FINAL REMEDIAL INVESTIGATION - INTERIM REMEDIAL MEASURES – ALTERNATIVE ANALYSIS REPORT WORK PLAN

BROWNFIELD CLEANUP PROGRAM
For
1550 HARLEM ROAD SITE
1550 Harlem Road, Cheektowaga, New York 14206
BCP # C915321

Prepared For:
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HAZARD EVALUATIONS

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1.0 INTRODUCTION

1.1 Project Background

This Remedial Investigation (RI), Interim Remedial Measures (IRM) Work Plan presents the proposed scope of work (Work Plan) at the 1550 Harlem Road Site, located at 1550 Harlem Road in the Town of Cheektowaga, New York (site), as shown on Figure 1 and Figure 2. The Applicant, American Tire, Inc., has been accepted into the Brownfield Cleanup Program (BCP) as a Volunteer.

The RI/IRM will be completed by Hazard Evaluations Inc. (HEI) and Matrix Environmental Technologies Inc. (METI) on behalf American Tire, Inc. The work will be completed in general accordance with New York State Department of Environmental Conservation (NYSDEC) DER-10 guidelines. The work plan provides details on the site investigation and interim remedial action to be undertaken. The site investigation will be focused on subsurface conditions beneath the existing building, as well as exterior areas of the site, and the IRM will include removal of a known underground storage tank (UST) and petroleum impacted soil. Following IRM work, American Tire, Inc. will redevelop the property with expected to include a tire retail and automotive repair facility.

1.2 Site Background

The site is addressed as 1550 Harlem Road in the Village of Sloan, Town of Cheektowaga, in Erie County, New York and consists of two parcels totaling approximately 0.43 acres of land. The site is bound to the east by Harlem Road, to the west by Gratton Street and residential properties, to the north by a commercial uses (Romar Industrial Plaza) and to the south by commercial uses (H&V Sales). The property is located within an urban area, utilized for commercial and residential purposes.

The 1550 Harlem Road Site is improved with one approximate 4,075 square foot one-story building located on the southern and central portion of the site. Historic features associated with a former greenhouse and outdoor nursery structures are located in the western and northern portion of the site, as well as paved parking areas in the eastern areas.

The site was originally developed as a gasoline station in the late 1950s or early 1960s, and continued to be used as a gas station until the 1970s. The site then remained vacant for a period of several years before being converted into a nursery/garden center in the early to mid 1980s. The site continued to be operated as a nursery/garden center until early 2014 and has been vacant since that time.

1.3 Summary of Environmental Conditions

Prior uses that appear to have led to site contamination include the former gasoline station usage, as well as storage of various pesticide/herbicides during usage as a nursery/garden center. Prior remedial measures have not been completed at the site. Hazard Evaluations Inc. completed a limited test pit investigation in January 2015.

During the test pits, one approximate 8,000-gallon underground storage tank was identified. Petroleum impacted soil was present near the tank, as well as in former pipe island locations. Non-aqueous phase liquid (NAPL) or product, was identified near the tank as well as within the pump islands. The presence of contamination resulted in NYSDEC Spill #1410324 being assigned to the site.

Hazard Evaluations completed a second limited investigation in March 2017. The work included completion of two hand augers and eight soil borings and collection of soil and groundwater samples. Based on the investigation completed in January 2015 and March 2017, the primary contaminants of concern in the soil include volatile organic compounds (VOCs) associated with gasoline contamination, including benzene and xylenes. The contamination at the site is primarily due to leakage from the current, UST on site, as well as the former pump islands. VOCs were encountered in the soil samples collected from these areas exceeding restricted residential use soil cleanup objectives (RRUSCO). Appendix A includes the sample location figure, tables summarizing analytical data and soil boring logs from the previous investigation. A final report was not created for the Phase II work.

1.4 Site Conditions

Based on the soil borings and test pits completed, approximately 2 to 5 feet of granular and cohesive fill material is present throughout the site. The fill material extended to generally between 3 to 5 feet below grade. Silty clay was encountered below the fill material at each of the soil boring and test pit locations, and extended the full depth drilled. Temporary groundwater wells were installed at two locations. Groundwater was present at each well at a depth of approximately 4 to 8 feet below ground surface.

The site is generally flat, with the surface covered by buildings, and gravel surface areas in the northern portion, and limited asphalt areas to the east. The western portion is vacant land covered with grass/overgrown vegetation. Based on a review of the site topographic conditions as depicted on the USGS 7.5 minute Topographic Quadrangle Map of Buffalo NE, New York, shallow localized groundwater flow is expected to flow in a southerly direction toward Cayuga Creek located approximately 0.75 miles south; however regional groundwater flow is expected to flow westerly toward Lake Erie, located approximately 5.5 miles west of the Site..

