMATION:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID:	8	**DIST/DIR:**	0.17 SW	**ELEVATION:**	625	**MAP ID:**	11

NAME:	TERMINAL STATION B SUB	**REV:**	1/10/12
ADDRESS:	996 BUSTI AVE	**ID1:**	NYD980783468
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	SGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

B002
B007
D000

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID:	5	**DIST/DIR:**	0.18 SE	**ELEVATION:**	624	**MAP ID:**	12

NAME:	NIAGARA MOHAWK MANHOLE 760 WEST AVE	**REV:**	1/10/12
ADDRESS:	760 WEST AVE	**ID1:**	NYP000964675
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	LGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

SITE INFORMATION

OWNER NAME:NATIONAL GRID
OWNER TYPE:P-PRIVATE
OPERATOR:NIAGARA MOHAWK POWER CORP
OPERATOR_TYPE:P-PRIVATE
MAILING ADDRESS:300 ERIE BLVD W
SYRACUSE, NY 13
UNIVERSE INFORMATION:

RECEIVED DATE:03/01/2010

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:N - NO
SUBJCA TSD 3004:N - NO
SUBJCA NON TSD:N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):N - NO
BEGINNING OF THE YEAR SNC:
PERMIT WORKLOAD:-----
CLOSURE WORKLOAD:-----
POST CLOSURE WORKLOAD:-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:-----
CORRECTIVE ACTION WORKLOAD:N - NO
GENERATOR STATUS:LQG - LARGE QUANTITY GENERATORS: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE

INSTITUTIONAL CONTROL:N-NOENGINEERING CONTROL:N
HUMAN EXPOSURE:N-NOGW CONTROLS:N- NO
LAND TYPE:P-PRIVATESHORT TERM GEN:N
TRANS FACILITY:NREC WASTE FROM OFF SITE:N

IMPORTER ACTIVITY:N - NOMIXED WASTE GEN:N - NO
TRANS ACTIVITY:N - NOTSD ACTIVITY:N - NO
RECYCLER ACTIVITY:N - NOONSITE BURNER EXEMPT:N - NO
FURNACE EXEMPTION:N - NOUNDER INJECT ACTIVITY:N - NO
REC WASTE FROM OFF SITE:N - NOUNIV WASTE DEST FAC:N
USED OIL TRANS:N - NOUSED OIL PROCESSOR:N - NO
USED OIL REFINER:N - NOUSED OIL FUEL BURNER:N - NO
UO FUEL MARKETER TO BURNER:NUSED OIL SPEC MARKETER:N - NO

NAIC INFORMATION

221122 - ELECTRIC POWER DISTRIBUTION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID:	5	**DIST/DIR:**	0.18 SE	**ELEVATION:**	624	**MAP ID:**	12

NAME:	NIAGARA MOHAWK MANHOLE 760 WEST AVE	**REV:**	1/10/12
ADDRESS:	760 WEST AVE	**ID1:**	NYP000964675
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	LGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

HAZARDOUS WASTE INFORMATION:

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID: 7 **DIST/DIR:** 0.19 NE **ELEVATION:** 616 **MAP ID:** 13

NAME:	RICH PRODUCTS CORP	**REV:**	1/10/12
ADDRESS:	1145 NIAGARA ST	**ID1:**	NYD002108371
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	VGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

SITE INFORMATION

CONTACT INFORMATION:
NIAGARA ST
BUFFALO NY 14213

PHONE:

OWNER NAME:ROBERT E RICH SR
OWNER TYPE:P-PRIVATE
OPERATOR:ROBERT E RICH SR
OPERATOR_TYPE:P-PRIVATE
MAILING ADDRESS:1145 NIAGARA ST
BUFFALO, NY 14213

UNIVERSE INFORMATION:

RECEIVED DATE:01/01/2007

SUBJECT TO CORRECTIVE ACTION (SUBJCA)

SUBJCA:N - NO
SUBJCA TSD 3004:N - NO
SUBJCA NON TSD:N - NO
SIGNIFICANT NON-COMPLIANCE(SNC):N - NO
BEGINNING OF THE YEAR SNC:
PERMIT WORKLOAD:-----
CLOSURE WORKLOAD:-----
POST CLOSURE WORKLOAD:-----
PERMITTING /CLOSURE/POST-CLOSURE PROGRESS:-----
CORRECTIVE ACTION WORKLOAD:N - NO
GENERATOR STATUS:CEG - CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS: GENERATES LESS THAN 100 KG/MONTH OF HAZARDOUS WASTE

INSTITUTIONAL CONTROL:N-NOENGINEERING CONTROL:N
HUMAN EXPOSURE:N-NOGW CONTROLS:N- NO
LAND TYPE:SHORT TERM GEN:N
TRANS FACILITY:NREC WASTE FROM OFF SITE:N

IMPORTER ACTIVITY:N - NOMIXED WASTE GEN:N - NO
TRANS ACTIVITY:N - NOTSD ACTIVITY:N - NO
RECYCLER ACTIVITY:N - NOONSITE BURNER EXEMPT:N - NO
FURNACE EXEMPTION:N - NOUNDER INJECT ACTIVITY:N - NO
REC WASTE FROM OFF SITE:N - NOUNIV WASTE DEST FAC:N
USED OIL TRANS:N - NOUSED OIL PROCESSOR:N - NO
USED OIL REFINER:N - NOUSED OIL FUEL BURNER:N - NO
UO FUEL MARKETER TO BURNER:NUSED OIL SPEC MARKETER:N - NO

NAIC INFORMATION

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

RCRAGN

SEARCH ID:	7	**DIST/DIR:**	0.19 NE	**ELEVATION:**	616	**MAP ID:**	13

NAME:	RICH PRODUCTS CORP	**REV:**	1/10/12
ADDRESS:	1145 NIAGARA ST	**ID1:**	NYD002108371
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	VGN
CONTACT:		**PHONE:**	
SOURCE:	EPA		

ENFORCEMENT INFORMATION:

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 29 **DIST/DIR:** 0.19 NE **ELEVATION:** 616 **MAP ID:** 13

NAME: RICH PRODUCTS CORPORATION
ADDRESS: 1145 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: CBS9-000322
ID2: 339592.00
STATUS: UNREGULATED
PHONE:

CHEMICAL BULK STORAGE FACILITY INFORMATION

TYPE OF SITE: MANUFACTURING
TOTAL ACTIVE TANKS ON SITE: 0
TOTAL FACILITY CAPACITY: 0 GALLONS
PBS NUMBER: ICS NUMBER: MOSF NUMBER:
ADDITIONAL ADDRESS INFO:

TYPE OF OWNER: CORPORATE/COMMERCIAL
OWNER SUB TYPE:
OWNER ADDRESS: 1145 NIAGARA STREET
BUFFALO NY 14213
PHONE: (716) 878-8000

EMERGENCY CONTACT: DAVID MEGASON
PHONE: (716) 878-8632

MAILING NAME: RICH PRODUCTS CORPORATION
ADDRESS: 1145 NIAGARA STREET
BUFFALO NY 14213
ATTENTION: DAVID MEGASON
PHONE: (716) 878-8017

CERTIFICATE DATE: 2/27/98EXP. DATE: 2/25/00
RENEWAL DATE: 8/29/01

TANK INFORMATION

TANK NUMBER: 00100STATUS: CLOSED - IN PLACE
INSTALLED: 01/92CLOSED: 01/99
TANK CAPACITY: 800 GALLONS
SUBSTANCE STORED: PHOSPHORIC ACID
SUBSTANCE DESCRIPTION: SINGLE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 45

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: DIKING

PIPE TYPE: FIBERGLASS
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: DOUBLE-WALLED

LEAK DETECTION: NONE
OVERFILL PROTECTION: 23

TANK NUMBER: 00102STATUS: CLOSED - IN PLACE
INSTALLED: 01/92CLOSED: 01/99
TANK CAPACITY: 800 GALLONS
SUBSTANCE STORED: SODIUM HYDROXIDE
SUBSTANCE DESCRIPTION: MORE THAN ONE HAZARDOUS SUBSTANCE ON DEC LIST

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 29 **DIST/DIR:** 0.19 NE **ELEVATION:** 616 **MAP ID:** 13

NAME:	RICH PRODUCTS CORPORATION	**REV:**	4/5/12
ADDRESS:	1145 NIAGARA ST	**ID1:**	CBS9-000322
	BUFFALO NY 14213	**ID2:**	339592.00
	ERIE	**STATUS:**	UNREGULATED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

HAZARDOUS SUBSTANCE %: 50

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: DIKING

PIPE TYPE: FIBERGLASS
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: DOUBLE-WALLED

LEAK DETECTION: NONE
OVERFILL PROTECTION: 23

TANK NUMBER: 00103STATUS: CLOSED - IN PLACE
INSTALLED: 01/92CLOSED: 01/99
TANK CAPACITY: 1000 GALLONS
SUBSTANCE STORED: POTASSIUM HYDROXIDE
SUBSTANCE DESCRIPTION: MORE THAN ONE HAZARDOUS SUBSTANCE ON DEC LIST
HAZARDOUS SUBSTANCE %: 20

TANK TYPE: FIBERGLASS REINFORCED PLASTIC (FRP)
TANK LOCATION: ABOVEGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: DIKING

PIPE TYPE: FIBERGLASS
PIPE LOCATION: ABOVE GROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
SECONDARY CONTAINMENT: DOUBLE-WALLED

LEAK DETECTION: NONE
OVERFILL PROTECTION: 23

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 30 **DIST/DIR:** 0.19 SE **ELEVATION:** 624 **MAP ID:** 14

NAME: SCHOOL #18
ADDRESS: 118 HAMPSHIRE ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-423637
ID2:
STATUS: UNREGULATED
PHONE:

PETROLEUM BULK STORAGE FACILITY INFORMATION

SITE STATUS:UNREGULATED
EXPIRATION DATE:N/A

CONTACT INFORMATION

COMPANY NAME:BUFFALO BOARD OF EDUCATION
CONTACT :WILLIAM MOSS

,NN,

(716) 816-3028

COMPANY NAME:BUFFALO BOARD OF EDUCATION
CONTACT :WILLIAM MOSS

RM 406 CITY HALL
BUFFALO,NY, 14202

(716) 816-3028
WMOSS@BUFFALOSCHOOLS.O
COMPANY NAME:BUFFALO BOARD OF EDUCATION
CONTACT :WILLIAM MOSS
ASSISTANT ENGINEER
65 NIAGARA SQUARE ROOM 406
BUFFALO,NY, 14202

(716) 816-3028

COMPANY NAME:SCHOOL #18
CONTACT :DAVE KEIFER

,NN,

(716) 816-3163

TANK INFORMATION

TANK NUMBER:1TANK ID:167253
TANKS STATUS:CLOSED - REMOVEDINSTALL DATE:9/1/1973
CAPACITY(GAL):12000DATE OF TEST:7/6/2004
NEXT TEST:CLOSED DATE:6/28/2010
REGISTERED:YESTANK TYPE:STEEL/CARBON STEEL
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

HISTORIC TANK INFORMATION FROM 2007

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID:	30	**DIST/DIR:**	0.19 SE	**ELEVATION:**	624	**MAP ID:**	14

NAME:	SCHOOL #18	**REV:**	4/5/12
ADDRESS:	118 HAMPSHIRE ST	**ID1:**	PBS9-423637
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	UNREGULATED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

TANK NUMBER: 1TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 9/1/1973
CLOSED: TANK CAPACITY: 12000 GALLONS
PRODUCT: #2 FUEL OIL

TANK TYPE: STEEL/CARBON STEEL/IRON
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: PAINTED/ASPHALT COATING
EXTERNAL PROTECTION 2:

PIPE TYPE: STEEL/CARBON STEEL/IRON
PIPE LOCATION: UNDERGROUND/ON-GROUND
EXTERNAL PROTECTION: PAINTED/ASPHALT COATING
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: NONE
SECONDARY CONTAINMENT 2:
LEAK DETECTION: NONE
LEAK DETECTION 2:

OVERFILL PROTECTION:PRODUCT LEVEL GAUGE (A/G)
OVERFILL PROTECTION 2:
DISPENSER: SUCTION
SPILL PREVENTION:
DATE TESTED: 7/6/2004
NEXT TEST: 7/6/2009

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID:	45	DIST/DIR:	0.19 SE	ELEVATION:	624	MAP ID:	14

NAME:	SCHOOL 18	**REV:**	4/5/12
ADDRESS:	118 HAMPSHIRE ST	**ID1:**	0375439
	BUFFALO NY	**ID2:**	140536
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 1/1/2004
DATE REPORTED: 1/5/2004
CLOSED DATE: 10/18/2004
INSP DATE:
MATERIAL SPILLED: #2 FUEL OILAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:YES
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: INSTITUTIONAL, EDUCATIONAL, GOV., OTHER
REPORTED BY: TANK TESTER
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: JFOTTO
SPILL CONTACT: MICHAEL BENZ
TELEPHONE: (716) 888-7030

SPILLER: BUFFALO BOARD OF EDUCATIO
WILLIAM MOSS
ADDRESS: 65 NIAGARA SQUARE, RM 406
BUFFALO, NY 14202-
TELEPHONE:

REPORTED BY:TANK TESTER

LAST DEC UPDATE: 10/19/2004
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: TANK TEST FAILURE USING ESTERBROOK EZ III LOCATOR PLUS, TANK WAS FOUND TO HAVE 8 INCHES OF WATER (SLIGHTLY LESS THAN 480 GALLONS OF WATER IN TANK).

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was JFO 05/26/04 JFO TELCON WITH BILL MOSS. THEY ARE HAVING A MEETING NEXT WEEK TO DISCUSS WEATHER OR NOT THEY CAN EXCAVATE SAFELY WHILE SCHOOL IS IN SESSION. HE WILL GET BACK TO ME. 10/17/04 JFO RECEIVED THE JULY 6, 2004 RETEST. THE TANK PASSED. NO FURTHER ACTION REQUIRED. CLOSED

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID:	46	DIST/DIR:	0.19 SE	ELEVATION:	630	MAP ID:	15

NAME:	ULTIMATE AUTO SERVICE	**REV:**	4/5/12
ADDRESS:	35 HAMPSHIRE ST	**ID1:**	8606136
	BUFFALO NY	**ID2:**	89310
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 12/30/1986DATE REPORTED: 12/30/1986
CLOSED DATE: 1/15/1987INSP DATE:

MATERIAL SPILLED: DIESELAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: LOCAL AGENCY
CALLER REMARKS: FUMES IN HOME

REGION:
UST TRUST? YES

SPILL INVESTIGATOR: LEARY
SPILL CONTACT:
TELEPHONE:

SPILLER: UTIMATE AUTO SERVICE

ADDRESS: 35 HAMPSHIRE STREET
BUFFALO, NY

TELEPHONE:

REPORTED BY:LOCAL AGENCY

LAST DEC UPDATE: 2/23/1987
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was RNL / / : LQR TELCON 12/31/86 BSA J.GORDEN, INVESTIGATING SEWERS, SEWERS FLUSHED 12/30/86. / / : LQR TELCON 12/31/86 BSA J.GORDEN, INVESTIGATING SEWERS, SEWERS FLUSHED 12/30/86; TELECON 01/15/87, NO TANKS ON SITE, COMPLETE.

THERE MAYBE MORE DEC REMARKS AVAILBLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 27 **DIST/DIR:** 0.20 SW **ELEVATION:** 628 **MAP ID:** 16

NAME:	MULTIFORM DESICCANTS INC	**REV:**	4/5/12
ADDRESS:	960 BUSTI AVE	**ID1:**	PBS9-600780
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	UNREGULATED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

PETROLEUM BULK STORAGE FACILITY INFORMATION

SITE STATUS:UNREGULATED
EXPIRATION DATE:N/A

CONTACT INFORMATION

COMPANY NAME:MULTIFORM DESICCANTS INC
CONTACT :

960 BUSTI AVE
BUFFALO,NY, 14213

TANK INFORMATION

TANK NUMBER:1TANK ID:182209
TANKS STATUS:CLOSED - REMOVEDINSTALL DATE:
CAPACITY(GAL):10000DATE OF TEST:
NEXT TEST:CLOSED DATE:10/22/1992
REGISTERED:YESTANK TYPE:STEEL/CARBON STEEL
TANK LOCATION:UNDERGROUND, VAULTED, WITH ACCESS

HISTORIC TANK INFORMATION FROM 2007

TANK NUMBER: 1TANK STATUS: CLOSED - REMOVED
ACTIVE STATUS:INACTIVEINSTALLED:
CLOSED: 10/22/1992TANK CAPACITY: 10000 GALLONS
PRODUCT: #2 FUEL OIL

TANK TYPE: STEEL/CARBON STEEL/IRON
TANK LOCATION: UNDERGROUND
INTERNAL PROTECTION:
EXTERNAL PROTECTION:
EXTERNAL PROTECTION 2:

PIPE TYPE:
PIPE LOCATION:
EXTERNAL PROTECTION:
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT:
SECONDARY CONTAINMENT 2:
LEAK DETECTION:
LEAK DETECTION 2:

OVERFILL PROTECTION:
OVERFILL PROTECTION 2:
DISPENSER:
SPILL PREVENTION:

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID:	27	**DIST/DIR:**	0.20 SW	**ELEVATION:**	628	**MAP ID:**	16

NAME:	MULTIFORM DESICCANTS INC	**REV:**	4/5/12
ADDRESS:	960 BUSTI AVE	**ID1:**	PBS9-600780
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	UNREGULATED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

DATE TESTED:
NEXT TEST:

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 22 **DIST/DIR:** 0.22 SE **ELEVATION:** 631 **MAP ID:** 17

NAME: COLE MUFFLER INC
ADDRESS: 954 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NY DEC

REV: 4/5/12
ID1: PBS9-600787
ID2:
STATUS: UNREGULATED
PHONE:

PETROLEUM BULK STORAGE FACILITY INFORMATION

SITE STATUS:UNREGULATED
EXPIRATION DATE:N/A

CONTACT INFORMATION

COMPANY NAME:DONALD E COLE
CONTACT :STEVE BOCHINO

,NN,

(315) 455-7307

COMPANY NAME:DONALD E COLE
CONTACT :DONALD E COLE
PRESIDENT
103 KUHN RD
SYRACUSE,NY, 13208

(315) 455-7468

COMPANY NAME:COLE MUFFLER INC.
CONTACT :STEVEN A. BOCHINO

103 KUHN RD
SYRACUSE,NY, 13208

(315) 455-7468

COMPANY NAME:COLE MUFFLER INC
CONTACT :SHOP MANAGER

,NN,

(315) 455-7468

TANK INFORMATION

TANK NUMBER:001TANK ID:196664
TANKS STATUS:IN SERVICEINSTALL DATE:4/12/2005
CAPACITY(GAL):220DATE OF TEST:
NEXT TEST:CLOSED DATE:
REGISTERED:YESTANK TYPE:07
TANK LOCATION:ABOVEGROUND: 10% OR MORE BELOW GROUND

- Continued on next page -

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID:	22	DIST/DIR:	0.22 SE	ELEVATION:	631	MAP ID:	17

NAME:	COLE MUFFLER INC	REV:	4/5/12
ADDRESS:	954 NIAGARA ST	ID1:	PBS9-600787
	BUFFALO NY 14213	ID2:	
	ERIE	STATUS:	UNREGULATED
CONTACT:		PHONE:	
SOURCE:	NY DEC		

HISTORIC TANK INFORMATION FROM 2007

TANK NUMBER: 001TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 4/12/2005
CLOSED: TANK CAPACITY: 220 GALLONS
PRODUCT: LUBE OIL

TANK TYPE: PLASTIC
TANK LOCATION: ABOVEGROUND ON CRIB, RACK, OR CRADLE
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

PIPE TYPE: NO PIPING
PIPE LOCATION: NO PIPING
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: IMPERVIOUS UNDERLAYMENT
SECONDARY CONTAINMENT 2:
LEAK DETECTION: IMPERVIOUS BARRIER/CONCRETE PAD (A/G)
LEAK DETECTION 2:

OVERFILL PROTECTION:PRODUCT LEVEL GAUGE (A/G)
OVERFILL PROTECTION 2:
DISPENSER: SUCTION
SPILL PREVENTION:NONE
DATE TESTED:
NEXT TEST:
TEST METHOD: TESTING NOT REQUIRED

TANK NUMBER: 002TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 4/12/2005
CLOSED: TANK CAPACITY: 55 GALLONS
PRODUCT: WASTE OIL/USED OIL

TANK TYPE: STEEL/CARBON STEEL/IRON
TANK LOCATION: ABOVEGROUND ON CRIB, RACK, OR CRADLE
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: PAINTED/ASPHALT COATING
EXTERNAL PROTECTION 2:

PIPE TYPE: NO PIPING
PIPE LOCATION: NO PIPING
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: DIKING (ABOVEGROUND)
SECONDARY CONTAINMENT 2:
LEAK DETECTION: IMPERVIOUS BARRIER/CONCRETE PAD (A/G)
LEAK DETECTION 2:

OVERFILL PROTECTION:PRODUCT LEVEL GAUGE (A/G)
OVERFILL PROTECTION 2:
DISPENSER: NONE

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

UST

SEARCH ID: 22 **DIST/DIR:** 0.22 SE **ELEVATION:** 631 **MAP ID:** 17

NAME:	COLE MUFFLER INC	**REV:**	4/5/12
ADDRESS:	954 NIAGARA ST	**ID1:**	PBS9-600787
	BUFFALO NY 14213	**ID2:**	
	ERIE	**STATUS:**	UNREGULATED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SPILL PREVENTION:TRANSFER STATION CONTAINMENT
DATE TESTED:
NEXT TEST:
TEST METHOD: TESTING NOT REQUIRED

TANK NUMBER: 003TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 4/12/2005
CLOSED: TANK CAPACITY: 55 GALLONS
PRODUCT: WASTE OIL/USED OIL

TANK TYPE: STEEL/CARBON STEEL/IRON
TANK LOCATION: ABOVEGROUND ON CRIB, RACK, OR CRADLE
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: PAINTED/ASPHALT COATING
EXTERNAL PROTECTION 2:

PIPE TYPE: NO PIPING
PIPE LOCATION: NO PIPING
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: DIKING (ABOVEGROUND)
SECONDARY CONTAINMENT 2:
LEAK DETECTION: IMPERVIOUS BARRIER/CONCRETE PAD (A/G)
LEAK DETECTION 2:

OVERFILL PROTECTION:PRODUCT LEVEL GAUGE (A/G)
OVERFILL PROTECTION 2:
DISPENSER: NONE
SPILL PREVENTION:TRANSFER STATION CONTAINMENT
DATE TESTED:
NEXT TEST:
TEST METHOD: TESTING NOT REQUIRED

TANK NUMBER: 004TANK STATUS: IN SERVICE
ACTIVE STATUS:ACTIVEINSTALLED: 4/12/2005
CLOSED: TANK CAPACITY: 55 GALLONS
PRODUCT: WASTE OIL/USED OIL

TANK TYPE: STEEL/CARBON STEEL/IRON
TANK LOCATION: ABOVEGROUND ON CRIB, RACK, OR CRADLE
INTERNAL PROTECTION: NONE
EXTERNAL PROTECTION: PAINTED/ASPHALT COATING
EXTERNAL PROTECTION 2:

PIPE TYPE: NO PIPING
PIPE LOCATION: NO PIPING
EXTERNAL PROTECTION: NONE
EXTERNAL PROTECTION 2:

SECONDARY CONTAINMENT: DIKING (ABOVEGROUND)
SECONDARY CONTAINMENT 2:
LEAK DETECTION: IMPERVIOUS BARRIER/CONCRETE PAD (A/G)
LEAK DETECTION 2:

OVERFILL PROTECTION:PRODUCT LEVEL GAUGE (A/G)

- More Details Exist For This Site; Max Page Limit Reached -

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID:	35	DIST/DIR:	0.22 SE	ELEVATION:	631	MAP ID:	17

NAME:	COLE MUFFLER	**REV:**	4/5/12
ADDRESS:	954 NIAGARA ST	**ID1:**	8601635
	BUFFALO NY	**ID2:**	149438
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 6/9/1986DATE REPORTED: 6/9/1986
CLOSED DATE: 6/11/1986INSP DATE: 6/11/1986

MATERIAL SPILLED: GASOLINEAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: TANK TESTER
CALLER REMARKS:

REGION:
UST TRUST? YES

SPILL INVESTIGATOR: ROSS
SPILL CONTACT:
TELEPHONE:

SPILLER: COLE MUFFLER

ADDRESS: 954 NIAGARA STREET
BUFFALO, NY

TELEPHONE:

REPORTED BY:TANK TESTER

LAST DEC UPDATE: 9/30/2004
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was LQR / / : SITE INSP. 06/09/86, CLEANUP REQUIRED AND UNDERWAY, TANKS BEING REMOVED; SITE INSP. 06/11/86, CLEANUP COMPLETE AND SATISFACTORY.

THERE MAYBE MORE DEC REMARKS AVAILBLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID:	31	**DIST/DIR:**	0.27 NW	**ELEVATION:**	570	**MAP ID:**	18

NAME:	AIR RELEASE	**REV:**	4/5/12
ADDRESS:	W FERRY ST	**ID1:**	0311359
	BUFFALO NY	**ID2:**	70371
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 1/7/2004
DATE REPORTED: 1/7/2004
CLOSED DATE: 1/8/2004
INSP DATE:
MATERIAL SPILLED: UNKNOWN MATERIALAMOUNT SPILLED: 0 L
MATERIAL CLASS: OTHERAMOUNT RECOVERED: 0 L

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: RESPONSIBLE PARTY
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: JFOTTO
SPILL CONTACT: RICHARD STAYER
TELEPHONE: (716) 532-2502

SPILLER: BUFFALO SEWER AUTHORITY

ADDRESS:
, ZZ
TELEPHONE:

REPORTED BY:RESPONSIBLE PARTY

LAST DEC UPDATE: 1/9/2004
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: METHANE GAS, UNKNOWN AMOUNT. SPILL OCCURED AT A SEWAGE TREATMENT PLANT. CLEAN UP HAS NOT STARTED. RICHARD STATED THAT THE WIND WAS THE SOURCE OF CLEAN UP.

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was JFO 01/08/04 JFO REFERRED THIS SPILL TO THE DIV OF AIR. NO ACTION NECESSARY BY SPILLS. CLOSED THERE IS NO PAPER FILE FOR THIS SPILL

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID:	32	**DIST/DIR:**	0.27 NW	**ELEVATION:**	570	**MAP ID:**	18

NAME:	BUFFALO SEWER AUTHORITY	**REV:**	4/5/12
ADDRESS:	BIRD ISLAND	**ID1:**	9805826
	BUFFALO NY	**ID2:**	257830
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 8/10/1998
DATE REPORTED: 8/10/1998
CLOSED DATE: 8/3/1999
INSP DATE:
MATERIAL SPILLED: #2 FUEL OILAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:YES
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: INSTITUTIONAL, EDUCATIONAL, GOV., OTHER
REPORTED BY: RESPONSIBLE PARTY
REGION:
UST TRUST? YES

SPILL INVESTIGATOR: RMCROSSE
SPILL CONTACT: MARTY BORZAC
TELEPHONE: (716) 883-1820

SPILLER: BUFFALO SEWER AUTHORITY
DAN BENTIBOGLIA
ADDRESS: FOOT OF WEST FERRY
BUFFALO, NY 14213-
TELEPHONE:

REPORTED BY:RESPONSIBLE PARTY

LAST DEC UPDATE: 8/17/1999
CLEAN UP MEET STANDARDS? NO
PENALTY RECOMMENDED? NO

CALLER REMARKS: KANTI TECHNOLOGY REPORT INDICATED BTEX CONTAMINATION

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was RMC 08/10/98: JDC REVIEWED SAMPLE RESULTS FOR GW AND FOUND MINOR VIOLATION TO STARS. WILL CONTACT RP AND ADVISE. 08/12/98: JDC SENT LETTER TO OPERATOR OUTLINING CLEANUP REQUIREMENTS. TEST RESULTS ARE AFTER TANK PULL, NOT PRELIMINARY AS ORIGINALLY THOUGHT. 08/31/98: JDC TELECON WITH MARSAHALL KIMMONS AND ADVISED THAT SITE WOULD BE INACTIVE IF RP IS SATISFIED WITH SAME. 09/10/98: JDC REVIEWED SAMPLE ARE RESULTS AND FOUND MINOR VIOLATIONS TO STARS, WILL MAKE INACTIVE WHEN SOIL DISPOSAL IS COMPLETE. 07/29/99: RMC ASSUMED SITE RESPONSIBILITY, JDC NO LONGER WORKS FOR DEPARTMENT, RMC REVIEWED FILE, FOUND NO DISPOSAL DOCUMENTS, CALLED RP LEFT MESSAGE, CALL DUE 8/10 08/02/99: RMC TELECON DAN BENTIBOGLIA OF BSA, RP CAN T RECALL TANK SITE, FILE IS ALSO UNCLEAR AS TO WHICH TANK AND LOCATION, RMC FAXED COPY OF FILE, HE WILL LOOK INTO, CALL BACK DUE 8/30 08/03/99: RMC TELECON MARTY BORYSZAK OF BSA, RMC INQUIRED AS TO CONDITIONS AT TIME OF REMOVAL, BORYSZAK ADVISED THAT THE ONLY INDICATION OF A PROBLEM CAME FROM EXCAVATION SAMLE RESULTS, NO SOIL WAS STOCKPILED, AND THAT SOILS EXCAVATED WERE USED AS BACKFILL, NO FURTHER ACTION REQUIRED, INACTIVE

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SWL

SEARCH ID: 19 **DIST/DIR:** 0.38 NW **ELEVATION:** **MAP ID:** 19

NAME: SQUAW ISLAND SLF
ADDRESS:
BUFFALO NY 14202
ERIE
CONTACT:
SOURCE: NY DEC

REV: 1/11/12
ID1: 9-15T07
ID2: 15T07
STATUS: INACTIVE
PHONE:

SITE INFORMATION

OWNER INFORMATION

NAME:
TYPE:
ADDRESS: ,
EMAIL:
PHONE:

CONTACT INFORMATION

NAME:
ADDRESS:

,
EMAIL:
PHONE:

ACTIVE:NO
ACTIVITY DESC:TRANSFER STATION - REGULATED
REG STATUS:NONE
WASTE TYPE:
ACTIVITY NUMBER:15T07
AUTH NUMBER:NONE
AUTH ISSUE DATE:
EXPIRATION DATE:
EAST COORDINATE:
NORTH COORDINATE:
ACCURACY:

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

SWL

SEARCH ID: 20 **DIST/DIR:** 0.38 NW **ELEVATION:** **MAP ID:** 19

NAME: SQUAW ISLAND SLF
ADDRESS: NIAGARA ST
BUFFALO NY 14202
ERIE
CONTACT:
SOURCE: NY DEC

REV: 1/11/12
ID1: 9-15Y17
ID2: 15Y17
STATUS: INACTIVE
PHONE:

SITE INFORMATION

OWNER INFORMATION

NAME:
TYPE:
ADDRESS: ,
EMAIL:
PHONE:

CONTACT INFORMATION

NAME:
ADDRESS:

,
EMAIL:
PHONE:

ACTIVE:NO
ACTIVITY DESC:COMPOSTING - YARD WASTE
REG STATUS:NONE
WASTE TYPE:
ACTIVITY NUMBER:15Y17
AUTH NUMBER:NONE
AUTH ISSUE DATE:
EXPIRATION DATE:
EAST COORDINATE:
NORTH COORDINATE:
ACCURACY:

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID:	42	**DIST/DIR:**	0.41 SW	**ELEVATION:**	638	**MAP ID:**	20

NAME:	MASSACHUSETTS PUMPING ST	**REV:**	4/5/12
ADDRESS:	MASSACHUSETTS AVE	**ID1:**	9711598
	BUFFALO NY	**ID2:**	64583
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 1/9/1998
DATE REPORTED: 1/9/1998
CLOSED DATE: 6/1/1998
INSP DATE: 5/7/1998
MATERIAL SPILLED: #2 FUEL OILAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: INSTITUTIONAL, EDUCATIONAL, GOV., OTHER
REPORTED BY: OTHER
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: SACALAND
SPILL CONTACT:
TELEPHONE:

SPILLER: CITY OF BUFFALO
DAVID LAWLER
ADDRESS: 2001 CITY HALL
BUFFALO, NY 14202-
TELEPHONE:

REPORTED BY:OTHER

LAST DEC UPDATE: 6/2/1998
CLEAN UP MEET STANDARDS? NO
PENALTY RECOMMENDED? NO

CALLER REMARKS: 3 SOIL BORING TAKEN BY MALCOLM PIRNIE TO PREPARE FOR CONTRACT BID. ONE BORING SHOWS 1 RESULT SLIGHTLY ABOVE STARS. CONSULTANT WOULF LIKE TO CLOSE TANK IN PLACE BECAUSE OF PROXIMITY TO THRUWAY

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was SAC 1/14/98:SAC TELECON TOM LACHCIK,MALCOLM PIRNIE-REQUESTED BORING LOG AND SITE INSPECTION,MEETING SET UP FOR 1/20/98. 1/16/98:TOM LACHCIK,MALCOLM PINRIE, LEFT MESSAGE TO CANCEL MEETING,WILL RESCHEDULE. 3/2/98:SAC TELECON TOM LACHCIK,MALCOLM PIRNIE,MR.LACHCIK CAN T MEET FOR A COUPLE OF WEEKS,SO HE WILL CALL BACK ONCE DATE CAN BE SET UP. 3/19/98:SAC MET W/TOM LACHCIK,MALCOLM PIRNIE,ON-SITE TO GET A BETTER IDEA WHERE TANK IS LOCATED,TANK END IS VERY NEAR THE I190 THEREFORE IT WILL BE CLOSED IN PLACE,RECEIVED BORING LOG, PETROLEUM ODORS NOTED IN TWO OF THE THREE BORINGS,ANALYTICAL RESULTS RECEIVED1/9/98 WHEN FILE WAS OPENED EXCEEDED STARS ON A LOW LEVEL FOR ONE BORING AND ONLY ONE PARAMETER,THEREFORE I STATUS CAN BE GIVEN ONCE TANK HAS BEEN CLOSED. 3/22/98:DRAFTED LETTER REQUIRING NOTIFICATION WHEN TANK WILL BE CLOSED. 5/7/98:SAC INSPECT SITE,TANK WAS EMPTIED AND CLEANED,5 GALL BUCKET OF CONTAMINATED SOIL WAS FOUND AROUND FILL PORT,THIS WILL BE DISPOSED OF W/SLUDGE AND TANK CLEANINGS,CONTRACTOR WILL FILL IN THE AFTERNOON.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID: 44 **DIST/DIR:** 0.42 SE **ELEVATION:** 638 **MAP ID:** 21

NAME:	PEACE BRIDGE SHOP	**REV:**	4/5/12
ADDRESS:	VERMONT ST	**ID1:**	8705888
	BUFFALO NY	**ID2:**	83861
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 10/13/1987DATE REPORTED: 10/13/1987
CLOSED DATE: 1/4/1988INSP DATE:

MATERIAL SPILLED: DIESELAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: INSTITUTIONAL, EDUCATIONAL, GOV., OTHER
REPORTED BY: RESPONSIBLE PARTY
CALLER REMARKS: CONTACTOR NICHTER CONST. FOUND CONTAMINATED SOIL WHILE REMOVING TANKS

REGION:
UST TRUST? YES

SPILL INVESTIGATOR: MXFRANKS
SPILL CONTACT:
TELEPHONE:

SPILLER: PEACE BRIDGE AUTHORITY

ADDRESS: PEACE BRIDGE PLAZA
BUFFALO, NY 14213

TELEPHONE:

REPORTED BY:RESPONSIBLE PARTY

LAST DEC UPDATE: 1/5/1988
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was MF / / : SOIL TO BE STOCKPILED AND TESTED TO DETERMINE ULTIMATE DISPOSAL. / / : 11/06/87 MF TELCON DIANE ROSSEAU NOT IN;11/09/87 MF TELCON HUGH WILLIS (PEACE BRIDGE) NOT IN. / / : 11/09/87 MF TELCON DIANE ROSSEAU. EP TOX FLASH POINT & DISPOSAL RECEIPT TO BE SENT IN TO DEC. / / : MF RECEIVED SOIL DISPOSAL RECEIPTS 01/04/88, SATISFACTORY, SITE COMPLETE. / / : MF 12/10/87 TELECON DIANE ROSSEAU, SHE WILL SEND THE RECEIPTS (FLASHPOINT,DISPOSAL) AS SOON AS SHE GETS THEM.

THERE MAYBE MORE DEC REMARKS AVAILBLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID: 33 **DIST/DIR:** 0.42 SE **ELEVATION:** 629 **MAP ID:** 22

NAME:	CARUSO S SERVICE	**REV:**	4/5/12
ADDRESS:	617 WEST AVE	**ID1:**	8708233
	BUFFALO NY	**ID2:**	303175
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 12/22/1987DATE REPORTED: 12/22/1987
CLOSED DATE: 4/6/1989INSP DATE: 4/6/1989

MATERIAL SPILLED: GASOLINEAMOUNT SPILLED: 25 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 24 G

CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: GASOLINE STATION
REPORTED BY: TANK TESTER
CALLER REMARKS: TANK TEST FAILURE. TANK EMPTIED.

REGION:
UST TRUST? YES

SPILL INVESTIGATOR: MXFRANKS
SPILL CONTACT:
TELEPHONE:

SPILLER: SIMON OIL

ADDRESS: 1316 MAIN STREET
NIAGARA FALLS, NY 14301

TELEPHONE:

REPORTED BY:TANK TESTER

LAST DEC UPDATE: 5/3/1989
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was MF / / : MF TO INVESTIGATE. / / : MF 12/23/87 TELECON KEN KIMMONS, HE WANTS TO FILL TANK IN PLACE AS IT IS NEAR FOUNDATION. TOLD HIM NO;SITE VISIT, NO TREAR FOUNDATION. / / : MF 12/30/87 SITE VISIT TANK REMOVAL (MARSHALL KIMMONS CONTRACTOR) HOLES IN TANK, CONTAMINATED SOIL, BAD VENT LINE NOTICED ON ANOTHER TANK. / / : MF 1/5/88 SITE VISIT, CONTAMINATED SOIL ON SITE, CHECKED MONITORING WELL, NO PRODUCT. / / : MF 1/25/88 SITE VISIT, CONTAMINATED SOIL STILL ON SITE, MONITORING WELL GONE.;MF 1/26/88 LETTER SENT TO KEN KIMMONS TO INSTALL WELL. 02/23/88: MF SITE VISIT/JOE CARUSO, CONTAMINATED SOIL REMOVED FROM SITE. MONITOR NOT INSTALLED. 02/24/88: MF TELECON KEN KIMMONS &DICK ALPERT, TOLD THEM THESE TANKS ARE NOT REGISTERED. DICK WILL GET BACK TO ME TOMORROW. 03/23/88: MF SITE VISIT, CHECKED M.W. NO PRODUCT/SHEEN. 06/03/88: MF SITE VISIT, CHECKED M.W., NO PRODUCT/SHEEN, LIQUID CLEAR. 09/14/88: MF SITE VISIT, CHECKED M.W., NO PRODUCT/SHEEN/ODOR, LIQUID CLOUDY. 12/28/88: MF SITE VISIT, CHECKED M.W., NO PRODUCT/SHEEN/ODOR, LIQUID CLEAR. 04/06/89: MF SITE VISIT, CHECKED MW, NO PRODUCT/SHEEN/ODOR. WELL CHECKED 5 TIMES, NOTHING DETECTED. NO FUTHER ACTION NECESSARY BY SPILLS.

THERE MAYBE MORE DEC REMARKS AVAILBLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID:	34	DIST/DIR:	0.42 SE	ELEVATION:	629	MAP ID:	22

NAME:	CARUSO SUNOCO	**REV:**	4/5/12
ADDRESS:	617 WEST AVE	**ID1:**	8908639
	BUFFALO NY	**ID2:**	303176
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 11/28/1989DATE REPORTED: 12/1/1989
CLOSED DATE: 12/12/1989INSP DATE:

MATERIAL SPILLED: GASOLINEAMOUNT SPILLED: 10 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: GASOLINE STATION
REPORTED BY: RESPONSIBLE PARTY
CALLER REMARKS: A 3K & A 4K UST FAILED A TANK TEST.

REGION:
UST TRUST? YES

SPILL INVESTIGATOR: MXFRANKS
SPILL CONTACT:
TELEPHONE:

SPILLER: SIMON OIL

ADDRESS: 1316 MAIN STREET
NIAGARA FALLS, NY 14301

TELEPHONE:

REPORTED BY:RESPONSIBLE PARTY

LAST DEC UPDATE: 12/15/1989
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was MF 12/01/89: MF TELECON PETE BARBER, SIMON OIL WILL NOT RETEST. PRODUCT EMPTIED & LETTER SENT. 12/06/89: MF 12/6/89 MARSHALL CALLED, TANKS WILL BE REMOVED TODAY. TELECON SAM CARUSO, ASKED HIM TO CALL ME WHEN MARSHALL GETS ON SITE. 12/07/89: MF 12/7/89 TELECON CARUSO, TANKS REMOVED YESTERDAY (THEY DID NOT CALL ME). TELECON BUFF F.D., NO CONTAMINATION NOTICED. 12/12/89: MF RECEIVED LETTER FROM KEN KIMMINS STATING NO CONTAMINATION NOTICED. NO FUTHER ACTION NECESSARY BY SPILLS.

THERE MAYBE MORE DEC REMARKS AVAILBLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID: 41 **DIST/DIR:** 0.45 SE **ELEVATION:** 640 **MAP ID:** 23

NAME:	EPISCOPAL FACILITY	**REV:**	4/5/12
ADDRESS:	24 RHODE ISLAND ST	**ID1:**	0806256
	BUFFALO NY 14213	**ID2:**	403527
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 8/22/2008
DATE REPORTED: 8/22/2008
CLOSED DATE: 12/15/2008
INSP DATE: 10/15/2008
CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: INSTITUTIONAL, EDUCATIONAL, GOV., OTHER
REPORTED BY: TANK TESTER
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: MXFRANKS
SPILL CONTACT: DAN KOBEL
TELEPHONE: (716) 818-5057

SPILLER: CANTERBURY WOODS
DAN KOBEL
ADDRESS: 705 RENAISSANCE DR
WILLIAMSVILLE, NY 14221
TELEPHONE:

REPORTED BY:TANK TESTER

LAST DEC UPDATE: 12/15/2008
CLEAN UP MEET STANDARDS? NO
PENALTY RECOMMENDED? NO

CALLER REMARKS:

DEC REMARKS:
TT FAILURE, ISOLATED & LINES FAILED 09/04/08: MF T/C DAN KOBEL, EXPLAINED THAT LINES HAVE TO BE TESTED TO SEE WHICH ONE FAILED. DEPENDING ON WHICH LINE FAILED, ADDITIONAL WORK MAY BE REQUIRED. LETTER SENT. SCHEDULE BY 9/19/08. 09/19/08: MF LETTER FROM RP, BEING THAT THE 10K UST IS TOO CLOSE TO THE BUILDING & REMOVAL MIGHT COMPERMISE THE FOUNDATION THEY WILL HAVE ELMWOOD TANK FILL IT IN PLACE. SAMPLES WILL BE TAKEN UNDER THE TANK. NO DATE GIVEN. 10/15/08: MF S/I/DAN KOBEL, ALEX, CANTERBURY WOODS/MIKE CLANCY, ELMWOOD TANK. TOP OF TANK UNCOVERED, SOME CONTAMINATED SOIL REMOVED, STAGED ON PLASTIC, COVERED. THEY WILL CLEAN TANK 10/17/08 & SAMPLE THRU HOLE IN THE BOTTOM. TANK IF NEXT TO GAS SERVICE EQUIPMENT & AIR CONDITION ROOM. 10/23/08: MF RECIVED FAX OF WATER SAMPLE RESULTS. SAMPLE TAKEN THRU HOLE DRILLED IN THE TANK BOTTOM. IN PPB TOTAL 8260 - 144 8270 - 33 11/24/08: MF LETTER TO RP FOR FINAL REPORT STATING WHY TANK COULD NOT BE REMOVED, DUE 12/15/08. 12/10/08: MF T/C DAN KOBEL, TOLD HIM I NEED LETTER STATING WHY TANK HAD TO BE FILLED IN PLACE. 12/11/08: MF RECEIVED FAX FROM DAN KOWAL, EPISCOPAL FACILITY STATING TANK HAD TO BE FILLED IN PLACE DO TO PROXIMITY TO FOUNDATION & GAS LINE. 12/12/08: MF RECEIVED PAPERWORK FOR CONCRETE FILL FOR TANK. SPILL I DO TO EXCEEDENCES 8260 144 PPB TOTAL. LETTER SENT.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID: 40 **DIST/DIR:** 0.46 SE **ELEVATION:** 640 **MAP ID:** 24

NAME:	EPISCOPAL CHURCH	**REV:**	4/5/12
ADDRESS:	34 RHODE ISLAND ST	**ID1:**	9300635
	BUFFALO NY	**ID2:**	202827
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 4/13/1993
DATE REPORTED: 4/13/1993
CLOSED DATE: 4/20/1993
INSP DATE:
MATERIAL SPILLED: #2 FUEL OILAMOUNT SPILLED: 0 L
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 L

RESOURCE AFFECTED
SOIL:NOAIR:NO
INDOOR AIR:NOGROUNDWATER:YES
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK TEST FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: INSTITUTIONAL, EDUCATIONAL, GOV., OTHER
REPORTED BY: TANK TESTER
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: RMCROSSE
SPILL CONTACT:
TELEPHONE:

SPILLER: EPICOPAL CHURCH HOME

ADDRESS: 34 RODE ISLAND DRIVE
BUFFALO, NY 14213
TELEPHONE:

REPORTED BY:TANK TESTER

LAST DEC UPDATE: 3/18/2002
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: TANK TEST FAILURE. RETEST SCHEDULED FOR 4/15/93.

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was RMC 04/20/93: RMC/CORNELL CERTIFIED TESTING/ PHONE TANK PASSED RETEST, RECEIVED REPORT...CLOSE OUT.

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

LUST

SEARCH ID:	39	**DIST/DIR:**	0.50 NE	**ELEVATION:**	630	**MAP ID:**	25

NAME:	DEMOLITION PROJECT	**REV:**	4/5/12
ADDRESS:	ARKANSAS ST & GRANT ST	**ID1:**	9975741
	BUFFALO NY	**ID2:**	267759
	ERIE	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	
SOURCE:	NY DEC		

SITE INFORMATION

SPILL DATE: 3/23/2000
DATE REPORTED: 3/23/2000
CLOSED DATE: 6/29/2000
INSP DATE: 3/30/2000
MATERIAL SPILLED: UNKNOWN PETROLEUMAMOUNT SPILLED: 0 G
MATERIAL CLASS: PETROLEUMAMOUNT RECOVERED: 0 G

RESOURCE AFFECTED
SOIL:YESAIR:NO
INDOOR AIR:NOGROUNDWATER:NO
SURFACE WATER:NODRINKING WATER:NO
SEWER:NOIMPERVIOUS SURFACE:NO
SUBWAY:NOUNDERGROUND UTILITIES:NO

CAUSE OF SPILL: TANK FAILURE
WATERBODY AFFECTED:
SOURCE OF SPILL: COMMERCIAL/INDUSTRIAL
REPORTED BY: OTHER
REGION:
UST TRUST? NO

SPILL INVESTIGATOR: JFOTTO
SPILL CONTACT:
TELEPHONE:

SPILLER: BENDERSON DEVELOPMENT
IVAN LOZINA
ADDRESS: 570 DELAWARE AVENUE
BUFFALO, NY 14202-
TELEPHONE:

REPORTED BY:OTHER

LAST DEC UPDATE: 8/11/2000
CLEAN UP MEET STANDARDS? YES
PENALTY RECOMMENDED? NO

CALLER REMARKS: DISCOVERED SMALL ABANDONED TANK (100-200 GAL.)TANK DURING CONSTRUCTION PROJECT. CONTAMINATED SOIL ENCOUNTERED; BELIEVED TO HAVE CONTAINED CHEMICAL USED IN DRY CLEANING.

DEC REMARKS:
Prior to Sept, 2004 data translation this spill Lead_DEC Field was JFO 03/23/00: JFO SITE INSPECTION, MET WITH ROCKY OF LEBIS. TANK (RIVETED NOT INTACT) IS ABOUT 75 GALLONS AND IS SETTING IN A SMALL POOL OF WATER WITH A SLIGHT SHEEN. STRONG SOLVENT ODOR. THEY WILL REMOVE TANK TOMORROW. THEY WILL DIG TO CLEAN AND PLACE CONTAMINATED SOIL ON PLASTIC. SAMPLES WILL BE COLLECTED FROM THE PIT AND THE SOIL PILE. 03/30/00: JFO TELECON FROM ROCKY. APPROX FIVE LOADS OF SOIL AND ONE DRUM FOR DISPOSAL. SIDEWALLS AND BOTTOM WERE ANALYZED, NON-DETECT. RECEIPTS AND ANALYTICAL TO FOLLOW. 03/30/00: JFO SITE INSPECTION, HOLE LOOKS GOOD. 04/04/00: JFO RECEIVED ANALYTICAL FOR THE PIT AND DISPOSAL. DISPOSAL RECEIPTS TO FOLLOW. 06/16/00: JFO TELECON TO ROCKY FOR DISPOSAL RECEIPTS. HE WILL SEND THEM IN. 06/29/00: JFO RECEIVED THE DISPOSAL RECEIPTS FOR 98.46 TONS OF SOIL. NO FURTHER ACTION REQUIRED. CLOSED

THERE MAYBE MORE DEC REMARKS AVAILABLE, PLEASE CONTACT THE NY DEC (518) 402-9549 FOR FURTHER INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

STATE

SEARCH ID: 9 **DIST/DIR:** 0.68 NE **ELEVATION:** 597 **MAP ID:** 26

NAME: CHEMCORE
ADDRESS: 1382 NIAGARA ST
BUFFALO NY 14213
ERIE
CONTACT:
SOURCE: NYSDEC

REV: 4/5/12
ID1: 915176
ID2: 57566.00
STATUS:
PHONE:

SITE INFORMATION

REGION: 9SIZE (ACRES): .460

SITE TYPE:
OPEN DUMP: NOSTRUCTURE: YES
LAGOON: NOLANDFILL: NO
POND: NO

SITE OWNER/OPERATOR INFORMATION:

NAME:
COMPANY:CHEMICAL SALES CORPORATION
ADDRESS: 1382 NIAGARA STREET
BUFFALO NY 14213
COUNTRY:UNITED STATES OF AMERICA

NAME:
COMPANY:CHEMICAL SALES CORPORATION
ADDRESS: C/O EDWARD ILARDO / 1 MAIN STREET
HAMBURG NY 14075
COUNTRY:UNITED STATES OF AMERICA

HAZARDOUS WASTE DISPOSAL PERIOD: 1920 TO 1996

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:
Contamination has been found in site soils and groundwater, under the building and outside of the building to the north. It has also been indicated that there is a hydraulic connection between the contaminated groundwater and Black Rock Channel. The remedial action has removed the contaminated soil and the on-site groundwater pump and treat system is in operation. This action has eliminated the migration of contaminants from the soil and the pump and treat system will remediate the groundwater over time. An edible oil substrate has been injected into the remediated portion of the site and groundwater pumping has been suspended for the remainder of 2010.

ASSESSMENT OF HEALTH PROBLEMS:
The site is fenced, thus limiting access. Most of the property is occupied by the building and parking areas cover the remainder of the property. Exposures via drinking water are not expected because nearby residences and businesses are served by public water.

DESCRIPTION:
ChemCore, Inc. is a two story, 39,000 sq./ft. warehouse/office building. The building s primary occupant(s) were ChemCore, Inc. which operated a chemical bulk sales operation until going bankrupt in 1998 and Crandall Filling Machine which was a tool making operation for the bottle filling industry until moving its operation in May 1999. The facility has been used for chemical storage and sales since approximately 1920. As part of the bankruptcy agreement ChemCore completed a Phase I, Environmental Assessment to determine the value of the facility as collateral. As a result of the recommendations a Phase II, Limited Site Evaluation was completed which included several soil borings. Toxicity Characteristic Leaching Procedure (TCLP) samples taken from these borings indicated the presence of hazardous waste. The hazardous waste as identified consisted of primarily, tetrachloroethene, 1,1,1-trichloroethane, and trichloroethene. A study completed by the Department verified soil contamination at depth under the facility and under parking areas directly to the north and south of the facility. Installation and sampling of monitoring wells has indicated that the groundwater under the facility is also contaminated. Water level measurements from these wells and from nearby Black Rock Channel suggests a hydraulic connection between the two. The site was determined to be eligible for implementation of an Remedial Investigation / Feasibility Study (RI/FS) under State Superfund. A consultant was selected in January 2001 and the RI/FS is complete. A Record of Decision (ROD) was issued in 2003 that includes complete demolition of the buildings, excavation of the highest contamination areas and a groundwater pump and treatment systems with a five year review. Included in the remedial effort is a pilot test of enhanced bioremediation of groundwater. The remedial design was completed in August 2005. The remedial construction is complete and the on-site pump and treat system is in operation. In 2010 the groundwater pumps were turned off to allow the bioremediation to be effective. Groundwater monitoring continues.

Environmental FirstSearch Descriptions

NPL: EPA NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money. A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.FINAL - Currently on the Final NPLPROPOSED - Proposed for NPL

NPL DELISTED: EPA NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.DELISTED - Deleted from the Final NPL

CERCLIS: EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.PART OF NPL- Site is part of NPL siteDELETED - Deleted from the Final NPLFINAL - Currently on the Final NPLNOT PROPOSED - Not on the NPLNOT VALID - Not Valid Site or IncidentPROPOSED - Proposed for NPLREMOVED - Removed from Proposed NPLSCAN PLAN - Pre-proposal SiteWITHDRAWN - Withdrawn

NFRAP: EPA COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.NFRAP – No Further Remedial Action PlanP - Site is part of NPL siteD - Deleted from the Final NPLF - Currently on the Final NPLN - Not on the NPLO - Not Valid Site or IncidentP - Proposed for NPLR - Removed from Proposed NPLS - Pre-proposal SiteW – Withdrawn

RCRA COR ACT: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: EPA RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: EPA/MA DEP/CT DEP RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM

GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.Facilities that generate or transport hazardous waste or meet other RCRA requirements.LGN - Large Quantity GeneratorsSGN - Small Quantity GeneratorsVGN – Conditionally Exempt Generator.Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities. CONNECTICUT HAZARDOUS WASTE MANIFEST – Database of all shipments of hazardous waste within, into or from Connecticut. The data includes date of shipment, transporter and TSD info, and material shipped and quantity. This data is appended to the details of existing generator records. MASSACHUSETTES HAZARDOUS WASTE GENERATOR – database of generators that are regulated under the MA DEP. VQN-MA = generates less than 220 pounds or 27 gallons per month of hazardous waste or waste oil.SQN-MA = generates 220 to 2,200 pounds or 27 to 270 gallons per month of waste oil.LQG-MA = generates greater than 2,200 lbs of hazardous waste or waste oil per month.

Fed Brownfield: EPA BROWNFIELD MANAGEMENT SYSTEM (BMS) - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs./n CLEANUPS IN MY COMMUNITY (subset) - Sites, facilities and properties that have been contaminated by hazardous materials and are being, or have been, cleaned up under EPA's brownfield's program.

ERNS: EPA/NRC EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: DOI/BIA INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation.BUREAU OF INDIAN AFFIARS CONTACT - Regional contact information for the Bureau of Indian Affairs offices.

State/Tribal Sites: NYSDEC ENVIRONMENTAL SITE REMEDIATION DATABASE - database of sites being remediated under a DER remedial program/s (i.e. State Superfund, Brownfield Cleanup, etc.). This database also includes the Registry of Institutional and Engineering Controls in New York State.REGISTRY OF INACTIVE HAZARDOUSE WASTE DISPOSAL SITES – HAZARDOUS SUBSTANCE SITE STUDY - (STATIC) This study was done in 1998 and was prepared by the NY DEC, Hazardous Substances Waste Disposal Task Force In consultation with N.Y. Department of Health

State Spills 90: NYSDEC SPILL INCIDENTS DATABASE - database of chemical and petroleum spill incidents that occurred since 1990.

State/Tribal SWL: NYSDEC ACTIVE FACILITIES REGISTRY - database of solid waste landfill facilities. The data includes location, waste type, owner and permit number.

State/Tribal LUST: NYSDEC SPILL INCIDENTS DATABASE SUBSET - database of chemical and petroleum spill incidents where the cause was a tank test failure or tank failure

State/Tribal UST/AST: NYSDEC DATABASE OF PETROLEUM BULK STROAGE, MAJOR OIL STORAGE (MOSF), AND CHEMICAL BULK STORAGE (CBS) FACILITIES - database of petroleum or chemical storage facilities. The data includes status, tank type, capacity and contents. The data also includes Nassau County Department of Health's PBS Tanks Nassau County Fire Marshall's PBS TanksSuffolk County Department of Health Services PBS Tanks Cortland County Health Department PBS Tanks Rockland County Department of Health PBS Tanks Westchester County Department of Health PBS Tanks.

State/Tribal EC: NYSDEC REGISTRY OF INSTITUTIONAL AND ENGINEERING CONTROLS Subset - database of sites from the Registry that have Engineering Controls.

State/Tribal IC: NYSDEC/NYDOC REGISTRY OF INSTITUTIONAL AND ENGINEERING CONTROLS Subset - database of sites from the Registry that have Institutional Controls.

State/Tribal VCP: NYSDEC VOLUNTARY CLEANUP PROGRAM - static database of voluntary clean up sites. The Brownfield Cleanup program has replaced the Voluntary Cleanup Program.

State/Tribal Brownfields: NYSDEC BROWNFIELD - database of old brownfield programs, brownfield cleanup programs, environmental restoration projects.

Federal IC / EC: EPA FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS- Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated. RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES (RCRA) – RCRA site the have institutional controls.

Environmental FirstSearch Database Sources

NPL: EPA Environmental Protection Agency

Updated quarterly

NPL DELISTED: EPA Environmental Protection Agency

Updated quarterly

CERCLIS: EPA Environmental Protection Agency

Updated quarterly

NFRAP: EPA Environmental Protection Agency.

Updated quarterly

RCRA COR ACT: EPA Environmental Protection Agency.

Updated quarterly

RCRA TSD: EPA Environmental Protection Agency.

Updated quarterly

RCRA GEN: EPA/MA DEP/CT DEP Environmental Protection Agency, Massachusetts Department of Environmental Protection, Connecticut Department of Environmental Protection

Updated quarterly

Fed Brownfield: EPA Environmental Protection Agency

Updated quarterly

ERNS: EPA/NRC Environmental Protection AgencyNational Response Center.

Updated annually

Tribal Lands: DOI/BIA United States Department of the InteriorBureau of Indian Affairs

Updated annually

State/Tribal Sites: NYSDEC New York Department of Environmental Remediation
New York State Department of Environmental Conservation
New York Department of Health

Updated quarterly

State Spills 90: NYSDEC New York State Department of Environmental Conservation

Updated quarterly

State/Tribal SWL: NYSDEC New York State Department of Environmental Conservation

Updated annually

State/Tribal LUST: NYSDEC New York State Department of Environmental Conservation

Updated quarterly

State/Tribal UST/AST: NYSDEC New York State Department of Environmental ConservationNassau County Department of Health
Nassau County Fire Marshal
Cortland County Health Department
Rockland County Department of Health
Westchester County Department of Health

Updated quarterly

State/Tribal EC: NYSDEC New York State Department of Environmental Conservation

Updated quarterly

State/Tribal IC: NYSDEC/NYDOC New York State Department of Environmental ConservationNew York Department of City Planning

Updated quarterly

State/Tribal VCP: NYSDEC New York State Department of Environmental Conservation

Updated quarterly

State/Tribal Brownfields: NYSDEC New York State Department of Environmental Conservation

Updated quarterly

Federal IC / EC: EPA Environmental Protection Agency

Updated quarterly

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: 1055 NIAGARA ST
BUFFALO, NY 14213

JOB: 0136-012-004

Street Name	Dist/Dir	Street Name	Dist/Dir
Albany St	0.07 NE		
Arkansas St	0.21 NE		
Barton St	0.25 NE		
Bird Island Pier	0.17 NW		
Busti Ave	0.16 SW		
California St	0.16 NE		
Fargo Ave	0.04 SE		
Gelston St	0.23 NE		
Gull St	0.18 NW		
Haggart Aly	0.18 NW		
Hampshire St	0.17 NE		
I 190	0.08 SW		
NIAGARA ST	0.00--		
Plymouth Ave	0.19 NE		
Robert Rich Way	0.22 NW		
School St	0.09 SE		
State Hwy 266	0.00--		
State Hwys Thruway Niagara Sec	0.08 NW		
W Ferry St	0.22 NW		

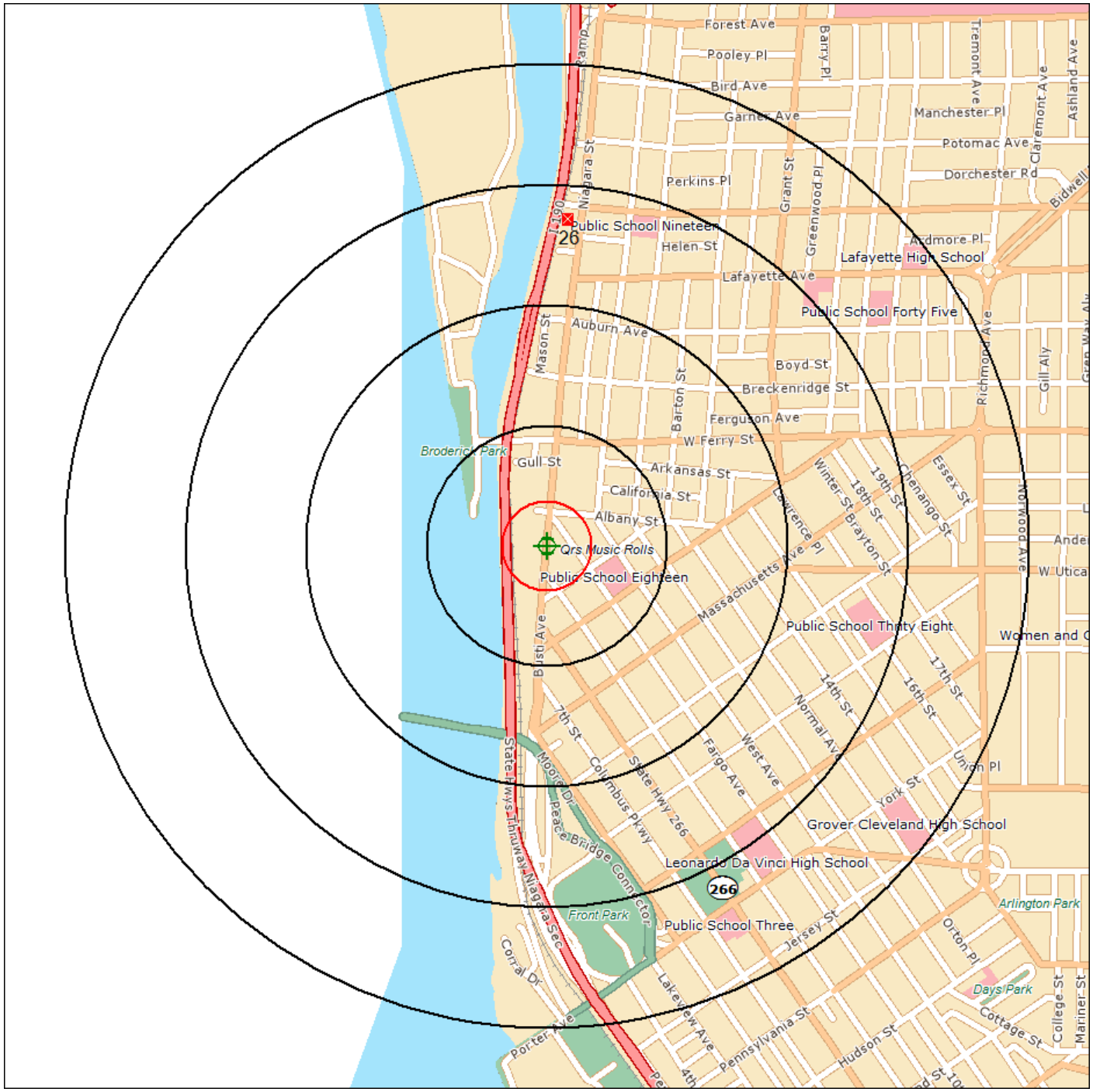
Environmental FirstSearch

1 Mile Radius

ASTM Map: NPL, RCRACOR, STATE Sites

FIRSTSEARCH

1055 NIAGARA ST, BUFFALO, NY 14213



Source: Tele Atlas

Target Site (Latitude: 42.912005 Longitude: -78.899804) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.5 Mile Radius

ASTM Map: CERCLIS, RCRATSD, LUST, SWL

FIRSTSEARCH

1055 NIAGARA ST, BUFFALO, NY 14213

Source: Tele Atlas

Target Site (Latitude: 42.912005 Longitude: -78.899804) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

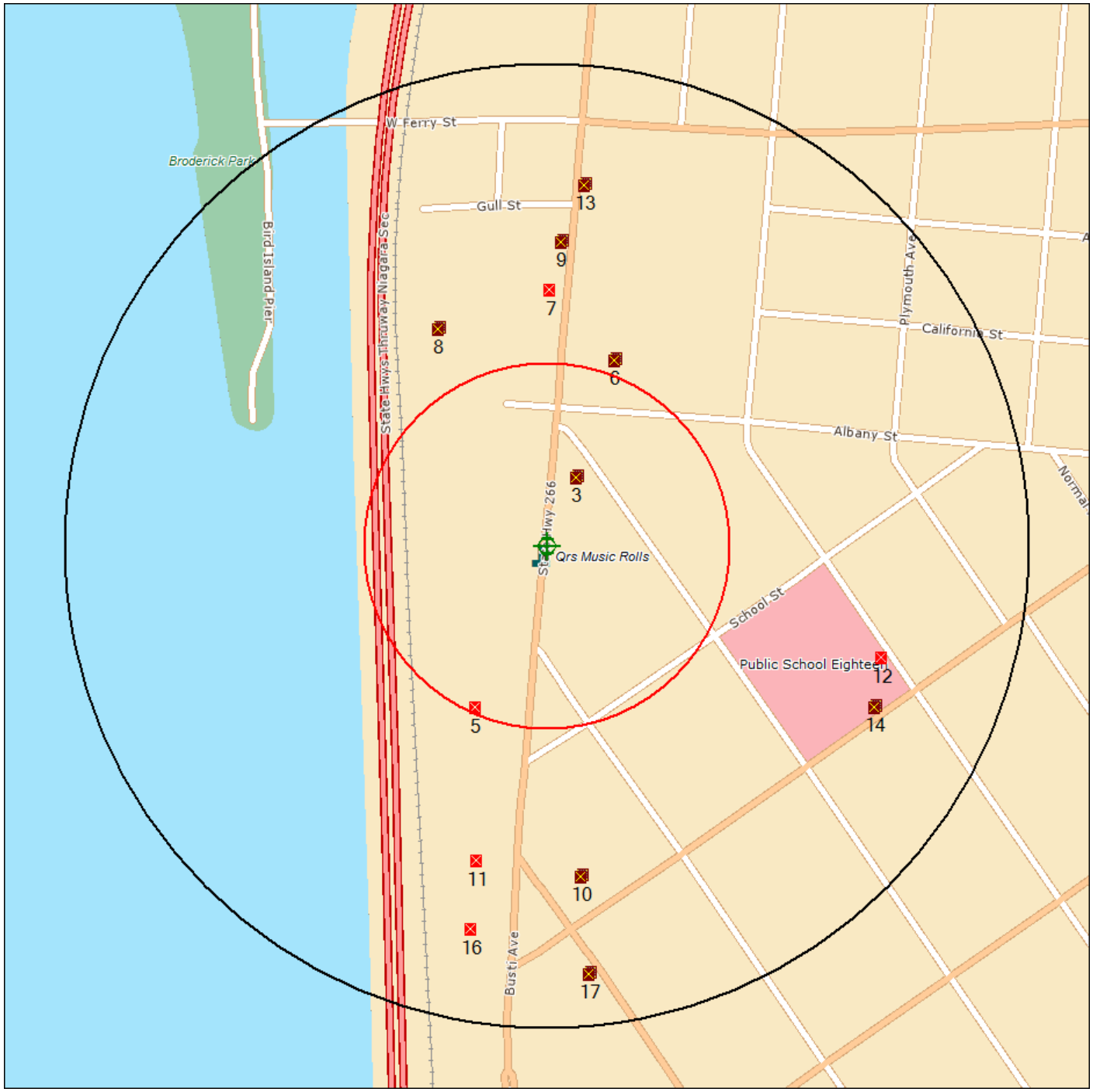
Environmental FirstSearch

.25 Mile Radius

ASTM Map: RCRAGEN, ERNS, UST, FED IC/EC, METH LABS

FIRSTSEARCH

1055 NIAGARA ST, BUFFALO, NY 14213



Source: Tele Atlas

Target Site (Latitude: 42.912005 Longitude: -78.899804) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

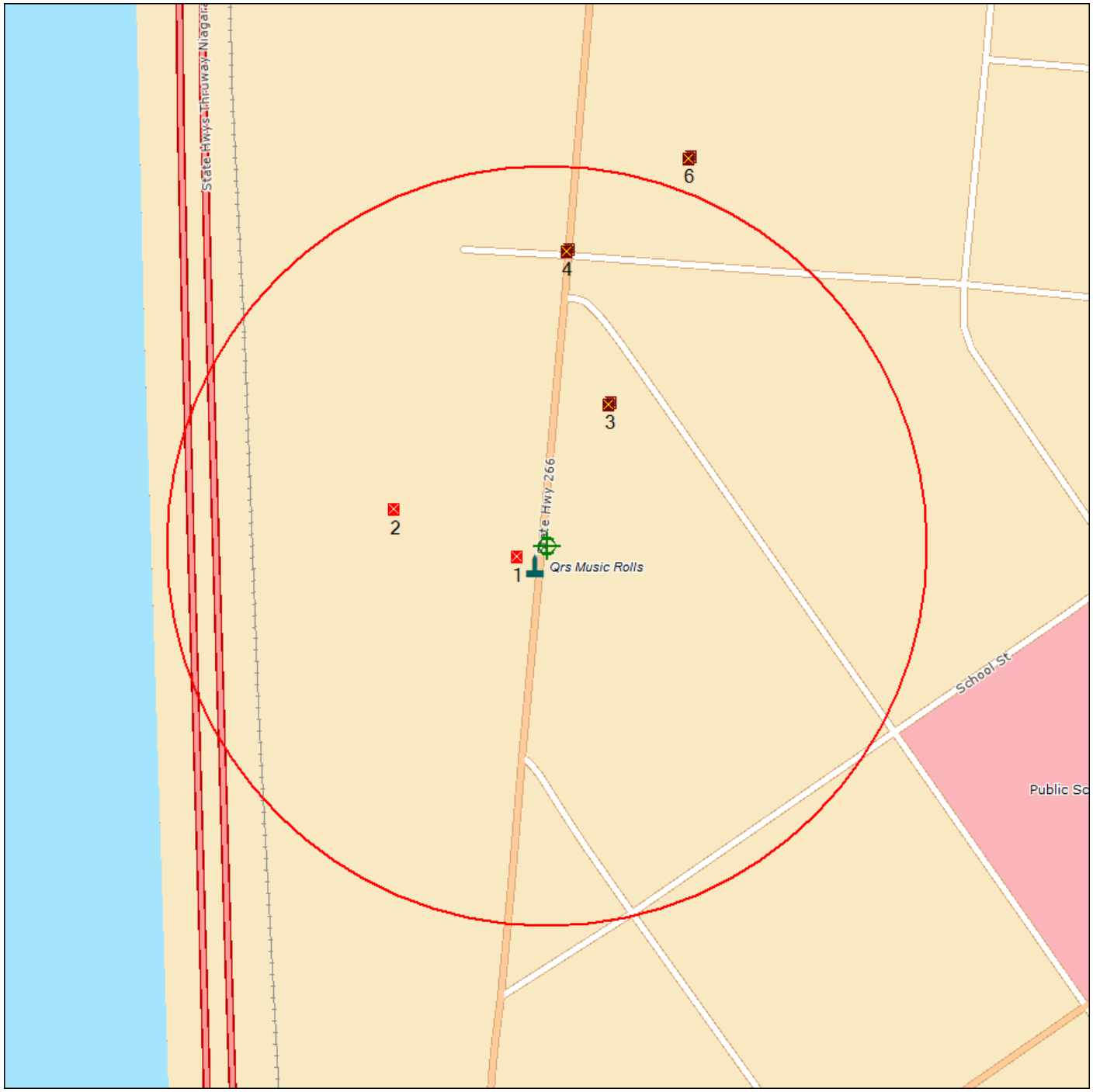
Environmental FirstSearch

.12 Mile Radius

Non-ASTM Map: Spills 90

FIRSTSEARCH

1055 NIAGARA ST, BUFFALO, NY 14213



Source: Tele Atlas

Target Site (Latitude: 42.912005 Longitude: -78.899804) .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

National Historic Sites and Landmark Sites .....

Black Rings Represent 1/4 Mile Radius; Red Ring Represents 500 ft. Radius

APPENDIX H

ENVIRONMENTAL REGULATORY AGENCY INFORMATION

NYSDEC SPILL REPORT FORM

DEC REGION: 9 **SPILL NUMBER:** 9200952

SPILL NAME: AL'S LEASING **DEC LEAD:** SACALAND

SPILL DATE: 04/24/1992 **SPILL TIME:** 10:45 am

CALL RECEIVED DATE: 04/24/1992 **RECEIVED TIME:** 10:50 am

SPILL LOCATION

PLACE: AL'S LEASING **COUNTY:** Erie

STREET: 1050 NIAGARA STREET **TOWN/CITY:** Buffalo (c)

COMMUNITY: BUFFALO

CONTACT: **CONTACT PHONE:**

CONT. FACTOR: Traffic Accident **SPILL REPORTED BY:** Fire Department

FACILITY TYPE: Commercial Vehicle **WATERBODY:**

CALLER REMARKS:

DIESEL SPILLED FROM TRUCK ONTO STREET

MATERIAL	CLASS	SPILLED	RECOVERED	RESOURCES AFFECTED
Diesel	Petroleum	50 G	50 G	SW,

POTENTIAL SPILLERS

COMPANY	ADDRESS	CONTACT
AL'S LEASING	166 GRAND CENTRAL AVENUE ELMIRA HEIGHTS	(800) 759-9153

OTHER SPILLS / CLEANUPS / PBS AT SITE

SPILL NUMBER / PROGRAM NUMBER	CLOSE DATE	PROGRAM TYPE

Tank No.	Tank Size	Material	Cause	Source	Test Method	Leak Rate	Gross Failure

DEC REMARKS:

Prior to Sept, 2004 data translation this spill Lead_DEC Field was "SAC"
04/27/92: SAC INSPECT SITE,MET W/ DAN DOWD OF LAUGHLIN,ABSORBENTS APPLIED, CONTAMINATED MATERIAL TO BE STORED ONRIBCO PROPERTY IN FRONT OF WHERE SPILL OCCURRED,DISP. LETTER DRAFTED.

08/21/92: DISPOSAL RECEIPTS HAVE BEEN RECEIVED 8/21/92.

PIN **T & A** **COST CENTER**

CLASS: C3 **CLOSE DATE:** 08/21/1992 **MEETS STANDARDS:** True

Created On: 04/27/1992

Date Printed: 5/14/2012 Last Updated: 08/25/1992

New York State Department of Environmental Conservation
Office of General Counsel, Region 9
270 Michigan Avenue, Buffalo, New York 14203-2915
Phone: (716) 851-7190 • **Fax:** (716) 851-7296
Website: www.dec.ny.gov

Joe Martens
Commissioner

May 9, 2012

Mr. Jonathan G. Taylor
TurnKey Environmental Restoration, LLC
2558 Hamburg Turnpke, Suite 300
Buffalo, NY 14218

Dear Mr. Taylor:

This letter acknowledges receipt of your request dated 5/8/2012 for access to records relative to:

1050, 1054 and 1088 Niagara Street, Buffalo

Your request has been forwarded to the appropriate individual programs within DEC.

To assist you in obtaining information, many records can be immediately accessed through the Department's website www.dec.ny.gov. The following links provide information commonly requested of the Department:

- DEC Permit Application Data www.dec.ny.gov/cfmx/extapps/envapps
- Spills, Tanks and Remedial Site Database Search www.dec.ny.gov/chemical/8437.html
- Mapping Gateway www.dec.ny.gov/pubs/212.html

If your record request is for undeveloped property, the Department recommends using the Environmental Resource Mapper www.dec.ny.gov/animals/38801.html to determine the location of both freshwater wetlands regulated by the State of New York and New York State's classified streams and water bodies. If your request did not specify records on wetlands or other environmental resources, the Department search may not include information on environmental resources that are state protected.

Following the necessary file search, you will be contacted as to whether such records are in our custody. If all records are not provided because the records are excepted from disclosure, you will be notified of the reasons and of your right to appeal the determination.

Due to the large volume of requests we receive, you may expect a reply by 6/6/2012.

Sincerely,

Peter Grasso
Regional Enforcement Coordinator

May 8, 2012

FOIL Coordinator
New York State Department of
Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203

Re: Freedom of Information Act (FOIA) Request
1050-1088 Niagara Street
Buffalo, NY

Dear, Coordinator:

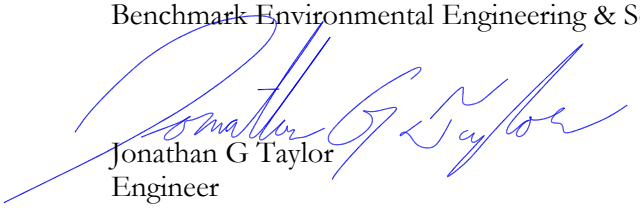
Our company is currently performing a Phase I Environmental Site Assessment (ESA) for the above referenced Site. The Site is comprised of three adjoining parcels two are currently vacant while one was formally used for manufacturing, owned by 9271 Group LLC, bordered by commercial and railroad properties, Albany Street to the north, commercial property to the south, Niagara Street to the east, and Railroad and Interstate 190 to the west. The property is located at the corner of Albany and Niagara Street, in a commercial developed area of the City of Buffalo, County of Erie, New York. We are providing the following information pursuant to the NYSDEC's requirements:

1050 Niagara Street, Buffalo, New York	
Assessed Acreage	1.08
SBL #	99.49-6-2
Owner	9271 Group LLC
Use	C - Manufacture
1088 Niagara Street, Buffalo, New York	
Assessed Acreage	1.59
SBL #	99.41-1-15
Owner	9271 Group LLC
Use	B – Com vac w/imp
1054 Niagara Street, Buffalo, New York	
Assessed Acreage	0.05
SBL #	99.49-6-10
Owner	9271 Group LLC
Use	B – Vacant comm
Maps	See attached

Under the provisions of the New York Freedom of Information Law, Article 6 of the Public Officers Law, We are requesting any and all records and information from all departments regarding any historical information pertaining to the parcels from 1050-1088 Niagara Street, Buffalo, NY.

Please inform us if any such files exist and how they may be reviewed. We appreciate your assistance in this matter. Please contact us at (716) 856-0599 if you have questions or require additional information.

Sincerely,
Benchmark Environmental Engineering & Science, PLLC



Jonathan G Taylor
Engineer
jtaylor@benchmarkturnkey.com

Erie County On-Line Mapping System

Legend

Streets and Highways

- Interstate
- Primary State Road
- Secondary State Road
- County Road
- Local Road

Parcels

1ft Color Orthos

- Red: Band_1
- Green: Band_2
- Blue: Band_3

2ft Color Orthos

- Red: Band_1
- Green: Band_2
- Blue: Band_3

1: 1,868

Notes

Enter Map Description

0.1 0 0.03 0.1 Miles

ERIE COUNTY, NEW YORK
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GEOGRAPHIC INFORMATION SERVICES

APPENDIX I

ENVIRONMENTAL QUESTIONNAIRE

Phase I Environmental Site Assessment
Environmental Questionnaire

1) Site Information

Site Name: 1050-1088 Niagara Street Site

Address: 1050-1088 Niagara Street, Buffalo, NY

Business Owner/Operator:

Title: Years in Position:

2) Size & Nature of Operation

Number of Buildings: Total Sq. Ft.: Property Size (acres):

Description of Operations:

Current Tenants:

What is the intended use of the subject property and/or structures located on the subject property?

3) What are the past uses/occupants of this facility/property & dates of occupancy?

1)
2)
3)

4) Utilities

Floor Drains:	Discharge Point:
Sump Pumps:	Discharge Point:
Storm Drains:	Discharge Point:
Other:	
On-site utilities:	
When was subject property connected to municipal sewer, if currently connected?	

5) List and describe the stormwater and wastewater discharges from the facility, including the sources, discharge points, and receiving waters or facility.

6) What is the nature of the wastes generated on-site (including hazardous/ regulated wastes, the disposal methods and waste disposal vendors)?

How is it stored on-site?

Who collects the waste?

7) Has the refuse service ever refuse to collect the waste?

☐ No ☐ Yes Explain:

8) Have there ever been any complaints or notices of violations about your facility?

☐ No ☐ Yes Nature:

9) What type of HVAC (Heating, Ventilation & Air Conditioning) system does this facility have (ex; natural gas, electric, heating oil, propane, etc. /forced air, radiant, HVAC, etc.)?

10) Was this facility ever heated with oil?

☐ No ☐ Yes When?

Method of Storage:

11) Was this facility ever a car repair shop, paint shop, or gas station?

☐ No ☐ Yes When?

Owner:

12) Are there any aboveground or underground storage tanks?

☐ No ☐ Yes

Tank ID#:

☐ UST ☐ AST Capacity: Product:

Location:

Notable Information:

Tank ID#:

☐ UST ☐ AST Capacity: Product:

Location:

Notable Information:

Tank ID#:

☐ UST ☐ AST Capacity: Product:

Location:

Notable Information:

Do the tanks comply with December 1998 EPA requirements (including overfill protection, monitoring systems, cathodic protection/double walled tank & piping, etc.)?

☐ No ☐ Yes

When were the tanks leak tested?

Are the tanks registered?

Leak detection devices in place? ☐ No ☐ Yes Type of system?

Monitoring reports available? ☐ No ☐ Yes Please supply reports.

13) Were there ever, to your knowledge, any underground or aboveground tanks located on-site previously?

☐ No ☐ Yes When?

Are closure reports available? ☐ No ☐ Yes

14) What type of chemicals are used in the operations (attach list)?
List hazardous waste/material storage locations:

15) List the environmental or safety reports to be submitted to regulatory agencies, the frequency of such reports, and the agencies to which they are submitted.

16) Do you have any federal, state, or local permits for the following?

SPDES:	☐ No	☐ Yes	ID #:
RCRA:	☐ No	☐ Yes	ID #:
EPA ID:	☐ No	☐ Yes	ID #:
Title V Air Emissions:	☐ No	☐ Yes	ID #:

17) Have you ever transported Hazardous waste from this site?
☐ No ☐ Yes manifests available? ☐ No ☐ Yes

18) Are PCBs or PCB-containing equipment present on the subject property, including light ballasts or other equipment?
☐ No ☐ Yes

Location:	Type of Equipment:
Location:	Type of Equipment:
Location:	Type of Equipment:

19) Are there any transformers located on-site?
☐ No ☐ Yes Are they utility owned? ☐ No ☐ Yes Utility Company or owner:

20) Do you treat or dispose of any waste materials on-site including incineration, neutralization, or landfilling?
☐ No ☐ Yes Type:

21) Do you store any hazardous/regulated wastes on-site for transfer to a disposal facility?
☐ No ☐ Yes Waste recipient: Permit #:

22) Have you ever been the subject of an enforcement action by any federal, date, or local agency regarding environmental issues?
☐ No ☐ Yes Nature of action:

23) Have there ever been any spills, unpermitted discharges, or releases of hazardous or contaminated materials at or near this facility?
☐ No ☐ Yes Nature of release:

24) Are there any stained, stressed or dead vegetation surfaces on-site?
☐ No ☐ Yes Suspected cause:

25) Are you presently under any federal, state, or local consent orders, decrees or causes of action?
☐ No ☐ Yes Are they pending? ☐ No ☐ Yes

26) Have you ever allowed or permitted any other entity to dump, store, dispose, transport, bury, incinerate, or landfill any materials at the site?

☐ No ☐ Yes Who? When?

27) Does anyone other than your operations utilize this site presently?

☐ No ☐ Yes Who?

Nature of their operations:

28) Have you ever experienced any problems from odors, drainage, storage practices, or operations from your neighbors?

☐ No ☐ Yes Nature of the problem:

Actions taken to correct the problem:

29) Are you aware of any environmental liens on the property?

☐ No ☐ Yes Nature:

30) Was there ever a septic tank, leach field injection well, or dry well located on the property?

☐ No ☐ Yes When?

31) Are there, or were there ever any water wells located on-site?

☐ No ☐ Yes When?

32) Are there any dry cleaning operations conducted on-site?

☐ No ☐ Yes How long has dry cleaning been conducted on-site?

What is the current generation of machine used on-site?

How old is the current machine?

Was there a previous machine used on-site?

33) Is there currently any X-ray developing or film developing conducted on-site?

☐ No ☐ Yes Is there a silver recovery system in use? ☐ No ☐ Yes

34) Do you have any specialized knowledge that would provide information regarding previous ownership or uses of the property that may be material to identifying recognized environmental conditions regarding the site?

☐ No ☐ Yes Nature:

35) What are the past and present uses of the properties adjacent to you (please include dates of occupancy)?

Direction	Current Use/ Occupant	Past Use/Occupants
North		
South		
East		
West		

36) Are there any pending, threatened or past litigation relevant to hazardous substances or petroleum products in, on or from the subject property?

☐ No ☐ Yes Nature:

37) Are there any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the subject property?

☐ No ☐ Yes Nature: _____

_____

38) Are there any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products related to this site?

☐ No ☐ Yes Nature: _____

_____

CERTIFICATION OF RESPONSES

I,_____, the owner/operator and/or responsible person for this facility, do hereby attest and certify that to the best of my knowledge, the answers and information provided in this questionnaire, are true and accurate. I have not willfully withheld information that may be pertinent to the questions contained herein and have not distorted or misrepresented the facts regarding the content of this questionnaire.

Signature: _____ Date: _____

Title: _____

APPENDIX J

USER QUESTIONNAIRE

Phase I Environmental Site Assessment
User Questionnaire

SITE NAME: 1050-1088 Niagara Street Site

ADDRESS: 1050-1088 Niagara Street, Buffalo, New York

1.) Are you aware of any environmental cleanup liens against the Site that have been filed or recorded in a registry under federal, tribal, state or local law?

☒ No ☐ Yes Explain: _____

2.) Are you aware of any engineering controls, land use restrictions or institutional controls that are in place and/or that have been filed or recorded in a registry under federal, tribal, state or local law?

☒ No ☐ Yes Explain: _____

3.) As the User of this ESA do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

☒ No ☐ Yes Explain: _____

4.) Does the purchase price being paid for this property reasonably reflect fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

☐ No ☐ Yes If No, Explain: N/A

5.) Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as User,

a. Do you know the past use of the property?
☒ No ☐ Yes Explain: _____

b. Do you know of specific chemicals that are present or once were present at the property?
☒ No ☐ Yes Explain: _____

c. Do you know of spills or other chemical releases that have taken place at the property?
☒ No ☐ Yes Explain: _____

d. Do you know of any environmental cleanup activities that have taken place at the property?
☒ No ☐ Yes Explain: _____

6.) As the User of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

☒ No ☐ Yes Explain: _____

CERTIFICATION OF RESPONSES

I, COREY STEWART, the user of the Phase I ESA being completed for this Site, do hereby attest and certify that to the best of my knowledge, the answers and information provided in this questionnaire, are true and accurate. I have not willfully withheld information that may be pertinent to the questions contained herein and have not distorted or misrepresented the facts regarding the content of this questionnaire.

Signature: _____ Date: 7/3/12

Title: PROJECT MANAGER

APPENDIX K

LIMITATIONS

Limitations

This Phase I Environmental Site Assessment (ESA) is based on current and historical information reviewed by Benchmark/TurnKey and Benchmark/TurnKey's site inspection. This report is not to be considered as an environmental audit of the subject property or a complete environmental investigation of the subject property.

The purpose of this assessment is not to proclaim a property is devoid of environmental impact but rather to identify recognized environmental conditions (RECs). RECs are defined by ASTM as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substance or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to the public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions."

This Phase I ESA makes no warranties nor implies any liability regarding:

1. Site specific practices and/or disposal methods of the past or future owners.

2. Adjacent property owners, their environmental practices and/or impact of such properties and practices on the subject property other than observed from the subject property.

3. Unreported spills.

4. Practices, waste disposal, environmental concerns and/or modifications to waste site indexes after the date on this report.

5. Site groundwater or soil conditions.

6. Accuracy or completeness of information supplied to BENCHMARK/TurnKey by others.

7. Environmental conditions in areas that was not practically or safely accessible.

8. Accuracy of previous studies (if any) provided to Benchmark/TurnKey.

This report is also subject to any and all limitations defined within ASTM E1527-05. This includes, but is not limited to, the limitation that this report is intended to identify

environmental conditions at a specific time and the report is only valid for a period of six months from the date of issuance.

The principles defined within ASTM E1527-05, and followed within this study, include the following.

- This practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a property.
- All appropriate inquiry does not mean an exhaustive assessment of a clean property. One of the purposes of this practice is to identify a balance between limiting costs/time and the reduction of uncertainty about unknown conditions.
- The level of inquiry is variable and depends on the type of property, risk level of the user and information developed in the course of the inquiry.
- Subsequent environmental assessments should not be used as standards to evaluate the appropriateness of prior inquiries based on hindsight, new information or new techniques.

APPENDIX L

USER RESPONSIBILITIES

User Responsibilities

The following information is the responsibility of the user and not of the environmental professional. This information may be provided by the user to the environmental professional for use in the final opinion of the all appropriate inquiry. If the information is not provided by the user, the environmental professional's ability to render such an opinion may be hindered and identified as a data gap.

- Searches for environmental cleanup liens against the subject property that are filed or recorded under any federal, tribal, state or local law, as required by 40 CFR section 312.25.
- Assessments of any specialized knowledge or experience on the part of the landowner, as required by 40 CFR section 312.28.
- An assessment of the relationship of the purchase price to the fair market value of the subject property, if the property was not contaminated, as required by 40 CFR 312.29.
- An assessment of commonly known or reasonably ascertainable information about the subject property, as required by 40 CFR section 312.30.

APPENDIX M

USER PROTECTIONS

User Protections

Persons claiming the liability protections under CERCLA must meet the statutory requirements of one of the following landowner liability protections. [It should be noted that the user must also satisfy certain continuing obligations outside the scope of this Phase I Environmental Assessment, as required by CERCLA].

- The innocent landowner defense pursuant to CERCLA Sections 101(35) and 107(b)(3).
- The bona fide prospective purchaser liability protection pursuant to CERCLA Sections 101(40) and 107(r).
- The contiguous property owner liability protection pursuant to CERCLA Section 107(q).

APPENDIX N

ELECTRONIC COPY

Limited Phase II Environmental Investigation Report

1050-1088 Niagara Street Site
Buffalo, New York

July 2012 0136-012-004

Prepared For:

9271 Group, LLC

Prepared By:

TurnKey Environmental Restoration, LLC

2558 Hamburg Turnpike, Suite 300, Buffalo, New York | phone: (716) 856-0635 | fax: (716) 856-0583

LIMITED PHASE II ENVIRONMENTAL INVESTIGATION REPORT

1050 – 1088 Niagara Street Site
Buffalo, New York

July 2012 0136-012-004

Prepared for:

9271 Group, LLC

LIMITED PHASE II ENVIRONMENTAL INVESTIGATION REPORT

1050-1088 Niagara Street Site

Buffalo, New York

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LIMITED PHASE II ENVIRONMENTAL INVESTIGATION REPORT
1050-1088 Niagara Street Site
Buffalo, New York
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1.0 INTRODUCTION

1.1 Background and Site Description

TurnKey Environmental Restoration, LLC (TurnKey) performed a Limited Phase II Environmental Investigation on behalf of 9271 Group, LLC at 1050-1088 Niagara Street, City of Buffalo, Erie County, New York (Site; see Figure 1). This investigation was performed based on the findings of the June 2012 Phase I Environmental Site Assessment (ESA) Report prepared by TurnKey.

The subject property is located in a highly developed commercial, industrial, and residential area of Buffalo, New York. The subject Site, addressed from 1050-1088 Niagara Street, is also identified as Tax ID Nos. 99.41-1-15, 99.49-6-2, and 99.41-6-10. The Site, totaling approximately 2.7-acres, is bordered by Albany Street to the north, a manufacturing facility to the south, Niagara Street to the east, and railroad tracks and Interstate 190 to the west. The Site is improved with one three story building on the 1050 Niagara Street Parcel.

The Site has a long history of being utilized for industrial operations (since at least 1889). The International Brewing Company and American Gelatine Corp. operated on-Site in the early 1900s. The northern portion of the Site included a filling station from at least the 1920s through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site building), a commercial printing company, was located on the 1050 Niagara Street parcel of the Site from at least 1930 through at least 1990 and Miken Companies, also a commercial printing company, until at least 2000. Two 25,000 gallon tanks were noted in the basement of 1050 Niagara Street. Residential, industrial, and commercial operations were identified for adjacent properties through the years.