The site does not have state or federal wetlands within property limits, nor is the site located within a flood plain. Figure 3, obtained from the Erie County GIS On-line Mapping System, depicts nearby wetlands and/or floodplains.

The site is currently serviced by municipal utilities, including potable water, sanitary and storm sewers from the Town of Cheektowaga/Erie County, natural gas and electric. There are no known groundwater supply wells on-site and the surrounding area is serviced with potable water.

2.0 PROJECT OBJECTIVES

The site has not been comprehensively characterized; therefore, the Applicant intends to further investigate the soil/fill and groundwater (if encountered) at the site. Data collected during the RI/IRM will be used to identify potential health risks and to evaluate remedial alternatives. The objectives of the RI/IRM include the following:

- Define the nature and extent of on-site contamination in both soil and groundwater.
- Identify on-site source areas of contamination, if any.
- Collect data of sufficient quantity and quality to evaluate potential threats to the public health and environment.
- Collect data of sufficient quantity and quality to evaluate remedial alternatives.
- The IRM will mitigate risks at the site associated with the known UST. The planned IRM includes tank removal, excavation and off-site disposal of impacted fill soils near the UST.

2.1 Regulatory Criteria

NYSDEC has applicable standards, criteria and guidance (SCG) values that will be used for this project. These goals are applicable when considering remedial alternatives. For purposes of the RI/IRM, the following SCG will be utilized:

- 6 NYCRR Part 375-3 Brownfield Cleanup Program dated December 14, 2006.
- NYSDEC Policy CP-51/Soil Cleanup Guidance dated October 21, 2010.
- NYSDEC "DER-10 Technical guidance for Investigation and Remediation", dated May 2010.
- NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) document "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations" dated June 1998, amended January 1999 Errata Sheet, April 2000 Addendum and June 2004 Addendum.
- State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006.

In addition, sampling data will be used to evaluate remedial alternatives to meet the objectives identified above. Two data confidence levels will be considered, including field screening data and analytical level data. Field screening will include photoionization detector (PID), groundwater elevation measurement, and field groundwater analyses (pH, temperature, specific conductivity, turbidity). Analytical level data will be associated with select soil and groundwater samples submitted for chemical analysis to an independent laboratory.

Soil and groundwater samples will be collected in general accordance with NYSDEC and Environmental Protection Agency (USEPA) sample collection and handling methodologies. Samples selected for laboratory analysis will be submitted to a NYSDOH Environmental Laboratory Accreditation Program (ELAP) Contract Laboratory Protocol (CLP) certified laboratory, with a Category B deliverables package. Additionally, a Data Usability Summary Report (DUSR) will be prepared by a third-party data validator.

2.2 Project Organization

HEI/METI will establish a project team for successful completion of the project. The project team has not been finalized and subcontractors will be determined. Once the team has been finalized, appropriate resumes and information will be provided to NYSDEC. The anticipated project team is listed below:

Company	Name	Role
Hazard Evaluations	Michele Wittman	Project Manager
Matrix Environmental Technologies Inc.	Sean R. Carter, P.E.	Project Engineer
Hazard Evaluations	Mark Hanna	Project Director
Matrix Environmental Technologies Inc.	Steve Marchetti	Technical Director
Hazard Evaluations	Eric Betzold	Project Geologist
Alpha Analytical	Candace Fox	Analytical Laboratory
Trec Environmental	Keith Hambley	Geoprobe/Drilling Contractor
Trec Environmental	Keith Hambley	UST Removal/ Excavation Contractor
Data Validation Services	Judy Harry	Data Usability Summary Report

Michele Wittman – Michele will be the Project Manager for the work and will be responsible for completion of each task, including coordination and supervision of field activities, adherence to work plan, schedule and budget. Additionally, Michele will be responsible for development of the work plan, coordination of subcontractors, field project oversight and report preparations.

3.0 INVESTIGATION SCOPE OF WORK

3.1 Introduction

The proposed RI scope of work will include providing access to and investigation for potential site contaminants in the soil/fill and groundwater at the site, specifically under the existing building. The scope of work includes nine (9) soil boring locations and installation of three (3) monitoring wells. Additionally, IRM activities are expected to include removal of UST and associated petroleum contaminated soil. Proposed sampling locations are included on Figure 4 and summary of proposed analytical testing is presented on Table 1.

3.1.1 Building Demolition

The current on-site building is dated and will not be utilized as part of site development. Additionally, the location of the building limits ability to complete RI and potential IRM work. Therefore, the building will be demolished as part of RI/IRM work. Additionally, various surface debris and general refuse material is scattered throughout the property. The debris and refuse will also be removed

prior to site investigation work.