Based on the findings of the Phase I ESA, including several former gasoline USTs, numerous releases from adjacent / nearby properties, historic filling station operations on

the Site, and tank fill/vents indicating potential tanks or former tanks on-Site warranted further investigation.

The investigation included the completion of a subsurface soil investigation in accessible exterior areas of the Site to assess potential environmental impact to the Site related to recognized environmental conditions identified in the Phase I ESA.

2.0 SUBSURFACE SOIL/FILL INVESTIGATION

On May 16, 2012, TurnKey's designated subcontractor, RE Lorenz Construction Inc., mobilized a track-mounted excavator to the site and excavated ten test pits, identified as TP-1 through TP-10, at various locations across the Site. Test pit locations are shown on Figure 2. Test pit logs are presented in Table 1. Soil descriptions were completed in the field via visual characterization of excavated soils and test pit excavation faces using the Unified Soil Classification System (USCS), and scanned for total volatile organic vapors with a calibrated MiniRae 2000 PID equipped with a 10.6 eV lamp. A summary of the test pit locations and rationale is included in the table below.

Sample Location	Rationale
TP-1	Former railroad tracks
TP-2	Historic industrial operations
TP-3	Historic industrial operations
TP-4	Historic gasoline USTs
TP-5	Former railroad tracks
TP-6	Historic industrial operations
TP-7	Down gradient form historic gasoline USTs
TP-8	Former railroad tracks
TP-9	Historic industrial operations
TP-10	Down gradient form historic gasoline USTs

The subsurface soil/fill for TP-1 through TP-4 and TP-10 was typically characterized as sandy lean clay with varying amounts and depths of fill material (i.e., brick, concrete). Apparent foundry sand was observed in TP-1 at approximately 7-10 feet below ground surface (fbgs) and petroleum odors were noted in TP-3 and TP-4. TP-4 was actually a series of test pits that encountered three USTs and an abandoned in-ground lift as shown on Figure 2. The subsurface soil/fill for TP-5 through TP-9 was typically characterized as slag in the upper foot underlain by lean clay with varying amounts of fill. Apparent foundry sands was observed in TP-5. Groundwater was not encountered during the test pit excavations.

Soil samples were collected from TP-1, TP-3, TP-4, TP-5, and TP-10. The soil/fill samples were placed in pre-cleaned, laboratory provided sample bottles using dedicated stainless steel sampling tools, and cooled to 4º C in the field. The samples were transported under chain-of-custody command to Test America Labs of Amherst, NY for analysis of

Target Compound List (TCL) plus NYSDEC STARS List volatile organic compounds (VOCs), NYSDEC STARS List semi-volatile organic compounds (SVOCs) and Resource Conservation and Recovery Act (RCRA) metals.

3.0 INVESTIGATION FINDINGS

Ten test pits (TP-1 through TP-10) were completed and five soil/fill samples were collected for analysis. Table 2 presents a summary of the soil sample results. Each compound that was analyzed and detected above the laboratory reporting limit is listed on the table with its associated result to provide a complete data summary. For comparison purposes, Table 2 presents soil cleanup objectives (SCOs) for each of the detected parameters as published in 6 NYCRR Part 375 Soil Cleanup Objectives dated May 2010. Appendix A contains a copy of the laboratory analytical data package.

3.1 Qualitative Soil Screening

Soil samples were screened via headspace for VOCs using a MiniRae 2000 PID. PID measurements ranged from <1 ppm to approximately 1,268 ppm (TP-4). Elevated PID readings and petroleum odors were observed in TP-3, TP-4 and TP-10 (see Table 1). Petroleum-stained soil was also noted in TP-4. Apparent foundry sand was noted in TP-1 and TP-5. Refer to Table 1 for a summary of soil classification for each sample interval, field observations, and PID measurements.

3.2 Site Hydrogeology

The property is located within the Erie-Ontario lake plain physiographic province, which is typified by little topographic relief, except in the immediate vicinity of major drainage ways. Surface soils are generally characterized as urban land with level to gently sloping land in which 80 percent or more of the soil surface is covered by asphalt, concrete, buildings, or other impervious structures typical of an urban environment. In addition, the presence of overburden fill material is widespread and common throughout the City of Buffalo.

Groundwater flow direction likely follows regional topography in the vicinity of the subject property and is to the west toward the Niagara River. Local groundwater flows, however, may be influenced by subsurface features, such as excavations, utilities, and localized fill-conditions. Groundwater was not encountered during test pit excavations.

3.2 Soil Analytical Results

Soil samples from TP-1, TP-3, TP-4, TP-5 and TP-10 were analyzed for SVOCs and RCRA Metals. Soil samples from test pits TP-3, TP-4 and TP-10 were also analyzed for TCL plus NYSDEC STARS List VOCs. As indicated on Table 2, the analytical data results indicate one SVOC compound (dibenzo(a,h)anthracene) was detected slightly above its unrestricted SCO in TP-1, but the concentration was an estimated value detected less than the sample quantitation limit, but greater than zero. Six VOCs (ethylbenzene, isopropylbenzene, n-propylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and total xylenes) were detected above their respective Unrestricted SCOs, including isopropylbenzene above its Commercial SCO, in TP-4. Five RCRA metals (barium, cadmium, chromium, lead and/or mercury) were detected above their respective Unrestricted SCOs in TP-1, TP-4, and TP-5. Lead and mercury were detected above their respective Commercial SCOs in TP-1.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the soil investigation at the Site, TurnKey offers the following conclusions and recommendations:

- Field observations of apparent petroleum contamination, including elevated PID readings and petroleum odors, were observed in TP-3, TP-4 and TP-10. Apparent petroleum-stained soil was also noted in TP-4;
- Apparent foundry sand was noted in TP-1 and TP-5;
- Six VOCs were detected above their respective Unrestricted SCOs, including isopropylbenzene above its Commercial SCO, in TP-4;
- One SVOC compound (dibenzo(a,h)anthracene) was detected slightly above its unrestricted SCO in TP-1;
- Five RCRA metals (barium, cadmium, chromium, lead and/or mercury) were detected above their respective Unrestricted SCOs in TP-1, TP-4, and TP-5. Lead and mercury were detected above their respective Commercial SCOs in TP-1;
- Based on the findings of this investigation, Site remediation appears warranted. The existing three USTs and in-ground hydraulic lift should be removed in accordance with NYSDEC protocols and impacted soil encountered in the area of these structures should be properly handled. The disposition of the tanks beneath the former commercial printing building should be determined and, if present, closed in-place or removed if they are not intended for future use.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of 9271 Group, LLC. The contents of this report are limited to information available at the time of the site investigation activities and to data referenced herein, and assume all referenced historic information sources to be true and accurate. The findings herein may be relied upon only at the discretion of 9271Group, LLC. Use of or reliance on this report or its findings by any other person or entity is prohibited without written permission of TurnKey Environmental Restoration, LLC.

TABLES

TABLE 1
TEST PIT SUMMARY
1050-1088 NIAGARA STREET SITE
9271 Group, LLC

Location	Test Pit Dimensions			Date	Visually Impacted Soil/Fill?	Olfactory Odor	Interval of Observed Impact (fbgs)	PID Scan (ppm) Depth - Reading (fbgs)	Analysis			Sample Interval	Approximate DTW (fbgs)	Observed Perched Water	Depth (fbgs) and Soil Description (ASTM D2488: Visual-Manual Procedure)
	Length (feet)	Width (feet)	Depth (fbgs)						TCL + STARS VOCs + TICs	STARS SVOCs + TICs	RCRA METALS				
Test Pit Locations															
TP-1	13.0	3.0	13.0	05/16/12	Yes (Foundry Sand)	No	7-10 (Foundary Sand)	0 (All Intervals)	No	Yes	Yes	7.0-9.0	N/A	N/A	**0.0-7.0 Sandy Lean Clay with Fill:** Brown, moist, mostly medium plasticity fines with some fine sand, brick and concrete, medium toughness, medium dry strength, massive **7.0-10.0 Fill:** Black and yellow, moist, foundry sand **10.0-13.0 Sandy Lean Clay with Fill:** Brown, moist, mostly medium plasticity fines with some fine sand, brick and concrete, medium toughness, medium dry strength, massive, refusal on concrete (13')
TP-2	13.0	6.0	16.0	05/16/12	No	No	N/A	0 (All Intervals)	No	No	No	N/A	N/A	N/A	**0.0-16.0 Sandy Lean Clay with Fill:** Brown, moist, mostly medium plasticity fines with some fine sand, brick and concrete, medium toughness, medium dry strength, massive
TP-3	13.0	3.0	15.0	05/16/12	No	Yes	4.0-15.0	1 - 128 3 - 213 5 - 555 7 - 366 9 - 355 11 - 938 13 - 238 15 - 85	Yes	Yes	Yes	4.0-5.0	N/A	N/A	**0.0-4.0 Sandy Lean Clay with Fill:** Brown, moist, mostly medium plasticity fines with some fine sand, brick and concrete, medium toughness, medium dry strength, massive **4.0-15.0 Sandy Lean Clay:** Brown, moist, mostly medium plasticity fines with some fine sand, medium toughness, medium dry strength, massive, petroleum like odor
TP-4[1]	13.0	2.0	11.0	05/16/12	Yes (Petroleum Stained)	Yes	3.0-11.0	1 - 219 3 - 984 5 - 1268 7 - 366 9 - 290 11 - 184	Yes	Yes	Yes	3.0-5.0	N/A	N/A	**0.0-4.0 Sandy Lean Clay with Fill:** Brown, moist, mostly medium plasticity fines with some fine sand, brick and concrete, black stained soil, medium toughness, medium dry strength, massive **4.0-15.0 Sandy Lean Clay:** Brown, moist, mostly medium plasticity fines with some fine sand, medium toughness, medium dry strength, massive, petroleum like odor
TP-5	13.0	2.0	16.0	05/16/12	Yes (Foundry Sand)	No	N/A	0 (All Intervals)	No	No	No	N/A	N/A	N/A	**0.0-1.0 Slag** **1.0-16.0 Lean Clay with Fill:** Reddish brown, moist to wet (6.5'), mostly medium plasticity fines with few fine sand, foundry sand, concrete slab, brick, medium toughness, medium dry strength, massive
TP-6	13.0	2.0	16.0	05/08/12	No	No	N/A	0 (All Intervals)	Yes	Yes	Yes	0.0-2.0	N/A	N/A	**0.0-1.0 Slag** **1.0-16.0 Lean Clay with Fill:** Reddish brown, moist, mostly medium plasticity fines with few fine sand, medium toughness, medium dry strength, massive, refusal at 16' bedrock

TABLE 1
TEST PIT SUMMARY
1050-1088 NIAGARA STREET SITE
9271 Group, LLC

Location	Test Pit Dimensions			Date	Visually Impacted Soil/Fill?	Olfactory Odor	Interval of Observed Impact (fbgs)	PID Scan (ppm) Depth - Reading (fbgs)	Analysis			Sample Interval	Approximate DTW (fbgs)	Observed Perched Water	Depth (fbgs) and Soil Description (ASTM D2488: Visual-Manual Procedure)
	Length (feet)	Width (feet)	Depth (fbgs)						TCL + STARS VOCs + TICs	STARS SVOCs + TICs	RCRA METALS				
TP-7	13.0	3.0	16.0	05/16/12	No	No	N/A	0 (All Intervals)	No	No	No	N/A	1.5	Perched	**0.0-1.0 Slag** **1.0-16.0 Lean Clay with Fill:** Reddish brown, moist, mostly medium plasticity fines with few fine sand, medium toughness, medium dry strength, massive, refusal at 16' bedrock
TP-8	13.0	3.0	17.0	05/16/12	No	No	N/A	0 (All Intervals)	No	No	No	N/A	N/A	N/A	**0.0-1.0 Slag** **1.0-17.0 Lean Clay with Fill:** Reddish brown, moist, mostly medium plasticity fines with few fine sand, medium toughness, medium dry strength, massive, refusal at 16' bedrock
TP-9	13.0	3.0	17.0	05/16/12	No	No	N/A	0 (All Intervals)	No	No	No	N/A	N/A	N/A	**0.0-1.0 Slag** **1.0-17.0 Lean Clay with Fill:** Reddish brown, moist, mostly medium plasticity fines with few fine sand, medium toughness, medium dry strength, massive, refusal at 16' bedrock
TP-10	13.0	3.0	17.0	05/16/12	No	Yes	3.0-17.0	1 - 0 3 - 34 5 - 54 7 - 130 9 - 468 11 - 178 13 - 238 15 - 200	Yes	Yes	Yes	9.0-11.0	N/A	N/A	**0.0-4.0 Sandy Lean Clay with Fill:** Brown, moist, mostly medium plasticity fines with some fine sand, brick and concrete, medium toughness, medium dry strength, massive **4.0-15.0 Sandy Lean Clay:** Brown, moist, mostly medium plasticity fines with some fine sand, medium toughness, medium dry strength, massive, petroleum like odor

Notes:
1. Series of test pits in the area of abandoned USTs shown in Figure 1

Definitions:
fbgs = feet below ground surface
PID = MiniRae photoionization detector equipped with a 10.6 eV lamp
ppm = parts per million
DTW = Depth to water.
N/A = Non applicable

TABLE 2

SUMMARY OF SOIL ANALYTICAL RESULTS

1050-1088 NIAGARA STREET

BUFFAL, NEW YORK

Parameter [1]	Unrestricted SCOs[2]	Commercial SCOs[3]	Test Pit Location				
			TP-1 (7-9)	TP-3 (4-5)	TP-4 (3-5)	TP-5 (7-9)	TP-10 (9-11)
Volatile Organic Compounds (VOCs) - mg/Kg [3]							
2-Butanone (MEK) [5]	--	--	NA	0.026 J	ND	NA	0.006 J
Acetone	**0.05**	**500**	NA	0.17	ND	NA	0.042
Ethylbenzene	**1**	**390**	NA	ND	**23**	NA	ND
Cyclohexane	--	--	NA	0.27	19	NA	ND
Isopropylbenzene (Cumene)	**2.3**	**2.3**	NA	0.25	**9.6**	NA	ND
n-Butylbenzene	**12**	**500**	NA	ND	7.7	NA	ND
n-Propylbenzene	**3.9**	**500**	NA	0.38	**130**	NA	ND
sec-Butylbenzene	**11**	**500**	NA	ND	3.3	NA	ND
tert-Butylbenzene	**5.9**	**500**	NA	0.019 J	ND	NA	ND
1,2,4-Trimethylbenzene	**3.6**	**190**	NA	0.7 B	**85**	NA	0.0012 J
1,3,5-Trimethylbenzene	**8.4**	**190**	NA	ND	**35**	NA	ND
p-Isopropyltoluene	**10**	**10**	NA	ND	7.2	NA	ND
Total Xylene	**0.26**	**500**	NA	0.091 B	**100**	NA	0.003 J
Methylcyclohexane	--	--	NA	0.55	120	NA	ND
TICS	--	--	NA	10.89 J	812 J	NA	0.286 J
Total VOCs			**0**	**1.62**	**539.8**	**0**	**0.042**
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg [3]							
Acenaphthylene	**100**	**500**	0.01 J	ND	ND	ND	ND
Acenaphthene	**20**	**500**	0.025 J	ND	ND	ND	ND
Anthracene	**100**	**500**	0.047 J	ND	ND	0.11 J	ND
Benzo(a)anthracene	**1**	**5.6**	0.17 J B	ND	ND	0.61 J B	ND
Benzo(b)fluoranthene	**1**	**5.6**	0.2 B	ND	ND	0.72 J B	ND
Benzo(k)fluoranthene	**0.8**	**56**	0.08 J B	ND	ND	0.32 J B	ND
Benzo(g,h,i)perylene	**100**	**500**	0.11 J B	ND	ND	0.4 J B	ND
Benzo(a)pyrene	**1**	**1**	0.18 J B	ND	ND	0.58 J B	ND
Chrysene	**1**	**56**	0.15 J B	ND	ND	0.6 J B	ND
Dibenzo(a,h)anthracene	**0.33**	**0.56**	**0.035 J**	ND	ND	ND	ND
Fluoranthene	**100**	**500**	0.22 B	ND	ND	0.96 J B	ND
Fluorene	**30**	**500**	0.016 J	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	0.092 J B	ND	ND	0.31 J B	ND
Naphthalene	**12**	**500**	0.1 J	0.0052 J	4.4 J	ND	ND
Phenanthrene	**100**	**500**	0.22 B	ND	ND	0.66 J B	ND
Pyrene	**100**	**500**	0.22 B'	ND	ND	1.0 J B	ND
TICS	--	--	2.62 J	5.15 J	177.3 J	ND	0.378 J
Total SVOCs			0	0	4.4	0	0
Metals - mg/Kg							
Arsenic	**13**	**16**	8.8	4.5	4.3	5.9	5.1
Barium	**350**	**400**	133	112	117	**375**	76.7
Cadmium	**2.5**	**9.3**	1.7	ND	0.33	**6**	0.25
Chromium	**30**	**1500**	**77.3**	18.8	14.4	**67.6**	15.3
Lead	**63**	**1000**	**1160**	19	1.3	**292**	14
Silver	**2**	**1500**	ND	ND	ND	0.73	ND
Mercury	**0.18**	**2.8**	**4**	ND	**0.083**	**0.35**	ND

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375.6.8 (a) Soil Cleanup Objectives - Unrestricted (May 2010)
3. Values per 6NYCRR Part 375.6.8 (b) Soil Cleanup Objectives - Commercial (May 2010).
4. Sample results were reported by the laboratory in ug/Kg and converted to mg/Kg for comparison to SCOs.

Definitions:

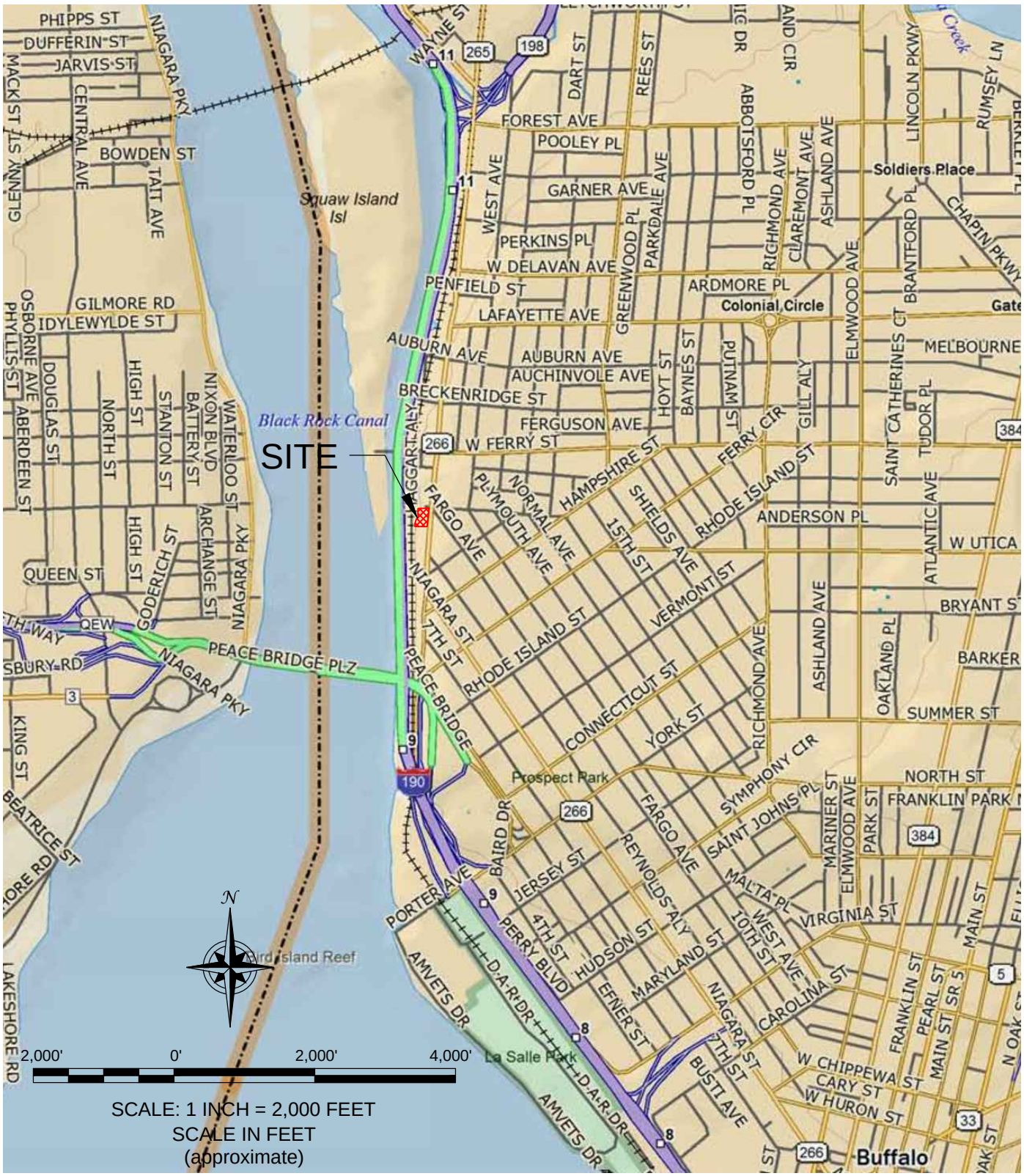
ND = Parameter not detected above laboratory detection limit.
NA = Parameter not Analysed.
"--" = No SCO available.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
* = Indicates the spike or duplicate analysis is not within the quality control limits.
D = Analyte was detected after laboratory dilution.

BOLD = Exceeds SCOs Unrestricted
BOLD = ExceedsSCOs Commerical

FIGURES

F:\CAD\TurnKey\Elliott Development\1050-1088 Niagara St\Phase I ESA\Figure 1; Site Location and Vicinity Map.dwg

FIGURE 1



TurnKey Environmental Restoration, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0136-012-004

DATE: JULY 2012

DRAFTED BY: JGT

SITE LOCATION AND VICINITY MAP

LIMITED PHASE II ENVRIONMENTAL SITE ASSESSMENT

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Phase II\1050-1088 Niagara Base Map.dwg

DATE: JULY 2012
DRAFTED BY: JGT

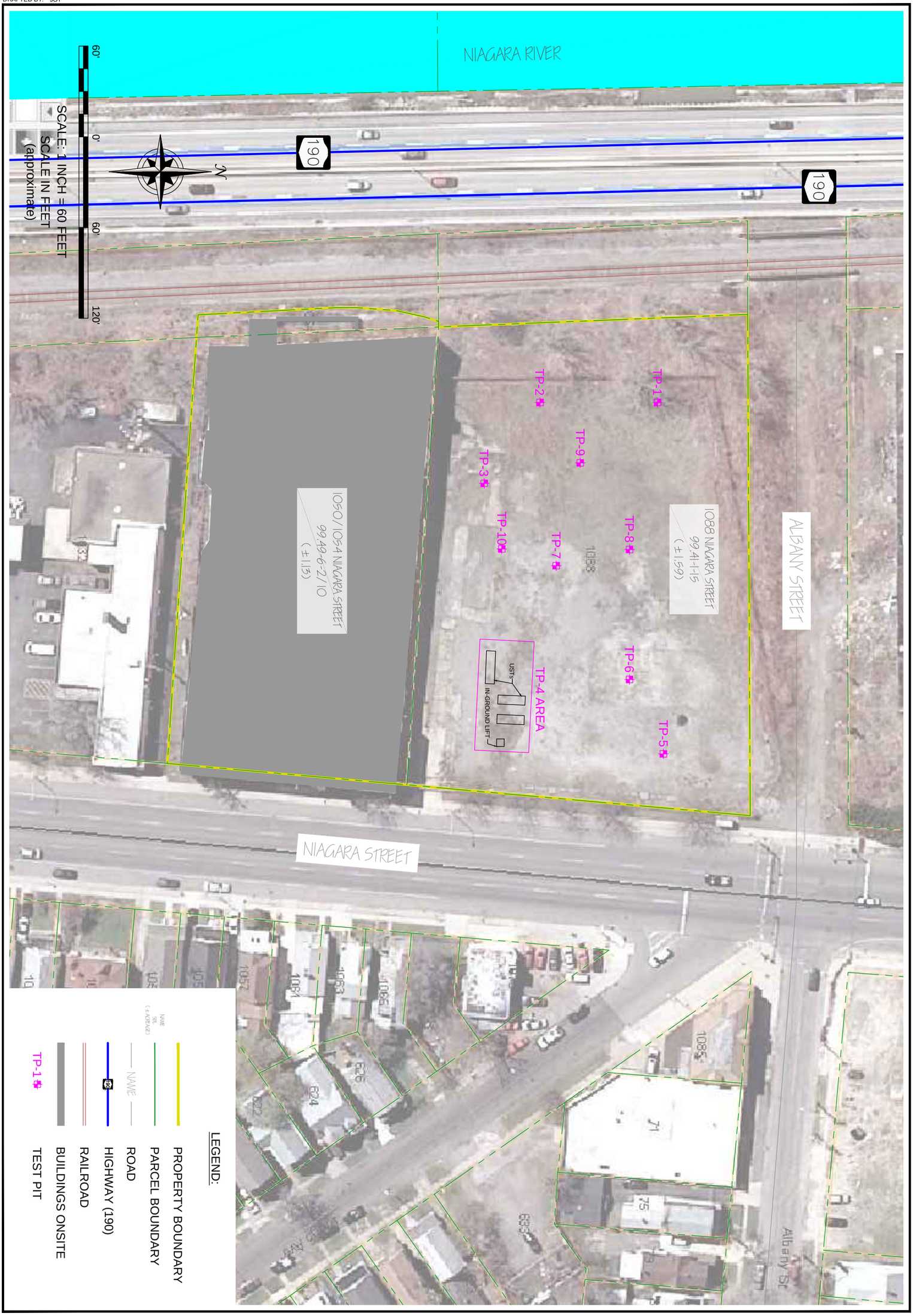


FIGURE 2

SITE PLAN

LIMITED PHASE II ENVIRONMENTAL INVESTIGATION REPORT

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP LLC

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0136-012-004

APPENDIX A

LABORATORY ANALYTICAL DATA SUMMARY PACKAGE

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 480-20163-1
Client Project/Site: Turnkey 1050-1088 Niagara Street

For:
Turnkey Environmental Restoration, LLC
2558 Hamburg Turnpike
Suite 300
Lackawanna, New York 14218

Attn: Mr. Michael Lesakowski

Authorized for release by:
5/25/2012 4:01:34 PM

Brian Fischer
Project Manager II
brian.fischer@testamericainc.com

Table of Contents

Qualifiers

GC/MS VOA

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

GC/MS VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

GC/MS Semi VOA

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

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.
T	Result is a tentatively identified compound (TIC) and an estimated value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-20163-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-20163-1

Comments
No additional comments.

Receipt
The samples were received on 5/17/2012 11:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6º C.

GC/MS VOA
Method(s) 8260B: The method blank for batch 65414 contained 4-Methyl-2-pentanone, Toluene, Ethylbenzene, m/p-xylenes, 1,2,4-Trimethylbenzene, Naphthalene, and Total Xylenes above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8260B: The following sample(s) was analyzed at a 1.0 gram dilution due to the nature of the sample matrix: TP-3 (4-5) (480-20163-2). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: Surrogate recovery for the following sample(s) was outside control limits: TP-3 (4-5) (480-20163-2). Re-analysis was performed with concurring results. Only the reanalysis has been reported.

Method(s) 8260B: The following samples were diluted due to the abundance of target analytes: TP-4 (3-5) (480-20163-3). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

GC/MS Semi VOA
Method(s) 8270C: The following samples were diluted due to the nature of the sample matrix: TP-4 (3-5) (480-20163-3), TP-5 (7-9) (480-20163-4). Elevated reporting limits (RLs) are provided.

Method(s) 8270C: The method blank for batch 64990 contained multiple analytes above the method detection limit. These target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

Metals
Method(s) 7471A: The following sample was diluted due to the abundance of the target analyte total mercury: TP-1 (7-9) (480-20163-1). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

Detection Summary

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Client Sample ID: TP-1 (7-9) — Lab Sample ID: 480-20163-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	25	J	190	2.2	ug/Kg	1	☼	8270C	Total/NA
Acenaphthylene	10	J	190	1.5	ug/Kg	1	☼	8270C	Total/NA
Anthracene	47	J	190	4.8	ug/Kg	1	☼	8270C	Total/NA
Benzo(a)anthracene	170	J B	190	3.2	ug/Kg	1	☼	8270C	Total/NA
Benzo(a)pyrene	180	J B	190	4.5	ug/Kg	1	☼	8270C	Total/NA
Benzo(b)fluoranthene	200	B	190	3.6	ug/Kg	1	☼	8270C	Total/NA
Benzo(g,h,i)perylene	110	J B	190	2.2	ug/Kg	1	☼	8270C	Total/NA
Benzo(k)fluoranthene	80	J B	190	2.1	ug/Kg	1	☼	8270C	Total/NA
Chrysene	150	J B	190	1.9	ug/Kg	1	☼	8270C	Total/NA
Dibenz(a,h)anthracene	35	J	190	2.2	ug/Kg	1	☼	8270C	Total/NA
Fluoranthene	220	B	190	2.7	ug/Kg	1	☼	8270C	Total/NA
Fluorene	16	J	190	4.3	ug/Kg	1	☼	8270C	Total/NA
Indeno(1,2,3-cd)pyrene	92	J B	190	5.2	ug/Kg	1	☼	8270C	Total/NA
Naphthalene	100	J	190	3.1	ug/Kg	1	☼	8270C	Total/NA
Phenanthrene	220	B	190	3.9	ug/Kg	1	☼	8270C	Total/NA
Pyrene	220	B	190	1.2	ug/Kg	1	☼	8270C	Total/NA
Arsenic	8.8		2.3		mg/Kg	1	☼	6010B	Total/NA
Barium	133		0.58		mg/Kg	1	☼	6010B	Total/NA
Cadmium	1.7		0.23		mg/Kg	1	☼	6010B	Total/NA
Chromium	77.3		0.58		mg/Kg	1	☼	6010B	Total/NA
Lead	1160		1.2		mg/Kg	1	☼	6010B	Total/NA
Mercury	4.0		0.22		mg/Kg	10	☼	7471A	Total/NA

Client Sample ID: TP-3 (4-5) — Lab Sample ID: 480-20163-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	700	B	30	5.8	ug/Kg	1	☼	8260B	Total/NA
2-Butanone (MEK)	26	J	150	11	ug/Kg	1	☼	8260B	Total/NA
Acetone	170		150	25	ug/Kg	1	☼	8260B	Total/NA
Cyclohexane	270		30	4.2	ug/Kg	1	☼	8260B	Total/NA
Isopropylbenzene	250		30	4.5	ug/Kg	1	☼	8260B	Total/NA
m,p-Xylene	91	B	60	5.0	ug/Kg	1	☼	8260B	Total/NA
Methylcyclohexane	550		30	4.6	ug/Kg	1	☼	8260B	Total/NA
N-Propylbenzene	380		30	2.4	ug/Kg	1	☼	8260B	Total/NA
tert-Butylbenzene	19	J	30	3.1	ug/Kg	1	☼	8260B	Total/NA
Xylenes, Total	91	B	60	5.0	ug/Kg	1	☼	8260B	Total/NA
Naphthalene	5.2	J	210	3.5	ug/Kg	1	☼	8270C	Total/NA
Arsenic	4.5		2.4		mg/Kg	1	☼	6010B	Total/NA
Barium	112		0.59		mg/Kg	1	☼	6010B	Total/NA
Chromium	18.8		0.59		mg/Kg	1	☼	6010B	Total/NA
Lead	19.0		1.2		mg/Kg	1	☼	6010B	Total/NA

Client Sample ID: TP-4 (3-5) — Lab Sample ID: 480-20163-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	85000		1300	350	ug/Kg	10	☼	8260B	Total/NA
1,3,5-Trimethylbenzene	35000		1300	380	ug/Kg	10	☼	8260B	Total/NA
4-Isopropyltoluene	7200		1300	420	ug/Kg	10	☼	8260B	Total/NA
Cyclohexane	19000		1300	280	ug/Kg	10	☼	8260B	Total/NA
Ethylbenzene	23000		1300	370	ug/Kg	10	☼	8260B	Total/NA
Isopropylbenzene	9600		1300	190	ug/Kg	10	☼	8260B	Total/NA
m,p-Xylene	100000		2500	700	ug/Kg	10	☼	8260B	Total/NA
Methylcyclohexane	120000		1300	590	ug/Kg	10	☼	8260B	Total/NA

Client Sample ID: TP-4 (3-5) (Continued)

Lab Sample ID: 480-20163-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
n-Butylbenzene	7700		1300	370	ug/Kg	10	☼	8260B	Total/NA
N-Propylbenzene	13000		1300	330	ug/Kg	10	☼	8260B	Total/NA
o-Xylene	800	J	1300	160	ug/Kg	10	☼	8260B	Total/NA
sec-Butylbenzene	3300		1300	460	ug/Kg	10	☼	8260B	Total/NA
Xylenes, Total	100000		2500	210	ug/Kg	10	☼	8260B	Total/NA
Naphthalene	4400		1100	18	ug/Kg	5	☼	8270C	Total/NA
Arsenic	4.3		2.6		mg/Kg	1	☼	6010B	Total/NA
Barium	117		0.65		mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.33		0.26		mg/Kg	1	☼	6010B	Total/NA
Chromium	14.4		0.65		mg/Kg	1	☼	6010B	Total/NA
Lead	34.9		1.3		mg/Kg	1	☼	6010B	Total/NA
Mercury	0.083		0.026		mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: TP-5 (7-9)

Lab Sample ID: 480-20163-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Anthracene	110	J	2000	51	ug/Kg	10	☼	8270C	Total/NA
Benzo(a)anthracene	610	J B	2000	34	ug/Kg	10	☼	8270C	Total/NA
Benzo(a)pyrene	580	J B	2000	48	ug/Kg	10	☼	8270C	Total/NA
Benzo(b)fluoranthene	720	J B	2000	39	ug/Kg	10	☼	8270C	Total/NA
Benzo(g,h,i)perylene	400	J B	2000	24	ug/Kg	10	☼	8270C	Total/NA
Benzo(k)fluoranthene	320	J B	2000	22	ug/Kg	10	☼	8270C	Total/NA
Chrysene	600	J B	2000	20	ug/Kg	10	☼	8270C	Total/NA
Fluoranthene	960	J B	2000	29	ug/Kg	10	☼	8270C	Total/NA
Indeno(1,2,3-cd)pyrene	310	J B	2000	55	ug/Kg	10	☼	8270C	Total/NA
Phenanthrene	660	J B	2000	42	ug/Kg	10	☼	8270C	Total/NA
Pyrene	1000	J B	2000	13	ug/Kg	10	☼	8270C	Total/NA
Arsenic	5.9		2.6		mg/Kg	1	☼	6010B	Total/NA
Barium	375		0.65		mg/Kg	1	☼	6010B	Total/NA
Cadmium	6.0		0.26		mg/Kg	1	☼	6010B	Total/NA
Chromium	67.6		0.65		mg/Kg	1	☼	6010B	Total/NA
Lead	292		1.3		mg/Kg	1	☼	6010B	Total/NA
Silver	0.73		0.65		mg/Kg	1	☼	6010B	Total/NA
Mercury	0.35		0.021		mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: TP-10 (9-11)

Lab Sample ID: 480-20163-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2,4-Trimethylbenzene	1.2	J	5.4	1.0	ug/Kg	1	☼	8260B	Total/NA
2-Butanone (MEK)	6.0	J	27	2.0	ug/Kg	1	☼	8260B	Total/NA
Acetone	42		27	4.5	ug/Kg	1	☼	8260B	Total/NA
m,p-Xylene	3.0	J	11	0.90	ug/Kg	1	☼	8260B	Total/NA
Xylenes, Total	3.0	J	11	0.90	ug/Kg	1	☼	8260B	Total/NA
Arsenic	5.1		2.3		mg/Kg	1	☼	6010B	Total/NA
Barium	76.7		0.58		mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.25		0.23		mg/Kg	1	☼	6010B	Total/NA
Chromium	15.3		0.58		mg/Kg	1	☼	6010B	Total/NA
Lead	14.0		1.2		mg/Kg	1	☼	6010B	Total/NA

Client Sample ID: TP-1 (7-9)
Date Collected: 05/16/12 09:30
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-1
Matrix: Solid
Percent Solids: 87.5

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	25	J	190	2.2	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Acenaphthylene	10	J	190	1.5	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Anthracene	47	J	190	4.8	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Benzo(a)anthracene	170	J B	190	3.2	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Benzo(a)pyrene	180	J B	190	4.5	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Benzo(b)fluoranthene	200	B	190	3.6	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Benzo(g,h,i)perylene	110	J B	190	2.2	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Benzo(k)fluoranthene	80	J B	190	2.1	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Chrysene	150	J B	190	1.9	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Dibenz(a,h)anthracene	35	J	190	2.2	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Fluoranthene	220	B	190	2.7	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Fluorene	16	J	190	4.3	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Indeno(1,2,3-cd)pyrene	92	J B	190	5.2	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Naphthalene	100	J	190	3.1	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Phenanthrene	220	B	190	3.9	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1
Pyrene	220	B	190	1.2	ug/Kg	☼	05/18/12 08:18	05/23/12 23:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Isophorone	*150*	*J*	*ug/Kg*	☼	*7.19*	*78-59-1*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
2-Methylnaphthalene	*120*	*J*	*ug/Kg*	☼	*8.70*	*91-57-6*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Pentadecane	*180*	*T J N*	*ug/Kg*	☼	*10.00*	*629-62-9*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Dibenzofuran	*30*	*J*	*ug/Kg*	☼	*10.29*	*132-64-9*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Diethyl phthalate	*51*	*J B*	*ug/Kg*	☼	*10.58*	*84-66-2*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Unknown	*170*	*T J*	*ug/Kg*	☼	*10.85*		*05/18/12 08:18*	*05/23/12 23:28*	*1*
Heptadecane	*380*	*T J N*	*ug/Kg*	☼	*11.13*	*629-78-7*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Pentadecane, 2,6,10,14-tetramethyl-	*280*	*T J N*	*ug/Kg*	☼	*11.15*	*1921-70-6*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Octadecane	*250*	*T J N*	*ug/Kg*	☼	*11.61*	*593-45-3*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Carbazole	*20*	*J B*	*ug/Kg*	☼	*11.97*	*86-74-8*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Nonadecane	*230*	*T J N*	*ug/Kg*	☼	*12.03*	*629-92-5*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Hexadecanoic acid, butyl ester	*270*	*T J N*	*ug/Kg*	☼	*13.08*	*111-6-8*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Octadecanoic acid, butyl ester	*260*	*T J N*	*ug/Kg*	☼	*13.70*	*123-95-5*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Unknown	*230*	*T J*	*ug/Kg*	☼	*16.12*		*05/18/12 08:18*	*05/23/12 23:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*111*		*39 - 146*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
2-Fluorophenol	*64*		*18 - 120*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
2-Fluorobiphenyl	*101*		*37 - 120*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Phenol-d5	*77*		*11 - 120*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
p-Terphenyl-d14	*120*		*65 - 153*	*05/18/12 08:18*	*05/23/12 23:28*	*1*
Nitrobenzene-d5	*75*		*34 - 132*	*05/18/12 08:18*	*05/23/12 23:28*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.8		2.3		mg/Kg	☼	05/21/12 15:30	05/22/12 18:31	1
Barium	133		0.58		mg/Kg	☼	05/21/12 15:30	05/22/12 18:31	1
Cadmium	1.7		0.23		mg/Kg	☼	05/21/12 15:30	05/22/12 18:31	1
Chromium	77.3		0.58		mg/Kg	☼	05/21/12 15:30	05/22/12 18:31	1
Lead	1160		1.2		mg/Kg	☼	05/21/12 15:30	05/22/12 18:31	1
Selenium	ND		4.7		mg/Kg	☼	05/21/12 15:30	05/22/12 18:31	1
Silver	ND		0.58		mg/Kg	☼	05/21/12 15:30	05/22/12 18:31	1

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Client Sample ID: TP-1 (7-9)
Date Collected: 05/16/12 09:30
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-1
Matrix: Solid
Percent Solids: 87.5

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	4.0		0.22		mg/Kg	☼	05/21/12 07:45	05/21/12 13:11	10

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Client Sample ID: TP-3 (4-5)
Date Collected: 05/16/12 10:30
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-2
Matrix: Solid
Percent Solids: 80.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		30	2.2	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,1,2,2-Tetrachloroethane	ND		30	4.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		30	6.8	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,1,2-Trichloroethane	ND		30	3.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,1-Dichloroethane	ND		30	3.7	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,1-Dichloroethene	ND		30	3.7	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,2,4-Trichlorobenzene	ND		30	1.8	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,2,4-Trimethylbenzene	**700**	**B**	30	5.8	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,2-Dibromo-3-Chloropropane	ND		30	15	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,2-Dibromoethane	ND		30	3.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,2-Dichlorobenzene	ND		30	2.3	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,2-Dichloroethane	ND		30	1.5	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,2-Dichloropropane	ND		30	15	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,3,5-Trimethylbenzene	ND		30	1.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,3-Dichlorobenzene	ND		30	1.5	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
1,4-Dichlorobenzene	ND		30	4.2	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
2-Butanone (MEK)	**26**	**J**	150	11	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
2-Hexanone	ND		150	15	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
4-Isopropyltoluene	ND		30	2.4	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
4-Methyl-2-pentanone (MIBK)	ND		150	9.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Acetone	**170**		150	25	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Benzene	ND		30	1.5	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Bromodichloromethane	ND		30	4.0	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Bromoform	ND		30	15	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Bromomethane	ND		30	2.7	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Carbon disulfide	ND		30	15	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Carbon tetrachloride	ND		30	2.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Chlorobenzene	ND		30	4.0	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Chloroethane	ND		30	6.8	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Chloroform	ND		30	1.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Chloromethane	ND		30	1.8	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
cis-1,2-Dichloroethene	ND		30	3.8	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
cis-1,3-Dichloropropene	ND		30	4.3	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Cyclohexane	**270**		30	4.2	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Dibromochloromethane	ND		30	3.8	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Dichlorodifluoromethane	ND		30	2.5	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Ethylbenzene	ND		30	2.1	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Isopropylbenzene	**250**		30	4.5	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
m,p-Xylene	**91**	**B**	60	5.0	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Methyl acetate	ND		30	5.6	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Methyl tert-butyl ether	ND		30	2.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Methylcyclohexane	**550**		30	4.6	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Methylene Chloride	ND		30	14	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
n-Butylbenzene	ND		30	2.6	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
N-Propylbenzene	**380**		30	2.4	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
o-Xylene	ND		30	3.9	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
sec-Butylbenzene	ND		30	2.6	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Styrene	ND		30	1.5	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
tert-Butylbenzene	**19**	**J**	30	3.1	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Tetrachloroethene	ND		30	4.0	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Toluene	ND		30	2.3	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1

Client Sample ID: TP-3 (4-5)
Date Collected: 05/16/12 10:30
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-2
Matrix: Solid
Percent Solids: 80.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		30	3.1	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
trans-1,3-Dichloropropene	ND		30	13	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Trichloroethene	ND		30	6.6	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Trichlorofluoromethane	ND		30	2.8	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Vinyl chloride	ND		30	3.7	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1
Xylenes, Total	**91**	**B**	60	5.0	ug/Kg	☼	05/21/12 15:00	05/22/12 06:11	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclohexane, 1,3-dimethyl-, cis-	*1300*	*T J N*	*ug/Kg*	☼	*6.96*	*638-4-0*	*05/21/12 15:00*	*05/22/12 06:11*	*1*
Unknown	*700*	*T J*	*ug/Kg*	☼	*7.15*		*05/21/12 15:00*	*05/22/12 06:11*	*1*
Unknown	*710*	*T J*	*ug/Kg*	☼	*7.41*		*05/21/12 15:00*	*05/22/12 06:11*	*1*
Heptane, 2,6-dimethyl-	*780*	*T J N*	*ug/Kg*	☼	*7.53*	*1072-5-5*	*05/21/12 15:00*	*05/22/12 06:11*	*1*
Cyclohexane, ethyl-	*1000*	*T J N*	*ug/Kg*	☼	*7.88*	*1678-91-7*	*05/21/12 15:00*	*05/22/12 06:11*	*1*
Unknown	*1600*	*T J*	*ug/Kg*	☼	*7.92*		*05/21/12 15:00*	*05/22/12 06:11*	*1*
Cyclohexane, 1-ethyl-2-methyl-, trans-	*1400*	*T J N*	*ug/Kg*	☼	*9.02*	*4923-78-8*	*05/21/12 15:00*	*05/22/12 06:11*	*1*
Octane, 2,6-dimethyl-	*1500*	*T J N*	*ug/Kg*	☼	*9.13*	*2051-30-1*	*05/21/12 15:00*	*05/22/12 06:11*	*1*
Unknown	*1200*	*T J*	*ug/Kg*	☼	*9.29*		*05/21/12 15:00*	*05/22/12 06:11*	*1*
Unknown	*700*	*T J*	*ug/Kg*	☼	*10.00*		*05/21/12 15:00*	*05/22/12 06:11*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*64 - 126*	*05/21/12 15:00*	*05/22/12 06:11*	*1*
4-Bromofluorobenzene (Surr)	*127*	*X*	*72 - 126*	*05/21/12 15:00*	*05/22/12 06:11*	*1*
Toluene-d8 (Surr)	*116*		*71 - 125*	*05/21/12 15:00*	*05/22/12 06:11*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		210	2.4	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Acenaphthylene	ND		210	1.7	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Anthracene	ND		210	5.3	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Benzo(a)anthracene	ND		210	3.6	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Benzo(a)pyrene	ND		210	5.0	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Benzo(b)fluoranthene	ND		210	4.0	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Benzo(g,h,i)perylene	ND		210	2.5	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Benzo(k)fluoranthene	ND		210	2.3	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Chrysene	ND		210	2.1	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Dibenz(a,h)anthracene	ND		210	2.4	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Fluoranthene	ND		210	3.0	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Fluorene	ND		210	4.8	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Indeno(1,2,3-cd)pyrene	ND		210	5.7	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Naphthalene	**5.2**	**J**	210	3.5	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Phenanthrene	ND		210	4.4	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1
Pyrene	ND		210	1.3	ug/Kg	☼	05/18/12 08:18	05/23/12 23:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclohexane, 1,1,3-trimethyl-	*320*	*T J N*	*ug/Kg*	☼	*3.95*	*3073-66-3*	*05/18/12 08:18*	*05/23/12 23:52*	*1*
Unknown	*240*	*T J*	*ug/Kg*	☼	*4.54*		*05/18/12 08:18*	*05/23/12 23:52*	*1*
Unknown	*270*	*T J*	*ug/Kg*	☼	*4.84*		*05/18/12 08:18*	*05/23/12 23:52*	*1*
Ethane, 1,1,2,2-tetrachloro-	*240*	*T J N*	*ug/Kg*	☼	*4.93*	*79-34-5*	*05/18/12 08:18*	*05/23/12 23:52*	*1*
Cyclohexane, 1-propenyl-	*330*	*T J N*	*ug/Kg*	☼	*5.01*	*5364-83-0*	*05/18/12 08:18*	*05/23/12 23:52*	*1*
Unknown	*870*	*T J*	*ug/Kg*	☼	*5.12*		*05/18/12 08:18*	*05/23/12 23:52*	*1*
Unknown	*320*	*T J*	*ug/Kg*	☼	*5.36*		*05/18/12 08:18*	*05/23/12 23:52*	*1*

Client Sample ID: TP-3 (4-5)
Date Collected: 05/16/12 10:30
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-2
Matrix: Solid
Percent Solids: 80.8

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	240	T J	ug/Kg	☼	5.44		05/18/12 08:18	05/23/12 23:52	1
Unknown	390	T J	ug/Kg	☼	5.48		05/18/12 08:18	05/23/12 23:52	1
Cyclohexane, 1,4-dimethyl-	340	T J N	ug/Kg	☼	5.74	589-90-2	05/18/12 08:18	05/23/12 23:52	1
Decane, 4-methyl-	480	T J N	ug/Kg	☼	6.11	2847-72-5	05/18/12 08:18	05/23/12 23:52	1
Unknown	390	T J	ug/Kg	☼	6.29		05/18/12 08:18	05/23/12 23:52	1
Unknown	230	T J	ug/Kg	☼	7.14		05/18/12 08:18	05/23/12 23:52	1
Unknown	230	T J	ug/Kg	☼	7.28		05/18/12 08:18	05/23/12 23:52	1
Hexadecanoic acid, butyl ester	260	T J N	ug/Kg	☼	13.08	111-6-8	05/18/12 08:18	05/23/12 23:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	98		39 - 146	05/18/12 08:18	05/23/12 23:52	1
2-Fluorophenol	61		18 - 120	05/18/12 08:18	05/23/12 23:52	1
2-Fluorobiphenyl	79		37 - 120	05/18/12 08:18	05/23/12 23:52	1
Phenol-d5	66		11 - 120	05/18/12 08:18	05/23/12 23:52	1
p-Terphenyl-d14	108		65 - 153	05/18/12 08:18	05/23/12 23:52	1
Nitrobenzene-d5	70		34 - 132	05/18/12 08:18	05/23/12 23:52	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.5**		2.4		mg/Kg	☼	05/21/12 15:30	05/22/12 18:33	1
Barium	**112**		0.59		mg/Kg	☼	05/21/12 15:30	05/22/12 18:33	1
Cadmium	ND		0.24		mg/Kg	☼	05/21/12 15:30	05/22/12 18:33	1
Chromium	**18.8**		0.59		mg/Kg	☼	05/21/12 15:30	05/22/12 18:33	1
Lead	**19.0**		1.2		mg/Kg	☼	05/21/12 15:30	05/22/12 18:33	1
Selenium	ND		4.7		mg/Kg	☼	05/21/12 15:30	05/22/12 18:33	1
Silver	ND		0.59		mg/Kg	☼	05/21/12 15:30	05/22/12 18:33	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.025		mg/Kg	☼	05/21/12 07:45	05/21/12 10:48	1

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Client Sample ID: TP-4 (3-5)
Date Collected: 05/16/12 11:30
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-3
Matrix: Solid
Percent Solids: 76.4

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1300	350	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,1,2,2-Tetrachloroethane	ND		1300	200	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1300	630	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,1,2-Trichloroethane	ND		1300	260	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,1-Dichloroethane	ND		1300	390	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,1-Dichloroethene	ND		1300	440	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,2,4-Trichlorobenzene	ND		1300	480	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,2,4-Trimethylbenzene	**85000**		1300	350	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,2-Dibromo-3-Chloropropane	ND		1300	630	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,2-Dibromoethane	ND		1300	48	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,2-Dichlorobenzene	ND		1300	320	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,2-Dichloroethane	ND		1300	520	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,2-Dichloropropane	ND		1300	200	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,3,5-Trimethylbenzene	**35000**		1300	380	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,3-Dichlorobenzene	ND		1300	340	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
1,4-Dichlorobenzene	ND		1300	180	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
2-Butanone (MEK)	ND		6300	3700	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
2-Hexanone	ND		6300	2600	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
4-Isopropyltoluene	**7200**		1300	420	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
4-Methyl-2-pentanone (MIBK)	ND		6300	400	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Acetone	ND		6300	5200	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Benzene	ND		1300	61	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Bromodichloromethane	ND		1300	250	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Bromoform	ND		1300	630	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Bromomethane	ND		1300	280	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Carbon disulfide	ND		1300	570	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Carbon tetrachloride	ND		1300	320	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Chlorobenzene	ND		1300	170	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Chloroethane	ND		1300	260	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Chloroform	ND		1300	870	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Chloromethane	ND		1300	300	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
cis-1,2-Dichloroethene	ND		1300	350	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
cis-1,3-Dichloropropene	ND		1300	300	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Cyclohexane	**19000**		1300	280	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Dibromochloromethane	ND		1300	610	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Dichlorodifluoromethane	ND		1300	550	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Ethylbenzene	**23000**		1300	370	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Isopropylbenzene	**9600**		1300	190	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
m,p-Xylene	**100000**		2500	700	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Methyl acetate	ND		1300	600	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Methyl tert-butyl ether	ND		1300	480	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Methylcyclohexane	**120000**		1300	590	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Methylene Chloride	ND		1300	250	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
n-Butylbenzene	**7700**		1300	370	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
N-Propylbenzene	**13000**		1300	330	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
o-Xylene	**800**	**J**	1300	160	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
sec-Butylbenzene	**3300**		1300	460	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Styrene	ND		1300	300	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
tert-Butylbenzene	ND		1300	350	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Tetrachloroethene	ND		1300	170	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Toluene	ND		1300	340	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10

Client Sample ID: TP-4 (3-5)
Date Collected: 05/16/12 11:30
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-3
Matrix: Solid
Percent Solids: 76.4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		1300	300	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
trans-1,3-Dichloropropene	ND		1300	61	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Trichloroethene	ND		1300	350	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Trichlorofluoromethane	ND		1300	590	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Vinyl chloride	ND		1300	420	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10
Xylenes, Total	**100000**		2500	210	ug/Kg	☼	05/21/12 21:24	05/23/12 18:35	10

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
n-Heptane	*90000*		*ug/Kg*	☼	*4.72*	*142-82-5*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Cyclopentane, 1,2,3-trimethyl-, (1.alpha	*52000*	*T J N*	*ug/Kg*	☼	*5.46*	*2613-69-6*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Heptane, 2-methyl-	*120000*	*T J N*	*ug/Kg*	☼	*5.60*	*592-27-8*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Heptane, 3-methyl-	*76000*	*T J N*	*ug/Kg*	☼	*5.72*	*589-81-1*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Cyclohexane, 1,3-dimethyl-, trans-	*130000*	*T J N*	*ug/Kg*	☼	*5.88*	*2207-3-6*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Octane	*67000*	*T J N*	*ug/Kg*	☼	*6.04*	*111-65-9*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Cyclohexane, 1,1,3-trimethyl-	*61000*	*T J N*	*ug/Kg*	☼	*6.64*	*3073-66-3*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Octane, 2-methyl-	*62000*	*T J N*	*ug/Kg*	☼	*6.83*	*3221-61-2*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Cyclohexane, propyl-	*54000*	*T J N*	*ug/Kg*	☼	*7.73*	*1678-92-8*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Benzene, 1-ethyl-2-methyl-	*100000*	*T J N*	*ug/Kg*	☼	*8.27*	*611-14-3*	*05/21/12 21:24*	*05/23/12 18:35*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*188*	*X*	*53 - 146*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
4-Bromofluorobenzene (Surr)	*62*		*49 - 148*	*05/21/12 21:24*	*05/23/12 18:35*	*10*
Toluene-d8 (Surr)	*64*		*50 - 149*	*05/21/12 21:24*	*05/23/12 18:35*	*10*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1100	13	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Acenaphthylene	ND		1100	9.0	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Anthracene	ND		1100	28	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Benzo(a)anthracene	ND		1100	19	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Benzo(a)pyrene	ND		1100	27	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Benzo(b)fluoranthene	ND		1100	21	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Benzo(g,h,i)perylene	ND		1100	13	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Benzo(k)fluoranthene	ND		1100	12	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Chrysene	ND		1100	11	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Dibenz(a,h)anthracene	ND		1100	13	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Fluoranthene	ND		1100	16	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Fluorene	ND		1100	25	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Indeno(1,2,3-cd)pyrene	ND		1100	30	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Naphthalene	**4400**		1100	18	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Phenanthrene	ND		1100	23	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5
Pyrene	ND		1100	7.1	ug/Kg	☼	05/18/12 08:18	05/24/12 00:15	5

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Octane	*9600*	*T J N*	*ug/Kg*	☼	*3.38*	*111-65-9*	*05/18/12 08:18*	*05/24/12 00:15*	*5*
Cyclohexane, 1,1,3-trimethyl-	*9000*	*T J N*	*ug/Kg*	☼	*3.95*	*3073-66-3*	*05/18/12 08:18*	*05/24/12 00:15*	*5*
Unknown	*16000*	*T J*	*ug/Kg*	☼	*4.22*		*05/18/12 08:18*	*05/24/12 00:15*	*5*
Cyclohexane, 1-ethyl-4-methyl-, trans-	*9200*	*T J N*	*ug/Kg*	☼	*4.85*	*6236-88-0*	*05/18/12 08:18*	*05/24/12 00:15*	*5*
Unknown	*10000*	*T J*	*ug/Kg*	☼	*5.01*		*05/18/12 08:18*	*05/24/12 00:15*	*5*
Unknown	*22000*	*T J*	*ug/Kg*	☼	*5.12*		*05/18/12 08:18*	*05/24/12 00:15*	*5*

Client Sample ID: TP-4 (3-5)
Date Collected: 05/16/12 11:30
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-3
Matrix: Solid
Percent Solids: 76.4

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	11000	T J	ug/Kg	☼	5.36		05/18/12 08:18	05/24/12 00:15	5
Benzene, 1-ethyl-3-methyl-	18000	T J N	ug/Kg	☼	5.47	620-14-4	05/18/12 08:18	05/24/12 00:15	5
Benzene, 1-ethyl-2-methyl-	8700	T J N	ug/Kg	☼	5.50	611-14-3	05/18/12 08:18	05/24/12 00:15	5
Benzene, 1-ethyl-2-methyl-	8000	T J N	ug/Kg	☼	5.67	611-14-3	05/18/12 08:18	05/24/12 00:15	5
Benzene, 1,2,3-trimethyl-	14000	T J N	ug/Kg	☼	5.85	526-73-8	05/18/12 08:18	05/24/12 00:15	5
Unknown	9900	T J	ug/Kg	☼	6.11		05/18/12 08:18	05/24/12 00:15	5
Benzene, 1-ethyl-3-methyl-	8000	T J N	ug/Kg	☼	6.16	620-14-4	05/18/12 08:18	05/24/12 00:15	5
Unknown	15000	T J	ug/Kg	☼	6.29		05/18/12 08:18	05/24/12 00:15	5
Benzene, 4-ethyl-1,2-dimethyl-	8900	T J N	ug/Kg	☼	6.78	934-80-5	05/18/12 08:18	05/24/12 00:15	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	104		39 - 146	05/18/12 08:18	05/24/12 00:15	5
2-Fluorophenol	80		18 - 120	05/18/12 08:18	05/24/12 00:15	5
2-Fluorobiphenyl	96		37 - 120	05/18/12 08:18	05/24/12 00:15	5
Phenol-d5	86		11 - 120	05/18/12 08:18	05/24/12 00:15	5
p-Terphenyl-d14	119		65 - 153	05/18/12 08:18	05/24/12 00:15	5
Nitrobenzene-d5	122		34 - 132	05/18/12 08:18	05/24/12 00:15	5

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.3**		2.6		mg/Kg	☼	05/21/12 15:30	05/22/12 18:36	1
Barium	**117**		0.65		mg/Kg	☼	05/21/12 15:30	05/22/12 18:36	1
Cadmium	**0.33**		0.26		mg/Kg	☼	05/21/12 15:30	05/22/12 18:36	1
Chromium	**14.4**		0.65		mg/Kg	☼	05/21/12 15:30	05/22/12 18:36	1
Lead	**34.9**		1.3		mg/Kg	☼	05/21/12 15:30	05/22/12 18:36	1
Selenium	ND		5.2		mg/Kg	☼	05/21/12 15:30	05/22/12 18:36	1
Silver	ND		0.65		mg/Kg	☼	05/21/12 15:30	05/22/12 18:36	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.083**		0.026		mg/Kg	☼	05/21/12 07:45	05/21/12 10:50	1

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Client Sample ID: TP-5 (7-9)
Date Collected: 05/16/12 14:00
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-4
Matrix: Solid
Percent Solids: 83.7

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		2000	23	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Acenaphthylene	ND		2000	16	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Anthracene	**110**	**J**	2000	51	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Benzo(a)anthracene	**610**	**J B**	2000	34	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Benzo(a)pyrene	**580**	**J B**	2000	48	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Benzo(b)fluoranthene	**720**	**J B**	2000	39	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Benzo(g,h,i)perylene	**400**	**J B**	2000	24	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Benzo(k)fluoranthene	**320**	**J B**	2000	22	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Chrysene	**600**	**J B**	2000	20	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Dibenz(a,h)anthracene	ND		2000	23	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Fluoranthene	**960**	**J B**	2000	29	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Fluorene	ND		2000	46	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Indeno(1,2,3-cd)pyrene	**310**	**J B**	2000	55	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Naphthalene	ND		2000	33	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Phenanthrene	**660**	**J B**	2000	42	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10
Pyrene	**1000**	**J B**	2000	13	ug/Kg	☼	05/18/12 08:18	05/24/12 00:39	10

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*	☼			*05/18/12 08:18*	*05/24/12 00:39*	*10*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*108*		*39 - 146*	*05/18/12 08:18*	*05/24/12 00:39*	*10*
2-Fluorophenol	*62*		*18 - 120*	*05/18/12 08:18*	*05/24/12 00:39*	*10*
2-Fluorobiphenyl	*97*		*37 - 120*	*05/18/12 08:18*	*05/24/12 00:39*	*10*
Phenol-d5	*78*		*11 - 120*	*05/18/12 08:18*	*05/24/12 00:39*	*10*
p-Terphenyl-d14	*118*		*65 - 153*	*05/18/12 08:18*	*05/24/12 00:39*	*10*
Nitrobenzene-d5	*78*		*34 - 132*	*05/18/12 08:18*	*05/24/12 00:39*	*10*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.9**		2.6		mg/Kg	☼	05/21/12 15:30	05/22/12 18:38	1
Barium	**375**		0.65		mg/Kg	☼	05/21/12 15:30	05/22/12 18:38	1
Cadmium	**6.0**		0.26		mg/Kg	☼	05/21/12 15:30	05/22/12 18:38	1
Chromium	**67.6**		0.65		mg/Kg	☼	05/21/12 15:30	05/22/12 18:38	1
Lead	**292**		1.3		mg/Kg	☼	05/21/12 15:30	05/22/12 18:38	1
Selenium	ND		5.2		mg/Kg	☼	05/21/12 15:30	05/22/12 18:38	1
Silver	**0.73**		0.65		mg/Kg	☼	05/21/12 15:30	05/22/12 18:38	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.35**		0.021		mg/Kg	☼	05/21/12 07:45	05/21/12 10:51	1

Client Sample ID: TP-10 (9-11)
Date Collected: 05/16/12 15:40
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-5
Matrix: Solid
Percent Solids: 86.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.4	0.39	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,1,2,2-Tetrachloroethane	ND		5.4	0.87	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.4	1.2	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,1,2-Trichloroethane	ND		5.4	0.70	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,1-Dichloroethane	ND		5.4	0.65	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,1-Dichloroethene	ND		5.4	0.66	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,2,4-Trichlorobenzene	ND		5.4	0.33	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,2,4-Trimethylbenzene	**1.2**	**J**	5.4	1.0	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,2-Dibromo-3-Chloropropane	ND		5.4	2.7	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,2-Dibromoethane	ND		5.4	0.69	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,2-Dichlorobenzene	ND		5.4	0.42	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,2-Dichloroethane	ND		5.4	0.27	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,2-Dichloropropane	ND		5.4	2.7	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,3,5-Trimethylbenzene	ND		5.4	0.35	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,3-Dichlorobenzene	ND		5.4	0.28	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
1,4-Dichlorobenzene	ND		5.4	0.75	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
2-Butanone (MEK)	**6.0**	**J**	27	2.0	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
2-Hexanone	ND		27	2.7	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
4-Isopropyltoluene	ND		5.4	0.43	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
4-Methyl-2-pentanone (MIBK)	ND		27	1.8	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Acetone	**42**		27	4.5	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Benzene	ND		5.4	0.26	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Bromodichloromethane	ND		5.4	0.72	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Bromoform	ND		5.4	2.7	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Bromomethane	ND		5.4	0.48	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Carbon disulfide	ND		5.4	2.7	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Carbon tetrachloride	ND		5.4	0.52	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Chlorobenzene	ND		5.4	0.71	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Chloroethane	ND		5.4	1.2	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Chloroform	ND		5.4	0.33	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Chloromethane	ND		5.4	0.32	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
cis-1,2-Dichloroethene	ND		5.4	0.69	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
cis-1,3-Dichloropropene	ND		5.4	0.77	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Cyclohexane	ND		5.4	0.75	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Dibromochloromethane	ND		5.4	0.69	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Dichlorodifluoromethane	ND		5.4	0.44	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Ethylbenzene	ND		5.4	0.37	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Isopropylbenzene	ND		5.4	0.81	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
m,p-Xylene	**3.0**	**J**	11	0.90	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Methyl acetate	ND		5.4	1.0	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Methyl tert-butyl ether	ND		5.4	0.53	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Methylcyclohexane	ND		5.4	0.81	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Methylene Chloride	ND		5.4	2.5	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
n-Butylbenzene	ND		5.4	0.47	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
N-Propylbenzene	ND		5.4	0.43	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
o-Xylene	ND		5.4	0.70	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
sec-Butylbenzene	ND		5.4	0.47	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Styrene	ND		5.4	0.27	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
tert-Butylbenzene	ND		5.4	0.56	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Tetrachloroethene	ND		5.4	0.72	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Toluene	ND		5.4	0.41	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Client Sample ID: TP-10 (9-11)
Date Collected: 05/16/12 15:40
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-5
Matrix: Solid
Percent Solids: 86.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		5.4	0.55	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
trans-1,3-Dichloropropene	ND		5.4	2.4	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Trichloroethene	ND		5.4	1.2	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Trichlorofluoromethane	ND		5.4	0.51	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Vinyl chloride	ND		5.4	0.65	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1
Xylenes, Total	**3.0**	**J**	11	0.90	ug/Kg	☼	05/20/12 11:05	05/20/12 17:09	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Cyclohexane, 1,3-dimethyl-, trans-	*40*	*T J N*	*ug/Kg*	☼	*7.31*	*2207-3-6*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
Cyclohexane, 1,3,5-trimethyl-	*22*	*T J N*	*ug/Kg*	☼	*8.14*	*1839-63-0*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
Cyclohexane, 1-ethyl-2-methyl-, trans-	*32*	*T J N*	*ug/Kg*	☼	*9.02*	*4923-78-8*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
Octane, 2,6-dimethyl-	*33*	*T J N*	*ug/Kg*	☼	*9.12*	*2051-30-1*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
1H-Indene, octahydro-, cis-	*34*	*T J N*	*ug/Kg*	☼	*9.29*	*4551-51-3*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
trans-4-Decene	*41*	*T J N*	*ug/Kg*	☼	*9.80*	*19398-89-1*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
Cyclopentane, (2-methylbutyl)-	*32*	*T J N*	*ug/Kg*	☼	*10.87*	*53366-38-4*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
Unknown	*22*	*T J*	*ug/Kg*	☼	*11.49*		*05/20/12 11:05*	*05/20/12 17:09*	*1*
Benzene, 1,2,3,5-tetramethyl-	*21*	*T J N*	*ug/Kg*	☼	*11.71*	*527-53-7*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
Dodecane, 6-methyl-	*29*	*T J N*	*ug/Kg*	☼	*12.07*	*6044-71-9*	*05/20/12 11:05*	*05/20/12 17:09*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*64 - 126*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
4-Bromofluorobenzene (Surr)	*94*		*72 - 126*	*05/20/12 11:05*	*05/20/12 17:09*	*1*
Toluene-d8 (Surr)	*92*		*71 - 125*	*05/20/12 11:05*	*05/20/12 17:09*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		200	2.3	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Acenaphthylene	ND		200	1.6	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Anthracene	ND		200	5.0	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Benzo(a)anthracene	ND		200	3.4	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Benzo(a)pyrene	ND		200	4.7	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Benzo(b)fluoranthene	ND		200	3.8	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Benzo(g,h,i)perylene	ND		200	2.3	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Benzo(k)fluoranthene	ND		200	2.1	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Chrysene	ND		200	1.9	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Dibenz(a,h)anthracene	ND		200	2.3	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Fluoranthene	ND		200	2.8	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Fluorene	ND		200	4.5	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Indeno(1,2,3-cd)pyrene	ND		200	5.4	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Naphthalene	ND		200	3.2	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Phenanthrene	ND		200	4.1	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1
Pyrene	ND		200	1.3	ug/Kg	☼	05/18/12 08:18	05/24/12 01:03	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Ethane, 1,1,2,2-tetrachloro-	*340*	*T J N*	*ug/Kg*	☼	*4.93*	*79-34-5*	*05/18/12 08:18*	*05/24/12 01:03*	*1*
Diethyl phthalate	*38*	*J B*	*ug/Kg*	☼	*10.59*	*84-66-2*	*05/18/12 08:18*	*05/24/12 01:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*100*		*39 - 146*	*05/18/12 08:18*	*05/24/12 01:03*	*1*
2-Fluorophenol	*60*		*18 - 120*	*05/18/12 08:18*	*05/24/12 01:03*	*1*
2-Fluorobiphenyl	*85*		*37 - 120*	*05/18/12 08:18*	*05/24/12 01:03*	*1*

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Client Sample ID: TP-10 (9-11)
Date Collected: 05/16/12 15:40
Date Received: 05/17/12 09:00

Lab Sample ID: 480-20163-5
Matrix: Solid
Percent Solids: 86.5

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Phenol-d5	*68*		*11 - 120*	*05/18/12 08:18*	*05/24/12 01:03*	*1*
p-Terphenyl-d14	*113*		*65 - 153*	*05/18/12 08:18*	*05/24/12 01:03*	*1*
Nitrobenzene-d5	*72*		*34 - 132*	*05/18/12 08:18*	*05/24/12 01:03*	*1*

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**5.1**		2.3		mg/Kg	☼	05/21/12 15:30	05/22/12 18:41	1
Barium	**76.7**		0.58		mg/Kg	☼	05/21/12 15:30	05/22/12 18:41	1
Cadmium	**0.25**		0.23		mg/Kg	☼	05/21/12 15:30	05/22/12 18:41	1
Chromium	**15.3**		0.58		mg/Kg	☼	05/21/12 15:30	05/22/12 18:41	1
Lead	**14.0**		1.2		mg/Kg	☼	05/21/12 15:30	05/22/12 18:41	1
Selenium	ND		4.7		mg/Kg	☼	05/21/12 15:30	05/22/12 18:41	1
Silver	ND		0.58		mg/Kg	☼	05/21/12 15:30	05/22/12 18:41	1

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.023		mg/Kg	☼	05/21/12 07:45	05/21/12 10:53	1

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)								
		12DCE	BFB	TOL						
Lab Sample ID	Client Sample ID	(64-126)	(72-126)	(71-125)						
480-20163-2	TP-3 (4-5)	108	127 X	116						
480-20163-5	TP-10 (9-11)	95	94	92						
LCS 480-65238/6	Lab Control Sample	93	103	97						
LCS 480-65414/6	Lab Control Sample	90	100	97						
MB 480-65238/7	Method Blank	88	101	97						
MB 480-65414/7	Method Blank	88	99	98						

Surrogate Legend

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

Method: 8260B - Volatile Organic Compounds (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)								
		12DCE	BFB	TOL						
Lab Sample ID	Client Sample ID	(53-146)	(49-148)	(50-149)						
480-20163-3	TP-4 (3-5)	188 X	62	64						
LCS 480-65416/1-A	Lab Control Sample	112	113	116						
MB 480-65416/2-A	Method Blank	116	112	118						

Surrogate Legend

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

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

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

		Percent Surrogate Recovery (Acceptance Limits)							
		TBP	2FP	FBP	PHL	TPH	NBZ		
Lab Sample ID	Client Sample ID	(39-146)	(18-120)	(37-120)	(11-120)	(65-153)	(34-132)		
480-20163-1	TP-1 (7-9)	111	64	101	77	120	75		
480-20163-2	TP-3 (4-5)	98	61	79	66	108	70		
480-20163-3	TP-4 (3-5)	104	80	96	86	119	122		
480-20163-4	TP-5 (7-9)	108	62	97	78	118	78		
480-20163-5	TP-10 (9-11)	100	60	85	68	113	72		
LCS 480-64990/2-A	Lab Control Sample	108	81	100	87	117	87		
MB 480-64990/1-A	Method Blank	95	65	88	73	101	72		

Surrogate Legend

TBP = 2,4,6-Tribromophenol
2FP = 2-Fluorophenol
FBP = 2-Fluorobiphenyl
PHL = Phenol-d5
TPH = p-Terphenyl-d14
NBZ = Nitrobenzene-d5

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-65238/7
Matrix: Solid
Analysis Batch: 65238

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.36	ug/Kg			05/20/12 11:42	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.81	ug/Kg			05/20/12 11:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.1	ug/Kg			05/20/12 11:42	1
1,1,2-Trichloroethane	ND		5.0	0.65	ug/Kg			05/20/12 11:42	1
1,1-Dichloroethane	ND		5.0	0.61	ug/Kg			05/20/12 11:42	1
1,1-Dichloroethene	ND		5.0	0.61	ug/Kg			05/20/12 11:42	1
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/Kg			05/20/12 11:42	1
1,2,4-Trimethylbenzene	ND		5.0	0.96	ug/Kg			05/20/12 11:42	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.5	ug/Kg			05/20/12 11:42	1
1,2-Dibromoethane	ND		5.0	0.64	ug/Kg			05/20/12 11:42	1
1,2-Dichlorobenzene	ND		5.0	0.39	ug/Kg			05/20/12 11:42	1
1,2-Dichloroethane	ND		5.0	0.25	ug/Kg			05/20/12 11:42	1
1,2-Dichloropropane	ND		5.0	2.5	ug/Kg			05/20/12 11:42	1
1,3,5-Trimethylbenzene	ND		5.0	0.32	ug/Kg			05/20/12 11:42	1
1,3-Dichlorobenzene	ND		5.0	0.26	ug/Kg			05/20/12 11:42	1
1,4-Dichlorobenzene	ND		5.0	0.70	ug/Kg			05/20/12 11:42	1
2-Butanone (MEK)	ND		25	1.8	ug/Kg			05/20/12 11:42	1
2-Hexanone	ND		25	2.5	ug/Kg			05/20/12 11:42	1
4-Isopropyltoluene	ND		5.0	0.40	ug/Kg			05/20/12 11:42	1
4-Methyl-2-pentanone (MIBK)	ND		25	1.6	ug/Kg			05/20/12 11:42	1
Acetone	ND		25	4.2	ug/Kg			05/20/12 11:42	1
Benzene	ND		5.0	0.25	ug/Kg			05/20/12 11:42	1
Bromodichloromethane	ND		5.0	0.67	ug/Kg			05/20/12 11:42	1
Bromoform	ND		5.0	2.5	ug/Kg			05/20/12 11:42	1
Bromomethane	ND		5.0	0.45	ug/Kg			05/20/12 11:42	1
Carbon disulfide	ND		5.0	2.5	ug/Kg			05/20/12 11:42	1
Carbon tetrachloride	ND		5.0	0.48	ug/Kg			05/20/12 11:42	1
Chlorobenzene	ND		5.0	0.66	ug/Kg			05/20/12 11:42	1
Chloroethane	ND		5.0	1.1	ug/Kg			05/20/12 11:42	1
Chloroform	ND		5.0	0.31	ug/Kg			05/20/12 11:42	1
Chloromethane	ND		5.0	0.30	ug/Kg			05/20/12 11:42	1
cis-1,2-Dichloroethene	ND		5.0	0.64	ug/Kg			05/20/12 11:42	1
cis-1,3-Dichloropropene	ND		5.0	0.72	ug/Kg			05/20/12 11:42	1
Cyclohexane	ND		5.0	0.70	ug/Kg			05/20/12 11:42	1
Dibromochloromethane	ND		5.0	0.64	ug/Kg			05/20/12 11:42	1
Dichlorodifluoromethane	ND		5.0	0.41	ug/Kg			05/20/12 11:42	1
Ethylbenzene	ND		5.0	0.35	ug/Kg			05/20/12 11:42	1
Isopropylbenzene	ND		5.0	0.75	ug/Kg			05/20/12 11:42	1
m,p-Xylene	ND		10	0.84	ug/Kg			05/20/12 11:42	1
Methyl acetate	ND		5.0	0.93	ug/Kg			05/20/12 11:42	1
Methyl tert-butyl ether	ND		5.0	0.49	ug/Kg			05/20/12 11:42	1
Methylcyclohexane	ND		5.0	0.76	ug/Kg			05/20/12 11:42	1
Methylene Chloride	ND		5.0	2.3	ug/Kg			05/20/12 11:42	1
n-Butylbenzene	ND		5.0	0.44	ug/Kg			05/20/12 11:42	1
N-Propylbenzene	ND		5.0	0.40	ug/Kg			05/20/12 11:42	1
o-Xylene	ND		5.0	0.65	ug/Kg			05/20/12 11:42	1
sec-Butylbenzene	ND		5.0	0.44	ug/Kg			05/20/12 11:42	1
Styrene	ND		5.0	0.25	ug/Kg			05/20/12 11:42	1
tert-Butylbenzene	ND		5.0	0.52	ug/Kg			05/20/12 11:42	1

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

Lab Sample ID: MB 480-65238/7
Matrix: Solid
Analysis Batch: 65238

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		5.0	0.67	ug/Kg			05/20/12 11:42	1
Toluene	ND		5.0	0.38	ug/Kg			05/20/12 11:42	1
trans-1,2-Dichloroethene	ND		5.0	0.52	ug/Kg			05/20/12 11:42	1
trans-1,3-Dichloropropene	ND		5.0	2.2	ug/Kg			05/20/12 11:42	1
Trichloroethene	ND		5.0	1.1	ug/Kg			05/20/12 11:42	1
Trichlorofluoromethane	ND		5.0	0.47	ug/Kg			05/20/12 11:42	1
Vinyl chloride	ND		5.0	0.61	ug/Kg			05/20/12 11:42	1
Xylenes, Total	ND		10	0.84	ug/Kg			05/20/12 11:42	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*					*05/20/12 11:42*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*64 - 126*		*05/20/12 11:42*	*1*
4-Bromofluorobenzene (Surr)	*101*		*72 - 126*		*05/20/12 11:42*	*1*
Toluene-d8 (Surr)	*97*		*71 - 125*		*05/20/12 11:42*	*1*

Lab Sample ID: LCS 480-65238/6
Matrix: Solid
Analysis Batch: 65238

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	50.0	54.6		ug/Kg		109	79 - 126
1,1-Dichloroethene	50.0	47.1		ug/Kg		94	65 - 153
1,2,4-Trimethylbenzene	50.0	53.1		ug/Kg		106	74 - 120
1,2-Dichlorobenzene	50.0	54.8		ug/Kg		110	75 - 120
1,2-Dichloroethane	50.0	57.5		ug/Kg		115	77 - 122
Benzene	50.0	53.9		ug/Kg		108	79 - 127
Chlorobenzene	50.0	56.8		ug/Kg		114	76 - 124
cis-1,2-Dichloroethene	50.0	54.4		ug/Kg		109	81 - 117
Ethylbenzene	50.0	56.3		ug/Kg		113	80 - 120
m,p-Xylene	100	113		ug/Kg		113	70 - 130
Methyl tert-butyl ether	50.0	52.4		ug/Kg		105	63 - 125
o-Xylene	50.0	55.6		ug/Kg		111	70 - 130
Tetrachloroethene	50.0	56.8		ug/Kg		114	74 - 122
Toluene	50.0	55.1		ug/Kg		110	74 - 128
trans-1,2-Dichloroethene	50.0	56.2		ug/Kg		112	78 - 126
Trichloroethene	50.0	53.9		ug/Kg		108	77 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*64 - 126*
4-Bromofluorobenzene (Surr)	*103*		*72 - 126*
Toluene-d8 (Surr)	*97*		*71 - 125*

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

Lab Sample ID: MB 480-65414/7
Matrix: Solid
Analysis Batch: 65414

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.36	ug/Kg			05/21/12 23:30	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.81	ug/Kg			05/21/12 23:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.1	ug/Kg			05/21/12 23:30	1
1,1,2-Trichloroethane	ND		5.0	0.65	ug/Kg			05/21/12 23:30	1
1,1-Dichloroethane	ND		5.0	0.61	ug/Kg			05/21/12 23:30	1
1,1-Dichloroethene	ND		5.0	0.61	ug/Kg			05/21/12 23:30	1
1,2,4-Trichlorobenzene	ND		5.0	0.30	ug/Kg			05/21/12 23:30	1
1,2,4-Trimethylbenzene	1.23	J	5.0	0.96	ug/Kg			05/21/12 23:30	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.5	ug/Kg			05/21/12 23:30	1
1,2-Dibromoethane	ND		5.0	0.64	ug/Kg			05/21/12 23:30	1
1,2-Dichlorobenzene	ND		5.0	0.39	ug/Kg			05/21/12 23:30	1
1,2-Dichloroethane	ND		5.0	0.25	ug/Kg			05/21/12 23:30	1
1,2-Dichloropropane	ND		5.0	2.5	ug/Kg			05/21/12 23:30	1
1,3,5-Trimethylbenzene	ND		5.0	0.32	ug/Kg			05/21/12 23:30	1
1,3-Dichlorobenzene	ND		5.0	0.26	ug/Kg			05/21/12 23:30	1
1,4-Dichlorobenzene	ND		5.0	0.70	ug/Kg			05/21/12 23:30	1
2-Butanone (MEK)	ND		25	1.8	ug/Kg			05/21/12 23:30	1
2-Hexanone	ND		25	2.5	ug/Kg			05/21/12 23:30	1
4-Isopropyltoluene	ND		5.0	0.40	ug/Kg			05/21/12 23:30	1
4-Methyl-2-pentanone (MIBK)	1.63	J	25	1.6	ug/Kg			05/21/12 23:30	1
Acetone	ND		25	4.2	ug/Kg			05/21/12 23:30	1
Benzene	ND		5.0	0.25	ug/Kg			05/21/12 23:30	1
Bromodichloromethane	ND		5.0	0.67	ug/Kg			05/21/12 23:30	1
Bromoform	ND		5.0	2.5	ug/Kg			05/21/12 23:30	1
Bromomethane	ND		5.0	0.45	ug/Kg			05/21/12 23:30	1
Carbon disulfide	ND		5.0	2.5	ug/Kg			05/21/12 23:30	1
Carbon tetrachloride	ND		5.0	0.48	ug/Kg			05/21/12 23:30	1
Chlorobenzene	ND		5.0	0.66	ug/Kg			05/21/12 23:30	1
Chloroethane	ND		5.0	1.1	ug/Kg			05/21/12 23:30	1
Chloroform	ND		5.0	0.31	ug/Kg			05/21/12 23:30	1
Chloromethane	ND		5.0	0.30	ug/Kg			05/21/12 23:30	1
cis-1,2-Dichloroethene	ND		5.0	0.64	ug/Kg			05/21/12 23:30	1
cis-1,3-Dichloropropene	ND		5.0	0.72	ug/Kg			05/21/12 23:30	1
Cyclohexane	ND		5.0	0.70	ug/Kg			05/21/12 23:30	1
Dibromochloromethane	ND		5.0	0.64	ug/Kg			05/21/12 23:30	1
Dichlorodifluoromethane	ND		5.0	0.41	ug/Kg			05/21/12 23:30	1
Ethylbenzene	0.450	J	5.0	0.35	ug/Kg			05/21/12 23:30	1
Isopropylbenzene	ND		5.0	0.75	ug/Kg			05/21/12 23:30	1
m,p-Xylene	1.67	J	10	0.84	ug/Kg			05/21/12 23:30	1
Methyl acetate	ND		5.0	0.93	ug/Kg			05/21/12 23:30	1
Methyl tert-butyl ether	ND		5.0	0.49	ug/Kg			05/21/12 23:30	1
Methylcyclohexane	ND		5.0	0.76	ug/Kg			05/21/12 23:30	1
Methylene Chloride	ND		5.0	2.3	ug/Kg			05/21/12 23:30	1
n-Butylbenzene	ND		5.0	0.44	ug/Kg			05/21/12 23:30	1
N-Propylbenzene	ND		5.0	0.40	ug/Kg			05/21/12 23:30	1
o-Xylene	ND		5.0	0.65	ug/Kg			05/21/12 23:30	1
sec-Butylbenzene	ND		5.0	0.44	ug/Kg			05/21/12 23:30	1
Styrene	ND		5.0	0.25	ug/Kg			05/21/12 23:30	1
tert-Butylbenzene	ND		5.0	0.52	ug/Kg			05/21/12 23:30	1

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

Lab Sample ID: MB 480-65414/7
Matrix: Solid
Analysis Batch: 65414

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		5.0	0.67	ug/Kg			05/21/12 23:30	1
Toluene	1.04	J	5.0	0.38	ug/Kg			05/21/12 23:30	1
trans-1,2-Dichloroethene	ND		5.0	0.52	ug/Kg			05/21/12 23:30	1
trans-1,3-Dichloropropene	ND		5.0	2.2	ug/Kg			05/21/12 23:30	1
Trichloroethene	ND		5.0	1.1	ug/Kg			05/21/12 23:30	1
Trichlorofluoromethane	ND		5.0	0.47	ug/Kg			05/21/12 23:30	1
Vinyl chloride	ND		5.0	0.61	ug/Kg			05/21/12 23:30	1
Xylenes, Total	1.67	J	10	0.84	ug/Kg			05/21/12 23:30	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*					*05/21/12 23:30*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*64 - 126*		*05/21/12 23:30*	*1*
4-Bromofluorobenzene (Surr)	*99*		*72 - 126*		*05/21/12 23:30*	*1*
Toluene-d8 (Surr)	*98*		*71 - 125*		*05/21/12 23:30*	*1*

Lab Sample ID: LCS 480-65414/6
Matrix: Solid
Analysis Batch: 65414

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	50.0	54.7		ug/Kg		109	79 - 126
1,1-Dichloroethene	50.0	44.9		ug/Kg		90	65 - 153
1,2,4-Trimethylbenzene	50.0	54.4		ug/Kg		109	74 - 120
1,2-Dichlorobenzene	50.0	55.1		ug/Kg		110	75 - 120
1,2-Dichloroethane	50.0	56.3		ug/Kg		113	77 - 122
Benzene	50.0	54.7		ug/Kg		109	79 - 127
Chlorobenzene	50.0	56.0		ug/Kg		112	76 - 124
cis-1,2-Dichloroethene	50.0	54.1		ug/Kg		108	81 - 117
Ethylbenzene	50.0	55.6		ug/Kg		111	80 - 120
m,p-Xylene	100	113		ug/Kg		113	70 - 130
Methyl tert-butyl ether	50.0	55.5		ug/Kg		111	63 - 125
o-Xylene	50.0	56.8		ug/Kg		114	70 - 130
Tetrachloroethene	50.0	53.1		ug/Kg		106	74 - 122
Toluene	50.0	55.4		ug/Kg		111	74 - 128
trans-1,2-Dichloroethene	50.0	55.7		ug/Kg		111	78 - 126
Trichloroethene	50.0	53.3		ug/Kg		107	77 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*64 - 126*
4-Bromofluorobenzene (Surr)	*100*		*72 - 126*
Toluene-d8 (Surr)	*97*		*71 - 125*

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

Lab Sample ID: MB 480-65416/2-A
Matrix: Solid
Analysis Batch: 65406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		99	27	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,1,2,2-Tetrachloroethane	ND		99	16	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		99	50	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,1,2-Trichloroethane	ND		99	21	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,1-Dichloroethane	ND		99	31	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,1-Dichloroethene	ND		99	34	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,2,4-Trichlorobenzene	ND		99	38	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,2,4-Trimethylbenzene	ND		99	28	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,2-Dibromo-3-Chloropropane	ND		99	50	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,2-Dibromoethane	ND		99	3.8	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,2-Dichlorobenzene	ND		99	25	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,2-Dichloroethane	ND		99	40	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,2-Dichloropropane	ND		99	16	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,3,5-Trimethylbenzene	ND		99	30	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,3-Dichlorobenzene	ND		99	26	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
1,4-Dichlorobenzene	ND		99	14	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
2-Butanone (MEK)	ND		500	290	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
2-Hexanone	ND		500	200	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
4-Isopropyltoluene	ND		99	33	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
4-Methyl-2-pentanone (MIBK)	ND		500	32	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Acetone	ND		500	410	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Benzene	ND		99	4.8	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Bromodichloromethane	ND		99	20	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Bromoform	ND		99	50	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Bromomethane	ND		99	22	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Carbon disulfide	ND		99	45	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Carbon tetrachloride	ND		99	25	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Chlorobenzene	ND		99	13	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Chloroethane	ND		99	21	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Chloroform	ND		99	68	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Chloromethane	ND		99	24	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
cis-1,2-Dichloroethene	ND		99	27	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
cis-1,3-Dichloropropene	ND		99	24	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Cyclohexane	ND		99	22	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Dibromochloromethane	ND		99	48	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Dichlorodifluoromethane	ND		99	43	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Ethylbenzene	ND		99	29	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Isopropylbenzene	ND		99	15	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
m,p-Xylene	ND		200	55	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Methyl acetate	ND		99	47	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Methyl tert-butyl ether	ND		99	37	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Methylcyclohexane	ND		99	46	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Methylene Chloride	ND		99	20	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
n-Butylbenzene	ND		99	29	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
N-Propylbenzene	ND		99	26	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
o-Xylene	ND		99	13	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
sec-Butylbenzene	ND		99	36	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Styrene	ND		99	24	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
tert-Butylbenzene	ND		99	28	ug/Kg		05/21/12 21:24	05/22/12 05:10	1

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

Lab Sample ID: MB 480-65416/2-A
Matrix: Solid
Analysis Batch: 65406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		99	13	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Toluene	ND		99	27	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
trans-1,2-Dichloroethene	ND		99	23	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
trans-1,3-Dichloropropene	ND		99	4.8	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Trichloroethene	ND		99	28	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Trichlorofluoromethane	ND		99	46	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Vinyl chloride	ND		99	33	ug/Kg		05/21/12 21:24	05/22/12 05:10	1
Xylenes, Total	ND		200	17	ug/Kg		05/21/12 21:24	05/22/12 05:10	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/Kg*				*05/21/12 21:24*	*05/22/12 05:10*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*53 - 146*	*05/21/12 21:24*	*05/22/12 05:10*	*1*
4-Bromofluorobenzene (Surr)	*112*		*49 - 148*	*05/21/12 21:24*	*05/22/12 05:10*	*1*
Toluene-d8 (Surr)	*118*		*50 - 149*	*05/21/12 21:24*	*05/22/12 05:10*	*1*

Lab Sample ID: LCS 480-65416/1-A
Matrix: Solid
Analysis Batch: 65406

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	2430	2460		ug/Kg		101	
1,1-Dichloroethene	2430	2090		ug/Kg		86	54 - 144
1,2,4-Trimethylbenzene	2430	2670		ug/Kg		110	
1,2-Dichlorobenzene	2430	2670		ug/Kg		110	
1,2-Dichloroethane	2430	2560		ug/Kg		106	
Benzene	2430	2760		ug/Kg		114	75 - 131
Chlorobenzene	2430	2790		ug/Kg		115	80 - 127
cis-1,2-Dichloroethene	2430	2630		ug/Kg		108	
Ethylbenzene	2430	2820		ug/Kg		116	
m,p-Xylene	4850	5740		ug/Kg		118	
Methyl tert-butyl ether	2430	2180		ug/Kg		90	
o-Xylene	2430	2750		ug/Kg		113	
Tetrachloroethene	2430	2930		ug/Kg		121	
Toluene	2430	2790		ug/Kg		115	76 - 133
trans-1,2-Dichloroethene	2430	2900		ug/Kg		120	
Trichloroethene	2430	2680		ug/Kg		110	77 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*112*		*53 - 146*
4-Bromofluorobenzene (Surr)	*113*		*49 - 148*
Toluene-d8 (Surr)	*116*		*50 - 149*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-64990/1-A
Matrix: Solid
Analysis Batch: 65655

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64990

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		170	2.0	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Acenaphthylene	ND		170	1.4	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Anthracene	ND		170	4.3	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Benzo(a)anthracene	20.5	J	170	2.9	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Benzo(a)pyrene	14.7	J	170	4.0	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Benzo(b)fluoranthene	21.9	J	170	3.3	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Benzo(g,h,i)perylene	17.4	J	170	2.0	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Benzo(k)fluoranthene	14.8	J	170	1.8	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Chrysene	12.9	J	170	1.7	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Dibenz(a,h)anthracene	ND		170	2.0	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Fluoranthene	15.8	J	170	2.4	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Fluorene	ND		170	3.9	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Indeno(1,2,3-cd)pyrene	18.3	J	170	4.6	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Naphthalene	ND		170	2.8	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Phenanthrene	15.4	J	170	3.5	ug/Kg		05/18/12 08:18	05/23/12 20:39	1
Pyrene	16.7	J	170	1.1	ug/Kg		05/18/12 08:18	05/23/12 20:39	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Diethyl phthalate	*60.2*	*J*	*ug/Kg*		*10.60*	*84-66-2*	*05/18/12 08:18*	*05/23/12 20:39*	*1*
Carbazole	*13.0*	*J*	*ug/Kg*		*11.98*	*86-74-8*	*05/18/12 08:18*	*05/23/12 20:39*	*1*
Di-n-octyl phthalate	*26.6*	*J*	*ug/Kg*		*14.71*	*117-84-0*	*05/18/12 08:18*	*05/23/12 20:39*	*1*
Tentatively Identified Compound	*None*		*ug/Kg*				*05/18/12 08:18*	*05/23/12 20:39*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*95*		*39 - 146*	*05/18/12 08:18*	*05/23/12 20:39*	*1*
2-Fluorophenol	*65*		*18 - 120*	*05/18/12 08:18*	*05/23/12 20:39*	*1*
2-Fluorobiphenyl	*88*		*37 - 120*	*05/18/12 08:18*	*05/23/12 20:39*	*1*
Phenol-d5	*73*		*11 - 120*	*05/18/12 08:18*	*05/23/12 20:39*	*1*
p-Terphenyl-d14	*101*		*65 - 153*	*05/18/12 08:18*	*05/23/12 20:39*	*1*
Nitrobenzene-d5	*72*		*34 - 132*	*05/18/12 08:18*	*05/23/12 20:39*	*1*