3.2 Field Investigation Activities

Prior to intrusive activities, HEI/METI and appropriate subcontractors will contact Dig Safely New York a minimum of three business days prior to the commencement of the field work. Investigative procedures are described below:

3.2.1 Surface Soil Investigation

Surface soil samples will be collected from six (6) unpaved locations as shown on Figure 4. Locations to be sampled will be from areas of visual staining, if identified. Surface soil samples will be collected from a depth of 0 to 2 inches below ground surface. Each soil sample will be collected using a pre-cleaned stainless steel spoon/trowel. Vegetation and roots, if present, will be removed prior to sampling. The spoon/trowel will be used to collect the soil and place into a stainless steel mixing bowl for homogenizing prior to placement into appropriate laboratory containers. The samples will be analyzed for the following parameters as shown on Table 1:

- Three (3) samples for Target Compound List (TCL) VOCs
- Three (3) samples for TCL semi-volatile organic compounds (SVOCs)
- Three (3) samples for Target Analyte List (TAL) metals
- Two (2) samples for Polychlorinated bi-phenyls (PCBs)
- Six (6) samples for Pesticides and herbicides.

3.2.2 Subsurface Soil Investigation

Soil sampling which has been completed on-site identified the presence of petroleum impacts near the current UST as well as near the former pump island areas. The petroleum impacts soil at concentrations above restricted residential use soil cleanup objectives (RRUSCO) material will be removed as part of the IRM as discussed in Section 4.0. Proposed subsurface soil sampling locations are included on Figure 4.

Ten (10) soil borings will be completed throughout the property, including three (3) within the former building footprint and six (6) at exterior locations. Four (4) of the soil boring locations will be completed as groundwater monitoring wells. Additionally, two (2) soil borings will be completed off-site to the east of the property limit, to assess if impacts are present at a former off-site pump island, located within Harlem Road right-of-way.

A drill rig capable of advancing a borehole using direct push method via a Geoprobe drill rig will be used to advance the six (6) soil boring locations that will not be completed as monitoring wells. The drill rig will advance the 1.5-inch diameter, 4-foot long core sample liner to the desired depth and retrieve soil core samples at four foot intervals. The total depth is anticipated to be approximately 12 to 16 feet below grade or spoon refusal, whichever is encountered first. However, two soil boring locations will be completed to a depth of 20 feet below

grade to assess if the native clay extends to greater depths.

The four (4) monitoring well locations will be advanced using a direct-push drill rig capable of advancing hollow-stem augers for installing 2-inch monitoring wells which are expected to be completed to depths of up to 16 feet below grade.

Discrete subsurface soil samples will be field screened in approximate two-foot depth intervals for VOCs with a calibrated organic vapor meter equipped with a photoionization detector (PID). Organic vapor meter results and soil descriptions will be recorded on the field soil boring logs.

Soil samples will be selected for analytical analysis based in field screening results, visual and olfactory observations. During initial investigations, granular fill was encountered overlying a clay and silt fill to depths of approximately two to five feet below grade. HEI will collect representative samples from each of the identified fill types, as well as the underlying native clay soils, for appropriate laboratory analysis.

The sample interval identified as the most impacted (i.e., highest PID reading, visual/olfactory evidence of odors, staining, or product) will be selected for analysis. Should fill material be encountered, a discrete sample will be collected from each type of fill soil. In the event that no impacts were identified, the native soils directly below the fill/native interface will be selected for analysis. Additionally, attempt will be made to collected soil samples at vertical variations within the native soil.

Six (6) subsurface soil samples will be selected for analysis for the following as shown on Table 1:

- Target Compound List (TCL) VOCs
- TCL semi-volatile organic compounds (SVOCs)
- Target Analyte List (TAL) metals

Additionally, two (2) samples will also be selected and analyzed for polychlorinated bi-phenyls (PCBs); and four (4) samples will be selected and analyzed for pesticides and herbicides.

Actual sample locations will be selected in the field based on utility locations, field observations, screening results, and engineering judgment. Subsurface soil samples will be collected using dedicated stainless steel sampling tools. Select representative soil samples will be place in pre-cleaned laboratory-provided sample bottles, labeled and cooled to 4^{o}C in the field, and transported under chain-of-custody to a NYSDOH ELAP certified analytical laboratory.

3.2.3 Monitoring Well Installation

Four (4) soil boring locations will be completed as monitoring wells using a direct-push drill rig capable of advancing hollow-stem augers to allow for installation of 2-inch diameter wells. The wells will be utilized for measurement of groundwater

depth and collection of groundwater samples. The three proposed locations are included on Figure 4.

After completion of the soil borings to depths of approximately 16 feet below grade, a 2-inch diameter, schedule 40 PVC monitoring well will be installed at each location. An approximate 10 foot length of 0.010-inch machine slotted well screen will be installed at each location attached to the riser. The well screen depth will be backfilled with silica sand filter pack (estimated at size #0) from the base to approximately 2 feet above the well screen. A bentonite seal will be placed above the sand and hydrated to limit potential for down-hole contamination. The top of the well riser will be flush with the ground surface and completed with a locking J-plug. The well will be finished with a flush-mounted road box.

Groundwater samples will be collected from each of the monitoring wells using low flow sampling techniques. The total depth of the wells is expected to be approximately 15 to 16 feet below grade.

3.2.4 Monitoring Well Development

After a minimum of 24-hours from installation, the monitoring wells will be developed using dedicated disposable polyethylene bailers via purge methodology. Field parameters, including pH, temperature, turbidity, and specific conductance will be measured periodically until they become relatively stable (approximately 10% fluctuation or less). A minimum of three well volumes will be removed from each monitoring well, unless dry well conditions are encountered. Development water will be containerized and sampled for future off-site disposal.

3.2.5 Groundwater Sampling

Prior to sample collection, static groundwater levels will be measured at each of the monitoring wells. The wells will be purged and field measurements of pH, specific conductivity, temperature and turbidity will be recorded and monitored for stabilization prior to sampling. Groundwater samples will be collected using low flow sampling techniques. If insufficient groundwater, new dedicated disposable bailers may be used to collect the groundwater samples.

The four (4) groundwater samples will be analyzed for the following parameters as summarized on Table 1:

- Target Compound List (TCL) VOCs
- TCL semi-volatile organic compounds (SVOCs)
- Target Analyte List (TAL) metals (total and dissolved phase)
- PCBs
- Pesticides and Herbicides

Groundwater samples will be placed in pre-cleaned laboratory-provided sample bottles, labeled and preserved in accordance with USEPA SW-846 methodology, and transported under chain-of-custody to a NYSDOH ELAP certified analytical

laboratory.

3.2.6 Field Specific Quality Assurance/Quality Control Sampling

Field-specific quality assurance/quality control samples will be collected and analyzed, as summarized on Table 1 to support third-party data usability assessment effort. Site-specific QA/QC samples will include blind duplicate, matrix spike/matrix spike duplicate, equipment rinsate blank, and trip blank.

3.3 Investigation- Derived Waste Management

During the completion of soil borings, removed materials will be placed into the borehole. The excess soil cuttings that cannot be replaced into the borehole will be containerized in 55-gallon drums. Based on analytical testing results, the excess soil may be utilized on-site, or disposed off-site. Development/purge water generated during well development and/or sampling activities will be containerized in 55-gallon drums for testing and future off-site disposal.

3.4 Site Mapping

The available site survey will be used as a base map. Various sample locations will be field located based on measurements from known features included within architectural drawings, if available and Site features (e.g., building columns, corners, etc.). Monitoring well relative elevations will be measured in the field.

4.0 INTERIM REMEDIAL MEASURES

4.1 IRM Tasks

Based on initial sampling results petroleum impacts were identified around the existing UST as well as former pump island areas. The IRM activities included below are based on current information and may be modified based on RI fieldwork or waste characterization sample results. If modification is necessary, a revised IRM work plan will be provided for NYSDEC approval prior to initiation of work. The IRM is expected to include the following work, as shown on Figure 5:

- Demolition of existing building
- Removal of the 8,000-gallon gasoline UST.
- Excavation and off-site disposal of impacted soil associated with gasoline UST and former pump island areas.

4.2 UST Removal

The area near the 8,000-gallon UST will be exposed and the tank will be removed in accordance with NYSDEC guidance. NYSDEC will be notified at least 10 days prior to excavation of the tank. In general, HEI/METI will complete the work as appropriate or retain the services of a subcontractor as needed for the following:

- A vacuum truck will be mobilized to the site to pump and remove remaining tank contents, if any, as well as tank cleaning fluids generated

- Excavation of the soil and fill surrounding the UST
- Removal of the UST from the excavation for staging and cleaning
- Ultimate removal of the UST from the site for landfill disposal.

In general, work will include mobilization of required equipment, pumping/removal of tank product, removal/cleaning of UST, recycling/disposal of steel UST, backfilling of the final excavation with recycled concrete (from approved NYSDEC facility), and finishing the surface with recycled concrete.