Lab Sample ID: LCS 480-64990/2-A
Matrix: Solid
Analysis Batch: 65655

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64990

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	3280	3280		ug/Kg		100	53 - 120
Acenaphthylene	3280	3350		ug/Kg		102	58 - 121
Anthracene	3280	3400		ug/Kg		104	62 - 129
Benzo(a)anthracene	3280	3320		ug/Kg		101	65 - 133
Benzo(a)pyrene	3280	3420		ug/Kg		104	64 - 127
Benzo(b)fluoranthene	3280	3510		ug/Kg		107	64 - 135
Benzo(g,h,i)perylene	3280	3370		ug/Kg		103	50 - 152
Benzo(k)fluoranthene	3280	3330		ug/Kg		102	58 - 138
Chrysene	3280	3240		ug/Kg		99	64 - 131
Dibenz(a,h)anthracene	3280	3690		ug/Kg		112	54 - 148
Fluoranthene	3280	3440		ug/Kg		105	62 - 131
Fluorene	3280	3410		ug/Kg		104	63 - 126
Indeno(1,2,3-cd)pyrene	3280	3730		ug/Kg		114	56 - 149

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-64990/2-A
Matrix: Solid
Analysis Batch: 65655

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64990

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	3280	2980		ug/Kg		91	46 - 120
Phenanthrene	3280	3390		ug/Kg		103	60 - 130
Pyrene	3280	3370		ug/Kg		103	51 - 133

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*108*		*39 - 146*
2-Fluorophenol	*81*		*18 - 120*
2-Fluorobiphenyl	*100*		*37 - 120*
Phenol-d5	*87*		*11 - 120*
p-Terphenyl-d14	*117*		*65 - 153*
Nitrobenzene-d5	*87*		*34 - 132*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 480-65187/1-A
Matrix: Solid
Analysis Batch: 65616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65187

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.9		mg/Kg		05/21/12 15:30	05/22/12 17:35	1
Barium	ND		0.48		mg/Kg		05/21/12 15:30	05/22/12 17:35	1
Cadmium	ND		0.19		mg/Kg		05/21/12 15:30	05/22/12 17:35	1
Chromium	ND		0.48		mg/Kg		05/21/12 15:30	05/22/12 17:35	1
Lead	ND		0.96		mg/Kg		05/21/12 15:30	05/22/12 17:35	1
Selenium	ND		3.8		mg/Kg		05/21/12 15:30	05/22/12 17:35	1
Silver	ND		0.48		mg/Kg		05/21/12 15:30	05/22/12 17:35	1

Lab Sample ID: LCSSRM 480-65187/2-A
Matrix: Solid
Analysis Batch: 65616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65187

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	94.3	90.36		mg/Kg		95.8	69.2 - 131.2
Barium	167	174.2		mg/Kg		104.5	72.5 - 126.9
Cadmium	60.4	60.54		mg/Kg		100.3	73.2 - 126.8
Chromium	70.3	66.41		mg/Kg		94.5	68.5 - 131.5
Lead	91.6	93.02		mg/Kg		101.5	70.3 - 129.6
Selenium	86.2	83.00		mg/Kg		96.2	64.0 - 136.6
Silver	34.3	25.20		mg/Kg		73.4	65.7 - 134.6

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 480-65171/1-A
Matrix: Solid
Analysis Batch: 65360

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65171

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.019		mg/Kg		05/21/12 07:45	05/21/12 10:43	1

Lab Sample ID: LCSSRM 480-65171/2-A
Matrix: Solid
Analysis Batch: 65360

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65171

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	3.77	3.07		mg/Kg		81.5	71.6 - 128.4

GC/MS VOA

Analysis Batch: 65238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-5	TP-10 (9-11)	Total/NA	Solid	8260B	65255
LCS 480-65238/6	Lab Control Sample	Total/NA	Solid	8260B	
MB 480-65238/7	Method Blank	Total/NA	Solid	8260B	

Prep Batch: 65255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-5	TP-10 (9-11)	Total/NA	Solid	5035	

Prep Batch: 65370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-2	TP-3 (4-5)	Total/NA	Solid	5035	

Analysis Batch: 65406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-65416/1-A	Lab Control Sample	Total/NA	Solid	8260B	65416
MB 480-65416/2-A	Method Blank	Total/NA	Solid	8260B	65416

Analysis Batch: 65414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-2	TP-3 (4-5)	Total/NA	Solid	8260B	65370
LCS 480-65414/6	Lab Control Sample	Total/NA	Solid	8260B	
MB 480-65414/7	Method Blank	Total/NA	Solid	8260B	

Prep Batch: 65416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-3	TP-4 (3-5)	Total/NA	Solid	5035	
LCS 480-65416/1-A	Lab Control Sample	Total/NA	Solid	5035	
MB 480-65416/2-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 65647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-3	TP-4 (3-5)	Total/NA	Solid	8260B	65416

GC/MS Semi VOA

Prep Batch: 64990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-1	TP-1 (7-9)	Total/NA	Solid	3550B	
480-20163-2	TP-3 (4-5)	Total/NA	Solid	3550B	
480-20163-3	TP-4 (3-5)	Total/NA	Solid	3550B	
480-20163-4	TP-5 (7-9)	Total/NA	Solid	3550B	
480-20163-5	TP-10 (9-11)	Total/NA	Solid	3550B	
LCS 480-64990/2-A	Lab Control Sample	Total/NA	Solid	3550B	
MB 480-64990/1-A	Method Blank	Total/NA	Solid	3550B	

Analysis Batch: 65655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-1	TP-1 (7-9)	Total/NA	Solid	8270C	64990
480-20163-2	TP-3 (4-5)	Total/NA	Solid	8270C	64990
480-20163-3	TP-4 (3-5)	Total/NA	Solid	8270C	64990
480-20163-4	TP-5 (7-9)	Total/NA	Solid	8270C	64990
480-20163-5	TP-10 (9-11)	Total/NA	Solid	8270C	64990

GC/MS Semi VOA (Continued)

Analysis Batch: 65655 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-64990/2-A	Lab Control Sample	Total/NA	Solid	8270C	64990
MB 480-64990/1-A	Method Blank	Total/NA	Solid	8270C	64990

Metals

Prep Batch: 65171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-1	TP-1 (7-9)	Total/NA	Solid	7471A	
480-20163-2	TP-3 (4-5)	Total/NA	Solid	7471A	
480-20163-3	TP-4 (3-5)	Total/NA	Solid	7471A	
480-20163-4	TP-5 (7-9)	Total/NA	Solid	7471A	
480-20163-5	TP-10 (9-11)	Total/NA	Solid	7471A	
LCSSRM 480-65171/2-A	Lab Control Sample	Total/NA	Solid	7471A	
MB 480-65171/1-A	Method Blank	Total/NA	Solid	7471A	

Prep Batch: 65187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-1	TP-1 (7-9)	Total/NA	Solid	3050B	
480-20163-2	TP-3 (4-5)	Total/NA	Solid	3050B	
480-20163-3	TP-4 (3-5)	Total/NA	Solid	3050B	
480-20163-4	TP-5 (7-9)	Total/NA	Solid	3050B	
480-20163-5	TP-10 (9-11)	Total/NA	Solid	3050B	
LCSSRM 480-65187/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 480-65187/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 65360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-1	TP-1 (7-9)	Total/NA	Solid	7471A	65171
480-20163-2	TP-3 (4-5)	Total/NA	Solid	7471A	65171
480-20163-3	TP-4 (3-5)	Total/NA	Solid	7471A	65171
480-20163-4	TP-5 (7-9)	Total/NA	Solid	7471A	65171
480-20163-5	TP-10 (9-11)	Total/NA	Solid	7471A	65171
LCSSRM 480-65171/2-A	Lab Control Sample	Total/NA	Solid	7471A	65171
MB 480-65171/1-A	Method Blank	Total/NA	Solid	7471A	65171

Analysis Batch: 65616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-1	TP-1 (7-9)	Total/NA	Solid	6010B	65187
480-20163-2	TP-3 (4-5)	Total/NA	Solid	6010B	65187
480-20163-3	TP-4 (3-5)	Total/NA	Solid	6010B	65187
480-20163-4	TP-5 (7-9)	Total/NA	Solid	6010B	65187
480-20163-5	TP-10 (9-11)	Total/NA	Solid	6010B	65187
LCSSRM 480-65187/2-A	Lab Control Sample	Total/NA	Solid	6010B	65187
MB 480-65187/1-A	Method Blank	Total/NA	Solid	6010B	65187

General Chemistry

Analysis Batch: 65041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-1	TP-1 (7-9)	Total/NA	Solid	Moisture	
480-20163-2	TP-3 (4-5)	Total/NA	Solid	Moisture	
480-20163-3	TP-4 (3-5)	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 65041 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-20163-4	TP-5 (7-9)	Total/NA	Solid	Moisture	
480-20163-5	TP-10 (9-11)	Total/NA	Solid	Moisture	

Client Sample ID: TP-1 (7-9)

Lab Sample ID: 480-20163-1

Date Collected: 05/16/12 09:30

Matrix: Solid

Date Received: 05/17/12 09:00

Percent Solids: 87.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			64990	05/18/12 08:18	CM	TAL BUF
Total/NA	Analysis	8270C		1	65655	05/23/12 23:28	AM	TAL BUF
Total/NA	Prep	7471A			65171	05/21/12 07:45	JRK	TAL BUF
Total/NA	Analysis	7471A		10	65360	05/21/12 13:11	JRK	TAL BUF
Total/NA	Prep	3050B			65187	05/21/12 15:30	SS	TAL BUF
Total/NA	Analysis	6010B		1	65616	05/22/12 18:31	MM	TAL BUF
Total/NA	Analysis	Moisture		1	65041	05/18/12 10:55	ZLR	TAL BUF

Client Sample ID: TP-3 (4-5)

Lab Sample ID: 480-20163-2

Date Collected: 05/16/12 10:30

Matrix: Solid

Date Received: 05/17/12 09:00

Percent Solids: 80.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			65370	05/21/12 15:00	JMB	TAL BUF
Total/NA	Analysis	8260B		1	65414	05/22/12 06:11	JMB	TAL BUF
Total/NA	Prep	3550B			64990	05/18/12 08:18	CM	TAL BUF
Total/NA	Analysis	8270C		1	65655	05/23/12 23:52	AM	TAL BUF
Total/NA	Prep	7471A			65171	05/21/12 07:45	JRK	TAL BUF
Total/NA	Analysis	7471A		1	65360	05/21/12 10:48	JRK	TAL BUF
Total/NA	Prep	3050B			65187	05/21/12 15:30	SS	TAL BUF
Total/NA	Analysis	6010B		1	65616	05/22/12 18:33	MM	TAL BUF
Total/NA	Analysis	Moisture		1	65041	05/18/12 10:55	ZLR	TAL BUF

Client Sample ID: TP-4 (3-5)

Lab Sample ID: 480-20163-3

Date Collected: 05/16/12 11:30

Matrix: Solid

Date Received: 05/17/12 09:00

Percent Solids: 76.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			65416	05/21/12 21:24	RL	TAL BUF
Total/NA	Analysis	8260B		10	65647	05/23/12 18:35	DE	TAL BUF
Total/NA	Prep	3550B			64990	05/18/12 08:18	CM	TAL BUF
Total/NA	Analysis	8270C		5	65655	05/24/12 00:15	AM	TAL BUF
Total/NA	Prep	7471A			65171	05/21/12 07:45	JRK	TAL BUF
Total/NA	Analysis	7471A		1	65360	05/21/12 10:50	JRK	TAL BUF
Total/NA	Prep	3050B			65187	05/21/12 15:30	SS	TAL BUF
Total/NA	Analysis	6010B		1	65616	05/22/12 18:36	MM	TAL BUF
Total/NA	Analysis	Moisture		1	65041	05/18/12 10:55	ZLR	TAL BUF

Client Sample ID: TP-5 (7-9)

Lab Sample ID: 480-20163-4

Date Collected: 05/16/12 14:00

Matrix: Solid

Date Received: 05/17/12 09:00

Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			64990	05/18/12 08:18	CM	TAL BUF

Lab Chronicle

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Client Sample ID: TP-5 (7-9)

Lab Sample ID: 480-20163-4

Date Collected: 05/16/12 14:00
Matrix: Solid
Date Received: 05/17/12 09:00
Percent Solids: 83.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270C		10	65655	05/24/12 00:39	AM	TAL BUF
Total/NA	Prep	7471A			65171	05/21/12 07:45	JRK	TAL BUF
Total/NA	Analysis	7471A		1	65360	05/21/12 10:51	JRK	TAL BUF
Total/NA	Prep	3050B			65187	05/21/12 15:30	SS	TAL BUF
Total/NA	Analysis	6010B		1	65616	05/22/12 18:38	MM	TAL BUF
Total/NA	Analysis	Moisture		1	65041	05/18/12 10:55	ZLR	TAL BUF

Client Sample ID: TP-10 (9-11)

Lab Sample ID: 480-20163-5

Date Collected: 05/16/12 15:40
Matrix: Solid
Date Received: 05/17/12 09:00
Percent Solids: 86.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			65255	05/20/12 11:05	JMB	TAL BUF
Total/NA	Analysis	8260B		1	65238	05/20/12 17:09	JMB	TAL BUF
Total/NA	Prep	3550B			64990	05/18/12 08:18	CM	TAL BUF
Total/NA	Analysis	8270C		1	65655	05/24/12 01:03	AM	TAL BUF
Total/NA	Prep	7471A			65171	05/21/12 07:45	JRK	TAL BUF
Total/NA	Analysis	7471A		1	65360	05/21/12 10:53	JRK	TAL BUF
Total/NA	Prep	3050B			65187	05/21/12 15:30	SS	TAL BUF
Total/NA	Analysis	6010B		1	65616	05/22/12 18:41	MM	TAL BUF
Total/NA	Analysis	Moisture		1	65041	05/18/12 10:55	ZLR	TAL BUF

Laboratory References:

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

Certification Summary

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Buffalo	Arkansas DEQ	State Program	6	88-0686
TestAmerica Buffalo	California	NELAC	9	1169CA
TestAmerica Buffalo	Connecticut	State Program	1	PH-0568
TestAmerica Buffalo	Florida	NELAC	4	E87672
TestAmerica Buffalo	Georgia	State Program	4	956
TestAmerica Buffalo	Georgia	State Program	4	N/A
TestAmerica Buffalo	Illinois	NELAC	5	100325 / 200003
TestAmerica Buffalo	Iowa	State Program	7	374
TestAmerica Buffalo	Kansas	NELAC	7	E-10187
TestAmerica Buffalo	Kentucky	State Program	4	90029
TestAmerica Buffalo	Kentucky (UST)	State Program	4	30
TestAmerica Buffalo	Louisiana	NELAC	6	02031
TestAmerica Buffalo	Maine	State Program	1	NY0044
TestAmerica Buffalo	Maryland	State Program	3	294
TestAmerica Buffalo	Massachusetts	State Program	1	M-NY044
TestAmerica Buffalo	Michigan	State Program	5	9937
TestAmerica Buffalo	Minnesota	NELAC	5	036-999-337
TestAmerica Buffalo	New Hampshire	NELAC	1	2337
TestAmerica Buffalo	New Hampshire	NELAC	1	68-00281
TestAmerica Buffalo	New Jersey	NELAC	2	NY455
TestAmerica Buffalo	New York	NELAC	2	10026
TestAmerica Buffalo	North Dakota	State Program	8	R-176
TestAmerica Buffalo	Oklahoma	State Program	6	9421
TestAmerica Buffalo	Oregon	NELAC	10	NY200003
TestAmerica Buffalo	Pennsylvania	NELAC	3	68-00281
TestAmerica Buffalo	Tennessee	State Program	4	TN02970
TestAmerica Buffalo	Texas	NELAC	6	T104704412-08-TX
TestAmerica Buffalo	USDA	Federal		P330-08-00242
TestAmerica Buffalo	Virginia	NELAC	3	460185
TestAmerica Buffalo	Virginia	State Program	3	278
TestAmerica Buffalo	Washington	State Program	10	C1677
TestAmerica Buffalo	West Virginia DEP	State Program	3	252
TestAmerica Buffalo	Wisconsin	State Program	5	998310390

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL BUF
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL BUF
6010B	Metals (ICP)	SW846	TAL BUF
7471A	Mercury (CVAA)	SW846	TAL BUF
Moisture	Percent Moisture	EPA	TAL BUF

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Turnkey Environmental Restoration, LLC
Project/Site: Turnkey 1050-1088 Niagara Street

TestAmerica Job ID: 480-20163-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-20163-1	TP-1 (7-9)	Solid	05/16/12 09:30	05/17/12 09:00
480-20163-2	TP-3 (4-5)	Solid	05/16/12 10:30	05/17/12 09:00
480-20163-3	TP-4 (3-5)	Solid	05/16/12 11:30	05/17/12 09:00
480-20163-4	TP-5 (7-9)	Solid	05/16/12 14:00	05/17/12 09:00
480-20163-5	TP-10 (9-11)	Solid	05/16/12 15:40	05/17/12 09:00

[redacted]

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
Turnkey	Mike Loszkowski	5-16-12	209429
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
2558 Hamburg Turnpike	(716) 856-0599 / (716) 856-0583		
City / State / Zip Code	**Site Contact**	**Lab Contact**	
Buffalo / NY / 14218	Paul W Werthman	B Fischer	
Project Name and Location (State)	**Carrier/Waybill Number**		
1050-1088 Niagara St			
Contract/Purchase Order/Quote No.			
0136-012-004			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: TCL + Stars VOC + TICs	Stars SVOC + TICs	RCRA Metals
TP-1 (7-9)	5-16-12	930				X	3						X	X	X
TP-3 (4-5)		1030				X	3						X	X	X
TP-4 (3-5)		1130				X	3						X	X	X
TP-5 (7-9)		1400				X	3							X	X
TP-10 (9-11)		1540				X	3						X	X	X

Special Instructions/ Conditions of Receipt

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

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

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

QC Requirements (Specify)

	Date	Time
1. Relinquished By: Paul W Werthman		
2. Relinquished By: [signature]	5-17-12	11:10
3. Relinquished By		
1. Received By: [signature]	5-17-12	10:15
2. Received By		
3. Received By		

Comments

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

Login Sample Receipt Checklist

Client: Turnkey Environmental Restoration, LLC

Job Number: 480-20163-1

Login Number: 20163

List Source: TestAmerica Buffalo

List Number: 1

Creator: May, Joel M

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

August 6, 2013

Mr. Bill Paladino
9271 Group, LLC
210 Ellicott Square Building
295 Main Street
Buffalo, New York 14203-2219

Re: Supplemental Phase II Site Investigation
1050-1088 Niagara Street Site
Buffalo, New York

Dear Mr. Paladino:

At your request, TurnKey Environmental Restoration, LLC (TurnKey) has completed a Supplemental Phase II Site Investigation for the subject property at 1050-1088 Niagara Street in the City of Buffalo, New York (Site, see Figure 1). A description of the investigation activities and a discussion of the results are presented below.

The Supplemental Phase II Site Investigation was conducted at the request of the New York State Department of Environmental Conservation (NYSDEC) to further Site conditions. A Brownfield Cleanup Program (BCP) application has been submitted for the Site, which is currently awaiting an eligibility determination from the NYSDEC, subject to a 30-day public comment period.

SITE BACKGROUND

The subject property is located in a highly developed commercial, industrial, and residential area of Buffalo, New York. The subject Site is the southern portion of the greater redevelopment site addressed from 1050-1088 Niagara Street, The redevelopment site, totaling approximately 2.7-acres, is bordered by Albany Street to the north, a manufacturing facility to the south, Niagara Street to the east, and railroad tracks and Interstate 190 to the west. The Site is improved with one three story building on the 1050 Niagara Street Parcel.

The redevelopment site has a long history of being utilized for industrial operations (since at least 1889). The International Brewing Company and American Gelatine Corp. operated on-Site in the early 1900s. The northern portion of the Site included a filling station from at least the 1920s through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site building), a commercial printing company, was located on the 1050 Niagara Street parcel of the Site

from at least 1930 through at least 1990 and Miken Companies, also a commercial printing company, until at least 2000. Two 25,000 gallon tanks were historically located in the basement of 1050 Niagara Street. Residential, industrial, and commercial operations were identified for adjacent properties through the years.

SOIL INVESTIGATION

The soil investigation was conducted by TurnKey, on July 15th, 2013. TurnKey utilized a concrete core drill to gain access to five locations beneath the basement and subbasement floor; hand tools were utilized to collect samples from the soil beneath the floors and from the exterior soil sample locations. Sample locations are identified as SB-1 through SB-8 (see Figure 2) Soil samples were collected from a depth of approximately 0 to 0.5 feet below ground surface (fbgs) in exterior locations SB-3 and SB-4 and approximately 0.5 to 1.0 fbgs beneath the floors and exterior location SB-5 for visual and olfactory observations and laboratory analysis.

Soil samples were collected for laboratory analysis from each soil boring for target compound list (TCL) semi-volatile organic compounds (SVOCs) (SB-1 through SB-8), Target Analyte List (TAL) metals (SB-1 through SB-4, SB-7), and polychlorinated biphenyls (PCBs) (SB-5) . The soil samples were collected and placed in a pre-cleaned, laboratory provided sample bottle utilizing stainless steel sampling tools, and cooled to 4 °C in the field and transported under chain-of-custody to Alpha Analytical, Inc. located in Westborough, MA.

RESULTS

Based on field observations, approximately half of the floor areas of the basement and sub-basement had visible evidence of apparent oil staining; some areas contained standing oil. Various open containers of oil and drums of unknown contents were noted throughout the sub-basement. Oil staining was also noted proximate compressors, former oil storage/hazardous waste storage areas and one utility sink in the basement. A floor drain with standing oil was noted in the central portion of the building. The attached photolog illustrates some of these areas.

Exterior samples along the former railroad spur encountered slag and railroad ballast intermixed with fine sand, silt, ash and debris. Black staining and petroleum odors were noted in samples SB-1 and SB-2 from beneath the sub-basement in an oil storage area (western portion of the building), in SB-6 from beneath the basement floor located in an oil/waste storage area (eastern portion of the building) and in SB-7 in an area of leaking pipes and oil staining in the central portion of the building.

Soil analytical results indicate that numerous SVOCs and metals were detected above their respective Unrestricted and Commercial Use SCOs (see Table 1). A copy of the laboratory analytical data package is included in Attachment 1.

SUMMARY AND CONCLUSIONS

Eight additional (8) soil borings were advanced to further investigate the southern portion of 1050-1088 Niagara Street site. The following was noted:

- Approximately half of the floor areas of the basement and sub-basement had visible evidence of apparent oil staining; some areas contained standing oil; oil staining was also noted proximate compressors, former oil storage/hazardous waste storage areas and one utility sink in the basement;
- A floor drain with standing oil was noted in the central portion of the building.
- Some of the soils exhibited visible (black staining) olfactory (petroleum odors) evidence of subsurface contamination;
- Subsurface soil analytical results indicate SVOCs and metals exceedances of Unrestricted and Commercial Use SCOs.

Based on the results of the field investigation, impacted building surfaces and surface/subsurface soils are present within the southern portion of the redevelopment site that may require remediation prior to any future development. Additional investigation is recommended to further assess soil, groundwater and soil vapor in former oil storage areas, former hazardous waste storage areas, floor drains and the railroad spur.

Containers and drums of regulated substances and wastes stored on-site should be properly characterized for off-site disposal or recycling. Oil staining and standing oil noted throughout the basement and sub-basement should be removed/cleaned prior to site redevelopment.

LIMITATIONS

TurnKey personnel monitored all activities during investigation at the Site according to generally accepted practices. Based on the field observations made by TurnKey personnel, as well as field and laboratory test data, the investigation performed at the Site complied with the scope of work provided to 9271 Group, LLC by TurnKey.

This report has been prepared for the exclusive use of 9271 Group, LLC. The contents of this report are limited to information available at the time of the site investigation activities and to data referenced herein, and assume all referenced historic information sources to be true and accurate. The findings herein may be relied upon only at the discretion of 9271

Group, LLC. Use of or reliance upon this report or its findings by any other person or entity is prohibited without written permission of TurnKey Environmental Restoration, LLC.

Please contact us if you have any questions.

Sincerely,
TurnKey Environmental Restoration, LLC

Michael Lesakowski
Project Manager

File: 0136-013-005

TABLES

TABLE 1

SUMMARY OF SOIL ANALYTICAL RESULTS

1050-1088 NIAGARA STREET

BUFFAL, NEW YORK

Parameter [1]	Unrestricted SCOs[2]	Commercial SCOs[3]	Sample Location												
			TP-1 (7-9)	TP-3 (4-5)	TP-4 (3-5)	TP-5 (7-9)	TP-10 (9-11)	SB-1 (0.5-1)	SB-2 (0.5-1)	SB-3 (0-0.5)	SB-4 (0-0.5)	SB-5 (0.5-1) [5]	SB-6 (0.5-1)	SB-7 (0.5-1)	SB-8 (0.5-1)
Volatile Organic Compounds (VOCs) - mg/Kg [3]															
2-Butanone (MEK) [5]	--	--	NA	0.026 J	ND	NA	0.006 J	--	--	--	--	--	--	--	--
Acetone	**0.05**	**500**	NA	0.17	ND	NA	0.042	--	--	--	--	--	--	--	--
Ethylbenzene	**1**	**390**	NA	ND	**23**	NA	ND	--	--	--	--	--	--	--	--
Cyclohexane	--	--	NA	0.27	19	NA	ND	--	--	--	--	--	--	--	--
Isopropylbenzene (Cumene)	**2.3**	**2.3**	NA	0.25	**9.6**	NA	ND	--	--	--	--	--	--	--	--
n-Butylbenzene	**12**	**500**	NA	ND	7.7	NA	ND	--	--	--	--	--	--	--	--
n-Propylbenzene	**3.9**	**500**	NA	0.38	**130**	NA	ND	--	--	--	--	--	--	--	--
sec-Butylbenzene	**11**	**500**	NA	ND	3.3	NA	ND	--	--	--	--	--	--	--	--
tert-Butylbenzene	**5.9**	**500**	NA	0.019 J	ND	NA	ND	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	**3.6**	**190**	NA	0.7 B	**85**	NA	0.0012 J	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	**8.4**	**190**	NA	ND	**35**	NA	ND	--	--	--	--	--	--	--	--
p-Isopropyltoluene	**10**	**10**	NA	ND	7.2	NA	ND	--	--	--	--	--	--	--	--
Total Xylene	**0.26**	**500**	NA	0.091 B	**100**	NA	0.003 J	--	--	--	--	--	--	--	--
Methylcyclohexane	--	--	NA	0.55	120	NA	ND	--	--	--	--	--	--	--	--
TICS	--	--	NA	10.89 J	812 J	NA	0.286 J	--	--	--	--	--	--	--	--
Semi-Volatile Organic Compounds (SVOCs) - mg/Kg [3]															
1,2-Dichlorobenzene	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.069 J	ND
1,3-Dichlorobenzene	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.08 J	ND
2-Methylnaphthalene	--	--	ND	ND	ND	ND	ND	ND	ND	25	5.9	1.3 J	ND	ND	ND
Acenaphthylene	**100**	**500**	0.01 J	ND	ND	ND	ND	ND	ND	ND	6.2	1.2 J	ND	ND	ND
Acenaphthene	**20**	**500**	0.025 J	ND	ND	ND	ND	ND	ND	39	7	7.3	ND	0.096 J	ND
Anthracene	**100**	**500**	0.047 J	ND	ND	0.11 J	ND	ND	ND	60	18	15	ND	0.18	ND
Benzo(a)anthracene	**1**	**5.6**	0.17 BJ	ND	ND	0.61 BJ	ND	ND	ND	**130**	**46**	**40**	ND	0.59	ND
Benzzo(a)pyrene	**1**	**1**	0.18 BJ	ND	ND	ND	ND	ND	ND	ND	**39**	**40**	ND	0.4	ND
Benzo(b)fluoranthene	**1**	**5.6**	0.2 B	ND	ND	0.72 BJ	ND	ND	ND	**120**	**36**	**55**	ND	0.65	ND
Benzo(k)fluoranthene	**0.8**	**56**	0.08 BJ	ND	ND	0.32 BJ	ND	ND	ND	**110**	**33**	**19**	ND	0.22	ND
Benzo(g,h,i)perylene	**100**	**500**	0.11 BJ	ND	ND	0.4 BJ	ND	ND	ND	67	21	26	ND	0.3	ND
Benzoic acid	--	--	ND	ND	ND	ND	ND	5.2 J	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	**1**	**1**	0.18 BJ	ND	ND	0.58 BJ	ND	ND	ND	**120**	ND	ND	ND	ND	ND
Biphenyl	--	--	ND	ND	ND	ND	ND	ND	ND	5.1 J	ND	ND	ND	ND	ND
Bis(2-ethylhexyl)pht	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4 J	ND	ND	ND
Butyl benzyl phthalate	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1 J	ND	ND	ND
Carbazole	--	--	ND	ND	ND	ND	ND	ND	ND	41	10	13	ND	0.13 J	ND
Chrysene	**1**	**56**	0.15 BJ	ND	ND	0.6 BJ	ND	ND	ND	**120**	**44**	**45**	ND	0.63	ND
Dibenzo(a,h)anthracene	**0.33**	**0.56**	**0.035 J**	ND	ND	ND	ND	ND	ND	**12**	**6.6**	ND	ND	0.1 J	ND
Dibenzofuran	--	--	ND	ND	ND	ND	ND	ND	ND	38	7.9	4.4	ND	ND	ND
Diethyl phthalate	--	--	ND	ND	ND	ND	ND	ND	0.086 J	ND	ND	ND	ND	ND	ND
Fluoranthene	**100**	**500**	0.22 B	ND	ND	0.96 BJ	ND	ND	ND	**300**	97	85	ND	1.4	ND
Fluorene	**30**	**500**	0.016 J	ND	ND	ND	ND	ND	ND	**43**	9	ND	ND	0.08 J	ND
Indeno(1,2,3-cd)pyrene	**0.5**	**5.6**	0.092 J B	ND	ND	0.31 BJ	ND	ND	ND	**85**	**24**	ND	ND	0.25	ND
Naphthalene	**12**	**500**	0.1 J	0.0052 J	4.4 J	ND	ND	ND	ND	**51**	**15**	2.2 J	ND	ND	ND
Phenanthrene	**100**	**500**	0.22 B	ND	ND	0.66 BJ	ND	ND	0.17	**300**	67	ND	0.072 J	1.2	ND
Pyrene	**100**	**500**	0.22 B	ND	ND	1 BJ	ND	ND	ND	**210**	84	69	ND	1	ND
TICS	--	--	2.62 J	5.15 J	177.3 J	ND	0.378	--	--	--	--	--	--	--	--
Metals - mg/Kg															
Aluminum	--	--	--	--	--	--	--	2000	5400	4300	4500	--	--	10000	--
Antimony	--	--	--	--	--	--	--	ND	2 J	5.8	9.4	--	--	ND	--
Arsenic	**13**	**16**	8.8	4.5	4.3	5.9	5.1	3.2	3.4	**42**	**86**	--	--	5.9	--
Barium	**350**	**400**	133	112	117	**375**	76.7	83	100	220	240	--	--	61	--
Beryllium	**7.2**	**590**	--	--	--	--	--	0.18 J	0.57	0.57	0.45 J	--	--	0.41 J	--
Cadmium	**2.5**	**9.3**	1.7	ND	0.33	**6**	0.25	0.34 J	0.78 J	**3.4**	**15**	--	--	0.52 J	--
Calcium	--	--	--	--	--	--	--	12000	21000	6200	23000	--	--	73000	--
Chromium	**30**	**1500**	**77.3**	18.8	14.4	**67.6**	15.3	4	12	**57**	**44**	--	--	13	--
Cobalt	--	--	--	--	--	--	--	62	140	18	8.6	--	--	21	--
Copper	**50**	**270**	--	--	--	--	--	29	**87**	**660**	**320**	--	--	36	--
Iron	--	--	--	--	--	--	--	9300	12000	100000	41000	--	--	15000	--
Lead	**63**	**1000**	**1160**	19	1.3	**292**	14	16	48	**670**	**550**	--	--	36	--
Magnesium	--	--	--	--	--	--	--	2700	5200	790	2000	--	--	31000	--
Manganese	**1600**	**10000**	--	--	--	--	--	47	120	530	380	--	--	460	--
Mercury	**0.18**	**2.8**	**4**	ND	**0.083**	**0.35**	ND	ND	0.03 J	**0.99**	**2.2**	--	--	ND	--
Nickel	**30**	**310**	--	--	--	--	--	13	48	30	28	--	--	19	--
Potassium	--	--	--	--	--	--	--	380	950	320	540	--	--	1400	--
Selenium	**3.9**	**1500**	ND	ND	ND	ND	ND	1.2 J	0.36 J	2.1	**6.2**	--	--	0.35 J	--
Silver	**2**	**1500**	ND	ND	ND	0.73	ND	1.6	**9**	**11**	**8**	--	--	0.32 J	--
Sodium	--	--	--	--	--	--	--	150 J	220	140 J	320 J	--	--	190 J	--
Vandium	--	--	--	--	--	--	--	8.3	16	11	15	--	--	20	--
Zinc	**109**	**10000**	--	--	--	--	--	39	80	**410**	**670**	--	--	68	--

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Values per 6NYCRR Part 375.6.8 (a) Soil Cleanup Objectives - Unrestricted (December 2006)
3. Values per 6NYCRR Part 375.6.8 (b) Soil Cleanup Objectives - Commercial (December 2006).
4. Sample results were reported by the laboratory in ug/kg and converted to mg/Kg for comparison to SCOs.
5. Sample SB-5 was aslo analyzed for polychlorinated biphenyls (PCBs), which were reported as non-detect.

Definitions:

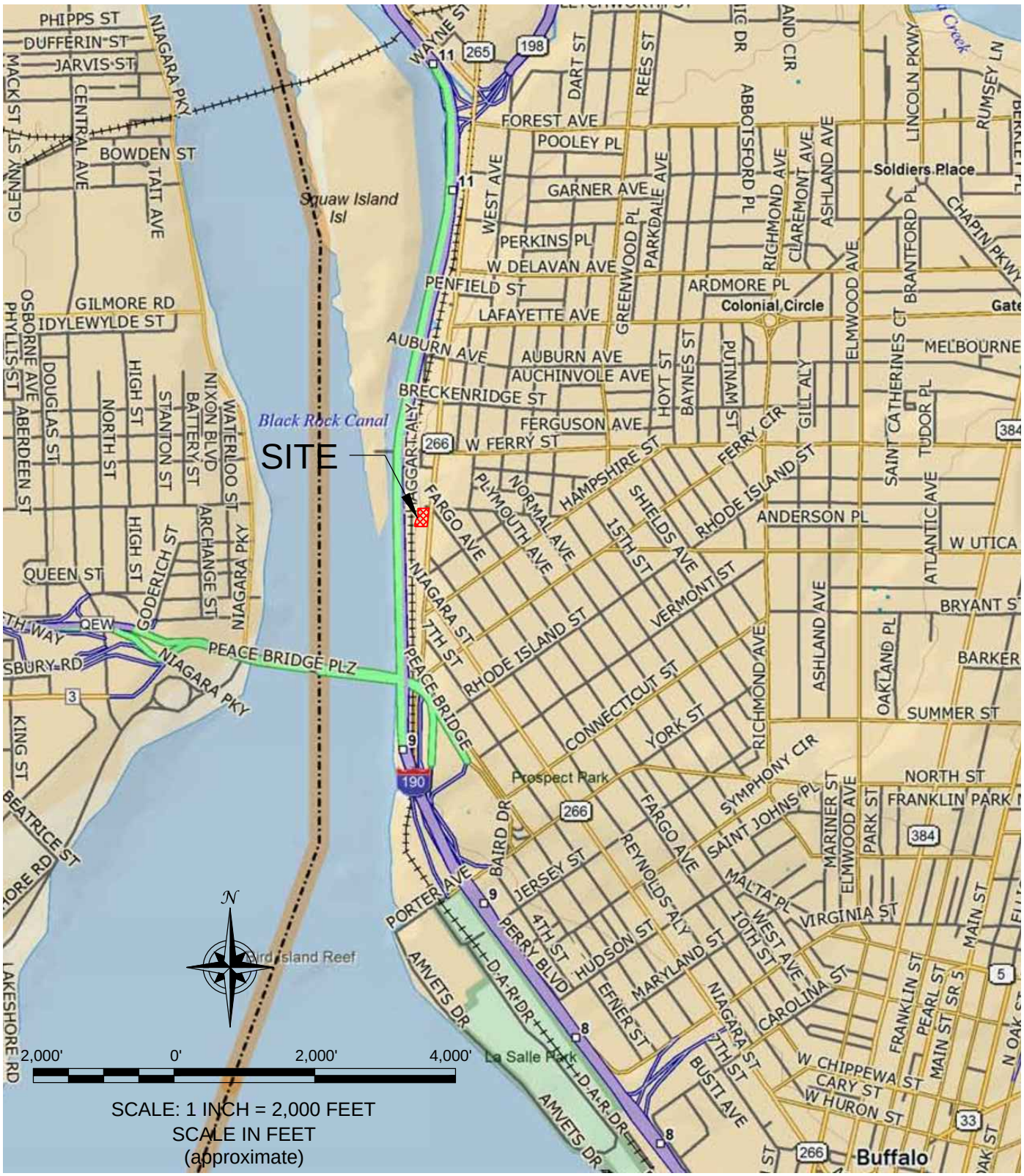
ND = Parameter not detected above laboratory detection limit.
NA = Parameter not Analysed.
"--" = No SCO available.
J = Estimated value; result is less than the sample quantitation limit but greater than zero.
B = Indicates a value greater than or equal to the instrument detection limit, but less than the quantitation limit.
* = Indicates the spike or duplicate analysis is not within the quality control limits.
D = Analyte was detected after laboratory dilution.

BOLD = Exceeds SCOs Unrestricted Use SCOs
BOLD = ExceedsSCOs Commerical Use SCOs

FIGURES

F:\CAD\TurnKey\Elliott Development\1050-1088 Niagara St\Phase I ESA\Figure 1; Site Location and Vicinity Map.dwg

FIGURE 1



TurnKey Environmental Restoration, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0136-012-004

DATE: JULY 2012

DRAFTED BY: JGT

SITE LOCATION AND VICINITY MAP

LIMITED PHASE II ENVRIONMENTAL SITE ASSESSMENT

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\Additional Phase II Work\1050-1088 Niagara IRM Base Map.dwg

DATE: JULY 2013
DRAFTED BY: JGT

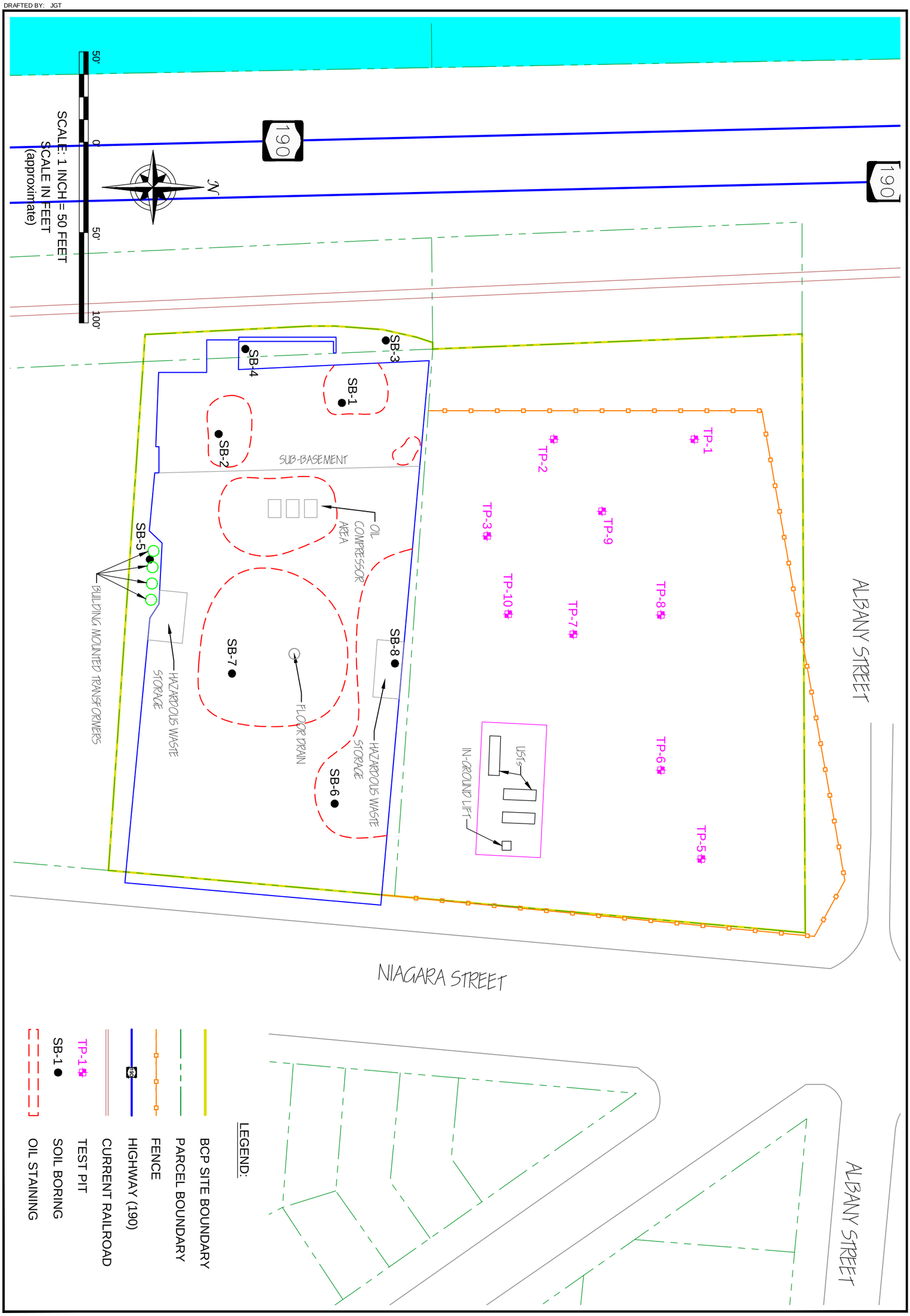


FIGURE 2

SAMPLE LOCATIONS

PHASE II INVESTIGATION

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0136-013-005

ATTACHMENT 1

LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

Lab Number:	L1313385
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Mike Lesakowski
Phone:	(716) 856-0599
Project Name:	1050 NIAGARA ST.
Project Number:	0136-013-005
Report Date:	07/24/13

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1313385-01	SB-1 (.5-1)	1050 NIAGARA ST.	07/15/13 10:20
L1313385-02	SB-2 (.5-1)	1050 NIAGARA ST.	07/15/13 10:52
L1313385-03	SB-3 (0-.5)	1050 NIAGARA ST.	07/15/13 10:25
L1313385-04	SB-4 (0-.5)	1050 NIAGARA ST.	07/15/13 10:50
L1313385-05	SB-5 (.5-1)	1050 NIAGARA ST.	07/15/13 14:30
L1313385-06	SB-6 (.5-1)	1050 NIAGARA ST.	07/15/13 14:00
L1313385-07	SB-7 (.5-1)	1050 NIAGARA ST.	07/15/13 12:20
L1313385-08	SB-8 (.5-1)	1050 NIAGARA ST.	07/15/13 13:00

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385
Project Number: 0136-013-005 **Report Date:** 07/24/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385
Project Number: 0136-013-005 **Report Date:** 07/24/13

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Semivolatile Organics

L1313385-01 has elevated detection limits due to the dilution required by matrix interferences encountered during the concentration of the sample.

The surrogate recoveries for L1313385-03 and -04 are below the acceptance criteria for 2-Fluorophenol, Phenol-d6, Nitrobenzene-d5, 2-Fluorobiphenyl, and 4-Terphenyl-d14 (all at 0%) due to the dilution required to quantitate the sample. Re-extraction was not required; therefore, the results of the original analysis are reported.

Metals

L1313385-01 through -04, and -07 have elevated detection limits for all elements, with the exception of Mercury, due to the dilutions required by matrix interferences encountered during analysis.

L1313385-03, -04, and -07 have elevated detection limits for Sodium due to the dilutions required by matrix interferences encountered during analysis.

The WG622605-1 Method Blank, associated with L1313385-01 through -04 and -07, has a concentration above the reporting limit for Calcium. Since the associated sample concentrations are greater than 5x the blank concentration for this analyte, no qualification of the results was performed.

The WG622815-4 MS recovery, performed on L1313385-03, is above the acceptance criteria for Mercury (466%). A post digestion spike was performed with an acceptable recovery of 105%.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative Date: 07/24/13

ORGANICS

SEMIVOLATILES

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-01	Date Collected:	07/15/13 10:20
Client ID:	SB-1 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	1,8270D	Extraction Date:	07/17/13 17:13
Analytical Date:	07/23/13 14:53		
Analyst:	RC		
Percent Solids:	84%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	1400	360	9
1,2,4-Trichlorobenzene	ND		ug/kg	1800	580	9
Hexachlorobenzene	ND		ug/kg	1000	330	9
Bis(2-chloroethyl)ether	ND		ug/kg	1600	490	9
2-Chloronaphthalene	ND		ug/kg	1800	570	9
1,2-Dichlorobenzene	ND		ug/kg	1800	580	9
1,3-Dichlorobenzene	ND		ug/kg	1800	560	9
1,4-Dichlorobenzene	ND		ug/kg	1800	540	9
3,3'-Dichlorobenzidine	ND		ug/kg	1800	470	9
2,4-Dinitrotoluene	ND		ug/kg	1800	380	9
2,6-Dinitrotoluene	ND		ug/kg	1800	450	9
Fluoranthene	ND		ug/kg	1000	320	9
4-Chlorophenyl phenyl ether	ND		ug/kg	1800	540	9
4-Bromophenyl phenyl ether	ND		ug/kg	1800	400	9
Bis(2-chloroisopropyl)ether	ND		ug/kg	2100	620	9
Bis(2-chloroethoxy)methane	ND		ug/kg	1900	530	9
Hexachlorobutadiene	ND		ug/kg	1800	500	9
Hexachlorocyclopentadiene	ND		ug/kg	5000	1100	9
Hexachloroethane	ND		ug/kg	1400	320	9
Isophorone	ND		ug/kg	1600	470	9
Naphthalene	ND		ug/kg	1800	580	9
Nitrobenzene	ND		ug/kg	1600	420	9
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	1400	370	9
n-Nitrosodi-n-propylamine	ND		ug/kg	1800	520	9
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	1800	460	9
Butyl benzyl phthalate	ND		ug/kg	1800	340	9
Di-n-butylphthalate	ND		ug/kg	1800	340	9
Di-n-octylphthalate	ND		ug/kg	1800	430	9
Diethyl phthalate	ND		ug/kg	1800	370	9
Dimethyl phthalate	ND		ug/kg	1800	450	9
Benzo(a)anthracene	ND		ug/kg	1000	340	9

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-01 Date Collected: 07/15/13 10:20

Client ID: SB-1 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	1400	430	9
Benzo(b)fluoranthene	ND		ug/kg	1000	360	9
Benzo(k)fluoranthene	ND		ug/kg	1000	340	9
Chrysene	ND		ug/kg	1000	350	9
Acenaphthylene	ND		ug/kg	1400	330	9
Anthracene	ND		ug/kg	1000	290	9
Benzo(ghi)perylene	ND		ug/kg	1400	370	9
Fluorene	ND		ug/kg	1800	500	9
Phenanthrene	ND		ug/kg	1000	340	9
Dibenzo(a,h)anthracene	ND		ug/kg	1000	340	9
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	1400	390	9
Pyrene	ND		ug/kg	1000	340	9
Biphenyl	ND		ug/kg	4000	580	9
4-Chloroaniline	ND		ug/kg	1800	460	9
2-Nitroaniline	ND		ug/kg	1800	500	9
3-Nitroaniline	ND		ug/kg	1800	490	9
4-Nitroaniline	ND		ug/kg	1800	480	9
Dibenzofuran	ND		ug/kg	1800	590	9
2-Methylnaphthalene	ND		ug/kg	2100	560	9
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	1800	550	9
Acetophenone	ND		ug/kg	1800	550	9
2,4,6-Trichlorophenol	ND		ug/kg	1000	330	9
P-Chloro-M-Cresol	ND		ug/kg	1800	510	9
2-Chlorophenol	ND		ug/kg	1800	530	9
2,4-Dichlorophenol	ND		ug/kg	1600	570	9
2,4-Dimethylphenol	ND		ug/kg	1800	520	9
2-Nitrophenol	ND		ug/kg	3800	550	9
4-Nitrophenol	ND		ug/kg	2500	570	9
2,4-Dinitrophenol	ND		ug/kg	8500	2400	9
4,6-Dinitro-o-cresol	ND		ug/kg	4600	640	9
Pentachlorophenol	ND		ug/kg	1400	380	9
Phenol	ND		ug/kg	1800	520	9
2-Methylphenol	ND		ug/kg	1800	570	9
3-Methylphenol/4-Methylphenol	ND		ug/kg	2500	580	9
2,4,5-Trichlorophenol	ND		ug/kg	1800	570	9
Benzoic Acid	5200	J	ug/kg	5700	1800	9
Benzyl Alcohol	ND		ug/kg	1800	540	9
Carbazole	ND		ug/kg	1800	380	9

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-01 Date Collected: 07/15/13 10:20

Client ID: SB-1 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		25-120
Phenol-d6	72		10-120
Nitrobenzene-d5	100		23-120
2-Fluorobiphenyl	78		30-120
2,4,6-Tribromophenol	94		0-136
4-Terphenyl-d14	62		18-120

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-02	Date Collected:	07/15/13 10:52
Client ID:	SB-2 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	1,8270D	Extraction Date:	07/17/13 17:13
Analytical Date:	07/23/13 15:22		
Analyst:	RC		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	42.	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	66.	1
Hexachlorobenzene	ND		ug/kg	120	38.	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	57.	1
2-Chloronaphthalene	ND		ug/kg	200	66.	1
1,2-Dichlorobenzene	ND		ug/kg	200	67.	1
1,3-Dichlorobenzene	ND		ug/kg	200	64.	1
1,4-Dichlorobenzene	ND		ug/kg	200	62.	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	54.	1
2,4-Dinitrotoluene	ND		ug/kg	200	44.	1
2,6-Dinitrotoluene	ND		ug/kg	200	52.	1
Fluoranthene	ND		ug/kg	120	37.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	62.	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	47.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	71.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	61.	1
Hexachlorobutadiene	ND		ug/kg	200	57.	1
Hexachlorocyclopentadiene	ND		ug/kg	580	130	1
Hexachloroethane	ND		ug/kg	160	37.	1
Isophorone	ND		ug/kg	180	54.	1
Naphthalene	ND		ug/kg	200	67.	1
Nitrobenzene	ND		ug/kg	180	48.	1
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	160	43.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	60.	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	53.	1
Butyl benzyl phthalate	ND		ug/kg	200	40.	1
Di-n-butylphthalate	ND		ug/kg	200	39.	1
Di-n-octylphthalate	ND		ug/kg	200	50.	1
Diethyl phthalate	86	J	ug/kg	200	43.	1
Dimethyl phthalate	ND		ug/kg	200	52.	1
Benzo(a)anthracene	ND		ug/kg	120	40.	1

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-02 Date Collected: 07/15/13 10:52

Client ID: SB-2 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	160	50.	1
Benzo(b)fluoranthene	ND		ug/kg	120	41.	1
Benzo(k)fluoranthene	ND		ug/kg	120	39.	1
Chrysene	ND		ug/kg	120	40.	1
Acenaphthylene	ND		ug/kg	160	38.	1
Anthracene	ND		ug/kg	120	34.	1
Benzo(ghi)perylene	ND		ug/kg	160	42.	1
Fluorene	ND		ug/kg	200	58.	1
Phenanthrene	170		ug/kg	120	40.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	39.	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	45.	1
Pyrene	ND		ug/kg	120	39.	1
Biphenyl	ND		ug/kg	460	67.	1
4-Chloroaniline	ND		ug/kg	200	54.	1
2-Nitroaniline	ND		ug/kg	200	57.	1
3-Nitroaniline	ND		ug/kg	200	56.	1
4-Nitroaniline	ND		ug/kg	200	55.	1
Dibenzofuran	ND		ug/kg	200	68.	1
2-Methylnaphthalene	ND		ug/kg	240	65.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	200	63.	1
Acetophenone	ND		ug/kg	200	63.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	38.	1
P-Chloro-M-Cresol	ND		ug/kg	200	59.	1
2-Chlorophenol	ND		ug/kg	200	61.	1
2,4-Dichlorophenol	ND		ug/kg	180	66.	1
2,4-Dimethylphenol	ND		ug/kg	200	60.	1
2-Nitrophenol	ND		ug/kg	440	63.	1
4-Nitrophenol	ND		ug/kg	280	66.	1
2,4-Dinitrophenol	ND		ug/kg	970	280	1
4,6-Dinitro-o-cresol	ND		ug/kg	530	74.	1
Pentachlorophenol	ND		ug/kg	160	43.	1
Phenol	ND		ug/kg	200	60.	1
2-Methylphenol	ND		ug/kg	200	65.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	66.	1
2,4,5-Trichlorophenol	ND		ug/kg	200	66.	1
Benzoic Acid	ND		ug/kg	660	200	1
Benzyl Alcohol	ND		ug/kg	200	62.	1
Carbazole	ND		ug/kg	200	44.	1

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-02 Date Collected: 07/15/13 10:52

Client ID: SB-2 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	82		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	85		30-120
2,4,6-Tribromophenol	113		0-136
4-Terphenyl-d14	88		18-120

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-03	D	Date Collected:	07/15/13 10:25
Client ID:	SB-3 (0-.5)		Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.		Field Prep:	Not Specified
Matrix:	Soil		Extraction Method:	EPA 3546
Analytical Method:	1,8270D		Extraction Date:	07/17/13 17:13
Analytical Date:	07/23/13 20:18			
Analyst:	RC			
Percent Solids:	80%			

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	39000		ug/kg	12000	3100	75
1,2,4-Trichlorobenzene	ND		ug/kg	15000	5000	75
Hexachlorobenzene	ND		ug/kg	9100	2800	75
Bis(2-chloroethyl)ether	ND		ug/kg	14000	4300	75
2-Chloronaphthalene	ND		ug/kg	15000	5000	75
1,2-Dichlorobenzene	ND		ug/kg	15000	5000	75
1,3-Dichlorobenzene	ND		ug/kg	15000	4800	75
1,4-Dichlorobenzene	ND		ug/kg	15000	4600	75
3,3'-Dichlorobenzidine	ND		ug/kg	15000	4000	75
2,4-Dinitrotoluene	ND		ug/kg	15000	3300	75
2,6-Dinitrotoluene	ND		ug/kg	15000	3900	75
Fluoranthene	300000		ug/kg	9100	2800	75
4-Chlorophenyl phenyl ether	ND		ug/kg	15000	4600	75
4-Bromophenyl phenyl ether	ND		ug/kg	15000	3500	75
Bis(2-chloroisopropyl)ether	ND		ug/kg	18000	5400	75
Bis(2-chloroethoxy)methane	ND		ug/kg	16000	4600	75
Hexachlorobutadiene	ND		ug/kg	15000	4300	75
Hexachlorocyclopentadiene	ND		ug/kg	44000	9800	75
Hexachloroethane	ND		ug/kg	12000	2800	75
Isophorone	ND		ug/kg	14000	4000	75
Naphthalene	51000		ug/kg	15000	5100	75
Nitrobenzene	ND		ug/kg	14000	3600	75
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	12000	3200	75
n-Nitrosodi-n-propylamine	ND		ug/kg	15000	4500	75
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	15000	4000	75
Butyl benzyl phthalate	ND		ug/kg	15000	3000	75
Di-n-butylphthalate	ND		ug/kg	15000	2900	75
Di-n-octylphthalate	ND		ug/kg	15000	3700	75
Diethyl phthalate	ND		ug/kg	15000	3200	75
Dimethyl phthalate	ND		ug/kg	15000	3900	75
Benzo(a)anthracene	130000		ug/kg	9100	3000	75

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-03 D Date Collected: 07/15/13 10:25

Client ID: SB-3 (0-.5) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)pyrene	120000		ug/kg	12000	3700	75
Benzo(b)fluoranthene	120000		ug/kg	9100	3100	75
Benzo(k)fluoranthene	110000		ug/kg	9100	2900	75
Chrysene	120000		ug/kg	9100	3000	75
Acenaphthylene	ND		ug/kg	12000	2800	75
Anthracene	60000		ug/kg	9100	2500	75
Benzo(ghi)perylene	67000		ug/kg	12000	3200	75
Fluorene	43000		ug/kg	15000	4400	75
Phenanthrene	300000		ug/kg	9100	3000	75
Dibenzo(a,h)anthracene	12000		ug/kg	9100	3000	75
Indeno(1,2,3-cd)Pyrene	85000		ug/kg	12000	3400	75
Pyrene	210000		ug/kg	9100	3000	75
Biphenyl	5100	J	ug/kg	35000	5000	75
4-Chloroaniline	ND		ug/kg	15000	4000	75
2-Nitroaniline	ND		ug/kg	15000	4300	75
3-Nitroaniline	ND		ug/kg	15000	4200	75
4-Nitroaniline	ND		ug/kg	15000	4100	75
Dibenzofuran	38000		ug/kg	15000	5100	75
2-Methylnaphthalene	25000		ug/kg	18000	4900	75
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	15000	4700	75
Acetophenone	ND		ug/kg	15000	4700	75
2,4,6-Trichlorophenol	ND		ug/kg	9100	2900	75
P-Chloro-M-Cresol	ND		ug/kg	15000	4400	75
2-Chlorophenol	ND		ug/kg	15000	4600	75
2,4-Dichlorophenol	ND		ug/kg	14000	4900	75
2,4-Dimethylphenol	ND		ug/kg	15000	4500	75
2-Nitrophenol	ND		ug/kg	33000	4800	75
4-Nitrophenol	ND		ug/kg	21000	4900	75
2,4-Dinitrophenol	ND		ug/kg	73000	21000	75
4,6-Dinitro-o-cresol	ND		ug/kg	40000	5600	75
Pentachlorophenol	ND		ug/kg	12000	3300	75
Phenol	ND		ug/kg	15000	4500	75
2-Methylphenol	ND		ug/kg	15000	4900	75
3-Methylphenol/4-Methylphenol	ND		ug/kg	22000	5000	75
2,4,5-Trichlorophenol	ND		ug/kg	15000	4900	75
Benzoic Acid	ND		ug/kg	49000	15000	75
Benzyl Alcohol	ND		ug/kg	15000	4700	75
Carbazole	41000		ug/kg	15000	3300	75

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-03 D
Client ID: SB-3 (0-.5)
Sample Location: 1050 NIAGARA ST.

Date Collected: 07/15/13 10:25
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	**0**	Q	25-120
Phenol-d6	**0**	Q	10-120
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
2,4,6-Tribromophenol	0		0-136
4-Terphenyl-d14	**0**	Q	18-120

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-04	D	Date Collected:	07/15/13 10:50
Client ID:	SB-4 (0-.5)		Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.		Field Prep:	Not Specified
Matrix:	Soil		Extraction Method:	EPA 3546
Analytical Method:	1,8270D		Extraction Date:	07/17/13 17:13
Analytical Date:	07/23/13 15:06			
Analyst:	RC			
Percent Solids:	66%			

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	7000		ug/kg	3900	1000	20
1,2,4-Trichlorobenzene	ND		ug/kg	4900	1600	20
Hexachlorobenzene	ND		ug/kg	3000	920	20
Bis(2-chloroethyl)ether	ND		ug/kg	4400	1400	20
2-Chloronaphthalene	ND		ug/kg	4900	1600	20
1,2-Dichlorobenzene	ND		ug/kg	4900	1600	20
1,3-Dichlorobenzene	ND		ug/kg	4900	1600	20
1,4-Dichlorobenzene	ND		ug/kg	4900	1500	20
3,3'-Dichlorobenzidine	ND		ug/kg	4900	1300	20
2,4-Dinitrotoluene	ND		ug/kg	4900	1100	20
2,6-Dinitrotoluene	ND		ug/kg	4900	1200	20
Fluoranthene	97000		ug/kg	3000	900	20
4-Chlorophenyl phenyl ether	ND		ug/kg	4900	1500	20
4-Bromophenyl phenyl ether	ND		ug/kg	4900	1100	20
Bis(2-chloroisopropyl)ether	ND		ug/kg	5900	1700	20
Bis(2-chloroethoxy)methane	ND		ug/kg	5300	1500	20
Hexachlorobutadiene	ND		ug/kg	4900	1400	20
Hexachlorocyclopentadiene	ND		ug/kg	14000	3200	20
Hexachloroethane	ND		ug/kg	3900	890	20
Isophorone	ND		ug/kg	4400	1300	20
Naphthalene	15000		ug/kg	4900	1600	20
Nitrobenzene	ND		ug/kg	4400	1200	20
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	3900	1000	20
n-Nitrosodi-n-propylamine	ND		ug/kg	4900	1500	20
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	4900	1300	20
Butyl benzyl phthalate	ND		ug/kg	4900	960	20
Di-n-butylphthalate	ND		ug/kg	4900	950	20
Di-n-octylphthalate	ND		ug/kg	4900	1200	20
Diethyl phthalate	ND		ug/kg	4900	1000	20
Dimethyl phthalate	ND		ug/kg	4900	1200	20
Benzo(a)anthracene	46000		ug/kg	3000	960	20

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-04 D Date Collected: 07/15/13 10:50

Client ID: SB-4 (0-.5) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)pyrene	39000		ug/kg	3900	1200	20
Benzo(b)fluoranthene	36000		ug/kg	3000	990	20
Benzo(k)fluoranthene	33000		ug/kg	3000	940	20
Chrysene	44000		ug/kg	3000	960	20
Acenaphthylene	6200		ug/kg	3900	920	20
Anthracene	18000		ug/kg	3000	820	20
Benzo(ghi)perylene	21000		ug/kg	3900	1000	20
Fluorene	9000		ug/kg	4900	1400	20
Phenanthrene	67000		ug/kg	3000	960	20
Dibenzo(a,h)anthracene	6600		ug/kg	3000	950	20
Indeno(1,2,3-cd)Pyrene	24000		ug/kg	3900	1100	20
Pyrene	84000		ug/kg	3000	960	20
Biphenyl	ND		ug/kg	11000	1600	20
4-Chloroaniline	ND		ug/kg	4900	1300	20
2-Nitroaniline	ND		ug/kg	4900	1400	20
3-Nitroaniline	ND		ug/kg	4900	1400	20
4-Nitroaniline	ND		ug/kg	4900	1300	20
Dibenzofuran	7900		ug/kg	4900	1600	20
2-Methylnaphthalene	5900		ug/kg	5900	1600	20
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	4900	1500	20
Acetophenone	ND		ug/kg	4900	1500	20
2,4,6-Trichlorophenol	ND		ug/kg	3000	930	20
P-Chloro-M-Cresol	ND		ug/kg	4900	1400	20
2-Chlorophenol	ND		ug/kg	4900	1500	20
2,4-Dichlorophenol	ND		ug/kg	4400	1600	20
2,4-Dimethylphenol	ND		ug/kg	4900	1500	20
2-Nitrophenol	ND		ug/kg	11000	1500	20
4-Nitrophenol	ND		ug/kg	6900	1600	20
2,4-Dinitrophenol	ND		ug/kg	24000	6700	20
4,6-Dinitro-o-cresol	ND		ug/kg	13000	1800	20
Pentachlorophenol	ND		ug/kg	3900	1000	20
Phenol	ND		ug/kg	4900	1400	20
2-Methylphenol	ND		ug/kg	4900	1600	20
3-Methylphenol/4-Methylphenol	ND		ug/kg	7100	1600	20
2,4,5-Trichlorophenol	ND		ug/kg	4900	1600	20
Benzoic Acid	ND		ug/kg	16000	5000	20
Benzyl Alcohol	ND		ug/kg	4900	1500	20
Carbazole	10000		ug/kg	4900	1000	20

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-04 D
Client ID: SB-4 (0-.5)
Sample Location: 1050 NIAGARA ST.

Date Collected: 07/15/13 10:50
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	**0**	Q	25-120
Phenol-d6	**0**	Q	10-120
Nitrobenzene-d5	**0**	Q	23-120
2-Fluorobiphenyl	**0**	Q	30-120
2,4,6-Tribromophenol	0		0-136
4-Terphenyl-d14	**0**	Q	18-120

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-06	Date Collected:	07/15/13 14:00
Client ID:	SB-6 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	1,8270D	Extraction Date:	07/17/13 17:13
Analytical Date:	07/23/13 13:27		
Analyst:	RC		
Percent Solids:	81%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	41.	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	65.	1
Hexachlorobenzene	ND		ug/kg	120	37.	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	56.	1
2-Chloronaphthalene	ND		ug/kg	200	65.	1
1,2-Dichlorobenzene	ND		ug/kg	200	65.	1
1,3-Dichlorobenzene	ND		ug/kg	200	63.	1
1,4-Dichlorobenzene	ND		ug/kg	200	60.	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	53.	1
2,4-Dinitrotoluene	ND		ug/kg	200	43.	1
2,6-Dinitrotoluene	ND		ug/kg	200	51.	1
Fluoranthene	ND		ug/kg	120	36.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	60.	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	46.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	70.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	60.	1
Hexachlorobutadiene	ND		ug/kg	200	56.	1
Hexachlorocyclopentadiene	ND		ug/kg	570	130	1
Hexachloroethane	ND		ug/kg	160	36.	1
Isophorone	ND		ug/kg	180	53.	1
Naphthalene	ND		ug/kg	200	66.	1
Nitrobenzene	ND		ug/kg	180	47.	1
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	160	42.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	59.	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	200	52.	1
Butyl benzyl phthalate	ND		ug/kg	200	39.	1
Di-n-butylphthalate	ND		ug/kg	200	38.	1
Di-n-octylphthalate	ND		ug/kg	200	49.	1
Diethyl phthalate	ND		ug/kg	200	42.	1
Dimethyl phthalate	ND		ug/kg	200	50.	1
Benzo(a)anthracene	ND		ug/kg	120	39.	1

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-06 Date Collected: 07/15/13 14:00

Client ID: SB-6 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	160	49.	1
Benzo(b)fluoranthene	ND		ug/kg	120	40.	1
Benzo(k)fluoranthene	ND		ug/kg	120	38.	1
Chrysene	ND		ug/kg	120	39.	1
Acenaphthylene	ND		ug/kg	160	37.	1
Anthracene	ND		ug/kg	120	33.	1
Benzo(ghi)perylene	ND		ug/kg	160	41.	1
Fluorene	ND		ug/kg	200	57.	1
Phenanthrene	72	J	ug/kg	120	39.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	38.	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	160	44.	1
Pyrene	ND		ug/kg	120	39.	1
Biphenyl	ND		ug/kg	450	66.	1
4-Chloroaniline	ND		ug/kg	200	52.	1
2-Nitroaniline	ND		ug/kg	200	56.	1
3-Nitroaniline	ND		ug/kg	200	55.	1
4-Nitroaniline	ND		ug/kg	200	54.	1
Dibenzofuran	ND		ug/kg	200	66.	1
2-Methylnaphthalene	ND		ug/kg	240	64.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	200	62.	1
Acetophenone	ND		ug/kg	200	62.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	38.	1
P-Chloro-M-Cresol	ND		ug/kg	200	58.	1
2-Chlorophenol	ND		ug/kg	200	60.	1
2,4-Dichlorophenol	ND		ug/kg	180	64.	1
2,4-Dimethylphenol	ND		ug/kg	200	59.	1
2-Nitrophenol	ND		ug/kg	430	62.	1
4-Nitrophenol	ND		ug/kg	280	64.	1
2,4-Dinitrophenol	ND		ug/kg	960	270	1
4,6-Dinitro-o-cresol	ND		ug/kg	520	73.	1
Pentachlorophenol	ND		ug/kg	160	43.	1
Phenol	ND		ug/kg	200	59.	1
2-Methylphenol	ND		ug/kg	200	64.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	65.	1
2,4,5-Trichlorophenol	ND		ug/kg	200	64.	1
Benzoic Acid	ND		ug/kg	640	200	1
Benzyl Alcohol	ND		ug/kg	200	61.	1
Carbazole	ND		ug/kg	200	43.	1

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-06	Date Collected:	07/15/13 14:00
Client ID:	SB-6 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	78		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	83		30-120
2,4,6-Tribromophenol	85		0-136
4-Terphenyl-d14	84		18-120

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-07	Date Collected:	07/15/13 12:20
Client ID:	SB-7 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	1,8270D	Extraction Date:	07/17/13 17:13
Analytical Date:	07/23/13 13:55		
Analyst:	RC		
Percent Solids:	84%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	96	J	ug/kg	160	40.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	64.	1
Hexachlorobenzene	ND		ug/kg	120	36.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	54.	1
2-Chloronaphthalene	ND		ug/kg	190	63.	1
1,2-Dichlorobenzene	69	J	ug/kg	190	64.	1
1,3-Dichlorobenzene	80	J	ug/kg	190	61.	1
1,4-Dichlorobenzene	ND		ug/kg	190	59.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	52.	1
2,4-Dinitrotoluene	ND		ug/kg	190	42.	1
2,6-Dinitrotoluene	ND		ug/kg	190	50.	1
Fluoranthene	1400		ug/kg	120	36.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	59.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	45.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	68.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	59.	1
Hexachlorobutadiene	ND		ug/kg	190	55.	1
Hexachlorocyclopentadiene	ND		ug/kg	560	120	1
Hexachloroethane	ND		ug/kg	160	35.	1
Isophorone	ND		ug/kg	170	52.	1
Naphthalene	ND		ug/kg	190	64.	1
Nitrobenzene	ND		ug/kg	170	46.	1
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	160	41.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	58.	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	190	51.	1
Butyl benzyl phthalate	ND		ug/kg	190	38.	1
Di-n-butylphthalate	ND		ug/kg	190	37.	1
Di-n-octylphthalate	ND		ug/kg	190	48.	1
Diethyl phthalate	ND		ug/kg	190	41.	1
Dimethyl phthalate	ND		ug/kg	190	49.	1
Benzo(a)anthracene	590		ug/kg	120	38.	1

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-07 Date Collected: 07/15/13 12:20

Client ID: SB-7 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)pyrene	400		ug/kg	160	47.	1
Benzo(b)fluoranthene	650		ug/kg	120	39.	1
Benzo(k)fluoranthene	220		ug/kg	120	37.	1
Chrysene	630		ug/kg	120	38.	1
Acenaphthylene	ND		ug/kg	160	36.	1
Anthracene	180		ug/kg	120	32.	1
Benzo(ghi)perylene	300		ug/kg	160	40.	1
Fluorene	80	J	ug/kg	190	56.	1
Phenanthrene	1200		ug/kg	120	38.	1
Dibenzo(a,h)anthracene	100	J	ug/kg	120	38.	1
Indeno(1,2,3-cd)Pyrene	250		ug/kg	160	43.	1
Pyrene	1000		ug/kg	120	38.	1
Biphenyl	ND		ug/kg	440	64.	1
4-Chloroaniline	ND		ug/kg	190	51.	1
2-Nitroaniline	ND		ug/kg	190	55.	1
3-Nitroaniline	ND		ug/kg	190	54.	1
4-Nitroaniline	ND		ug/kg	190	52.	1
Dibenzofuran	ND		ug/kg	190	65.	1
2-Methylnaphthalene	ND		ug/kg	230	62.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	60.	1
Acetophenone	ND		ug/kg	190	60.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	36.	1
P-Chloro-M-Cresol	ND		ug/kg	190	56.	1
2-Chlorophenol	ND		ug/kg	190	58.	1
2,4-Dichlorophenol	ND		ug/kg	170	63.	1
2,4-Dimethylphenol	ND		ug/kg	190	58.	1
2-Nitrophenol	ND		ug/kg	420	60.	1
4-Nitrophenol	ND		ug/kg	270	63.	1
2,4-Dinitrophenol	ND		ug/kg	930	260	1
4,6-Dinitro-o-cresol	ND		ug/kg	500	71.	1
Pentachlorophenol	ND		ug/kg	160	42.	1
Phenol	ND		ug/kg	190	57.	1
2-Methylphenol	ND		ug/kg	190	62.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	64.	1
2,4,5-Trichlorophenol	ND		ug/kg	190	63.	1
Benzoic Acid	ND		ug/kg	630	200	1
Benzyl Alcohol	ND		ug/kg	190	60.	1
Carbazole	130	J	ug/kg	190	42.	1

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-07	Date Collected:	07/15/13 12:20
Client ID:	SB-7 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	73		25-120
Phenol-d6	72		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	82		30-120
2,4,6-Tribromophenol	95		0-136
4-Terphenyl-d14	89		18-120

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-08	Date Collected:	07/15/13 13:00
Client ID:	SB-8 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	1,8270D	Extraction Date:	07/17/13 17:13
Analytical Date:	07/23/13 14:24		
Analyst:	RC		
Percent Solids:	80%		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	43.	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	68.	1
Hexachlorobenzene	ND		ug/kg	120	39.	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	58.	1
2-Chloronaphthalene	ND		ug/kg	210	68.	1
1,2-Dichlorobenzene	ND		ug/kg	210	68.	1
1,3-Dichlorobenzene	ND		ug/kg	210	66.	1
1,4-Dichlorobenzene	ND		ug/kg	210	63.	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	55.	1
2,4-Dinitrotoluene	ND		ug/kg	210	45.	1
2,6-Dinitrotoluene	ND		ug/kg	210	53.	1
Fluoranthene	ND		ug/kg	120	38.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	210	63.	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	48.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	73.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	63.	1
Hexachlorobutadiene	ND		ug/kg	210	59.	1
Hexachlorocyclopentadiene	ND		ug/kg	600	130	1
Hexachloroethane	ND		ug/kg	170	38.	1
Isophorone	ND		ug/kg	190	55.	1
Naphthalene	ND		ug/kg	210	69.	1
Nitrobenzene	ND		ug/kg	190	50.	1
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	170	44.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	210	62.	1
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	210	55.	1
Butyl benzyl phthalate	ND		ug/kg	210	41.	1
Di-n-butylphthalate	ND		ug/kg	210	40.	1
Di-n-octylphthalate	ND		ug/kg	210	51.	1
Diethyl phthalate	ND		ug/kg	210	44.	1
Dimethyl phthalate	ND		ug/kg	210	53.	1
Benzo(a)anthracene	ND		ug/kg	120	41.	1

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-08 Date Collected: 07/15/13 13:00

Client ID: SB-8 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzo(a)pyrene	ND		ug/kg	170	51.	1
Benzo(b)fluoranthene	ND		ug/kg	120	42.	1
Benzo(k)fluoranthene	ND		ug/kg	120	40.	1
Chrysene	ND		ug/kg	120	41.	1
Acenaphthylene	ND		ug/kg	170	39.	1
Anthracene	ND		ug/kg	120	35.	1
Benzo(ghi)perylene	ND		ug/kg	170	43.	1
Fluorene	ND		ug/kg	210	60.	1
Phenanthrene	ND		ug/kg	120	41.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	40.	1
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	170	46.	1
Pyrene	ND		ug/kg	120	40.	1
Biphenyl	ND		ug/kg	480	69.	1
4-Chloroaniline	ND		ug/kg	210	55.	1
2-Nitroaniline	ND		ug/kg	210	59.	1
3-Nitroaniline	ND		ug/kg	210	58.	1
4-Nitroaniline	ND		ug/kg	210	56.	1
Dibenzofuran	ND		ug/kg	210	70.	1
2-Methylnaphthalene	ND		ug/kg	250	67.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	210	65.	1
Acetophenone	ND		ug/kg	210	65.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	39.	1
P-Chloro-M-Cresol	ND		ug/kg	210	60.	1
2-Chlorophenol	ND		ug/kg	210	63.	1
2,4-Dichlorophenol	ND		ug/kg	190	68.	1
2,4-Dimethylphenol	ND		ug/kg	210	62.	1
2-Nitrophenol	ND		ug/kg	450	65.	1
4-Nitrophenol	ND		ug/kg	290	68.	1
2,4-Dinitrophenol	ND		ug/kg	1000	280	1
4,6-Dinitro-o-cresol	ND		ug/kg	540	76.	1
Pentachlorophenol	ND		ug/kg	170	45.	1
Phenol	ND		ug/kg	210	62.	1
2-Methylphenol	ND		ug/kg	210	67.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	68.	1
2,4,5-Trichlorophenol	ND		ug/kg	210	68.	1
Benzoic Acid	ND		ug/kg	680	210	1
Benzyl Alcohol	ND		ug/kg	210	64.	1
Carbazole	ND		ug/kg	210	45.	1

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-08	Date Collected:	07/15/13 13:00
Client ID:	SB-8 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	89		0-136
4-Terphenyl-d14	79		18-120

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/13 12:25
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/17/13 17:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-08 Batch: WG622369-1					
Acenaphthene	ND		ug/kg	130	34.
1,2,4-Trichlorobenzene	ND		ug/kg	170	55.
Hexachlorobenzene	ND		ug/kg	100	31.
Bis(2-chloroethyl)ether	ND		ug/kg	150	47.
2-Chloronaphthalene	ND		ug/kg	170	54.
1,2-Dichlorobenzene	ND		ug/kg	170	55.
1,3-Dichlorobenzene	ND		ug/kg	170	52.
1,4-Dichlorobenzene	ND		ug/kg	170	51.
3,3'-Dichlorobenzidine	ND		ug/kg	170	44.
2,4-Dinitrotoluene	ND		ug/kg	170	36.
2,6-Dinitrotoluene	ND		ug/kg	170	43.
Fluoranthene	ND		ug/kg	100	31.
4-Chlorophenyl phenyl ether	ND		ug/kg	170	51.
4-Bromophenyl phenyl ether	ND		ug/kg	170	38.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	59.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	50.
Hexachlorobutadiene	ND		ug/kg	170	47.
Hexachlorocyclopentadiene	ND		ug/kg	480	110
Hexachloroethane	ND		ug/kg	130	30.
Isophorone	ND		ug/kg	150	44.
Naphthalene	ND		ug/kg	170	55.
Nitrobenzene	ND		ug/kg	150	40.
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/kg	130	35.
n-Nitrosodi-n-propylamine	ND		ug/kg	170	50.
Bis(2-Ethylhexyl)phthalate	ND		ug/kg	170	44.
Butyl benzyl phthalate	ND		ug/kg	170	32.
Di-n-butylphthalate	ND		ug/kg	170	32.
Di-n-octylphthalate	ND		ug/kg	170	41.
Diethyl phthalate	ND		ug/kg	170	35.
Dimethyl phthalate	ND		ug/kg	170	42.

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/13 12:25
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/17/13 17:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-08 Batch: WG622369-1					
Benzo(a)anthracene	ND		ug/kg	100	33.
Benzo(a)pyrene	ND		ug/kg	130	41.
Benzo(b)fluoranthene	ND		ug/kg	100	34.
Benzo(k)fluoranthene	ND		ug/kg	100	32.
Chrysene	ND		ug/kg	100	33.
Acenaphthylene	ND		ug/kg	130	31.
Anthracene	ND		ug/kg	100	28.
Benzo(ghi)perylene	ND		ug/kg	130	35.
Fluorene	ND		ug/kg	170	48.
Phenanthrene	ND		ug/kg	100	33.
Dibenzo(a,h)anthracene	ND		ug/kg	100	32.
Indeno(1,2,3-cd)Pyrene	ND		ug/kg	130	37.
Pyrene	ND		ug/kg	100	32.
Biphenyl	ND		ug/kg	380	55.
4-Chloroaniline	ND		ug/kg	170	44.
2-Nitroaniline	ND		ug/kg	170	47.
3-Nitroaniline	ND		ug/kg	170	46.
4-Nitroaniline	ND		ug/kg	170	45.
Dibenzofuran	ND		ug/kg	170	56.
2-Methylnaphthalene	ND		ug/kg	200	53.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	52.
Acetophenone	ND		ug/kg	170	52.
2,4,6-Trichlorophenol	ND		ug/kg	100	31.
P-Chloro-M-Cresol	ND		ug/kg	170	48.
2-Chlorophenol	ND		ug/kg	170	50.
2,4-Dichlorophenol	ND		ug/kg	150	54.
2,4-Dimethylphenol	ND		ug/kg	170	50.
2-Nitrophenol	ND		ug/kg	360	52.
4-Nitrophenol	ND		ug/kg	230	54.
2,4-Dinitrophenol	ND		ug/kg	800	230

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/13 12:25
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/17/13 17:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04,06-08 Batch: WG622369-1					
4,6-Dinitro-o-cresol	ND		ug/kg	430	61.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	170	49.
2-Methylphenol	ND		ug/kg	170	54.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	55.
2,4,5-Trichlorophenol	ND		ug/kg	170	54.
Benzoic Acid	ND		ug/kg	540	170
Benzyl Alcohol	ND		ug/kg	170	51.
Carbazole	ND		ug/kg	170	36.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	84		30-120
2,4,6-Tribromophenol	102		0-136
4-Terphenyl-d14	93		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1313385

Report Date: 07/24/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-08 Batch: WG622369-2 WG622369-3								
Acenaphthene	93		90		31-137	3		50
1,2,4-Trichlorobenzene	92		94		38-107	2		50
Hexachlorobenzene	108		105		40-140	3		50
Bis(2-chloroethyl)ether	70		71		40-140	1		50
2-Chloronaphthalene	89		87		40-140	2		50
1,2-Dichlorobenzene	81		84		40-140	4		50
1,3-Dichlorobenzene	79		82		40-140	4		50
1,4-Dichlorobenzene	78		81		28-104	4		50
3,3'-Dichlorobenzidine	86		79		40-140	8		50
2,4-Dinitrotoluene	**102**	Q	**99**	Q	28-89	3		50
2,6-Dinitrotoluene	96		93		40-140	3		50
Fluoranthene	105		102		40-140	3		50
4-Chlorophenyl phenyl ether	99		98		40-140	1		50
4-Bromophenyl phenyl ether	105		104		40-140	1		50
Bis(2-chloroisopropyl)ether	50		48		40-140	4		50
Bis(2-chloroethoxy)methane	71		71		40-117	0		50
Hexachlorobutadiene	101		103		40-140	2		50
Hexachlorocyclopentadiene	79		83		40-140	5		50
Hexachloroethane	79		82		40-140	4		50
Isophorone	68		68		40-140	0		50
Naphthalene	85		85		40-140	0		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-08 Batch: WG622369-2 WG622369-3								
Nitrobenzene	77		80		40-140	4		50
NitrosoDiPhenylAmine(NDPA)/DPA	100		96			4		50
n-Nitrosodi-n-propylamine	70		70		32-121	0		50
Bis(2-Ethylhexyl)phthalate	103		101		40-140	2		50
Butyl benzyl phthalate	102		98		40-140	4		50
Di-n-butylphthalate	98		96		40-140	2		50
Di-n-octylphthalate	99		96		40-140	3		50
Diethyl phthalate	100		98		40-140	2		50
Dimethyl phthalate	99		98		40-140	1		50
Benzo(a)anthracene	104		101		40-140	3		50
Benzo(a)pyrene	108		104		40-140	4		50
Benzo(b)fluoranthene	101		100		40-140	1		50
Benzo(k)fluoranthene	104		97		40-140	7		50
Chrysene	100		96		40-140	4		50
Acenaphthylene	90		89		40-140	1		50
Anthracene	104		100		40-140	4		50
Benzo(ghi)perylene	115		104		40-140	10		50
Fluorene	98		97		40-140	1		50
Phenanthrene	100		96		40-140	4		50
Dibenzo(a,h)anthracene	114		107		40-140	6		50
Indeno(1,2,3-cd)Pyrene	119		112		40-140	6		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-08 Batch: WG622369-2 WG622369-3								
Pyrene	102		99		35-142	3		50
Biphenyl	92		91			1		50
4-Chloroaniline	50		45		40-140	11		50
2-Nitroaniline	92		87		47-134	6		50
3-Nitroaniline	71		67		26-129	6		50
4-Nitroaniline	96		90		41-125	6		50
Dibenzofuran	96		94		40-140	2		50
2-Methylnaphthalene	85		85		40-140	0		50
1,2,4,5-Tetrachlorobenzene	97		96		40-117	1		50
Acetophenone	78		79		14-144	1		50
2,4,6-Trichlorophenol	99		95		30-130	4		50
P-Chloro-M-Cresol	96		94		26-103	2		50
2-Chlorophenol	83		83		25-102	0		50
2,4-Dichlorophenol	100		97		30-130	3		50
2,4-Dimethylphenol	82		82		30-130	0		50
2-Nitrophenol	82		83		30-130	1		50
4-Nitrophenol	95		89		11-114	7		50
2,4-Dinitrophenol	87		82		4-130	6		50
4,6-Dinitro-o-cresol	99		94		10-130	5		50
Pentachlorophenol	103		100		17-109	3		50
Phenol	78		78		26-90	0		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1313385

Report Date: 07/24/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04,06-08 Batch: WG622369-2 WG622369-3								
2-Methylphenol	82		81		30-130.	1		50
3-Methylphenol/4-Methylphenol	82		80		30-130	2		50
2,4,5-Trichlorophenol	105		103		30-130	2		50
Benzoic Acid	59		57			3		50
Benzyl Alcohol	78		75		40-140	4		50
Carbazole	102		97		54-128	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	81		84		25-120
Phenol-d6	76		77		10-120
Nitrobenzene-d5	71		73		23-120
2-Fluorobiphenyl	90		92		30-120
2,4,6-Tribromophenol	119		124		0-136
4-Terphenyl-d14	93		93		18-120

PCBS

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID:	L1313385-05	Date Collected:	07/15/13 14:30
Client ID:	SB-5 (.5-1)	Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	1,8082A	Extraction Date:	07/18/13 12:31
Analytical Date:	07/19/13 23:47	Cleanup Method1:	EPA 3665A
Analyst:	JW	Cleanup Date1:	07/18/13
Percent Solids:	54%	Cleanup Method2:	EPA 3660B
		Cleanup Date2:	07/18/13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Polychlorinated Biphenyls by GC - Westborough Lab						
Aroclor 1016	ND		ug/kg	61.3	12.1	1
Aroclor 1221	ND		ug/kg	61.3	18.5	1
Aroclor 1232	ND		ug/kg	61.3	13.0	1
Aroclor 1242	ND		ug/kg	61.3	11.6	1
Aroclor 1248	ND		ug/kg	61.3	7.42	1
Aroclor 1254	ND		ug/kg	61.3	9.66	1
Aroclor 1260	ND		ug/kg	61.3	10.6	1
Aroclor 1262	ND		ug/kg	61.3	4.53	1
Aroclor 1268	ND		ug/kg	61.3	8.89	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	49		30-150
Decachlorobiphenyl	70		30-150
2,4,5,6-Tetrachloro-m-xylene	46		30-150
Decachlorobiphenyl	96		30-150

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1313385

Report Date: 07/24/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 07/20/13 01:20
Analyst: JW

Extraction Method: EPA 3546
Extraction Date: 07/18/13 12:26
Cleanup Method1: EPA 3665A
Cleanup Date1: 07/18/13
Cleanup Method2: EPA 3660B
Cleanup Date2: 07/18/13

Parameter	Result	Qualifier	Units	RL	MDL
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 05 Batch: WG622595-1					
Aroclor 1016	ND		ug/kg	32.8	6.47
Aroclor 1221	ND		ug/kg	32.8	9.88
Aroclor 1232	ND		ug/kg	32.8	6.96
Aroclor 1242	ND		ug/kg	32.8	6.22
Aroclor 1248	ND		ug/kg	32.8	3.96
Aroclor 1254	ND		ug/kg	32.8	5.16
Aroclor 1260	ND		ug/kg	32.8	5.69
Aroclor 1262	ND		ug/kg	32.8	2.42
Aroclor 1268	ND		ug/kg	32.8	4.75

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	98		30-150
Decachlorobiphenyl	111		30-150
2,4,5,6-Tetrachloro-m-xylene	96		30-150
Decachlorobiphenyl	112		30-150

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1313385

Report Date: 07/24/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 05 Batch: WG622595-2 WG622595-3								
Aroclor 1016	84		89		40-140	6		50
Aroclor 1260	78		82		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,4,5,6-Tetrachloro-m-xylene	91		96		30-150
Decachlorobiphenyl	103		106		30-150
2,4,5,6-Tetrachloro-m-xylene	89		93		30-150
Decachlorobiphenyl	101		103		30-150

METALS

Project Name: 1050 NIAGARA ST.
Lab Number: L1313385
Project Number: 0136-013-005
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-01
Client ID: SB-1 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil
Percent Solids: 84%

Date Collected: 07/15/13 10:20
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Aluminum, Total	2000		mg/kg	9.4	1.9	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Antimony, Total	ND		mg/kg	4.7	0.75	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Arsenic, Total	3.2		mg/kg	0.94	0.19	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Barium, Total	83		mg/kg	0.94	0.28	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Beryllium, Total	0.18	J	mg/kg	0.47	0.09	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Cadmium, Total	0.34	J	mg/kg	0.94	0.07	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Calcium, Total	12000		mg/kg	9.4	2.8	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Chromium, Total	4.0		mg/kg	0.94	0.19	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Cobalt, Total	62		mg/kg	1.9	0.47	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Copper, Total	29		mg/kg	0.94	0.19	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Iron, Total	9300		mg/kg	4.7	1.9	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Lead, Total	16		mg/kg	4.7	0.19	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Magnesium, Total	2700		mg/kg	47	4.7	10	07/18/13 12:05	07/21/13 09:59	EPA 3050B	1,6010C	MG
Manganese, Total	47		mg/kg	0.94	0.19	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Mercury, Total	ND		mg/kg	0.09	0.02	1	07/19/13 11:21	07/19/13 14:33	EPA 7471B	1,7471B	MC
Nickel, Total	13		mg/kg	2.3	0.38	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Potassium, Total	380		mg/kg	230	38.	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Selenium, Total	1.2	J	mg/kg	1.9	0.28	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Silver, Total	1.6		mg/kg	0.94	0.19	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Sodium, Total	150	J	mg/kg	190	28.	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Thallium, Total	ND		mg/kg	1.9	0.38	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Vanadium, Total	8.3		mg/kg	0.94	0.09	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG
Zinc, Total	39		mg/kg	4.7	0.66	2	07/18/13 12:05	07/19/13 16:00	EPA 3050B	1,6010C	MG

Project Name: 1050 NIAGARA ST.
Lab Number: L1313385
Project Number: 0136-013-005
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-02
Client ID: SB-2 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil
Percent Solids: 80%

Date Collected: 07/15/13 10:52
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Aluminum, Total	5400		mg/kg	9.8	2.0	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Antimony, Total	2.0	J	mg/kg	4.9	0.78	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Arsenic, Total	3.4		mg/kg	0.98	0.20	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Barium, Total	100		mg/kg	0.98	0.29	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Beryllium, Total	0.57		mg/kg	0.49	0.10	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Cadmium, Total	0.78	J	mg/kg	0.98	0.07	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Calcium, Total	21000		mg/kg	9.8	2.9	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Chromium, Total	12		mg/kg	0.98	0.20	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Cobalt, Total	140		mg/kg	2.0	0.49	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Copper, Total	87		mg/kg	0.98	0.20	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Iron, Total	12000		mg/kg	4.9	2.0	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Lead, Total	48		mg/kg	4.9	0.20	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Magnesium, Total	5200		mg/kg	49	4.9	10	07/18/13 12:05	07/21/13 10:02	EPA 3050B	1,6010C	MG
Manganese, Total	120		mg/kg	0.98	0.20	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Mercury, Total	0.03	J	mg/kg	0.09	0.02	1	07/19/13 11:21	07/19/13 14:38	EPA 7471B	1,7471B	MC
Nickel, Total	48		mg/kg	2.4	0.39	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Potassium, Total	950		mg/kg	240	39.	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Selenium, Total	0.36	J	mg/kg	2.0	0.29	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Silver, Total	9.0		mg/kg	0.98	0.20	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Sodium, Total	220		mg/kg	200	29.	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Thallium, Total	ND		mg/kg	2.0	0.39	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Vanadium, Total	16		mg/kg	0.98	0.10	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG
Zinc, Total	80		mg/kg	4.9	0.69	2	07/18/13 12:05	07/19/13 16:03	EPA 3050B	1,6010C	MG

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-03 Date Collected: 07/15/13 10:25

Client ID: SB-3 (0-.5) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Matrix: Soil

Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Aluminum, Total	4300		mg/kg	48	9.7	10	07/18/13 12:05	07/21/13 12:40	EPA 3050B	1,6010C	KL
Antimony, Total	5.8		mg/kg	4.8	0.78	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Arsenic, Total	42		mg/kg	0.97	0.19	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Barium, Total	220		mg/kg	0.97	0.29	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Beryllium, Total	0.57		mg/kg	0.48	0.10	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Cadmium, Total	3.4		mg/kg	0.97	0.07	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Calcium, Total	6200		mg/kg	48	14.	10	07/18/13 12:05	07/21/13 12:40	EPA 3050B	1,6010C	KL
Chromium, Total	57		mg/kg	0.97	0.19	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Cobalt, Total	18		mg/kg	1.9	0.48	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Copper, Total	660		mg/kg	0.97	0.19	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Iron, Total	100000		mg/kg	24	9.7	10	07/18/13 12:05	07/21/13 12:40	EPA 3050B	1,6010C	KL
Lead, Total	670		mg/kg	4.8	0.19	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Magnesium, Total	790		mg/kg	48	4.8	10	07/18/13 12:05	07/21/13 12:40	EPA 3050B	1,6010C	KL
Manganese, Total	530		mg/kg	0.97	0.19	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Mercury, Total	0.99		mg/kg	0.09	0.02	1	07/19/13 11:21	07/19/13 13:23	EPA 7471B	1,7471B	MC
Nickel, Total	30		mg/kg	2.4	0.39	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Potassium, Total	320		mg/kg	240	39.	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Selenium, Total	2.1		mg/kg	1.9	0.29	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Silver, Total	11		mg/kg	0.97	0.19	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Sodium, Total	140	J	mg/kg	970	140	10	07/18/13 12:05	07/21/13 12:40	EPA 3050B	1,6010C	KL
Thallium, Total	ND		mg/kg	1.9	0.39	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Vanadium, Total	11		mg/kg	0.97	0.10	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG
Zinc, Total	410		mg/kg	4.8	0.68	2	07/18/13 12:05	07/19/13 16:28	EPA 3050B	1,6010C	MG

Project Name: 1050 NIAGARA ST.
Lab Number: L1313385
Project Number: 0136-013-005
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-04
Client ID: SB-4 (0-.5)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil
Percent Solids: 66%

Date Collected: 07/15/13 10:50
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Aluminum, Total	4500		mg/kg	58	12.	10	07/18/13 12:05	07/21/13 12:43	EPA 3050B	1,6010C	KL
Antimony, Total	9.4		mg/kg	5.8	0.93	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Arsenic, Total	86		mg/kg	1.2	0.23	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Barium, Total	240		mg/kg	1.2	0.35	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Beryllium, Total	0.45	J	mg/kg	0.58	0.12	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Cadmium, Total	15		mg/kg	1.2	0.08	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Calcium, Total	23000		mg/kg	58	17.	10	07/18/13 12:05	07/21/13 12:43	EPA 3050B	1,6010C	KL
Chromium, Total	44		mg/kg	1.2	0.23	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Cobalt, Total	8.6		mg/kg	2.3	0.58	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Copper, Total	320		mg/kg	1.2	0.23	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Iron, Total	41000		mg/kg	5.8	2.3	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Lead, Total	550		mg/kg	5.8	0.23	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Magnesium, Total	2000		mg/kg	58	5.8	10	07/18/13 12:05	07/21/13 12:43	EPA 3050B	1,6010C	KL
Manganese, Total	380		mg/kg	1.2	0.23	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Mercury, Total	2.2		mg/kg	0.11	0.02	1	07/19/13 11:21	07/19/13 13:34	EPA 7471B	1,7471B	MC
Nickel, Total	28		mg/kg	2.9	0.46	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Potassium, Total	540		mg/kg	290	46.	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Selenium, Total	6.2		mg/kg	2.3	0.35	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Silver, Total	8.0		mg/kg	1.2	0.23	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Sodium, Total	320	J	mg/kg	1200	170	10	07/18/13 12:05	07/21/13 12:43	EPA 3050B	1,6010C	KL
Thallium, Total	ND		mg/kg	2.3	0.46	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Vanadium, Total	15		mg/kg	1.2	0.12	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG
Zinc, Total	670		mg/kg	5.8	0.81	2	07/18/13 12:05	07/19/13 16:32	EPA 3050B	1,6010C	MG

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-07 Date Collected: 07/15/13 12:20

Client ID: SB-7 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Matrix: Soil

Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Aluminum, Total	10000		mg/kg	46	9.3	10	07/18/13 12:05	07/21/13 13:07	EPA 3050B	1,6010C	KL
Antimony, Total	ND		mg/kg	4.6	0.74	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Arsenic, Total	5.9		mg/kg	0.93	0.19	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Barium, Total	61		mg/kg	0.93	0.28	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Beryllium, Total	0.41	J	mg/kg	0.46	0.09	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Cadmium, Total	0.52	J	mg/kg	0.93	0.07	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Calcium, Total	73000		mg/kg	46	14.	10	07/18/13 12:05	07/21/13 13:07	EPA 3050B	1,6010C	KL
Chromium, Total	13		mg/kg	0.93	0.19	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Cobalt, Total	21		mg/kg	1.9	0.46	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Copper, Total	36		mg/kg	0.93	0.19	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Iron, Total	15000		mg/kg	4.6	1.9	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Lead, Total	36		mg/kg	4.6	0.19	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Magnesium, Total	31000		mg/kg	46	4.6	10	07/18/13 12:05	07/21/13 13:07	EPA 3050B	1,6010C	KL
Manganese, Total	460		mg/kg	0.93	0.19	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Mercury, Total	ND		mg/kg	0.08	0.02	1	07/19/13 11:21	07/19/13 13:36	EPA 7471B	1,7471B	MC
Nickel, Total	19		mg/kg	2.3	0.37	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Potassium, Total	1400		mg/kg	230	37.	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Selenium, Total	0.35	J	mg/kg	1.9	0.28	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Silver, Total	0.32	J	mg/kg	0.93	0.19	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Sodium, Total	190	J	mg/kg	930	140	10	07/18/13 12:05	07/21/13 13:07	EPA 3050B	1,6010C	KL
Thallium, Total	ND		mg/kg	1.9	0.37	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Vanadium, Total	20		mg/kg	0.93	0.09	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG
Zinc, Total	68		mg/kg	4.6	0.65	2	07/18/13 12:05	07/19/13 16:35	EPA 3050B	1,6010C	MG

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01-04,07 Batch: WG622605-1										
Aluminum, Total	3.5	J	mg/kg	4.0	0.80	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Antimony, Total	ND		mg/kg	2.0	0.32	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Arsenic, Total	ND		mg/kg	0.40	0.08	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Barium, Total	ND		mg/kg	0.40	0.12	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Beryllium, Total	ND		mg/kg	0.20	0.04	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Cadmium, Total	ND		mg/kg	0.40	0.03	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Calcium, Total	8.1		mg/kg	4.0	1.2	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Chromium, Total	ND		mg/kg	0.40	0.08	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Cobalt, Total	ND		mg/kg	0.80	0.20	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Copper, Total	ND		mg/kg	0.40	0.08	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Iron, Total	1.3	J	mg/kg	2.0	0.80	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Lead, Total	ND		mg/kg	2.0	0.08	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Magnesium, Total	ND		mg/kg	4.0	0.40	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Manganese, Total	ND		mg/kg	0.40	0.08	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Nickel, Total	ND		mg/kg	1.0	0.16	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Potassium, Total	ND		mg/kg	100	16.	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Selenium, Total	ND		mg/kg	0.80	0.12	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Silver, Total	ND		mg/kg	0.40	0.08	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Sodium, Total	ND		mg/kg	80	12.	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Thallium, Total	ND		mg/kg	0.80	0.16	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Vanadium, Total	ND		mg/kg	0.40	0.04	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG
Zinc, Total	ND		mg/kg	2.0	0.28	1	07/18/13 12:05	07/19/13 14:18	1,6010C	MG

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01-02 Batch: WG622814-1										
Mercury, Total	ND		mg/kg	0.08	0.02	1	07/19/13 11:21	07/19/13 13:45	1,7471B	MC

Project Name: 1050 NIAGARA ST. **Lab Number:** L1313385

Project Number: 0136-013-005 **Report Date:** 07/24/13

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 03-04,07 Batch: WG622815-1										
Mercury, Total	ND		mg/kg	0.08	0.02	1	07/19/13 11:21	07/19/13 13:19	1,7471B	MC

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1313385

Report Date: 07/24/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-04,07 Batch: WG622605-2 SRM Lot Number: 0518-10-02								
Aluminum, Total	92		-		29-171	-		
Antimony, Total	122		-		4-196	-		
Arsenic, Total	100		-		81-119	-		
Barium, Total	100		-		83-118	-		
Beryllium, Total	104		-		83-117	-		
Cadmium, Total	94		-		82-117	-		
Calcium, Total	91		-		83-117	-		
Chromium, Total	101		-		80-119	-		
Cobalt, Total	101		-		83-117	-		
Copper, Total	101		-		83-117	-		
Iron, Total	86		-		51-150	-		
Lead, Total	99		-		80-120	-		
Magnesium, Total	101		-		74-126	-		
Manganese, Total	92		-		83-117	-		
Nickel, Total	104		-		82-117	-		
Potassium, Total	99		-		74-126	-		
Selenium, Total	102		-		80-120	-		
Silver, Total	101		-		66-134	-		
Sodium, Total	103		-		74-127	-		
Thallium, Total	101		-		79-120	-		
Vanadium, Total	98		-		79-121	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1313385

Report Date: 07/24/13

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-04,07 Batch: WG622605-2 SRM Lot Number: 0518-10-02					
Zinc, Total	97	-	82-119	-	
Total Metals - Westborough Lab Associated sample(s): 01-02 Batch: WG622814-2 SRM Lot Number: 0518-10-02					
Mercury, Total	121	-	67-133	-	
Total Metals - Westborough Lab Associated sample(s): 03-04,07 Batch: WG622815-2 SRM Lot Number: 0518-10-02					
Mercury, Total	121	-	67-133	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-04,07 QC Batch ID: WG622605-4 QC Sample: L1313193-02 Client ID: MS Sample												
Aluminum, Total	2800	162	3400	**369**	Q	-	-		75-125	-		35
Antimony, Total	ND	40.6	39	96		-	-		75-125	-		35
Arsenic, Total	0.92	9.75	11	103		-	-		75-125	-		35
Barium, Total	28.	162	200	106		-	-		75-125	-		35
Beryllium, Total	0.19J	4.06	4.3	106		-	-		75-125	-		35
Cadmium, Total	0.17J	4.14	4.4	106		-	-		75-125	-		35
Calcium, Total	1100	812	2400	**160**	Q	-	-		75-125	-		35
Chromium, Total	7.6	16.2	24	101		-	-		75-125	-		35
Cobalt, Total	2.6	40.6	44	102		-	-		75-125	-		35
Copper, Total	7.5	20.3	30	111		-	-		75-125	-		35
Iron, Total	6400	81.2	7200	**985**	Q	-	-		75-125	-		35
Lead, Total	8.0	41.4	53	109		-	-		75-125	-		35
Magnesium, Total	1200	812	2100	111		-	-		75-125	-		35
Manganese, Total	160	40.6	210	123		-	-		75-125	-		35
Nickel, Total	8.0	40.6	50	103		-	-		75-125	-		35
Potassium, Total	810	812	1700	110		-	-		75-125	-		35
Selenium, Total	ND	9.75	9.8	100		-	-		75-125	-		35
Silver, Total	ND	24.4	25	103		-	-		75-125	-		35
Sodium, Total	110J	812	970	119		-	-		75-125	-		35
Thallium, Total	ND	9.75	9.1	93		-	-		75-125	-		35
Vanadium, Total	8.7	40.6	52	107		-	-		75-125	-		35

Matrix Spike Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-04,07 QC Batch ID: WG622605-4 QC Sample: L1313193-02 Client ID: MS Sample										
Zinc, Total	17.	40.6	58	101		-	-	75-125	-	35
Total Metals - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG622814-4 QC Sample: L1313200-10 Client ID: MS Sample										
Mercury, Total	ND	0.168	0.16	95		-	-	70-130	-	35
Total Metals - Westborough Lab Associated sample(s): 03-04,07 QC Batch ID: WG622815-4 QC Sample: L1313385-03 Client ID: SB-3 (0-.5)										
Mercury, Total	0.99	0.195	1.9	**466**	Q	-	-	70-130	-	35

Lab Duplicate Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-04,07 QC Batch ID: WG622605-3 QC Sample: L1313193-02 Client ID: DUP Sample						
Aluminum, Total	2800	2600	mg/kg	7		35
Antimony, Total	ND	ND	mg/kg	NC		35
Arsenic, Total	0.92	0.68J	mg/kg	NC		35
Barium, Total	28.	23	mg/kg	20		35
Beryllium, Total	0.19J	0.14J	mg/kg	NC		35
Cadmium, Total	0.17J	0.14J	mg/kg	NC		35
Calcium, Total	1100	960	mg/kg	14		35
Chromium, Total	7.6	5.7	mg/kg	29		35
Cobalt, Total	2.6	2.5	mg/kg	4		35
Copper, Total	7.5	7.9	mg/kg	5		35
Iron, Total	6400	5300	mg/kg	19		35
Lead, Total	8.0	8.8	mg/kg	10		35
Magnesium, Total	1200	920	mg/kg	26		35
Manganese, Total	160	160	mg/kg	0		35
Nickel, Total	8.0	6.2	mg/kg	25		35
Potassium, Total	810	660	mg/kg	20		35
Selenium, Total	ND	ND	mg/kg	NC		35
Silver, Total	ND	ND	mg/kg	NC		35
Sodium, Total	110J	100J	mg/kg	NC		35

Lab Duplicate Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01-04,07 QC Batch ID: WG622605-3 QC Sample: L1313193-02 Client ID: DUP Sample					
Thallium, Total	ND	ND	mg/kg	NC	35
Vanadium, Total	8.7	7.1	mg/kg	20	35
Zinc, Total	17.	15	mg/kg	13	35
Total Metals - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG622814-3 QC Sample: L1313200-10 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/kg	NC	35
Total Metals - Westborough Lab Associated sample(s): 03-04,07 QC Batch ID: WG622815-3 QC Sample: L1313385-03 Client ID: SB-3 (0-.5)					
Mercury, Total	0.99	1.0	mg/kg	1	35

INORGANICS
&
MISCELLANEOUS

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-01
Client ID: SB-1 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 10:20
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.9		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-02
Client ID: SB-2 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 10:52
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.9		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-03
Client ID: SB-3 (0-.5)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 10:25
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.7		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-04
Client ID: SB-4 (0-.5)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 10:50
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	65.8		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-05
Client ID: SB-5 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 14:30
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	53.7		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-06
Client ID: SB-6 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 14:00
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.4		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-07
Client ID: SB-7 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 12:20
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.6		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

SAMPLE RESULTS

Lab ID: L1313385-08
Client ID: SB-8 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 13:00
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.9		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Lab Duplicate Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-08 QC Batch ID: WG622403-1 QC Sample: L1313185-02 Client ID: DUP Sample						
Solids, Total	84.9	85.4	%	1		20

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1313385-01A	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14)
L1313385-01B	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),TS(7),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1313385-02A	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14)
L1313385-02B	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),TS(7),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1313385-03A	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14)
L1313385-03B	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),TS(7),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1313385-04A	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14)

*Values in parentheses indicate holding time in days

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1313385
Report Date: 07/24/13

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1313385-04B	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),TS(7),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1313385-05A	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	TS(7),NYTCL-8082(14)
L1313385-05B	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	-
L1313385-06A	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14),TS(7)
L1313385-06B	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14),TS(7)
L1313385-07A	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14)
L1313385-07B	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),TS(7),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1313385-08A	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14),TS(7)
L1313385-08B	Amber 120ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14),TS(7)

*Values in parentheses indicate holding time in days

Project Name:	1050 NIAGARA ST.	**Lab Number:**	L1313385
Project Number:	0136-013-005	**Report Date:**	07/24/13

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
G	- The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The lower value for the two columns has been reported due to obvious interference.

Report Format: DU Report with "J" Qualifiers

Project Name:	1050 NIAGARA ST.	**Lab Number:**	L1313385
Project Number:	0136-013-005	**Report Date:**	07/24/13

Data Qualifiers

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with "J" Qualifiers

Project Name:	1050 NIAGARA ST.	**Lab Number:**	L1313385
Project Number:	0136-013-005	**Report Date:**	07/24/13

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certificate/Approval Program Summary

Last revised July 2, 2013 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574. ***NELAP Accredited Solid Waste/Soil.***

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Selenium, Silver, Sodium, Thallium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP) 504.1, Ethylene Dibromide (EDB) 504.1, 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223, Enumeration and P/A), E. Coli. – Colilert (SM9223, Enumeration and P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform-EC Medium (SM 9221E).

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), E. Coli – Colilert (SM9223 Enumeration), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E), Enterococcus - Enterolert.

Solid Waste/Soil (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Dalapon, Volatile Organics (SW 8260), Acid Extractables (Phenols) (SW 8270), Benzidines (SW 8270), Phthalates (SW 8270), Nitrosamines (SW 8270), Nitroaromatics & Cyclic Ketones (SW 8270), PAHs (SW 8270), Haloethers (SW 8270), Chlorinated Hydrocarbons (SW 8270).)

State of Illinois Certificate/Lab ID: 003155. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM2120B, 2320B, 2510B, 2540C, SM4500CN-CE, 4500F-C, 4500H-B, 4500NO3-F, 5310C, EPA 200.7, 200.8, 245.1, 300.0. Organic Parameters: EPA 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: SM2120B, 2310B, 2320B, 2340B, 2510B, 2540B, 2540C, 2540D, SM4500CL-E, 4500CN-E, 4500F-C, 4500H-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-E, 4500S-D, 4500SO3-B, 5210B, 5220D, 5310C, 5540C, EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1. Organic Parameters: EPA 608, 624, 625.)

Hazardous and Solid Waste (Inorganic Parameters: EPA 1010A, 1030, 1311, 1312, 6010C, 6020A, 7196A, 7470A, 7471B, 9012B, 9014, 9038, 9040C, 9045D, 9050A, 9065, 9251. Organic Parameters: 8011 (NPW only), 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8315A, 8330.)

Maine Department of Human Services Certificate/Lab ID: 2009024.
Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2120B, 2130B, 2320B, 2510C, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, 5310C, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 8315A, 9010C, SM2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-C, 4500NH3-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-B, 4500P-E, 4500S2-D, 4500SO3-B, 5540C, 5210B, 5220D, 5310C, 9010B, 9030B, 9040C, 7470A, 7196A, 2340B, EPA 200.7, 6010C, 200.8, 6020A, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8011, 8081B, 8082A, 8330, 8151A, 8260C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9040B, 9045C, 6010C, 6020A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B, 9038, 9251. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260C, 8270D, 8330, 8151A, 8081B, 8082A, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.
*Drinking Water (*Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl) (EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate); (EPA 353.2 for: Nitrate-N, Nitrite-N); (SM4500NO3-F for: Nitrate-N and Nitrite-N); 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B. Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics); (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), EPA 332. Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; ColilertQT SM9223B; MF-SM9222D.)

*Non-Potable Water (*Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 3005A, 200.7, 200.8, 245.1, SW-846 6010C, 6020A, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 426C, 1664A, SW-846 9010B, 9010C, 9030, 9040B, 9040C, SM2120B, 2310B, 2320B, 2340B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500P-E, 4500-S2-D, 4500SO3-B, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D, 3060A. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260C, 8270D, 8330, EPA 624, 625, 608, SW-846 8082A, 8081B, 8015C, 8151A, 8330, 8270D-SIM.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010C, 6020A, 7196A, 7471B, 1010, 1010A, 1030, 9010C, 9012B, 9014, 9030B, 9040C, 9045C, 9045D, 9050, 9065, 9251, 1311, 1312, 3005A, 3050B, 3060A. Organic Parameters: SW-846 3540C, 3546, 3050B, 3580A, 3620D, 3630C, 5030B, 5035, 8260C, 8270D, 8270D-SIM, 8330, 8151A, 8015B, 8015C, 8082A, 8081B.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2064. ***NELAP Accredited.***
Drinking Water (Organic Parameters: **EPA 524.2:** Di-isopropyl ether (DIPE), Ethyl-t-butyl ether (ETBE), Tert-amyl methyl ether (TAME)).

Non-Potable Water (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene. **EPA 8015C(M):** TPH.)

Solid & Chemical Materials (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. Organic Parameters: SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D,

9050A, 9065, 9251. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.1, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2340B, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010C, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 8315A, 3005A, 3015, 9010C, 9030B. Organic Parameters: EPA 624, 8260C, 8270D, 8270D-SIM, 625, 608, 8081B, 8151A, 8330, 8082A, EPA 3510C, 5030B, 8015C, 8011.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010C, 6020A, 7196A, 7471B, 8315A, 9012B, 9014, 9065, 9050A, 9038, 9251, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. Organic Parameters: EPA 8260C, 8270D, 8270D-SIM, 8015C, 8081B, 8151A, 8330, 8082A, 3540C, 3546, 3580A, 5035A-H, 5035A-L.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. (Inorganic Parameters: SM2310B, 2320B, 4500Cl-E, 4500Cn-E, 9012B, 9014, Lachat 10-204-00-1-X, 1010A, 1030, 4500NO3-F, 353.2, 4500P-E, 4500SO4-E, 300.0, 4500S-D, 5310B, 5310C, 6010C, 6020A, 200.7, 200.8, 3500Cr-B, 7196A, 245.1, 7470A, 7471B, 1311,1312. Organic Parameters: 608, 8081B, 8082A, 624, 8260B, 625, 8270D, 8151A, 8015C, 504.1, MA-EPH, MA-VPH.)

Drinking Water Program Certificate/Lab ID: 25700. (Inorganic Parameters: Chloride EPA 300.0. Organic Parameters: 524.2)

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO3-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1312, 3005A,3015, 3060A, 200.7, 200.8, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P,BE, 245.1, 300.0, 350.1, 350.2, 351.1, 353.2, 420.1, 6010C, 6020A, 7196A, 7470A, 9030B, 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500CN-CE, 4500Cl-E, 4500F-B, 4500F-C, 4500H+-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500S-D, 4500SO3-B, 5310BCD, 5540C, 9010C, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 625, 624, 608, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, 8015C, NJ-EPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3005A, 3050B, 3060A, 6010C, 6020A, 7196A, 7471B, 9010C, 9012B, 9014, 9040B, 9045D, 9050A, 9065, SM 4500NH3-BH, 9030B, 9038, 9251. Organic Parameters: 3540C, 3546, 3580A, 3620C, 3630C, 5035, 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, NJ-EPH.)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. ***NELAP Accredited via NJ-DEP.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commisson on Environmental Quality Certificate/Lab ID: T104704476. ***NELAP Accredited.***
Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 $S2^{-}$D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.1, 2320B, 4500F-C, 4500NO3-F, 4500H+B, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 351.2, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 2340B, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500 SO3-B, 4500H-B, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C, 9010Cm

9030B, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9010C, 9012B, 9030B, 9014, 9038, 9040C, 9045D, 9251, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 3550B, 3580A, 3620C, 3630C, 6020A, 8260B, 8260C, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.
Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO3-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:
EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether. **EPA 8260B:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8260 Non-potable water matrix:** Iodomethane (methyl iodide), Methyl methacrylate. **EPA 8260 Soil matrix:** Tert-amyl methyl ether (TAME), Diisopropyl ether (DIPE), Azobenzene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine. **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, TKN in a soil matrix, NO2 in a soil matrix, NO3 in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 7/17/13

ALPHA Job #: L13133 85

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-9288

Client Information

Client: Turnkey
Address: 2558 Hamburg Turnpike
Buffalo NY 14218
Phone: (716) 856-0599
Fax: (716) 856-0583
Email:

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 1050 Niagara St
Project Location: "
Project #: 0136-013-005
Project Manager: Mike Lesakowski
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 7/23/13 Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: TCL SVOC	TAL Metals	PCBs	SAMPLE HANDLING	Sample Specific Comments	TOTAL # BOTTLES
13385, 1	SB-1 (.5-1)	7-15-13	1620	Soil	PWW	X	X				2
2	SB-2 (.5-1)		1052			X	X				2
3	SB-3 (0-.5)		1025			X	X				2
4	SB-4 (0-.5)		1050			X	X				2
5	SB-5 (.5-1)		1430			X		X		Just PCBs	1
6	SB-6 (.5-1)		1420			X				TCL SVOC only	2
7	SB-7 (.5-1)		1230			X	X				2
8	SB-8 (.5-1)		1300			X				TCL SVOC only	2

Filtration ☐ Done ☐ Not needed ☐ Lab to do
Preservation ☐ Lab to do (Please specify below)

Container Type															
Preservative															

Relinquished By:	Date/Time	Received By:	Date/Time
	7-16-13 1300	James D. Rickus	7-16-13 1600
James D. Rickus	7-16-13 1815		7/16/13

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

ANALYTICAL REPORT

Lab Number:	L1314698
Client:	Benchmark & Turnkey Companies 2558 Hamburg Turnpike Suite 300 Buffalo, NY 14218
ATTN:	Mike Lesakowski
Phone:	(716) 856-0599
Project Name:	1050 NIAGARA ST.
Project Number:	0136-013-005
Report Date:	08/06/13

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1314698
Report Date: 08/06/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1314698-01	SB-5 (.5-1)	1050 NIAGARA ST.	07/15/13 14:30

Project Name: 1050 NIAGARA ST. **Lab Number:** L1314698
Project Number: 0136-013-005 **Report Date:** 08/06/13

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples free of charge for 30 days from the date the project is completed. After 30 days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	1050 NIAGARA ST.	**Lab Number:**	L1314698
Project Number:	0136-013-005	**Report Date:**	08/06/13

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Semivolatile Organics

L1314698-01 was extracted with the method required holding time exceeded at the client's request.

L1314698-01 has elevated detection limits due to the dilution required by the matrix interferences encountered during the concentration of the sample and the analytical dilution required by the target compounds present in the sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cynthia McQueen

Title: Technical Director/Representative Date: 08/06/13

ORGANICS

SEMIVOLATILES

Project Name: 1050 NIAGARA ST. **Lab Number:** L1314698

Project Number: 0136-013-005 **Report Date:** 08/06/13

SAMPLE RESULTS

Lab ID:	L1314698-01	D	Date Collected:	07/15/13 14:30
Client ID:	SB-5 (.5-1)		Date Received:	07/16/13
Sample Location:	1050 NIAGARA ST.		Field Prep:	Not Specified
Matrix:	Soil		Extraction Method:	EPA 3546
Analytical Method:	1,8270D		Extraction Date:	08/02/13 11:37
Analytical Date:	08/06/13 02:09			
Analyst:	JB			
Percent Solids:	54%			

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	7300		ug/kg	2400	630	10
Hexachlorobenzene	ND		ug/kg	1800	570	10
Bis(2-chloroethyl)ether	ND		ug/kg	2800	860	10
2-Chloronaphthalene	ND		ug/kg	3100	1000	10
3,3'-Dichlorobenzidine	ND		ug/kg	3100	820	10
2,4-Dinitrotoluene	ND		ug/kg	3100	660	10
2,6-Dinitrotoluene	ND		ug/kg	3100	780	10
Fluoranthene	85000		ug/kg	1800	560	10
4-Chlorophenyl phenyl ether	ND		ug/kg	3100	930	10
4-Bromophenyl phenyl ether	ND		ug/kg	3100	700	10
Bis(2-chloroisopropyl)ether	ND		ug/kg	3700	1100	10
Bis(2-chloroethoxy)methane	ND		ug/kg	3300	930	10
Hexachlorobutadiene	ND		ug/kg	3100	860	10
Hexachlorocyclopentadiene	ND		ug/kg	8800	2000	10
Hexachloroethane	ND		ug/kg	2400	560	10
Isophorone	ND		ug/kg	2800	820	10
Naphthalene	2200	J	ug/kg	3100	1000	10
Nitrobenzene	ND		ug/kg	2800	730	10
NDPA/DPA	ND		ug/kg	2400	640	10
n-Nitrosodi-n-propylamine	ND		ug/kg	3100	910	10
Bis(2-ethylhexyl)phthalate	2400	J	ug/kg	3100	800	10
Butyl benzyl phthalate	1100	J	ug/kg	3100	600	10
Di-n-butylphthalate	ND		ug/kg	3100	590	10
Di-n-octylphthalate	ND		ug/kg	3100	750	10
Diethyl phthalate	ND		ug/kg	3100	650	10
Dimethyl phthalate	ND		ug/kg	3100	780	10
Benzo(a)anthracene	40000		ug/kg	1800	600	10
Benzo(a)pyrene	40000		ug/kg	2400	750	10
Benzo(b)fluoranthene	55000		ug/kg	1800	620	10
Benzo(k)fluoranthene	19000		ug/kg	1800	580	10
Chrysene	45000		ug/kg	1800	600	10

Project Name: 1050 NIAGARA ST. **Lab Number:** L1314698

Project Number: 0136-013-005 **Report Date:** 08/06/13

SAMPLE RESULTS

Lab ID: L1314698-01 D Date Collected: 07/15/13 14:30

Client ID: SB-5 (.5-1) Date Received: 07/16/13

Sample Location: 1050 NIAGARA ST. Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthylene	1200	J	ug/kg	2400	570	10
Anthracene	15000		ug/kg	1800	510	10
Benzo(ghi)perylene	26000		ug/kg	2400	640	10
Fluorene	7100		ug/kg	3100	880	10
Phenanthrene	63000		ug/kg	1800	600	10
Dibenzo(a,h)anthracene	7200		ug/kg	1800	590	10
Indeno(1,2,3-cd)pyrene	26000		ug/kg	2400	680	10
Pyrene	69000		ug/kg	1800	600	10
Biphenyl	ND		ug/kg	7000	1000	10
4-Chloroaniline	ND		ug/kg	3100	810	10
2-Nitroaniline	ND		ug/kg	3100	860	10
3-Nitroaniline	ND		ug/kg	3100	850	10
4-Nitroaniline	ND		ug/kg	3100	830	10
Dibenzofuran	4400		ug/kg	3100	1000	10
2-Methylnaphthalene	1300	J	ug/kg	3700	980	10
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	3100	950	10
Acetophenone	ND		ug/kg	3100	950	10
2,4,6-Trichlorophenol	ND		ug/kg	1800	580	10
p-Chloro-m-cresol	ND		ug/kg	3100	890	10
2-Chlorophenol	ND		ug/kg	3100	920	10
2,4-Dichlorophenol	ND		ug/kg	2800	990	10
2,4-Dimethylphenol	ND		ug/kg	3100	910	10
2-Nitrophenol	ND		ug/kg	6600	960	10
4-Nitrophenol	ND		ug/kg	4300	990	10
2,4-Dinitrophenol	ND		ug/kg	15000	4200	10
4,6-Dinitro-o-cresol	ND		ug/kg	8000	1100	10
Pentachlorophenol	ND		ug/kg	2400	660	10
Phenol	ND		ug/kg	3100	910	10
2-Methylphenol	ND		ug/kg	3100	990	10
3-Methylphenol/4-Methylphenol	ND		ug/kg	4400	1000	10
2,4,5-Trichlorophenol	ND		ug/kg	3100	990	10
Carbazole	13000		ug/kg	3100	660	10
Benzaldehyde	ND		ug/kg	4000	1200	10
Caprolactam	ND		ug/kg	3100	850	10
Atrazine	ND		ug/kg	2400	690	10
2,3,4,6-Tetrachlorophenol	ND		ug/kg	3100	520	10

Project Name: 1050 NIAGARA ST. **Lab Number:** L1314698

Project Number: 0136-013-005 **Report Date:** 08/06/13

SAMPLE RESULTS

Lab ID: L1314698-01 D
Client ID: SB-5 (.5-1)
Sample Location: 1050 NIAGARA ST.

Date Collected: 07/15/13 14:30
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		25-120
Phenol-d6	88		10-120
Nitrobenzene-d5	92		23-120
2-Fluorobiphenyl	96		30-120
2,4,6-Tribromophenol	88		0-136
4-Terphenyl-d14	95		18-120

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1314698
Report Date: 08/06/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/04/13 23:53
Analyst: JB

Extraction Method: EPA 3546
Extraction Date: 08/02/13 11:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG626188-1					
Acenaphthene	ND		ug/kg	130	34.
Hexachlorobenzene	ND		ug/kg	99	31.
Bis(2-chloroethyl)ether	ND		ug/kg	150	46.
2-Chloronaphthalene	ND		ug/kg	160	54.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	36.
2,6-Dinitrotoluene	ND		ug/kg	160	42.
Fluoranthene	ND		ug/kg	99	30.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	50.
4-Bromophenyl phenyl ether	ND		ug/kg	160	38.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	58.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	50.
Hexachlorobutadiene	ND		ug/kg	160	47.
Hexachlorocyclopentadiene	ND		ug/kg	470	110
Hexachloroethane	ND		ug/kg	130	30.
Isophorone	ND		ug/kg	150	44.
Naphthalene	ND		ug/kg	160	55.
Nitrobenzene	ND		ug/kg	150	39.
NDPA/DPA	ND		ug/kg	130	35.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	49.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	43.
Butyl benzyl phthalate	ND		ug/kg	160	32.
Di-n-butylphthalate	ND		ug/kg	160	32.
Di-n-octylphthalate	ND		ug/kg	160	41.
Diethyl phthalate	ND		ug/kg	160	35.
Dimethyl phthalate	ND		ug/kg	160	42.
Benzo(a)anthracene	ND		ug/kg	99	32.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	33.
Benzo(k)fluoranthene	ND		ug/kg	99	32.
Chrysene	ND		ug/kg	99	32.

Project Name: 1050 NIAGARA ST. **Lab Number:** L1314698

Project Number: 0136-013-005 **Report Date:** 08/06/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/04/13 23:53
Analyst: JB

Extraction Method: EPA 3546
Extraction Date: 08/02/13 11:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG626188-1					
Acenaphthylene	ND		ug/kg	130	31.
Anthracene	ND		ug/kg	99	28.
Benzo(ghi)perylene	ND		ug/kg	130	34.
Fluorene	ND		ug/kg	160	47.
Phenanthrene	ND		ug/kg	99	32.
Dibenzo(a,h)anthracene	ND		ug/kg	99	32.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	37.
Pyrene	ND		ug/kg	99	32.
Biphenyl	ND		ug/kg	380	54.
4-Chloroaniline	ND		ug/kg	160	44.
2-Nitroaniline	ND		ug/kg	160	47.
3-Nitroaniline	ND		ug/kg	160	46.
4-Nitroaniline	ND		ug/kg	160	45.
Dibenzofuran	ND		ug/kg	160	55.
2-Methylnaphthalene	ND		ug/kg	200	53.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	51.
Acetophenone	ND		ug/kg	160	51.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	48.
2-Chlorophenol	ND		ug/kg	160	50.
2,4-Dichlorophenol	ND		ug/kg	150	54.
2,4-Dimethylphenol	ND		ug/kg	160	49.
2-Nitrophenol	ND		ug/kg	360	52.
4-Nitrophenol	ND		ug/kg	230	54.
2,4-Dinitrophenol	ND		ug/kg	790	230
4,6-Dinitro-o-cresol	ND		ug/kg	430	60.
Pentachlorophenol	ND		ug/kg	130	35.
Phenol	ND		ug/kg	160	49.
2-Methylphenol	ND		ug/kg	160	53.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	54.
2,4,5-Trichlorophenol	ND		ug/kg	160	54.

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1314698
Report Date: 08/06/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 08/04/13 23:53
Analyst: JB

Extraction Method: EPA 3546
Extraction Date: 08/02/13 11:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG626188-1					
Carbazole	ND		ug/kg	160	36.
Benzaldehyde	ND		ug/kg	220	67.
Caprolactam	ND		ug/kg	160	46.
Atrazine	ND		ug/kg	130	37.
2,3,4,6-Tetrachlorophenol	ND		ug/kg	160	28.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	93		25-120
Phenol-d6	92		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	86		30-120
2,4,6-Tribromophenol	90		0-136
4-Terphenyl-d14	91		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1314698
Report Date: 08/06/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG626188-2 WG626188-3								
Acenaphthene	82		93		31-137	13		50
Benzidine	44		44			0		50
n-Nitrosodimethylamine	75		89			17		50
1,2,4-Trichlorobenzene	75		88		38-107	16		50
Hexachlorobenzene	79		85		40-140	7		50
Bis(2-chloroethyl)ether	82		94		40-140	14		50
2-Chloronaphthalene	83		90		40-140	8		50
1,2-Dichlorobenzene	79		88		40-140	11		50
1,3-Dichlorobenzene	76		86		40-140	12		50
1,4-Dichlorobenzene	75		86		28-104	14		50
3,3'-Dichlorobenzidine	47		54		40-140	14		50
2,4-Dinitrotoluene	88		**94**	Q	28-89	7		50
2,6-Dinitrotoluene	88		89		40-140	1		50
Fluoranthene	81		87		40-140	7		50
4-Chlorophenyl phenyl ether	84		93		40-140	10		50
4-Bromophenyl phenyl ether	84		92		40-140	9		50
Azobenzene	88		95		40-140	8		50
Bis(2-chloroisopropyl)ether	87		98		40-140	12		50
Bis(2-chloroethoxy)methane	91		98		40-117	7		50
Hexachlorobutadiene	76		88		40-140	15		50
Hexachlorocyclopentadiene	85		96		40-140	12		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1314698

Report Date: 08/06/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG626188-2 WG626188-3								
Hexachloroethane	78		87		40-140	11		50
Isophorone	89		94		40-140	5		50
Naphthalene	78		90		40-140	14		50
Nitrobenzene	84		100		40-140	17		50
NDPA/DPA	85		92			8		50
n-Nitrosodi-n-propylamine	90		98		32-121	9		50
Bis(2-ethylhexyl)phthalate	95		108		40-140	13		50
Butyl benzyl phthalate	78		84		40-140	7		50
Di-n-butylphthalate	86		95		40-140	10		50
Di-n-octylphthalate	91		106		40-140	15		50
Diethyl phthalate	86		91		40-140	6		50
Dimethyl phthalate	86		94		40-140	9		50
Benzo(a)anthracene	87		101		40-140	15		50
Benzo(a)pyrene	86		100		40-140	15		50
Benzo(b)fluoranthene	83		103		40-140	22		50
Benzo(k)fluoranthene	90		95		40-140	5		50
Chrysene	85		96		40-140	12		50
Acenaphthylene	84		88		40-140	5		50
Anthracene	88		102		40-140	15		50
Benzo(ghi)perylene	78		94		40-140	19		50
Fluorene	83		92		40-140	10		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1314698

Report Date: 08/06/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG626188-2 WG626188-3								
Phenanthrene	86		97		40-140	12		50
Dibenzo(a,h)anthracene	80		94		40-140	16		50
Indeno(1,2,3-cd)pyrene	78		94		40-140	19		50
Pyrene	80		86		35-142	7		50
Biphenyl	83		99			18		50
Aniline	52		59		40-140	13		50
4-Chloroaniline	58		61		40-140	5		50
2-Nitroaniline	93		94		47-134	1		50
3-Nitroaniline	67		70		26-129	4		50
4-Nitroaniline	83		86		41-125	4		50
Dibenzofuran	84		94		40-140	11		50
2-Methylnaphthalene	79		88		40-140	11		50
1,2,4,5-Tetrachlorobenzene	80		98		40-117	20		50
Acetophenone	91		99		14-144	8		50
2,4,6-Trichlorophenol	86		92		30-130	7		50
p-Chloro-m-cresol	95		98		26-103	3		50
2-Chlorophenol	88		98		25-102	11		50
2,4-Dichlorophenol	90		99		30-130	10		50
2,4-Dimethylphenol	100		107		30-130	7		50
2-Nitrophenol	92		100		30-130	8		50
4-Nitrophenol	87		92		11-114	6		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1314698

Report Date: 08/06/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG626188-2 WG626188-3								
2,4-Dinitrophenol	35		35		4-130	0		50
4,6-Dinitro-o-cresol	69		74		10-130	7		50
Pentachlorophenol	79		90		17-109	13		50
Phenol	**93**	Q	**102**	Q	26-90	9		50
2-Methylphenol	95		103		30-130.	8		50
3-Methylphenol/4-Methylphenol	96		102		30-130	6		50
2,4,5-Trichlorophenol	92		94		30-130	2		50
Benzoic Acid	15		15			0		50
Benzyl Alcohol	96		101		40-140	5		50
Carbazole	86		97		54-128	12		50
Benzaldehyde	92		104			12		50
Caprolactam	96		97			1		50
Atrazine	92		105			13		50
2,3,4,6-Tetrachlorophenol	83		88			6		50
Pyridine	58		68		10-93	16		50
Parathion, ethyl	86		96		40-140	11		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1050 NIAGARA ST.

Project Number: 0136-013-005

Lab Number: L1314698

Report Date: 08/06/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG626188-2 WG626188-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	91		103		25-120
Phenol-d6	92		104		10-120
Nitrobenzene-d5	90		99		23-120
2-Fluorobiphenyl	84		90		30-120
2,4,6-Tribromophenol	88		105		0-136
4-Terphenyl-d14	75		83		18-120

INORGANICS
&
MISCELLANEOUS

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1314698
Report Date: 08/06/13

SAMPLE RESULTS

Lab ID: L1314698-01
Client ID: SB-5 (.5-1)
Sample Location: 1050 NIAGARA ST.
Matrix: Soil

Date Collected: 07/15/13 14:30
Date Received: 07/16/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	53.7		%	0.100	NA	1	-	07/17/13 20:54	30,2540G	RT

Lab Duplicate Analysis
Batch Quality Control

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1314698
Report Date: 08/06/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG622403-1 QC Sample: L1313185-02 Client ID: DUP Sample						
Solids, Total	84.9	85.4	%	1		20

Project Name: 1050 NIAGARA ST.
Project Number: 0136-013-005

Lab Number: L1314698
Report Date: 08/06/13

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information **Custody Seal**

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1314698-01A	Amber 250ml unpreserved	A	N/A	3.4	Y	Absent	NYTCL-8270(14)

*Values in parentheses indicate holding time in days

Project Name:	1050 NIAGARA ST.	**Lab Number:**	L1314698
Project Number:	0136-013-005	**Report Date:**	08/06/13

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
G	- The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The lower value for the two columns has been reported due to obvious interference.

Report Format: DU Report with "J" Qualifiers

Project Name:	1050 NIAGARA ST.	**Lab Number:**	L1314698
Project Number:	0136-013-005	**Report Date:**	08/06/13

Data Qualifiers

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with "J" Qualifiers

Project Name:	1050 NIAGARA ST.	**Lab Number:**	L1314698
Project Number:	0136-013-005	**Report Date:**	08/06/13

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certificate/Approval Program Summary

Last revised July 2, 2013 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574. ***NELAP Accredited Solid Waste/Soil.***

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Selenium, Silver, Sodium, Thallium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP) 504.1, Ethylene Dibromide (EDB) 504.1, 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223, Enumeration and P/A), E. Coli. – Colilert (SM9223, Enumeration and P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform-EC Medium (SM 9221E).

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), E. Coli – Colilert (SM9223 Enumeration), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E), Enterococcus - Enterolert.

Solid Waste/Soil (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Dalapon, Volatile Organics (SW 8260), Acid Extractables (Phenols) (SW 8270), Benzidines (SW 8270), Phthalates (SW 8270), Nitrosamines (SW 8270), Nitroaromatics & Cyclic Ketones (SW 8270), PAHs (SW 8270), Haloethers (SW 8270), Chlorinated Hydrocarbons (SW 8270).)

State of Illinois Certificate/Lab ID: 003155. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM2120B, 2320B, 2510B, 2540C, SM4500CN-CE, 4500F-C, 4500H-B, 4500NO3-F, 5310C, EPA 200.7, 200.8, 245.1, 300.0. Organic Parameters: EPA 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: SM2120B, 2310B, 2320B, 2340B, 2510B, 2540B, 2540C, 2540D, SM4500CL-E, 4500CN-E, 4500F-C, 4500H-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-E, 4500S-D, 4500SO3-B, 5210B, 5220D, 5310C, 5540C, EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1. Organic Parameters: EPA 608, 624, 625.)

Hazardous and Solid Waste (Inorganic Parameters: EPA 1010A, 1030, 1311, 1312, 6010C, 6020A, 7196A, 7470A, 7471B, 9012B, 9014, 9038, 9040C, 9045D, 9050A, 9065, 9251. Organic Parameters: 8011 (NPW only), 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8315A, 8330.)

Maine Department of Human Services Certificate/Lab ID: 2009024.
Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2120B, 2130B, 2320B, 2510C, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, 5310C, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 8315A, 9010C, SM2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-C, 4500NH3-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-B, 4500P-E, 4500S2-D, 4500SO3-B, 5540C, 5210B, 5220D, 5310C, 9010B, 9030B, 9040C, 7470A, 7196A, 2340B, EPA 200.7, 6010C, 200.8, 6020A, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8011, 8081B, 8082A, 8330, 8151A, 8260C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9040B, 9045C, 6010C, 6020A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B, 9038, 9251. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260C, 8270D, 8330, 8151A, 8081B, 8082A, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.
*Drinking Water (*Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl) (EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate); (EPA 353.2 for: Nitrate-N, Nitrite-N); (SM4500NO3-F for: Nitrate-N and Nitrite-N); 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B. Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics); (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), EPA 332. Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; ColilertQT SM9223B; MF-SM9222D.)

*Non-Potable Water (*Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn); 245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B; Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 3005A, 200.7, 200.8, 245.1, SW-846 6010C, 6020A, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 426C, 1664A, SW-846 9010B, 9010C, 9030, 9040B, 9040C, SM2120B, 2310B, 2320B, 2340B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500P-E, 4500-S2-D, 4500SO3-B, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D, 3060A. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260C, 8270D, 8330, EPA 624, 625, 608, SW-846 8082A, 8081B, 8015C, 8151A, 8330, 8270D-SIM.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010C, 6020A, 7196A, 7471B, 1010, 1010A, 1030, 9010C, 9012B, 9014, 9030B, 9040C, 9045C, 9045D, 9050, 9065, 9251, 1311, 1312, 3005A, 3050B, 3060A. Organic Parameters: SW-846 3540C, 3546, 3050B, 3580A, 3620D, 3630C, 5030B, 5035, 8260C, 8270D, 8270D-SIM, 8330, 8151A, 8015B, 8015C, 8082A, 8081B.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2064. ***NELAP Accredited.***
Drinking Water (Organic Parameters: **EPA 524.2:** Di-isopropyl ether (DIPE), Ethyl-t-butyl ether (ETBE), Tert-amyl methyl ether (TAME)).

Non-Potable Water (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene. **EPA 8015C(M):** TPH.)

Solid & Chemical Materials (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.1, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-E, EPA 300.0, SM2120B, 2340B, SM4500F-BC, EPA 200.7, 200.8, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. Organic Parameters: SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D,

9050A, 9065, 9251. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.1, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2340B, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010C, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 8315A, 3005A, 3015, 9010C, 9030B. Organic Parameters: EPA 624, 8260C, 8270D, 8270D-SIM, 625, 608, 8081B, 8151A, 8330, 8082A, EPA 3510C, 5030B, 8015C, 8011.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010C, 6020A, 7196A, 7471B, 8315A, 9012B, 9014, 9065, 9050A, 9038, 9251, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. Organic Parameters: EPA 8260C, 8270D, 8270D-SIM, 8015C, 8081B, 8151A, 8330, 8082A, 3540C, 3546, 3580A, 5035A-H, 5035A-L.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. (Inorganic Parameters: SM2310B, 2320B, 4500Cl-E, 4500Cn-E, 9012B, 9014, Lachat 10-204-00-1-X, 1010A, 1030, 4500NO3-F, 353.2, 4500P-E, 4500SO4-E, 300.0, 4500S-D, 5310B, 5310C, 6010C, 6020A, 200.7, 200.8, 3500Cr-B, 7196A, 245.1, 7470A, 7471B, 1311,1312. Organic Parameters: 608, 8081B, 8082A, 624, 8260B, 625, 8270D, 8151A, 8015C, 504.1, MA-EPH, MA-VPH.)

Drinking Water Program Certificate/Lab ID: 25700. (Inorganic Parameters: Chloride EPA 300.0. Organic Parameters: 524.2)

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO3-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1312, 3005A,3015, 3060A, 200.7, 200.8, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P,BE, 245.1, 300.0, 350.1, 350.2, 351.1, 353.2, 420.1, 6010C, 6020A, 7196A, 7470A, 9030B, 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500CN-CE, 4500Cl-E, 4500F-B, 4500F-C, 4500H+-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500S-D, 4500SO3-B, 5310BCD, 5540C, 9010C, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 625, 624, 608, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, 8015C, NJ-EPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3005A, 3050B, 3060A, 6010C, 6020A, 7196A, 7471B, 9010C, 9012B, 9014, 9040B, 9045D, 9050A, 9065, SM 4500NH3-BH, 9030B, 9038, 9251. Organic Parameters: 3540C, 3546, 3580A, 3620C, 3630C, 5035, 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, NJ-EPH.)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. ***NELAP Accredited via NJ-DEP.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commisson on Environmental Quality Certificate/Lab ID: T104704476. ***NELAP Accredited.***
Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 $S2^{-}$D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.1, 2320B, 4500F-C, 4500NO3-F, 4500H+B, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 351.2, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 2340B, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500 SO3-B, 4500H-B, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C, 9010Cm

9030B, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9010C, 9012B, 9030B, 9014, 9038, 9040C, 9045D, 9251, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 3550B, 3580A, 3620C, 3630C, 6020A, 8260B, 8260C, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B Certificate/Lab ID: L2217.
Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6010C, 6020, 6020A, 245.1, 245.2, 7470A, 9040B, 9010B, 180.1. 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO3-F, 4500CL-D, 5220D, 5310C, 2130B, 2320B, 2540C, 3005A, 3015, 9010B, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A, 8082, 8082A, 8081A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 6010C, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 9012A, 9040B, 9045C, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330A/B-prep, 8082, 8082A, 8081A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:
EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether. **EPA 8260B:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8260 Non-potable water matrix:** Iodomethane (methyl iodide), Methyl methacrylate. **EPA 8260 Soil matrix:** Tert-amyl methyl ether (TAME), Diisopropyl ether (DIPE), Azobenzene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine. **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, TKN in a soil matrix, NO2 in a soil matrix, NO3 in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

Serial_No:08061312:20

CHAIN OF CUSTODY

PAGE 1 OF 1

L1314698

Date Rec'd in Lab: 7/17/13

ALPHA Job #: L1314698

8/2/13

ALPHA LABORATORIES
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Turnkey
Address: 2558 Hamburg Turnpike Buffalo NY 14218
Phone: (716) 856-0599
Fax: (716) 856-0583
Email:
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 1050 Niagara St
Project Location: "
Project #: 0136-013-005
Project Manager: Mike Lesakowski
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: 7/23/13 Time: 8/6/13

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL SVOC	TAL Metals	PCBs	NYTCL-8270	Sample Specific Comments	Total # Bottles
L1314698											
13385-1	SB-1 (.5-1)	7-15-13	10:20	Soil	PLW	X	X				2
-2	SB-2 (.5-1)		10:52			X	X				2
-3	SB-3 (0-.5)		10:25			X	X				2
-4	SB-4 (0-.5)		10:50			X	X				2
-5	SB-5 (.5-1)		14:30			X		X	X	Just PCBs	1
-6	SB-6 (.5-1)		14:20			X				TCL SVOC only	2
-7	SB-7 (.5-1)		12:20			X	X				2
-8	SB-8 (.5-1)		13:00			X				TCL SVOC only	2

Container Type
Preservative

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:	Date/Time	Received By:	Date/Time
	7-16-13 1300	James D. Rickus	7-16-13 1600
James D. Rickus	7-16-13 1815		7/16/13

FORM NO: 01-01 (rev. 14-OCT-07)

May 15, 2013

Mr. Martin Doster, P.E.
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

Re: 1088 Niagara Street Site
Draft Interim Remedial Measures Work Plan

Dear Mr. Doster:

On behalf of our client, 9271 Group, LLC (9271 Group), TurnKey Environmental Restoration, LLC (TurnKey) has prepared this letter work plan for proposed interim remedial measures (IRM) related to NY Spill 1201545 for the 1088 Niagara Street Site, in accordance with the Department's May 2, 2013 correspondence.

9271 Group has prepared and submitted an application for admittance into the Brownfield Cleanup Program (BCP) as a volunteer for the larger 1050-1088 Niagara Street Site. Additional remedial investigation is planned for the entire site after admittance into the BCP.

BACKGROUND

The 1088 Niagara Street portion of the BCP Site (northern portion of the Site) formerly included Hygrade Oil Co. and Gulf Oil Corp. which utilized the site as a service station and fuel distribution facility, including multiple petroleum storage and distribution tanks, and gasoline pump house from at least the 1920s through the 1960s.

Based on the findings of the Phase I ESA (June 2012), TurnKey completed a limited Phase II site investigation on the 1088 Niagara Street parcel in June 2012. During the investigation, the presence of three (3) abandoned historic underground storage tanks (USTs) and one (1) former in-ground hydraulic lifts were discovered. Based on the investigation findings, the NYSDEC Spills hotline was notified and Spill No. 1201545 was issued for the Site.

This IRM Work Plan has been prepared in association with the submitted BCP Application for the larger 1050-1088 Niagara Street Site. The purpose of this IRM Work Plan is to provide details relative to the removal and proper handling of the USTs and any residual

contents prior to or concurrent with completion of the Remedial Investigation (RI) and development of remedial alternatives.

INTERIM REMEDIAL MEASURES

In accordance with the Department's request, an IRM is being proposed to address the discovered USTs and any residual contents, and the identified hydraulic lift to expedite the remedial measures. Additional remedial measures beyond those planned as an IRM will be presented in a Remedial Action Work Plan (RAWP) that will be prepared and submitted to the Department after acceptance into the BCP and completion of the remedial investigation (RI). The IRM has been prepared in general accordance with NYSDEC DER-10 and NYSDEC Memorandum *Permanent Closure of Petroleum Storage Tanks* (1987/1988/2003).

UST and Residual Contents Removal

Prior to excavation of the USTs, the tops of the tanks will be fully exposed using an excavator. Upon completion of uncovering the tanks will be opened and inspected to determine proper handling of any residual contents.

If residual contents are discovered, a properly licensed vacuum truck operator will be employed to remove the contents of the tanks and clean the interior of the tanks. All tanks contents and residual cleaning materials will be properly characterized and disposed of off-site at a licensed disposal facility.

Once tank contents are removed, USTs will be removed from the ground, cleaned of residual soil and transported off-site for disposal as scrap. Any appurtenant piping attached to the USTs will be removed during tank excavation.

Hydraulic Lift Removal

The hydraulic lift and reservoir will be excavated and staged on plastic sheeting to allow for the removal and cleaning of any residual contents by the vacuum truck operator, as described above. After removal of any contents, the hydraulic lift and reservoir will be cleared of residual soil and transported off-site for scrap.

Community Air Monitoring

Real-time community air monitoring will be performed during all ground intrusive activities at the Site. Particulate and VOC monitoring will be performed along the downwind perimeter of the work area during subgrade excavation, grading and soil/fill handling activities in accordance with this plan. 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 NYSDEC's DER-10 (May 2010) Appendix 1A (NYSDOH's Generic Community Air Monitoring Plan) and Appendix 1B (Fugitive Dust and Particulate Monitoring).

Future BCP Investigation and Remedial Measures

As indicated in the submitted BCP Application, 9271 Group is prepared to complete an RI and remediate the 1050-1088 Niagara Street Site in accordance with the requirements of the BCP. As such, we propose to address any additional petroleum-impacted soil/fill and/or characterization sampling associated with the IRM described above, under the supervision of the Department during the RI and Remedial Action phases of the BCP project.

Reporting

All reporting and documentation associated with the IRM will be included in the RI-IRM-AAR. IRM documentation will include:

- Daily log sheets
- Disposal facility applications, approvals and associated manifests
- Copy of NYSDEC Petroleum Bulk Storage Application to register all USTs closed-removed
- Sampling and Analysis results, and
- Community Air Monitoring Plan records.

If you have any question, please us know.

Sincerely,
TurnKey Environmental Restoration, LLC

Nathan Munley
Senior Project Scientist

Michael Lesakowski
Project Manager

cc: W. Paladino (9271 Group)
C. Slater (Slater Law)
E. Melnyk (NYSDEC)
F. Gallego (NYSDEC)

File: 0136-013-005

FIGURE

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\IRM Work Plan - May 2013\1050-1088 Niagara IRM Base Map.dwg

DATE: MAY 2013
DRAFTED BY: JGT

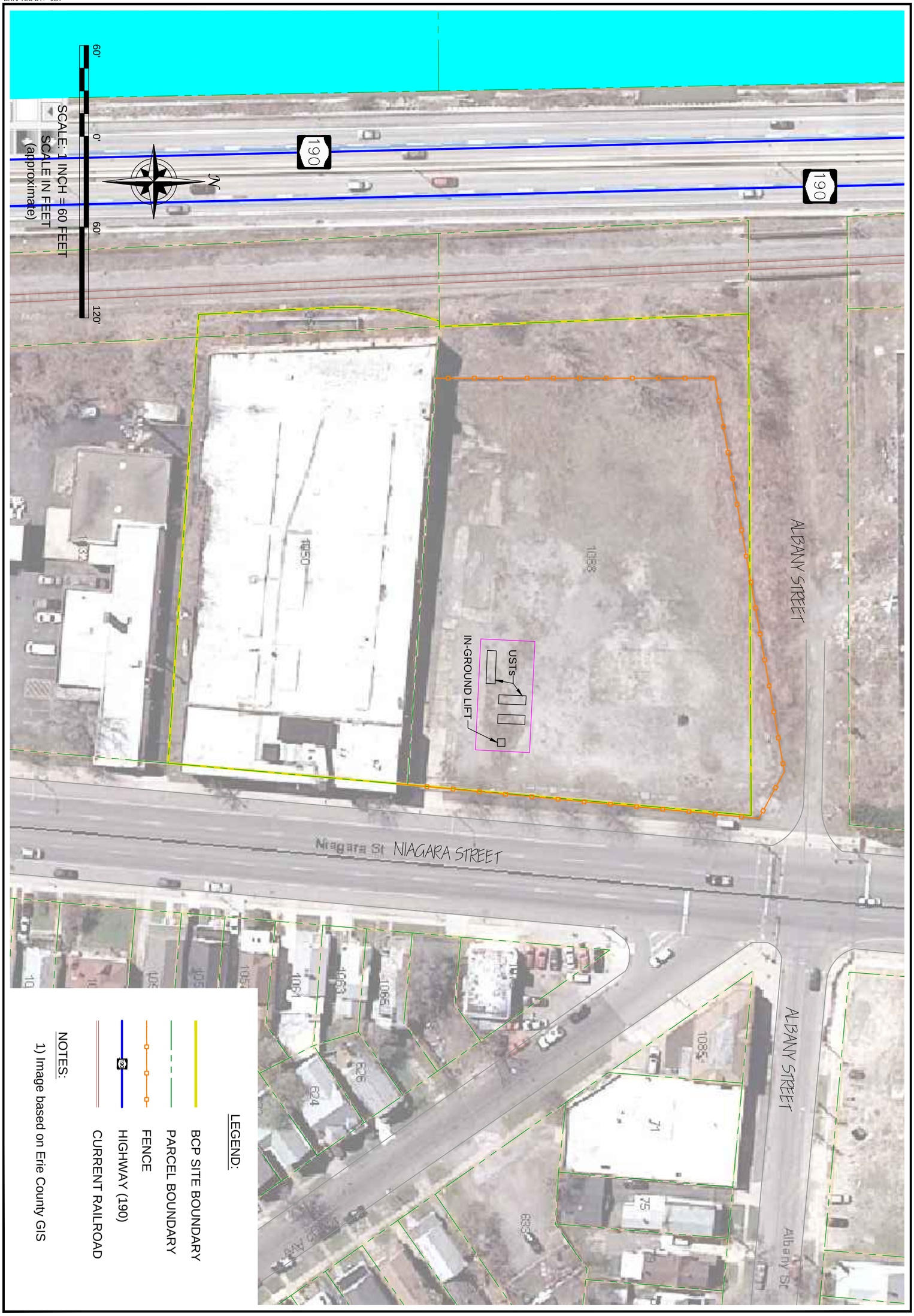


FIGURE A

SITE PLAN

IRM WORK PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0136-012-004

APPENDIX C

SITE-SPECIFIC HEALTH AND SAFETY PLAN

SITE HEALTH AND SAFETY PLAN
for
BROWNFIELD CLEANUP PROGRAM
RI/IRM ACTIVITIES

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

November 2013 0136-013-005

Prepared for:

9271 GROUP, LLC

1050-1088 NIAGARA STREET SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES

ACKNOWLEDGEMENT

Plan Reviewed by (initial):

Corporate Health and Safety Director: Thomas H. Forbes, P.E.

Project Manager: Michael Lesakowski

Designated Site Safety and Health Officer: Bryan C. Hann

Acknowledgement:
I acknowledge that I have reviewed the information contained in this site-specific Health and Safety Plan, and understand the hazards associated with performance of the field activities described herein. I agree to comply with the requirements of this plan.

NAME (PRINT)	SIGNATURE	DATE

TURNKEY

1050-1088 NIAGARA STREET SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES

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1050-1088 NIAGARA STREET SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES

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1.0 INTRODUCTION

1.1 General

In accordance with OSHA requirements contained in 29 CFR 1910.120, this Health and Safety Plan (HASP) describes the specific health and safety practices and procedures to be employed by TurnKey Environmental Restoration, LLC and Benchmark Environmental Engineering & Science, PLLC employees (referred to jointly hereafter as "TurnKey-Benchmark") during Remedial Investigation (RI) and Interim Remedial Measures (IRM) activities at the 1050-1088 Niagara Street Site (Site) located in the City of Buffalo, Erie County, New York. This HASP presents procedures for TurnKey-Benchmark employees who will be involved with RI/IRM field activities; it does not cover the activities of other contractors, subcontractors or other individuals on the Site. These firms will be required to develop and enforce their own HASPs as discussed in Section 2.0. TurnKey-Benchmark accepts no responsibility for the health and safety of contractor, subcontractor or other personnel.

This HASP presents information on known Site health and safety hazards using available historical information, and identifies the equipment, materials and procedures that will be used to eliminate or control these hazards. Environmental monitoring will be performed during the course of field activities to provide real-time data for on-going assessment of potential hazards.

1.2 Background

The Site consists of three adjoining parcels totaling approximately 2.7-acres, located at 1050-1088 Niagara Street in the City of Buffalo, Erie County, New York. The Site is currently improved with a one three-story building, located on the 1050 Niagara Street parcel.

The Site has a long history of being utilized for industrial operations (since at least 1889). The International Brewing Company and American Gelatine Corp. operated on-Site in the early 1900s. The northern portion of the Site (1088 Niagara St parcel) included a filling station from at least the 1920s through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at

least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site building), a commercial printing company, was located on the 1050 Niagara Street parcel of the Site from at least 1930 through at least 1990; and Miken Companies, also a commercial printing company, was located on-Site until at least 2000.

1.3 Known and Suspected Environmental Conditions

Previous investigations have shown that the former use of the site as a filling station and lithographic printing operation have impacted that Site, which will require remediation prior to redevelopment. The findings of the previous investigation included:

- Historic Site use as a petroleum filling station from at least 1930 through at least 1960.
- Elevated VOCs, some exceeding Commercial Use SCOs were detected in on-Site soil/fill. Several metals were detected above their respective Commercial Use SCOs, including arsenic, cadmium, chromium, copper, lead, and mercury.
- Contaminated soil/fill encountered on Site.
- Multiple underground storage tanks (UST's), a hydraulic lift, and building mounted transformers were identified as being located on site.
- Historic coal bins, rail siding, oil pump houses, and multiple petroleum storage tanks (ASTs and USTs) were noted in historic records searches.
- Evidence of two former 25,000 gallon tanks within the basement of the 1050 Niagara Street building, likely containing fuel oil and/or printing related solvents
- Elevated photoionization detector (PID) readings for volatile organic compounds (VOCs) were detected in multiple locations across the site, with readings as high as 1,268 ppm being detected.

The RI will be performed in support of the BCP to determine the nature and extent of impacts from these known and suspect environmental conditions on this parcel. As part of the RI, an IRM will be completed to immediately address known environmental impacts related to past use of the Site as an automobile dealership and service facility. An IRM will quickly mitigate risks to public health and the environment attributable to petroleum contamination at the Site. Impacted soil will be removed and impacted groundwater (if encountered) will be extracted and treated during the IRM.

1.4 Parameters of Interest

Based on the previous investigations, constituents of potential concern (COPCs) in soil and, potentially groundwater, at the Site include:

- **Inorganic Compound –** The inorganic COPCS potentially present at elevated concentrations are arsenic, beryllium, copper, and lead.

- **Volatile Organic Compounds (VOCs)** – VOCs present at elevated concentration may include petroleum-related VOCs, such as 1,2,4- and 1,3,5-trimethylbenzene, isopropylbenzene, ethylbenzene, n-propylbenzene, and xylenes.

- **Semi-Volatile Organic Compounds (SVOCs) –** SVOCs present at elevated concentrations may include polycyclic aromatic hydrocarbons (PAHs), which are byproducts of incomplete combustion and impurities in petroleum products.

1.5 Overview of RI/IRM Activities

TurnKey-Benchmark personnel will be on-site to observe and perform RI and IRM activities. The field activities to be completed as part of the RI and IRM are described below.

Remedial Investigation Activities

1. **Surface Soil Sampling:** TurnKey-Benchmark will advance Five (5) monitoring well borings and collect one surface soil sample from each boring from the upper 0-6 inches for the purpose of determining the nature and extent of potential COPC impacts in the surface soil/fill.

2. **Near Surface Soil Sampling:** TurnKey-Benchmark will advance three (3) test pits and two (2) hand cores; and collect one subsurface soil sample from location for the purpose of determining the nature and extent of potential COPC impacts in the near surface soil/fill.

3. **Subsurface Soil Sampling:** TurnKey-Benchmark will advance eleven (11) borings, and four (4) test pits; and collect one subsurface soil sample from each location for the purpose of determining the nature and extent of potential COPC impacts in the subsurface soil/fill.

4. **Monitoring Well Installation/Development and Sampling:** TurnKey-Benchmark will observe the installation of five (5) on-Site groundwater monitoring wells, develop

the wells, and collect groundwater samples for the purpose of determining the nature and extent of potential COPC impacts.

5. **Subslab Vapor Sampling:** TurnKey-Benchmark will advance sample points into the sub-slab of the on-Site Building and collect subslab vapor, ambient indoor air, and ambient outdoor air samples for the purpose of determining the nature and extent of potential COPC impacts.

Potential IRM Activities

1. **Soil Excavation:** The remediation contractor would perform soil excavation activities.

2. **Verification Sampling:** The remediation contractor, in association with TurnKey-Benchmark, will collect soil samples from the sidewalls and bottom of the excavations using a backhoe to verify that cleanup objectives have been met.

3. **Backfilling:** The remediation contractor would coordinate and perform backfilling activities.

4. **Groundwater and Surface Management:** The remediation contractor would direct groundwater/surface water collection during soil excavation activities and coordinate disposal of the collected water.

2.0 ORGANIZATIONAL STRUCTURE

This section of the HASP describes the lines of authority, responsibility and communication as they pertain to health and safety functions at the Site. The purpose of this chapter is to identify the personnel who impact the development and implementation of the HASP and to describe their roles and responsibilities. This chapter also identifies other contractors and subcontractors involved in work operations and establish the lines of communications among them for health and safety matters. The organizational structure described in this chapter is consistent with the requirements of 29 CFR 1910.120(b)(2). This section will be reviewed by the Project Manager and updated as necessary to reflect the current organizational structure at this Site.

2.1 Roles and Responsibilities

All Turnkey-Benchmark personnel on the Site must comply with the minimum requirements of this HASP. The specific responsibilities and authority of management, safety and health, and other personnel on this Site are detailed in the following paragraphs.

2.1.1 Corporate Health and Safety Director

The TurnKey-Benchmark Corporate Health and Safety Director is ***Mr. Thomas H. Forbes, P.E.*** The Corporate Health and Safety Director responsible for developing and implementing the Health and Safety program and policies for Benchmark Environmental Engineering & Science, PLLC and TurnKey Environmental Restoration, LLC, and consulting with corporate management to ensure adequate resources are available to properly implement these programs and policies. The Corporate Health and Safety Director coordinates TurnKey-Benchmark's Health and Safety training and medical monitoring programs and assists project management and field staff in developing site-specific health and safety plans.

2.1.2 Project Manager

The Project Manager for this Site is ***Mr. Michael Lesakowski.*** The Project Manager has the responsibility and authority to direct all TurnKey-Benchmark work operations at the Site. The Project Manager coordinates safety and health functions with the Site Safety and Health Officer, and bears ultimate responsibility for proper implementation of this HASP.

He may delegate authority to expedite and facilitate any application of the program, including modifications to the overall project approach as necessary to circumvent unsafe work conditions. Specific duties of the Project Manager include:

- Preparing and coordinating the Site work plan.
- Providing TurnKey-Benchmark workers with work assignments and overseeing their performance.
- Coordinating health and safety efforts with the Site Safety and Health Officer (SSHO).
- Reviewing the emergency response coordination plan to assure its effectiveness.
- Serving as the primary liaison with Site contractors and the property owner.

2.1.3 Site Safety and Health Officer

The Site Safety and Health Officer (SSHO) for this Site is ***Mr. Bryan C. Hann***. The qualified alternate SSHO is ***Mr. Nathan Munley.*** The SSHO reports to the Project Manager. The SSHO is on-site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SSHO are:

- Managing the safety and health functions for TurnKey-Benchmark personnel on the Site.
- Serving as the point of contact for safety and health matters.
- Ensuring that TurnKey-Benchmark field personnel working on the Site have received proper training (per 29 CFR Part 1910.120(e)), that they have obtained medical clearance to wear respiratory protection (per 29 CFR Part 1910.134), and that they are properly trained in the selection, use and maintenance of personal protective equipment, including qualitative respirator fit testing.
- Performing or overseeing Site monitoring as required by the HASP.
- Assisting in the preparation and review of the HASP.

- Maintaining site-specific safety and health records as described in this HASP.
- Coordinating with the Project Manager, Site Workers, and Contractor's SSHO as necessary for safety and health efforts.

2.1.4 Site Workers

Site workers are responsible for: complying with this HASP or a more stringent HASP, if appropriate (i.e., Contractor and Subcontractor's HASP); using proper PPE; reporting unsafe acts and conditions to the SSHO; and following the safety and health instructions of the Project Manager and SSHO.

2.1.5 Other Site Personnel

Other Site personnel who will have health and safety responsibilities will include the Drilling Contractor, who will be responsible for developing, implementing and enforcing a Health and Safety Plan equally stringent or more stringent than TurnKey-Benchmark's HASP. TurnKey-Benchmark assumes no responsibility for the health and safety of anyone outside its direct employ. Each Contractor's HASP shall cover all non-TurnKey/Benchmark Site personnel. Each Contractor shall assign a SSHO who will coordinate with TurnKey-Benchmark's SSHO as necessary to ensure effective lines of communication and consistency between contingency plans.

In addition to TurnKey-Benchmark and Contractor personnel, other individuals who may have responsibilities in the work zone include subcontractors and governmental agencies performing Site inspection work (i.e., the New York State Department of Environmental Conservation). The Contractor shall be responsible for ensuring that these individuals have received OSHA-required training (29 CFR 1910.120(e)), including initial, refresher and site-specific training, and shall be responsible for the safety and health of these individuals while they are on-site.

3.0 HAZARD EVALUATION

Due to the presence of certain contaminants at the Site, the possibility exists that workers will be exposed to hazardous substances during field activities. The principal points of exposure would be through direct contact with and incidental ingestion of soil, and through the inhalation of contaminated particles or vapors. Other points of exposure may include direct contact with groundwater. In addition, the use of drilling and/or medium to large-sized construction equipment (e.g., excavator) will also present conditions for potential physical injury to workers. Further, since work will be performed outdoors, the potential exists for heat/cold stress to impact workers, especially those wearing protective equipment and clothing. Adherence to the medical evaluations, worker training relative to chemical hazards, safe work practices, proper personal protection, environmental monitoring, establishment work zones and Site control, appropriate decontamination procedures and contingency planning outlined herein will reduce the potential for chemical exposures and physical injuries.

3.1 Chemical Hazards

As discussed in Section 1.3, historic activities have potentially resulted in impacts to Site soils, groundwater, and subslab vapors. Visual and olfactory observations, as well as elevated PID readings, indicate a potential VOC impact to Site soil. In addition to VOCs, soil and groundwater may be impacted by SVOCs (PAHs) due to historic use as a lithographic printing operation and gasoline filling station. Table 1 lists exposure limits for airborne concentrations of the COPCs identified in Section 1.4 of this HASP. Brief descriptions of the toxicology of the prevalent COPCs and related health and safety guidance and criteria are provided below.

- **1,2,4-Trimethylbenzene (CAS #95-63-6)** is a common gasoline additive. Acute exposure predominantly results in skin irritation and inhalation causes chemical pneumonitis. Symptoms include headache, dizziness, fatigue, muscular weakness, drowsiness.

- **1,3,5-Trimethylbenzene (CAS #108-67-8)** is a colorless, odorless flammable liquid. The substance is irritating to the eyes , the skin and the respiratory tract . If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system.

- **Isopropylbenzene (CAS #98-82-8)** is a colorless, gasoline-like odor flammable liquid. Acute exposure typically results in irritation of the eyes, mucous membranes and upper respiratory tract. Can be absorbed through the skin. Possible central nervous system depressant. Symptoms may include irritation, dizziness, nausea, lack of coordination and narcosis.

- **N-Propylbenzene (CAS #103-65-1)** is a colorless to pale yellow flammable liquid. Inhalation or contact may irritate or burn skin and eyes. In case fire, smoke-vapor may produce irritating, corrosive and/or toxic gases. Vapors may cause dizziness or suffocation.

- **Ethylbenzene (CAS #100-41-4)** is a component of automobile gasoline. Over-exposure may cause kidney, skin liver and/or respiratory disease. Signs of exposure may include dermatitis, irritation of the eyes and mucus membranes, headache. Narcosis and coma may result in more severe cases.

- **Xylenes (o, m, and p) (CAS #95-47-6, 108-38-3, and 106-42-3)** are colorless, flammable liquids present in paint thinners and fuels. Acute exposure may cause central nervous system depression, resulting in headache, dizziness, fatigue, muscular weakness, drowsiness, and coordination loss. Repeated exposures may also cause removal of lipids from the skin, producing dry, fissured dermatitis. Exposure of high concentrations of vapor may cause eye irritation and damage, as well as irritation of the mucus membranes.

- **Polycyclic Aromatic Hydrocarbons (PAHs)** are formed as a result of the pyrolysis and incomplete combustion of organic matter such as fossil fuel. PAH aerosols formed during the combustion process disperse throughout the atmosphere, resulting in the deposition of PAH condensate in soil, water and on vegetation. In addition, several products formed from petroleum processing operations (e.g., roofing materials and asphalt) also contain elevated levels of PAHs. Hence, these compounds are widely dispersed in the environment. PAHs are characterized by a molecular structure containing three or more fused, unsaturated carbon rings. Seven of the PAHs are classified by USEPA as probable human carcinogens (USEPA Class B2). These are: benzo(a)pyrene; benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; chrysene; dibenzo(a,h)anthracene; and indeno(1,2,3-cd)pyrene. The primary route of exposure to PAHs is through incidental ingestion and inhalation of contaminated particulates. PAHs are characterized by an organic odor, and exist as oily liquids in pure form. Acute exposure symptoms may include acne-type blemishes in areas of the skin exposed to sunlight.

- **Arsenic (CAS #7440-38-2)** is a naturally occurring element and is usually found combined with one or more elements, such as oxygen or sulfur. Inhalation is a more important exposure route than ingestion. First phase exposure symptoms include nausea, vomiting, diarrhea and pain in the stomach. Prolonged contact is corrosive to the skin and mucus membranes. Arsenic is considered a Group A human carcinogen by the USEPA. Exposure via inhalation is associated with an increased risk of lung cancer. Exposure via the oral route is associated with an increased risk of skin cancer.

- **Barium (CAS #7440-39-3)** is a silver white metal, produced by the reduction of barium oxide. Local effects and symptoms of exposure to barium compounds, such as the hydroxide or carbonate, may include irritation of the eyes, throat, nose and skin. Systemic effects from ingestion include increased muscle contractility, reduction of heart rate/potential arrest, intestinal peristalsis, vascular constriction, and bladder contraction.

- **Cadmium** is a natural element and is usually combined with one or more elements, such as oxygen, chloride, or sulfur. Breathing high levels of cadmium severely damages the lungs and can cause death. Ingestion of high levels of cadmium severely irritates the stomach, leading to vomiting and diarrhea. Long term exposure to lower levels of cadmium leads to a buildup of this substance in the kidneys and possible kidney disease. Other potential long term effects are lung damage and fragile bones. Cadmium is suspected to be a human carcinogen.

- **Chromium (CAS #7440-47-3)** is used in the production of stainless steel, chrome plated metals, and batteries. Two forms of chromium, hexavalent (CR+6) and trivalent (CR+3) are toxic. Hexavalent chromium is an irritant and corrosive to the skin and mucus membranes. Chromium is a potential occupational carcinogen. Acute exposures to dust may cause coughing, wheezing, headaches, pain and fever.

- **Lead (CAS #7439-92-1)** can affect almost every organ and system in our bodies. The most sensitive is the central nervous system, particularly in children. Lead also damages kidneys and the immune system. The effects are the same whether it is breathed or swallowed. Lead may decrease reaction time, cause weakness in fingers, wrists, or ankles, and possibly affect memory. Lead may cause anemia.

- **Mercury (CAS #7439-97-6)** is used in industrial applications for the production of caustic and chlorine, and in electrical control equipment and apparatus. Overexposure to mercury may cause coughing, chest pains, bronchitis,

pneumonia, indecision, headaches, fatigue, and salivation. Mercury is a skin and eye irritant.

With respect to the anticipated RI/IRM activities discussed in Section 1.5, possible routes of exposure to the above-mentioned contaminants are presented in Table 2. The use of proper respiratory equipment, as outlined in Section 7.0 of this HASP, will minimize the potential for exposure to airborne contamination. Exposure to contaminants through dermal and other routes will also be minimized through the use of protective clothing (Section 7.0), safe work practices (Section 6.0), and proper decontamination procedures (Section 12.0).

3.2 Physical Hazards

RI/IRM field activities at the 1050-1088 Niagara Street Site may present the following physical hazards:

- The potential for physical injury during heavy construction equipment use, such as backhoes, excavators and drilling equipment.
- The potential for heat/cold stress to employees during the summer/winter months (see Section 10.0).
- The potential for slip and fall injuries due to rough, uneven terrain and/or open excavations.

These hazards represent only some of the possible means of injury that may be present during RI/IRM operations and sampling activities at the Site. Since it is impossible to list all potential sources of injury, it shall be the responsibility of each individual to exercise proper care and caution during all phases of the work.

4.0 TRAINING

4.1 Site Workers

All personnel performing RI/IRM activities at the Site (such as, but not limited to, equipment operators, general laborers, and drillers) and who may be exposed to hazardous substances, health hazards, or safety hazards and their supervisors/managers responsible for the Site shall receive training in accordance with 29 CFR 1910.120(e) before they are permitted to engage in operations in the exclusion zone or contaminant reduction zone. This training includes an initial 40-hour Hazardous Waste Site Worker Protection Course, an 8-hour Annual Refresher Course subsequent to the initial 40-hour training, and 3 days of actual field experience under the direct supervision of a trained, experienced supervisor. Additional site-specific training shall also be provided by the SSHO prior to the start of field activities. A description of topics to be covered by this training is provided below.

4.1.1 Initial and Refresher Training

Initial and refresher training is conducted by a qualified instructor as specified under OSHA 29 CFR 1910.120(e)(5), and is specifically designed to meet the requirements of OSHA 29 CFR 1910.120(e)(3) and 1910.120(e)(8). The training covers, as a minimum, the following topics:

- OSHA HAZWOPER regulations.
- Site safety and hazard recognition, including chemical and physical hazards.
- Medical monitoring requirements.
- Air monitoring, permissible exposure limits, and respiratory protection level classifications.
- Appropriate use of personal protective equipment (PPE), including chemical compatibility and respiratory equipment selection and use.
- Work practices to minimize risk.
- Work zones and Site control.

- Safe use of engineering controls and equipment.
- Decontamination procedures.
- Emergency response and escape.
- Confined space entry procedures.
- Heat and cold stress monitoring.
- Elements of a Health and Safety Plan.
- Spill containment.

Initial training also incorporates workshops for PPE and respiratory equipment use (Levels A, B and C), and respirator fit testing. Records and certification received from the course instructor documenting each employee's successful completion of the training identified above are maintained on file at TurnKey-Benchmark's Buffalo, NY office. Contractors and Subcontractors are required to provide similar documentation of training for all their personnel who will be involved in on-site work activities.

Any employee who has not been certified as having received health and safety training in conformance with 29 CFR 1910.120(e) is prohibited from working in the exclusion and contamination reduction zones, or to engage in any on-site work activities that may involve exposure to hazardous substances or wastes.

4.1.2 Site Training

Site workers are given a copy of the HASP and provided a site-specific briefing prior to the commencement of work to ensure that employees are familiar with the HASP and the information and requirements it contains. The Site briefing shall be provided by the SSHO prior to initiating field activities and shall include:

- Names of personnel and alternates responsible for Site safety and health.
- Safety, health and other hazards present on the Site.
- The site lay-out including work zones and places of refuge.

- The emergency communications system and emergency evacuation procedures.
- Use of PPE.
- Work practices by which the employee can minimize risks from hazards.
- Safe use of engineering controls and equipment on the site.
- Medical surveillance, including recognition of symptoms and signs of over-exposure as described in Chapter 5 of this HASP.
- Decontamination procedures as detailed in Chapter 12 of this HASP.
- The emergency response plan as detailed in Chapter 15 of this HASP.
- Confined space entry procedures, if required, as detailed in Chapter 13 of this HASP.
- The spill containment program as detailed in Chapter 9 of this HASP.
- Site control as detailed in Chapter 11 of this HASP.

Supplemental health and safety briefings will also be conducted by the SSHO on an as-needed basis during the course of the work. Supplemental briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during ongoing Site characterization and analysis. Conditions for which the SSHO may schedule additional briefings include, but are not limited to: a change in Site conditions (e.g., based on monitoring results); changes in the work schedule/plan; newly discovered hazards; and safety incidents occurring during Site work.

4.2 Supervisor Training

On-site safety and health personnel who are directly responsible for or who supervise the safety and health of workers engaged in hazardous waste operations (i.e., SSHO) shall receive, in addition to the appropriate level of worker training described in Section 4.1, above, 8 additional hours of specialized supervisory training, in compliance with 29 CFR 1910.120(e)(4).

4.3 Emergency Response Training

Emergency response training is addressed in Appendix A of this HASP, Emergency Response Plan.

4.4 Site Visitors

Each Contractor's SSHO will provide a site-specific briefing to all Site visitors and other non-TurnKey/Benchmark personnel who enter the Site beyond the Site entry point. The site-specific briefing will provide information about Site hazards, the Site layout including work zones and places of refuge, the emergency communications system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

Site visitors will not be permitted to enter the exclusion zone or contaminant reduction zones unless they have received the level of training required for Site workers as described in Section 4.1.

5.0 MEDICAL MONITORING

Medical monitoring examinations are provided to TurnKey-Benchmark employees as stipulated under 29 CFR Part 1910.120(f). These exams include initial employment, annual and employment termination physicals for all TurnKey-Benchmark employees involved in hazardous waste site field operations. Post-exposure examinations are also provided for employees who may have been injured, received a health impairment, or developed signs or symptoms of over-exposure to hazardous substances or were accidentally exposed to substances at concentrations above the permissible exposure limits without necessary personal protective equipment. Such exams are performed as soon as possible following development of symptoms or the known exposure event.

Medical evaluations are performed by Health Works, an occupational health care provider under contract with TurnKey-Benchmark. Health Works is located in Seneca Square Plaza, 1900 Ridge Road, West Seneca, New York 14224. The facility can be reached at (716) 823-5050 to schedule routine appointments or post-exposure examinations.

Medical evaluations are conducted according to the TurnKey-Benchmark Medical Monitoring Program and include an evaluation of the workers' ability to use respiratory protective equipment. The examinations include:

- Occupational/medical history review.
- Physical exam, including vital sign measurement.
- Spirometry testing.
- Eyesight testing.
- Audio testing (minimum baseline and exit, annual for employees routinely exposed to greater than 85db).
- EKG (for employees >40 yrs age or as medical conditions dictate).
- Chest X-ray (baseline and exit, and every 5 years).
- Blood biochemistry (including blood count, white cell differential count, serum multiplastic screening).
- Medical certification of physical requirements (i.e., sight, musculoskeletal,

cardiovascular) for safe job performance and to wear respiratory protection equipment.

The purpose of the medical evaluation is to determine an employee's fitness for duty on hazardous waste sites; and to establish baseline medical data.

In conformance with OSHA regulations, TurnKey-Benchmark will maintain and preserve medical records for a period of 30 years following termination of employment. Employees are provided a copy of the physician's post-exam report, and have access to their medical records and analyses.

6.0 SAFE WORK PRACTICES

All TurnKey-Benchmark employees shall conform to the following safe work practices during all on-site work activities conducted within the exclusion and contamination reduction zones:

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth contact is strictly prohibited.
- The hands and face must be thoroughly washed upon leaving the work area and prior to engaging in any activity indicated above.
- Respiratory protective equipment and clothing must be worn by all personnel entering the Site as required by the HASP or as modified by the Site safety officer. Excessive facial hair (i.e., beards, long mustaches or sideburns) that interferes with the satisfactory respirator-to-face seal is prohibited.
- Contact with surfaces/materials either suspected or known to be contaminated will be avoided to minimize the potential for transfer to personnel, cross contamination and need for decontamination.
- Medicine and alcohol can synergize the effects of exposure to toxic chemicals. Due to possible contraindications, use of prescribed drugs should be reviewed with the TurnKey-Benchmark occupational physician. Alcoholic beverage and illegal drug intake are strictly forbidden during the workday.
- All personnel shall be familiar with standard operating safety procedures and additional instructions contained in this Health and Safety Plan.
- On-site personnel shall use the "buddy" system. No one may work alone (i.e., out of earshot or visual contact with other workers) in the exclusion zone.
- Personnel and equipment in the contaminated area shall be minimized, consistent with effective Site operations.
- All employees have the obligation to immediately report and if possible, correct unsafe work conditions.
- Use of contact lenses on-site will not be permitted. Spectacle kits for insertion into full-face respirators will be provided for TurnKey-Benchmark employees, as requested and required.

The recommended specific safety practices for working around the contractor's equipment (e.g., backhoes, bulldozers, excavators, drill rigs etc.) are as follows:

- Although the Contractor and subcontractors are responsible for their equipment and safe operation of the Site, TurnKey-Benchmark personnel are also responsible for their own safety.

- Subsurface work will not be initiated without first clearing underground utility services.

- Heavy equipment should not be operated within 20 feet of overhead wires. This distance may be increased if windy conditions are anticipated or if lines carry high voltage. The Site should also be sufficiently clear to ensure the project staff can move around the heavy machinery safely.

- Care should be taken to avoid overhead wires when moving heavy-equipment from location to location.

- Hard hats, safety boots and safety glasses should be worn at all times in the vicinity of heavy equipment. Hearing protection is also recommended.

- The work Site should be kept neat. This will prevent personnel from tripping and will allow for fast emergency exit from the Site.

- Proper lighting must be provided when working at night.

- Construction activities should be discontinued during an electrical storm or severe weather conditions.

- The presence of combustible gases should be checked before igniting any open flame.

- Personnel shall stand upwind of any construction operation when not immediately involved in sampling/logging/observing activities.

- Personnel will not approach the edge of an unsecured trench/excavation closer than 2 feet.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 Equipment Selection

Personal protective equipment (PPE) will be donned when work activities may result in exposure to physical or chemical hazards beyond acceptable limits, and when such exposure can be mitigated through appropriate PPE. The selection of PPE will be based on an evaluation of the performance characteristics of the PPE relative to the requirements and limitations of the Site, the task-specific conditions and duration, and the hazards and potential hazards identified at the Site.

Equipment designed to protect the body against contact with known or suspect chemical hazards are grouped into four categories according to the degree of protection afforded. These categories designated A through D consistent with United States Environmental Protection Agency (USEPA) Level of Protection designation, are:

- **Level A:** Should be selected when the highest level of respiratory, skin and eye protection is needed.

- **Level B:** Should be selected when the highest level of respiratory protection is needed, but a lesser level of skin protection is required. Level B protection is the minimum level recommended on initial Site entries until the hazards have been further defined by on-site studies. Level B (or Level A) is also necessary for oxygen-deficient atmospheres.

- **Level C:** Should be selected when the types of airborne substances are known, the concentrations have been measured and the criteria for using air-purifying respirators are met. In atmospheres where no airborne contaminants are present, Level C provides dermal protection only.

- **Level D:** Should not be worn on any Site with elevated respiratory or skin hazards. This is generally a work uniform providing minimal protection.

OSHA requires the use of certain PPE under conditions where an immediate danger to life and health (IDLH) may be present. Specifically, OSHA 29 CFR 1910.120(g)(3)(iii) requires use of a positive pressure self-contained breathing apparatus, or positive pressure air-line respirator equipped with an escape air supply when chemical exposure levels present a substantial possibility of immediate serious injury, illness or death, or impair the ability to

escape. Similarly, OSHA 29 CFR 1910.120(g)(3)(iv) requires donning totally-encapsulating chemical protective suits (with a protection level equivalent to Level A protection) in conditions where skin absorption of a hazardous substance may result in a substantial possibility of immediate serious illness, injury or death, or impair the ability to escape.

In situations where the types of chemicals, concentrations, and possibilities of contact are unknown, the appropriate level of protection must be selected based on professional experience and judgment until the hazards can be further characterized. The individual components of clothing and equipment must be assembled into a full protective ensemble to protect the worker from site-specific hazards, while at the same time minimizing hazards and drawbacks of the personal protective gear itself. Ensemble components are detailed below for levels A/B, C, and D protection.

7.2 Protection Ensembles

7.2.1 Level A/B Protection Ensemble

Level A/B ensembles include similar respiratory protection, however Level A provides a higher degree of dermal protection than Level B. Use of Level A over Level B is determined by: comparing the concentrations of identified substances in the air with skin toxicity data, and assessing the effect of the substance (by its measured air concentrations or splash potential) on the small area of the head and neck unprotected by Level B clothing.

The recommended PPE for level A/B is:

- Pressure-demand, full-face piece self-contained breathing apparatus (MSHA/-NIOSH approved) or pressure-demand supplied-air respirator with escape self-contained breathing apparatus (SCBA).
- Chemical-resistant clothing. For Level A, clothing consists of totally-encapsulating chemical resistant suit. Level B incorporates hooded one-or two-piece chemical splash suit.
- Inner and outer chemical resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

7.2.2 Level C Protection Ensemble

Level C protection is distinguished from Level B by the equipment used to protect the respiratory system, assuming the same type of chemical-resistant clothing is used. The main selection criterion for Level C is that conditions permit wearing an air-purifying device. The device (when required) must be an air-purifying respirator (MSHA/NIOSH approved) equipped with filter cartridges. Cartridges must be able to remove the substances encountered. Respiratory protection will be used only with proper fitting, training and the approval of a qualified individual. In addition, an air-purifying respirator can be used only if: oxygen content of the atmosphere is at least 19.5% in volume; substances are identified and concentrations measured; substances have adequate warning properties; the individual passes a qualitative fit-test for the mask; and an appropriate cartridge/canister is used, and its service limit concentration is not exceeded.

Recommended PPE for Level C conditions includes:

- Full-face piece, air-purifying respirator equipped with MSHA and NIOSH approved organic vapor/acid gas/dust/mist combination cartridges or as designated by the SSHO.
- Chemical-resistant clothing (hooded, one or two-piece chemical splash suit or disposable chemical-resistant one-piece suit).
- Inner and outer chemical-resistant gloves.
- Chemical-resistant safety boots/shoes.
- Hardhat.

An air-monitoring program is part of all response operations when atmospheric contamination is known or suspected. It is particularly important that the air be monitored thoroughly when personnel are wearing air-purifying respirators. Continual surveillance using direct-reading instruments is needed to detect any changes in air quality necessitating a higher level of respiratory protection.

7.2.3 Level D Protection Ensemble

As indicated above, Level D protection is primarily a work uniform. It can be worn in areas where only boots can be contaminated, where there are no inhalable toxic substances

and where the atmospheric contains at least 19.5% oxygen.

Recommended PPE for Level D includes:

- Coveralls.
- Safety boots/shoes.
- Safety glasses or chemical splash goggles.
- Hardhat.
- Optional gloves; escape mask; face shield.

7.2.4 Recommended Level of Protection for Site Tasks

Based upon current information regarding both the contaminants suspected to be present at the Site and the various tasks that are included in the remedial activities, the minimum required levels of protection for these tasks shall be as identified in Table 3.

8.0 EXPOSURE MONITORING

8.1 General

Based on the results of historic sample analysis and the nature of the proposed work activities at the Site, the possibility exist that organic vapors and/or particulates may be released to the air during intrusive construction activities. Ambient breathing zone concentrations may at times, exceed the permissible exposure limits (PELs) established by OSHA for the individual compounds (see Table 1), in which case respiratory protection will be required. Respiratory and dermal protection may be modified (upgraded or downgraded) by the SSHO based upon real-time field monitoring data.

8.1.1 On-Site Work Zone Monitoring

TurnKey-Benchmark personnel will conduct routine, real-time air monitoring during all intrusive construction phases such as excavation, backfilling, drilling, etc. The work area will be monitored at regular intervals using a photo-ionization detector (PID), combustible gas meter and a particulate meter. Observed values will be recorded and maintained as part of the permanent field record.

Additional air monitoring measurements may be made by TurnKey-Benchmark personnel to verify field conditions during subcontractor oversight activities. Monitoring instruments will be protected from surface contamination during use. Additional monitoring instruments may be added if the situations or conditions change. Monitoring instruments will be calibrated in accordance with manufacturer's instructions before use.

8.1.2 Off-Site Community Air Monitoring

In addition to on-site monitoring within the work zone(s), monitoring at the down-wind portion of the Site perimeter will be conducted. This will provide a real-time method for determination of vapor and/or particulate releases to the surrounding community as a result of ground intrusive investigation work.

Ground intrusive activities are defined in the Generic Community Air Monitoring Plan and attached as Appendix C. Ground intrusive activities include soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells. Non-intrusive activities include the collection of soil and sediment samples or the

collection of groundwater samples from existing wells. Continuous monitoring is required for ground intrusive activities and periodic monitoring is required for non-intrusive activities. Periodic monitoring consists of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring while bailing a well, and taking a reading prior to leaving a sampling location. This may be upgraded to continuous if the sampling location is in close proximity to individuals not involved in the Site activity (i.e., on a curb of a busy street). The action levels below will be used during periodic monitoring.

8.2 Monitoring Action Levels

8.2.1 On-Site Work Zone Action Levels

The PID, or other appropriate instrument(s), will be used by TurnKey-Benchmark personnel to monitor organic vapor concentrations as specified in this HASP. Combustible gas will be monitored with the "combustible gas" option on the combustible gas meter or other appropriate instrument(s). In addition, fugitive dust/particulate concentrations will be monitored during major soil intrusion (viz., well/boring installation) using a real-time particulate monitor as specified in this plan. In the absence of such monitoring, appropriate respiratory protection for particulates shall be donned. Sustained readings obtained in the breathing zone may be interpreted (with regard to other Site conditions) as follows for TurnKey-Benchmark personnel:

- Total atmospheric concentrations of unidentified vapors or gases ranging from 0 to 1 ppm above background on the PID) - Continue operations under Level D (see Appendix A).

- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings from >1 ppm to 5 ppm above background on the PID (vapors not suspected of containing high levels of chemicals toxic to the skin) - Continue operations under Level C (see Appendix A).

- Total atmospheric concentrations of unidentified vapors or gases yielding sustained readings of >5 ppm to 50 ppm above background on the PID - Continue operations under Level B (see Attachment 1), re-evaluate and alter (if possible) construction methods to achieve lower vapor concentrations.

- Total atmospheric concentrations of unidentified vapors or gases above 50 ppm on the PID - Discontinue operations and exit the work zone immediately.

The particulate monitor will be used to monitor respirable dust concentrations during all intrusive activities and during handling of Site soil/fill. Action levels based on the instrument readings shall be as follows:

- Less than 50 mg/m^3 - Continue field operations.
- 50-150 mg/m^3 - Don dust/particulate mask or equivalent
- Greater than 150 mg/m^3 - Don dust/particulate mask or equivalent. Initiate engineering controls to reduce respirable dust concentration (viz., wetting of excavated soils or tools at discretion of Site Health and Safety Officer).

Readings from the field equipment will be recorded and documented on the appropriate Project Field Forms. All instruments will be calibrated before use on a daily basis and the procedure will be documented on the appropriate Project Field Forms.

8.2.2 Community Air Monitoring Action Levels

In addition to the action levels prescribed in Section 8.2.1 for TurnKey-Benchmark personnel on-site, the following criteria shall also be adhered to for the protection of downwind receptors consistent with NYSDOH requirements (Appendix C):

- **ORGANIC VAPOR PERIMETER MONITORING:**
  - If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone exceeds 5 ppm above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the sustained organic vapor decreases below 5 ppm over background, work activities can resume with continued monitoring.
  - If the sustained ambient air concentration of organic vapors at the downwind perimeter of the exclusion zone are greater than 5 ppm over background but less than 25 ppm for the 15-minute average, activities can resume provided that: the organic vapor level 200 feet downwind of the working site or half the distance to the nearest off-site residential or commercial structure, whichever

is less, but in no case less than 20 feet, is below 5 ppm over background; and more frequent intervals of monitoring, as directed by the Site Health and Safety Officer, are conducted.

- If the sustained organic vapor level is above 25 ppm at the perimeter of the exclusion zone for the 15-minute average, the Site Health and Safety Officer must be notified and work activities shut down. The Site Health and Safety Officer will determine when re-entry of the exclusion zone is possible and will implement downwind air monitoring to ensure vapor emissions do not impact the nearest off-site residential or commercial structure at levels exceeding those specified in the ***Organic Vapor Contingency Monitoring Plan*** below. All readings will be recorded and will be available for New York State Department of Environmental Conservation (DEC) and Department of Health (DOH) personnel to review.

o **ORGANIC VAPOR CONTINGENCY MONITORING PLAN:**

- If the sustained organic vapor level is greater than 5 ppm over background 200 feet downwind from the work area or half the distance to the nearest off-site residential or commercial property, whichever is less, all work activities must be halted.

- If, following the cessation of the work activities or as the result of an emergency, sustained organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest off-site residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest off-site residential or commercial structure (20-foot zone).

- If efforts to abate the emission source are unsuccessful and if sustained organic vapor levels approach or exceed 5 ppm above background within the 20-foot zone for more than 30 minutes, or are sustained at levels greater than 10 ppm above background for longer than one minute, then the ***Major Vapor Emission Response Plan*** (see below) will automatically be placed into effect.

o **MAJOR VAPOR EMISSION RESPONSE PLAN:**

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in this Health and Safety Plan and the Emergency Response Plan (Appendix A) will be advised.

2. The local police authorities will immediately be contacted by the Site Health and Safety Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two sustained successive readings below action levels are measured, air monitoring may be halted or modified by the Site Health and Safety Officer.

The following personnel are to be notified in the listed sequence in the event that a Major Vapor Emission Plan is activated:

Responsible Person	Contact	Phone Number
SSHO	Police	911
SSHO	State Emergency Response Hotline	(800) 457-7362

Additional emergency numbers are listed in the Emergency Response Plan included as Appendix A.

- **EXPLOSIVE VAPORS:**
  - Sustained atmospheric concentrations of greater than 10% LEL in the work area - Initiate combustible gas monitoring at the downwind portion of the Site perimeter.
  - Sustained atmospheric concentrations of greater than 10% LEL at the downwind Site perimeter – Halt work and contact local Fire Department.

- **AIRBORNE PARTICULATE COMMUNITY AIR MONITORING**

Respirable (PM-10) particulate monitoring will be performed on a continuous basis at the upwind and downwind perimeter of the exclusion zone. The monitoring will be performed using real-time monitoring equipment capable of measuring PM-10 and integrating over a period of 15-minutes for comparison to the airborne particulate action levels. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. All readings will be recorded and will be available for NYSDEC and NYSDOH review. Readings will be interpreted as follows:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/m^3) greater than the background (upwind perimeter) reading 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 provided that the downwind PM-10 particulate levels do not exceed 150 ug/m^3 above the upwind level and that visible dust is not migrating from the work area.

- If, after implementation of dust suppression techniques downwind PM-10 levels are greater than 150 ug/m^3 above the upwind level, work activities must be stopped and dust suppression controls re-evaluated. Work can resume provided that supplemental dust suppression measures and/or other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

Pertinent emergency response information including the telephone number of the Fire Department is included in the Emergency Response Plan (Appendix A).

9.0 SPILL RELEASE/RESPONSE

This chapter of the HASP describes the potential for and procedures related to spills or releases of known or suspected petroleum and/or hazardous substances on the Site. The purpose of this Section of the HASP is to plan appropriate response, control, counter-measures and reporting, consistent with OSHA requirements in 29 CFR 1910.120(b)(4)(ii)(J) and (j)(1)(viii). The spill containment program addresses the following elements:

- Potential hazardous material spills and available controls.
- Initial notification and evaluation.
- Spill response.
- Post-spill evaluation.

9.1 Potential Spills and Available Controls

An evaluation was conducted to determine the potential for hazardous material and oil/petroleum spills at this Site. For the purpose of this evaluation, hazardous materials posing a significant spill potential are considered to be:

- CERCLA Hazardous Substances as identified in 40 CFR Part 302, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

- Extremely Hazardous Substances as identified in 40 CFR Part 355, Appendix A, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

- Hazardous Chemicals as defined under Section 311(e) of the Emergency Planning and Community Right-To-Know Act of 1986, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Toxic Chemicals as defined in 40 CFR Part 372, where such chemicals are present or will be stored in excess of 10,000 lbs.

- Chemicals regulated under 6NYCRR Part 597, where such materials pose the potential for release in excess of their corresponding Reportable Quantity (RQ).

Oil/petroleum products are considered to pose a significant spill potential whenever the following situations occur:

- The potential for a "harmful quantity" of oil (including petroleum and non-petroleum-based fuels and lubricants) to reach navigable waters of the U.S. exists (40 CFR Part 112.4). Harmful quantities are considered by USEPA to be volumes that could form a visible sheen on the water or violate applicable water quality standards.

- The potential for any amount of petroleum to reach any waters of NY State, including groundwater, exists. Petroleum, as defined by NY State in 6NYCRR Part 612, is a petroleum-based heat source, energy source, or engine lubricant/maintenance fluid.

- The potential for any release, to soil or water, of petroleum from a bulk storage facility regulated under 6NYCRR Part 612. A regulated petroleum storage facility is defined by NY State as a site having stationary tank(s) and intra-facility piping, fixtures and related equipment with an aggregate storage volume of 1,100 gallons or greater.

The evaluation indicates that, based on Site history and decommissioning records, a hazardous material spill and/or a petroleum product spill is not likely to occur during RI/IRM efforts.

9.2 Initial Spill Notification and Evaluation

Any worker who discovers a hazardous substance or oil/petroleum spill will immediately notify the Project Manager and SSHO. The worker will, to the best of his/her ability, report the material involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, if any, and any associated injuries. The Emergency Response Plan presented in Attachment H2 of this HASP will immediately be implemented if an emergency release has occurred.

Following initial report of a spill, the Project Manager will make an evaluation as to whether the release exceeds RQ levels. If an RQ level is exceeded, the Project Manager will notify the Site owner and NYSDEC at 1-800-457-7362 within 2 hours of spill discovery. The Project Manager will also determine what additional agencies (e.g., USEPA) are to be contacted regarding the release, and will follow-up with written reports as required by the applicable regulations.

9.3 Spill Response

For all spill situations, the following general response guidelines will apply:

- Only those personnel involved in overseeing or performing containment operations will be allowed within the spill area. If necessary, the area will be roped, ribboned, or otherwise blocked off to prevent unauthorized access.
- Appropriate PPE, as specified by the SSHO, will be donned before entering the spill area.
- Ignition points will be extinguished/removed if fire or explosion hazards exist.
- Surrounding reactive materials will be removed.
- Drains or drainage in the spill area will be blocked to prevent inflow of spilled materials or applied materials.

For minor spills, the Contractor will maintain a Spill Control and Containment Kit in the Field Office or other readily accessible storage location. The kit will consist of, at a minimum, a 50 lb. bag of "speedy dry" granular absorbent material, absorbent pads, shovels, empty 5-gallon pails and an empty open-top 55-gallon drum. Spilled materials will be absorbed, and shoveled into a 55-gallon drum for proper disposal (NYSDEC approval will be secured for on-site treatment of the impacted soils/absorbent materials, if applicable). Impacted soils will be hand-excavated to the point that no visible signs of contamination remains, and will be drummed with the absorbent.

In the event of a major release or a release that threatens surface water, a spill response contractor will be called to the Site. The response contractor may use heavy equipment (e.g., excavator, backhoe, etc.) to berm the soils surrounding the spill Site or create diversion trenching to mitigate overland migration or release to navigable waters. Where feasible, pumps will be used to transfer free liquid to storage containers. Spill control/cleanup contractors in the Western New York area that may be contacted for assistance include:

- The Environmental Service Group of NY, Inc.: (716) 695-6720
- Environmental Products and Services, Inc.: (716) 447-4700
- Op-Tech: (716) 873-7680

9.4 Post-Spill Evaluation

If a reportable quantity of hazardous material or oil/petroleum is spilled as determined by the Project Manager, a written report will be prepared as indicated in Section 9.2. The report will identify the root cause of the spill, type and amount of material released, date/time of release, response actions, agencies notified and/or involved in cleanup, and procedures to be implemented to avoid repeat incidents. In addition, all re-useable spill cleanup and containment materials will be decontaminated, and spill kit supplies/disposable items will be replenished.

10.0 HEAT/COLD STRESS MONITORING

Since some of the work activities at the Site will be scheduled for both the summer and winter months, measures will be taken to minimize heat/cold stress to TurnKey-Benchmark employees. The Site Safety and Health Officer and/or his or her designee will be responsible for monitoring TurnKey-Benchmark field personnel for symptoms of heat/cold stress.

10.1 Heat Stress Monitoring

Personal protective equipment may place an employee at risk of developing heat stress, a common and potentially serious illnesses often encountered at construction, landfill, waste disposal, industrial or other unsheltered sites. The potential for heat stress is dependent on a number of factors, including environmental conditions, clothing, workload, physical conditioning and age. Personal protective equipment may severely reduce the body's normal ability to maintain temperature equilibrium (via evaporation and convection), and require increased energy expenditure due to its bulk and weight.

Proper training and preventive measures will mitigate the potential for serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress, the following steps should be taken:

- Adjust work schedules.
- Modify work/rest schedules according to monitoring requirements.
- Mandate work slowdowns as needed.
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat (i.e., eight fluid ounces must be ingested for approximately every 1 lb of weight lost). The normal thirst

mechanism is not sensitive enough to ensure that enough water will be consumed to replace lost perspiration. When heavy sweating occurs, workers should be encouraged to drink more.

- Train workers to recognize the symptoms of heat related illness.

Heat-Related Illness - Symptoms:

- Heat rash may result from continuous exposure to heat or humid air.

- Heat cramps are caused by heavy sweating with inadequate electrolyte replacement. Signs and symptoms include: muscle spasms; pain in the hands, feet and abdomen.

- Heat exhaustion occurs from increased stress on various body organs including inadequate blood circulation due to cardiovascular insufficiency or dehydration. Signs and symptoms include: pale, cool, moist skin; heavy sweating; dizziness; nausea; fainting.

- Heat stroke is the most serious form of heat stress. Temperature regulation fails and the body temperature rises to critical levels. Immediate action must be taken to cool the body before serious injury and death occur. Competent medical help must be obtained. Signs and symptoms are: red, hot, usually dry skin; lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse; coma.

The monitoring of personnel wearing protective clothing should commence when the ambient temperature is 70 degrees Fahrenheit or above. For monitoring the body's recuperative ability to excess heat, one or more of the following techniques should be used as a screening mechanism.

- Heart rate may be measured by the radial pulse for 30 seconds as early as possible in the resting period. The rate at the beginning of the rest period should not exceed 100 beats per minute. If the rate is higher, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest periods stay the same, If the pulse rate is 100 beats per minute at the beginning of the nest rest period, the following work cycle should be further shortened by 33%.

- Body temperature may be measured orally with a clinical thermometer as early as possible in the resting period. Oral temperature at the beginning of the rest period

should not exceed 99.6 degrees Fahrenheit. If it does, the next work period should be shortened by 10 minutes (or 33%), while the length of the rest period remains the same. However, if the oral temperature exceeds 99.6 degrees Fahrenheit at the beginning of the next period, the work cycle may be further shortened by 33%. Oral temperature should be measured at the end of the rest period to make sure that it has dropped below 99.6 degrees Fahrenheit. No TurnKey-Benchmark employee will be permitted to continue wearing semi-permeable or impermeable garments when his/her oral temperature exceeds 100.6 degrees Fahrenheit.

10.2 Cold Stress Monitoring

Exposure to cold conditions may result in frostbite or hypothermia, each of which progresses in stages as shown below.

- **Frostbite** occurs when body tissue (usually on the extremities) begins to freeze. The three states of frostbite are:

  1) **Frost nip** - This is the first stage of the freezing process. It is characterized by a whitened area of skin, along with a slight burning or painful sensation. Treatment consists of removing the victim from the cold conditions, removal of boots and gloves, soaking the injured part in warm water (102 to 108 degrees Fahrenheit) and drinking a warm beverage. Do not rub skin to generate friction/ heat.

  2) **Superficial Frostbite** - This is the second stage of the freezing process. It is characterized by a whitish gray area of tissue, which will be firm to the touch but will yield little pain. The treatment is identical for Frost nip.

  3) **Deep Frostbite** - In this final stage of the freezing process the affected tissue will be cold, numb and hard and will yield little to no pain. Treatment is identical to that for Frost nip.

- **Hypothermia** is a serious cold stress condition occurring when the body loses heat at a rate faster than it is produced. If untreated, hypothermia may be fatal. The stages of hypothermia may not be clearly defined or visible at first, but generally include:

  1) Shivering
  2) Apathy (i.e., a change to an indifferent or uncaring mood)

3) Unconsciousness
4) Bodily freezing

Employees exhibiting signs of hypothermia should be treated by medical professionals. Steps that can be taken while awaiting help include:

1) Remove the victim from the cold environment and remove wet or frozen clothing. (Do this carefully as frostbite may have started.)

2) Perform active re-warming with hot liquids for drinking (Note: do not give the victim any liquid containing alcohol or caffeine) and a warm water bath (102 to 108 degrees Fahrenheit).

3) Perform passive re-warming with a blanket or jacket wrapped around the victim.

In any potential cold stress situation, it is the responsibility of the Site Health and Safety Officer to encourage the following:

- Education of workers to recognize the symptoms of frostbite and hypothermia.
- Workers should dress warmly, with more layers of thin clothing as opposed to one thick layer.
- Personnel should remain active and keep moving.
- Personnel should be allowed to take shelter in a heated areas, as necessary.
- Personnel should drink warm liquids (no caffeine or alcohol if hypothermia has set in).
- For monitoring the body's recuperation from excess cold, oral temperature recordings should occur:
  - At the Site Safety Technicians discretion when suspicion is based on changes in a worker's performance or mental status.
  - At a workers request.
  - As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind chill less than 20 degrees Fahrenheit or wind chill

less than 30 degrees Fahrenheit with precipitation).

- As a screening measure, whenever anyone worker on-site develops hypothermia.

Any person developing moderate hypothermia (a core body temperature of 92 degrees Fahrenheit) will not be allowed to return to work for 48 hours without the recommendation of a qualified medical doctor.

11.0 WORK ZONES AND SITE CONTROL

Work zones around the areas designated for construction activities will be established on a daily basis and communicated to all employees and other Site users by the SSHO. It shall be each Contractor's Site Safety and Health Officer's responsibility to ensure that all Site workers are aware of the work zone boundaries and to enforce proper procedures in each area. The zones will include:

- Exclusion Zone ("Hot Zone") - The area where contaminated materials may be exposed, excavated or handled and all areas where contaminated equipment or personnel may travel. Flagging tape will delineate the zone. All personnel entering the Exclusion Zone must wear the prescribed level of personal protective equipment identified in Section 7.

- Contamination Reduction Zone - The zone where decontamination of personnel and equipment takes place. Any potentially contaminated clothing, equipment and samples must remain in the Contamination Reduction Zone until decontaminated.

- Support Zone - The part of the site that is considered non-contaminated or "clean." Support equipment will be located in this zone, and personnel may wear normal work clothes within this zone.

In the absence of other task-specific work zone boundaries established by the SSHO, the following boundaries will apply to all investigation and construction activities involving disruption or handling of Site soils or groundwater:

- Exclusion Zone: 50 foot radius from the outer limit of the sampling/construction activity.

- Contaminant Reduction Zone: 100 foot radius from the outer limit of the sampling/construction activity.

- Support Zone: Areas outside the Contaminant Reduction Zone.

Access of non-essential personnel to the Exclusion and Contamination Reduction Zones will be strictly controlled by the SSHO. Only personnel who are essential to the

completion of the task will be allowed access to these areas and only if they are wearing the prescribed level of protection. Entrance of all personnel must be approved by the SSHO.

The SSHO will maintain a Health and Safety Logbook containing the names of TurnKey-Benchmark workers and their level of protection. The zone boundaries may be changed by the SSHO as environmental conditions warrant, and to respond to the necessary changes in work locations on-site.

12.0 DECONTAMINATION

12.1 Decontamination for TurnKey-Benchmark Employees

The degree of decontamination required is a function of a particular task and the environment within which it occurs. The following decontamination procedure will remain flexible, thereby allowing the decontamination crew to respond appropriately to the changing environmental conditions that may arise at the Site. All TurnKey-Benchmark personnel on-site shall follow the procedure below, or the Contractor's procedure (if applicable), whichever is more stringent.

Station 1 - Equipment Drop: Deposit visibly contaminated (if any) re-useable equipment used in the contamination reduction and exclusion zones (tools, containers, monitoring instruments, radios, clipboards, etc.) on plastic sheeting.

Station 2 - Boots and Gloves Wash and Rinse: Scrub outer boots and outer gloves. Deposit tape and gloves in waste disposal container.

Station 3 - Tape, Outer Boot and Glove Removal: Remove tape, outer boots and gloves. Deposit tape and gloves in waste disposal container.

Station 4 - Canister or Mask Change: If worker leaves exclusive zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot cover donned, and worker returns to duty.

Station 5 - Outer Garment/Face Piece Removal: Protective suit removed and deposited in separate container provided by Contractor. Face piece or goggles are removed if used. Avoid touching face with fingers. Face piece and/or goggles deposited on plastic sheet. Hard hat removed and placed on plastic sheet.

Station 6 - Inner Glove Removal: Inner gloves are the last personal protective equipment to be removed. Avoid touching the outside of the gloves with bare fingers. Dispose of these gloves in waste disposal container.

Following PPE removal, personnel shall wash hands, face and forearms with absorbent wipes. If field activities proceed for duration of 6 consecutive months or longer, shower facilities will be provided for worker use in accordance with OSHA 29 CFR 1910.120(n).

12.2 Decontamination for Medical Emergencies

In the event of a minor, non-life threatening injury, personnel should follow the decontamination procedures as defined, and then administer first-aid.

In the event of a major injury or other serious medical concern (e.g., heat stroke), immediate first-aid is to be administered and the victim transported to the hospital in lieu of further decontamination efforts unless exposure to a Site contaminant would be considered "Immediately Dangerous to Life or Health."

12.3 Decontamination of Field Equipment

The Contractor in accordance with his approved Health and Safety Plan in the Contamination Reduction Zone will conduct decontamination of heavy equipment. As a minimum, this will include manually removing heavy soil contamination, followed by steam cleaning on an impermeable pad.

TurnKey-Benchmark personnel will conduct decontamination of all tools used for sample collection purposes. It is expected that all tools will be constructed of nonporous, nonabsorbent materials (i.e., metal), which will aid in the decontamination effort. Any tool or part of a tool made of porous, absorbent material (i.e., wood) will be placed into suitable containers and prepared for disposal.

Decontamination of bailers, split-spoons, spatula knives, and other tools used for environmental sampling and examination shall be as follows:

- Disassemble the equipment
- Water wash to remove all visible foreign matter.
- Wash with detergent.
- Rinse all parts with distilled-deionized water.
- Allow to air dry.
- Wrap all parts in aluminum foil or polyethylene.

13.0 CONFINED SPACE ENTRY

OSHA 29 CFR 1910.146 identifies a confined space as a space that is large enough and so configured that an employee can physically enter and do assigned work, has limited or restricted means for entry and exit, and is not intended for continuous employee occupancy. Confined spaces include, but are not limited to, trenches, storage tanks, process vessels, pits, sewers, tunnels, underground utility vaults, pipelines, sumps, wells, and excavations.

Confined space entry by TurnKey-Benchmark employees is not anticipated to be necessary to complete the RI/IRM activities identified in Section 2.0. In the event that the scope of work changes or confined space entry appears necessary, the Project Manager will be consulted to determine if feasible engineering alternatives to confined space entry can be implemented. If confined space entry by TurnKey-Benchmark employees cannot be avoided through reasonable engineering measures, task-specific confined space entry procedures will be developed and a confined-space entry permit will be issued through TurnKey-Benchmark's corporate Health and Safety Director. TurnKey-Benchmark employees shall not enter a confined space without these procedures and permits in place.

14.0 FIRE PREVENTION AND PROTECTION

14.1 General Approach

Recommended practices and standards of the National Fire Protection Association (NFPA) and other applicable regulations will be followed in the development and application of Project Fire Protection Programs. When required by regulatory authorities, the project management will prepare and submit a Fire Protection Plan for the approval of the contracting officers, authorized representative or other designated official. Essential considerations for the Fire Protection Plan will include:

- Proper Site preparation and safe storage of combustible and flammable materials.
- Availability of coordination with private and public fire authorities.
- Adequate job-site fire protection and inspections for fire prevention.
- Adequate indoctrination and training of employees.

14.2 Equipment and Requirements

Fire extinguishers will be provided by each Contractor and are required on all heavy equipment and in each field trailer. Fire extinguishers will be inspected, serviced, and maintained in accordance with the manufacturer's instructions. As a minimum, all extinguishers shall be checked monthly and weighed semi-annually, and recharged if necessary. Recharge or replacement shall be mandatory immediately after each use.

14.3 Flammable and Combustible Substances

All storage, handling or use of flammable and combustible substances will be under the supervision of qualified persons. All tanks, containers and pumping equipment, whether portable or stationary, used for the storage and handling of flammable and combustible liquids, will meet the recommendations of the National Fire Protection Association.

14.4 Hot Work

If the scope of work necessitates welding or blowtorch operation, the hot work permit presented in Appendix B will be completed by the SSHO and reviewed/issued by the Project Manager.

15.0 EMERGENCY INFORMATION

In accordance with OSHA 29 CFR Part 1910, an Emergency Response Plan is attached to this HASP as Appendix A. The hospital route map is presented within Appendix A as Figure 1.

16.0 REFERENCES

1. New York State Department of Environmental Conservation. *DER-10; Technical Guidance for Site Investigation and Remediation.* May 2010.

TABLES

TABLE 1

TOXICITY DATA FOR CONSTITUENTS OF POTENTIAL CONCERN

1050-1088 Niagara Street Site

Buffalo, New York

Parameter	Synonyms	CAS No.	Code	Concentration Limits [1]		
				PEL	TLV	IDLH
Volatile Organic Compounds (VOCs): ppm						
1,2,4-Trimethylbenzene	Pseudocumene	95-63-6	*none*	25	25	--
1,3,5-Trimethylbenzene	Mesitylene	108-67-8	*none*	25	25	--
Ethylbenzene	Ethylbenzol, Phenylethane	100-41-4	*none*	100	100	800
Isopropylbenzene	Cumene	98-82-8	*none*	50	50	900
n-Propylbenzene	Isocumene	103-65-1	*none*	50	50	--
Xylene, Total	o-, m-, p-isomers	1330-20-7	*none*	100	100	900
Semi-volatile Organic Compounds (SVOCs) [2] : ppm						
Anthracene	*none*	120-12-7	*none*	--	--	--
Benzo(a)anthracene	*none*	56-55-3	*none*	--	--	--
Benzo(a)pyrene	*none*	50-32-8	*none*	--	--	--
Benzo(b)fluoranthene	*none*	205-99-2	*none*	--	--	--
Benzo(k)fluoranthene	*none*	207-08-9	*none*	--	--	--
Chrysene	*none*	218 01 9	*none*	--	--	--
Dibenzo(a,h)anthracene	*none*	53-70-3	*none*	--	--	--
Fluoranthene	*none*	206-44-0	*none*	--	--	--
Fluorene	*none*	86-73-7	*none*	--	--	--
Indeno(1,2,3-cd)pyrene	*none*	193-39-5	*none*	--	--	--
Naphthalene	Naphthalin, Tar camphor, White tar	91-20-3	*none*	10	10	250
Phenanthrene	*none*	85-01-8	*none*	--	--	--
Pyrene	*none*	129-00-0	*none*	--	--	--
Inorganic Compounds: mg/m [2]						
Arsenic	*none*	7440-38-2	*Ca*	0.01	0.01	5
Barium	*none*	7440-39-3	*none*	0.5	0.5	50
Cadmium	*none*	7440-43-9	*Ca*	0.005	0.01	9
Chromium	*none*	7440-47-3	*none*	1	0.5	250
Copper	*none*	7440-50-8	*none*	0.1	0.2	200
Lead	*none*	7439-92-1	*none*	0.05	0.15	100
Mercury	*none*	7439-97-6	C-0.1	0.1	0.05	10
Selenium	*none*	7782-49-2	*none*	0.2	0.2	1
Silver	*none*	7440-28-0	*none*	0.01	0.1	10
Zinc	*none*	7440-66-6	*none*	--	--	--

Notes:

1. Concentration limits as reported by NIOSH Pocket Guide to Chemical Hazards, February 2004 (NIOSH Publication No. 97-140, fourth printing with chages and updates.
2. " -- " = concentration limit not available; exposure should be minimized to the extent feasible through appropriate engineering controls & PPE.

Explanation:

Ca = NIOSH considers constituent to be a potential occupational carcinogen.
C-## = Ceiling Level equals the maximum exposure concentration allowable during the work day.
IDLH = Immediately Dangerous to Life or Health.
ND indicates that an IDLH has not as yet been determined.
TLV = Threshold Limit Value, established by American Conference of Industrial Hygienists (ACGIH), equals the maximum exposure concentration allowable for 8 hours/day @ 40 ho
TLVs are the amounts of chemicals in the air that almost all healthy adult workers are predicted to be able to tolerate without adverse effects. There are three types.
TLV-TWA (TLV-Time-Weighted Average) which is averaged over the normal eight-hour day/forty-hour work week. (Most TLVs.)
TLV-C or Ceiling limits are the concentration that should not be exceeded during any part of the working exposure.
Unless the initials "STEL" or "C" appear in the Code column, the TLV value should be considered to be the eight-hour TLV-TWA.
PEL = Permissible Exposure Limit, established by OSHA, equals the maximium exposure conconcentration allowable for 8 hours per day @ 40 hours per week

TABLE 2

POTENTIAL ROUTES OF EXPOSURE TO THE CONSTITUENTS OF POTENTIAL CONCERN

1050-1088 Niagara Street Site
Buffalo, New York

Activity [1]	Direct Contact with Soil/Fill	Inhalation of Vapors or Dust	Direct Contact with Groundwater
Remedial Investigation Tasks			
1. Subsurface Soil Sampling	**x**	**x**	
2. Monitoring Well Installation/Development and Sampling	**x**	**x**	**x**
3. Subslab Vapor Sampling	**x**	**x**	
Interim Remedial Measures Tasks			
1. Soil Excavation	x	x	
2. Backfilling	x	x	
3. Verification Sampling	x	x	
4. Groundwater and Surface Water Management	x		x

Notes:
1. Activity as described in Section 1.5 of the Health and Safety Plan.

TABLE 3

REQUIRED LEVELS OF PROTECTION
FOR RI/IRM TASKS

1050-1088 Niagara Street Site
Buffalo, New York

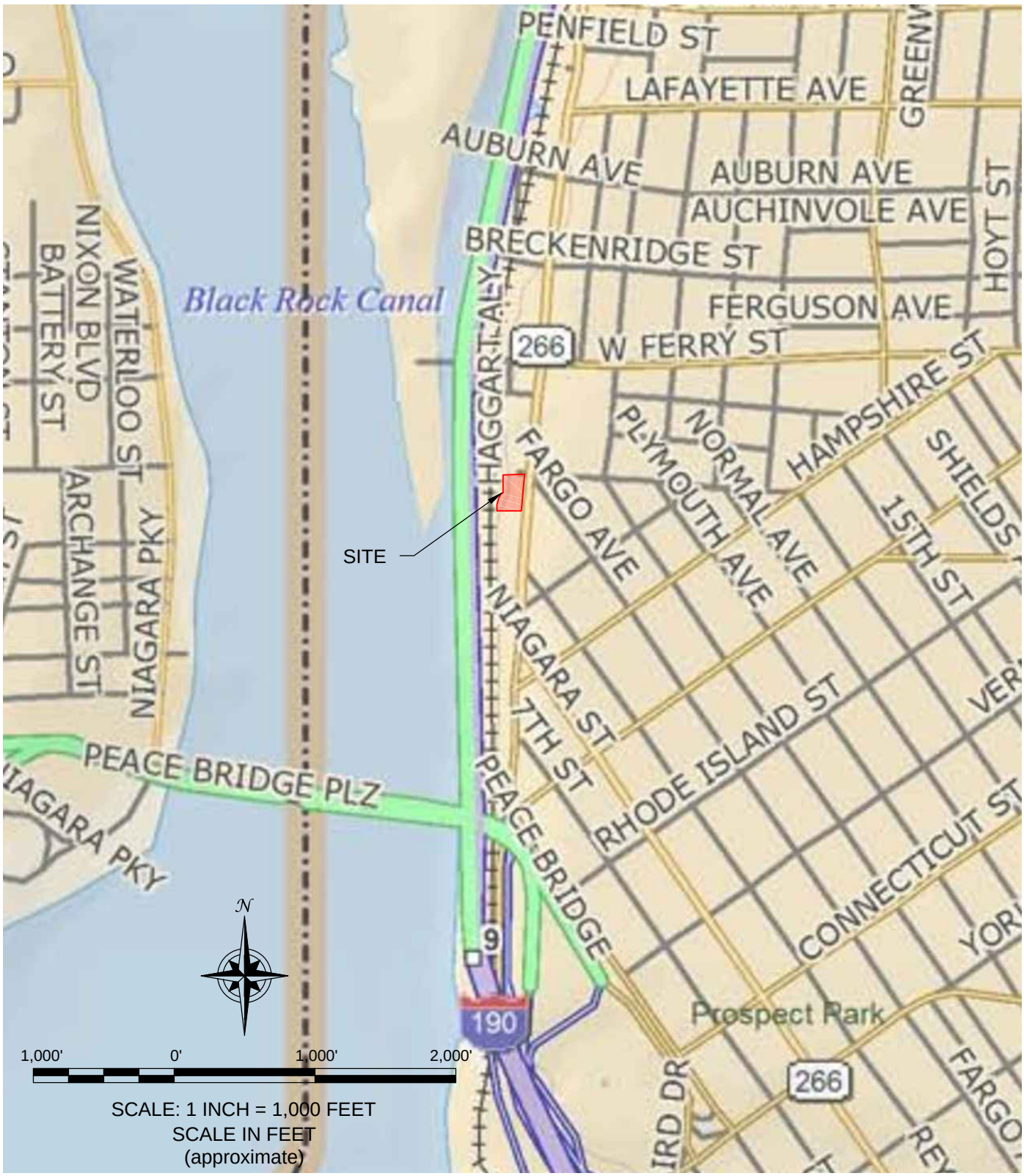
Activity	Respiratory Protection [1]	Clothing	Gloves [2]	Boots [2, 3]	Other Required PPE/Modifications [2, 4]
Remedial Investigation Tasks					
1. Subsurface Soil Sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
2. Monitoring Well Installation/Development and Sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	SGSS
3. Subslab Vapor Sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
Interim Remedial Measures Tasks					
1. Soil Excavation	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
2. Backfilling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
3. Verification Sampling	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS
4. Groundwater and Surface Water Management	Level D (upgrade to Level C if necessary)	Work Uniform or Tyvek	L/N	outer: L inner: STSS	HH SGSS

Notes:

1. Respiratory equipment shall conform to guidelines presented in Section 7.0 of this HASP. The Level C requirement is an air-purifying respirator equiped with organic compound/acid gas/dust cartridge.
2. HH = hardhat; L= Latex; L/N = latex inner glove, nitrile outer glove; N = Nitrile; S = Saranex; SG = safety glasses; SGSS = safety glasses with sideshields; STSS = steel toe safety shoes.
3. Latex outer boot (or approved overboot) required whenever contact with contaminated materials may occur. SSHO may downgrade to STSS (steel-toed safety shoes) if contact will be limited to cover/replacement soils.
4. Dust masks shall be donned as directed by the SSHO (site safety and health officer) or site safety technician whenever potentially contaminated airborne particulates (i.e., dust) are present in significant amounts in the breathing zone. Goggles may be substituted with safety glasses w/side-shields whenever contact with contaminated liquids is not anticipated.

FIGURES

FIGURE 1



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PROJECT NO.: 0136-013-005

DATE: NOVEMBER 2013

DRAFTED BY: JGT

SITE LOCATION AND VICINITY MAP

HEALTH AND SAFETY PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

DATE: NOVEMBER 2013
DRAFTED BY: JGT

FIGURE 2

SITE PLAN (AERIAL)

HEALTH AND SAFETY PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

TURNKEY ENVIRONMENTAL RESTORATION, LLC

2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

JOB NO.: 0136-013-005

ATTACHMENT A

EMERGENCY RESPONSE PLAN

EMERGENCY RESPONSE PLAN
for
BROWNFIELD CLEANUP PROGRAM
RI/IRM ACTIVITIES

1050-1088 NIAGARA STREET SITE
BUFFALO, NEW YORK

November 2013 0136-013-005

Prepared for:

9271 GROUP, LLC

1050-1088 NIAGARA STREET SITE
HEALTH AND SAFETY PLAN FOR RI/IRM ACTIVITIES
APPENDIX A: EMERGENCY RESPONSE PLAN

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1.0 GENERAL

This report presents the site-specific Emergency Response Plan (ERP) referenced in the Site Health and Safety Plan (HASP) prepared for Remedial Investigation (RI) and Interim Remedial Measures (IRM) activities at the 1050-1088 Niagara Street Site in Buffalo, New York. This appendix of the HASP describes potential emergencies that may occur at the Site; procedures for responding to those emergencies; roles and responsibilities during emergency response; and training all workers must receive in order to follow emergency procedures. This ERP also describes the provisions this Site has made to coordinate its emergency response planning with other contractors on-site and with off-site emergency response organizations.

This ERP is consistent with the requirements of 29 CFR 1910.120(l) and provides the following site-specific information:

- Pre-emergency planning.
- Personnel roles, lines of authority, and communication.
- Emergency recognition and prevention.
- Safe distances and places of refuge.
- Evacuation routes and procedures.
- Decontamination procedures.
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Critique of response and follow-up.
- Emergency personal protective equipment (PPE) and equipment.

2.0 PRE-EMERGENCY PLANNING

This Site has been evaluated for potential emergency occurrences, based on site hazards, the required work tasks, the site topography, and prevailing weather conditions. The results of that evaluation indicate the potential for the following site emergencies to occur at the locations indicated.

Type of Emergency:

1. Medical, due to physical injury

Source of Emergency:

1. Slip/trip/fall

Location of Source:

1. Non-specific

3.0 ON-SITE EMERGENCY RESPONSE EQUIPMENT

Emergency procedures may require specialized equipment to facilitate worker rescue, contamination control and reduction, or post-emergency clean up. Emergency response equipment available on the Site is listed below. The equipment inventory and storage locations are based on the potential emergencies described above. This equipment inventory is designed to meet on-site emergency response needs and any specialized equipment needs that off-site responders might require because of the hazards at this Site but not ordinarily stocked.

Any additional personal protective equipment (PPE) required and stocked for emergency response is also listed in below. During an emergency, the Emergency Response Coordinator (ERC) is responsible for specifying the level of PPE required for emergency response. At a minimum, PPE used by emergency responders will comply with Section 7.0, Personal Protective Equipment, of this HASP. Emergency response equipment is inspected at regular intervals and maintained in good working order. The equipment inventory is replenished as necessary to maintain response capabilities.

Emergency Equipment	Quantity	Location
First Aid Kit	1	Site Vehicle
Chemical Fire Extinguisher	2 (minimum)	All heavy equipment and Site Vehicle

Emergency PPE	Quantity	Location
Full-face respirator	1 for each worker	Site Vehicle
Chemical-resistant suits	4 (minimum)	Site Vehicle

4.0 EMERGENCY PLANNING MAPS

An area-specific map of the Site will be developed on a daily basis during performance of field activities. The map will be marked to identify critical on-site emergency planning information, including: emergency evacuation routes, a place of refuge, an assembly point, and the locations of key site emergency equipment. Site zone boundaries will be shown to alert responders to known areas of contamination. There are no major topographical features, however the direction of prevailing winds/weather conditions that could affect emergency response planning are also marked on the map. The map will be posted at site-designated place of refuge and inside the TurnKey personnel field vehicle.

5.0 EMERGENCY CONTACTS

The following identifies the emergency contacts for this ERP.

Emergency Telephone Numbers:

Project Manager: ***Michael Lesakowski***
Work: (716) 856-0599
Mobile: (716) 818-3954

Corporate Health and Safety Director: ***Thomas H. Forbes***
Work: (716) 856-0599
Mobile: (716) 864-1730

Site Safety and Health Officer (SSHO): ***Bryan C. Hann***
Work: (716) 856-0635
Mobile: (716) 870-1165

Alternate SSHO: ***Nathan Munley***
Work: (716) 856-0635
Mobile: (716) 289-1072

BUFFALO GENERAL HOSPITAL (ER):	(716) 878-7000
FIRE:	911
AMBULANCE:	911
BUFFALO POLICE:	911
STATE EMERGENCY RESPONSE HOTLINE:	(800) 457-7362
NATIONAL RESPONSE HOTLINE:	(800) 424-8802
NYSDOH:	(716) 847-4385
NYSDEC:	(716) 851-7220
NYSDEC 24-HOUR SPILL HOTLINE:	(800) 457-7252

The Site location is:

1050-1088 Niagara Street
Buffalo, New York 14213
Site Phone Number: (Insert Cell Phone or Field Trailer): _____

6.0 EMERGENCY ALERTING & EVACUATION

Internal emergency communication systems are used to alert workers to danger, convey safety information, and maintain site control. Any effective system can be employed. Two-way radio headsets or field telephones are often used when work teams are far from the command post. Hand signals and air-horn blasts are also commonly used. Every system must have a backup. It shall be the responsibility of each contractor's Site Health and Safety Officer to ensure all personnel entering the site understand an adequate method of internal communication. Unless all personnel are otherwise informed, the following signals shall be used.

1) Emergency signals by portable air horn, siren, or whistle: two short blasts, personal injury; continuous blast, emergency requiring site excavation.

2) Visual signals: hand gripping throat, out of air/cannot breathe; hands on top of head, need assistance; thumbs up, affirmative/ everything is OK; thumbs down, no/negative; grip partner's wrist or waist, leave area immediately.

If evacuation notice is given, site workers leave the worksite with their respective buddies, if possible, by way of the nearest exit. Emergency decontamination procedures detailed in Section 12.0 of the HASP are followed to the extent practical without compromising the safety and health of site personnel. The evacuation routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by rehearsals and inputs from emergency response organizations. Wind direction indicators are located so that workers can determine a safe up wind or cross wind evacuation route and assembly area if not informed by the emergency response coordinator at the time the evacuation alarm sounds. Since work conditions and work zones within the site may be changing on daily basis, it shall be the responsibility of the construction Site Health and Safety Officer to review evacuation routes and procedures as necessary and to inform all TurnKey-Benchmark workers of any changes.

Personnel exiting the site will gather at a designated assembly point. To determine that everyone has successfully exited the site, personnel will be accounted for at the assembly

site. If any worker cannot be accounted for, notification is given to the SSHO (***Bryan Hann*** or ***Nathan Munley***) so that appropriate action can be initiated. Contractors and subcontractors on this site have coordinated their emergency response plans to ensure that these plans are compatible and that source(s) of potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

7.0 EXTREME WEATHER CONDITIONS

In the event of adverse weather conditions, the Site Safety and Health Officer in conjunction with the Contractor's SSHO will determine if engineering operations can continue without sacrificing the health and safety of site personnel. Items to be considered prior to determining if work should continue include but are not limited to:

- Potential for heat/cold stress.
- Weather-related construction hazards (e.g., flooding or wet conditions producing undermining of structures or sheeting, high wind threats, etc).
- Limited visibility.
- Potential for electrical storms.
- Limited site access/egress (e.g., due to heavy snow)

8.0 EMERGENCY MEDICAL TREATMENT & FIRST AID

Personnel Exposure:

The following general guidelines will be employed in instances where health impacts threaten to occur acute exposure is realized:

- Skin Contact: Use copious amounts of soap and water. Wash/rinse affected area for at least 15 minutes. Decontaminate and provide medical attention. Eyewash stations will be provided on site. If necessary, transport to Buffalo General Hospital.

- Inhalation: Move to fresh air and, if necessary, transport to Hospital.

- Ingestion: Decontaminate and transport to Hospital.

Personal Injury:

Minor first-aid will be applied on-site as deemed necessary. In the event of a life threatening injury, the individual should be transported to Hospital via ambulance. The Site Health and Safety Officer will supply available chemical specific information to appropriate medical personnel as requested.

First aid kits will conform to Red Cross and other applicable good health standards, and shall consist of a weatherproof container with individually sealed packages for each type of item. First aid kits will be fully equipped before being sent out on each job and will be checked weekly by the SSHO to ensure that the expended items are replaced.

Directions to Buffalo General Hospital (see Figure 1):

The following directions describe the best route from the Site to Buffalo General Hospital:

- Travel south along Niagara Street
- Turn left on Porter Avenue
- Continue straight on Porter Avenue at round-about – turns into North Street
- Turn right onto Main Street
- Turn left onto High Street
- Hospital on the left (100 High Street)
  (2.4 miles)

9.0 EMERGENCY RESPONSE CRITIQUE & RECORD KEEPING

Following an emergency, the SSHO and Project Manager shall review the effectiveness of this Emergency Response Plan (ERP) in addressing notification, control and evacuation requirements. Updates and modifications to this ERP shall be made accordingly. It shall be the responsibility of each contractor to establish and assure adequate records of the following:

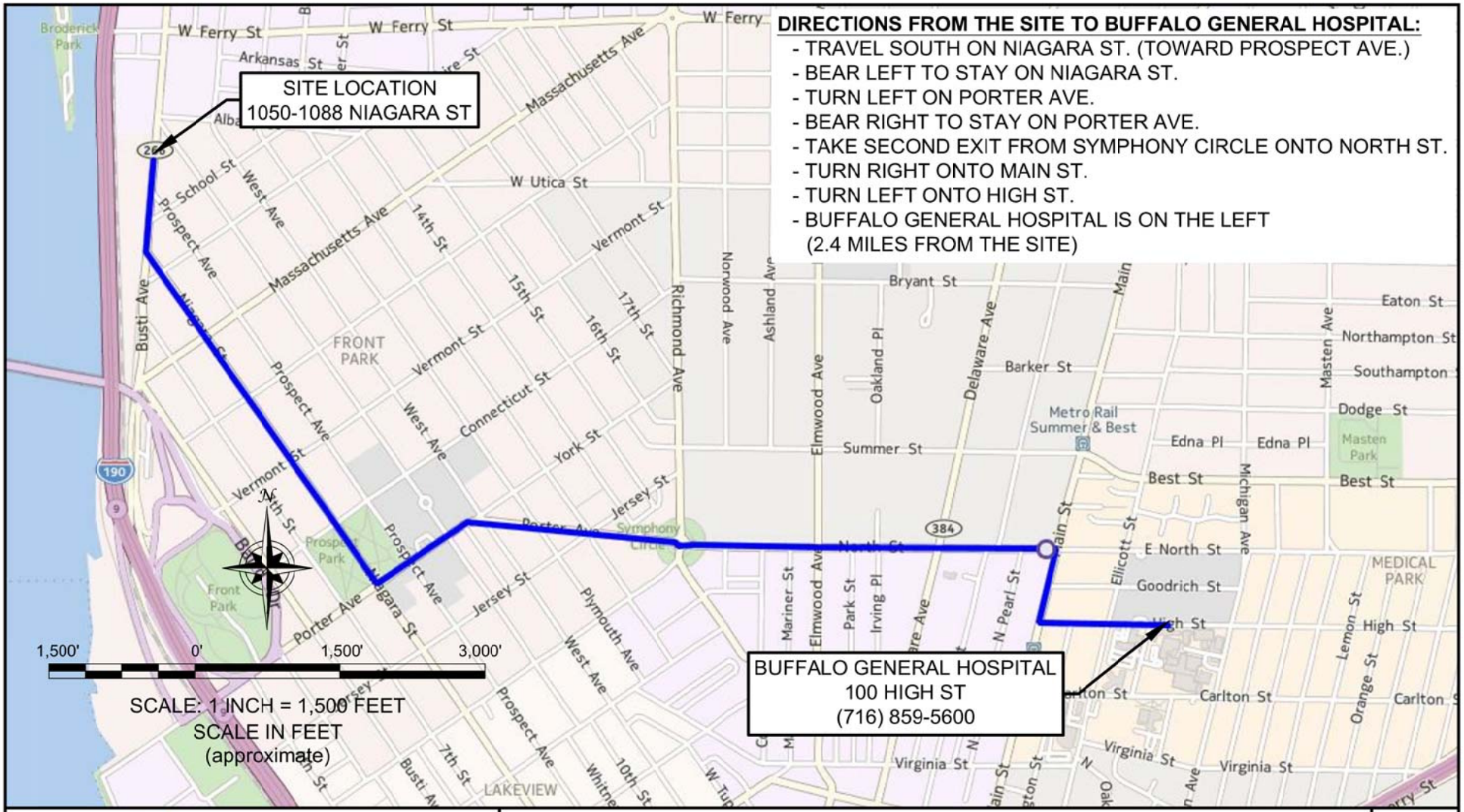
- Occupational injuries and illnesses.
- Accident investigations.
- Reports to insurance carrier or State compensation agencies.
- Reports required by the client.
- Records and reports required by local, state, federal and/or international agencies.
- Property or equipment damage.
- Third party injury or damage claims.
- Environmental testing logs.
- Explosive and hazardous substances inventories and records.
- Records of inspections and citations.
- Safety training.

10.0 EMERGENCY RESPONSE TRAINING

All persons who enter the worksite, including visitors, shall receive a site-specific briefing about anticipated emergency situations and the emergency procedures by the SSHO. Where this site relies on off-site organizations for emergency response, the training of personnel in those off-site organizations has been evaluated and is deemed adequate for response to this site.

FIGURES

F:\CAD\TurnKey\Ellicott Development\1050-1088 Niagara St\RI-IRM Work Plan - November 2013\Figure 1; Hospital Route Map (ERP).dwg



DIRECTIONS FROM THE SITE TO BUFFALO GENERAL HOSPITAL:

- TRAVEL SOUTH ON NIAGARA ST. (TOWARD PROSPECT AVE.)
- BEAR LEFT TO STAY ON NIAGARA ST.
- TURN LEFT ON PORTER AVE.
- BEAR RIGHT TO STAY ON PORTER AVE.
- TAKE SECOND EXIT FROM SYMPHONY CIRCLE ONTO NORTH ST.
- TURN RIGHT ONTO MAIN ST.
- TURN LEFT ONTO HIGH ST.
- BUFFALO GENERAL HOSPITAL IS ON THE LEFT (2.4 MILES FROM THE SITE)

TURNKEY ENVIRONMENTAL RESTORATION, LLC
2558 HAMBURG TURNPIKE
SUITE 300
BUFFALO, NY 14218
(716) 856-0635

PROJECT NO.: 0136-013-005

DATE: DECEMBER 2013

DRAFTED BY: JCT

HOSPITAL ROUTE MAP

EMERGENCY RESPONSE PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

FIGURE 1

ATTACHMENT B

HOT WORK PERMIT FORM

HOT WORK PERMIT

PART 1 - INFORMATION

Issue Date:	
Date Work to be Performed: Start:	Finish (permit terminated):
Performed By:	
Work Area:	
Object to be Worked On:	

PART 2 - APPROVAL

(for 1, 2 or 3: mark Yes, No or NA)*

Will working be on or in:	Finish (permit terminated):	
1. Metal partition, wall, ceiling covered by combustible material?	yes	no
2. Pipes, in contact with combustible material?	yes	no
3. Explosive area?	yes	no

* = If any of these conditions exist (marked "yes"), a permit will not be issued without being reviewed and approved by Thomas H. Forbes (Corporate Health and Safety Director). Required Signature below.

PART 3 - REQUIRED CONDITIONS**

(Check all conditions that must be met)

	PROTECTIVE ACTION		PROTECTIVE EQUIPMENT
	Specific Risk Assessment Required		Goggles/visor/welding screen
	Fire or spark barrier		Apron/fireproof clothing
	Cover hot surfaces		Welding gloves/gauntlets/other:
	Move movable fire hazards, specifically		Wellintons/Knee pads
	Erect screen on barrier		Ear protection: Ear muffs/Ear plugs
	Restrict Access		B.A.: SCBA/Long Breather
	Wet the ground		Respirator: Type:
	Ensure adequate ventilation		Cartridge:
	Provide adequate supports		Local Exhaust Ventilation
	Cover exposed drain/floor or wall cracks		Extinguisher/Fire blanket
	Fire watch (must remain on duty during duration of permit)		Personal flammable gas monitor
	Issue additional permit(s):		

Other precautions:

** Permit will not be issued until these conditions are met.

SIGNATURES

Orginating Employee:	Date:
Project Manager:	Date:
Part 2 Approval:	Date:

ATTACHMENT C

NYSDOH GENERIC COMMUNITY AIR MONITORING PLAN

Appendix C1
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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 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 DEC/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, particularly if wind direction changes. 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.

1. 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.

2. 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.

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

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) 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.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) 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/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 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/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix C2
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX D

PROJECT DOCUMENTATION FORMS

DAILY LOG	DATE			
	REPORT NO.			
	PAGE		OF	

CORRECTIVE MEASURES REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

WEATHER CONDITIONS:

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Corrective Measures Undertaken (reference Problem Identification Report No.)

Retesing Location:

Suggested Method of Minimizing Re-Occurrence:

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative

INSPECTOR'S DAILY REPORT

CONTRACTOR			
CLIENT		DATE:	

LOCATION				DAY		JOB NO.	
WEATHER		TEMP	° F	START		END	

WORK PERFORMED:

CONTRACTOR ACTIVITIES:

[PUT CONTRACTOR ACTIVITIES HERE, BE SPECIFIC. TYPE OF EQUIPMENT, ACTIVITIES PERFORMED, BY WHOM, LOCATION OF LANDFILL ETC.]

TURNKEY ACTIVITIES:

[PUT ENGINEER ACTIVITIES HERE, BE SPECIFIC. TYPE OF EQUIPMENT, ACTIVITIES AND TESTING PERFORMED, SAMPLES COLLECTED, BY WHOM, LOCATION OF LANDFILL ETC.]

TEST PERFORMED		*QA PERSONNEL* SIGNATURE			
PICTURES TAKEN	none	REPORT NO.			
VISITORS	none	SHEET	1	OF	

INSPECTOR'S DAILY REPORT

CONTRACTOR			
CLIENT		DATE:	

LOCATION				DAY		JOB NO.	
WEATHER		TEMP	° F	START		END	

INSPECTOR'S DAILY REPORT

MEETINGS HELD & RESULTS:

CONTRACTOR'S WORK FORCE AND EQUIPMENT

DESCRIPTION	*H*	#	*DESCRIPTION*	*H*	#	*DESCRIPTION*	*H*	#	*DESCRIPTION*	*H*	#
Field Engineer						Equipment			Front Loader Ton		
Superintendent			Ironworker			Generators			Bulldozer		
						Welding Equip.			DJ Dump truck		
Laborer-Foreman			Carpenter						Water Truck		
Laborer									Backhoe		
Operating Engineer			Concrete Finisher						Excavator		
						Roller			Pad foot roller		
Carpenter						Paving Equipment					
						Air Compressor					

REMARKS:

REFERENCES TO OTHER FORMS:

SAMPLES COLLECTED:					
SAMPLE NUMBER					
APPROX. LOCATION OF STOCKPILE					
NO. OF STOCKPILE					
DATE OF COLLECTION					
CLIMATOLOGIC CONDITIONS					
FIELD OBSERVATION		SHEET		OF	

DAILY LOG	DATE			
	REPORT NO.			
	PAGE		OF	

PROBLEM IDENTIFICATION REPORT

Date:

Project:

Job No:

Location:

CQA Monitor(s):

Client:

Contractor:

Contractor's Supervisor:

WEATHER CONDITIONS:

Ambient Air Temp. - A.M.:

Ambient Air Temp. - P.M.:

Wind Direction:

Wind Speed:

Precipitation:

Problem Description:

Problem Location (reference test location, sketch on back of form as appropriate):

Problem Causes:

Suggested Corrective Measures or Variances:

Linked to Corrective Measures Report No. *or Variance Log No.*

Approvals (initial):

CQA Engineer:

Project Manager:

Signed:

CQA Representative

APPENDIX E

SOIL-FILL MANAGEMENT PLAN

SOIL/FILL MANAGEMENT PLAN

for the

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

November 2013 0136-013-005

Prepared for:

9271 Group, LLC

SOIL/FILL MANAGEMENT PLAN

1050-1088 Niagara Street Site

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SOIL/FILL MANAGEMENT PLAN
1050-1088 Niagara Street Site

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APPENDICES

1.0 INTRODUCTION

1.1 Background and History

The Site consists of three adjoining parcels, addressed at 1050, 1054 and 1088 Niagara Street, totaling approximately 2.7 acres, in the City of Buffalo, Erie County, New York. The Site is currently improved with a one three-story building, located on the 1050 Niagara Street parcel, with the remaining portion currently vacant.

The Site has a long history of being utilized for industrial operations (since at least 1889). The International Brewing Company and American Gelatine Corp. operated on-Site in the early 1900s. The northern portion of the Site (1088 Niagara St parcel) included a filling station from at least the 1920s through at least 1960. Multiple gasoline tanks were identified on the northern portion of the site from at least 1925 through at least 1951. Gulf Oil Corporation and/or Hygrade Petroleum Co. were identified as on-Site operators from at least the 1920s through at least 1960. The Niagara Lithograph Company (current on-site building), a commercial printing company, was located on the 1050 Niagara Street parcel of the Site from at least 1930 through at least 1990; and Miken Companies, also a commercial printing company, was located on-Site until at least 2000.

1.2 Previous Environmental Investigations

A summary of the investigations that have occurred at the Site are presented below.

1.2.1 June 2012 – Phase I Environmental Site Assessment

TurnKey Environmental Restoration, LLC (TurnKey) completed a Phase I ESA in June 2012. Findings of the Phase I report are summarized below:

- Historic operators on-Site included commercial printing from at least 1930 through at least 2000, and the American Gelatine Company and the International Brewing Company in the early 1900s
- Two former 25,000 gallon tanks were noted in the basement of 1050 Niagara Street based on historic Sanborn maps; contents unknown.

- Potential tank vents were noted on the west side of the building on the 1050 Niagara Street parcel and potential tank fill ports were noted on the surface in the southeast portion of the 1088 Niagara Street parcel.
- Building-mounted transformers were noted with the 1050 Niagara Street building.
- Gulf Oil Corporation from the 1920s through the 1960s, Hygrade Oil and Fuel Corp./Hygrade Petroleum Co. from the 1920s through the 1940s,.
- The Site included a filling station from the 1920s through the 1960s. Multiple gasoline tanks, assumed to be USTs, were identified on the northern portion of the site in at least 1925 and 1951 based on historic Sanborn maps.
- Numerous closed/inactive spills were identified in connection with adjacent/nearby properties in the regulatory database.

1.2.2 July 2012 Limited Phase II Environmental Investigation Report

TurnKey Environmental Restoration, LLC (TurnKey) completed a Limited Phase II Environmental Investigation Report in July 2012. Findings of the Limited Phase II investigation are detailed below:

- Three (3) abandoned USTs; were encountered; these USTs appeared to be associated with the former services station on-Site;
- In-ground hydraulic lifts were discovered on-Site;
- Field observations of apparent petroleum contamination, including elevated PID readings and petroleum odors, were observed in TP-3, TP-4 and TP-10. Apparent petroleum-stained soil was also noted in TP-4;
- Apparent foundry sand (black sand) was noted in test pits TP-1 and TP-5;
- Elevated VOCs, some exceeding Commercial Use SCOs were detected;
- Several metals were detected above their respective Unrestricted Use SCOs, including arsenic, cadmium, and lead above their respective Commercial Use SCOs;
- Based on the findings of the investigation NYSDEC Spill file No. 1201545 was opened for the Site.

1.2.3 August 2013 – Supplemental Phase II Site Investigation

TurnKey Environmental Restoration, LLC (TurnKey) completed a Supplemental Phase II Environmental Investigation Report in August 2013. Findings of the Supplemental Phase II investigation are detailed below:

- Eight (8) soil borings were advanced to further investigate the southern portion of 1050-1088 Niagara Street site.
- Approximately half of the floor areas of the basement and sub-basement had visible evidence of apparent oil staining; some areas contained standing oil; oil staining was also noted proximate compressors, former oil storage/hazardous waste storage areas and one utility sink in the basement;
- A floor drain with standing oil was noted in the central portion of the building.
- Some of the soils exhibited visible (black staining) olfactory (petroleum odors) evidence of subsurface contamination;
- Subsurface soil analytical results indicate SVOCs and metals exceedance of Unrestricted and Commercial Use SCOs.

1.3 Purpose and Scope

The purpose of this Soil/Fill Management Plan (SFMP) is to protect both the environment and human health during redevelopment of the Site and subsequent to completion of Brownfield Cleanup activities. While assessments of surface and subsurface soil/fill and groundwater at the Site will be performed during the RI, subsurface information is never 100 percent complete or accurate, especially on a site with a long and diverse history. As such, it is not unreasonable to anticipate the possibility that some quantity of impacted subsurface soil/fill may be encountered following completion of the IRM and Brownfield cleanup activities. In particular, soil/fill impacts may be encountered during development activities such as infrastructure construction (i.e., roads, waterline, sewers, electric, cable, etc.) or foundation excavation and site grading. The SFMP will be modified/expanded as appropriate based on the results of the RI and IRM.

Compliance with this SFMP is required to properly manage any impacted subsurface soil/fill encountered during redevelopment activities at the Site. This SFMP was developed with the express purpose of addressing unknown subsurface impacts if and when

encountered. The SFMP also facilitates the transfer of responsibilities with property ownership.

This SFMP provides protocols for development and post-development activities. Items discussed herein include:

- Excavation, grading, sampling and handling of Site soils.
- Acceptability of soil/fill from off-site sources for backfill or sub-grade fill.
- Erosion and dust control measures.
- Fencing and other access controls.
- Health and safety procedures for subsurface construction work and the protection of the surrounding community.
- Acceptability and placement of final cover.

1.4 Soil/Fill Management Program Responsibility

The property owner(s) or responsible entity will be responsible for all monitoring, implementation, and reporting requirements of this Plan. The property owner(s) will not perform, contract, nor permit their employees, agents, or assigns to perform any excavations or disturbance of Site soils, except as delineated in this Plan. The property owner(s) or responsible entity will be responsible for proper notification and reporting to regulatory agencies (i.e., NYSDEC Region 9, Division of Environmental Remediation and NYS Department of Health) prior to and following construction activities. The NYSDEC may provide periodic construction oversight and monitoring during construction activities to verify that the requirements of this SFMP are adhered to.

1.5 Notification and Reporting Requirements

The NYSDEC must be notified prior to that subgrade activities are being. The property owner(s) or other responsible entity shall complete daily logs, as identified in the work plan. Details of intrusive activities will be provided to the Department in the Construction Closeout Report (CCR) and/or Final Engineering Report (FER) for the Site

2.0 SOIL/FILL MANAGEMENT

2.1 Soil Screening Methods

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional (QEP) during all remedial intrusive activities. Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

2.2 On-Site Stockpile Methods

Every attemot will be made to have material requiring off-site disposal to be direct loaded and transported directly off-site. For materials that cannot be direct loaded, or material that requires testing will be placed on and covered with polyethylene sheeting to prevent infiltration of precipitation and wind erosion. If off-Site disposal of the material is planned, the stockpiled impacted material will be characterized per the requirements of a permitted disposal facility. Stockpiled impacted material will not remain on-Site for more than 90 days. Upon obtaining an approved waste profile, the impacted material will be transported and disposed of off-Site.

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC.

2.3 Excavation and Handling of On-Site Soil/Fill

A QEP will inspect soil/fill excavations or disturbances on behalf of the subject property owner. The soil/fill will be inspected for staining or discoloration, and will be field screened for the presence of volatile organic compounds (VOCs) with a photoionization detector (PID). The PID detector will be calibrated as per the manufacturer's requirements.

Sampling and analyses to verify excavation limits and analysis for disposal purposes will be in accordance with the protocols delineated in Section 2.3.

Excavation of impacted soil/fill will continue horizontally until visually impacted materials are removed to the satisfaction of the environmental professional and the NYSDEC representative, but will not extend beyond the Site boundaries. All excavation work will be directed by an experienced engineer or scientist to remove all visually-impacted material.

Impacted material will either be direct loaded, placed in roll-off containers or be stockpiled on plastic sheeting in an area away from the primary work activities and then sampled to determine whether it is subject to special disposal/reuse requirements. The length of time soil can be stockpiled should be limited to 90 days due to potential hazardous waste storage requirement concerns.

Sampling and analyses to verify excavation limits and analysis for disposal purposes will be in accordance with the protocols identified in Section 2.3.

2.4 Backfill Material

2.4.1 Use Criteria

Material used to backfill excavations or to increase site grades or elevations may be comprised of on-Site soil/fill and demolition material including brick and concrete, or off-Site soil/fill. Backfill materials used on-Site must meet the following criteria:

- Excavated on-Site soil/fill with no evidence of visible or olfactory evidence of contamination that has been tested to meet the criteria on Table 1, in accordance with DER-10, Table 5.4(e)4;

- On-Site demolition material proposed for reuse on-site will be sampled and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval.

- Off-site soil will originate from known sources having no evidence of disposal or releases of hazardous substances, hazardous, toxic or radioactive wastes, or petroleum, which has been tested in accordance with DER10, 5.4(e)10, or at a reduced frequency if agreeable to the Department;

- All off-site sources of soil/fill to be used as backfill must be tested in accordance with the Sampling and Analytical Protocol (Section 2.3), and found to contain concentrations less than criteria listed in Table 1 – Criteria for Use of Off-Site Soil; and,

- No materials meeting the definitions of a solid waste as defined in 6NYCRR, Part 360-1.2(a), and/or grossly contaminated as defined in 6 NYCRR Part 375-1.2(u), shall be used as backfill.

2.4.2 On-Site Source Sampling Requirements

If on-Site soil is to be used as a source of backfill, then it must be tested to meet the criteria identified on Table 1, in accordance with DER-10. In association with the results of the RI, a minimum of one sample will be collected for each 250 cubic yards (cy) up to 1,000 cy of material to be reused. If more than 1,000 cy of on-Site material and all samples of the first 1,000 cy meet the criteria listed in Table 1, the sample collection may be reduced to one sample for each additional 1,000 cy of on-Site source backfill.

Discrete grab samples will be collected for VOC analysis source is required. For all other analyses, a minimum of three grab samples will be collected per composite sample. Approximately equal aliquots of the grab samples will be composited in the field using a stainless steel trowel and bowl. The trowel and bowl shall be decontaminated with a non-phosphate detergent (i.e., Alconox®) and potable water wash solution followed by a distilled water rinse between sampling locations. The soil/fill samples will be analyzed in accordance with USEPA SW-846 Methodology by a NYSDOH ELAP-certified laboratory.

2.4.3 Off-Site Borrow Source Sampling Requirements

If an off-site soil/fill borrow source is of unknown origin or originates from a commercial, industrial or urban site, then it must be tested to meet the criteria identified on Table 1, in accordance with DER-10, 5.4(e)10. If an off-site soil/fill borrow source is of known origin, NYSDEC would be involved in the decision as to whether the source is in fact known and acceptable for use and whether sampling of the source is required.

Grab samples will be collected for VOC analysis. For all other analyses, a minimum of four grab samples will be collected per composite sample. Approximately equal aliquots of the grab samples will be composited in the field using a stainless steel trowel and bowl.

The trowel and bowl shall be decontaminated with a non-phosphate detergent (i.e., Alconox®) and potable water wash solution followed by a distilled water rinse between sampling locations. The soil/fill samples will be analyzed in accordance with USEPA SW-846 Methodology by a NYSDOH ELAP-certified laboratory.

2.5 Sampling and Analysis Protocol

Excavated soil/fill that is deemed unacceptable for on-Site reuse and is designated for off-site disposal shall be sampled in accordance with the requirements of the off-site disposal facility and the appropriate regulatory authorities. In addition, the resulting excavation following removal of impacted soil/fill will require verification sampling and analysis to determine the limits of impact. Both characterization and verification sampling and analysis are discussed in the following sections.

2.5.1 Impacted Soil/Fill Characterization

The following procedure represents a suggested method for determining requirements for impacted soil/fill designated for off-site disposal, recycling, and/or biotreatment. The sampling procedures, frequency and parameter list must be coordinated with the off-site disposal facility prior to undertaking characterization work. Excavated soil/fill should be separately stockpiled from any on-Site excavated material which may be re-used.

The samples will be analyzed by a NYSDOH ELAP-certified laboratory for Toxicity Characteristic Leaching Procedure (TCLP) method to determine the appropriate off-site disposal method. Parameters to be analyzed for by TCLP protocol (i.e. VOCs, SVOCs, PCB, etc.) will be determined by the potential off-site disposal facility. If TCLP hazardous waste characteristic values are exceeded, the soil/fill will be disposed of in a permitted hazardous waste disposal facility, or treated to render non-hazardous prior to disposal. If TCLP analytical results are below hazardous waste characteristic values, the soil/fill will be disposed of off-site in a permitted sanitary landfill, and/or recycled at a permitted biotreatment facility.

2.5.2 Verification Sampling

Verification sampling will be performed on the excavation sidewalls and bottom of the excavation after lateral and vertical excavation limits have been achieved and visibly impacted soil/fill has been removed. In general, one sidewall sample will be collected for each 30 linear feet of excavation sidewall and one sample will be collected from the bottom of the excavation for each 900 square feet of excavation bottom. The samples will be collected by retrieving a discrete sample from across the excavation face. The backhoe bucket will be used to assist in sample collection and avoid the need for confined space entry. For excavations having lengths greater than 30 feet, an additional discrete sample will be collected for each additional 30 feet of excavation length. Verification sampling analytical protocols will be determined based on the areas of concern, in accordance with DER-10 and consultation with the NYSDEC.

A Category B deliverables package will be requested to facilitate data evaluation by a third-party validation expert.

2.6 Fluids Management

All liquids to be removed from the site, including excavation dewatering, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, and monitoring well purge and development fluids will not be recharged back to the land surface or subsurface of the site without a written request to the Department seeking permission to discharge.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

3.0 COMMUNITY AIR MONITORING PLAN

The New York State Department of Health's Generic Community Air Monitoring Plan requires monitoring for volatile organic compounds and particulates. As detailed in Appendix A of this SFMP, the following criteria shall also be adhered to for the protection of the nearby community.

ORGANIC VAPOR PERIMETER MONITORING:

Community air monitoring for organic vapors will be performed at the downwind perimeter of the exclusion zone on a continuous basis during intrusive activities performed outdoors that may be reasonably expected to potentially release organic vapors, or when sustained readings are detected in the work zone (i.e., proximate to the source of the intrusive activity). Otherwise, the monitoring will be performed on an hourly basis. A photoionization detector (PID) or other equipment will be suitable to the types of contaminants known or suspected to be present will be used, and will be capable of calculating 15-minute running average concentrations. All air monitoring equipment will be calibrated at least daily and an upwind concentration will be taken at least daily to establish background conditions. The 15-minute average concentrations 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.

EXPLOSIVE VAPORS:

Explosive vapor community air monitoring will be performed at the downwind perimeter of the Site on a continuous basis whenever sustained atmospheric concentrations of greater than 10% of the LEL are recorded in the exclusion zone. If sustained atmospheric concentrations of greater than 10% LEL are recorded at the downwind Site perimeter, the local Fire Department will be contacted (see Section 2.5.1 of the SMP for phone number).

AIRBORNE PARTICULATE COMMUNITY AIR MONITORING

Respirable (PM-10) particulate monitoring will be performed on a continuous basis at the downwind perimeter of the exclusion zone. The monitoring will be performed using real-time monitoring equipment capable of measuring less than PM-10 and integrating over a period of 15-minutes for comparison to the airborne particulate action levels. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. All readings will be recorded and will be available for NYSDEC and NYSDOH review. Readings will be interpreted as follows:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/m^3) greater than the background reading 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 provided that the downwind PM-10 particulate levels do not exceed 150 ug/m^3 above the background level and that visible dust is not migrating from the work area.

- If, after implementation of dust suppression techniques downwind PM-10 levels are greater than 150 ug/m^3 above the background level, work activities must be stopped

and dust suppression controls re-evaluated. Work can resume provided that supplemental dust suppression measures and/or other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the background level and in preventing visible dust migration.

The location of air sampling stations will be based on generally prevailing wind conditions. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide upwind and downwind monitoring stations.

Exceedance of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

DUST CONTROL PLAN

Dust monitoring will be performed at the Site during subgrade excavation, grading, and handling activities in accordance with the *NYSDEC's DER-10 (May 2010) Appendix A1 (NYSDOH's Generic Community Air Monitoring Plan) and Appendix A1 (Fugitive Dust and Particulate Monitoring).* Dust suppression techniques will be employed as necessary to mitigate fugitive dust from non-vegetated or disturbed soil/fill during intrusive activities.

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Hauling materials in properly tarped containers or vehicles.
- Covering or proof-rolling excavated areas and materials after excavation activity ceases.
- Reducing the excavation size and/or number of excavations.

4.0 REFERENCES

1. TurnKey Environmental Restoration, LLC. *Phase I Environmental Site Assessment, 1050-1088 Niagara Street, Buffalo, New York*. June 2012.

2. TurnKey Environmental Restoration, LLC. *Limited Phase II Environmental Investigation Report, 1050-1088 Niagara Street, Buffalo, New York*. July 2012.

3. TurnKey Environmental Restoration, LLC. *Supplemental Phase II Site Investigation Report, 1050-1088 Niagara Street, Buffalo, New York*. August 2013.

4. New York State Department of Environmental Conservation. *DER-10; Technical Guidance for Site Investigation and Remediation*. May 2010.

TABLES

TABLE 2

CRITERIA FOR USE OF OFF-SITE SOIL

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Parameter	Allowable Concentration for Use of Off-Site Soil
Volatile Organic Compounds (mg/kg)	
1,1,1-Trichloroethane	0.68
1,1-Dichloroethane	0.27
1,1-Dichloroethene	0.33
1,2-Dichlorobenzene	1.1
1,2-Dichloroethane	0.02
1,2-Dichloroethene(cis)	0.25
1,2-Dichloroethene(trans)	0.19
1,3-Dichlorobenzene	2.4
1,4-Dichlorobenzene	1.8
1,4-Dioxane	0.1
Acetone	0.05
Benzene	0.06
Butylbenzene	12
Carbon tetrachloride	0.76
Chlorobenzene	1.1
Chloroform	0.37
Ethylbenzene	1
Hexachlorobenzene	3.2
Methyl ethyl ketone	0.12
Methyl tert-butyl ether	0.93
Methylene chloride	0.05
Propylbenzene-n	3.9
Sec-Butylbenzene	11
Tert-Butylbenzene	5.9
Tetrachloroethene	1.3
Toluene	0.7
Trichloroethene	0.47

TABLE 2

CRITERIA FOR USE OF OFF-SITE SOIL

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Parameter	Allowable Concentration for Use of Off-Site Soil
Volatile Organic Compounds (mg/kg)	
Trimethylbenzene-1,2,4	3.6
Trimethylbenzene-1,3,5	8.4
Vinyl chloride	0.02
Xylene (mixed)	1.6
Semi-Volatile Organic Compounds (mg/kg)	
Acenaphthene	98
Acenaphthylene	107
Anthracene	500
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1.7
Benzo(g,h,i)perylene	500
Benzo(k)fluoranthene	1.7
Chrysene	1
Dibenz(a,h)anthracene	0.56
Fluoranthene	500
Fluorene	386
Indeno(1,2,3-cd)pyrene	5.6
m-Cresol(s)	0.33
Naphthalene	12
o-Cresol(s)	0.33
p-Cresol(s)	0.33
Pentachlorophenol	0.8
Phenanthrene	500
Phenol	0.33
Pyrene	500

TABLE 2

CRITERIA FOR USE OF OFF-SITE SOIL

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

Parameter	Allowable Concentration for Use of Off-Site Soil
Metals (mg/kg)	
Arsenic	16
Barium	400
Beryllium	47
Cadmium	7.5
Chromium, Hexavalent[1]	19
Chromium, Trivalent[1]	1500
Copper	270
Cyanide	27
Lead	450
Manganese	2000
Mercury (total)	0.73
Nickel	130
Selenium	4
Silver	8.3
Zinc	2480
PCBs/Pesticides (mg/kg)	
2,4,5-TP Acid (Silvex)	3.8
4,4'-DDE	17
4,4'-DDT	47
4,4'-DDD	14
Aldrin	0.19
Alpha-BHC	0.02
Beta-BHC	0.09
Chlordane (alpha)	2.9
Delta-BHC	0.25
Dibenzofuran	210
Dieldrin	0.1
Endosulfan I	102
Endosulfan II	102

TABLE 2

CRITERIA FOR USE OF OFF-SITE SOIL

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

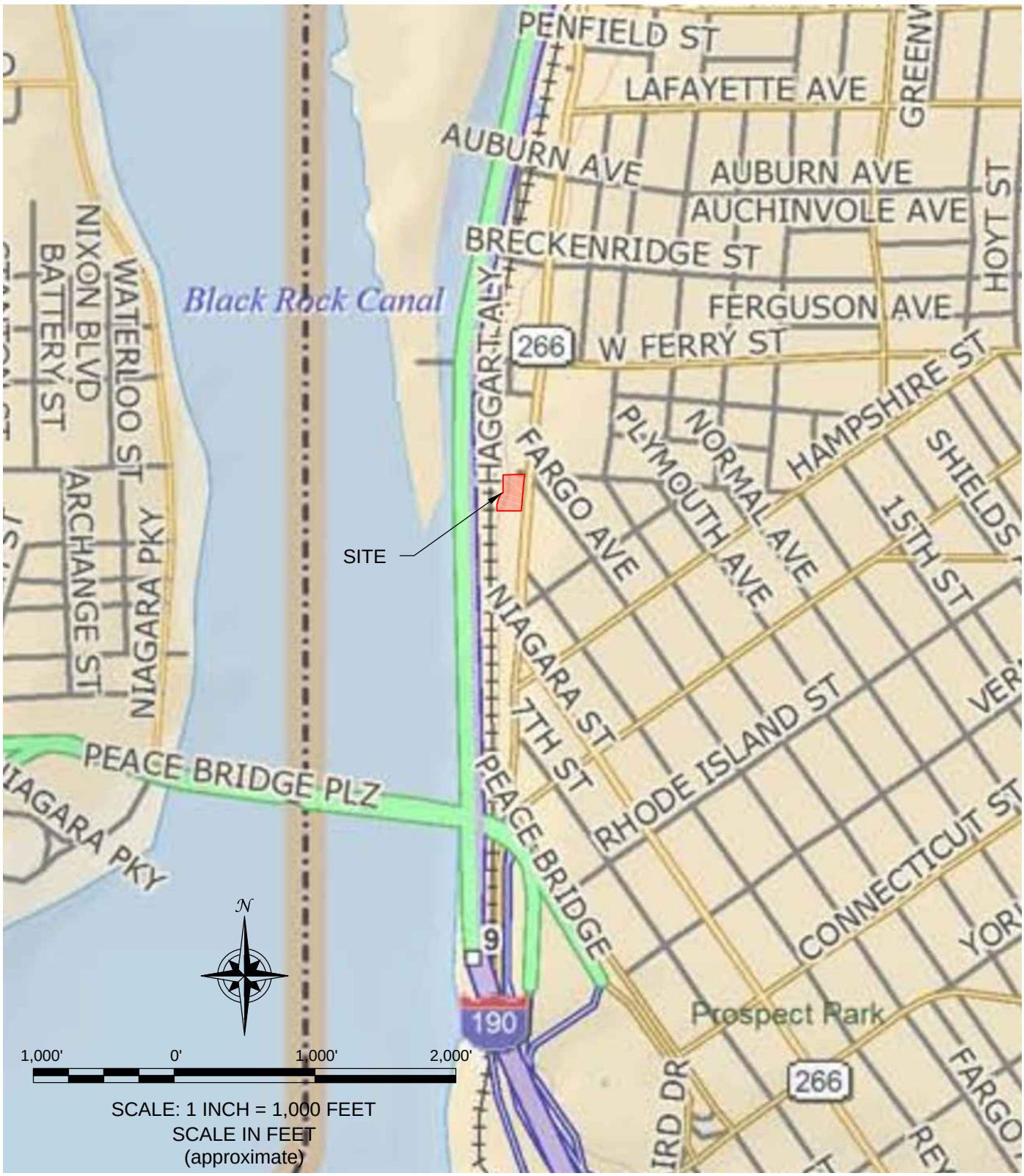
Parameter	Allowable Concentration for Use of Off-Site Soil
PCBs/Pesticides (mg/kg)	
Endosulfan sulfate	200
Endrin	0.06
Heptachlor	0.38
Lindane	0.1
Polychlorinated biphenyls	1

Notes:

1. The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.

FIGURES

FIGURE 1



TurnKey Environmental Restoration, LLC

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PROJECT NO.: 0136-013-005

DATE: NOVEMBER 2013

DRAFTED BY: JGT

SITE LOCATION AND VICINITY MAP

SOIL/FILL MANAGEMENT PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

9271 GROUP, LLC

DATE: NOVEMBER 2013
DRAFTED BY: JGT

FIGURE 2

SITE PLAN (AERIAL)

SOIL/FILL MANAGEMENT PLAN

1050-1088 NIAGARA STREET SITE

BUFFALO, NEW YORK

PREPARED FOR

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TURNKEY ENVIRONMENTAL RESTORATION, LLC

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APPENDIX A

NYSDOH/NYSDEC
GENERIC COMMUNITY AIR MONITORING PLAN
&
FUGITIVE DUST

Appendix A1
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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 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 DEC/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, particularly if wind direction changes. 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.

1. 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.

2. 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.

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

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) 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.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) 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/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 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/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix A2
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

APPENDIX F

FIELD OPERATING PROCEDURES

(PROVIDED ELECTRONICALLY)

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Abandonment of Borehole Procedures

FOP 001.1

ABANDONMENT OF BOREHOLE PROCEDURE

PURPOSE

Soil borings that are not completed as monitoring wells will be plugged by filling the holes with a cement/bentonite grout. Field staff will calculate the borehole volume and compare it to the final installed volume of grout to evaluate whether bridging or loss to the formation has occurred. These calculations and the actual volume placed will be noted on the Boring Log.

PROCEDURE

1. Determine most suitable seal materials. Grout specifications generally have mixture ratios as follows:

   Grout Slurry Composition (% Weight)

1.5 to 3.0%	-	Bentonite (Quick Gel)
40 to 60 %	-	Cement (Portland Type I)
40 to 60 %	-	Potable Water

2. Calculate the volume of the borehole base on the bit or auger head diameter plus 10% and determine the volume of grout to be emplaced. Generally, the total mixed volume is the borehole volume plus 20%.

3. Identify the equipment to be used for the preparation and mixing of the grout. Ensure the volume of the tanks to be used for mixing has been measured adequately. Document these volumes on the Well Abandonment/Decommissioning Log (sample attached).

4. Identify the source of the water to be used for the grout and determine its suitability for use. In particular, water with high sulfate, or chloride levels or heated water should not be used. These types of waters can cause operational difficulties or modify the set-up for the grout.

5. Identify the equipment to be used for emplacing the grout. Ensure that the pump to be used has adequate pressure to enable complete return to surface.

6. Identify the volumes to be pumped at each stage or in total if only one stage is to be used.

7. Prepare the borehole abandonment plan and discuss the plan and activities with the drilling contractor prior to beginning any mixing activities.

8. Begin mixing the grout to be emplaced.

9. Record the type and amount of materials used during the mixing operation. Ensure the ratios are within specifications tolerance.

10. Begin pumping the grout through the return line bypass system to confirm all pump and surface fittings are secure.

11. Initiate downhole pumping from the bottom of the borehole. Record the times and volumes emplaced on the Well Abandonment/Decommissioning Log (sample attached).

12. Document the return circulation of grout. This may be facilitated by using a colored dye or other tagging method if a mudded borehole condition exists prior to grout injection.

13. Identify what procedures will be used for grouting in the upper 3 feet. When casing exists in the borehole, decisions are required as to the timing for removal and final disposition of the casing. Generally, it will not be removed prior to grouting because of the potential for difficult access and loss of circulation in the upper soil or rock layers. Accordingly, when cement return is achieved at surface, the casing is commonly removed and the borehole is topped off with grout or soils. If casing removal is not possible or not desired, the casing left in place should be cut off at a depth of 5 feet or greater below ground surface. If casing is not present during grouting, the grout level in the borehole is topped off after the rods or tremie pipe is removed.

14. Clear and clean the surface near the borehole.

15. The uppermost five feet of the borehole at the land surface should be filled with material physically similar to the natural soils. The surface of the borehole should be restored to the condition of the area surrounding the borehole. For example, concrete or asphalt will be patched with concrete or asphalt of the same type and thickness, grassed areas will be seeded, and topsoil will be used in other areas. All solid waste materials generated during the decommissioning process must be disposed of properly.

16. A follow-up check at each site should be made within one week to 10 days of completion. It should be noted that on occasion, the grout and/or surface material may settle over several days. If settling occurs, additional material physically similar to surrounding materials (i.e., asphalt, concrete, or soil) must be used to match the existing grade.

17. Document borehole and/or well/piezometer decommissioning activities on a Well Abandonment/Decommissioning Log (sample attached).

ATTACHMENTS

Well Abandonment/Decommissioning Log (sample)

REFERENCES

ASTM D 5299: *Guide for Decommissioning of Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities.*

NYSDEC, July 1988, *Drilling and Monitoring Well Installation Guidance Manual.*

NYSDEC, November 2009, *CP-43: Groundwater Monitoring Well Decommissioning Policy.*

Driscoll, F.G., 1987, *Groundwater and Wells*, Johnson Division, St. Paul, Minnesota, 1089 p.

WELL ABANDONMENT/ DECOMMISSIONING LOG

PROJECT INFORMATION	WELL INFORMATION
Project Name:	WELL I.D.:
Client:	Stick-up (fags):
Project Job Number:	Total Depth (fbgs):
Date:	Screen Interval (fbgs):
Weather:	Well Material:
	Diameter (inches):
BM/TK Personnel:	
Drilling Company:	Drilling Company Personnel:
Drill Rig Type:	

DECOMMISSIONING PROCEDURES

Time	Description of Field Activities

PREPARED BY: DATE:

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Ambient Air/Subslab Vapor Summa Canister Sample Collection Procedure

FOP 004.3

AMBIENT AIR/SUBSLAB VAPOR SAMPLE COLLECTION PROCEDURE

BACKGROUND

In October 2006, the New York State Department of Health (NYSDOH) finalized their vapor intrusion guidance document entitled "Guidance for Evaluating Soil Vapor Intrusion in the State of New York." (www.health.state.ny.us/nysdoh/gas/svi_guidance/), which has been guiding NYSDOH and New York State Department of Environmental Conservation (NYSDEC) decisions concerning the need for subslab vapor mitigation at sites undergoing investigation, cleanup and monitoring under formal NY Sate remedial programs (e.g., Brownfield Cleanup Program sites, Inactive Hazardous Waste Site Remediation Program sites, etc.). The guidance presents two soil vapor/indoor air matrices to assist in interpreting subslab and ambient air data (i.e., "Matrix 1" and "Matrix 2"). As of June 2007, six compounds have been assigned to these two matrices as follows:

Volatile Chemical	Soil Vapor / Indoor Air Matrix
Carbon tetrachloride	Matrix 1
1,1-Dichloroethene	Matrix 2
cis-1,2-Dichloroethene	Matrix 2
Tetrachloroethene	Matrix 2
1,1,1-Trichloroethane	Matrix 2
Trichloroethene	Matrix 1
Vinyl chloride	Matrix 1

Additional matrices will be developed when a chemical's toxicological properties, background concentrations, or analytical capabilities suggest that major revisions are needed. Both matrices are attached as Figures 1 and 2.

PURPOSE

This procedure delineates the scope of additional investigation at a building on the project site to determine if volatile organic compounds (VOCs) detected in groundwater and/or soil near the building are intruding into the building airspace or have the potential, in sufficient concentrations, to adversely impact indoor air quality. This ambient air/subslab vapor monitoring procedure follows the NYSDOH Final Soil Vapor Intrusion Guidance (October 2006) as well as USEPA Methods TO-14 and TO-15, for volatile organic compounds (VOCs) using Summa passive canisters.

SURVEYS AND PRE-SAMPLING BUILDING PREPARATION

A pre-sampling inspection should be performed prior to each sampling event to identify and minimize conditions that may interfere with the proposed testing. The inspection should evaluate the type of structure, floor layout, airflows and physical conditions of the building(s) being studied. This information, along with information on sources of potential indoor air contamination, should be identified on a building inventory form. An example of the building inventory form is attached. Items to be included in the building inventory include the following:

- Construction characteristics, including foundation cracks and utility penetrations or other openings that may serve as preferential pathways for vapor intrusion;
- Presence of an attached garage;
- Recent renovations or maintenance to the building (e.g., fresh paint, new carpet or furniture);
- Mechanical equipment that can affect pressure gradients (e.g., heating systems, clothes dryers or exhaust fans);

- Use or storage of petroleum products (e.g., fuel containers, gasoline operated equipment and unvented kerosene heaters); and

- Recent use of petroleum-based finishes or products containing volatile chemicals.

Each room on the floor of the building being tested and on lower floors, if possible, should be inspected. This is important because even products stored in another area of a building can affect the air of the room being tested.

The presence and description of odors (e.g., solvent, moldy) and portable vapor monitoring equipment readings (e.g., PIDs, ppb RAE, Jerome Mercury Vapor Analyzer, etc.) should be noted and used to help evaluate potential sources. This includes taking readings near products stored or used in the building.

Potential interference from products or activities releasing volatile chemicals may need to be controlled. Removing the source from the indoor environment prior to testing is the most effective means of reducing interference. Ensuring that containers are tightly sealed may be acceptable. When testing for volatile organic compounds, containers should be tested with portable vapor monitoring equipment to determine whether compounds are leaking. The inability to eliminate potential interference may be justification for not testing, especially when testing for similar compounds at low levels. The investigator should consider the possibility that chemicals may adsorb onto porous materials and may take time to dissipate.

In some cases, the goal of the testing is to evaluate the impact from products used or stored in the building (e.g., pesticide misapplications, school renovation projects). If the goal of the testing is to determine whether products are an indoor volatile chemical contaminant source, the removing these sources does not apply.

Once interfering conditions are corrected (if applicable), ventilation may be needed prior to sampling to eliminate residual contamination in the indoor air. If ventilation is appropriate, it should be completed 24 hours or more prior to the scheduled sampling time. Where applicable, ventilation can be accomplished by operating the building's HVAC system to maximize outside air intake. Opening windows and doors, and operating exhaust fans may also help or may be needed if the building has no HVAC system.

Air samples are sometimes designed to represent typical exposure in a mechanically ventilated building and the operation of HVAC systems during sampling should be noted on the building inventory form (see attached sample). In general, the building's HVAC system should be operating under normal conditions. Unnecessary building ventilation should be avoided within 24 hours prior to and during sampling. During colder months, heating systems should be operating to maintain normal indoor air temperatures (i.e., 65 – 75 °F) for at least 24 hours prior to and during the scheduled sampling time.

Depending upon the goal of the indoor air sampling, some situations may warrant deviation from the above protocol regarding building ventilation. In such cases, building conditions and sampling efforts should be understood and noted within the framework and scope of the investigation.

To avoid potential interferences and dilution effects, every effort should be made to avoid the following for 24 hours prior to sampling:

- Opening any windows, fireplace dampers, openings or vents;
- Operating ventilation fans unless special arrangements are made;
- Smoking in the building;
- Painting;
- Using a wood stove, fireplace or other auxiliary heating equipment (e.g., kerosene heater);
- Operating or storing automobile in an attached garage;

- Allowing containers of gasoline or oil to remain within the house or garage area, except for fuel oil tanks;
- Cleaning, waxing or polishing furniture, floors or other woodwork with petroleum- or oil-based products;
- Using air fresheners, scented candles or odor eliminators;
- Engaging in any hobbies that use materials containing volatile chemicals;
- Using cosmetics including hairspray, nail polish, nail polish removers, perfume/cologne, etc.;
- Lawn mowing, paving with asphalt, or snow blowing;
- Applying pesticides; and
- Using building repair or maintenance products, such as caulk or roofing tar.

PRODUCT INVENTORY

The primary objective of the product inventory is to identify potential air sampling interference by characterizing the occurrence and use of chemicals and products throughout the building, keeping in mind the goal of the investigation and site-specific contaminants of concern. For example, it is not necessary to provide detailed information for each individual container of like items. However, it is necessary to indicate that "20 bottles of perfume" or "12 cans of latex paint" were present with containers in good condition. This information is used to help formulate an indoor environment profile.

An inventory should be provided for each room on the floor of the building being tested and on lower floors, if possible. This is important because even products stored in another area of a building can affect the air of the room being tested.

The presence and description of odors (e.g., solvent, moldy) and portable vapor monitoring equipment readings (e.g., PIDs, ppb RAE, Jerome Mercury Vapor Analyzer, etc.) should be noted and used to help evaluate potential sources. This includes taking readings near

products stored or used in the building. Products in buildings should be inventoried every time air is tested to provide an accurate assessment of the potential contribution of volatile chemicals. If available, chemical ingredients of interest (e.g., analyte list) should be recorded for each product. If the ingredients are not listed on the label, record the product's exact and full name, and the manufacturer's name, address and telephone number, if available. In some cases, Material Safety Data Sheets (MSDS) may be useful for identifying confounding sources of volatile chemicals in air. Adequately documented photographs of the products and their labeled ingredients can supplement the inventory and facilitate recording the information.