4.3 Soil Excavation

Following removal of the UST, the surrounding soils will be assessed to determine if the soils have been impacted. If impacted soils are encountered, the soils will be excavated, characterized, and disposed off-site.

The tank excavation sidewalls and bottom will be screened with a PID and visual/olfactory observation to determine the limits of impact to assure impacted soils are addressed. Project oversight will be completed by an experienced HEI field professional.

Two additional soil excavation areas are planned, as shown on Figure 5. The proposed excavation areas are adjacent to the UST and/or former pump island locations. Based on currently understood information, below is a summary of estimated soil excavation quantities.

- Area A (UST area) – approximately 100 cubic yards
- Area B – approximately 75 cubic yards
- Area C – approximately 185 cubic yards

Project oversight will be directed by an experienced HEI field professional.

4.4 Soil Disposal

Impacted soil removed from identified former UST and pump areas will be staged on the northwestern corner of the site. The excavated soil will be staged on poly-sheeting and covered with poly-sheeting on a nightly basis. The soil is anticipated to remain on site for two to three weeks, until landfill approval is received, at which time the soil will be disposed at an approved landfill facility.

The selected analysis will be determined based on solid waste landfill requirements (to be determined), but are expected to include toxicity characteristic leaching procedures (TLCP) VOCs, TCLP SVOCs, TCLP Metals, PCBs, pesticides, herbicides, ignitability, reactive cyanide and reactive sulfide. The soil will be disposed based on analytical testing results, and in accordance with applicable disposal regulations.

4.5 Excavation Water Treatment and Disposal

Due to the shallow depth of expected excavations and limited groundwater encountered during initial investigations, groundwater is not anticipated to be encountered during excavation activities. However, should groundwater management be required, the water will be pumped and stored in a portable storage tank and tested prior to disposal.

4.6 Confirmatory Soil Sample Collection and Analysis

Confirmatory soil samples will be collected from the UST excavation (Area A) as well as excavation Areas B and C. Sidewall samples will be collected within two feet of the tank, unless impacted soil is encountered, which will be removed. Samples will be biased based on field screening toward the suspected location of greatest contamination. Based on DER-10 requirements, one sample will be collected every 30 linear feet of sidewall and one sample for every 900 square feet of excavation bottom, as listed below:

- Area A – four (4) sidewall and one (1) bottom sample
- Area B – four (4) sidewall and one (1) bottom sample
- Area C – six (6) sidewall and two (2) bottom samples

The number of confirmation samples may be reduced based on field conditions, and agreed upon by NYSDEC representative. Each of the sidewall and bottom samples will be analyzed for TCL VOCs and TCL SVOCs. Additionally, two sidewall samples from each of the three excavations will also be analyzed for metals, PCBs, pesticides and herbicides. A summary of expected samples is included on Table 1.

4.7 Excavation Backfill

The three excavation areas will be backfilled with appropriate structural fill as required for construction purposes. The backfill will be approved material in accordance with DER-10 and tested, if required.

4.8 Personnel Decontamination

The degree of decontamination is a function of both the particular task and the physical environment in which it takes place. Decontamination procedures will remain flexible, thereby allowing the decontamination crew to respond appropriately to changing conditions at the site. On-site sampling activities will be carried out in such a manner as to avoid gross contamination of site workers, personal protective equipment, machinery and equipment.

Between sampling locations (or sometimes between samples at one sampling location), and upon the completion of the daily field activities, site workers will proceed to the Contaminated Reduction Zone (CRZ). Equipment (e.g., sampling tubes, shovels, tools, etc.) will be decontaminated in this area. Prior to leaving the site for breaks, at the end of the work shift, or when PPE has been grossly contaminated, disposable boot covers, gloves, and suits will be removed and placed in a drum designated for the disposal of these materials. After removing PPE, each site worker will wash with soap

and fresh water prior to donning new PPE or leaving the site for the day. All wash water and rinse water will be collected and disposed of in accordance with appropriate regulations.

4.9 Decontamination of Equipment

Equipment decontamination efforts will be conducted in the CRZ. Gross contamination will first be removed with plastic scrapers or other appropriate tools. The equipment will be decontaminated at a temporary equipment decontamination pad in the CRZ via hand washing or pressure washing. Downhole tools and augers can be hand washed or pressure washed.

The decontamination of the direct push drilling rig, excavator, or other heavy equipment will be undertaken as necessary. Initially, scraping of the equipment will remove heavily caked materials prior to washing. Washing will then be accomplished by pressure washing. Water generated during decontamination activities will be collected, stored and profiled for future off-site disposal.