SAMPLE LOCATIONS

The following are types of samples that are collected to investigate the soil vapor intrusion pathway:

- Subsurface vapor samples:
  - *Soil vapor* samples (i.e., soil vapor samples not beneath the foundation or slab of a building) and
  - *Sub-slab vapor* samples (i.e., soil vapor samples immediately beneath the foundation or slab of a building);
- Indoor air samples; and
- Outdoor air samples.

The types of samples that should be collected depend upon the specific objective(s) of the sampling, as described below.

- Soil vapor
  Soil vapor samples are collected to determine whether this environmental medium is contaminated, characterize the nature and extent of contamination, and identify possible sources of the contamination. Soil vapor sampling results are used when evaluating the following:
  - The potential for *current* human exposures;

- The potential for *future* human exposures (e.g., should a building be constructed); and
- The effectiveness of measures implemented to remediate contaminated subsurface vapors.

- Sub-slab vapor

  Sub-slab vapor samples are collected to characterize the nature and extent of soil vapor contamination immediately beneath a building with a basement foundation and/or a slab-on-grade. Sub-slab vapor sampling results are used when evaluating the following:
  - *Current* human exposures;
  - The potential for *future* human exposures (e.g., if the structural integrity of the building changes or the use of the building changes); and
  - Site-specific attenuation factors (i.e., the ratio of indoor air to sub-slab vapor concentrations).

  Sub-slab vapor samples are collected after soil vapor characterization and/or other environmental sampling (e.g., soil and groundwater characterization) indicate a need. Subslab samples are typically collected concurrently with indoor and outdoor air samples. However, outside of the heating season, sub-slab vapor samples may be collected independently depending on the sampling objective (e.g., characterize the extent of subsurface vapor contamination outside of the heating season to develop a more comprehensive, focused investigation plan for the heating season).

- Indoor air

  Indoor air samples are collected to characterize exposures to air within a building, including those with earthen floors and crawlspaces. Indoor air sampling results are used when evaluating the following:
  - *Current* human exposures;
  - The potential for *future* exposures (e.g., if a currently vacant building should become occupied); and
  - Site-specific attenuation factors (e.g., the ratio of indoor air to sub-slab vapor concentrations).

Indoor air samples are collected after subsurface vapor characterization and other environmental sampling (e.g., soil and groundwater characterization) indicate a need. When indoor air samples are collected, concurrent sub-slab vapor and outdoor air samples are collected to evaluate the indoor air results appropriately. However, indoor air and outdoor air samples, without sub-slab vapor samples, may be collected when confirming the effectiveness of a mitigation system.

In addition, site-specific situations may warrant collecting indoor air samples prior to characterizing subsurface vapors and/or without concurrent sub-slab sampling due to a need to examine immediate inhalation hazards. Examples of such situations may include, but are not limited to, the following:

- In response to a spill event when there is a need to qualitatively and/or quantitatively characterize the contamination;
- If high readings are obtained in a building when screening with field equipment (e.g., a photoionization detector (PID), an organic vapor analyzer, or an explosimeter) and the source is unknown;
- If significant odors are present and the source needs to be characterized; or
- If groundwater beneath the building is contaminated, the building is prone to groundwater intrusion or flooding (e.g., sump pit overflows), and subsurface vapor sampling is not feasible.

- Outdoor air

  Outdoor air samples are collected to characterize site-specific background outdoor air conditions. These samples must be collected simultaneously with indoor air samples. They may also be collected concurrently with soil vapor samples. Outdoor air sampling results are primarily used when evaluating the extent to which outdoor sources may be influencing indoor air quality. They may also be used in the evaluation of soil vapor results (i.e., to identify potential outdoor air interferences associated with the infiltration of outdoor air into the sampling apparatus while the soil vapor sample was collected).

SOIL VAPOR SAMPLE COLLECTION

Soil vapor probe installations (see Figure 3 attached) may be permanent, semi-permanent or temporary. In general, permanent installations are preferred for data consistency reasons. Soil implants or probes should be constructed in the same manner at all sampling locations to minimize possible discrepancies. The following procedures should be included in any construction protocol:

- Soil vapor probes should be installed using direct push technology or, if necessary to attain the desired depth, using an auger;
- Porous backfill material (e.g., glass beads or coarse sand) should be used to create a sampling zone 1 to 2 feet in length;
- Soil vapor probes should be fitted with inert tubing (e.g., polyethylene, stainless steel, or Teflon®) of the appropriate size (typically 1/8 inch to 1/4 inch diameter) and of laboratory or food grade quality to the surface;
- Soil vapor probes should be sealed above the sampling zone with a bentonite slurry for a minimum distance of 3 feet to prevent outdoor air infiltration and the remainder of the borehole backfilled with clean material;
- For multiple probe depths, the borehole should be grouted with bentonite between probes to create discrete sampling zones; and
- For permanent installations, a protective casing should be set around the top of the probe tubing and grouted in place to the top of bentonite to minimize infiltration of water or outdoor air, as well as to prevent accidental damage.

Soil vapor samples should be collected in the same manner at all locations to minimize possible discrepancies. The following procedures should be included in any sampling protocol:

- At least 24 hours after the installation of permanent probes and shortly after the installation of temporary probes, one to three implant volumes (i.e., the volume of

the sample probe and tube) must be purged prior to collecting the samples to ensure samples collected are representative;

- Flow rates for both purging and collecting must not exceed 0.2 liters per minute to minimize outdoor air infiltration during sampling;

- Samples must be collected, using conventional sampling methods, in an appropriate container — one which meets the objectives of the sampling (e.g., investigation of areas where low or high concentrations of volatile chemicals are expected; to minimize losses of volatile chemicals that are susceptible to photodegradation), meets the requirements of the sampling and analytical methods (e.g., low flow rate; Summa® canisters if analyzing by using EPA Method TO-15), and is certified clean by the laboratory;

- Sample size depends upon the volume of sample required to achieve minimum reporting limit requirements; and

- A tracer gas (e.g., helium, butane, or sulfur hexafluoride) must be used when collecting soil vapor samples to verify that adequate sampling techniques are being implemented (i.e., to verify infiltration of outdoor air is not occurring) (discussed later in this procedure). Once verified, continued use of the tracer gas may be reconsidered.

When soil vapor samples are collected, the following actions should be taken to document local conditions during sampling that may influence interpretation of the results:

- If sampling near a commercial or industrial building, uses of volatile chemicals during normal operations of the facility should be identified;

- Outdoor plot sketches should be drawn that include the site, area streets, neighboring commercial or industrial facilities (with estimated distance to the site), outdoor ambient air sample locations (if applicable), and compass orientation (north);

- Weather conditions (e.g., precipitation, outdoor temperature, barometric pressure, wind speed and direction) should be noted for the past 24 to 48 hours; and

- Any pertinent observations should be recorded, such as odors and readings from field instrumentation.

The field sampling team must maintain a sample log sheet summarizing the following:

- Sample identification,
- Date and time of sample collection,
- Sampling depth,
- Identity of samplers,
- Sampling methods and devices,
- Purge volumes,
- Volume of soil vapor extracted,
- If canisters used, the vacuum before and after samples collected,
- Apparent moisture content (dry, moist, saturated, etc.) of the sampling zone, and
- Chain of custody protocols and records used to track samples from sampling point to analysis.

SUB-SLAB VAPOR SAMPLE COLLECTION

During colder months, heating systems should be operating to maintain normal indoor air temperatures (i.e., 65 – 75 °F) for at least 24 hours prior to and during the scheduled sampling time. Prior to installation of the sub-slab vapor probe, the building floor should be inspected and any penetrations (cracks, floor drains, utility perforations, sumps, etc.) should be noted and recorded. Probes should be installed at locations where the potential for ambient air infiltration via floor penetrations is minimal.

Sub-slab vapor probe installations (see Figure 4 attached) may be permanent, semi-permanent or temporary. Sub-slab implants or probes should be constructed in the same manner at all sampling locations to minimize possible discrepancies. The following procedures should be included in any construction protocol:

- Permanent recessed probes must be constructed with brass or stainless steel tubing and fittings;
- Temporary probes must be constructed with polyethylene or Teflon® tubing of laboratory or food grade quality;
- Tubing should not extend further than 2 inches into the sub-slab material;
- Coarse sand or glass beads should be added to cover about 1 inch of the probe tip for permanent installations; and
- The soil vapor probe should be sealed to the surface with permagum grout, melted beeswax, putty or other non-VOC-containing and non-shrinking products for temporary installations or cement for permanent installations.

Sub-slab vapor samples should be collected in the following manner:

- After installation of the probes, one to three volumes (i.e., the volume of the sample probe and tube) must be purged prior to collecting the samples to ensure samples collected are representative;
- Flow rates for both purging and collecting must not exceed 0.2 liters per minute to minimize outdoor air infiltration during sampling; and
- Samples must be collected, using conventional sampling methods, in an appropriate container — one which meets the objectives of the sampling (e.g., investigation of areas where low or high concentrations of volatile chemicals are expected; to minimize losses of volatile chemicals that are susceptible to photodegradation), meets the requirements of the sampling and analytical methods (e.g., low flow rate; Summa® canisters if analyzing by using EPA Method TO-15), and is certified clean by the laboratory;
- Sample size depends upon the volume of sample required to achieve minimum reporting limit requirements [Section 2.9 of the Guidance], the flow rate, and the sampling duration; and
- Ideally, samples should be collected over the same period of time as concurrent indoor and outdoor air samples.

When sub-slab vapor samples are collected, the following actions should be taken to document conditions during sampling and ultimately to aid in the interpretation of the sampling results:

- If sampling within a commercial or industrial building, uses of volatile chemicals in commercial or industrial processes and/or during building maintenance, should be identified;
- The use of heating or air conditioning systems during sampling should be noted;
- Floor plan sketches should be drawn that include the floor layout with sample locations, chemical storage areas, garages, doorways, stairways, location of basement sumps or subsurface drains and utility perforations through building foundations, HVAC system air supply and return registers, compass orientation (north), and any other pertinent information should be completed;
- If possible, photographs should accompany floor plan sketches;
- Outdoor plot sketches should be drawn that include the building site, area streets, outdoor air sample locations (if applicable), compass orientation (north), footings that create separate foundation sections, and paved areas;
- Weather conditions (e.g., precipitation, indoor and outdoor temperature, and barometric pressure) and ventilation conditions (e.g., heating system active and windows closed) should be reported;
- Smoke tubes or other devices should be used to confirm pressure relationships and air flow patterns, especially between floor levels and between suspected contaminant sources and other areas; and
- Any pertinent observations, such as spills, floor stains, smoke tube results, odors and readings from field instrumentation (e.g., vapors via PID, ppb RAE, Jerome Mercury Vapor Analyzer, etc.), should be recorded.

The field sampling team must maintain a sample log sheet summarizing the following:

- Sample identification,
- Date and time of sample collection,
- Sampling depth,
- Identity of samplers,
- Sampling methods and devices,
- Soil vapor purge volumes,
- Volume of soil vapor extracted,
- If canisters used, the vacuum before and after samples collected,
- Apparent moisture content (dry, moist, saturated, etc.) of the sampling zone, and

- Chain of custody protocols and records used to track samples from sampling point to analysis.

The following describes the subslab air sampling procedure:

1. Canisters will be supplied by the laboratory that will be conducting the analysis.

2. Sampling will take place in accordance with the project work plan sufficiently spaced to allow locations to be modified, if necessary.

3. The number of Summa canisters required as well as the flow rate of the constant differential low volume flow controllers will be supplied by the laboratory in accordance with the project work plan.

4. The sampling program will consist of concurrently collecting and analyzing one sub-slab vapor sample and one indoor ambient air sample (discussed in the next section). Sample locations should be selected based on the likelihood for potential continuous human occupancy during the workday (i.e., due to the size of the areas and available infrastructure), and to account for the possibility of varying foundation depths in different areas of the building. In addition, sample locations typically are based upon the results of a subsurface investigation (i.e., soil gas survey or boring advancement) conducted prior to air sample collection activities. Canisters are typically placed in areas where the highest concentrations of soil gas were observed. Indoor air sample locations preferably should be selected near the middle of the sampled room, well away from the edges where dilution is more likely to occur.

5. Collect at least one outdoor ambient air sample from a location on the building roof or designated background area of the site positioned away from building ventilation system equipment on the highest portion of the building roof or site. See the Outdoor Ambient Air Sampling Procedure section in this procedure.

6. Field personnel should assure conservative sampling conditions prior to and throughout the sampling event. The building should be closed (windows and doors shut) and existing building ventilation systems should be turned off 12

to 24 hours before the air sampling is scheduled to begin as well as during sample collection. Any air-handling units that may induce large pressure gradients (i.e., exhaust fans, HVAC units etc.) should also be turned off.

7. Any activity being conducted by current building tenants involving volatile organic compounds, such as the use of lacquer thinner and cleaning solvents, prior to and/or during air sampling activities should be noted in the Project Field Book. These activities have the potential to bias the analytical results.

8. At each location, drill an approximately ¾-inch diameter hole through the concrete slab (typically 6-8 inches thick) using a hand-held hammer drill.

9. Measure and record the concrete thickness in the Project Field Book.

10. Insert polyethylene or Teflon® tubing of laboratory or food grade quality into the drilled hole and no further than 2 inches into the subslab material.

11. Seal the tubing with an appropriately sized volatile organic compound-free stopper (i.e., permagum grout, melted beeswax, putty, or other non-VOC-containing and non-shrinking product) into the concrete core hole and secure in-place making sure the fit is very snug. Supplement any visible gaps between the stopper and concrete slab with a VOC-free sealant, such as beeswax or bentonite slurry.

12. Run the tubing assembly through a shroud (plastic pail, cardboard box, or garbage bag) creating a tight seal with the surface making sure not to disturb the seal around the tubing penetration.

13. Enrich the atmosphere of the shroud with helium. Measure and record the helium concentration within the shroud.

14. Purge approximately 1 to 3 tubing volumes (i.e., the volume of the sample probe and tube) using a hand pump (or similar approved device) to ensure the collection of a representative sample.

15. Flow rates for both purging and sample collection must not exceed 0.2 liters per minute to minimize outdoor air infiltration during sampling.

16. Use a portable monitoring device to analyze a sample of soil vapor for the tracer **prior to and after** sampling for the compounds of concern. Note that the tracer gas samples can be collected via syringe, Tedlar bag etc. They need not be collected in Summa® canisters or minicans.

17. If concentrations greater than 10% of tracer gas are observed either prior to and/or after sampling, the probe seal should be enhanced to reduce the infiltration of outdoor air. Following enhancement of the seal, repeat steps 14 through 17 above until purged concentrations are less than 10% of the tracer gas within the shroud.

18. Following tubing purge and adequate seal integrity testing via helium tracer gas, immediately attach a 6-liter Summa Canister fitted with a 24-hour regulator (or approved other duration) to the opposite end of the tubing. Concurrent with each subslab sample location, prepare an indoor ambient air sample by staging a second Summa Canister on a ladder (approximately 2 to 5-feet above the floor) adjacent to the sub-slab sample location.

19. All Summa Canister valves should remain closed until all subslab borings are complete and all of the canisters in their respective positions.

20. Open the valves to all of the canisters for the required collection period (i.e., 24-hours).

21. Following sample collection, close and cap each canister valve.

22. Collect all Summa Canisters and ship, under chain-of-custody command to an approved analytical laboratory for VOC analysis in accordance with USEPA Method TO-14 or TO-15.

23. Repair all concrete openings with a cement patch.

24. Analytical results submitted by the laboratory should be reported as concentrations of each VOC at each location, typically in parts per billion by volume (ppbv).

INDOOR AIR SAMPLE COLLECTION

During colder months, heating systems should be operating to maintain normal indoor air temperatures (i.e., 65 – 75 °F) for at least 24 hours prior to and during the scheduled sampling time. If possible, prior to collecting indoor samples, a pre-sampling inspection, discussed earlier in this procedure, should be performed to evaluate the physical layout and conditions of the building being investigated, to identify conditions that may affect or interfere with the proposed sampling, and to prepare the building for sampling.

In general, indoor air samples should be collected in the following manner:

- Sampling duration should reflect the exposure scenario being evaluated without compromising the detection limit or sample collection flow rate (e.g., an 8 hour sample from a workplace with a single shift versus a 24 hour sample from a workplace with multiple shifts). To ensure that air is representative of the locations sampled and to avoid undue influence from sampling personnel, samples should be collected for at least 1 hour. If the goal of the sampling is to represent average concentrations over longer periods, then longer duration sampling periods may be appropriate. Typically, 24 hour samples are collected from residential settings;

- Personnel should avoid lingering in the immediate area of the sampling device while samples are being collected;

- Sample flow rates must conform to the specifications in the sample collection method and, if possible, should be consistent with the flow rates for concurrent outdoor air and sub-slab samples; and

- Samples must be collected, using conventional sampling methods, in an appropriate container — one which meets the objectives of the sampling (e.g.,

investigation of areas where low or high concentrations of volatile chemicals are expected; to minimize losses of volatile chemicals that are susceptible to photodegradation), meets the requirements of the sampling and analytical methods (e.g., low flow rate; Summa® canisters if analyzing by using EPA Method TO-15), and is certified clean by the laboratory.

At sites with tetrachloroethene contamination, passive air monitors that are specifically analyzed for tetrachloroethene (i.e., "perc badges") are commonly used to collect indoor and outdoor air samples. If site characterization activities indicate that degradation products of tetrachloroethene also represent a vapor intrusion concern, perc badges may be used to indicate the likelihood of vapor intrusion (i.e., by using tetrachloroethene as a surrogate) followed, as needed, by more comprehensive sampling and laboratory analyses to quantify both tetrachloroethene and its degradation products. Perc badge samples ideally should be collected over a twenty-four hour period, but for no less than eight hours.

The following actions should be taken to document conditions during indoor air sampling and ultimately to aid in the interpretation of the sampling results:

- A product inventory survey must be completed (discussed earlier);
- The use of heating or air conditioning systems during sampling should be noted;
- Floor plan sketches should be drawn that include the floor layout with sample locations, chemical storage areas, garages, doorways, stairways, location of basement sumps or subsurface drains and utility perforations through building foundations, HVAC system supply and return registers, compass orientation (north), and any other pertinent information should be completed;
- If possible, photographs should accompany floor plan sketches;
- Outdoor plot sketches should be drawn that include the building site, area streets, outdoor air sample locations (if applicable), compass orientation (north), footings that create separate foundation sections, and paved areas;

- Weather conditions (e.g., precipitation, indoor and outdoor temperature, and barometric pressure) and ventilation conditions (e.g., heating system active and windows closed) should be reported;

- Smoke tubes or other devices should be used to confirm pressure relationships and air flow patterns, especially between floor levels and between suspected contaminant sources and other areas; and

- Any pertinent observations, such as spills, floor stains, smoke tube results, odors and readings from field instrumentation (e.g., vapors via PID, ppb RAE, Jerome Mercury Vapor Analyzer, etc.), should be recorded.

The field sampling team must maintain a sample log sheet summarizing the following:

- Sample identification,
- Date and time of sample collection,
- Sampling height,
- Identity of samplers,
- Sampling methods and devices,
- Depending upon the method, volume of air sampled,
- If canisters used, the vacuum before and after samples collected,
- Chain of custody protocols and records used to track samples from sampling point to analysis.

The following describes the indoor air sampling procedure:

1. Canisters will be supplied by the laboratory that will be conducting the analysis.

2. Sampling will take place in accordance with the project work plan sufficiently spaced to allow locations to be modified, if necessary.

3. The number of Summa canisters required as well as the flow rate of the constant differential low volume flow controllers will be supplied by the

laboratory in accordance with the project work plan. Indoor air sampling typically requires the continuous collection of samples over a 24-hour period.

4. The sampling program will consist of concurrently collecting and analyzing one sub-slab vapor sample and one indoor ambient air sample. Sample locations should be selected based on the likelihood for potential continuous human occupancy during the workday (i.e., due to the size of the areas and available infrastructure), and to account for the possibility of varying foundation depths in different areas of the building. In addition, sample locations typically are based upon the results of a subsurface investigation (i.e., soil gas survey or boring advancement) conducted prior to air sample collection activities. Canisters are typically placed in areas where the highest concentrations of soil gas were observed. Indoor air sample locations preferably should be selected near the middle of the sampled room, well away from the edges where dilution is more likely to occur.

5. Collect at least one outdoor ambient air sample from a location on the building roof or designated background area of the site positioned away from building ventilation system equipment on the highest portion of the building roof or site. See the Outdoor Ambient Air Sampling Procedure presented in this procedure.

6. Field personnel should assure conservative sampling conditions prior to and throughout the sampling event. The building should be closed (windows and doors shut) and existing building ventilation systems should be turned off 12 to 24 hours before the air sampling is scheduled to begin as well as during sample collection. Any air-handling units that may induce large pressure gradients (i.e., exhaust fans, HVAC units etc.) should also be turned off.

7. Any activity being conducted by current building tenants involving volatile organic compounds, such as the use of lacquer thinner and cleaning solvents, prior to and/or during air sampling activities should be noted in the Project Field Book. These activities have the potential to bias the analytical results.

8. Concurrent with each subslab sample location, prepare an indoor ambient air sample by staging a second Summa Canister on a ladder (approximately 2 to 5-feet above the floor) adjacent to the sub-slab sample location.

9. All Summa Canister valves should remain closed until all subslab borings are complete and all of the canisters in their respective positions.

10. Open the valves to all of the canisters for the required collection period (i.e., 24-hours).

11. Following sample collection, close and cap each canister valve.

12. Collect all Summa Canisters and ship, under chain-of-custody command to an approved analytical laboratory for VOC analysis in accordance with USEPA Method TO-14 or TO-15.

13. Analytical results submitted by the laboratory should be reported as concentrations of each VOC at each location, typically in parts per billion by volume (ppbv).

OUTDOOR AIR SAMPLE COLLECTION

Outdoor air samples must be collected simultaneously with indoor air samples and may be collected concurrently with subsurface vapor samples. Outdoor air samples must be collected in the same manner as indoor samples.

The following actions should be taken to document conditions during outdoor air sampling and ultimately to aid in the interpretation of the sampling results:

- Outdoor plot sketches should be drawn that include the building site, area streets, outdoor air sample locations (if applicable), the location of potential interferences (e.g., gasoline stations, factories, lawn movers, etc.), compass orientation (north), footings that create separate foundation sections, and paved areas;

- Weather conditions (e.g., precipitation, indoor and outdoor temperature, and barometric pressure) and ventilation conditions (e.g., heating system active and windows closed) should be reported; and

- Any pertinent observations, such as odors, readings from field instrumentation, and significant activities in the vicinity (e.g., operation of heavy equipment or dry cleaners) should be recorded.

The following describes the outdoor air sampling procedure:

1. Canisters will be supplied by the laboratory that will be conducting the analysis.

2. Sampling will take place in accordance with the project work plan sufficiently spaced to allow locations to be modified, if necessary.

3. The number of Summa canisters required as well as the flow rate of the constant differential low volume flow controllers will be supplied by the laboratory in accordance with the project work plan.

4. Sample locations typically are collected upwind of the facility.

5. Place canisters on the ground, with a clear plastic sheet beneath to prevent contamination. Locate the sampling inlet approximately 18-inches above the ground surface.

6. Sample collection should take place on warm, dry days. If rain or high humidity conditions develop during sampling, the sampling event should be suspended. Temperature, barometric pressure and wind speed should be monitored during the sampling event, for use in analysis of the results.

7. The combination of sampling location, height and meteorological conditions will assure that sampling will measure VOCs at their highest concentrations.

8. Air samples will be analyzed by Gas Chromatography/Mass Spectroscopy (GC/MS) in accordance with EPA Method TO-14 or TO-15.

9. Analytical results will be reported as concentrations of each VOC at each location during each sampling event, typically in parts per billion by volume (ppbv).

TRACER GAS

When collecting soil vapor samples as part of a vapor intrusion evaluation, a tracer gas serves as a quality assurance/quality control device to verify the integrity of the soil vapor probe seal. Without the use of a tracer, there is no way to verify that a soil vapor sample has not been diluted by surface air.

Depending on the nature of the contaminants of concern, a number of different compounds can be used as a tracer. Typically, sulfur hexafluoride (SF6) or helium are used as tracers because they are readily available, have low toxicity, and can be monitored with portable measurement devices. Butane and propane (or other gases) could also be used as a tracer in some situations. The protocol for using a tracer gas is straightforward: simply enrich the atmosphere in the immediate vicinity of the area where the probe intersects the ground surface with the tracer gas, and measure a vapor sample from the probe for the presence of high concentrations (> 10%) of the tracer. A cardboard box, a plastic pail, or even a garbage bag can serve to keep the tracer gas in contact with the probe during the testing.

There are two basic approaches to testing for the tracer gas:

- Include the tracer gas in the list of target analytes reported by the laboratory; or

- Use a portable monitoring device to analyze a sample of soil vapor for the tracer prior to and after sampling for the compounds of concern. (Note that the tracer gas samples can be collected via syringe, Tedlar bag etc. They need not be collected in Summa® canisters or minicans.)

The advantage of the second approach is that the real time tracer sampling results can be used to confirm the integrity of the probe seals prior to formal sample collection. Figure 5 (attached) depicts common methods for using tracer gas. In each of the examples, a, b and c, the tracer gas is released in the enclosure prior to initially purging the sample point. Care should be taken to avoid excessive purging prior to sample collection. Care should also be taken to prevent pressure build-up in the enclosure during introduction of the tracer gas. Inspection of the installed sample probe, specifically noting the integrity of the surface seal and the porosity of the soil in which the probe is installed, will help to determine the tracer gas setup. Figure 5(a) may be most effective at preventing tracer gas infiltration, however, it may not be required in some situations depending on site-specific conditions. Figures 5(b) and 5(c) may be sufficient for probes installed in tight soils with well-constructed surface seals. In all cases, the same tracer gas application should be used for all probes at any given site.

Because minor leakage around the probe seal should not materially affect the usability of the soil vapor sampling results, the mere presence of the tracer gas in the sample should not be a cause for alarm. Consequently, portable field monitoring devices with detection limits in the low ppm range are more than adequate for screening samples for the tracer. If high concentrations (> 10%) of tracer gas are observed in a sample, the probe seal should be enhanced to reduce the infiltration of ambient air.

During the initial stages of a soil vapor sampling program, tracer gas samples should be collected at each of the sampling probes. If the results of the initial samples indicate that the probe seals are adequate, the project manager can consider reducing the number of locations at which tracer gas samples are employed. At a minimum, at least 10% of the subsequent samples should be supported with tracer gas analyses. When using permanent soil vapor probes as part of a long-term monitoring program, annual testing of the probe integrity is recommended.

QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)

Extreme care should be taken during all aspects of sample collection to ensure that sampling error is minimized and high quality data are obtained. The sampling team members should avoid actions (e.g., fueling vehicles, using permanent marking pens, and wearing freshly dry-cleaned clothing or personal fragrances), which can cause sample interference in the field. Appropriate QA/QC protocols must be followed for sample collection and laboratory analysis, such as use of certified clean sample devices, meeting sample holding times and temperatures, sample accession, chain of custody, etc. Samples should be delivered to the analytical laboratory as soon as possible after collection. In addition, laboratory accession procedures must be followed including field documentation (sample collection information and locations), chain of custody, field blanks, field sample duplicates and laboratory duplicates, as appropriate.

Some methods require collecting samples in duplicate (e.g., indoor air sampling using passive sampling devices for tetrachloroethene) to assess errors. Duplicate and/or split samples should be collected in accordance with the requirements of the sampling and analytical methods being implemented.

For certain regulatory programs, a Data Usability Summary Report (DUSR) may be required to determine whether or not the data, as presented, meets the site or project specific criteria for data quality and data use. This requirement may dictate the level of QC and the category of data deliverable to request from the laboratory. Guidance on preparing a DUSR is available by contacting the NYSDEC's Division of Environmental Remediation.

New York State Public Health Law requires laboratories analyzing environmental samples collected from within New York State to have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix

combinations. If ELAP certification is not currently required for an analyte (e.g., trichloroethene), the analysis should be performed by a laboratory that has ELAP certification for similar compounds in air and uses analytical methods with detection limits similar to background (e.g., tetrachloroethene via EPA Method TO-15).

The work plan must state that all samples that will be used to make decisions on appropriate actions to address exposures and environmental contamination will be analyzed by an ELAP-certified laboratory. If known, the name of the laboratory should also be provided. Similarly, the name of the laboratory that was used must be included in the report of the sampling results. For samples collected and tested in the field for screening purposes by using field testing technology, the qualifications of the field technician must be documented in the work plan.

DECISION MATRICES (FIGURES 1 AND 2)

The considerations in assigning a chemical to a matrix include the following:

- Human health risks, including such factors as a chemical's ability to cause cancer, reproductive, developmental, liver, kidney, nervous system, immune system or other effects, in animals and humans and the doses that may cause those effects;
- The data gaps in its toxicologic database;
- Background concentrations of volatile chemicals in indoor air [Section 3.2.4]; and
- Analytical capabilities currently available.

To use the matrices accurately as a tool in the decision-making process, the following must be noted:

- The matrices are generic. As such, it may be necessary to modify recommended actions to accommodate building-specific conditions (e.g., dirt floor in basement,

crawl spaces, etc.) and/or site-specific conditions (e.g., proximity of building to identified subsurface contamination) for the protection of public health. Additionally, actions more conservative than those specified within the matrix may be implemented at any time. For example, the decision to implement more conservative actions may be based on a comparison of the costs associated with resampling or monitoring to the costs associated with installation and monitoring of a mitigation system.

- Indoor air concentrations detected in samples collected from the building's basement or, if the building has a slab-on-grade foundation, from the building's lowest occupied living space should be used.

- Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude the need to investigate possible sources of vapor contamination, nor does it preclude the need to remediate contaminated soil vapors or the source of soil vapor contamination.

- When current exposures are attributed to sources other than vapor intrusion, the agencies must be provided documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix and to support assessment and follow-up by the agencies.

RECOMMENDED ACTIONS

Actions recommended in the matrix are based on the relationship between sub-slab vapor concentrations and corresponding indoor air concentrations. They are intended to address both potential and current human exposures and include the following:

- *No further action*
  When the volatile chemical is not detected in the indoor air sample and the concentration detected in the corresponding sub-slab vapor sample is not expected to substantially affect indoor air quality.

- *Take reasonable and practical actions to identify source(s) and reduce exposures*
  The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile chemical-containing products in places where people do not spend much time, such as a garage or shed).

- *Monitor*
  Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure HVAC systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building specific basis, taking into account applicable environmental data and building operating conditions.

- *Mitigate*
  Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. Methods to mitigate exposures related to soil vapor intrusion are described in Section 4 of the Guidance.

TIME OF YEAR

Sub-slab vapor samples and, unless there is an immediate need for sampling, indoor air samples are typically collected during the heating season because soil vapor intrusion is more likely to occur when a building's heating system is in operation and air is being drawn into the building. In general, heating systems are expected to be operating routinely from November 15th to March 31st throughout the state. However, this timeframe may vary depending on factors, such as the location of the site (e.g., upstate versus downstate) and the weather conditions for a particular year.

A vapor intrusion investigation may also be conducted outside of the heating season. However, the results may not be used to rule out exposures. For example, results indicating "no further action" or "monitoring required" must be verified during the heating season to ensure these actions are protective during the heating season as well.

SAMPLING ROUNDS

Investigating a soil vapor intrusion pathway usually requires more than one round of subsurface vapor, indoor air and/or outdoor air sampling, for reasons such as the following:

- To characterize the nature and extent of subsurface vapor contamination (similar to the delineation of groundwater contamination) and to address corresponding exposure concerns;

- To evaluate fluctuations in concentrations due to
  - Different weather conditions (e.g., seasonal effects),
  - Changes in building conditions (e.g., various operating conditions of a building's HVAC system),
  - Changes in source strength, or
  - Vapor migration or contaminant biodegradation processes (particularly when degradation products may be more toxic than the parent compounds); or
- To confirm sampling results or the effectiveness of mitigation or remedial systems.

Overall, successive rounds of sampling are conducted until the following questions can be answered:

- Are subsurface vapors contaminated? If so, what are the nature and extent of contamination? What is/are the source(s) of the contamination?
- What are the current and potential exposures to contaminated subsurface vapors?
- What actions, if any, are needed to prevent or mitigate exposures and to remediate subsurface vapor contamination?

Toward this end, multiple rounds of sampling may be required to characterize the nature and extent of subsurface vapor contamination such that

- Both potential and current exposures are adequately addressed;
- Measures can be designed to remediate subsurface vapor contamination, either directly (e.g., SVE system) or indirectly (e.g., soil excavation or groundwater remediation), given that monitoring and mitigation are considered temporary measures implemented to address exposures related to vapor intrusion until contaminated environmental media are remediated; and
- The effectiveness of remedial measures can be monitored and confirmed (e.g., endpoint sampling).

ATTACHMENTS

Figure 1 *Soil Vapor/Indoor Air Matrix 1*
Figure 2 *Soil Vapor/Indoor Air Matrix 2*
Figure 3 *Schematics of a permanent soil vapor probe and permanent nested soil vapor probes*
Figure 4 *Schematic of a sub-slab vapor probe*
Figure 5 *Schematics of tracer gas applications*

Indoor Air Quality Questionnaire and Building Inventory

REFERENCES

New York State Department of Health, *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, February 2005.

New York State Department of Health, *Indoor Air Sampling & Analysis Guidance.* (February 1, 2005).

Office of Solid Waste and Emergency Response (OSWER). *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance).* November 2002.

United States Environmental Protection Agency. *EPA Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*. 1988

- Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS). Pp. 15-1 through 15-62.

- Method TO-17, Determination of Volatile Organic Compounds in Ambient Air using Active Sampling on Sorbent Tubes. Pp. 17-1 through 17-49.

- Compendium of Methods for the Determination of Air Pollutants in Indoor Air, EPA/600/4-90-010.

FIGURE 1

Soil Vapor/Indoor Air Matrix 1

October 2006

	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m³)			
SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m³)	< 0.25	0.25 to < 1	1 to < 5.0	5.0 and above
< 5	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
5 to < 50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
50 to < 250	9. MONITOR	10. MONITOR / MITIGATE	11. MITIGATE	12. MITIGATE
250 and above	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE

No further action:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take reasonable and practical actions to identify source(s) and reduce exposures:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR / MITIGATE:
Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

See additional notes on page 2.

MATRIX 1 Page 1 of 2

ADDITIONAL NOTES FOR MATRIX 1

This matrix summarizes the minimum actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate building-specific conditions (e.g., dirt floor in basement, crawl spaces, etc.) and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, resampling may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Additionally, actions more protective of public health than those specified within the matrix may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action is usually undertaken for reasons other than public health (e.g., seeking community acceptance, reducing excessive costs, etc.).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of vapor contamination, nor does it preclude remediating contaminated soil vapors or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 0.25 microgram per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples, a minimum reporting limit of 5 micrograms per cubic meter is recommended for buildings with full slab foundations, and 1 microgram per cubic meter for buildings with less than a full slab foundation.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion to occur is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions may be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including the identified source of the volatile chemicals, the environmental remediation program, and site-specific and building-specific conditions. For example, to the extent that all site data and site conditions demonstrate that soil vapor intrusion is not occurring and that the potential for soil vapor intrusion to occur is not likely, the soil vapor intrusion investigation would be considered complete. In general, if indoor exposures represent a concern due to indoor sources, then the State will provide guidance to the property owner and/or tenant on ways to reduce their exposure. If indoor exposures represent a concern due to outdoor sources, then the NYSDEC will decide who is responsible for further investigation and any necessary remediation. Depending upon the outdoor source, this responsibility may or may not fall upon the party conducting the soil vapor intrusion investigation.

MATRIX 1 Page 2 of 2

FIGURE 2

Soil Vapor/Indoor Air Matrix 2

October 2006

SUB-SLAB VAPOR CONCENTRATION of COMPOUND (mcg/m³)	INDOOR AIR CONCENTRATION of COMPOUND (mcg/m³)			
	< 3	3 to < 30	30 to < 100	100 and above
< 100	1. No further action	2. Take reasonable and practical actions to identify source(s) and reduce exposures	3. Take reasonable and practical actions to identify source(s) and reduce exposures	4. Take reasonable and practical actions to identify source(s) and reduce exposures
100 to < 1,000	5. MONITOR	6. MONITOR / MITIGATE	7. MITIGATE	8. MITIGATE
1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

No further action:
Given that the compound was not detected in the indoor air sample and that the concentration detected in the sub-slab vapor sample is not expected to significantly affect indoor air quality, no additional actions are needed to address human exposures.

Take reasonable and practical actions to identify source(s) and reduce exposures:
The concentration detected in the indoor air sample is likely due to indoor and/or outdoor sources rather than soil vapor intrusion given the concentration detected in the sub-slab vapor sample. Therefore, steps should be taken to identify potential source(s) and to reduce exposures accordingly (e.g., by keeping containers tightly capped or by storing volatile organic compound-containing products in places where people do not spend much time, such as a garage or outdoor shed). Resampling may be recommended to demonstrate the effectiveness of actions taken to reduce exposures.

MONITOR:
Monitoring, including sub-slab vapor, basement air, lowest occupied living space air, and outdoor air sampling, is needed to determine whether concentrations in the indoor air or sub-slab vapor have changed. Monitoring may also be needed to determine whether existing building conditions (e.g., positive pressure heating, ventilation and air-conditioning systems) are maintaining the desired mitigation endpoint and to determine whether changes are needed. The type and frequency of monitoring is determined on a site-specific and building-specific basis, taking into account applicable environmental data and building operating conditions. Monitoring is an interim measure required to evaluate exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MITIGATE:
Mitigation is needed to minimize current or potential exposures associated with soil vapor intrusion. The most common mitigation methods are sealing preferential pathways in conjunction with installing a sub-slab depressurization system, and changing the pressurization of the building in conjunction with monitoring. The type, or combination of types, of mitigation is determined on a building-specific basis, taking into account building construction and operating conditions. Mitigation is considered a temporary measure implemented to address exposures related to soil vapor intrusion until contaminated environmental media are remediated.

MONITOR / MITIGATE:
Monitoring or mitigation may be recommended after considering the magnitude of sub-slab vapor and indoor air concentrations along with building- and site-specific conditions.

See additional notes on page 2.

MATRIX 2 Page 1 of 2

ADDITIONAL NOTES FOR MATRIX 2

This matrix summarizes the minimum actions recommended to address current and potential exposures related to soil vapor intrusion. To use the matrix appropriately as a tool in the decision-making process, the following should be noted:

[1] The matrix is generic. As such, it may be appropriate to modify a recommended action to accommodate building-specific conditions (e.g., dirt floor in basement, crawl spaces, etc.) and/or factors provided in Section 3.2 of the guidance (e.g., current land use, environmental conditions, etc.). For example, resampling may be recommended when the matrix indicates "no further action" for a particular building, but the results of adjacent buildings (especially sub-slab vapor results) indicate a need to take actions to address exposures related to soil vapor intrusion. Additionally, actions more protective of public health than those specified within the matrix may be proposed at any time. For example, the party implementing the actions may decide to install sub-slab depressurization systems on buildings where the matrix indicates "no further action" or "monitoring." Such an action is usually undertaken for reasons other than public health (e.g., seeking community acceptance, reducing excessive costs, etc.).

[2] Actions provided in the matrix are specific to addressing human exposures. Implementation of these actions does not preclude investigating possible sources of vapor contamination, nor does it preclude remediating contaminated soil vapors or the source of soil vapor contamination.

[3] Appropriate care should be taken during all aspects of sample collection to ensure that high quality data are obtained. Since the data are being used in the decision-making process, the laboratory analyzing the environmental samples must have current Environmental Laboratory Approval Program (ELAP) certification for the appropriate analyte and environmental matrix combinations. Furthermore, samples should be analyzed by methods that can achieve a minimum reporting limit of 3 micrograms per cubic meter for indoor and outdoor air samples. For sub-slab vapor samples, a minimum reporting limit of 5 micrograms per cubic meter is recommended.

[4] Sub-slab vapor and indoor air samples are typically collected when the likelihood of soil vapor intrusion to occur is considered to be the greatest (i.e., worst-case conditions). If samples are collected at other times (typically, samples collected outside of the heating season), then resampling during worst-case conditions may be appropriate to verify that actions taken to address exposures related to soil vapor intrusion are protective of human health.

[5] When current exposures are attributed to sources other than soil vapor intrusion, the agencies should be given documentation (e.g., applicable environmental data, completed indoor air sampling questionnaire, digital photographs, etc.) to support a proposed action other than that provided in the matrix box and to support agency assessment and follow-up.

[6] The party responsible for implementing the recommended actions will differ depending upon several factors, including the identified source of the volatile chemicals, the environmental remediation program, and site-specific and building-specific conditions. For example, to the extent that all site data and site conditions demonstrate that soil vapor intrusion is not occurring and that the potential for soil vapor intrusion to occur is not likely, the soil vapor intrusion investigation would be considered complete. In general, if indoor exposures represent a concern due to indoor sources, then the State will provide guidance to the property owner and/or tenant on ways to reduce their exposure. If indoor exposures represent a concern due to outdoor sources, then the NYSDEC will decide who is responsible for further investigation and any necessary remediation. Depending upon the outdoor source, this responsibility may or may not fall upon the party conducting the soil vapor intrusion investigation.

MATRIX 2 Page 2 of 2

FIGURE 3

Schematics of a permanent soil vapor probe and permanent nested soil vapor probes

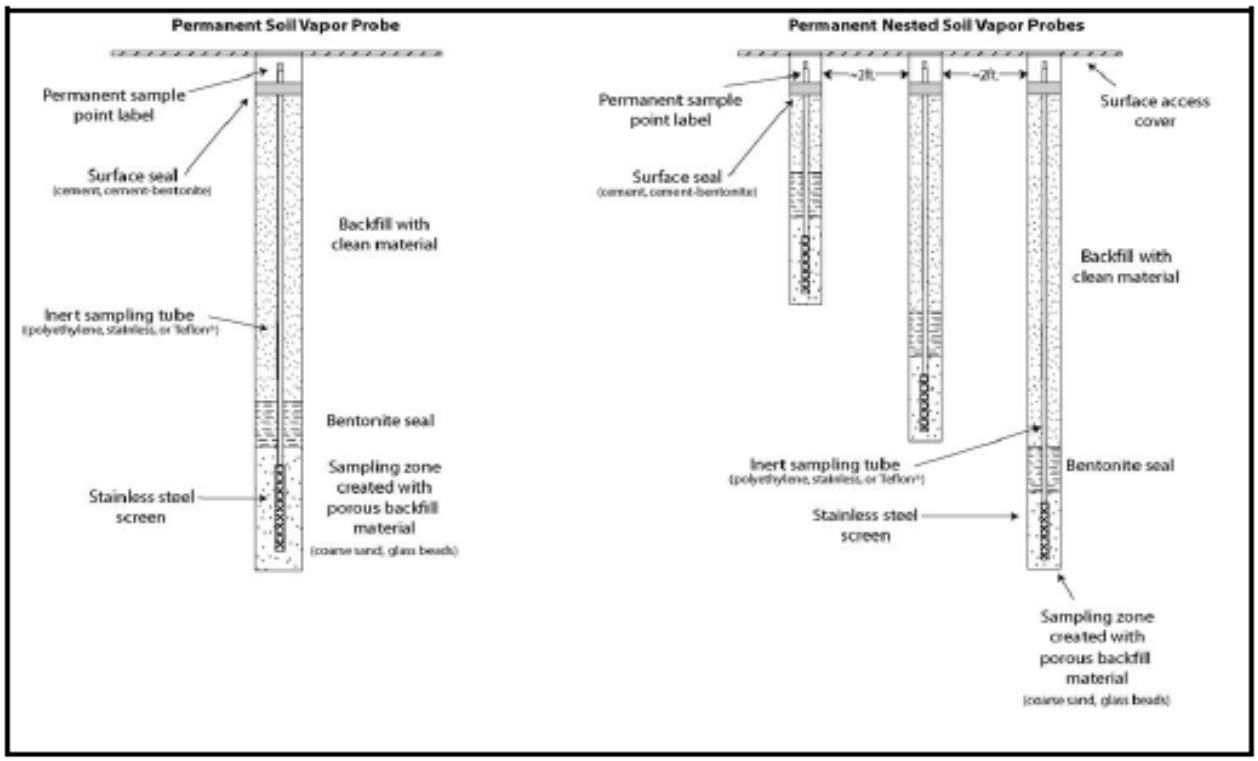


FIGURE 4

Schematic of a sub-slab vapor probe

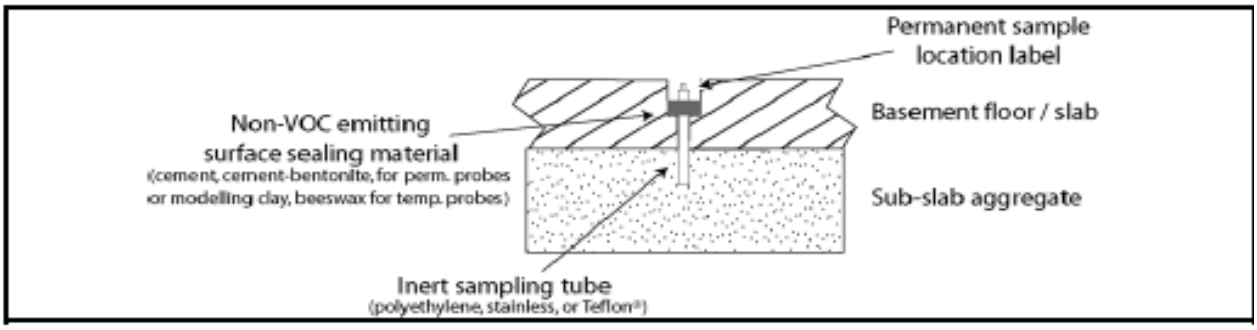
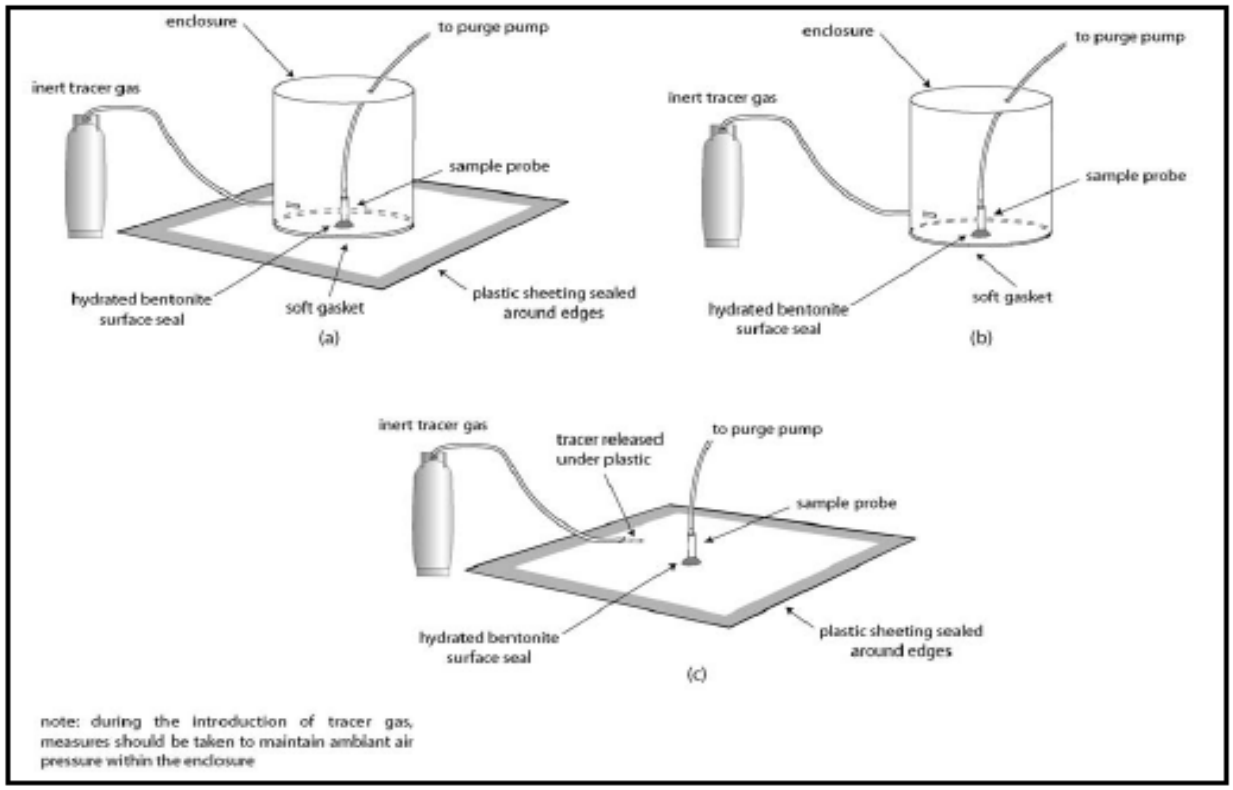


FIGURE 5

Schematics of tracer gas applications



AMBIENT AIR/SUBSLAB VAPOR SAMPLE COLLECTION PROCEDURE

INDOOR AIR QUALITY QUESTIONNAIRE & BUILDING INVENTORY

Project Name: Project No.
Project Location: Client:
Preparer's Name: Date/Time:
Preparer's Affiliation: Phone No:
Purpose of Investigation:

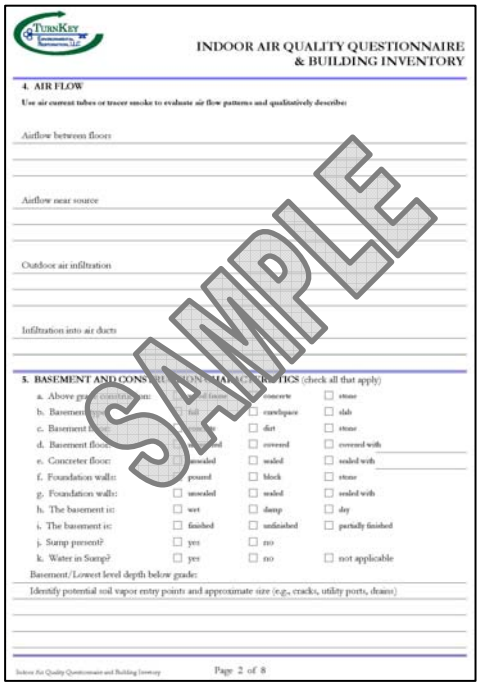
1. OCCUPANT:
Interviewed: yes no
Last Name: First Name:
Address:
County:
Home Phone: Office Ph
Number of Occupants/persons at this location: Age of Occupants:

2. OWNER OR LANDLORD: (check if same as Occupant)
Interviewed: yes no
Last Name:
Address:
County:
Home Phone:

3. BUILDING CHARACTERISTICS
Type of Building: (check appropriate response)
Residential Commercial/Multi-use
Industrial Other:
If the property is residential, type? (check appropriate response)
1-Family 2-Family 3-Family
Ranch Split Level Colonial
Cape Cod Contemporary Mobile Home
Duplex Apartment House Townhouse/Condo
Modular Log Home Other:
If multiple units, how many?
If the property is commercial, type?
Business Type(s):
Does it include residences (i.e., multi-use)? yes no If yes, how many?
Other Characteristics:
Number of floors Building age
Is the building insulated? yes no How air tight? tight average not tight

Indoor Air Quality Questionnaire and Building Inventory Page 1 of 8

SAMPLE



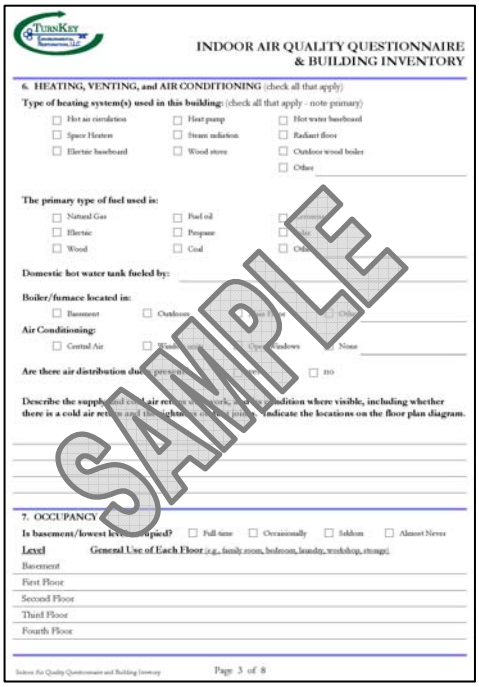
INDOOR AIR QUALITY QUESTIONNAIRE & BUILDING INVENTORY

4. AIR FLOW
Use air current tubes or tracer smoke to evaluate air flow patterns and qualitatively describe:
Airflow between floors
Airflow near source
Outdoor air infiltration
Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (check all that apply)
a. Above grade construction: wood concrete stone
b. Basement type: full crawlspace slab
c. Basement floor: concrete dirt stone
d. Basement floors: tiled covered covered with
e. Concrete floor: unsealed sealed sealed with
f. Foundation walls: poured block stone
g. Foundation walls: unsealed sealed sealed with
h. The basement is: wet damp dry
i. The basement is: finished unfinished partially finished
j. Sump present? yes no
k. Water in Sump? yes no not applicable
Basement/Lowest level depth below grade:
Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

Indoor Air Quality Questionnaire and Building Inventory Page 2 of 8

SAMPLE



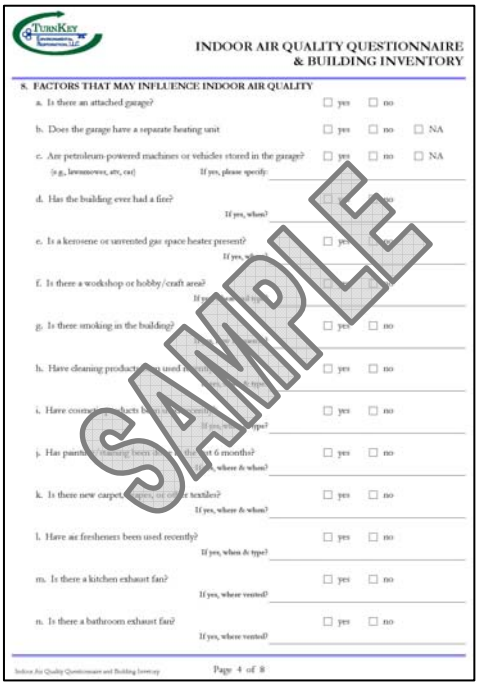
INDOOR AIR QUALITY QUESTIONNAIRE & BUILDING INVENTORY

6. HEATING, VENTING, and AIR CONDITIONING (check all that apply)
Type of heating system(s) used in this building: (check all that apply - note primary)
Hot air circulation Heat pump Hot water baseboard
Space Heaters Steam radiation Radiant floor
Electric baseboard Wood stove Outdoor wood boiler
Other
The primary type of fuel used is:
Natural Gas Fuel oil
Electric Propane
Wood Coal
Domestic hot water tank fueled by:
Boiler/furnace located in:
Basement Outdoors
Air Conditioning:
Central Air Open Windows None
Are there air distribution ducts present? no
Describe the supply and cold air return registers, work, and condition where visible, including whether there is a cold air return and the presence of vapor barriers. Indicate the locations on the floor plan diagram.

7. OCCUPANCY
Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never
Level General Use of Each Floor (e.g., family room, bedroom, laundry, workshop, storage)
Basement
First Floor
Second Floor
Third Floor
Fourth Floor

Indoor Air Quality Questionnaire and Building Inventory Page 3 of 8

SAMPLE

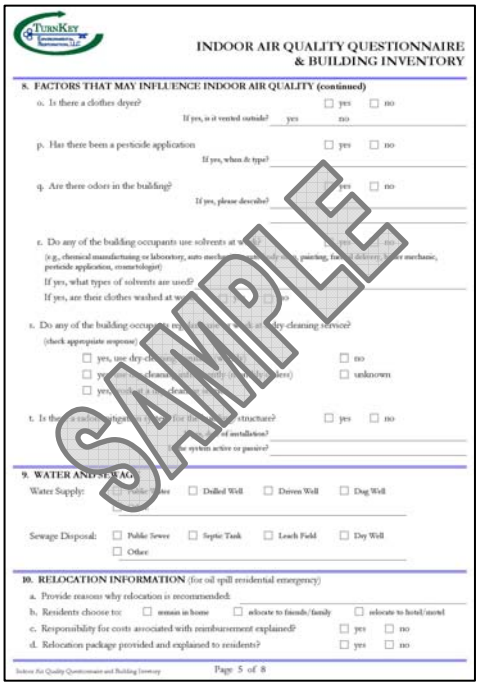


INDOOR AIR QUALITY QUESTIONNAIRE & BUILDING INVENTORY

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY
a. Is there an attached garage? yes no
b. Does the garage have a separate heating unit yes no NA
c. Are petroleum-powered machines or vehicles stored in the garage? yes no NA
(e.g., lawnmower, atv, car) If yes, please specify:
d. Has the building ever had a fire? yes no
If yes, when?
e. Is a kerosene or unvented gas space heater present? yes no
If yes, where?
f. Is there a workshop or hobby/craft area? yes no
If yes, type?
g. Is there smoking in the building? yes no
How frequently?
h. Have cleaning products been used recently? yes no
If yes, type?
i. Have cosmetic products been used recently? yes no
If yes, type?
j. Has painting/staining been done in the last 6 months? yes no
If yes, where & when?
k. Is there new carpet, drapes, or other textiles? yes no
If yes, where & when?
l. Have air fresheners been used recently? yes no
If yes, when & type?
m. Is there a kitchen exhaust fan? yes no
If yes, where vented?
n. Is there a bathroom exhaust fan? yes no
If yes, where vented?

Indoor Air Quality Questionnaire and Building Inventory Page 4 of 8

SAMPLE


INDOOR AIR QUALITY QUESTIONNAIRE
& BUILDING INVENTORY

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY (continued)

o. Is there a clothes dryer? ☐ yes ☐ no
If yes, is it vented outside? ☐ yes ☐ no

p. Has there been a pesticide application ☐ yes ☐ no
If yes, when & type?

q. Are there odors in the building? ☐ yes ☐ no
If yes, please describe?

r. Do any of the building occupants use solvents at w
(e.g., chemical manufacturing or laboratory, auto mech
pesticide application, cosmetologist)
If yes, what types of solvents are used?
If yes, are their clothes washed at w

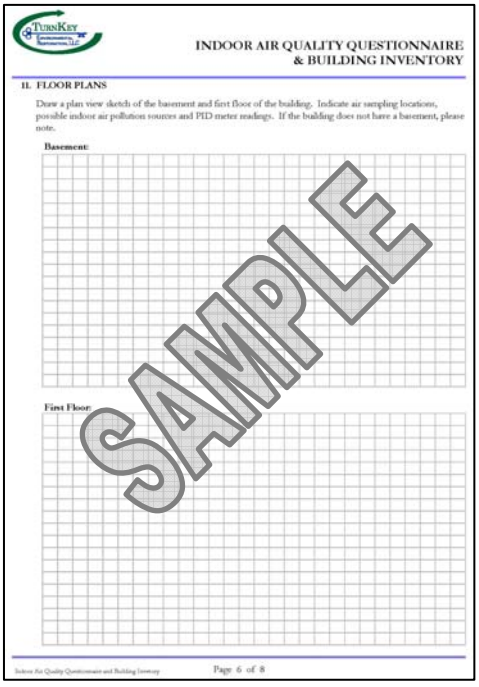
s. Do any of the building occupants re
(check appropriate response)
☐ yes, use dry-cl ☐ no
☐ y ☐ unknown
☐ ye

t. Is the
of installation?
the system active or passive?

9. WATER AND SEWAGE
Water Supply: ☐ Drilled Well ☐ Driven Well ☐ Dug Well
Sewage Disposal: ☐ Public Sewer ☐ Septic Tank ☐ Leach Field ☐ Dry Well
☐ Other

10. RELOCATION INFORMATION (for oil spill residential emergency)
a. Provide reasons why relocation is recommended:
b. Residents choose to: ☐ remain in home ☐ relocate to friends/family ☐ relocate to hotel/motel
c. Responsibility for costs associated with reimbursement explained? ☐ yes ☐ no
d. Relocation package provided and explained to residents? ☐ yes ☐ no

Indoor Air Quality Questionnaire and Building Inventory Page 5 of 8


INDOOR AIR QUALITY QUESTIONNAIRE
& BUILDING INVENTORY

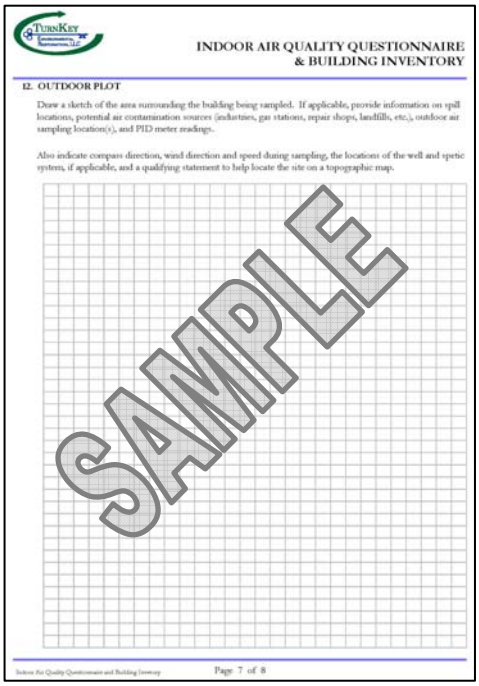
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:

First Floor:

Indoor Air Quality Questionnaire and Building Inventory Page 6 of 8

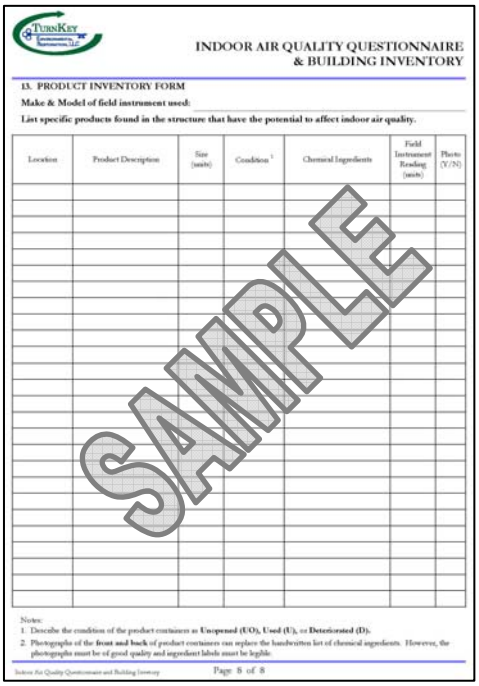

INDOOR AIR QUALITY QUESTIONNAIRE
& BUILDING INVENTORY

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s), and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and spetic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

Indoor Air Quality Questionnaire and Building Inventory Page 7 of 8


INDOOR AIR QUALITY QUESTIONNAIRE
& BUILDING INVENTORY

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used:

List specific products found in the structure that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition [1]	Chemical Ingredients	Field Instrument Reading (units)	Photo (Y/N)

Notes:
1. Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D).**
2. Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

Indoor Air Quality Questionnaire and Building Inventory Page 8 of 8

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Calibration & Maintenance of Portable Dissolved Oxygen Meter

FOP 007.0

CALIBRATION AND MAINTENANCE OF PORTABLE DISSOLVED OXYGEN METER

PURPOSE

This guideline describes a method for calibration of a portable dissolved oxygen meter. This meter measures the concentration of dissolved oxygen within a water sample. This parameter is of interest both as a general indicator of water quality, and because of its pertinence to fate and transport of organics and inorganics. This guideline presents a method for calibration of this meter, which is performed to verify instrument accuracy and function. All field instruments will be calibrated, verified and recalibrated at frequencies required by their respective operating manuals or manufacturer's specifications, but not less than once each day that the instrument is in use. Field personnel should have access to all operating manuals for the instruments used for the field measurements. This procedure also documents critical maintenance activities for this meter.

ACCURACY

The calibrated accuracy of the dissolved oxygen meter will be within ± 1% of full-scale over the temperature range of 23° to 113° F (-5° to +45° C).

PROCEDURE

1. Calibrate the dissolved oxygen meter to ambient air based on probe temperature and true local atmospheric pressure conditions (or feet above sea level). Because procedures vary with different brands and models of meters, refer to the manufacturer's recommended calibration procedures.

2. In the event of a failure to adequately calibrate, follow the corrective action directed by the manufacturer.
3. If calibration cannot be achieved or maintained, obtain a replacement instrument (rental instruments) and/or order necessary repairs/adjustment.

4. Document the calibration results and related information in the Project Field Book and on an **Equipment Calibration Log** (see attached sample). Information will include, at a minimum:
    - Time, date, and initials of the field team member performing the calibration
    - The unique identifier for the meter, including manufacturer, model, and serial number
    - The brand and expiration dates of calibration solutions
    - The calibration readings
    - The instrument settings (if applicable)
    - The approximate response time
    - The overall adequacy of calibration including the Pass or fail designation in accordance with the accuracy specifications presented above
    - Corrective action taken (see Step 5 above) in the event of failure to adequately calibrate

MAINTENANCE

- When not in use or between measurements, the dissolved oxygen probe will be kept immersed in or moist with deionized water.

- The meter batteries will be checked prior to each meter's use and will be replaced when the meter cannot be redline adjusted.

- The meter response time and stability will be tracked to determine the need for instrument maintenance. When response time becomes greater than two minutes, probe service is indicated.

ATTACHMENTS

Equipment Calibration Log (sample)

FOP 007.0

CALIBRATION AND MAINTENANCE OF PORTABLE DISSOLVED OXYGEN METER

EQUIPMENT CALIBRATION

PROJECT INFORMATION:

Project Name: Date:

Project No.:

Client: Instrument Source: ☐ TK ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	READING	SETTI
☐ pH meter	units		Myron L Company Ultra Meter 6P	606987		4.00		
						7.00		
						10.01		
☐ Turbidity meter	NTU		Hach 2100P Turbidimeter	970600014560		< 0.4		
						20		
						100		
						800		
☐ Sp. conductance meter	uS/mS		Myron L Company Ultra Meter 6P	606987		µS @ 25 °C		
☐ PID	ppm		Photovac 2020 PID			open air zero		MIBK re
						____ ppm Iso. Gas		factor =
☐ Particulate meter	mg/m^3					zero air		
☐ Oxygen	%					open air		
☐ Hydrogen sulfide	ppm					open air		
☐ Carbon monoxide	ppm					open air		
☐ LEL	%					open air		
☐ Radiation Meter	uR/h					background area		
☐								

ADDITIONAL REMARKS:

PREPARED BY: **DATE:**

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Calibration and Maintenance of Portable Field pH/Eh Meter

FOP 008.0

CALIBRATION AND MAINTENANCE OF PORTABLE FIELD pH/Eh METER

PURPOSE

This guideline describes a method for calibration of a portable pH/Eh meter. The pH/Eh meter measures the hydrogen ion concentration or acidity of a water sample (pH function), and the oxidation/reduction potential of a water sample (Eh function). Calibration is performed to verify instrument accuracy and function. All field instruments will be calibrated, verified and recalibrated at frequencies required by their respective operating manuals or manufacturer's specifications, but not less than once each day that the instrument is in use. Field personnel should have access to all operating manuals for the instruments used for the field measurements. This procedure also documents critical maintenance activities for this meter.

ACCURACY

The calibrated accuracy of the pH/Eh meter will be:

pH ± 0.2 pH unit, over the temperature range of ± 0.2 C.

Eh ± 0.2 millivolts (mV) over the range of ± 399.9 mV, otherwise ± 2 mV.

PROCEDURE

Note: Meters produced by different manufacturers may have different calibration procedures. These instructions will take precedence over the procedure provided herein. This procedure is intended to be used as a general guideline, or in the absence of available manufacturer's instructions.

1. Obtain and active the meter to be used. As stated above, initial calibrations will be performed at the beginning of each sampling day.

2. Immerse the sensing probe in a container of certified pH 7.0 buffer solution traceable to the National Bureau of Standards.

3. Measure the temperature of the buffer solution, and adjust the temperature setting accordingly.

4. Compare the meter reading to the known value of the buffer solution while stirring. If the reading obtained by the meter does not agree with the known value of the buffer solution, recalibrate the meter according to the manufacturer's instructions until the desired reading is obtained. This typically involves accessing and turning a dial or adjustment screw while measuring the pH of the buffer solution. The meter is adjusted until the output agrees with the known solution pH.

5. Repeat Steps 2 through 5 with a pH 4.0 and 10.0 buffer solution to provide a three-point calibration. Standards used to calibrate the pH meter will be of concentrations that bracket the expected values of the samples to be analyzed, especially for two-point calibrations (see note below).

Note: Some pH meters only allow two-point calibrations. Two-point calibrations should be within the suspected range of the groundwater to be analyzed. For example, if the groundwater pH is expected to be approximately 8, the two-point calibration should bracket that value. Buffer solutions of 7 and 10 should then be used for the two-point calibration.

6. Document the calibration results and related information in the Project Field Book and on an **Equipment Calibration Log** (see attached sample). Information will include, at a minimum:

    - Time, date, and initials of the field team member performing the calibration
    - The unique identifier for the meter, including manufacturer, model, and serial number
    - The brand and expiration dates of buffer solutions
    - The instrument readings
    - The instrument settings (if applicable)

- Pass or fail designation in accordance with the accuracy specifications presented above
- Corrective action taken (see Maintenance below) in the event of failure to adequately calibrate

MAINTENANCE

- When not in use, or between measurements, keep the pH/Eh probe immersed in or moist with buffer solutions.

- Check the meter batteries at the end of each day and recharge or replace as needed.

- Replace the pH/Eh probe any time that the meter response time becomes greater than two minutes or the meeting system consistently fails to retain its calibrated accuracy for a minimum of ten sample measurements.

- If a replacement of the pH/Eh probe fails to resolve instrument response time and stability problems, obtain a replacement instrument (rental instruments) and/or order necessary repairs/adjustment.

ATTACHMENTS

Equipment Calibration Log (sample)

FOP 008.0

CALIBRATION AND MAINTENANCE OF PORTABLE FIELD pH/Eh METER

EQUIPMENT CALIBRATION

PROJECT INFORMATION:

Project Name: Date:

Project No.:

Client: Instrument Source: ☐ TK ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	READING	SETTI
☐ pH meter	units		Myron L Company Ultra Meter 6P	606987		4.00		
						7.00		
						10.01		
☐ Turbidity meter	NTU		Hach 2100P Turbidimeter	970600014560		< 0.4		
						20		
						100		
						800		
☐ Sp. conductance meter	uS/mS		Myron L Company Ultra Meter 6P	606987		µS @ 25 °C		
☐ PID	ppm		Photovac 2020 PID			open air zero		MIBK re
						____ ppm Iso. Gas		factor =
☐ Particulate meter	mg/m^3					zero air		
☐ Oxygen	%					open air		
☐ Hydrogen sulfide	ppm					open air		
☐ Carbon monoxide	ppm					open air		
☐ LEL	%					open air		
☐ Radiation Meter	uR/h					background area		
☐								

ADDITIONAL REMARKS:

PREPARED BY: **DATE:**

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Calibration and Maintenance of Portable Field Turbidity Meter

FOP 009.0

CALIBRATION AND MAINTENANCE OF PORTABLE FIELD TURBIDITY METER

PURPOSE

This guideline describes the method for calibration of the HACH 2100P portable field turbidity meter. Turbidity is one water quality parameter measured during purging and development of wells. Turbidity is measured as a function of the samples ability to transmit light, expressed as Nephelometric Turbidity Units (NTUs). The turbidity meter is factory calibrated and must be checked daily prior to using the meter in the field. Calibration is performed to verify instrument accuracy and function. This procedure also documents critical maintenance activities for this meter.

ACCURACY

Accuracy shall be ± 2% of reading below 499 NTU or ± 3% of reading above 500 NTU with resolution to 0.01 NTU in the lowest range. The range key provides for automatic or manual range selection for ranges of 0.00 to 9.99, 0.0 to 99.9 and 0 to 1000 NTU. Another key provides for selecting automatic signal averaging. Pressing the key shall toggle signal averaging on or off.

PROCEDURE

Calibration of the 2100P Turbidimeter is based on formazin, the primary standard for turbidity. The instrument's electronic and optical design provides long-term stability and minimizes the need for frequent calibration. The two-detector ratioing system compensates for most fluctuations in lamp output. **A formazin recalibration should be performed at least once every three months,** more often if experience indicates the need. During calibration, use a primary standard such as StablCal™ Stabilized Standards or formazin standards.

Note: Meters produced by different manufacturers may have different calibration check procedures. These manufacturers' instructions will take precedence over the procedure provided here. This procedure is intended to be used as a general guideline, or in the absence of available manufacturer's instructions.

Note: Because the turbidity meter measures light transmission, it is critical that the meter and standards be cared for as precision optical instruments. Scratches, dirt, dust, etc. can all temporarily or permanently affect the accuracy of meter readings.

Preparing StablCal Stabilized Standards in Sealed Vials

Sealed vials that have been sitting undisturbed for longer than a month must be shaken to break the condensed suspension into its original particle size. Start at *step 1* for these standards. If the standards are used on at least a weekly interval, start at *step 3*.

Note: These instructions do not apply to < 0.1 NTU StablCal Standards; < 0.1 NTU StablCal Standards should not be shaken or inverted.

1. Shake the standard vigorously for 2-3 minutes to re-suspend any particles.
2. Allow the standard to stand undisturbed for 5 minutes.
3. Gently invert the vial of StablCal 5 to 7 times.
4. Prepare the vial for measurement using traditional preparation techniques. This usually consists of oiling the vial (see *Section 2.3.2 on page 11 of the manual*)

and marking the vial to maintain the same orientation in the sample cell compartment (see *Section 2.3.3 on page 12 of the manual*). This step will eliminate any optical variations in the sample vial.

5. Let the vial stand for one minute. The standard is now ready for use in the calibration procedure.

Calibration Procedure

1. Turn the meter on.

2. Shake pre-mixed formazin primary standards in accordance with the above procedure.

3. Wipe the outside of the < 0.1 NTU standard and insert the sample cell in the cell compartment by aligning the orientation mark on the cell with the mark on the front of the cell compartment.

4. Close the lid and press **I/O**.

5. Press the **CAL** button. The **CAL** and **S0** icons will be displayed and the 0 will flash. The four-digit display will show the value of the **S0** standard for the previous calibration. If the blank value was forced to 0.0, the display will be blank. Press the right arrow key (→) to get a numerical display.

6. Press **READ**. The instrument will count from 60 to 0, read the blank and use it to calculate a correction factor for the 20 NTU standard measurement. If the dilution water is ≥ 0.5 NTU, E 1 will appear when the calibration is calculated (*see Section 3.6.2.3 on page 31 of the manual*). The display will automatically increment to the next standard. Remove the sample cell from the cell compartment

Note: The turbidity of the dilution water can be "forced" to zero by pressing → rather than reading the dilution water. The display will show "S0 NTU" and the ↑ key must be pressed to continue with the next standard.

7. Repeat steps 1 through 7 for the 20, 100 and 800 standards.

8. Following the 800 NTU standard calibration, the display will increment back to the **S0** display. Remove the sample cell from the cell compartment.

9. Press **CAL** to accept the calibration. The instrument will return to measurement mode automatically.

10. Document the calibration results and related information in the Project Field Book and on an **Equipment Calibration Log** (see attached sample). Information will include, at a minimum:
    - Time, date, and initials of the field team member performing the calibration
    - The unique identifier for the meter, including manufacturer, model, and serial number
    - The brand of calibration standards
    - The instrument readings
    - The instrument settings (if applicable)
    - Pass or fail designation in accordance with the accuracy specifications presented above
    - Corrective action taken (see Maintenance below) in the event of failure to adequately calibrate.

Note: Pressing CAL completes the calculation of the calibration coefficients. If calibration errors occurred during calibration, error messages will appear after CAL is pressed. If E 1 or E 2 appear, check the standard preparation and review the calibration; repeat the calibration if necessary. If "CAL?" appears, an error may have

occurred during calibration. If "CAL?" is flashing, the instrument is using the default calibration.

NOTES

- If the **I/O** key is pressed during calibration, the new calibration data is lost and the old calibration will be used for measurements. Once in calibration mode, only the **READ, I/O,** ↑ , and →keys function. Signal averaging and range mode must be selected before entering the calibration mode.

- If **E 1** or **E 2** are displayed, an error occurred during calibration. Check the standard preparation and review the calibration; repeat the calibration if necessary. Press **DIAG** to cancel the error message (**E 1** or **E 2)**. To continue without repeating the calibration, press **I/O** twice to restore the previous calibration. If "**CAL?"** is displayed, an error may have occurred during calibration. The previous calibration may not be restored. Either recalibrate or use the calibration as is.

- To review a calibration, press **CAL** and then ↑ to view the calibration standard values. As long as **READ** is never pressed and **CAL** is not flashing, the calibration will not be updated. Press **CAL** again to return to the measurement mode.

MAINTENANCE

- **Cleaning**: Keep the turbidimeter and accessories as clean as possible and store the instrument in the carrying case when not in use. Avoid prolonged exposure to sunlight and ultraviolet light. Wipe spills up promptly. Wash sample cells with non-abrasive laboratory detergent, rinse with distilled or demineralized water, and air dry. Avoid scratching the cells and wipe all moisture and fingerprints off the cells before inserting them into the instrument. Failure to do so can give inaccurate readings. See *Section 2.3.1 on page 11of the manual* for more information about sample cell care.

- **Battery Replacement**: AA alkaline cells typically last for about 300 tests with the signal-averaging mode off, about 180 tests if signal averaging is used. The "battery" icon flashes when battery replacement is needed. Refer to *Section 1.4.2 on page 5 of the manual* for battery installation instructions. If the batteries are changed within 30

seconds, the instrument retains the latest range and signal average selections. If it takes more than 30 seconds, the instrument uses the default settings. If, after changing batteries, the instrument will not turn off or on and the batteries are good, remove the batteries and reinstall them. If the instrument still won't function, contact Hach Service or the nearest authorized dealer.

- **Lamp Replacement**: The procedure in *Section 4.0 on page 49 of the manual* explains lamp installation and electrical connections. Use a small screwdriver to remove and install the lamp leads in the terminal block. The instrument requires calibration after lamp replacement.

ATTACHMENTS

Equipment Calibration Log (sample)

FOP 009.0

CALIBRATION AND MAINTENANCE OF PORTABLE FIELD TURBIDITY METER

EQUIPMENT CALIBRATION

PROJECT INFORMATION:

Project Name: Date:

Project No.:

Client: Instrument Source: ☐ TK ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	READING	SETTI
☐ pH meter	units		Myron L Company Ultra Meter 6P	606987		4.00		
						7.00		
						10.01		
☐ Turbidity meter	NTU		Hach 2100P Turbidimeter	970600014560		< 0.4		
						20		
						100		
						800		
☐ Sp. conductance meter	uS/mS		Myron L Company Ultra Meter 6P	606987		µS @ 25 °C		
☐ PID	ppm		Photovac 2020 PID			open air zero		MIBK re
						____ ppm Iso. Gas		factor =
☐ Particulate meter	mg/m^3					zero air		
☐ Oxygen	%					open air		
☐ Hydrogen sulfide	ppm					open air		
☐ Carbon monoxide	ppm					open air		
☐ LEL	%					open air		
☐ Radiation Meter	uR/h					background area		
☐								

ADDITIONAL REMARKS:

PREPARED BY: **DATE:**

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Calibration and Maintenance of Portable Photoionization Meter

FOP 011.0

CALIBRATION AND MAINTENANCE OF PORTABLE PHOTOIONIZATION DETECTOR

PURPOSE

This procedure describes a general method for the calibration and maintenance of a portable photoionization detector (PID). The PID detects and initially quantifies a reading of the volatile organic compound (VOC) concentration in air. The PID is used as a field-screening tool for initial evaluation of soil samples and for ambient air monitoring of compounds with ionization potentials (IP) less than the PID lamp electron voltage (eV) rating. The IP is the amount of energy required to move an electron to an infinite distance from the nucleus thus creating a positive ion plus an electron. It should be noted that all of the major components of air (i.e., carbon dioxide, methane, nitrogen, oxygen etc.) have IP's above 12 eV. As a result, they will not be ionized by the 9.5, 10.2, 10.6 or 11.7 eV lamps typically utilized in field PIDs. The response of the PID will then be the sum of the organic and inorganic compounds in air that are ionized by the appropriate lamp (i.e., 9.5, 10.2, 10.6 or 11.7 eV). Attached to this FOP is a table summarizing common organic compounds and their respective IPs.

Calibration is performed to verify instrument accuracy and function. All field instruments will be calibrated, verified and recalibrated at frequencies required by their respective operating manuals or manufacturer's specifications, but not less than once each day that the instrument is in use. Field personnel should have access to all operating manuals for the instruments used for the field measurements. This procedure also documents critical maintenance activities for this meter.

Note: The information included below is equipment manufacturer- and model-specific, however, accuracy, calibration, and maintenance procedures for this type of portable

equipment are typically similar. The information below pertains to the Photovac 2020 photoionization detector equipped with a 10.6 eV lamp. The actual equipment to be used in the field will be equivalent or similar. The previously mentioned attached table indicates the compounds that cannot be detected by a standard 10.6 eV lamp.

Note: The PID indicates total VOC concentration readings that are normalized to an isobutylene standard, so actual quantification of individual compounds is not provided. In addition, the PID response to compounds is highly variable, dependent on ionization potential of the compound, and the presence or absence of other compounds.

ACCURACY

The Photovac 2020 is temperature compensated so that a 20 ºC change in temperature corresponds to a change in reading of less than two percent full-scale at maximum sensitivity. The useful range of the instrument is from 0.5 – 2000 ppm isobutylene with an accuracy of ± 10% or ± 2 ppm. Response time is less than three seconds to 90 percent of full-scale. The operating temperature range is 0 to 40º C and the operating humidity range is 0 to 100 % relative humidity (non-condensing).

PROCEDURE

1. Calibrate all field test equipment at the beginning of each sampling day. Check and recalibrate the PID according to the manufacture's specifications.

2. Calibrate the PID meter using a compressed gas cylinder containing a 100-ppm isobutylene standard, a flow regulator, and a tubing assembly. In

addition, a compressed gas cylinder containing zero air ("clean" air) may be required if ambient air conditions do not permit calibration to "clean air".

3. Fill two Tedlar bags equipped with a one-way valve with zero-air (if applicable) and 100-ppm isobutylene gas.

4. Assemble the calibration equipment and actuate the PID in its calibration mode. Connect the PID probe to the zero air calibration bag (or calibrate to ambient air if conditions permit) and wait for a stable indication.

5. Change the response factor of the PID to the Methyl Isobutyl Ketone (MIBK) setting, which is a response factor of 1.0 for the Photovac 2020.

6. Connect the PID probe to the 100-ppm isobutylene standard calibration bag. Measure an initial reading of the isobutylene standard and wait for a stable indication.

7. Keep the PID probe connected to the 100-ppm isobutylene standard calibration bag, calibrate to 100-ppm with the isobutylene standard and wait for a stable indication.

8. Document the calibration results and related information in the Project Field Book and on an **Equipment Calibration Log** (see attached sample), indicating the meter readings before and after the instrument has been adjusted. This is important, not only for data validation, but also to establish maintenance schedules and component replacement. Information will include, at a minimum:
    - Time, date and initials of the field team member performing the calibration
    - The unique identifier for the meter, including manufacturer, model, and serial number
    - The brand and expiration date of the isobutylene gas
    - The instrument readings: before and after calibration
    - The instrument settings (if applicable)

- Pass or fail designation in accordance with the accuracy specifications presented above
- Corrective action taken (see Maintenance below) in the event of failure to adequately calibrate.

MAINTENANCE

- The probe and dust filter of the PID should be checked before and after every use for cleanliness. Should instrument response become unstable, recalibration should be performed. If this does not resolve the problem, access the photoionization bulb and clean with the manufacturer-supplied abrasive compound, then recalibrate.

- The PID battery must be recharged after each use. Store the PID in its carrying case when not in use. Additional maintenance details related to individual components of the PID are provided in the equipment manufacturer's instruction manual. If calibration or instrument performance is not in accordance with specifications, send the instrument to the equipment manufacturer for repair.

- Maintain a log for each monitoring instrument. Record all maintenance performed on the instrument on this log with date and name of the organization performing the maintenance.

ATTACHMENTS

Table 1; Summary of Ionization Potentials
Equipment Calibration Log (sample)

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
A		
2-Amino pyridine	8	
Acetaldehyde	10.21	
Acetamide	9.77	
Acetic acid	10.69	X
Acetic anhydride	10	
Acetone	9.69	
Acetonitrile	12.2	X
Acetophenone	9.27	
Acetyl bromide	10.55	
Acetyl chloride	11.02	X
Acetylene	11.41	X
Acrolein	10.1	
Acrylamide	9.5	
Acrylonitrile	10.91	X
Allyl alcohol	9.67	
Allyl chloride	9.9	
Ammonia	10.2	
Aniline	7.7	
Anisidine	7.44	
Anisole	8.22	
Arsine	9.89	
B		
1,3-Butadiene (butadiene)	9.07	
1-Bromo-2-chloroethane	10.63	X
1-Bromo-2-methylpropane	10.09	
1-Bromo-4-fluorobenzene	8.99	
1-Bromobutane	10.13	
1-Bromopentane	10.1	
1-Bromopropane	10.18	
1-Bromopropene	9.3	
1-Butanethiol	9.14	
1-Butene	9.58	
1-Butyne	10.18	
2,3-Butadione	9.23	
2-Bromo-2-methylpropane	9.89	
2-Bromobutane	9.98	
2-Bromopropane	10.08	

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
2-Bromothiophene	8.63	
2-Butanone (MEK)	9.54	
3-Bromopropene	9.7	
3-Butene nitrile	10.39	
Benzaldehyde	9.53	
Benzene	9.25	
Benzenethiol	8.33	
Benzonitrile	9.71	
Benzotrifluoride	9.68	
Biphenyl	8.27	
Boron oxide	13.5	X
Boron trifluoride	15.56	X
Bromine	10.54	
Bromobenzene	8.98	
Bromochloromethane	10.77	X
Bromoform	10.48	
Butane	10.63	X
Butyl mercaptan	9.15	
cis-2-Butene	9.13	
m-Bromotoluene	8.81	
n-Butyl acetate	10.01	
n-Butyl alcohol	10.04	
n-Butyl amine	8.71	
n-Butyl benzene	8.69	
n-Butyl formate	10.5	
n-Butyraldehyde	9.86	
n-Butyric acid	10.16	
n-Butyronitrile	11.67	X
o-Bromotoluene	8.79	
p-Bromotoluene	8.67	
p-tert-Butyltoluene	8.28	
s-Butyl amine	8.7	
s-Butyl benzene	8.68	
sec-Butyl acetate	9.91	
t-Butyl amine	8.64	
t-Butyl benzene	8.68	
trans-2-Butene	9.13	
C		

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
1-Chloro-2-methylpropane	10.66	X
1-Chloro-3-fluorobenzene	9.21	
1-Chlorobutane	10.67	X
1-Chloropropane	10.82	X
2-Chloro-2-methylpropane	10.61	X
2-Chlorobutane	10.65	X
2-Chloropropane	10.78	X
2-Chlorothiophene	8.68	
3-Chloropropene	10.04	
Camphor	8.76	
Carbon dioxide	13.79	X
Carbon disulfide	10.07	
Carbon monoxide	14.01	X
Carbon tetrachloride	11.47	X
Chlorine	11.48	X
Chlorine dioxide	10.36	
Chlorine trifluoride	12.65	X
Chloroacetaldehyde	10.61	X
α -Chloroacetophenone	9.44	
Chlorobenzene	9.07	
Chlorobromomethane	10.77	X
Chlorofluoromethane (Freon 22)	12.45	X
Chloroform	11.37	X
Chlorotrifluoromethane (Freon 13)	12.91	X
Chrysene	7.59	
Cresol	8.14	
Crotonaldehyde	9.73	
Cumene (isopropyl benzene)	8.75	
Cyanogen	13.8	X
Cyclohexane	9.8	
Cyclohexanol	9.75	
Cyclohexanone	9.14	
Cyclohexene	8.95	
Cyclo-octatetraene	7.99	
Cyclopentadiene	8.56	
Cyclopentane	10.53	
Cyclopentanone	9.26	
Cyclopentene	9.01	

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
Cyclopropane	10.06	
m-Chlorotoluene	8.83	
o-Chlorotoluene	8.83	
p-Chlorotoluene	8.7	
D		
1,1-Dibromoethane	10.19	
1,1-Dichloroethane	11.12	X
1,1-Dimethoxyethane	9.65	
1,1-Dimethylhydrazine	7.28	
1,2-Dibromoethene	9.45	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	12.2	X
1,2-Dichloroethane	11.12	X
1,2-Dichloropropane	10.87	X
1,3-Dibromopropane	10.07	
1,3-Dichloropropane	10.85	X
2,2-Dimethyl butane	10.06	
2,2-Dimethyl propane	10.35	
2,3-Dichloropropene	9.82	
2,3-Dimethyl butane	10.02	
3,3-Dimethyl butanone	9.17	
cis-Dichloroethene	9.65	
Decaborane	9.88	
Diazomethane	9	
Diborane	12	X
Dibromochloromethane	10.59	
Dibromodifluoromethane	11.07	X
Dibromomethane	10.49	
Dibutylamine	7.69	
Dichlorodifluoromethane (Freon 12)	12.31	X
Dichlorofluoromethane	12.39	X
Dichloromethane	11.35	X
Diethoxymethane	9.7	
Diethyl amine	8.01	
Diethyl ether	9.53	
Diethyl ketone	9.32	
Diethyl sulfide	8.43	
Diethyl sulfite	9.68	
Difluorodibromomethane	11.07	X

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
Dihydropyran	8.34	
Diiodomethane	9.34	
Diisopropylamine	7.73	
Dimethoxymethane (methylal)	10	
Dimethyl amine	8.24	
Dimethyl ether	10	
Dimethyl sulfide	8.69	
Dimethylaniline	7.13	
Dimethylformamide	9.18	
Dimethylphthalate	9.64	
Dinitrobenzene	10.71	X
Dioxane	9.19	
Diphenyl	7.95	
Dipropyl amine	7.84	
Dipropyl sulfide	8.3	
Durene	8.03	
m-Dichlorobenzene	9.12	
N,N-Diethyl acetamide	8.6	
N,N-Diethyl formamide	8.89	
N,N-Dimethyl acetamide	8.81	
N,N-Dimethyl formamide	9.12	
o-Dichlorobenzene	9.06	
p-Dichlorobenzene	8.95	
p-Dioxane	9.13	
trans-Dichloroethene	9.66	
E		
Epichlorohydrin	10.2	
Ethane	11.65	X
Ethanethiol (ethyl mercaptan)	9.29	
Ethanolamine	8.96	
Ethene	10.52	
Ethyl acetate	10.11	
Ethyl alcohol	10.48	
Ethyl amine	8.86	
Ethyl benzene	8.76	
Ethyl bromide	10.29	
Ethyl chloride (chloroethane)	10.98	X
Ethyl disulfide	8.27	

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
Ethyl ether	9.51	
Ethyl formate	10.61	X
Ethyl iodide	9.33	
Ethyl isothiocyanate	9.14	
Ethyl mercaptan	9.29	
Ethyl methyl sulfide	8.55	
Ethyl nitrate	11.22	X
Ethyl propionate	10	
Ethyl thiocyanate	9.89	
Ethylene chlorohydrin	10.52	
Ethylene diamine	8.6	
Ethylene dibromide	10.37	
Ethylene dichloride	11.05	X
Ethylene oxide	10.57	
Ethylenelmine	9.2	
Ethynylbenzene	8.82	
F		
2-Furaldehyde	9.21	
Fluorine	15.7	X
Fluorobenzene	9.2	
Formaldehyde	10.87	X
Formamide	10.25	
Formic acid	11.05	X
Freon 11 (trichlorofluoromethane)	11.77	X
Freon 112 (1,1,2,2-tetrachloro-1,2-difluoroethane)	11.3	X
Freon 113 (1,1,2-trichloro-1,2,2-trifluororethane)	11.78	X
Freon 114 (1,2-dichloro-1,1,2,2-tetrafluoroethane)	12.2	X
Freon 12 (dichlorodifluoromethane)	12.31	X
Freon 13 (chlorotrifluoromethane)	12.91	X
Freon 22 (chlorofluoromethane)	12.45	X
Furan	8.89	
Furfural	9.21	
m-Fluorotoluene	8.92	
o-Fluorophenol	8.66	
o-Fluorotoluene	8.92	
p-Fluorotoluene	8.79	
H		
1-Hexene	9.46	

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
2-Heptanone	9.33	
2-Hexanone	9.35	
Heptane	10.08	
Hexachloroethane	11.1	X
Hexane	10.18	
Hydrazine	8.1	
Hydrogen	15.43	X
Hydrogen bromide	11.62	X
Hydrogen chloride	12.74	X
Hydrogen cyanide	13.91	X
Hydrogen fluoride	15.77	X
Hydrogen iodide	10.38	
Hydrogen selenide	9.88	
Hydrogen sulfide	10.46	
Hydrogen telluride	9.14	
Hydroquinone	7.95	
I		
1-Iodo-2-methylpropane	9.18	
1-Iodobutane	9.21	
1-Iodopentane	9.19	
1-Iodopropane	9.26	
2-Iodobutane	9.09	
2-Iodopropane	9.17	
Iodine	9.28	
Iodobenzene	8.73	
Isobutane	10.57	
Isobutyl acetate	9.97	
Isobutyl alcohol	10.12	
Isobutyl amine	8.7	
Isobutyl formate	10.46	
Isobutyraldehyde	9.74	
Isobutyric acid	10.02	
Isopentane	10.32	
Isophorone	9.07	
Isoprene	8.85	
Isopropyl acetate	9.99	
Isopropyl alcohol	10.16	
Isopropyl amine	8.72	

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
Isopropyl benzene	8.69	
Isopropyl ether	9.2	
Isovaleraldehyde	9.71	
m-Iodotoluene	8.61	
o-Iodotoluene	8.62	
p-Iodotoluene	8.5	
K		
Ketene	9.61	
L		
2,3-Lutidine	8.85	
2,4-Lutidine	8.85	
2,6-Lutidine	8.85	
M		
2-Methyl furan	8.39	
2-Methyl napthalene	7.96	
1-Methyl napthalene	7.96	
2-Methyl propene	9.23	
2-Methyl-1-butene	9.12	
2-Methylpentane	10.12	
3-Methyl-1-butene	9.51	
3-Methyl-2-butene	8.67	
3-Methylpentane	10.08	
4-Methylcyclohexene	8.91	
Maleic anhydride	10.8	X
Mesityl oxide	9.08	
Mesitylene	8.4	
Methane	12.98	X
Methanethiol (methyl mercaptan)	9.44	
Methyl acetate	10.27	
Methyl acetylene	10.37	
Methyl acrylate	9.9	
Methyl alcohol	10.85	X
Methyl amine	8.97	
Methyl bromide	10.54	
Methyl butyl ketone	9.34	
Methyl butyrate	10.07	
Methyl cellosolve	9.6	
Methyl chloride	11.28	X

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
Methyl chloroform (1,1,1-trichloroethane)	11	X
Methyl disulfide	8.46	
Methyl ethyl ketone	9.53	
Methyl formate	10.82	X
Methyl iodide	9.54	
Methyl isobutyl ketone	9.3	
Methyl isobutyrate	9.98	
Methyl isocyanate	10.67	X
Methyl isopropyl ketone	9.32	
Methyl isothiocyanate	9.25	
Methyl mercaptan	9.44	
Methyl methacrylate	9.7	
Methyl propionate	10.15	
Methyl propyl ketone	9.39	
α -Methyl styrene	8.35	
Methyl thiocyanate	10.07	
Methylal (dimethoxymethane)	10	
Methylcyclohexane	9.85	
Methylene chloride	11.32	X
Methyl-n-amyl ketone	9.3	
Monomethyl aniline	7.32	
Monomethyl hydrazine	7.67	
Morpholine	8.2	
n-Methyl acetamide	8.9	
N		
1-Nitropropane	10.88	X
2-Nitropropane	10.71	X
Naphthalene	8.12	
Nickel carbonyl	8.27	
Nitric oxide, (NO)	9.25	
Nitrobenzene	9.92	
Nitroethane	10.88	X
Nitrogen	15.58	X
Nitrogen dioxide	9.78	
Nitrogen trifluoride	12.97	X
Nitromethane	11.08	X
Nitrotoluene	9.45	
p-Nitrochloro benzene	9.96	

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
O		
Octane	9.82	
Oxygen	12.08	X
Ozone	12.08	X
P		
1-Pentene	9.5	
1-Propanethiol	9.2	
2,4-Pentanedione	8.87	
2-Pentanone	9.38	
2-Picoline	9.02	
3-Picoline	9.02	
4-Picoline	9.04	
n-Propyl nitrate	11.07	X
Pentaborane	10.4	
Pentane	10.35	
Perchloroethylene	9.32	
Pheneloic	8.18	
Phenol	8.5	
Phenyl ether (diphenyl oxide)	8.82	
Phenyl hydrazine	7.64	
Phenyl isocyanate	8.77	
Phenyl isothiocyanate	8.52	
Phenylene diamine	6.89	
Phosgene	11.77	X
Phosphine	9.87	
Phosphorus trichloride	9.91	
Phthalic anhydride	10	
Propane	11.07	X
Propargyl alcohol	10.51	
Propiolactone	9.7	
Propionaldehyde	9.98	
Propionic acid	10.24	
Propionitrile	11.84	X
Propyl acetate	10.04	
Propyl alcohol	10.2	
Propyl amine	8.78	
Propyl benzene	8.72	
Propyl ether	9.27	

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
Propyl formate	10.54	
Propylene	9.73	
Propylene dichloride	10.87	X
Propylene imine	9	
Propylene oxide	10.22	
Propyne	10.36	
Pyridine	9.32	
Pyrrole	8.2	
Q		
Quinone	10.04	
S		
Stibine	9.51	
Styrene	8.47	
Sulfur dioxide	12.3	X
Sulfur hexafluoride	15.33	X
Sulfur monochloride	9.66	
Sulfuryl fluoride	13	X
T		
o-Terphenyls	7.78	
1,1,2,2-Tetrachloro-1,2-difluoroethane (Freon 112)	11.3	X
1,1,1-Trichloroethane	11	X
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	11.78	X
2,2,4-Trimethyl pentane	9.86	
o-Toluidine	7.44	
Tetrachloroethane	11.62	X
Tetrachloroethene	9.32	
Tetrachloromethane	11.47	X
Tetrahydrofuran	9.54	
Tetrahydropyran	9.25	
Thiolacetic acid	10	
Thiophene	8.86	
Toluene	8.82	
Tribromoethene	9.27	
Tribromofluoromethane	10.67	X
Tribromomethane	10.51	
Trichloroethene	9.45	
Trichloroethylene	9.47	
Trichlorofluoromethane (Freon 11)	11.77	X

TABLE 1

SUMMARY OF IONIZATION POTENTIALS

Chemical Name	Ionization Potential (eV)	Cannot be Read by 10.6 eV PID
Trichloromethane	11.42	X
Triethylamine	7.5	
Trifluoromonobromo-methane	11.4	X
Trimethyl amine	7.82	
Tripropyl amine	7.23	
V		
o-Vinyl toluene	8.2	
Valeraldehyde	9.82	
Valeric acid	10.12	
Vinyl acetate	9.19	
Vinyl bromide	9.8	
Vinyl chloride	10	
Vinyl methyl ether	8.93	
W		
Water	12.59	X
X		
2,4-Xylidine	7.65	
m-Xylene	8.56	
o-Xylene	8.56	
p-Xylene	8.45	

FOP 011.0

CALIBRATION AND MAINTENANCE OF PORTABLE PHOTOIONIZATION DETECTOR

EQUIPMENT CALIBRATION

PROJECT INFORMATION:

Project Name: Date:

Project No.:

Client: Instrument Source: ☐ TK ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	READING	SETTI
☐ pH meter	units		Myron L Company Ultra Meter 6P	606987		4.00		
						7.00		
						10.01		
☐ Turbidity meter	NTU		Hach 2100P Turbidimeter	970600014560		< 0.4		
						20		
						100		
						800		
☐ Sp. conductance meter	uS/mS		Myron L Company Ultra Meter 6P	606987		µS @ 25 °C		
☐ PID	ppm		Photovac 2020 PID			open air zero		MIBK re
						____ ppm Iso. Gas		factor =
☐ Particulate meter	mg/m^3					zero air		
☐ Oxygen	%					open air		
☐ Hydrogen sulfide	ppm					open air		
☐ Carbon monoxide	ppm					open air		
☐ LEL	%					open air		
☐ Radiation Meter	uR/h					background area		
☐								

ADDITIONAL REMARKS:

PREPARED BY: **DATE:**

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Calibration and Maintenance of Portable Specific Conductance Meter

FOP 012.0

CALIBRATION AND MAINTENANCE OF PORTABLE SPECIFIC CONDUCTANCE METER

PURPOSE

This guideline describes a method for calibration of a portable specific conductance meter. This meter measures the ability of a water sample to conduct electricity, which is largely a function of the dissolved solids within the water. The instrument has been calibrated by the manufacturer according to factory specifications. This guideline presents a method for checking the factory calibration of a portable specific conductance meter. A calibration check is performed to verify instrument accuracy and function. All field test equipment will be checked at the beginning of each sampling day. This procedure also documents critical maintenance activities for this meter.