4.10 Disposal of Contaminated Materials

Potentially contaminated materials (gloves, clothing, sample sleeves etc.) will be bagged and segregated for proper disposal. Investigation derived waste will be managed in accordance with NYSDEC guidance regulations. All fluids collected during groundwater sampling and decontamination will be containerized and managed appropriately subsequent to field activities and decontamination procedures.

4.11 Stormwater Management

Remedial activities may result in surface water flow off site and into adjacent properties. Silt fencing will be the primary sediment control measure used in this area, if needed. Prior to extensive soil excavation or grading activities, silt fencing will be installed around the perimeter of the construction area. The positioning of the silt fencing will be adjusted as necessary as work proceeds or site conditions change. Silt fences will be maintained as deemed necessary and will remain in place until construction activities in an area are completed.

4.12 Dust Monitoring and Controls

A Community Air Monitoring Plan (CAMP) will be implemented during site investigation and includes particulate monitoring. The remediation crew will make all efforts to suppress dust and particulate matter during the handling of contaminated soil. Fugitive dust and particulate monitoring will be completed in accordance with DER-10 Appendix 1B. The following techniques have been shown to be effective for the controlling 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/or
(g) Reducing the excavation size and/or number of excavations.

Care will be taken not to use excess water, which can result in unacceptably wet site conditions. Use of atomizing sprays will prevent overly wet conditions, conserve water and provide an effective means of suppressing fugitive dust.

Weather conditions will be evaluated during remedial work. When extreme wind conditions make dust control ineffective, as a last resort, remedial actions may need to be suspended.

4.13 Soil Vapor Intrusion Investigation

A soil vapor intrusion (SVI) investigation is not anticipated to be needed at the subject site. However, after review of RI and IRM analytical testing results, the need for a SVI or mitigation will be evaluated. Should SVI work be needed, SVI will be completed in general accordance with NYSDOH Final document entitled "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" dated October 2006.

5.0 REMEDIAL INVESTIGATION/INTERIM REMEDIAL MEASURES/ ALTERNATIVES ANALYSIS REPORT

Upon completion of the RI/IRM tasks, a RI/IRM/AAR report will be generated in general requirements as identified in DER-10 Section 3.14. The report will include the following information.

- Background and site information.
- Description of investigation and IRM areas.
- Identify and characterize the sources of contamination.
- Comparison with cleanup levels during the alternatives analysis report (AAR).
- Describe the amount, concentration, environmental fate and transport (if necessary), location and other significant characteristics of the contaminants present.
- Define hydraulic factors, as needed.
- Provide a qualitative human exposure assessment.
- Identify actual or potential adverse impacts to fish and wildlife resources.
- Conclusions regarding the IRM and its effectiveness.

An independent data validation expert will complete a third-party data view of the analytical data generated during the RI/IRM work. A Data Usability Summary Report (DUSR) will be prepared, with appropriate data qualifiers added to the results.

A summary of the IRM work will be included within the RI/IRM/AAR report. Details of the IRM will be included in a separate section of the report, to include:

- Limits of areas remediated; Map will identify confirmatory sample locations
- Summary of estimated quantities of excavated soil and disposal location,
- Summary of estimated quantity and source of backfill;

- Analytical testing results for confirmatory samples

The report will also include an alternatives analysis to evaluate a remedial approach. The planned IRM work is anticipated to be an effective and final remedy; therefore, additional remedial alternatives are not anticipated at this time. In the event that additional and/or significant contamination is identified above that expected, the AAR will evaluate the need for further remedial activities.

Remedial action objectives will be evaluated and developed to assure the selected remedy is protective of human health and the environment under the proposed future site usage. Proposed soil cleanup objectives will be based on proposed future usage. Should further remedial requirements be identified, a list of potentially applicable remedial technologies will be developed and evaluated. Criteria to be evaluated for the remedy and protectiveness to public health and the environment include:

- Overall protection of the public health and the environment
- Standards, criteria and guidance (SCG)
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility or volume of contamination through treatment
- Short-term impact and effectiveness
- Implementability
- Cost effectiveness
- Land use

Should the IRM not meet the objectives and be a final remedy, a remedial alternative will be recommended for the site, which will include a discussion on the reasons for the selection. Community acceptance and comments will be evaluated within the alternative selection.

6.0 ADDITIONAL PROJECT DOCUMENTS

Various supporting documents have been prepared associated with the RI/IRM/AAR work plan and included in the appendix as listed below.

6.1 Quality Assurance Project Plan

The Quality Assurance Project Plan (QAPP) was generated in general accordance with Section 2.4 in DER-10. The QAPP describes the quality assurance/quality control (QA/QC) protocols and guidance associated with the RI/IRM/AAR Work Plan to ensure the suitability and verifiable data result from the sampling and analysis. The QAPP also provides procedures to be used during sampling of various media, field activities, and analytical laboratory testing. The QAPP is included in Appendix B.

6.2 Health and Safety Plan

A site specific Health and Safety Plan (HASP) has been prepared for this project and included in Appendix C. The HASP will be enforced by HEI, METI, and subcontractors associated with the RI/IRM field activities. The HASP covers the on-site investigation and interim remedial work. Subcontractors will be required to develop and implement their health and safety plan.

The HASP will include a Community Air Monitoring Plan (CAMP) to describe particulate and volatile organic vapor monitoring to protect nearby community during the investigative and excavation activities.

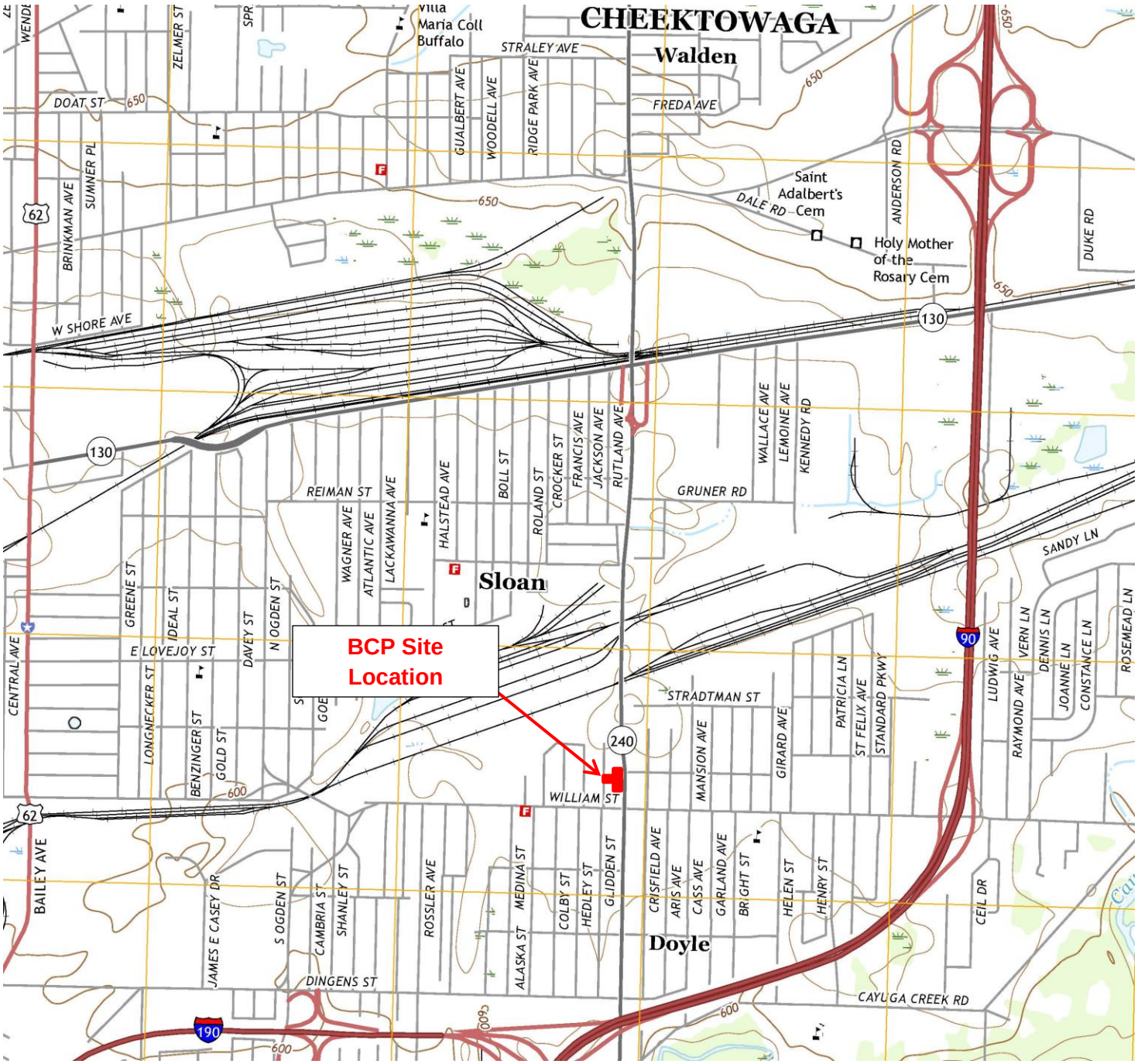
6.3 Citizens Participation Plan

A Citizens Participation Plan (CPP) was previously submitted to NYSDEC. The CPP was prepared in accordance with NYSDEC DER-23 to enable citizen participation. This plan directs responsibility for planning and conducting CP activities, as well as identifies objectives of the plan and how communication between the NYSDEC and individuals and organizations that have expressed interest in or are affected by the site, will be facilitated.