ACCURACY

The calibrated accuracy of the specific conductance meter will be within ± 1 percent of full-scale, with repeatability of ± 1 percent. The built-in cell will be automatically temperature compensated from at least 32° to 160° F (0° to 71°C).

PROCEDURE

Note: The information included below is equipment manufacturer- and model-specific, however, accuracy, calibration, and maintenance procedures for this type of portable equipment are typically similar. The information below pertains to the Myron L Company Ultrameter Model 6P. The actual equipment to be used in the field will be equivalent or similar.

CALIBRATION AND MAINTENANCE OF PORTABLE SPECIFIC CONDUCTANCE METER

1. Calibrate all field test equipment at the beginning of each sampling day. Check and recalibrate the specific conductance meter according to the manufacture's specifications.

2. Use a calibration solution of known specific conductivity and salinity. For maximum accuracy, use a Standard Solution Value closest to the samples to be tested.

3. Rinse conductivity cell three times with proper standard.

4. Re-fill conductivity cell with same standard.

5. Press **COND** or **TDS**, then press **CAL/MCLR**. The "CAL" icon will appear on the display.

6. Press the **↑/MS** or **MR/↓** key to step the displayed value toward the standard's value or hold a key down to cause rapid scrolling of the reading.

7. Press CAL/MCLR once to confirm new value and end the calibration sequence for this particular solution type.

8. Repeat steps 1 through 7 with additional new solutions, as necessary.

9. Document the calibration results and related information in the Project Field Book and on an **Equipment Calibration Log** (see attached sample), indicating the meter readings before and after the instrument has been adjusted. This is important, not only for data validation, but also to establish maintenance schedules and component replacement. Information will include, at a minimum:
    - Time, date and initials of the field team member performing the calibration
    - The unique identifier for the meter, including manufacturer, model, and serial number
    - The brand and expiration date of the calibration standards
    - The instrument readings: before and after calibration

- The instrument settings (if applicable)
- The overall adequacy of calibration including the Pass or fail designation in accordance with the accuracy specifications presented above.
- Corrective action taken (see Maintenance below) in the event of failure to adequately calibrate.

MAINTENANCE

NOTE: Ultrameters should be rinsed with clean water after use. Solvents should be avoided. Shock damage from a fall may cause instrument failure.

Temperature Extremes

Solutions in excess of 160°F/71°C should not be placed in the cell cup area; this may cause damage. Care should be exercised not to exceed rated operating temperature. Leaving the Ultrameter in a vehicle or storage shed on a hot day can easily subject the instrument to over 150°F voiding the warranty.

Battery Replacement

Dry Instrument THOROUGHLY. Remove the four bottom screws. Open instrument carefully; it may be necessary to rock the bottom slightly side to side to release it from the RS-232 connector. Carefully detach battery from circuit board. Replace with 9-volt alkaline battery. Replace bottom, ensuring the sealing gasket is installed in the groove of the top half of case. Re-install screws, tighten evenly and securely.

NOTE: Because of nonvolatile EEPROM circuitry, all data stored in memory and all calibration settings are protected even during power loss or battery replacement.

Cleaning Sensors

The conductivity cell cup should be kept as clean as possible. Flushing with clean water following use will prevent buildup on electrodes. However, if very dirty samples — particularly scaling types — are allowed to dry in the cell cup, a film will form. This film reduces accuracy. When there are visible films of oil, dirt, or scale in the cell cup or on the electrodes, use a foaming non-abrasive household cleaner. Rinse out the cleaner and your Ultrameter is ready for accurate measurements.

NOTE: Maintain a log for each monitoring instrument. Record all maintenance performed on the instrument on this log with date and name of the organization performing the maintenance.

ATTACHMENTS

Equipment Calibration Log (sample)

FOP 012.0

CALIBRATION AND MAINTENANCE OF PORTABLE SPECIFIC CONDUCTANCE METER

EQUIPMENT CALIBRATION

PROJECT INFORMATION:

Project Name: Date:

Project No.:

Client: Instrument Source: ☐ TK ☐ Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	READING	SETTI
☐ pH meter	units		Myron L Company Ultra Meter 6P	606987		4.00		
						7.00		
						10.01		
☐ Turbidity meter	NTU		Hach 2100P Turbidimeter	970600014560		< 0.4		
						20		
						100		
						800		
☐ Sp. conductance meter	uS/mS		Myron L Company Ultra Meter 6P	606987		µS @ 25 °C		
☐ PID	ppm		Photovac 2020 PID			open air zero		MIBK re
						____ ppm Iso. Gas		factor =
☐ Particulate meter	mg/m^3					zero air		
☐ Oxygen	%					open air		
☐ Hydrogen sulfide	ppm					open air		
☐ Carbon monoxide	ppm					open air		
☐ LEL	%					open air		
☐ Radiation Meter	uR/h					background area		
☐								

ADDITIONAL REMARKS:

PREPARED BY: **DATE:**

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Documentation Requirements for Drilling and Well Installation

FOP 015.0

DOCUMENTATION REQUIREMENTS FOR DRILLING AND WELL INSTALLATION

PURPOSE

The purpose of these documentation requirements is to document the procedures used for drilling and installing wells in order to ensure the quality of the data obtained from these operations. TurnKey field technical personnel will be responsible for developing and maintaining documentation for quality control of field operations. At least one field professional will monitor each major operation (e.g. one person per drilling rig) to document and record field procedures for quality control. These procedures provide a description of the format and information for this documentation.

PROCEDURE

Project Field Book

Personnel assigned by the TurnKey Field Team Leader or Project Manager will maintain a Project Field Book for all site activities. These Field Books will be started upon initiation of any site activities to document the field investigation process. The Field Books will meet the following criteria:

- Permanently bound, with nominal 8.5-inch by 11-inch gridded pages.
- Water resistant paper.
- Pages must be pre-numbered or numbered in the field, front and back.

Notations in the field book will be in black or blue ink that will not smudge when wet. Information that may be recorded in the Field Book includes:

- Time and date of all entries.

- Name and location of project site and project job number.
- Listing of key project, client and agency personnel and telephone numbers.
- Date and time of daily arrivals and departures, name of person keeping the log, names and affiliation of persons on site, purpose of visit (if applicable), weather conditions, outline of project activities to be completed.
- Details of any variations to the procedures/protocols (i.e., as presented in the Work Plan or Field Operating Procedures) and the basis for the change.
- Field-generated data relating to implementation of the field program, including sample locations, sample descriptions, field measurements, instrument calibration, etc.
- Record of all photographs taken in the field, including date, time, photographer, site location and orientation, sequential number of photograph, and roll number.

Upon completion of the site activities, all Field Books will be photocopied and both the original and photocopied versions placed in the project files. In addition, all field notes except those presented on specific field forms will be neatly transcribed into Field Activity Daily Log (FADL) forms (sample attached).

Field Borehole/Monitoring Well Installation Log Form

Examples of the Field Borehole Log and Field Borehole/Monitoring Well Installation Log forms are attached to this Field Operating Procedure. One form will be completed for every boring by the TurnKey field person overseeing the drilling. At a minimum, these forms will include:

- Project name, location, and number.
- Boring number.

- Rig type and drilling method.
- Drilling dates.
- Sampling method.
- Sample descriptions, to meet the requirements of the Unified Soil Classification System (USCS) for soils and the Unified Rock Classification System (URCS) for rock.
- Results of photoionization evaluations (scan and/or headspace determinations).
- Blow counts for sampler penetration (Standard Penetration Test, N-Value).
- Drilling rate, rig chatter, and other drilling-related information, as necessary.

All depths recorded on Boring/Monitoring Well Installation Log forms will be expressed in increments tenths of feet, and not in inches.

Well Completion Detail Form

An example of this form is attached to this Field Operating Procedure. One form will be completed for every boring by the TurnKey field person overseeing the well installation. At a minimum, these forms will include:

- Project name, location, and number.
- Well number.
- Installation dates.
- Dimensions and depths of the various well components illustrated in the Well Completion Detail (attached). These include the screened interval, bottom caps or plugs, centralizers, and the tops and bottoms of the various annular materials.

- Drilling rate, rig chatter, and other drilling related information.

All depths recorded on Field Borehole/Monitoring Well Installation Logs will be expressed in tenths of feet, and not in inches.

Daily Drilling Report Form

An example of this form is attached to this Field Operating Procedure. This form should be used to summarize all drilling activities. One form should be completed for each rig for each day. These forms will include summaries of:

- Footage drilled, broken down by diameter (e.g. 200 feet of 6-inch diameter hole, 50 feet of 10-inch diameter hole).
- Footage of well and screen installed, broken down by diameter.
- Quantities of materials used, including sand, cement, bentonite, centralizers, protective casings, traffic covers, etc. recorded by well or boring location.
- Active time (hours), and activity (drilling, decontamination, development, well installation, surface completions, etc.)
- Down-time (hours) and reason.
- Mobilizations and other events.
- Other quantities that will be the basis for drilling invoices.

The form should be signed daily by both the TurnKey field supervisor and the driller's representative, and provided to the TurnKey Field Team Leader.

Other Project Field Forms

Well purging/well development forms, test pit logs, environmental sampling field data sheets, water level monitoring forms, and well testing (slug test or pumping test) forms. Refer to specific guidelines for form descriptions.

ATTACHMENTS

Field Activity Daily Log (FADL) (sample)
Field Borehole Log (sample)
Field Borehole/Monitoring Well Installation Log (sample)
Stick-up Well/Piezometer Completion Detail (sample)
Flush-mount Well/Piezometer Completion Detail (sample)
Daily Drilling Report (sample)

DOCUMENTATION REQUIREMENTS FOR DRILLING AND WELL INSTALLATION

DAILY LOG				
	DATE			
	NO.			
	SHEET		OF	

FIELD ACTIVITY DAILY LOG

PROJECT NAME:	PROJECT NO.
PROJECT LOCATION:	CLIENT:
FIELD ACTIVITY SUBJECT:	
DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:	

TIME	DESCRIPTION

VISITORS ON SITE:	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
WEATHER CONDITIONS: A.M.:	IMPORTANT TELEPHONE CALLS:
P.M.:	
BM/TK PERSONNEL ON SITE:	
SIGNATURE	DATE:

FOP 015.0

DOCUMENTATION REQUIREMENTS FOR DRILLING AND WELL INSTALLATION

FIELD BOREHOLE LOG

PROJECT:		**Log of Boring No.:**		
BORING LOCATION:		ELEVATION AND DATUM:		
DRILLING CONTRACTOR:		DATE STARTED:		DATE FINISHED:
DRILLING METHOD:		TOTAL DEPTH:		SCREEN INTERVAL:
DRILLING EQUIPMENT:		DEPTH TO WATER: FIRST:	COMPL.:	CASING:
SAMPLING METHOD:		LOGGED BY:		
HAMMER WEIGHT:	DROP:	RESPONSIBLE PROFESSIONAL:		REG. NO.

Depth (bgs)	SAMPLES: Sample No.	Sample	Blows (per 6")	SPT N-Value	Recovery	PID Scan (ppm)	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, % of Soil Type, ...ticity, Fabric, Bedding, Weathering/Fracturing, Odor SURFACE ELEVATION (FMSL):	REMARKS

ABANDONMENT:

Volume of cement/bentonite grout required:	V = pr2 x 7.48 =	gallons	borehole depth =	ft.
Volume of cement/bentonite grout installed:		gallons	borehole diameter =	ft.
Has bridging of grout occurred?	☐ yes ☐ no		borehole radius =	ft.
If yes, explain resolution:				
Method of installation:				

Project No:	**TurnKey Environmental Restoration, LLC**	Figure

DOCUMENTATION REQUIREMENTS FOR DRILLING AND WELL INSTALLATION

FIELD BOREHOLE/MONITORING WELL INSTALLATION LOG

PROJECT:			**Log of Well No.:**	
BORING LOCATION:			ELEVATION AND DATUM:	
DRILLING CONTRACTOR:			DATE STARTED:	DATE FINISHED:
DRILLING METHOD:			TOTAL DEPTH:	SCREEN INTERVAL:
DRILLING EQUIPMENT:			DEPTH TO WATER: FIRST: / COMPL.:	CASING:
SAMPLING METHOD:			LOGGED BY:	
HAMMER WEIGHT:	DROP:		RESPONSIBLE PROFESSIONAL:	REG. NO.

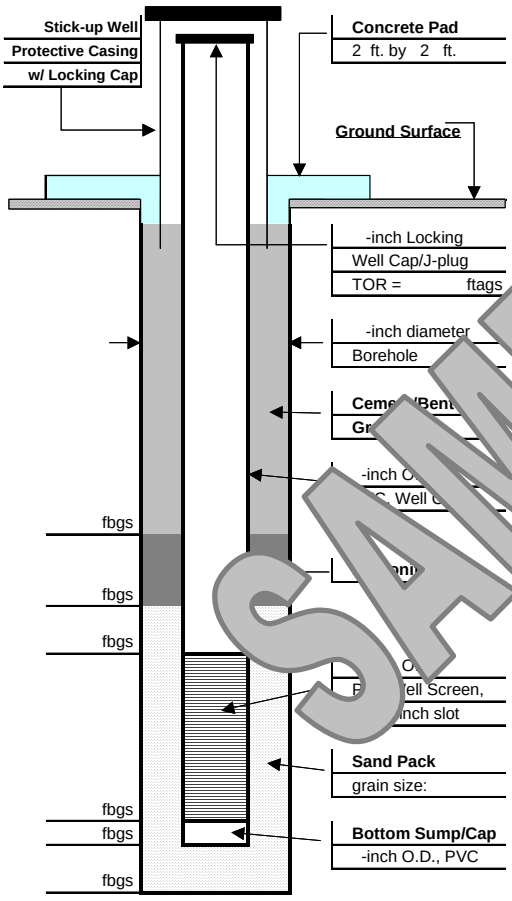
Depth (fbgs)	SAMPLES: Sample No.	Sample	Blows (per 6")	SPT N-Value	Recovery	PID Scan (ppm)	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, % of Soil Type, ... Fabric, Bedding, Weathering/Fracturing, Odor, Other SURFACE ELEVATION (FMSL):	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

Project No:	**TurnKey Environmental Restoration, LLC**	Figure

DOCUMENTATION REQUIREMENTS FOR DRILLING AND WELL INSTALLATION

STICK-UP MONITORING WELL COMPLETION DETAIL

Project Name:	WELL NUMBER:
Client:	Date Installed:
Boring Location:	Project Number:



Driller Information

Company:	
Driller:	
Helper:	
Permit Number:	
Drill Rig Type	

Well Informa

Land Surface Ele	fmsl (approximate)
Method:	
Sa le Collection	
Los g Dri	gallons (approximate)

of We truction

g:	
n:	
Sa	
and	
ular Seal:	

ll Development

Well Purpose:	
Techneque(s):	
Date Completed:	
BM/TK Personnel:	
Total Volume Purge:	gallons
Static Water Level (SWL):	fbTOR
Pump Depth: bottom of well	
Purge Duration:	minutes
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: saturated thickness: SWL - stickup = fbgs

Total Depth = fbTOR Total Depth - SWL = feet

stick-up = feet

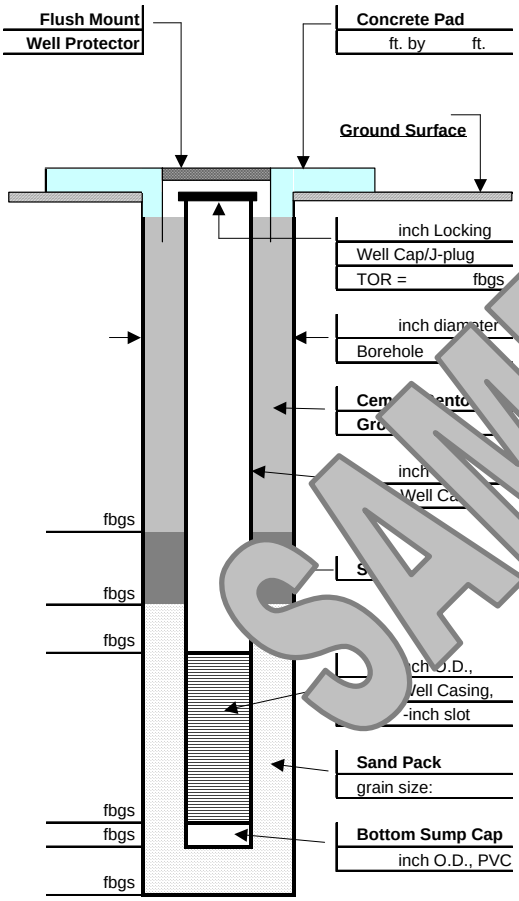
Total Depth = fbgs

PREPARED BY: DATE:

DOCUMENTATION REQUIREMENTS FOR DRILLING AND WELL INSTALLATION

FLUSHMOUNT WELL/PIEZOMETER COMPLETION DETAIL

Project Name:	WELL NUMBER:
Client:	Date Installed:
Boring Location:	Project Number:



Driller Information

Company:	
Driller:	
Helper:	
Permit Number:	
Drill Rig Typ	

Well Informa

Land Surface Ele	fmsl (approximate)
Method:	
Soi le Collection	
rilling	
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Sur	
nd P	
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ll Development

Well Purpose:	
Techneque(s):	
Date Completed:	
BM/TK Personnel:	
Total Volume Purge:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Purge Duration:	minutes
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments:

PREAPRED BY: DATE:

DOCUMENTATION REQUIREMENTS FOR DRILLING AND WELL INSTALLATION

DAILY DRILLING REPORT

CONTRACTOR:	DATE:
DRILLING EQUIPMENT:	PROJECT:
CREW MEMBERS:	JOB NUMBER:
SITE NAME:	BM PERSONNEL:

CATEGORY	Total Hours	a.m. 6 7 8 9 10 11	12 1 2 3 4 5 6 7 8 9 10 11	p.m. 12	a.m. 1 2 3 4 5 6
MOB / DEMOB					
DRILLING					
WELL INSTALLATION					
DEVELOPMENT / TESTING					
GROUTING					
STEAM / DECON					
DOWN TIME (explain below)					
STANDBY (explain below)					
CLEANUP					
PREP FOR DRILLING					
LUNCH					
OTHER:					

REMARKS:

DRILLING & WELL MATERIALS: Describe nature, quantity, siz

ITEM OR SERVICE	QUANTITIES	LOCATION				TOTALS
Starting depth (fbgs)						--
Ending depth (fbgs)						--
Total footage drilled (feet)						
Drilling Method (HSA, air rotary, cab						--
Auger/Bit size						--
CSSS starting depth (f						--
CSSS ending depth (f						--
Total CSSS footage						
-inch Schedule 40 P						
-inch Schedule 40 PVC						
-inch Schedule 40 PVC screen, slot s						
-inch Schedule 40 PVC riser						
-inch Schedule 40 PVC screen,						
-inch Schedule 40 PVC riser						
Sand pack, size =						
Bentonite pellets/chips, size =						
Cement/beontonite grout						
☐ Protective casing ☐ Flushmount road box						
Lockable J-plug						
Lock						

PERSONNEL TIME LOG:

POSITION	NAME	HOURS
Observer		
Drillers		

DRILLER (optional):	BM REP.

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Drill Site Selection Procedure

FOP 017.0

DRILL SITE SELECTION PROCEDURE

PURPOSE

This procedure presents a method for selecting a site location for drilling. Drill site selection should be based on the project objectives, ease of site access, freedom from obstructions and buried metallic objects (drums) and site safety (appropriate set backs from overhead and buried services).

PROCEDURE

The following procedure outlines procedures prior to drilling activities:

1. Review project objectives and tentatively select drilling locations that provide necessary information for achieving objectives (i.e., Work Plan).

2. Clear locations with property owner/operator to ensure that drilling activities will not interfere with site operations and select appropriate access routes.

3. Stake locations in the field, measure distance from locations to recognizable landmarks, such as building or fence lines and plot locations on site plan. Ensure location is relatively flat, free of overhead wires and readily accessible. Survey location if property ownership is in doubt.

4. Obtain clearances from appropriate utilities and if buried waste/metallic objects are suspected, screen location with appropriate geophysical method.

5. Establish a secure central staging area for storage of drilling supplies and for equipment decontamination. Locate a secure storage area for drilling samples, as necessary.

ATTACHMENTS

none

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Drilling & Excavation Equipment Decontamination Procedures

FOP 018.0

DRILLING AND EXCAVATION EQUIPMENT DECONTAMINATION PROCEDURES

PURPOSE

This procedure is to be used for the decontamination of drilling and excavation equipment (i.e., drill rigs, backhoes, augers, drill bits, drill rods, buckets, and associated equipment) used during a subsurface investigation. The purpose of this procedure is to remove chemical constituents associated with a particular drilling or excavation location from this equipment. This prevents these constituents from being transferred between drilling or excavation locations, or being transported out of controlled areas.

PROCEDURE

The following procedure will be utilized prior to the use of drilling or excavation equipment at each location, and prior to the demobilization of such equipment from the site:

1. Remove all loose soil and other particulate materials from the equipment at the survey site.

2. Wrap augers, tools, plywood, and other reusable items with a plastic cover prior to transport from the site of use to the decontamination facility.

3. Transport equipment to the decontamination facility. All equipment must be decontaminated at an established decontamination facility. This facility will be placed within a controlled area, and will be equipped with necessary features to contain and collect wash water and entrained materials.

4. Wash equipment thoroughly with pressurized low-volume water or steam, supplied by a pressure washer or steam cleaner.

5. If necessary, use a brush or scraper to remove visible soils adhering to the equipment, and a non-phosphate detergent to remove any oils, grease, and/or hydraulic fluids adhering to the equipment. Continue pressure washing until all visible contaminants are removed.

6. Allow equipment to air dry.

7. Store equipment in a clean area or wrap the equipment in new plastic sheeting as necessary to ensure cleanliness until ready for use.

8. Manage all wash waters and entrained solids as described in the TurnKey Field Operating Procedure for Management of Investigation-Derived Waste.

ATTACHMENTS

none

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Establishing Horizontal and Vertical Control

FOP 021.0

ESTABLISHING HORIZONTAL AND VERTICAL CONTROL

PURPOSE

This guideline presents a method for establishing horizontal and vertical controls at a project site. It is imperative that this procedure be performed accurately, as all topographic and site maps, monitoring well locations and test pit locations will be based on these controls.

PROCEDURE

A. Establishing Horizontal Primary and Project Control

1. Research the State Plan Coordinate, USGS or project site applicable horizontal control monuments.

2. At the project site, recover the above-mentioned monuments, two markers minimum being recovered.

3. Establish control points on the project site by bringing in the primary control points recovered in the field.

4. All control points will be tied into a closed traverse to assure the error of closure.

5. Compute closures for obtaining degree of accuracy to adjust traverse points.

B. Establishing Vertical Primary and Project Control

1. Research project or USGS datum for recovering monument(s) for vertical control if different than those previously found.

2. Recover the monuments in the field, two markers minimum being found.

3. Set the projects benchmarks.

4. Run a level line from the monuments to the set project benchmarks and back, setting turning points on all benchmarks set on site.

5. Reduce field notes and compute error of closure to adjust benchmarks set on site.

6. Prepare the recovery sketches and tabulate a list for horizontal and vertical control throughout project site.

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Groundwater Level Measurement

FOP 022.0

GROUNDWATER LEVEL MEASUREMENT

PURPOSE

This procedure describes the methods used to obtain accurate and consistent water level measurements in monitoring wells, piezometers and well points. Water levels will be measured at monitoring wells and, if practicable, in supply wells to estimate purge volumes associated with sampling, and to develop a potentiometric surface of the groundwater in order to estimate the direction and velocity of flow in the aquifer. Water levels in monitoring wells will be measured using an electronic water level indicator (e-line) that has been checked for operation prior to mobilization.

PROCEDURE

1. Decontaminate the e-line probe and a lower portion of cable following the procedures referenced in the TurnKey's Field Operating Procedure for Non-Disposable and Non-Dedicated Sampling Equipment Decontamination. Store the e-line in a protected area until use. This may include wrapping the e-line in clean plastic until the time of use.

2. Unlock and remove the well protective cap or cover and place on clean plastic.

3. Lower the probe slowly into the monitoring well until the audible alarm sounds. This indicates the depth to water has been reached.

4. Move the cable up and down slowly to identify the depth at which the alarm just begins to sound. Measure this depth against the mark on the lip of the well riser used as a surveyed reference point (typically the north side of the riser).

5. Read depth from the graduated cable to the nearest 0.01 foot. Do not use inches. If the e-line is not graduated, use a rule or tape measure graduated in 0.01-foot increments to measure from the nearest reference mark on the e-line cable.

6. Record the water level on a Water Level Monitoring Record (sample attached).

7. Remove the probe from the well slowly, drying the cable and probe with a clean paper wipe. Be sure to repeat decontamination before use in another well.

8. Replace well plug and protective cap or cover. Lock in place as appropriate.

ATTACHMENTS

Water Level Monitoring Record (sample)

REFERENCES

TurnKey FOPs:
040 Non-Disposable and Non-Dedicated Sampling Equipment Decontamination

WATER LEVEL MONITORING RECORD

Project Name: Client:
Project No.: Location:
Field Personnel: Date:
Weather:

Well No.	Time	Top of Riser Elevation (fmsl)	Static Depth to Water (fbTOR)	Groundwater Elevation (fmsl)	Total Depth (fbTOR)	Last Total Depth Measurement (fbTOR)

Comments/Remarks:

PREAPRED BY: DATE:

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Groundwater Sample Collection Procedures

FOP 024.0

GROUNDWATER SAMPLE COLLECTION PROCEDURES

PURPOSE

This procedure describes the methods for collecting groundwater samples from monitoring wells and domestic supply wells following purging and sufficient recovery. This procedure also includes the preferred collection order in which water samples are collected based on the volatilization sensitivity or suite of analytical parameters required.

PROCEDURE

Allow approximately 3 to 10 days following well development before performing purge and sample activities at any well location. Conversely, perform sampling as soon as practical after sample purging at any time after the well has recovered sufficiently to sample, or within 24 hours after evacuation, if the well recharges slowly. If the well does not yield sufficient volume for all required laboratory analytical testing (including quality control), a decision should be made to prioritize analyses based on contaminants of concern at the site. If the well takes longer than 24 hours to recharge, the Project Manager should be consulted. The following two procedures outline sample collection activities for monitoring and domestic type wells.

Monitoring Wells

1. Purge the monitoring well in accordance with the Benchmark FOPs for Groundwater Purging Procedures Prior to Sample Collection or Low Flow (Minimal Drawdown) Groundwater Purging & Sampling Procedures. Perform sampling as soon as practical after purging at any time after the well has recovered sufficiently to sample, or within 24 hours after evacuation, if the well recharges slowly. If the well does not yield sufficient volume for all required laboratory analytical testing (including quality control), a decision should be made to prioritize analyses based on contaminants of concern at the site. Analyses will be prioritized in the order of the parameters volatilization sensitivity. After volatile organics have been collected, field parameters

must be measured from the next sample collected. If a well takes longer than 24 hours to recharge, the Project Manager should be consulted.

2. Sampling equipment that is not disposable or dedicated to the well will be decontaminated in accordance with the Benchmark Field Operating Procedure for Non-Disposable and Non-Dedicated Sampling Equipment Decontamination.

3. Calibrate all field meters (i.e., pH/Eh, turbidity, specific conductance, dissolved oxygen, PID etc.) in accordance with the Benchmark Field Operating Procedure for Calibration and Maintenance of the specific field meter.

4. Prepare the electronic water level indicator (e-line) in accordance with the procedures referenced in the Benchmark Field Operating Procedure for Groundwater Level Measurement and decontaminate the e-line probe and a lower portion of cable following the procedures referenced in the Benchmark Field Operating Procedure for Non-disposable and Non-dedicated Sampling Equipment Decontamination. Store the e-line in a protected area until use. This may include wrapping the e-line in clean plastic until the time of use.

5. Inspect the well/piezometer for signs of vandalism or damage and record condition on the Groundwater Field Form (sample attached). Specifically, inspect the integrity of the following: concrete surface seal, lock, protective casing and well cover, well casing and J-plug/cap. Report any irregular findings to the Project Manager.

6. Unlock and remove the well protective cap or cover and place on clean plastic to avoid introducing foreign material into the well.

7. Calibrate the photoionization detector (PID) in accordance with the Benchmark Field Operating Procedure for Calibration and Maintenance of Portable Photoionization Detector.

8. Monitor the well for organic vapors using a PID, as per the Work Plan. If a reading of greater than 5 ppm is recorded, the well should be allowed to vent until levels drop below 5 ppm before proceeding with purging. Record PID measurements on a well-specific Groundwater Field Form (sample attached).

9. Lower the e-line probe slowly into the monitoring well and record the measurement on a well-specific Groundwater Field Form (sample attached).

10. Groundwater samples will be collected directly from the sampling valve on the flow through cell (low-flow), discharge port of a standard pump assembly (peristaltic, pneumatic, submersible, or Waterra™ pump) or bailer (stainless steel, PVC or polyethylene) into appropriate laboratory provided containers. In low-yielding wells at which the flow through cell is not used, the samples may be collected using a disposable bailer.

11. If disposable polyethylene bailers are used, the bailer should be lowered *slowly* below the surface of the water to minimize agitation and volatilization. For wells that are known to produce turbid samples (values greater than 50 NTU), the bailer should be lowered and retrieved at a rate that limits surging of the well.

12. Sampling data will be recorded on a Groundwater Field Form (sample attached).

13. Pre-label all sample bottles in the field using a waterproof permanent marker in accordance with the Benchmark Sample Labeling, Storage and Shipment FOP. The following information, at a minimum, should be included on the label:

    - Project Number;
    - Sample identification code (as per project specifications);
    - Date of sample collection (mm, dd, yy);
    - Time of sample collection (military time only) (hh:mm);
    - Specify "grab" or "composite" sample type;
    - Sampler initials;
    - Preservative(s) (if applicable); and
    - Analytes for analysis (if practicable).

14. Collect a separate sample of approximately 200 ml into an appropriate container prior to collecting the first and following the last groundwater sample collected to measure the following field parameters:

Parameter	Units
Dissolved Oxygen	parts per million (ppm)

Specific Conductance	μmhos/cm or μS or mS
pH	pH units
Temperature	^{o}C or ^{o}F
Turbidity	NTU
Eh (*optional*)	mV
PID VOCs (*optional*)	ppm

Record all field measurements on a Groundwater Field Form (sample attached).

15. Collect samples into pre-cleaned bottles provided by the analytical laboratory with the appropriate preservative(s) added based on the volatilization sensitivity or suite of analytical parameters required, as designated in the **Sample Collection Order** section below.

16. Lower the e-line probe slowly into the monitoring well and record the measurement on a well-specific Groundwater Field Form (sample attached).

17. The samples will be labeled, stored and shipped in accordance with the Benchmark Field Operating Procedure for Sample Labeling, Storage and Shipment Procedures.

Domestic Supply Wells

1. Calculate or estimate the volume of water in the well. It is desirable to purge at least one casing volume before sampling. This is controlled, to some extent, by the depth of the well, well yield and the rate of the existing pump. If the volume of water in the well cannot be calculated, the well should be purged continuously for no less than 15 minutes.

2. Connect a sampling tap to an accessible fitting between the well and the pressure tank where practicable. A hose will be connected to the device and the hose discharge located 25 to 50 feet away. The well will be allowed to pump until the lines and one well volume is removed. Flow rate will be measured with a container of known volume and a stopwatch.

3. Place a clean piece of polyethylene or Teflon™ tubing on the sampling port and collect the samples in the order designated below and in the sample containers supplied by the laboratory for the specified analytes. ***DO NOT*** use standard garden hose to collect samples.

4. Sampling results and measurements will be recorded on a Groundwater Field Form (sample attached) as described in the previous section.

5. Collect samples into pre-cleaned bottles provided by the analytical laboratory with the appropriate preservative(s) added based on the volatilization sensitivity or suite of analytical parameters required, as designated in the **Sample Collection Order** section below.

6. The samples will be labeled, stored and shipped in accordance with the Benchmark Field Operating Procedure for Sample Labeling, Storage and Shipment Procedures.

SAMPLE COLLECTION ORDER

All groundwater samples, from monitoring wells and domestic supply wells, will be collected in accordance with the following.

1. Samples will be collected preferentially in recognition of volatilization sensitivity. The preferred order of sampling if no free product is present is:

    - Field parameters
    - Volatile Organic Compounds (VOCs)
    - Purgeable organic carbons (POC)
    - Purgeable organic halogens (POH)
    - Total Organic Halogens (TOX)
    - Total Organic Carbon (TOC)
    - Extractable Organic Compounds (i.e., BNAs, SVOCs, etc.)
    - Total petroleum hydrocarbons (TPH) and oil and grease
    - PCBs and pesticides
    - Total metals (Dissolved Metals)
    - Total Phenolic Compounds

- Cyanide
- Sulfate and Chloride
- Turbidity
- Nitrate (as Nitrogen) and Ammonia
- Preserved inorganics
- Radionuclides
- Unpreserved inorganics
- Bacteria
- Field parameters

2. Document the sampling procedures and related information in the Project Field Book and on a Groundwater Field Form (sample attached).

DOCUMENTATION

The three words used to ensure adequate documentation for groundwater sampling are accountability, controllability, and traceability. Accountability is undertaken in the sampling plan and answers the questions who, what, where, when, and why to assure that the sampling effort meets its goals. Controllability refers to checks (including QA/QC) used to ensure that the procedures used are those specified in the sampling plan. Traceability is documentation of what was done, when it was done, how it was done, and by whom it was done, and is found in the field forms, Project Field Book, and chain-of-custody forms. At a minimum, adequate documentation of the sampling conducted in the field consists of an entry in the Project Field Book (with sewn binding), field data sheets for each well, and a chain-of-custody form.

As a general rule, if one is not sure whether the information is necessary, it should nevertheless be recorded, as it is impossible to over-document one's fieldwork. Years may go by before the documentation comes under close scrutiny, so the documentation must be

capable of defending the sampling effort without the assistance or translation of the sampling crew.

The minimum information to be recorded daily with an indelible pen in the Project Field Book and/or field data sheets includes date and time(s), name of the facility, name(s) of the sampling crew, site conditions, the wells sampled, a description of how the sample shipment was handled, and a QA/QC summary. After the last entry for the day in the Project Field Book, the Field Team Leader should sign the bottom of the page under the last entry and then draw a line across the page directly under the signature.

PRECAUTIONS/RECOMMENDATIONS

The following precautions should be adhered to prior to and during sample collection activities:

- Field vehicles should be parked downwind (to avoid potential sample contamination concerns) at a minimum of 15 feet from the well and the engine turned off prior to PID vapor analysis and VOC sample collection.

- Ambient odors, vehicle exhaust, precipitation, or windy/dusty conditions can potentially interfere with obtaining representative samples. These conditions should be minimized and should be recorded in the field notes. Shield sample bottles from strong winds, rain, and dust when being filled.

- The outlet from the sampling device should discharge below the top of the sample's air/water interface, when possible. The sampling plan should specify how the samples will be transferred from the sample collection device to the sample container to minimize sample alterations.

- The order of sampling should be from the least contaminated to the most contaminated well to reduce the potential for cross contamination of sampling equipment (see the Sampling Plan or Work Plan).

- Samples should not be transferred from one sampling container to another.

- Sampling equipment must not be placed on the ground, because the ground may be contaminated and soil contains trace metals. Equipment and supplies should be removed from the field vehicle only when needed.

- Smoking and eating should not be allowed until the well is sampled and hands are washed with soap and water, due to safety and possibly sample contamination concerns. These activities should be conducted beyond a 15-foot radius of the well.

- No heat-producing or electrical instruments should be within 15 feet of the well, unless they are intrinsically safe, prior to PID vapor analysis.

- Minimize the amount of time that the sample containers remain open.

- Do not touch the inside of sample bottles or the groundwater sample as it enters the bottle. Disposable gloves may be a source of phthalates, which could be introduced into groundwater samples if the gloves contact the sample.

- Sampling personnel should use a new pair of disposable gloves for each well sampled to reduce the potential for exposure of the sampling personnel to contaminants and to reduce sample cross contamination. In addition, sampling personnel should change disposable gloves between purging and sampling operations at the same well.

- Sampling personnel should not use perfume, insect repellent, hand lotion, etc., when taking groundwater samples. If insect repellent must be used, then sampling personnel should not allow samples or sampling equipment

to contact the repellent, and it should be noted in the documentation that insect repellent was used.

- Complete the documentation of the well. A completed assemblage of paperwork for a sampling event includes the completed field forms, entries in the Project Field Book (with a sewn binding), transportation documentation (if required), and possibly chain-of-custody forms.

ATTACHMENTS

Groundwater Field Form (sample)

REFERENCES

1. Wilson, Neal. *Soil Water and Ground Water Sampling*, 1995

Benchmark FOPs:

007 Calibration and Maintenance of Portable Dissolved Oxygen Meter
008 Calibration and Maintenance of Portable Field pH/Eh Meter
009 Calibration and Maintenance of Portable Field Turbidity Meter
011 Calibration and Maintenance of Portable Photoionization Detector
012 Calibration and Maintenance of Portable Specific Conductance Meter
022 Groundwater Level Measurement
023 Groundwater Purging Procedures Prior to Sample Collection (optional)
031 Low Flow (Minimal Drawdown) Groundwater Purging & Sampling Procedures (optional)
040 Non-Disposable and Non-Dedicated Sampling Equipment Decontamination
046 Sample Labeling, Storage and Shipment Procedures

GROUNDWATER FIELD FORM

Project Name: Date:

Location: Project No.: Field Team:

Well No.			Diameter (inches):			Sample Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			Casing Volume:			Purpose: ☐ Development ☐ Sampling			
Total Depth (fbTOR):			Purge Volume (gal):			Purge Method:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
	S1								
	S2								

Well No.			Diameter (inches):			Sample Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			Casing Volume:			Purpose: ☐ Development ☐ Sampling			
Total Depth (fbTOR):			Purge Volume (gal):			Purge Method:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
	S1								
	S2								

REMARKS:

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Hollow Stem Auger (HSA) Drilling Procedures

FOP 026.1

HOLLOW STEM AUGER (HSA) DRILLING PROCEDURES

PURPOSE

This guideline presents a method for drilling a borehole through unconsolidated materials, including soils or overburden, and consolidated materials, including bedrock.

PROCEDURE

The following procedure will be used to drill a borehole for sampling and/or well installation, using hollow-stem auger methods and equipment.

1. Follow TurnKey's Field Operating Procedure for Drill Site Selection Procedure prior to implementing any drilling activity.

2. Perform drill rig safety checks with the driller by completing the Drilling Safety Checklist form (sample attached).

3. Conduct tailgate health and safety meeting with project team and drillers by completing the Tailgate Safety Meeting Form.

4. Calibrate air-monitoring equipment in accordance with the appropriate Benchmark's Field Operating Procedures (i.e., PID, FID, combustible gas meter) or manufacturer's recommendations for calibration of field meters (i.e., DataRAM 4 Particulate Meter).

5. Ensure all drilling equipment (i.e., augers, rods, split-spoons) appear clean and free of soil prior to initiating any subsurface intrusion. Decontamination of drilling equipment should be in accordance with TurnKey's FOP: Drilling and Excavation Equipment Decontamination Procedures.

6. Mobilize the auger rig to the site and position over the borehole.

7. Level and stabilize the rig using the rig jacks, and recheck the rig location against the planned drilling location. If necessary, raise the jacks and adjust the rig position.

8. Place a metal or plywood auger pan over the borehole location to collect the auger cuttings. This auger pan will be equipped with a 12-inch nominal diameter hole for auger passage. As an alternative, a piece of polyethylene tarp may be used as a substitute.

9. Advance augers into the subsurface. For sampling or pilot-hole drilling, nominal 8-inch outside diameter (OD) augers should be used. The boring diameter will be approved by the TurnKey field supervisor.

10. Collect soil samples via split spoon sampler in accordance with TurnKey's Field Operating Procedure for Split Spoon Sampling.

11. Check augers periodically during drilling to ensure the boring is plumb. Adjust rig position as necessary to maintain plumb.

12. Continue drilling until reaching the assigned total depth, or until auger refusal occurs. Auger refusal is when the drilling penetration drops below 0.1 feet per 10 minutes, with the full weight of the rig on the auger bit, and a center bit (not center plug) in place.

13. Plug and abandon boreholes not used for well installation in accordance with TurnKey's Field Operating Procedure for Abandonment of Borehole.

OTHER PROCEDURAL ISSUES

- Slip rings may be used for lifting a sampling or bit string. The string will not be permitted to extend more than 15 feet above the mast crown.

- Borings will not be over drilled (rat holed) without the express permission of the TurnKey field supervisor. All depth measurements should be accurate to the nearest 0.1 foot, to the extent practicable.

- Potable water may be placed in the auger stem if critically necessary for borehole control or to accomplish sampling objectives and must be approved by the TurnKey Project Manager and/or NYSDEC Project Manager. Upon approval,

the potable water source and quantity used will be documented in the Project Field Book and subsequent report submittal.

ATTACHMENTS

Drilling Safety Checklist (sample)
Tailgate Safety Meeting Form (sample)

REFERENCES

TurnKey FOPs:

001 *Abandonment of Borehole Procedures*
010 *Calibration and Maintenance of Portable Flame Ionization Detector*
011 *Calibration and Maintenance of Portable Photoionization Detector*
017 *Drill Site Selection Procedure*
018 *Drilling and Excavation Equipment Decontamination Procedures*
058 *Split Spoon Sampling Procedures*

DRILLING SAFETY CHECKLIST

Project:	Date:
Project No.:	Drilling Company:
Client:	Drill Rig Type:

ITEMS TO CHECK	OK	ACTION NEEDED
"Kill switches" installed by the manufacturer are in operable condition and all workers at the drill site are familiar with their location and how to activate them?		
"Kill switches" are accessible to workers on both sides of the rotating stem? NOTE: Optional based on location and number of switches provided by the manufacturer.		
Cables on drill rig are free of kinks, frayed wires, "bird cages" and worn or missing sections?		
Cables are terminated at the working end with a proper eye splice, either swaged Coupling or using cable clamps?		
Cable clamps are installed with the saddle on the live or load side? Clamps should not be alternated and should be of the correct size and number for the cable size to which it is installed. Clamps are complete with no missing parts?		
Hooks installed on hoist cables are the safety type with a functional latch to prevent accidental separation?		
Safety latches are functional and completely span the entire throat of the hook and have positive action to close the throat except when manually displaced for connecting or disconnecting a load?		
Drive shafts, belts, chain drives and universal joints shall be guarded to prevent accidental insertion of hands and fingers or tools.		
Outriggers shall be extended prior to and whenever the boom is raised off its cradle. Hydraulic outriggers must maintain pressure to continuously support and stabilize the drill rig even while unattended.		
Outriggers shall be properly supported on the ground surface to prevent settling into the soil.		
Controls are properly labeled and have freedom of movement? Controls should not be blocked or locked in an action position.		
Safeties on any device shall not be bypassed or neutralized.		
Controls shall be operated smoothly and cables and lifting devices shall not be jerked or operated erratically to overcome resistance.		
Slings, chokers and lifting devices are inspected before using and are in proper working order? Damaged units are removed from service and are properly tagged?		
Shackles and clevises are in proper working order and pins and screws are fully inserted before placing under a load?		
High-pressure hoses have a safety (chain, cable or strap) at each end of the hose section to prevent whipping in the event of a failure?		
Rotating parts of the drill string shall be free of sharp projections or hooks, which could entrap clothing or foreign objects?		

DRILLING SAFETY CHECKLIST

Project: Date:

ITEMS TO CHECK	OK	ACTION NEEDED
Wire ropes should not be allowed to bend around sharp edges without cushion material.		
The exclusion zone is centered over the borehole and the radius is equal or greater than the boom height?		
The work area around the borehole shall be kept clear of trip hazards and walking surfaces should be free of slippery material.		
Workers shall not proceed higher than the drilling deck without a fall restraining device and must attach the device in a manner to restrict fall to less than 6 feet.		
A fire extinguisher of appropriate size shall be immediately available to the drill crew. The drill crew shall have received annual training on proper use of the fire extinguisher.		
29 CFR 1910.333 © (3) Except where electrical distribution and transmission lines have been de-energized and visibly grounded, drill rigs will be operated proximate to, under, by, or near power lines only in accordance with the following: .333 © (3) (ii) 50 kV or less -minimum clearance is 10 ft. For 50 kV or over - 10ft. Plus ½ in. For each additional kV **TurnKey Policy: Maintain 20 feet clearance**		
29 CFR 1910.333 © (3) (iii) While the rig is in transit with the boom in the down position, clearance from energized power lines will be maintained as follows: Less than 50 kV - 4 feet 50 to 365 kV - 10 feet 365 to 720 kV - 16 feet		

Name: (printed)

Signed: Date:

TAILGATE SAFETY MEETING FORM

Project Name: Date: Time:
Project Number: Client:
Work Activities:

HOSPITAL INFORMATION:

Name:
Address: *City:* *State:* *Zip:*
Phone No.: *Ambulance Phone No.*

SAFETY TOPICS PRESENTED:

Chemical Hazards:

Physical Hazards: Slips, Trips, Falls

PERSONAL PROTECTIVE EQUIPMENT:

Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D

New Equipment:

Other Safety Topic (s): Environmental Hazards (aggressive fauna)
Eating, drinking, use of tobacco products is prohibited in the Exclusion Zone (EZ)

ATTENDEES

Name Printed	Signatures

Meeting conducted by:

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Low-Flow (Minimal Drawdown) Groundwater Purging & Sampling Procedure

FOP 031.1

LOW FLOW (MINIMAL DRAWDOWN) GROUNDWATER PURGING & SAMPLING PROCEDURES

PURPOSE

This procedure describes the methods used for performing low flow (minimal drawdown) purging, also referred to as micro-purging, at a well prior to groundwater sampling to obtain a representative sample from the water-bearing zone. This method of purging is used to minimize the turbidity of the produced water. This may increase the representativeness of the groundwater samples by avoiding the necessity of filtering suspended solids in the field prior to preservation of the sample.

Well purging is typically performed immediately preceding groundwater sampling. The sample should be collected as soon as the parameters measured in the field (i.e., pH, specific conductance, dissolved oxygen, Eh, temperature, and turbidity) have stabilized.

PROCEDURE

Allow approximately 3 to 10 days following well development for groundwater to return to static conditions before performing low-flow purge and sample activities at any well location. Conversely, perform low-flow sampling as soon as purged groundwater has stabilized. If the well does not yield sufficient volume (i.e., cannot maintain a constant water level during purging) for low-flow purge and sampling, then an alternative method must be performed in accordance with TurnKey's Groundwater Purging Procedures Prior to Sample Collection FOP.

1. Water samples should not be taken immediately following well development. Sufficient time should be allowed to stabilize the groundwater flow regime in the vicinity of the monitoring well. This lag time will depend on site conditions and methods of installation but may exceed one week.

2. Prepare the electronic water level indicator (e-line) in accordance with the procedures referenced in the Benchmark's Groundwater Level Measurement FOP and decontaminate the e-line probe and a lower portion of cable following the procedures referenced in the Benchmark's Non-disposable and Non-dedicated Sampling Equipment Decontamination FOP. Store the e-line in a protected area until use. This may include wrapping the e-line in clean plastic until the time of use.

3. Calibrate all sampling devices and monitoring equipment in accordance with manufacturer's recommendations, the site Quality Assurance Project Plan (QAPP) and/or Field Sampling Plan (FSP). Calibration of field instrumentation should be followed as specified in Benchmark's Calibration and Maintenance FOP for each individual meter.

4. Inspect the well/piezometer for signs of vandalism or damage and record condition on the Groundwater Field Form (sample attached). Specifically, inspect the integrity of the following: concrete surface seal, lock, protective casing and well cover, well casing and J-plug/cap. Report any irregular findings to the Project Manager.

5. Unlock and remove the well protective cap or cover and place on clean plastic to avoid introducing foreign material into the well.

6. Monitor the well for organic vapors using a PID, as per the Work Plan. If a reading of greater than 5 ppm is recorded, the well should be allowed to vent until levels drop below 5 ppm before proceeding with purging.

7. Lower the e-line probe slowly into the monitoring well and record the initial water level in accordance with the procedures referenced in Benchmark's Groundwater Level Measurement FOP. Refer to the construction diagram for the well to identify the screened depth.

8. Decontaminate all non-dedicated pump and tubing equipment following the procedures referenced in the Benchmark's Non-disposable and Non-dedicated Sampling Equipment Decontamination FOP.

9. Lower the purge pump or tubing (i.e., low-flow electrical submersible, peristaltic, etc.) slowly into the well until the pump/tubing intake is approximately in the middle of the screened interval. Rapid insertion of the pump will increase the turbidity of well water, and can increase the required purge time. This step can be eliminated if dedicated tubing is already within the well.

   Placement of the pump close to the bottom of the well will cause increased entrainment of solids, which may have settled in the well over time. Low-flow purging has the advantage of minimizing mixing between the overlying stagnant casing water and water within the screened interval. The objective of low-flow purging is to maintain a purging rate, which minimizes stress (drawdown) of the water level in the well. Low-flow refers to the velocity with which water enters the pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen.

10. Lower the e-line back down the well as water levels will be frequently monitored during purge and sample activities.

11. Begin pumping to purge the well. The pumping rate should be between 100 and 500 milliliters (ml) per minute (0.03 to 0.13 gallons per minute) depending on site hydrogeology. Periodically check the well water level with the e-line adjusting the flow rate as necessary to stabilize drawdown within the well. If possible, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 feet or less). If the water level exceeds 2 feet below static and declining, slow the purge rate until the water level generally stabilizes. Record each pumping rate and water level during the event.

    The low flow rate determined during purging will be maintained during the collection of analytical samples. At some sites where geologic heterogeneities are sufficiently different within the screened interval, high conductivity zones may be preferentially sampled.

12. Measure and record field parameters (pH, specific conductance, Eh, dissolved oxygen (DO), temperature, and turbidity) during purging activities. In lieu of measuring all of the parameters, a minimum subset could be limited to pH, specific conductance, and turbidity or DO. A reduction in the field parameter list must be approved by the Project Manager and/or the NYSDEC Project Manager.

    Water quality indicator parameters should be used to determine purging needs prior to sample collection in each well. Stabilization of indicator parameters should be used to determine when formation water is first encountered during purging. In general, the order of stabilization is pH, temperature, and specific conductance, followed by Eh, DO and turbidity. Performance criteria for determination of stabilization should be based on water-level drawdown, pumping rate and equipment specifications for measuring indicator parameters. An in-line flow through cell to continuously measure the above parameters may be used. The in-line device should be disconnected or bypassed during sample collection.

13. Purging will continue until parameters of water quality have stabilized. Record measurements for field indicator parameters (including water levels) at regular intervals during purging. The stability of these parameters with time can be used to guide the decision to discontinue purging. Proper adjustments must be made to stabilize the flow rate as soon as possible.

14. Record well purging and sampling data in the Project Field Book or on the Groundwater Field Form (sample attached). Measurements should be taken approximately every three to five minutes, or as merited given the rapidity of change.

15. Purging is complete when field indicator parameters stabilize. Stabilization is achieved after all field parameters have stabilized for three successive readings. Three successive readings should be within ± 0.1 units for pH, ± 3% for specific conductance, ± 10 mV for Eh, and ± 10% for turbidity and dissolved oxygen. These stabilization guidelines are provided for rough estimates only,

actual site-specific knowledge may be used to adjust these requirements higher or lower.

An in-line water quality measurement device (e.g., flow-through cell) should be used to establish the stabilization time for several field parameters on a well-specific basis. Data on pumping rate, drawdown and volume required for parameter stabilization can be used as a guide for conducting subsequent sampling activities.

16. Collect all project-required samples from the discharge tubing at the flow rate established during purging in accordance with Benchmark's Groundwater Sample Collection Procedures FOP. **If a peristaltic pump and dedicated tubing is used, collect all project-required samples from the discharge tubing as stated before, however volatile organic compounds should be collected in accordance with the procedure presented in the next section.** Continue to maintain a constant flow rate such that the water level is not drawn down as described above. Fill sample containers with minimal turbulence by allowing the ground water to flow from the tubing along the inside walls of the container.

17. If field filtration is recommended as a result of increased turbidity greater than 50 NTU, an in-line filter equipped with a 0.45-micron filter should be utilized. Collection of a filtered sample must be accompanied by an unfiltered sample.

18. Replace the dedicated tubing down the well taking care to avoid contact with the ground surface.

19. Restore the well to its capped/covered and locked condition.

20. Upon purge and sample collection completion, slowly lower the e-line to the bottom of the well/piezometer. Record the total depth to the nearest 0.01-foot and compare to the previous total depth measurement. If a significant discrepancy exists, re-measure the total depth. Record observations of purge water to determine whether the well/piezometer had become silted due to inactivity or damaged (i.e., well sand within purge water). Upon confirmation

of the new total depth and determination of the cause (i.e., siltation or damage), notify the Project Manager following project field activities.

PERISTALTIC PUMP VOC SAMPLE COLLECTION PROCEDURE

The collection of VOCs from a peristaltic pump and dedicated tubing assembly shall be collected using the following procedure.

1. Once all other required sample containers have been filled, turn off the peristaltic pump. The negative pressure effects of the pump head have not altered groundwater remaining within the dedicated tubing assembly and as such, this groundwater can be collected for VOC analysis.

2. While maintaining the pressure on the flexible tubing within the pump head assembly, carefully remove and coil the polyethylene tubing from the well; taking care to prevent the tubing from coming in contact with the ground surface and without allowing groundwater to escape or drain from the tubing intake.

3. Once the polyethylene tubing is removed, turn the variable speed control to zero and reverse the pump direction.

4. Slowly increase the pump rate allowing the groundwater within the polyethylene tubing to be "pushed" out of the intake end (i.e., positive displacement) making sure the groundwater within the tubing is not "pulled" through the original discharge end (i.e., negative displacement). Groundwater pulled through the pump head assembly CANNOT be collected for VOC analysis.

5. Slowly fill each VOC vial by holding the vial at a 45-degree angle and allowing the flowing groundwater to cascade down the side until the vial is filled with as minimal disturbance as possible. As the vial fills, slowly rotate the vial to vertical. **DO NOT OVERFILL THE VIAL, AS THE PRESERVATIVE WILL BE LOST.** The vial should be filled only enough so that the water creates a slight meniscus at the vial mouth.

6. Cap the VOC vials leaving no visible headspace (i.e., air-bubbles). Gently tap each vial against your hand checking for air bubbles.

7. If an air bubble is observed, slowly remove the cap and repeat Steps 5 and 6.

ATTACHMENTS

Groundwater Field Form (sample)

REFERENCES

United States Environmental Protection Agency, 540/S-95/504, 1995. *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures.*

Benchmark FOPs:

007 *Calibration and Maintenance of Portable Dissolved Oxygen Meter*
008 *Calibration and Maintenance of Portable Field pH/Eh Meter*
009 *Calibration and Maintenance of Portable Field Turbidity Meter*
011 *Calibration and Maintenance of Portable Photoionization Detector*
012 *Calibration and Maintenance of Portable Specific Conductance Meter*
022 *Groundwater Level Measurement*
024 *Groundwater Sample Collection Procedures*
040 *Non-Disposable and Non-Dedicated Sampling Equipment Decontamination*
046 *Sample Labeling, Storage and Shipment Procedures*

LOW FLOW (MINIMAL DRAWDOWN) GROUNDWATER PURGING & SAMPLING PROCEDURES

GROUNDWATER FIELD FORM

Project Name: Date:

Location: Project No.: Field Team:

Well No.			Diameter (inches):			Sample Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			Casing Volume:			Purpose: ☐ Development ☐ Sampling			
Total Depth (fbTOR):			Purge Volume (gal):			Purge Method:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
	S1								
	S2								

Well No.			Diameter (inches):			Sample Time:			
Product Depth (fbTOR):			Water Column (ft):			DTW when sampled:			
DTW (static) (fbTOR):			Casing Volume:			Purpose: ☐ Development ☐ Sampling			
Total Depth (fbTOR):			Purge Volume (gal):			Purge Method:			
Time	Water Level (fbTOR)	Acc. Volume (gallons)	pH (units)	Temp. (deg. C)	SC (uS)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor
	0 Initial								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
	8								
	9								
	10								
Sample Information:									
	S1								
	S2								

REMARKS:

Note: All measurements are in feet, distance from top of riser.

Volume Calculation

Diam.	Vol. (g/ft)
1"	0.041
2"	0.163
4"	0.653
6"	1.469

Stabilization Criteria

Parameter	Criteria
pH	± 0.1 unit
SC	± 3%
Turbidity	± 10%
DO	± 0.3 mg/L
ORP	± 10 mV

PREPARED BY:

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Management of Investigation-Derived Waste (IDW)

FOP 032.1

MANAGEMENT OF INVESTIGATION-DERIVED WASTE (IDW)

PURPOSE

The purpose of these guidelines is to ensure the proper holding, storage, transportation, and disposal of materials generated from field investigation activities that may contain hazardous wastes. Investigation-derived waste (IDW) includes the following:

- Drill cuttings, discarded soil samples, drilling mud solids, and used sample containers.
- Well development and purge waters and discarded groundwater samples.
- Decontamination waters and associated solids.
- Soiled disposable personal protective equipment (PPE).
- Used disposable sampling equipment.
- Used plastic sheeting and aluminum foil.
- Other equipment or materials that either contain or have been in contact with potentially impacted environmental media.

Because these materials may contain regulated chemical constituents, they must be managed as a solid waste. This management may be terminated if characterization analytical results indicate the absence of these constituents.

PROCEDURE

1. Contain all investigation-derived wastes in Department of Transportation (DOT)-approved 55-gallon drums, roll-off boxes, or other containers suitable for the wastes.

2. Contain wastes from separate borings or wells in separate containers (i.e. do not combine wastes from several borings/wells in a single container, unless it is a container used specifically for transfer purposes, or unless specific permission to do so has been provided by the TurnKey Field Team Leader. Unused samples from surface sample locations within a given area may be combined.

3. To the extent practicable, separate solids from drilling muds, decontamination waters, and similar liquids. Place solids within separate containers.

4. Transfer all waste containers to a staging area. Access to this area will be controlled. Waste containers must be transferred to the staging area as soon as practicable after the generating activity is complete.

5. Pending transfer, all containers will be covered and secured when not immediately attended.

6. Label all containers with regard to contents, origin, date of generation, using TurnKey's IDW container label (sample attached). Use indelible ink for all labeling.

7. Complete the Investigative Derived Waste Container Log (sample attached) as waste containers are labeled in order to track and inventory project waste. Leave a copy of the log with the site manager or fax copy to the owner/operator as necessary.

8. Collect samples for waste characterization purposes, or use boring/well sample analytical data for characterization.

9. For wastes determined to be hazardous in character, **be aware of accumulation time limitations**. Coordinate the disposal of these wastes with the plant manager/owner/operator, if applicable.

10. Upon Property Owner, Project Manager, and/or NYSDEC Project Manager approval, dispose of investigation-derived wastes as follows:

- Soil, water, and other environmental media for which analysis does not detect organic constituents, and for which inorganic constituents are at levels that meet the Site's cleanup objectives, may be spread on the Property or otherwise treated as a non-waste material. Disposal quantity and on-site location will be documented on Project Field Books and in the project report submittal.

- Soil, water, and other environmental media in which organic compounds are detected or metals are present above the Site's cleanup objectives will be disposed off-site in accordance with applicable state and federal regulations. Disposal quantity and off-site location will be documented on Project Field Books and in the project report submittal.

- Personal protective equipment, disposable bailers, and similar equipment may be disposed as municipal waste, unless waste characterization results mandate otherwise.

WASTE STORAGE MANAGEMENT

Hazardous materials generated on site should be temporarily stored in a secure location that is under the control of the owner/operator or does not allow for vandalism (i.e., within a locked building structure or within a locked fenced in area). A waste-staging area should be designated on-site by the Project Manager in conjunction with the owner/operator.

ATTACHMENTS

Investigation Derived Waste Container Log (sample)
Investigation Derived Waste Container Label (sample)

REFERENCES

None

INVESTIGATION DERIVED WASTE CO

Project Name: Location:

Project Number: Personnel:

Container		Contents	Date		Staging Location	Date Sampled	Co
Number	Description		Started	Ended			

Prepared By:

Signed:

IDW Container Label (sample):

Project Name:
Project Number:

Container I.D.:
Contents/Matrix:
Estimated Quantity:
Date of Generation:
Date of Sample Collection:

Contact Name:
Contact Phone Number:

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Monitoring Well Construction for Hollow Stem Auger Boreholes

FOP 033.0

MONITORING WELL CONSTRUCTION FOR HOLLOW STEM AUGER BOREHOLES

PURPOSE

Wells will be installed within selected boreholes for the purpose of evaluating groundwater characteristics. Well installation procedures depend upon the drilling method. This procedure describes well construction and installation for boreholes drilled using the hollow stem auger method. Refer to the TurnKey's Hollow Stem Auger Drilling Procedures FOP. Nominal dimensions and materials for the well are shown in the attached well construction diagram.

PROCEDURE

1. Advance borehole in accordance with the TurnKey's Hollow Stem Auger Drilling Procedure FOP to the required depth. The nominal inside diameter (ID) of the auger stem used should be at least 2 inches larger than the outside diameter (OD) of the riser and screen selected for the well installation. Record the monitoring well construction on the Field Borehole/Monitoring Well Installation Log (sample attached) (see Documentation Requirements for Drilling and Well Installation FOP).

2. Remove the drill rods and center bit/plug from the auger stem and verify borehole depth using weighted measuring tape.

3. In the event of an over drill (i.e. borehole depth is more than one foot greater than desired base of screen depth), use bentonite chips poured through the auger stem to seal the over drilled portion of the borehole. Be sure to note bentonite chip thickness on Field Borehole/Monitoring Well Installation Log.

4. Add a maximum of 6 inches of filter pack material through the auger stem to the base of the borehole. (Note: This step may be avoided if dense non-aqueous phase liquids are suspected to be present and it is desirable to have the screen and/or sump at the base of the borehole.)

5. Measure the length of the well string (i.e. riser and screen), and lower the well string into the well assembly to the desired depth. All measurements during the well installation process will be accurate to 0.1 foot.

6. Surface pour filter pack material into the annulus between the well and the auger stem as the augers are gradually withdrawn from the borehole. Use a weighted tape to confirm that the level of sand is maintained within the augers at all times. Record material volumes used.

7. After filter pack materials are brought to the required level, surface pour bentonite chips or pellets into the annulus between the well and the auger stem to form the filter pack seal. If necessary to avoid bridging, delayed hydration (coated) pellets may be used. Record the volume of material used.

8. Allow the bentonite chips/pellets to adequately hydrate for approximately 30 to 45-minutes. Cap or cover the well top of riser.

9. Mix cement/bentonite grout to a smooth consistency using a centrifugal or reciprocating pump. Do not hand mix. All water used must be potable quality. Record the volume of water used.

10. Fill the remaining annulus between the well and the auger stem with grout by surface pouring or pumping, and begin withdrawal of the auger string. Periodically top the auger string off with additional grout. If groundwater is present within the annulus above the bentonite chip/pellet seal, cement/bentonite grout will be pressure tremie grouted from bottom to top in order to displace groundwater from the borehole.

11. When the auger string is withdrawn, center the upper portion of the well riser within the borehole, and place drums or barricades around the well for protection while the grout cures. Place and lock a security cap (i.e., J-plug) in the opening of the well riser.

12. Leave the well undisturbed for at least 24 hours to allow the grout to cure. If excessive grout fallback occurs, top off as necessary with bentonite chips or additional grout.

13. Construct the surface completion as shown in the attached Typical Monitoring Well Detail (Figure 1). Select flush completions for all locations in active operational or high traffic areas, or in other areas where an above grade completion would be undesirable. Use aboveground completions in all other areas.

14. Place a dedicated lock on the well or protective casing, and keep well locked when not actively attended.

15. Permanently label the well with the appropriate well identifier as determined by the Project Manager or specified in the Work Plan.

16. Permanently mark a survey location on the north side at the top of the casing with a saw cut. Survey all wells for horizontal location and elevation, using a surveyor licensed by the State of New York. Coordinates and elevations will be provided in a coordinate system consistent with previous well surveys at the Site. Information obtained will include location (*x* and *y*) of the well, and elevation (*z*) of the ground surface, the pad, and the top of riser.

17. Develop the well as described in the TurnKey's Field Operating Procedure for Monitoring Well Development.

18. Manage all waste materials generated during well installation and development as described in the TurnKey's Field Operating Procedure for Management of Investigation Derived Waste.

ATTACHMENTS

Field Borehole/Monitoring Well Installation Log (sample)
Typical Monitoring Well Detail (Figure 1)

REFERENCES

TurnKey FOPs:

015 Documentation Requirements for Drilling and Well Installation
026 Hollow Stem Auger Drilling Procedures
032 Management of Investigation Derived Waste
036 Monitoring Well Development Procedures

MONITORING WELL CONSTRUCTION FOR HOLLOW STEM AUGER BOREHOLES

FIELD BOREHOLE/MONITORING WELL INSTALLATION LOG

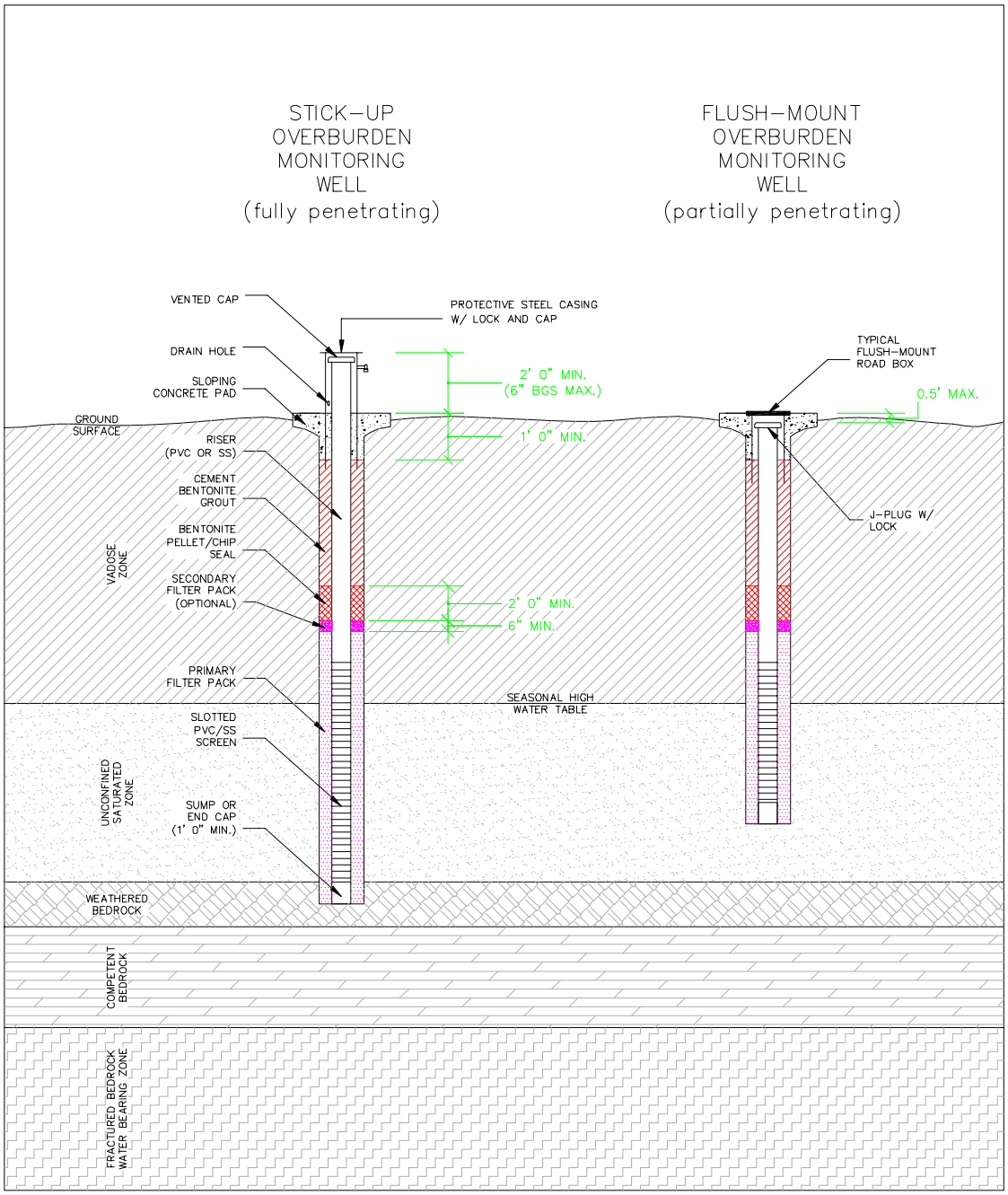
PROJECT:			**Log of Well No.:**	
BORING LOCATION:			ELEVATION AND DATUM:	
DRILLING CONTRACTOR:			DATE STARTED:	DATE FINISHED:
DRILLING METHOD:			TOTAL DEPTH:	SCREEN INTERVAL:
DRILLING EQUIPMENT:			DEPTH TO WATER: FIRST: / COMPL.:	CASING:
SAMPLING METHOD:			LOGGED BY:	
HAMMER WEIGHT:	DROP:		RESPONSIBLE PROFESSIONAL:	REG. NO.

Depth (fbgs)	SAMPLES: Sample No.	Sample	Blows (per 6")	SPT N-Value	Recovery	PID Scan (ppm)	SAMPLE DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
							USCS Classification: Color, Moisture Condition, % of Soil Type, Fabric, Bedding, Weathering/Fracturing, Odor, Other	
							SURFACE ELEVATION (FMSL):	

Project No:	TurnKey Environmental Restoration, LLC	Figure

MONITORING WELL CONSTRUCTION FOR HOLLOW STEM AUGER BOREHOLES

FIGURE 1



TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Monitoring Well Development Procedures

FOP 036.0

MONITORING WELL DEVELOPMENT PROCEDURES

PURPOSE

This procedure describes the methods for the development of newly installed monitoring wells and re-development of existing monitoring wells that have been inactive for an extended period of time (i.e., one year or more). Monitoring wells are developed after installation in order to remove introduced water and drilling fluids, reduce the turbidity of the water, and improve the hydraulic communication between the well and the water-bearing formation. Well development will not commence until the annular grout seal has cured, but will be performed within ten calendar days of well installation.

PROCEDURE

1. All well development will include surge blocking or false bailing with one or more of the following fluid removal methods. Well development activities may include:

    - Bailing
    - Air Lifting
    - Submersible Pumping
    - Other methods as approved by the TurnKey Field Team Leader.
    - The appropriate water removal method will be selected based on water level depth and anticipated well productivity.

2. Assemble and decontaminate equipment (if necessary), and place in the well. Reference the TurnKey's Field Operating Procedure for Non-Disposable and Non-Dedicated Sampling Equipment Decontamination.

3. Alternate the use of agitation methods with water removal methods, using the former to suspend solids in the well water, and the latter to remove the turbid water. For example, use a vented surge block to agitate the well, moving up and down within the screened interval and then use a pump to clear the well. A bailer may be used for both purposes, by surging with the bailer (false

bailing) for a period within the screened interval, then bailing a volume of water from the well.

4. When using surging methods, initiate this activity gradually, with short (2 to 3 feet) strokes. After several passes across the screened interval, increase the speed and length of the surge strokes.

5. Continue development until the following objectives are achieved:

   - Field parameters stabilize to the following criteria:
     - Dissolved Oxygen: ± 0.3 mg/L
     - Turbidity: ± 10%
     - Specific Conductance: ± 3%
     - ORP: ± 10 mV
     - pH: ± 0.1 units
   - The well will generate non-turbid water during continued pumping typically less than 50 NTU.
   - A minimum of 10 well volumes has been evacuated from the well.
   - In the case of lost water during drilling activities, the volume of water removed exceeds twice the volume of water lost to the formation during the drilling process, as indicated by the water balance.

6. Document the development methods, volumes, field parameter measurements, and other observations on the attached Groundwater Well Development Log (sample attached).

ATTACHMENTS

Groundwater Well Development Log (sample)

REFERENCES

TurnKey FOPs:
040 Non-Disposable and Non-Dedicated Sampling Equipment Decontamination

GROUNDWATER WELL DEVELOPMENT LOG

Project Name:	WELL NUMBER:
Project Number:	Sample Matrix:
Client:	Weather:

WELL DATA: DATE: TIME:

Casing Diameter (inches):	Casing Material:
Screened interval (fbTOR):	Screen Material:
Static Water Level (fbTOR):	Bottom Depth (fbTOR):
Elevation Top of Well Riser (fmsl):	Datum Ground Surface: Mean Sea Level
Elevation Top of Screen (fmsl):	Stick-up (feet):

PURGING DATA: DATE: START TIME: END TIME:

VOLUME CALCULATION:

(A) Total Depth of Well (fbTOR):	
(B) Casing Diameter (inches):	
(C) Static Water Level (fbTOR):	
One Well Volume (V, gallons): $V = 0.0408 [(B)^2 \times \{ (A) - (C) \}]$	

*Use the table to the right to calculate one well

Volume Calculati

Well Diam	Volume gal/ft
1"	.041
4"	0.65
	1.020
	1.469
8"	2.611

Stabilization Criteria

Pa...er	Criteria
	+/- 0.3 mg/L
...bidity	+/- 10%
SC	+/- 3%
ORP	+/- 10 mV
pH	+/- 0.1 unit

Field Personnel:

EVACUATION STABILIZATION

Time	Water Level (fbTOR)	Accumulat... Volume (gallons)		Ter... (degre...	...ific ...nce (m...)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Appearance & Odor

REMARKS:

PREPARED BY:

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Sample Labeling, Storage, and Shipment Procedures

FOP 046.0

SAMPLE LABELING, STORAGE & SHIPMENT PROCEDURES

PURPOSE

The collection and analysis of samples of environmental media, including soils, groundwater, surface water, and sediment, are the central activities of the field investigation. These samples must be properly labeled to preserve its identity, and properly stored and shipped in a manner that preserves its integrity and chain of custody. This procedure presents methods for these activities.

SAMPLE LABELING PROCEDURE

1. Assign each sample retained for analysis a unique 9-digit alphanumeric identification code or as indicated in the Project Work Plan. Typically, this code will be formatted as follows:

Sample I.D. Example: GW051402047	
GW	**Sample matrix** GW = groundwater; SW = surface water; SUB = subsurface soil; SS = surface soil; SED = sediment; L = leachate; A = air
05	Month of sample collection
14	Day of sample collection
02	Year of sample collection
047	Consecutive sample number

2. Consecutive sample numbers will indicate the individual sample's sequence in the total set of samples collected during the investigation/sampling event. The sample number above, for example, would indicate the 47th sample retained for analysis during the field investigation, collected on May 14, 2002.

3. Affix a non-removable (when wet) label to each sample container. The following information will be written on the label with black or blue ink that will not smudge when wet:

   - Project number
   - Sample ID (see Step 1 above)
   - Date of sample collection
   - Time of sample collection (military time only)
   - Specify "grab" or "composite" sample with an "X"
   - Sampler initials
   - Preservative(s) (if applicable)
   - Analytes for analysis (if practicable)

4. Record all sample label information in the Project Field Book and on a Sample Summary Collection Log (see attached samples), keyed to the sample identification number. In addition, add information regarding the matrix, sample location, depth, etc. to provide a complete description of the sample.

SAMPLE STORAGE PROCEDURE

1. Immediately after collection, placement in the proper container, and labeling, place samples to be retained for chemical analysis into resealable plastic bags.

2. Place bagged samples into an ice chest filled approximately half-full of double bagged ice. Blue ice is not an acceptable substitute for ice.

3. Maintain samples in an ice chest or in an alternative location (e.g. sample refrigerator) as approved by the TurnKey Field Team Leader until time of shipment. Periodically drain melt-water off coolers and replenish ice as necessary.

4. Ship samples on a daily basis, unless otherwise directed by the TurnKey Field Team Leader.

5. Maintain appropriate custody procedures on coolers and other sample storage containers at all times. These procedures are discussed in detail in the Project Quality Assurance Project Plan, Monitoring Plan or Work Plan.

6. Samples shall be kept in a secure location locked and controlled (i.e., locked building or fenced area) so that only the Project Field Team Leader has access to the location or under the constant visual surveillance of the same.

SAMPLE SHIPPING PROCEDURE

1. Fill out the chain-of-custody form completely (see attached sample) with all relevant information. The white original goes with the samples and should be placed in a resealable plastic bag and taped inside the sample cooler lid; the sampler should retain the copy.

2. Place a layer of inert cushioning material such as bubble pack in the bottom of cooler.

3. Place each bottle in a bubble wrap sleeve or other protective wrap. To the extent practicable, then place each bottle in a resealable plastic bag.

4. Open a garbage bag (or similar) into a cooler and place sample bottles into the garbage bag (or similar) with volatile organic analysis (VOA) vials near the center of the cooler.

5. Pack bottles with ice in plastic bags. At packing completion, cooler should be at least 50 percent ice, by volume. Coolers should be completely filled, so that samples do not move excessively during shipping.

6. Duct tape (or similar) cooler drain closed and wrap cooler completely in two or more locations to secure lid, specifically covering the hinges of the cooler.

7. Place laboratory label address identifying cooler number (i.e., 1 of 4, 2 of 4 etc.) and overnight delivery waybill sleeves on cooler lid or handle sleeve (Federal Express).

8. Sign the custody seal tape with an indelible soft-tip marker and place over the duct tape across the front and back seam between the lid and cooler body.

9. Cover the signed custody seal tape with an additional wrap of transparent strapping tape.

10. Place "Fragile" and "This Side Up" labels on all four sides of the cooler. "This Side Up" labels are yellow labels with a black arrow with the arrowhead pointing toward the cooler lid.

11. For coolers shipped by overnight delivery, retain a copy of the shipping waybill, and attach to the chain-of-custody documentation.

ATTACHMENTS

Soil/Sediment Sample Summary Collection Log (sample)
Groundwater/Surface Water Sample Summary Collection Log (sample)
Wipe Sample Summary Collection Log (sample)
Air Sample Summary Collection Log (sample)
Chain-Of-Custody Form (sample)

REFERENCES

None

SOIL/SEDIMENT
SAMPLE COLLECTION SUMMARY LOG

Field ID	Location	QC Type	Depth (feet)		Analytical Parameters	Containers	Date	Time	Sampler Initials	Comments (e.g. problems encountered, ref. to variance, location changes, depth changes, important matrix observations or description, gravel thickness, etc.)
			from	to						

Equipment Rinsate Blanks *- Pour clean deionized water over or through dec[illegible] sample containers. Collect at a frequency of 1 per sampling method per day. Analyze for all those parameters analyzed for in the samples collected the same day. [illegible] Metals analyzed for that day (except Hexavalent Chromium which needs a separate container). Match equipment used for constituents of concern to rinsate analyte. [illegible] water manufacturers info & date.*

MS/MSD/MSB *- Collect at a frequency of 1 per 20 samples of each [illegible] day. [illegible] parameters analyzed for the samples collected the same day.*

Field Blank *- Pour clean deionized water (used as final decon rinse [illegible] sampling site. Collect field blanks at a frequency of 1 per lot of deionized water. Note water lot number and dates in use for decon in 'Comments' section.*

Investigation Derived Waste (IDW) Characterization *- One [illegible] drums of decon fluids and soil. Please note number of drums and labels on collection log.*

Notes:

1. See QAPP for sampling frequency and actual numb[illegible]
2. CWM - clear, wide-mouth glass jar with Teflon-lined ca[illegible]
3. HDPE - high density polyethylene bottle.
4. MS/MSD/MSB - Matrix Spike, Matrix Spike Duplicate, Matrix Spike Blank.
5. BD - Blind Duplicate - indicate location of duplicate.

GROUNDWATER/SURFACE WATER SAMPLE COLLECTION SUMMARY LOG

Field ID	Location	QC Type	Depth (feet)		Analytical Parameters	Containers	Date	Time	Sampler Initials	Comments (e.g. problems encountered, ref. to variance, location changes, depth changes, important matrix observations or description, gravel thickness, etc.)
			from	to						

Equipment Rinsate Blanks *- Pour clean deionized water over or through dec[illegible] sample containers. Collect at a frequency of 1 per sampling method per day. Analyze for all those parameters analyzed for in the samples collected the same day. H[illegible] Metals analyzed for that day (except Hexavalent Chromium which needs a separate container). Match equipment used for constituents of concern to rinsate analyte.*

MS/MSD/MSB *- Collect at a frequency of 1 per 20 samples of each[illegible] day. A[illegible] parameters analyzed for the samples collected the same day.*

Field Blank *- Pour clean deionized water (used as final decon rinse w[illegible] sampling site. Collect field blanks at a frequency of 1 per lot of deionized water. Note water lot number and dates in use for decon in 'Comments' section.*

Investigation Derived Waste (IDW) Characterization *- One co[illegible] drums of decon fluids and soil. Please note number of drums and labels on collection log.*

Notes:

1. See QAPP for sampling frequency and actual numb[illegible]
2. CWM - clear, wide-mouth glass jar with Teflon-lined c[illegible]
3. HDPE - high density polyethylene bottle.
4. FD - Field Duplicate.
5. MS/MSD/MSB - Matrix Spike, Matrix Spike Duplicate, Matrix Spike Blank.
6. BD - Blind Duplicate.

WIPE SAMPLE COLLECTION SUMMARY LOG

Field ID	Location	QC Type	Analytical Parameters	Containers	Date	Time	Sampler Initials	Comments (e.g. problems encountered, ref. to variance, location changes, important observations or descriptions, etc.)

Notes:

1. See QAPP for sampling frequency and actual number of QC samples.
2. CWM - clear, wide-mouth glass jar with Teflon-lined cap.
3. FD - Field Duplicate.
4. FB - Field Blank.
5. RS - Rinsate.
6. No Matrix Spike, Matrix Spike Duplicate or Matrix S… Blanks fo… sa…
7. Rinsates should be taken at a rate of 1 per day … sampling … …us…le equipment is used.
8. Wipe sample FB collected by wiping unused gl… …d a… other sam… …ling into contact with sampled surface) with prepared gauze pad and place in sample jar. Take at a rate of 1 FB per 20 samples.
9. Wipe sample FDs taken adjacent to original samp… …r 2… …les.
10. **EH :** Extract and Hold

AIR SAMPLE COLLECTION SUMMARY LOG

Field ID	Location	QC Type	Analytical Parameters	Containers	Date	Time	Sampler Initials	Comments (e.g. problems encountered, ref. to variance, location changes, important observations or descriptions, etc.)

Notes:

1. See QAPP for sampling frequency and actual n[illegible] of 2 samples.
2. SC - Summa Canister.
3. TB - Tedlar Bag (quantity).
4. No Matrix Spike, Matrix Spike Duplicate, Matrix Spike [illegible] Field [illegible]ate, Field Blanks or Rinsates collected for air samples.

TurnKey Environmental Restoration, LLC

CHAIN OF CUSTODY RECORD

Project No. | Project Name

Samplers (Signature)

No.	Date	Time	comp	grab	Sample Identification	Number of Containers	VOCs	SVOCs	Metals						REMARKS

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

Sample Disposal:
Return to Client ☐ Disposal by Lab ☐ Archive ____________(mos.)

Turnaround Time Required:
Normal ☐ Rush ☐

QC Level:
I. ☐ II. ☐ III. ☐ Project Specific (specify):__________________

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	REMARKS:
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Screening of Soil Samples for Organic Vapors During Drilling Activities

FOP 047.0

SCREENING OF SOIL SAMPLES FOR ORGANIC VAPORS DURING DRILLING ACTIVITIES

PURPOSE

This procedure is used to screen soil samples for the presence of volatile organic constituents (VOCs) using a field organic vapor meter. These meters will be either photoionization detector (PID) or flame-ionization detector (FID) type. This screening is performed at the drilling and sampling location as a procedure for ensuring the health and safety of personnel at the site and to identify potentially contaminated soil samples for laboratory analysis. All soil samples will be field screened to provide a vertical profile of soil contamination by volatile organic substances.

PROCEDURE

1. Calibrate air-monitoring equipment in accordance with the appropriate TurnKey's Field Operating Procedures or manufacturers recommendations for calibration of field meters.

2. Collect split-spoon (or other sampler) samples in accordance with TurnKey's Split Spoon Sampling Procedure FOP.

3. When the split-spoon or other sampler is opened or accessed, shave a thin layer of material from the entire length of the core.

4. Scan the core visually and with the PID or FID noting stratification, visible staining, or other evidence of contamination.

5. Based on this initial scan of the sample, collect approximately 100 milliliters (ml) of soil using a decontaminated or dedicated stainless steel spatula, scoop, or equivalent. Place this soil into a labeled wide-mouth glass jar approximately ½ to ¾ full and seal with aluminum foil and a screw top cap. Alternatively, the soil may be placed into a clean, re-sealable plastic bag and sealed. Be sure to leave some headspace above the soil sample within the sealed container.

6. Place field screening sample (i.e., jar or bag) in a location where the ambient temperature is at least 70° Fahrenheit.

7. Leave the field screening sample bag for at least 30 minutes, but no more than 60 minutes.

8. Carefully remove the screw top cap from the jar and slowly insert the tip of the organic vapor meter (PID or FID) through the aluminum foil seal making the smallest hole possible. Alternatively, unseal a portion of the plastic bag just big enough to insert the probe of a calibrated PID.

9. Record the maximum reading in parts per million by volume (ppmv) on the Field Borehole Log or Field Borehole/Monitoring Well Installation Log form (see attached samples) (see Documentation Requirements for Drilling and Well Installation FOP), at the depth interval corresponding to the depth of sample collection.

ATTACHMENTS

Field Borehole Log (sample)
Field Borehole/Monitoring Well Installation Log (sample)

REFERENCES

TurnKey FOPs:

010 Calibration and Maintenance of Portable Flame Ionization Detector
011 Calibration and Maintenance of Portable Photoionization Detector
015 Documentation Requirements for Drilling and Well Installation
058 Split Spoon Sampling Procedures

FOP 047.0

SCREENING OF SOIL SAMPLES FOR ORGANIC VAPORS DURING DRILLING ACTIVITIES

FIELD BOREHOLE LOG

PROJECT:		**Log of Boring No.:**		
BORING LOCATION:		ELEVATION AND DATUM:		
DRILLING CONTRACTOR:		DATE STARTED:		DATE FINISHED:
DRILLING METHOD:		TOTAL DEPTH:		SCREEN INTERVAL:
DRILLING EQUIPMENT:		DEPTH TO WATER: FIRST:	COMPL.:	CASING:
SAMPLING METHOD:		LOGGED BY:		
HAMMER WEIGHT:	DROP:	RESPONSIBLE PROFESSIONAL:		REG. NO.

Depth (fbgs)	SAMPLES: Sample No.	Sample	Blows (per 6")	SPT N-Value	Recovery	PID Scan (ppm)	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, % of Soil Type, Texture, Plasticity, Fabric, Bedding, Weathering/Fracturing, Odor, Other SURFACE ELEVATION (FMSL):	REMARKS

ABANDONMENT:			
Volume of cement/bentonite grout required:	V = pr2 x 7.48 =	gallons	borehole depth = ft.
Volume of cement/bentonite grout installed:		gallons	borehole diameter = ft.
Has bridging of grout occurred? ☐ yes ☐ no			borehole radius = ft.
If yes, explain resolution:			
Method of installation:			
Project No:	**TurnKey Environmental Restoration, LLC**		Figure

SCREENING OF SOIL SAMPLES FOR ORGANIC VAPORS DURING DRILLING ACTIVITIES

FIELD GEOPROBE BOREHOLE \ TEMPORARY WELL INSTALLATION LOG

PROJECT:			**Log of Temp. Well No.:**	
BORING LOCATION:			ELEVATION AND DATUM:	
DRILLING CONTRACTOR:			DATE STARTED:	DATE FINISHED:
DRILLING METHOD:			TOTAL DEPTH:	SCREEN INTERVAL:
DRILLING EQUIPMENT:			DEPTH TO WATER: FIRST: / COMPL.:	CASING:
SAMPLING METHOD:			LOGGED BY:	
HAMMER WEIGHT:	DROP:		RESPONSIBLE PROFESSIONAL:	REG. NO.

Depth (fbgs)	SAMPLES: Sample No.	Sample	Blows (per 6")	SPT N-Value	Recovery	PID Scan (ppm)	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, % of Soil Type, Plasticity, Fabric, Bedding, Weathering/Fracturing, Odor; SURFACE ELEVATION (FMSL):	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

Project No:	TurnKey Environmental Restoration, LLC	Figure

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Soil Description Procedures Using The Visual-Manual Method

FOP 054.2

SOIL DESCRIPTION PROCEDURES USING THE VISUAL-MANUAL METHOD

PURPOSE

This guideline presents a means for insuring consistent and proper field identification and description of collected soils during a project (via, split-spoon (barrel) sampler, hand auger, test pit etc.). The lithology and moisture content of each soil sample will be physically characterized by visual-manual observation in accordance with ASTM Method D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). When precise classification of soils for engineering purposes is required, the procedures prescribed in ASTM Method D2487 (Standard Practice for Classification of Soils for Engineering Purposes [Unified Soil Classification System, USCS]) will be used. The method of soil characterization presented herein describes soil types based on grain size, liquid and plastic limits, and moisture content based on visual examination and manual tests. When using this FOP to classify soil, the detail of description provided for a particular material should be dictated by the complexity and objectives of the project. However, more often than not, "after the fact" field information is required later in the project, therefore, every attempt to describe the soil as completely as possibly should be made.

Intensely weathered or decomposed rock that is friable and can be reduced to gravel size or smaller by normal hand pressure should be classified as a soil. The soil classification would be followed by the parent rock name in parenthesis. Projects requiring depth to bedrock determinations should always classify weathered or decomposed bedrock as bedrock (i.e., landfill siting). The project manager should always be consulted prior to making this determination.

SOIL DESCRIPTION PROCEDURES USING THE VISUAL-MANUAL METHOD

PROCEDURE

Assemble necessary equipment and discuss program requirements with drilling contractor.

1. Calibrate air-monitoring equipment in accordance with the appropriate TurnKey's Field Operating Procedures or manufacturers recommendations for calibration of field meters.

2. Collect desired soil sample in accordance with appropriate TurnKey FOP (i.e., split-spoon sampling, hand augering, test pitting etc.).

3. Shave a thin layer off the entire length of the sample to expose fresh sample.

4. Photograph and scan the sample with a photoionization detector (PID) at this time, if applicable, in accordance with TurnKey's Screening of Soil Samples for Organic Vapors During Drilling Activities FOP.

5. Describe the sample using terminology presented in the Descriptive Terms section below.

6. Record all pertinent information in the Project Field Book and Field Borehole Log (sample attached) or Field Borehole/Monitoring Well Installation Log (sample attached).

7. After the sample has been described, place a representative portion of the sample in new, precleaned jars or self-sealing plastic bags for archival purposes (if required). Label the jar or bag with the sample identification number, sample interval, date, project number and store in a secure location.

8. If the soil is to be submitted to a laboratory for analysis, collect the soil sample with a dedicated stainless steel sampling tool, place the sample into the appropriate laboratory-supplied containers, and store in an ice-chilled cooler staged in a secure location in accordance with TurnKey's Sample Labeling, Storage and Shipment Procedures FOP.

9. All remaining soil from soil sample collection activities shall be containerized in accordance with TurnKey's Management of Investigative-Derived Waste (IDW) FOP and/or the Project Work Plan.

DESCRIPTIVE TERMS

All field soil samples will be described using the Unified Soil Classification System (USCS) presented in Figures 1 and 2 (attached). In addition to ASTM Method D2488, Method D1586, Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils (a.k.a., Standard Penetration Test, STP), when implemented, can also be used to classify the resistance of soils. In certain instances, it is desirable to supplement the USCS classification with a geologic interpretation of the soil sample that is supported by the soil descriptive terms presented in this section. The project manager should be consulted when making any geologic interpretation. Field test methods are provided to assist field personnel in classifying soil and are identified by a bold blue **FTM** and shaded. Classification of sampled soils will use the following ASTM descriptive terms and criteria:

- **Group Name** (USCS, see Figure 2)
- **Group Symbol** (USCS, see Figure 2) – only use if physical laboratory testing has been performed to substantiate. The USCS can be applied to most unconsolidated materials, and is represented by a two-letter symbol, except Peat (Pt).
  - The first letter includes: G (gravel), S (sand), M (silt), C (clay), and O (organic).
  - The second letter includes: P (poorly graded or uniform particle sizes), W (well graded or diversified particle sizes), H (high plasticity), and L (low plasticity).
  - Examples:
    - GW = well graded gravels and gravel-sand mixtures, little or no fines
    - GP = poorly graded gravels and gravel-sand mixtures, little or no fines
    - GM = silty gravels, gravel-sand-silt mixtures

- GC = clayey gravels, gravel-sand-clay mixtures
- SW = well graded sands and gravelly sands, little or no fines
- SP = poorly graded sands and gravelly sands, little or no fines
- SM = silty sand, sand-silt mixtures
- SC = clayey sand sand-clay mixtures
- ML = inorganic silts, very fine sands, rock flour, silty or clayey fine sands
- CL = inorganic clays of low to medium plasticity, gravelly/sandy/silty/lean clays
- OL = organic silts and organic silty clays of low plasticity
- MH = inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts (very rare)
- CH = inorganic clays of high plasticity, fat clays
- OH = organic clays of medium to high plasticity
- Pt = peat, muck, and other highly organic soils

- **Angularity** (ASTM D2488; Table 1)
  - Angular – particles have sharp edges and relatively planar sides with unpolished surfaces
  - Subangular – particles are similar to angular description but have rounded edges
  - Subrounded – particles have nearly planar sides but have well-rounded corners and edges
  - Rounded – particles have smoothly curved sides and no edges
- **Particle Shape** (ASTM D2488; Table 2)
  - Flat – particles with width/thickness > 3
  - Elongated – particles with length/width > 3
  - Flat and Elongated – particles meet criteria for both flat and elongated
- **Moisture Condition** (ASTM D2488; Table 3)
  - Dry – absence of moisture, dusty, dry to the touch
  - Moist – damp, but no visible water
  - Wet – visible free water, usually soil is below water table
- **Reaction with Hydrochloric Acid (HCL)** (ASTM D2488; Table 4)
  - None – no visible reaction

- Weak – some reaction, with bubbles forming slowly
- Strong – violent reaction, with bubbles forming immediately

- **Consistency of Cohesive Soils** (ASTM D2488; Table 5)
  - Very soft – squeezes between fingers when fist is closed; easily penetrated several inches by fist (SPT = 2 or less)
  - Soft – easily molded by fingers; easily penetrated several inches by thumb (SPT = 2 to 4)
  - Firm – molded by strong pressure of fingers; can be penetrated several inches by thumb with moderate effort (SPT = 4 to 8)
  - Stiff – dented by strong pressure of fingers; readily indented by thumb but can be penetrated only with great effort (SPT = 8 to 15)
  - Very stiff – readily indented by thumbnail (SPT = 15 to 30)
  - Hard – indented with difficultly by thumbnail (SPT >30)
- **Cementation** (ASTM D2488; Table 6)
  - Weak – crumbles or breaks with handling or slight finger pressure
  - Moderate – crumbles or breaks with considerable finger pressure
  - Strong – will not crumble or break with finger pressure
- **Structure (Fabric)** (ASTM D2488; Table 7)
  - Varved – alternating 1 mm to 12 mm (0.04 – 0.5 inch) layers of sand, silt and clay
  - Stratified – alternating layers of varying material or color with the layers less than 6 mm (0.23 inches) thick; note thickness
  - Laminated – alternating layers of varying material or color with the layers less than 6 mm (0.23 inches) thick; note thickness
  - Fissured – contains shears or separations along planes of weakness
  - Slickensided – shear planes appear polished or glossy, sometimes striated

- Blocky – cohesive soil that can be broken down into small angular lumps which resist further breakdown
- Lensed – inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness
- Homogeneous or Massive – same color and appearance throughout

- **Inorganic Fine-Grained Soil Characteristics** (ASTM D2488; Table 12)

  Several field tests can be performed to determine the characteristics of fine-grained soils (material passing the No. 40 sieve), such as dry strength, dilatency, and toughness. These field testing methods are described below.

  - **Dry Strength** (ASTM D2488; Table 8)

    FTM (Dry Strength): Select enough material and moisten with water until it can be molded or shaped without sticking to your fingers (slightly below the sticky limit) into a ball about 1 inch in diameter. From this ball, form three balls about ½ inch in diameter and allow to dry in air, or sun, or by artificial means (temperature not to exceed 60° C (140° F). Soil containing natural dry lumps about ½ inch in diameter may be used in place of molded balls, however the dry strengths are usually lower. Test the strength by crushing the dry balls or lumps between your fingers using the descriptions below.

    - None – the dry specimen crumbles with the slightest pressure of handling
    - Low – the dry specimen crumbles with some finger pressure
    - Medium – the dry specimen breaks into pieces or crumbles with considerable finger pressure
    - High – the dry specimen cannot be broken with finger pressure. The specimen will break into pieces between the thumb and a hard surface.
    - Very High – the dry specimen cannot be broken between the thumb and a hard surface

  - **Dilatency** (ASTM D2488; Table 9)

    FTM (Dilatency): Place enough material in your hand to form a ball approximately ½ inch in diameter and moisten with water until it can be

molded or shaped without sticking to your fingers (slightly below the sticky limit). Smooth the ball in the palm of one hand with the blade of a knife or small spatula. Shake horizontally, striking the side of the hand vigorously against the other several times. Note the reaction of water appearing on the surface of the soil. The soil is said to have given a reaction to this test if, when it is shaken, water comes to the surface of the sample producing a smooth, shiny appearance. Squeeze the sample between the thumb and forefinger and note the reaction as follows:

- None – no visible change in the specimen
- Slow – water slowly appears on the surface of the specimen during shaking and does not disappear or disappears slowly upon squeezing
- Rapid – water quickly appears on the surface of the specimen during shaking and disappears upon squeezing

- **Toughness** (ASTM D2488; Table 10)

FTM (Toughness): Following the dilatency test above, shape the test specimen into an elongated pat and roll by hand on a smooth surface or between palms into a thread about 1/8 inch in diameter. Fold the sample threads and re-roll repeatedly until the thread crumbles at a diameter of about 1/8 inch (e.g., near the plastic limit). Note the pressure required to roll the thread near the plastic limit as well as the strength of the thread. After the thread crumbles, lump the pieces together and knead the lump until it crumbles. Describe the toughness as follows:

- Low – only slight pressure is required to roll the thread near the plastic limit. The thread and the lump are weak and very soft.
- Medium – medium pressure is required to roll the thread to near the plastic limit. The thread and the lump are soft.
- High – considerable pressure is required to roll the thread to near the plastic limit. The thread and the lump are firm.

Using the results of the dry strength, dilatency, and toughness test described above, classify the soil according to the following:

Soil Symbol	Dry Strength	Dilatency	Toughness
Silt (ML)	None to low	Slow to rapid	Low or thread cannot be formed
Lean clay (CL)	Medium to high	None to slow	Medium
Elastic Silt (MH)	Low to medium	None to slow	Low to medium
Fat Clay (CH)	High to very high	None	Low to medium high

- **Plasticity** (ASTM D2488; Table 11)

  Two field test methods can be used to determine plasticity of fine-grained soils (material passing the No. 40 sieve): the roll or thread test and the ribbon test. Each test is described below.

  FTM (Roll or Thread Test): As with the toughness test above, mix a representative portion of the soil sample with water until it can be molded or shaped without sticking to your fingers (slightly below the sticky limit). Place an elongated cylindrical sample on a nonabsorbent rolling surface (e.g., glass or was paper on a flat surface) and attempt to roll it into a thread approximately 1/8 inch in diameter. The results of this test are defined below (non-plastic to high plasticity).

  FTM (Ribbon Test): Form a roll from a handful of moist soil (slightly below the sticky limit) about ½ to ¾ inches in diameter and about 3 to 5 inches long. Place the material in the palm of your hand and, starting at one end, flatten the roll between your thumb and forefinger to form the longest and thinnest ribbon possible that can be supported by the cohesive properties of the material before breaking. If the soil sample holds together for a length of 6 to 10 inches without breaking, the material is considered to be both highly plastic and highly compressive (Fat Clay, CH). If the soil cannot be ribboned, it is non-plastic (Silt, ML or MH). If it can be ribboned only with difficulty into short lengths, it has low plasticity (Lean Clay, CL). Use the following terms to describe the plasticity of soil:

- Nonplastic (ML or MH) – a 3 mm (0.12 inches) thread cannot be rolled at any water content
- Low Plasticity (CL, ML, or MH) – the thread can barely be rolled, and crumbles easily
- Medium Plasticity (CL) – the thread is easy to roll and not much time is required to reach the plastic limit before crumbling
- High Plasticity (CH) – it takes considerable time rolling and kneading to reach the plastic limit; the thread can be rolled several times before crumbling

Note: A soil with as little as 20% clay will behave as a clayey soil. A soil needs 45% to over 60% medium to coarse sand to behave as a sandy soil. In a soil with 20% clay and 80% sand, the soil will behave as a clayey soil.

- **Relative Density of Cohesionless (Granular) Soils**
  - Very loose – easily penetrated 30 cm (1.2 inches) with 13 mm (0.5 inch) rebar pushed by hand (SPT = 0 to 4)
  - Loose – easily penetrated several cm with 13 mm (0.5 inch) rebar pushed by hand (SPT = 4 to 10)
  - Medium dense – easily to moderately penetrated with 13 mm (0.5 inch) rebar driven by 2.3 kg (6 pound) hammer (SPT = 10 to 30)
  - Dense – penetrated 0.3 m (1 foot) with difficulty using 13 mm (0.5 inch) rebar driven by 2.3 kg (6 pound) hammer (SPT = 30 to 50)
  - Very dense – penetrated only a few cm with 13 mm (0.5 inch) rebar driven by 2.3 kg (6 pound) hammer (SPT = >50)
- **Color** (use Munsel® Color System, as necessary)
- **Particle Size** (see Figure 3)
  - Boulder – larger than a basketball
  - Cobble – grapefruit, orange, volleyball
  - Coarse Gravel – tennis ball, grape

- Fine Gravel – pea
- Coarse Sand – rock salt
- Medium Sand – opening in window screen
- Fine Sand – sugar, table salt
- Fines (silt and clay) – cannot visually determine size (unaided)

- **Gradation**
  - Well Graded (GW, SW) – full range and even distribution of grain sizes present
  - Poorly-graded (GP, SP) – narrow range of grain sizes present
  - Uniformly-graded (GP, SP) – consists predominantly of one grain size
  - Gap-graded (GP-SP) – within the range of grain sizes present, one or more sizes are missing

- **Organic Material** – Organic soils usually have a dark brown to black color and may have an organic odor. Often, organic soils will change color, for example, black to brown, when exposed to the air. Some organic soils will lighten in color significantly when air-dried. Organic soils normally will not have a high toughness or plasticity. The thread of the toughness test will be spongy.
  - PEAT – 50 to 100 percent organics by volume, primary constituent
  - Organic (soil name) – 15 to 50 percent organics by volume, secondary organic constituent
  - (Soil name) with some organics – 5 to 15 percent organics by volume, additional organic constituents

- **Fill Materials** – All soils should be examined to see if they contain materials indicative of man-made fills. Man-made fill items should be listed in each of the soil descriptions. Common fill indicators include glass, brick, dimensioned lumber, concrete, pavement sections, asphalt, metal, plastics, plaster etc. Other items that could suggest fill include buried vegetation mats, tree limbs, stumps etc. The soil description for a fill material should be followed by the term "FILL", i.e., for a sandy silt with some brick fragments the description would be "SANDY

SILT (ML), with brick fragments (Fill)". The size and distribution of fill indicators should be noted. The limits (depth range) of fill material should be determined and identified at each exploration location.

- **Other Constituents/Characteristics**
  - Additional constituents and/or pertinent soil characteristics not included in the previous categories should be described depending on the scope and objectives of the project. Observations that may be discussed include:
    - Oxide staining
    - Odor
    - Origin
    - Presence of root cast
    - Presence of mica
    - Presence of gypsum
    - Presence of calcium carbonate
    - Percent by volume of cobbles & boulders with size description and appropriate rock classification
  - Other pertinent information from the exploratory program should be recorded, if it would be useful from a biddability/constructability perspective. The conditions that should be listed include caving or sloughing, difficulty in drilling and groundwater infiltration.

SOIL DESCRIPTIONS

Generally, soil descriptions collected during most investigations are not intended for civil engineering (construction) purposes, but rather for hydrogeologic and contaminant transport purposes. As such, the ASTM visual-manual assessments are somewhat limited in that they are only performed in order to indicate important information about potential hydraulic properties of a soil. Soil descriptions should be concise, stressing major constituents and

characteristics, and should be given in a consistent order and format. The following order is recommended:

- Soil name. The basic name of the predominant grain size and a single-word modifier indicating the major subordinate grain size (i.e., mostly clay with some silt). The feel test can be used to determine the texture of the soil by rubbing some moist soil between your fingers; sand feels gritty, silt feels smooth, and clays feel sticky. The terms representing percentages of grain size to be used include:
    - Trace – particles are present, but estimated to be less than 5%
    - Few – 5 to 10%
    - Little – 15 to 25%
    - Some – 30 to 45%
    - Mostly – 50 to 100%
- Color (using Munsell® charts, as necessary). Color is an important property in identifying organic soils, and within a given locality it may also be useful in identifying materials of similar geologic origin. It the sample contains layers or patches of varying colors (e.g., mottled), this shall be noted and all representative colors shall be described. The color shall be described for moist samples, however if the color represents a dry condition, it must be stated as such in the log. Generally, colors become darker as the moisture content increases and lighter as the soil dries. Examples include:
    - Some fine-grained soils (OL, OH) with dark drab shades of brown or gray, including almost black, contain organic colloidal matter.
    - In contrast, clean, bright looking shades of gray, olive green, brown, red, yellow, and white are associated with inorganic soils.
    - Gray-blue or gray- and yellow-mottled colors frequently result from poor drainage.
    - Red, yellow, and yellowish brown result from the presence of iron oxides.

  - White to pink may indicate considerable silica, calcium carbonate, or aluminum compounds.

- Field moisture condition as dry, moist, or wet;
- Gradation or Plasticity. Granular soils (i.e., sands or gravels) should be described as well-graded, poorly graded, uniform, or gap-graded, depending on the gradation of the minus 3-inch fraction. Cohesive soils (i.e., silts and clays) should be described as non-plastic, low, medium, or high, depending on the results of the manual evaluation for dry strength, dilatency, toughness, and plasticity discussed previously.
- Consistency/Density. An estimate of consistency of a cohesive soil or density of a granular soil, usually based on the SPT results (see Descriptive Terms section of this FOP);
- Soil Structure or Mineralogy. Description of discontinuities, inclusions, and structures, including joints, fissures, and slickensides.
- Odor. Describe the odor if organic or unusual. Soils containing a significant amount of organic material usually have a distinctive odor of decaying vegetation. This is especially apparent in fresh samples, but if the samples are dried, the odor may often be revived by heating a moistened sample. If the odor is unusual (petroleum, chemical, etc.), it should be noted in the log.
- Other important geologic information such as consolidation, gravel size and shape, visible internal structure, root holes, mica, odors, etc.

The first step when describing soil is to determine if the sample is predominantly fine-grained or coarse-grained (see Figures 3 and 4). Coarse-grained soils are relatively easy to identify, however descriptions of fine-grained soils can be more difficult, requiring additional field tests to assist the field geologist arrive at the proper soils classification (see **FTMs** under Descriptive Terms above). These tests are explained in detail in the ASTM Standard D2488 and briefly herein. Generally, the differentiation between silt and clay is based on plasticity and "texture". However, tests for dry strength and dilatency, along with plasticity,

can be very helpful and are recommended in the ASTM Standard. If additional tests are performed, in addition to plasticity, to classify the fines, record them with the soil description on the logs. Doing this will assist the reader (i.e., Project Manager) to follow the logic used to describe a soil (e.g., medium plasticity, low dry strength = elastic silt [MH]; not a lean clay [CL]).

Fines described in the classification should be modified by their plasticity (e.g., non-plastic fines, low plasticity fines, etc.) reserving the words "silt" and "clay" for the soil name.

In summary, adhering to the ASTM Standard and the guidelines outlined in this FOP will provide uniformity in soil descriptions provided by all field personnel. Prior to mobilization to the field, field staff should make sure to have laminated copies of the ASTM Standard flow charts and tables as well as this FOP (as necessary). Some examples of complete soil descriptions are as follows:

Coarse-grained Soil

POORLY GRADED FINE SAND w/ SILT: Dark grey, wet, mostly fine sand with some non-plastic fines, some iron-stained mottling, laminated, medium dense

Fine-grained Soil

LEAN CLAY: Dark reddish/brown, moist, mostly fines, medium plasticity, firm, no dilatency, medium dry strength, root holes.

Soil/Fill (option 1) – visual evidence of fill

FILL: Black, moist, mostly fines with some fine sand, slag, cinders, metal, brick, non-plastic, loose when disturbed, strong odor

Soil/Fill (option 2) – no visual evidence of fill, suspected reworked material

FILL (reworked): Black, moist, mostly fines with some fine sand and few coarse angular gravel, non-plastic, hard, loose when disturbed, mild odor

BORING AND MONITORING WELL INSTALLATION LOGS

Currently, TurnKey utilizes WinLoG software to construct subsurface logs and a template of the log is included in this FOP as an example. One of the most important functions of a boring/monitoring well installation log, besides transmitting the soil description, is to indicate where the "data" (soil samples) were collected, giving the reader an idea of how reliable or representative the description is. On each sample log, depths of attempted and recovered or non-recovered interval are shown. Odor, if noted, should be considered subjective and not necessarily indicative of specific compounds or concentrations.

Remember: all field logs should be NEAT, ACCURATE, and LEGIBLE. Don't forget that the well completion diagram completed for each well requires details of the surface completion (i.e., flush-mount, stick-up etc.). It is the responsibility of the field staff to double-check each log (i.e., soil names, classifications, well construction details etc.) prior to implementing into a final report. A registered professional (i.e., professional engineer, PE or professional geologist, PG) must review each log and will be ultimately responsible for its content and accuracy.

REQUIRED EQUIPMENT

- Knife
- Engineer's rule/measuring tape

- Permanent marker
- Pre-cleaned wide-mouth sample jars (typically provided by the driller)
- Pre-cleaned wide-mouth laboratory sample jars (provided by the laboratory)
- Stainless steel sampling equipment (i.e., spoons, spatulas, bowls etc.)
- 10x hand lens
- Hydrochloric acid
- ASTM D2488 flow charts (preferably laminated)
- ASTM D2488 test procedures (Tables 1 through 12) (preferably laminated)
- Camera (disposable, 35 mm or digital)
- Munsell soil color chart (as necessary)
- Project Field Book/field forms

ATTACHMENTS

Figure 1; Field Guide for Soil and Stratigraphic Analysis
Figure 2; USCS Soil Classification Flow Chart (modified from ASTM D2488)
Figure 3; Illustration of Particle Sizes
Figure 4; Grain-Size Scale (Modified Wentworth Scale)

Field Borehole Log (sample)

REFERENCES

American Society for Testing and Materials, 2008a. *ASTM D1586: Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils.*

American Society for Testing and Materials, 2010. *ASTM D2487: Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).*

American Society for Testing and Materials, 2009a. *ASTM D2488: Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).*

State of California, Department of Transportation, Engineering Service Center, Office of Structural Foundations, August 1996. *Soil & Rock Logging Classification Manual (Field Guide), by Joseph C. de Larios.*

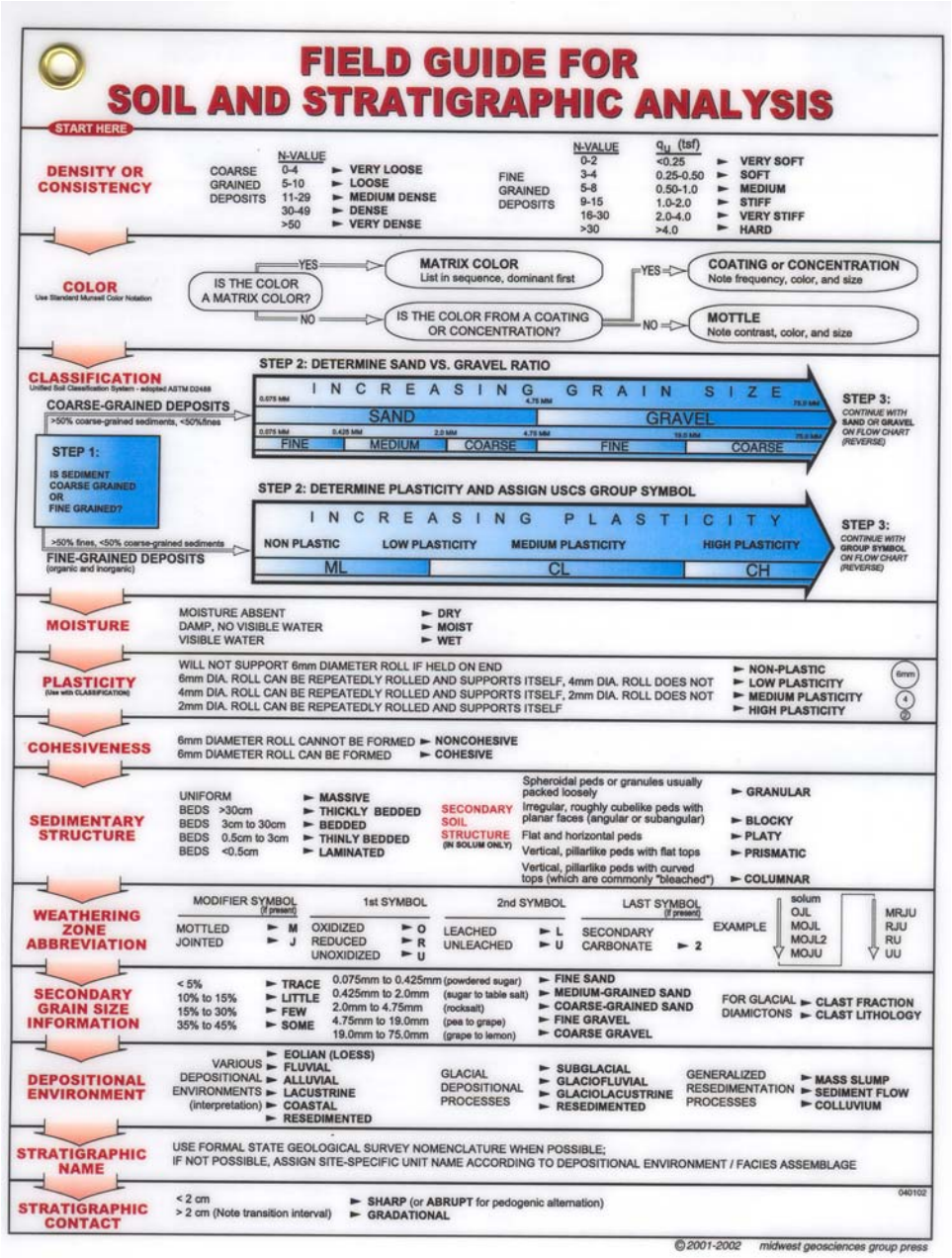
TurnKey FOPs:

010 Calibration and Maintenance of Portable Flame Ionization Detector
011 Calibration and Maintenance of Portable Photoionization Detector
015 Documentation Requirements for Drilling and Well Installation
025 Hand Augering Procedures
032 Management of Investigation-Derived Waste
046 Sample Labeling, Storage and Shipment Procedures
047 Screening of Soil Samples for Organic Vapors During Drilling Activities
058 Split-Spoon Sampling Procedures
065 Test Pit Excavation and Logging Procedures

SOIL DESCRIPTION PROCEDURES USING THE VISUAL-MANUAL METHOD

FIGURE 1

FIELD GUIDE FOR SOIL AND STRATIGRAPHIC ANALYSIS



SOIL DESCRIPTION PROCEDURES USING THE VISUAL-MANUAL METHOD

FIGURE 2

USCS SOIL CLASSIFICATION FLOW CHART (MODIFIED FROM ASTM D2488)

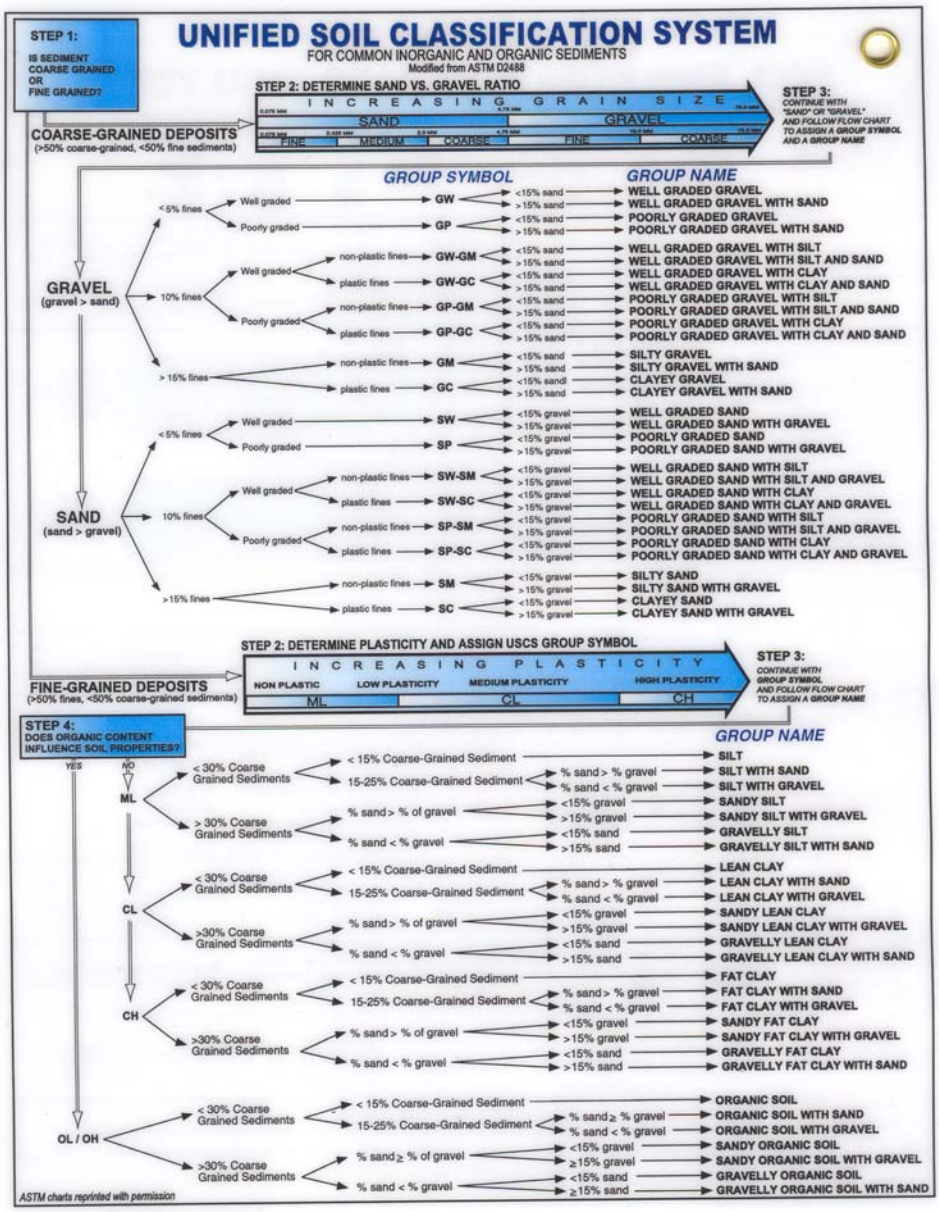


FIGURE 3

ILLUSTRATION OF PARTICLE SIZES

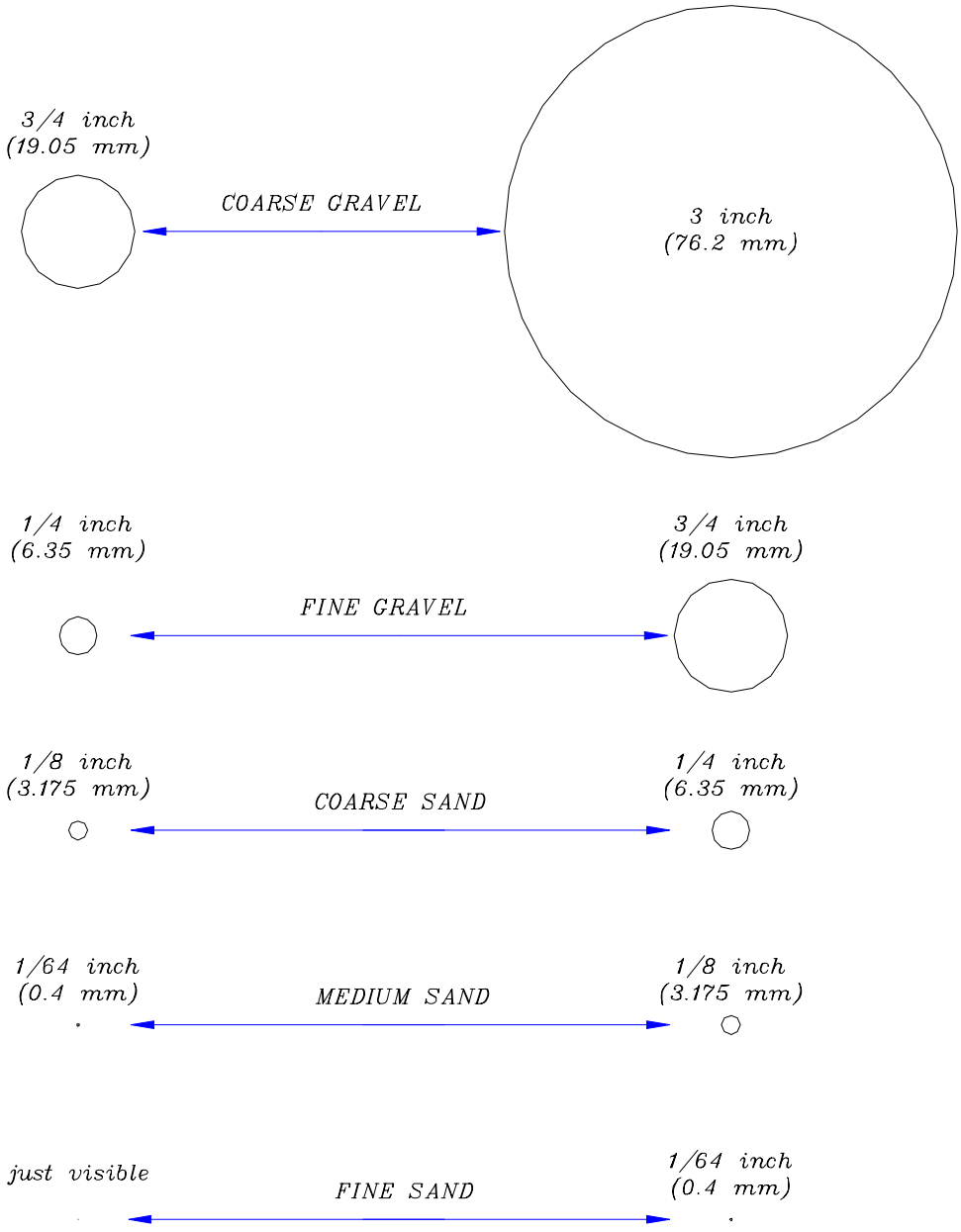


FIGURE 4

GRAIN-SIZE SCALE (MODIFIED WENTWORTH SCALE)

Grain size refers to the physical dimensions of particles of rock or other solid. This is different from the crystallite size, which is the size of a single crystal inside the solid (a grain can be made of several single crystals). Grain sizes can range from very small colloidal particles, through clay, silt, sand, and gravel, to boulders. Size ranges define limits of classes that are given names in the Wentworth scale used in the United States. The Krumbein *phi* (φ) scale, a modification of the Wentworth scale created by W. C. Krumbein, is a logarithmic scale computed by the equation: $\varphi = -\log_2(\text{grain size in mm})$.

φ scale	Size range (metric)	Size range (approx. inches)	Aggregate name (Wentworth Class)
< −8	> 256 mm	> 10.1 in	Boulder
−6 to −8	64–256 mm	2.5–10.1 in	Cobble
−5 to −6	32–64 mm	1.26–2.5 in	Very coarse gravel
−4 to −5	16–32 mm	0.63–1.26 in	Coarse gravel
−3 to −4	8–16 mm	0.31–0.63 in	Medium gravel
−2 to −3	4–8 mm	0.157–0.31 in	Fine gravel
−1 to −2	2–4 mm	0.079–0.157 in	Very fine gravel
0 to −1	1–2 mm	0.039–0.079 in	Very coarse sand
1 to 0	½–1 mm	0.020–0.039 in	Coarse sand
2 to 1	¼–½ mm	0.010–0.020 in	Medium sand
3 to 2	125–250 µm	0.0049–0.010 in	Fine sand
4 to 3	62.5–125 µm	0.0025–0.0049 in	Very fine sand
8 to 4	3.90625–62.5 µm	0.00015–0.0025 in	Silt
> 8	< 3.90625 µm	< 0.00015 in	Clay
<10	< 1 µm	< 0.000039 in	Colloid

In some schemes "gravel" is anything larger than sand (>2.0 mm), and includes "granule", "pebble", "cobble", and "boulder" in the above table. In this scheme, "pebble" covers the size range 4 to 64 mm (−2 to −6 φ).

SOIL DESCRIPTION PROCEDURES
USING THE VISUAL-MANUAL METHOD

Project No: **Borehole Number:**

Project:

Client: *Logged By:*

Site Location: *Checked By:*

TurnKey Environmental Restoration, LLC
726 Exchange Street, Suite 624
Buffalo, NY
(716) 856-0635

SUBSURFACE PROFILE			SAMPLE						
Elev. /Depth	Symbol	Description (ASTM D2488: Visual-Manual Procedure)	Sample No.	SPT N-Value	Recovery (ft)	Symbol	PID VOCs ppm 0 25 50	Lab Sample	Well Completion Details or Remarks
0.0 0.0		Ground Surface							

Drilled By: *Hole Size:*
Drill Rig Type: *Stick-up:*
Drill Method: *Datum:*

Drill Date(s): *Sheet: 1 of 1*

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Surface and Subsurface Soil Sampling Procedures

FOP 063.2

SURFACE AND SUBSURFACE SOIL SAMPLING PROCEDURES

PURPOSE

This procedure describes the methods for sampling surface soil and subsurface soil samples for physical and chemical laboratory analysis during intrusive activities such as test pitting, hand augering, drilling, surface soil sampling etc. Typical health and safety related issues should be addressed in the Project Health and Safety Plan.

PRE-SAMPLING PROCEDURES

1. Review project objectives and the Project Health and Safety Plan (HASP).

2. Conduct tailgate health and safety meeting with project team and/or subcontractor(s) by completing the Tailgate Safety Meeting Form (sample attached).

3. Calibrate air-monitoring equipment in accordance with the appropriate TurnKey's Field Operating Procedures or manufacturers recommendations for calibration of field meters.

4. Commence intrusive activities in accordance with specific TurnKey's FOPs (test pitting, hand augering, drilling etc.) or as directed by the Project Work Plan.

5. Conduct air monitoring as required by the HASP, Project Work Plan or TurnKey's FOP Real-Time Air Monitoring During Intrusive Activities. Record all results on the Real Time Air Monitoring Log (sample attached).

6. Decontaminate all non-dedicated stainless steel (or Pyrex glass) equipment in accordance with TurnKey's Non-disposable and Non-dedicated Sampling Equipment Decontamination procedures.

7. Collect soil samples in accordance with the following sections.

SURFACE AND SUBSURFACE SOIL SAMPLING PROCEDURES

SURFACE SOIL/FILL SAMPLING PROCEDURES

Collection of surface soil/fill samples facilitates the evaluation of potential health risks to current site receptors that may be exposed to soil/fill via direct contact, incidental ingestion, or inhalation of airborne particulates. The following procedure is in accordance with NYSDEC sampling protocol of surface soil/fill material.

1. Collect all soil samples using dedicated (or decontaminated non-dedicated) sampling tools (i.e., spoons, trowels, bowls etc.), preferably constructed of stainless steel.

2. If the sample area is vegetated, then collect the surface soil sample from 0 to 2 inches below ground surface (bgs) following removal of the sod.

3. If there is no soil present within the sample area (i.e., only slag, concrete, mixed with fines), excavate an area 12 inches by 12 inches by 6 inches deep, screen the material to less than 1/8 inch (No. 4 sieve), and submit the screened material for analysis. If there is not enough material to completely fill the sample jar, then expand the excavation 3 inches in all four directions screening the additional material. Expand the excavation in this manner until sufficient sample volume is obtained. Volatile organic analysis of surface soil/fill utilizing this method will yield negatively biased results and should not be performed.

SURFACE/SUBSURFACE SOIL SAMPLING PROCEDURES

1. Collect all soil samples using dedicated (or decontaminated non-dedicated) sampling tools (i.e., spoons, trowels, bowls etc.), preferably constructed of stainless steel.

   Surface soil samples are typically collected from 0 to 6 inches below ground surface (bgs). Subsurface soils are typically sampled from varying depths greater than 6-inches bgs based on field observations and as directed by the Project Work Plan.

2. Transfer samples for chemical (VOC, SVOC, Metals etc.) and physical (i.e., Atterberg Limits, Grain Size, Permeability etc.) analytical testing by direct grab (i.e., directly from the bucket of the excavation equipment, split-spoon sampler, hand auger etc.) using the dedicated (or decontaminated non-dedicated) sampling tools into appropriate laboratory-supplied containers and seal. The chemical or physical laboratory selected to perform the analysis should determine minimum sample volume for analysis.

3. Prepare collected samples in accordance with TurnKey's FOP: Sample Labeling, Storage and Shipment Procedures. Do not allow the chemical soil samples to freeze during storage and shipping. It should be noted, ice is not required for physical soil samples and all physical soil samples should be kept at the collected soil moisture by securing with a tight sealing lid. Do not allow physical soil samples to gain or lose moisture from the collected soil moisture prior to analysis.

4. Record all sampling details (i.e., depth and location) in the Project Field Book; appropriate TurnKey log sheets depending on method of intrusion (i.e., drilling, test pitting, hand augering etc.); and on the Soil/Sediment Sample Collection Summary Log (sample attached).

PARAMETER-SPECIFIC PROCEDURES

1. Volatile Organic Compound (VOCs): Transfer sufficient soil volume to fill the laboratory-supplied container (typically 4 ounces) by packing the soil sample with the sampling tool to the top of the container leaving no headspace. At no time should a gloved hand (i.e., latex, nitrile etc.) be used to pack the sample into the sample container as the sample may be compromised via cross-contamination.

2. All Other Parameters: All other parameters include, but are not limited to, Semi-VOCs (SVOCs), polychlorinated biphenyls (PCBs), herbicides, pesticides, total metals etc. Transfer sufficient soil volume to fill the laboratory-supplied container by packing the soil sample with the sampling

tool to the top of the container. Unless otherwise indicated by the laboratory or the Project Work Plan, the sample jar for all other parameters does not have to be packed completely leaving no headspace as with the VOC containers.

ATTACHMENTS

Tailgate Safety Meeting Form (sample)
Soil/Sediment Sample Collection Summary Log (sample)
Real Time Air Monitoring Log (sample)

REFERENCES

TurnKey FOPs:

006 *Calibration and Maintenance of Combustible Gas/Oxygen Meter*
010 *Calibration and Maintenance of Portable Flame Ionization Detector*
011 *Calibration and Maintenance of Portable Photoionization Detector*
040 *Non-disposable and Non-dedicated Sampling Equipment Decontamination*
046 *Sample Labeling, Storage and Shipment Procedures*
073 *Real-Time Air Monitoring During Intrusive Activities*

TAILGATE SAFETY MEETING FORM

Project Name: Date: Time:
Project Number: Client:
Work Activities:

HOSPITAL INFORMATION:

Name:
Address: *City:* *State:* *Zip:*
Phone No.: *Ambulance Phone No.*

SAFETY TOPICS PRESENTED:

Chemical Hazards:

Physical Hazards: Slips, Trips, Falls

PERSONAL PROTECTIVE EQUIPMENT:

Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D

New Equipment:

Other Safety Topic (s): Environmental Hazards (aggressive fauna)
Eating, drinking, use of tobacco products is prohibited in the Exclusion Zone (EZ)

ATTENDEES

Name Printed	Signatures

Meeting conducted by:

SOIL/SEDIMENT
SAMPLE COLLECTION SUMMARY LOG

Field ID	Location	QC Type	Depth (feet)		Analytical Parameters	Containers	Date	Time	Sampler Initials	Comments (e.g. problems encountered, ref. to variance, location changes, depth changes, important matrix observations or description, gravel thickness, etc.)
			from	to						

Equipment Rinsate Blanks *- Pour clean deionized water over or through decontaminated sampling equipment into sample containers. Collect at a frequency of 1 per sampling method per day. Analyze for all those parameters analyzed for in the samples collected the same day. HSL Metals can be substituted by only the Metals analyzed for that day (except Hexavalent Chromium which needs its separate container). Match equipment used for constituents of concern to rinsate analyte. Note deionzied water lot # or distilled water can be substit info & date.*

MS/MSD/MSB *- Collect at a frequency of 1 per 20 samples of each matrix per day. Analyze for all those parameters analyzed for in the samples collected the same day.*

Field Blank *- Pour clean deionized water (used as final decon rinse water) into sample containers while at the sampling site. Collect field blanks at a frequency of 1 per lot of deionized water. Note water lot number and dates in use for decon in 'Comments' section.*

Investigation Derived Waste (IDW) Characterization samples *- One composited sample from all drums of decon fluids and soil. Please note number of drums and labels on collection log.*

Notes:

1. See QAPP for sampling frequency and actual number of QC samples.
2. CWM - clear, wide-mouth glass jar with Teflon-lined cap.
3. HDPE - high density polyethylene bottle.
4. MS/MSD/MSB - Matrix Spike, Matrix Spike Duplicate, Matrix Spike Blank.
5. BD - Blind Duplicate - indicate location of duplicate.

SURFACE AND SUBSURFACE SOIL SAMPLING PROCEDURES

REAL TIME AII

Date:	
Project Name:	
Project Number:	
Project Location:	
Client:	
Purpose of Air Monitoring:	

WEATHER CONDITIONS:

Time of Day:	A.M.
Ambient Air Temp.:	
Wind Direction:	
Wind Speed:	
Precipitation:	

Date	Personnel	Time	Air Monitoring Meter Measurement (Units)							Location
			PID (ppm)	LEL (%)	H2S (ppm)	O2 (%)	CO (ppm)	Particulates (mg/m^3)	Other	

NOTE: SEE EQUIPMENT CALIBRATION LOG FOR DESCRIPTION OF EQUIPMENT TYPE.

Prepared By:

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Test Pit Excavation and Logging Procedures

FOP 065.1

TEST PIT EXCAVATION & LOGGING PROCEDURES

PURPOSE

This procedure describes the methods for completing test pits, trenches, and other excavations that may be performed to expose subsurface soils or materials. In most cases, these pits will be mechanically excavated, using a backhoe, trackhoe, or other equipment. Because pits and other excavations can represent a substantial physical hazard, it requires a particular focus on safety procedures. The Project Health and Safety Plan identifies practices related to excavation permits, entry, and control that must be incorporated into excavation activities.

EXCAVATION PROCEDURE

1. Review project objectives and the Project Health and Safety Plan (HASP).

2. Perform excavation equipment safety checks with the operator. Specific concerns should include, but not limited to, no leaking hydraulic lines, fire extinguisher on board of the excavation equipment, operator experience etc.

3. Conduct tailgate health and safety meeting with project team and excavation operator(s) by completing the Tailgate Safety Meeting Form (sample attached).

4. Calibrate air-monitoring equipment in accordance with the appropriate TurnKey's Field Operating Procedures or manufacturers recommendations for calibration of field meters.

5. Conduct air monitoring as required by the HASP and/or Project Work Plan. Record all results on the Real Time Air Monitoring Log (sample attached).

6. Mobilize the excavation equipment to the site and position over the required location.

7. Select excavation locations, which provide necessary information for achieving objectives. Check locations with owner/operator to ensure excavation

operations will not interfere with site operations, and select appropriate access routes.

8. Stake locations in the field and measure distance from locations to nearest landmarks. Survey location, if required.

9. Obtain clearances from appropriate utilities and, if buried waste/metallic objects are suspected, screen location with appropriate geophysical methods, as necessary.

10. Decontaminate excavation equipment in accordance with TurnKey's Drilling and Excavation Equipment Decontamination procedures.

11. Excavate pits. In uncontrolled areas, excavate only as many test pits as can be backfilled during the same day. Generally, allow equal time for excavation and backfilling. To the extent practicable, no pits should be left open overnight in an uncontrolled area. If sudden weather changes or other unforeseen events necessitate this, pits will be covered and/or barricaded and flagged with caution/hazard tape. These pits should be backfilled as soon as possible.

12. The TurnKey field geologist or experienced professional should determine the depth of excavation. The depth is generally limited by the safe reach of the selected equipment, but may also be limited by the stability of the excavated materials (i.e. wall stability).

13. Excavate the test pits in compliance with applicable safety regulations. In no case should a pit deeper than 4 feet be entered without first stabilizing the sidewalls by using forms, or by terracing or sloping (2:1 slope maximum) the sidewalls.

14. Excavated spoils must be placed no closer than 2 feet from the open excavation.

15. Collect soil samples from pit sidewalls in accordance with TurnKey's Surface and Subsurface Soil Sampling Procedures. If the test pit is greater than 4 feet in depth, it will not be entered for sampling. In this event, collect samples

using the backhoe bucket, then fill sample containers from the center of the bucket using the stainless steel sampling equipment (i.e., spoon, spade, trowel etc.) or drive a Shelby tube or EnCore™ sampler for VOCs.

16. Record excavation observations in the Project Field Book or Test Pit Excavation Log form (sample attached). Information recorded should include:

- Physical dimension of the pit;
- A scaled sketch of one side of the pit showing any lithologic contacts, zones of groundwater seepage, other special features (jointing, boulders, cobbles, zones of contamination, color abnormalities, etc.)
- General information such as project number, pit designation number, depth, date, name of responsible professional (i.e., geologist), type of excavating equipment utilized, time of excavation and backfilling, method of collecting samples and amount of sample collected (if applicable);
- Rate of groundwater inflow, depth to groundwater and time of measurement; and
- Unified Soil Classification System (USCS) designation of each distinctive unit.

17. Photograph each excavation, highlighting unique or important features. Use a ruler or other suitable item for scale. Include a label with the pit designation so the developed picture will be labeled.

18. Backfill pit to match the existing grade compacting in 2 to 3 foot lifts. Since the excavated material should be cover soil, the excess soil will be placed back into the hole. The TurnKey Field Team Leader will provide direction on whether excavated soils may be used as fill, or these materials are to be containerized as investigation derived waste.

ATTACHMENTS

Tailgate Safety Meeting Form (sample)
Real Time Air Monitoring Log (sample)
Test Pit Excavation Log (sample)

REFERENCES

TurnKey FOPs:

006 *Calibration and Maintenance of Combustible Gas/Oxygen Meter*
010 *Calibration and Maintenance of Portable Flame Ionization Detector*
011 *Calibration and Maintenance of Portable Photoionization Detector*
018 *Drilling and Excavation Equipment Decontamination*
063 *Surface and Subsurface Soil Sampling Procedures*

TAILGATE SAFETY MEETING FORM

Project Name: Date: Time:

Project Number: Client:

Work Activities:

HOSPITAL INFORMATION:

Name:

Address: *City:* *State:* *Zip:*

Phone No.: *Ambulance Phone No.*

SAFETY TOPICS PRESENTED:

Chemical Hazards:

Physical Hazards: Slips, Trips, Falls

PERSONAL PROTECTIVE EQUIPMENT:

Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D
Activity:	*PPE Level:*	A	B	C	D

New Equipment:

Other Safety Topic (s): Environmental Hazards (aggressive fauna)

Eating, drinking, use of tobacco products is prohibited in the Exclusion Zone (EZ)

ATTENDEES

Name Printed	Signatures

Meeting conducted by:

TEST PIT EXCAVATION & LOGGING PROCEDURES

REAL TIME AII

Date:	
Project Name:	
Project Number:	
Project Location:	
Client:	
Purpose of Air Monitoring:	

WEATHER CONDITIONS:

Time of Day:	A.M.
Ambient Air Temp.:	
Wind Direction:	
Wind Speed:	
Precipitation:	

Date	Personnel	Time	Air Monitoring Meter Measurement (Units)							Location
			PID (ppm)	LEL (%)	H2S (ppm)	O2 (%)	CO (ppm)	Particulates (mg/m^3)	Other	

NOTE: SEE EQUIPMENT CALIBRATION LOG FOR DESCRIPTION OF EQUIPMENT TYPE.

Prepared By:

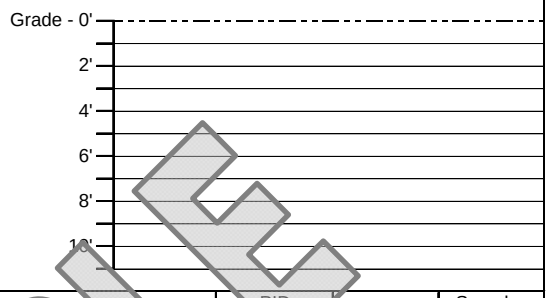
TEST PIT EXCAVATION LOG

Project:	TEST PIT I.D.:
Project No.:	Excavation Date:
Client:	Excavation Method:
Location:	Logged / Checked By:

Test Pit Location: *NOT TO SCALE*

TIME		
Start:	Length:	(approx.)
End:	Width:	(approx.)
	Depth:	(approx.)

Test Pit Cross Section:



Depth (fbgs)	USCS Symbol & Soil Description	PID Scan (ppm)	Photos Y / N	Samples Collected (fbgs)

COMMENTS:			
GROUNDWATER ENCOUNTERED:	yes	no	If yes, depth to GW:
VISUAL IMPACTS:	yes	no	Describe:
OLFACTORY OBSERVATIONS:	yes	no	Describe:
NON-NATIVE FILL ENCOUNTERED:	yes	no	
OTHER OBSERVATIONS:	yes	no	Describe:
SAMPLES COLLECTED:	yes	no	Sample I.D.:
			Sample I.D.:
			Sample I.D.:

TurnKey Environmental Restoration, LLC

FIELD OPERATING PROCEDURES

Real-Time Air Monitoring During Intrusive Activities

FOP 073.1

REAL-TIME AIR MONITORING DURING INTRUSIVE ACTIVITIES PROCEDURE

PURPOSE

This guideline presents requirements for real-time community air monitoring and required responses during all project required intrusive activities, such as drilling, test pitting, earthwork construction etc. This procedure is consistent with the requirements for community air monitoring for all intrusive projects, including projects conducted at remediation sites, as established by the New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC). Accordingly, this Field Operating Procedure (FOP) follows procedures and practices outlined under the NYSDEC's Draft DER-10 (November 2009) generic Community Air Monitoring Plan dated November 2009 and NYSDEC Technical Assistance and Guidance Memorandum (TAGM) 4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites.

This FOP requires real-time monitoring for constituents of concern (COC) (i.e., volatile organic compounds (VOCs), lower explosive limit (% LEL), particulates (i.e., dust) etc.) at the upwind and downwind perimeter as well as the exclusion zone of a project site during all intrusive activities. This FOP is not intended for use in establishing action levels for worker respiratory protection (see Project Health and Safety Plan (HASP) for worker protection action levels). Rather, its intent is to provide a measure of protection for the surrounding community from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The community, as referenced in this document, includes any off-site residences, public buildings/grounds and commercial or industrial establishments adjacent to the project site. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, this FOP helps

to confirm that work activities did not spread contamination off-site through via air transport mechanisms. Community air monitoring shall be integrated with the construction worker personal exposure-monitoring program contained in the project and site-specific HASP.

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.

MONITORING & MITIGATION PROCEDURE

Real-time air monitoring for COC levels at the upwind and downwind perimeter as well as the exclusion zone of the project site will be required. The perimeter locations of monitoring stations will be established based on the location of the exclusion zone (i.e., immediate work area) and wind direction. Where wind direction is shifting or winds are calm, the downwind monitoring location will default to the perimeter location nearest the most sensitive receptor (i.e., residential property). All downwind receptors being equal, the downwind monitoring location will default to the perimeter location downwind of the prevailing winds at the site. Although additional site specific COCs may be monitored during real-time air monitoring activities, the most common COCs are discussed in this

FOP, including organic vapors (i.e., VOCs), airborne particulates (i.e., fugitive dust) and combustible gases (i.e., methane) and oxygen.

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

ORGANIC VAPORS

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 (see Major Vapor Emission Monitoring below).

- 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.

Major Vapor Emission Monitoring

- If the sustained organic vapor level is greater than 25 ppm at the perimeter of the

work area, all work activities must be halted. If, following the cessation of the work activities or as the result of an emergency, organic levels persist above 25 ppm above background at the perimeter of the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest off-site receptor (20-foot zone).

- If efforts to abate the emission source are unsuccessful and if organic vapor levels approach or exceed 25 ppm above background at the perimeter of the work area, then the Major Vapor Emission Response Plan will automatically be placed into effect (see next section).

Major Vapor Emission Response Plan

Upon activation of Major Vapor Emission Response Plan, the following activities will be undertaken:

1. All Emergency Response Contacts as listed below and in the Site-Specific Health and Safety Plan will be contacted.

2. The local police authorities will immediately be contacted by the Site Safety and Health Officer and advised of the situation.

3. Frequent air monitoring will be conducted at 30-minute intervals within the 20-foot zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the Site Safety and Health Officer.

4. The Site Safety and Health Officer will determine if site workers can safely undertake source abatement measures. Abatement measures may include covering the source area with clean fill or plastic sheeting, or consolidating contaminated materials to minimize surface area. The Site Safety and Health Officer will adjust worker personal protective equipment as necessary to protect workers from over-exposure to organic vapors.

The following personnel are to be notified by the Site Safety and Health Officer in the listed

sequence if the Major Vapor Emission Response Plan is activated:

Contact	Phone
Police/Fire Department	911
New York State DOH	(716) 847-4502
New York State DEC Region 8	(585) 226-2466, switchboard
New York State DEC Region 9	(716) 851-7220
State Emergency Response Hotline	(800) 457-7362

In addition, the Site Safety and Health Officer will provide these authorities with a description of the apparent source of the contamination and abatement measures being taken by the contractor, if any.

AIRBORNE PARTICULATES

Fugitive dust suppression and airborne particulate monitoring shall be performed during any intrusive activities involving disturbance or handling of site soil/fill materials. Fugitive dust suppression techniques will include the following minimum measures:

- Excavated stockpiles will be seeded or covered with clean soil or synthetic materials (e.g., tarps, membranes, etc.) whenever stockpiling activities cease for a period of longer than 90 days.
- Spraying potable water on all excessively dry work areas and roads.
- All fill materials leaving the site will be hauled in properly covered containers or haul trailers.

- Additional dust suppression efforts may be required as discussed below.

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 ($\mu g/m^3$) 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 $\mu g/m^3$ 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 $\mu g/m^3$ 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 $\mu g/m^3$ 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.

Visual Assessment

In conjunction with the real-time monitoring program, TurnKey personnel and any subcontractors thereof will be responsible for visually assessing fugitive dust migration from the site. If airborne dust is observed leaving the site, the work will be stopped until supplemental dust suppression techniques are employed in those areas.

Supplemental Dust Suppression

Supplemental dust suppression techniques may include but are not necessarily limited to the following measures:

- Reducing the excavation size, number of excavations or volume of material handled.
- Restricting vehicle speeds.
- Applying water on buckets during excavation and dumping.
- Wetting equipment and excavation faces.
- Wetting haul roads.
- Restricting work during extreme wind conditions.
- Use of a street sweeper on paved haul roads, where feasible.

Work can resume using supplemental dust suppression techniques provided that the measures are successful in reducing the sustained downwind particulate concentration to below 150 ug/m^3 of the upwind level, and in preventing visible dust migration off-site.

COMBUSTIBLE GASES & OXYGEN

Ambient combustible gas and oxygen concentrations should be measured prior to commencing intrusive activities each workday and a minimum of every 30-minutes thereafter. Air monitoring activities should be performed using equipment appropriate to measure combustible gases in percent lower explosive limit (LEL) and percent oxygen and calibrated daily. All combustible gas and oxygen readings must be recorded in the Project Field Book and/or Real-Time Air Monitoring Logs (sample attached) and, if applicable, be made available for State (DEC and DOH) personnel to review.

Mitigation upon the detection of various action levels of organic vapors are presented below:

Combustible Gas:

- If the sustained ambient air concentration of combustible gas at the downwind perimeter of the site exceeds a reading of 10 to 25% LEL, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 10% LEL, work activities can resume with continued monitoring.

- If sustained combustible gas levels at the downwind perimeter of the site persist at levels in excess of 25% LEL, work activities must be halted, the source of explosion hazards identified, corrective actions taken to abate emissions and monitoring continued. Following combustible gas mitigation, work activities can resume provided that the sustained total organic vapor level 200 feet downwind of the exclusions 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 a sustained value of 10% LEL.

Oxygen:

- If the sustained ambient oxygen concentration at the downwind perimeter of the site measures a reading between 19.5% - 21% oxygen, work activities can

continue with extreme caution, however attempts to determine the potential source of oxygen displacement must be conducted.

- If the sustained oxygen level readily decreases below 19.5% LEL, work activities should be discontinued and all personnel must leave the area immediately.

- If the sustained oxygen level at the downwind perimeter of the site persists at levels between 21-25%, work activities can resume with caution.

- If the sustained oxygen level at the downwind perimeter of the site persists at levels exceeding 25% (fire hazard potential), work activities should be discontinued and all personnel must leave the area immediately.

ATTACHMENTS

Real-Time Air Monitoring Log (sample)

REFERENCES

TurnKey FOPs:

006 *Calibration and Maintenance of Combustible Gas/Oxygen Meter*
010 *Calibration and Maintenance of Flame Ionization Detector*
011 *Calibration and Maintenance of Portable Photoionization Detector*
084 *Calibration and Maintenance of Portable Particulate Meter*

REAL-TIME AIR MONITORING DURING INTRUSIVE ACTIVITIES PROCEDURE

REAL TIME AII

Date:	
Project Name:	
Project Number:	
Project Location:	
Client:	
Purpose of Air Monitoring:	

WEATHER CONDITIONS:

Time of Day:	A.M.
Ambient Air Temp.:	
Wind Direction:	
Wind Speed:	
Precipitation:	

Date	Personnel	Time	Air Monitoring Meter Measurement (Units)							Location
			PID (ppm)	LEL (%)	H2S (ppm)	O2 (%)	CO (ppm)	Particulates (mg/m^3)	Other	

NOTE: SEE EQUIPMENT CALIBRATION LOG FOR DESCRIPTION OF EQUIPMENT TYPE.

Prepared By:

FOP 076.0

"BEFORE & AFTER" PROJECT PROCEDURES FOR FIELD PERSONNEL

PURPOSE

This procedure describes the required field and office activities to be preformed "before and after" project assignments by field personnel. Field activities may include, but are not limited to, drilling oversight, excavation contractor oversight, matrix sample collection (e.g., soil, sediment, groundwater, surface water, wipe, and/or air), third party oversight, and site reconnaissance to name a few. Office activities may include, but are not limited to, photocopying field book entries, completing all field forms, tabulating collected field and laboratory data, and preparation of report text.

The primary goal of this procedure is to eliminate delays and unnecessary budgetary "strain" due to a lack of preparedness and knowledge of the site by the field team members. This procedure also seeks to streamline the preparation and transfer of field information/data from field personnel to the Project Manager upon field work completion.

PROJECT ASSIGNMENT

During the initial meeting with the Project Manager, several questions should be raised by the field team member and answered by the Project Manager. A pad of paper and pen should be in hand to record all pertinent job information. At a minimum, the following questions should be answered:

1. *What is the job number?*
2. *Who is the client and the on-site representative (if applicable)?*
3. *What is the name of the project?*
4. *What are the job responsibilities and how should they be accomplished?*
5. *How much time do I have to complete the assigned tasks?*
6. *Are there any project required documents? What are they?*

Any deviation from the above questions should be approved by the Project Manager prior to contravention, not at the end of the day or following the project completion.

"BEFORE" CHECKLISTS

Checklists should be developed and used so that all of the required steps prior to going into the field are undertaken. A good checklist will include:

- Adequate review of the documents listed in this FOP
- Any documents, equipment, and supplies presented in this FOP
- Providing adequate notification to the laboratory (so that holding times are not exceeded) and to the owner of the site and the primary regulatory agency (usually in writing) that a round of sampling is to commence in order to facilitate sampling and allow for a sampling audit or split sampling.
- Specifying and documenting the equipment maintenance and calibration undertaken prior to going into the field relative to the sampling event.
- Checking and calibrating the equipment.
- Listing the documents, equipment, and supplies required to collect samples at the site as presented in this FOP.

Prior to going into the field, sampling personnel should reacquaint themselves with the sampling plan. The review is undertaken so that the required specific protocol such as sampling from the least to the most contaminated wells, knowing where quality control samples are to be taken, knowing the disposition of purge water, etc., is understood and followed.

The amount of equipment maintenance and calibration required prior to going into the field should be clearly specified in the presampling equipment maintenance and calibration checklists, which are based on the manufacturer's recommendations, sampling objectives, and prior experience. Maintenance and calibration performed before sampling must be

documented to provide evidence that the equipment was adequately maintained and calibrated and to keep a permanent record of equipment servicing and performance.

A list of all the documents, equipment, and supplies required for the sampling event should be prepared and used. It can be frustrating and time consuming to forget equipment and supplies, so some up-front preparation is warranted. The following sections provide a list of the documentation, equipment, and supplies, which should assist in preparing a site-specific equipment and supply checklist. Once prepared, the checklist and project requirements should be reviewed with the Project Manager.

"BEFORE" DOCUMENTATION SUMMARY

Prior to going into the field, the field team should review and understand all of the project documents including, but not limited to:

- The Health and Safety Plan (HASP)
- The Site Analytical Plan (SAP), Sampling Plan, or similar document
- The Quality Assurance Project Plan (QAPP)
- The Work Plan
- Project specific Field Operating Procedures and field forms
- Site Maps
- Equipment operation manuals
- Chain-of-Custody forms
- Shipping labels and custody seals
- Any reference materials (i.e., conversion tables, volume calculation, etc.). The Pocket Ref, Third Edition by Thomas Glover is a great source for the field.

If at any time, the field team does not understand the project required protocol, procedures, sample locations, etc.; the Project Manager should be consulted for clarification.

"BEFORE" EQUIPMENT SUMMARY

Prior to going into the field, the field team should review the following equipment checklist, noting that project specific equipment may not be included in this list:

- Water level indicator
- Pumps, sample tubing, flow controllers, power cord(s), batteries, compressors, generators, etc.
- Bailers (disposable, PVC, stainless steel, glass), rope
- Flow-through cell
- Field meters with adequate calibration solutions (pH/Eh meter, conductivity meter, dissolved oxygen meter, turbidity meter, batteries, etc.)
- Garden hose
- Explosive gas meter and/or photoionization detector (PID) with calibration supplies
- Complete set of hand tools including a sharp knife, screw drivers, pliers, hacksaw, flashlight, large pipe wrench, hammer, bolt cutters, and replacement locks
- Fish hook with weight and string
- Field filtering equipment and supplies
- Decontamination supplies, such as scrub brushes, Alconox®, distilled water, potable water, 5-gallon bucket, paper towels, aluminum foil
- 5-gallon bucket(s)
- Measuring cup
- Sample bottles/containers (with extras) and preservatives
- Stainless steel spoons, trowels, shovels
- Shipping containers (i.e., coolers)
- Clipboard
- Calculator
- Water resistant clock or watch with second hand
- First aid kit

"BEFORE" SUPPLIES SUMMARY

Prior to going into the field, the field team should review the following supplies checklist, noting that project specific supplies may not be included in this list:

- Laboratory grade non-phosphate detergent (Alconox®)
- Appropriate personal protective equipment appropriate to the contaminants of concern, such as nitrile gloves, Tyvek, boots, hardhat, safety glasses, hearing protection, etc.
- Bags of ice
- Plastic garbage bags
- Plastic sheeting
- Sufficient quantities of potable and laboratory grade deionized water for cleaning and equipment blanks
- Methanol
- Isopropyl alcohol
- Clean rags and paper towels
- Electrical tape, duct tape, and wide transparent tape
- Hand soap
- Regular, ballpoint, and indelible pens
- Hollow braid polyethylene rope

After providing adequate notification (lab, state and/or federal agencies), performing the presampling maintenance and calibration, obtaining the site and well keys, and packing the supplies and equipment, the field activities are ready to be performed.

"AFTER" – PROJECT FILE REVIEW & CREATION

It is the responsibility of each field crew member to review his/her own field notes and time sheet for accuracy and completeness. All errors to the field notes should be corrected, dated, and initialed for Project Manager review. Once reviewed by the field team member, the Project Field Book, all field forms, photographs, chain-of-custodies etc. must be

photocopied, scanned (if required), downloaded, etc. and then given to the Project Manager in an organized file folder in a timely manner. Avoiding delay during this step is critical, especially when there are severe time constraints for the project.

REFERENCES

1. Wilson, Neal. *Soil Water and Ground Water Sampling*, 1995

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Geoprobe Drilling Procedures

FOP 078.0

GEOPROBE DRILLING PROCEDURES

PURPOSE

This guideline presents a method for direct-push drilling a borehole through unconsolidated materials, including soils or overburden.

PROCEDURE

The following procedure will be used to drill a borehole for sampling and/or well installation, using direct-push methods and equipment.

1. Follow TurnKey's Field Operating Procedure (FOP) for Drill Site Selection Procedure prior to implementing any drilling activity.

2. Perform drill rig safety checks with the driller by completing the Drilling Safety Checklist form (sample attached).

3. Conduct tailgate health and safety meeting with project team and drillers by completing the Tailgate Safety Meeting Form (sample attached).

4. Calibrate air-monitoring equipment in accordance with the appropriate TurnKey's FOPs or manufacturers recommendations.

5. Ensure all drilling equipment (i.e., rods, 4-foot sampler, dedicated PVC sleeves) appear clean and free of soil prior to initiating any subsurface intrusion. Decontamination of drilling equipment should be in accordance with TurnKey's Drilling and Excavation Equipment Decontamination Procedures FOP.

6. Mobilize the Geoprobe™ rig to the site and position over the borehole.

7. Level and stabilize the rig and recheck the rig location against the planned drilling location.

8. Fully advance the sampler into the subsurface using an ATV-mounted direct-push Geoprobe™ drill rig and 1.5-inch diameter sampler, typically 4-feet in length and fitted with a dedicated PVC sleeve, for each four-foot core of soil.

9. Retrieve the 4-foot sample core from the driller, place on a piece of polyethylene tarp, and cut open using a sharp utility knife.

10. Visually characterize each 4-foot soil core using the Unified Soil Classification System (USCS) in accordance with TurnKey's Soil Description Procedures Using the USCS FOP.

11. Scan each 4-foot core for total volatile organic vapors with a calibrated Photovac 2020 PID equipped with a 10.6 eV lamp, and report any visual and/or olfactory observations. Record PID scan measurements in the Project Field Book and appropriate field forms.

12. If required, collect a representative soil sample for headspace determinations. In general, soil samples representative of each 4-foot core interval are collected, placed in a sealable plastic bag, and kept at or near room temperature (approximately 65-70° F) for a minimum of 15 minutes prior to measurement. Record PID headspace determination measurements in the Project Field Book and appropriate field forms.

13. Check sampler and rods periodically during drilling to ensure the boring is plumb. Adjust rig position as necessary to maintain plumb.

14. Continue drilling until reaching the assigned total depth, or until sampler refusal occurs. Sampler refusal is when the drilling penetration drops below 0.1 feet per 2 minutes, with the full weight of the rig on the sampler.

15. Plug and abandon boreholes not used for temporary well installation in accordance with TurnKey's Field Operating Procedure for Abandonment of Borehole. Boreholes to be used as temporary wells should be completed in accordance with TurnKey's Temporary Well (Piezometer) Construction Procedures FOP.

16. Decontaminate all non-dedicated drilling tools between boring locations using potable tap water and a phosphate-free detergent (i.e., Alconox™) in accordance with TurnKey's Drilling and Excavation Equipment Decontamination Procedures FOP.

OTHER PROCEDURAL ISSUES

- Borings will not be over drilled (rat holed) without the express permission of the TurnKey field supervisor. All depth measurements should be accurate to the nearest 0.1 foot, to the extent practicable.

- Potable water may be placed in the sampler stem if critically necessary for borehole control or to accomplish sampling objectives. This will be performed only with the express permission of the TurnKey field supervisor.

ATTACHMENTS

Drilling Safety Checklist (sample)
Tailgate Safety Meeting Form (sample)

REFERENCES

TurnKey FOPs:

001 Abandonment of Borehole Procedures
017 Drill Site Selection Procedure
018 Drilling and Excavation Equipment Decontamination Procedures
054 Soil Description Procedures Using the USCS
077 Temporary Well (Piezometer) Construction Procedures

DRILLING SAFETY CHECKLIST

Project:	Date:
Project No.:	Drilling Company:
Client:	Drill Rig Type:

ITEMS TO CHECK	OK	ACTION NEEDED
"Kill switches" installed by the manufacturer are in operable condition and all workers at the drill site are familiar with their location and how to activate them?		
"Kill switches" are accessible to workers on both sides of the rotating stem? NOTE: Optional based on location and number of switches provided by the manufacturer.		
Cables on drill rig are free of kinks, frayed wires, "bird cages" a[illegible] or missing sections?		
Cables are terminated at the working end with a proper eye splice[illegible] swaged Coupling or using cable clamps?		
Cable clamps are installed with the saddle on the live or [illegible]de? Clamp[illegible] should not be alternated and should be of the corre[illegible]an[illegible]ber for the cable size to which it is installed. Clamps are co[illegible] parts		
Hooks installed on hoist cables are the safe[illegible]ty[illegible]h a[illegible]tiona[illegible] prevent accidental separation?		
Safety latches are functional and complete[illegible] e[illegible]roat of the hook and have positive action to close th[illegible]at [illegible]hen [illegible]ally displaced for connecting or disconnecting a loa[illegible]		
Drive shafts, belts, chain d[illegible]es and [illegible]ts [illegible]l be guarded to prevent accidental insertion[illegible]s and [illegible]		
Outriggers shall be extended [illegible] whe[illegible]r th[illegible]oom is raised off its cradle. Hydraulic o[illegible]iggers m[illegible]ma[illegible]res[illegible]to continuously support and stabilize the[illegible]n whi[illegible]		
Outriggers shall [illegible]pro[illegible]supp[illegible]n the ground surface to prevent settling into the so[illegible]		
Controls are properly labeled a[illegible]ha[illegible] freedom of movement? Controls should not be blocked or lo[illegible]d i[illegible]action position.		
Safeties on any device shall n[illegible] bypassed or neutralized.		
Controls shall be operated smoothly and cables and lifting devices shall not be jerked or operated erratically to overcome resistance.		
Slings, chokers and lifting devices are inspected before using and are in proper working order? Damaged units are removed from service and are properly tagged?		
Shackles and clevises are in proper working order and pins and screws are fully inserted before placing under a load?		
High-pressure hoses have a safety (chain, cable or strap) at each end of the hose section to prevent whipping in the event of a failure?		
Rotating parts of the drill string shall be free of sharp projections or hooks, which could entrap clothing or foreign objects?		

DRILLING SAFETY CHECKLIST

Project: Date:

ITEMS TO CHECK	OK	ACTION NEEDED
Wire ropes should not be allowed to bend around sharp edges without cushion material.		
The exclusion zone is centered over the borehole and the radius is equal or greater than the boom height?		
The work area around the borehole shall be kept clear of trip hazards and walking surfaces should be free of slippery material.		
Workers shall not proceed higher than the drilling deck without a fall restraining device and must attach the device in a manner to restrict fall to less than 6 feet.		
A fire extinguisher of appropriate size shall be immediately available to the drill crew. The drill crew shall have received annual training on proper use of the fire extinguisher.		
29 CFR 1910.333 © (3) Except where electrical distribution and transmission lines have been de-energized and visibly grounded, drill rigs will be operated proximate to, under, by, or near power lines only in accordance with the following: .333 © (3) (ii) 50 kV or less -minimum clearance is 10 ft. For 50 kV or over - 10ft. Plus ½ in. For each additional kV **TurnKey Policy: Maintain 20 feet clearance**		
29 CFR 1910.333 © (3) (iii) While the rig is in transit with the boom in the down position, clearance from energized power lines will be maintained as follows: Less than 50 kV - 4 feet 50 to 365 kV - 10 feet 365 to 720 kV - 16 feet		

Name: (printed)

Signed: Date:

TAILGATE SAFETY MEETING FORM

Project Name: Date: Time:

Project Number: Client:

Work Activities:

HOSPITAL INFORMATION:

Name:

Address: *City:* *State:* *Zip:*

Phone No.: *Ambulance Phone No.*

SAFETY TOPICS PRESENTED:

Chemical Hazards:

Physical Hazards: Slips, Trips, Falls

PERSONAL PROTECTIVE EQUIPMENT:

Activity:			B	C	D
Activity:			B	C	D
Activity:		A	B	C	D
Activity:		A	B	C	D
Activity:		A	B	C	D

New Equipment:

Other Safety Topic (s) ve fauna)

Eating, drink co products is prohibited in the Exclusion Zone (EZ)

ATTENDEES

Name Printed	Signatures

Meeting conducted by:

TurnKey Environmental Restoration, LLC

Field Operating Procedures

Calibration & Maintenance of Portable Particulate Meter

FOP 084.0

CALIBRATION AND MAINTENANCE OF PORTABLE PARTICULATE METER

PURPOSE

This guideline describes a method for calibration of a portable particulate meter, specifically the Thermo Electron Corporation MIE DataRAM 4 (Model DR-4000). The DataRAM 4 measures the concentration of airborne particulate matter (liquid or solid), as well as mean particle size, air temperature, and humidity, providing direct and continuous readout as well as electronic recording of the information. This parameter is of interest both as a general indicator of air quality, and because of its pertinence to community air monitoring typically required at most construction/remediation/investigation sites. The DataRAM covers a wide measurement range from 0.0001 mg/m^3 to 400 mg/m^3. With its large capacity internal data logging capabilities with data retrieval on screen or downloaded, the DataRAM can store up to 50,000 data points, including individual point averages, particle size, temperature, and humidity with time stamp as well as overall average and maximum concentration.

Because the DataRAM meter must be factory calibrated once a year, this guideline presents a method for start-up, operation, and maintenance, which is performed to verify instrument function. All field instruments will be calibrated, verified and recalibrated at frequencies required by their respective operating manuals or manufacturer's specifications, but not less than once each year. Field personnel should have access to all operating manuals for the instruments used for the field measurements. This procedure also documents critical maintenance activities for this meter. The user should reference the manufacturer's instruction manual prior to operating this unit.

ACCURACY & PRECISION

The calibrated accuracy of the DataRAM 4 particulate meter is within ± 2% of reading ± precision over the temperature range of -4° to 158° F (-10° to 50° C) and 10 to 95% relative humidity (non-condensing). The precision is ± 1% of reading or ± 0.001 mg/m^3, whichever

is greater (1-second averaging) and ± 0.3% of reading or ± 0.0003 mg/m^3, whichever is greater (10-second averaging).

INSTRUMENT PANEL VIEW

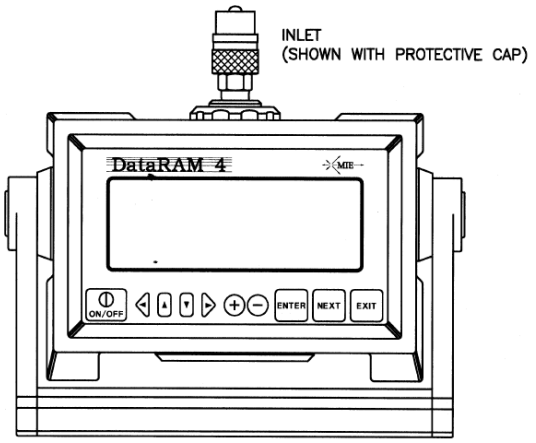


FIGURE 1. FRONT–PANEL VIEW OF DataRAM

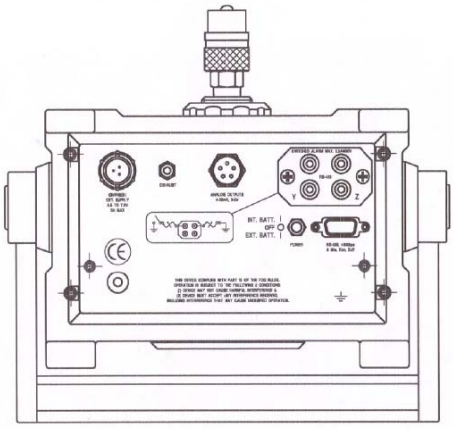


FIGURE 2. BACK–PANEL VIEW OF DataRAM

MAINTENANCE

General Guidelines

The DataRAM 4 is designed to be repaired at the factory. No user serviceable components are inside the metal enclosure of the DataRAM 4 with exception of the filter cartridge or the analytic filter holder. Access to the internal components of the unit by others than authorized MIE personnel voids warranty.

Unless a MALFUNCTION message is displayed, or other operational problems occur, the DataRAM 4 should be returned to the factory once every two years for routine check out, test, cleaning and calibration check.

Battery Charging and Cycling

If the DataRAM 4 is to be operated without its charger/power supply, i.e., deriving power from its internal battery, this battery should be fully charged before initiating a run. The

DataRAM 4 charger/power supply can be connected continuously to the instrument whether the DataRAM 4 is on or off. If the charger/power supply is not connected, the internal battery will discharge very slowly depending on storage temperature. Low storage temperature reduces battery capacity. High storage temperatures, however, reduce battery life which is of the order of 8 years at 20°C (68°F), and only 2 years at 40°C (104°F).

In general, the user should maintain the battery charge as high as possible in order to extend its charge/discharge cycling capacity (this characteristic differs from that of nickel-cadmium batteries).

Instrument Storage

If the DataRAM 4 is to be stored for an extended period of time (i.e., 3 months or more), place the 3-position switch on the back panel in its OFF position (mid-position), in order to minimize gradual battery discharge. This will have no effect on data retention or internal clock function. It is recommended, however, that the battery be recharged every 3 months in order to prolong battery life.

During storage always snap on quick-connect cap over the instrument inlet to protect the sensing optics from gradual dust contamination. Store DataRAM 4 in a dry environment.

Filter Replacement

To replace either of two types of filters used with DataRAM 4, place the instrument on its back rubber feet (front panel facing upward). On the bottom surface of the DataRAM, locate the large threaded plastic filter cover and holding the cross bar, rotate this cover counterclockwise. Remove cover and the filter holder within the open cavity.

HEPA Filter Cartridge Replacement

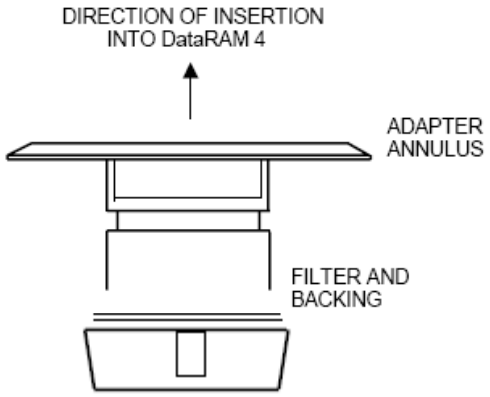
The DataRAM 4 is shipped from the factory with the HEPA filter cartridge installed. This cartridge can be identified by its metallic cover. Remove this cartridge. Clean the internal black rubber gasket against which the cartridge is normally compressed. Install new HEPA-type cartridge (MIE part no. MSA-95302) by inserting its wider ridged end first. Reposition threaded plastic cover engaging threads carefully; rotate cover clockwise, hand tightening firmly. Properly dispose of used cartridge to prevent inadvertent re-use.

Analytic Filter Installation/Replacement

In order to install or replace the analytical filter holder, proceed as follows. Remove the HEPA cartridge normally in place. Remove (separate) the inlet cover (with the blue plug) of the Millipore plastic filter holder from the rest of that holder assembly containing the white membrane filter. Insert firmly the gray plastic adapter annulus into the open face of the filter holder assembly. Remove the red plastic plug from the exhaust nipple of the filter holder assembly. Ensure that all three components of the holder assembly are fully compressed to preclude any leafage. Insert the assembly into the filter cavity of the DataRAM 4 with the gray plastic adapter annulus bearing against the internal black gasket (adapter annulus inserted first). Reposition threaded plastic cover and hand-tighten carefully and firmly. Set aside HEPA cartridge for future use.

In order to remove and/or to replace the membrane filter within its holder, remove the gray plastic adapter annulus and separate (pry apart) the two transparent plastic rings that compress the membrane filter. Make sure to remove and replace only the membrane filter (using tweezers), leaving the white backing disc in the holder. A new membrane filter should then be placed over that backing and the sealing ring should then be inserted to trap and compress the filter and backing discs. For storage, the inlet cap with the blue plug should be inserted as well as the red plug on the back of the filter holder.

Analytical filter holder with adapter annulus inserted



Cleaning of Optical Sensing Chamber

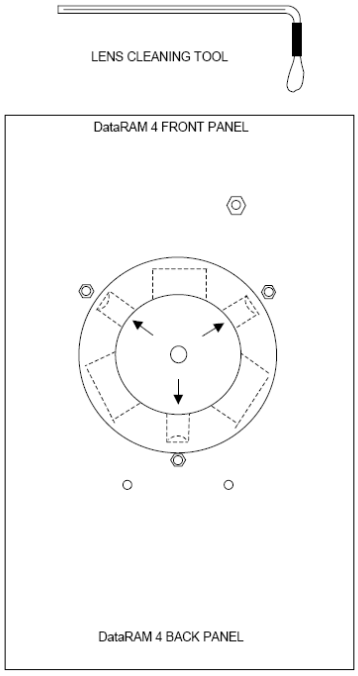
Although the DataRAM 4 incorporates filtered air shielding of the critical optical sensing surfaces, continued sampling of airborne particles at high concentrations may result in gradual build-up of contamination on those interior surfaces of the sensing chamber components. This may cause an excessively high optical background level. If this background level does becomes excessive, the DataRAM 4 will alert the user at the completion of the zeroing sequence by the display of a BACKGROUND HIGH message. If this message is presented, the DataRAM 4 can continue to be operated providing accurate measurements. However, it is then advisable to clean the front surfaces of the optical lenses within the sensing chamber at the first convenient opportunity, as described below. The tools required for this cleaning are: an intense concentrated light source (e.g., flash light) to view the inside of the sensing chamber, denatured alcohol, a soft lint-free cloth, and the special cleaning tool provided with the DataRAM 4 consisting of a cut-off cotton swab inserted in a plastic sleeve and held by a right-angle Allen wrench.

Proceed as follows to clean the lens surfaces within the sensing chamber:

- **Make sure to shut off power completely before proceeding with cleaning**
- Install the stainless steel cover on the inlet of the DataRAM 4 to protect this fitting.
- Place the DataRAM 4 upside down on a table, resting the instrument on the inlet cover and the rear protective bumper.
- Unscrew the gray plastic cover of the filter cavity on the bottom surface of the DataRAM 4.
- Remove the filter cartridge from its cavity.
- Carefully clean the black soft filter-sealing gasket within the filter cavity by wiping it with the lint-free soft cloth. Use alcohol if necessary.
- Shine the concentrated light source into the sensing chamber located about 3 cm (1¼ in.) beyond the soft-sealing gasket in the filter cavity.
- Locate the three smaller side cavities inside the sensing chamber, identified by the arrows on that figure (see page 6). These three cavities contain the lenses of the two sources and the common detector of the DataRAM 4. The frontal surfaces of these lenses are likely to require cleaning if the instrument indicates BACKGROUND HIGH.
- Wet the cotton swab of the lens-cleaning tool with alcohol (e.g., methanol, ethanol, or rubbing alcohol).

- Holding the cleaning tool by its long handle, insert this tool into the sensing chamber without touching the walls of this chamber.
- Direct the cotton swab tip towards the opening of one of the three smaller cavities as indicated by the arrows of the figure below, and insert the cotton tip into this cavity as far as it will go. Gently wipe that internal surface touched by the swab tip by a rotating motion. Carefully withdraw the swab tip from the cavity.
- Repeat previous cleaning step for the other two small cavities.
- Carefully remove the cleaning tool from the sensing chamber. Allow the alcohol to dry leaving the filter cavity open for about 15 minutes.
- Re-insert the filter cartridge into its cavity and close it with its gray plastic cover, hand-tightening it firmly. Remove the inlet cap and store on its pod on the back panel.
- Place the DataRAM 4 right side up and key ON. Proceed to check its optical background by running the ZERO/INITIALIZE check as. The message READY! should appear at the end of this check indicating that the lens contamination has been eliminated. Should the message BACKGROUND HIGH persist after completion of the above-described lens cleaning procedure, please contact the factory.

Lens cleaning tool and bottom view of open filter cavity showing location of sensor chamber lens cavities (arrows).



FACTORY CALIBRATION

For mass concentration measurements, each DataRAM 4 is factory calibrated against a set of reference monitors that, in turn, are periodically calibrated against a gravimetric standard traceable to the National Institute of Standards and Testing (NIST).

The primary factory reference method consists of generating a dust aerosol by means of a fluidized bed generator, and injecting continuously the dust into a mixing chamber from which samples are extracted concurrently by two reference filter collectors and by two master real-time monitors that are used for the routine calibration of every DataRAM 4.

The primary dust concentration reference value is obtained from the weight increase of the two filters due to the dust collected over a measured period of time, at a constant and known flow rate. The two master real-time monitors are then adjusted to agree with the reference mass concentration value (obtained from averaging the measurements of the two gravimetric filters) to within ±1%.

Three primary, NIST traceable, measurements are involved in the determination of the reference mass concentration: the weight increment from the dust collected on the filter, the sampling flow rate, and the sampling time. Additional conditions that must be met are: a) suspended dust concentration uniformity at all sampling inlets of the mixing chamber; b) identical sample transport configurations leading to reference and instrument under calibration; and c) essentially 100% collection efficiency of filters used for gravimetric reference for the particle size range of the test dust.

The test dust used for the MIE factory calibration of the DataRAM 4 is SAE Fine (ISO Fine) supplied by Powder Technology, Inc. It has the following physical characteristics (as dispersed into the mixing chamber):

- Mass median aerodynamic particle diameter: 2 to 3 μm
- Geometric standard deviation of lognormal size distribution: 2.5
- Bulk density: 2.60 to 2.65 g/cm3
- Refractive index: 1.54

In addition to the mass calibration described above, the DataRAM 4 is factory calibrated using a gas with known scattering coefficient in order to adjust the relative scattering irradiance at the two source wavelengths.

ATTACHMENTS

None

APPENDIX G

ELECTRONIC COPY