7.0 PROJECT SCHEDULE

Figure 6 presents the tentative schedule for planned activities in order to meet Applicants potential development planned for Summer/Fall 2018. A certificate of completion (COC) is anticipated by August 2018.

FIGURES



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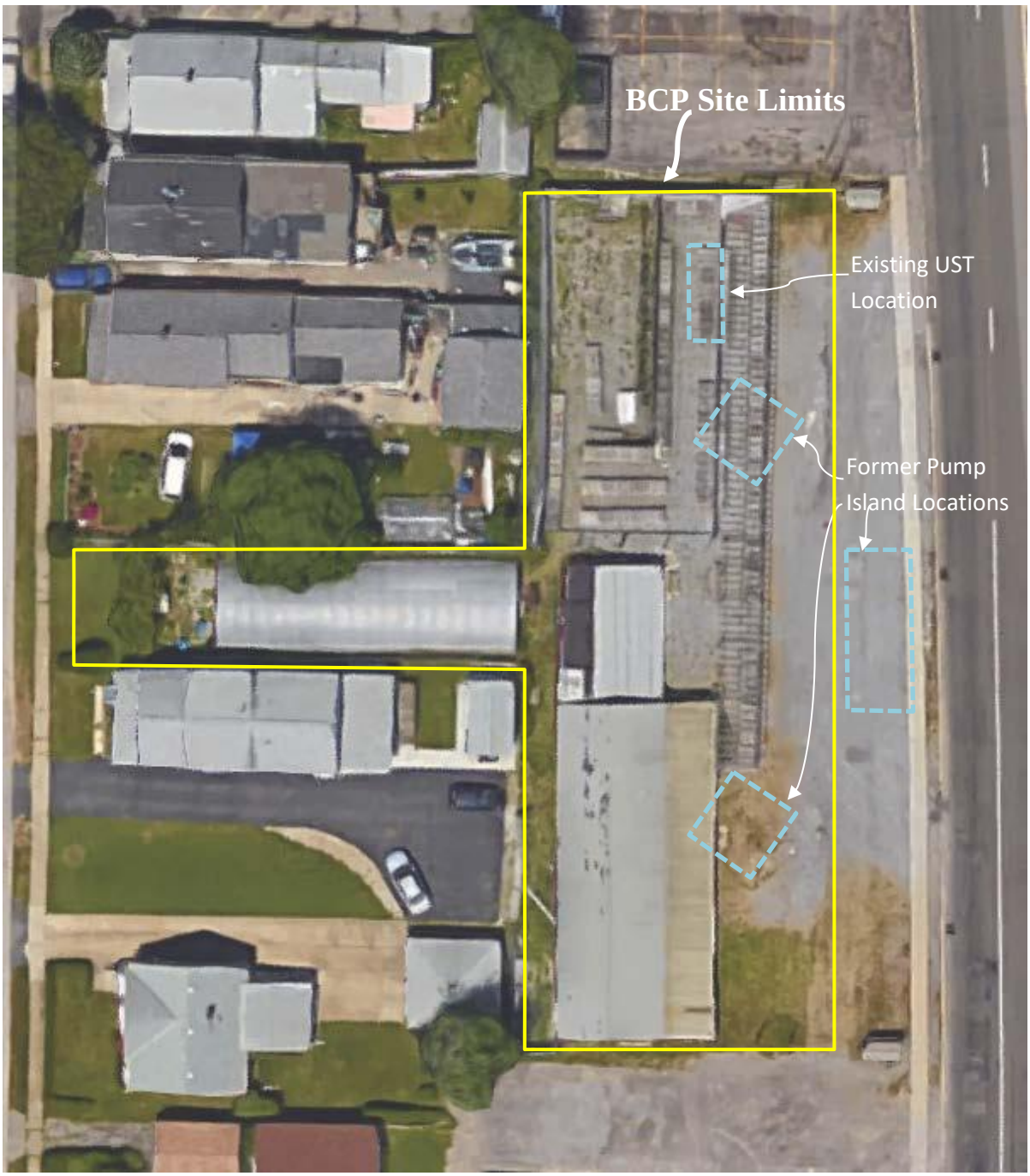
HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

SITE LOCATION MAP
1550 HARLEM ROAD
CHEEKTOWAGA, NEW YORK

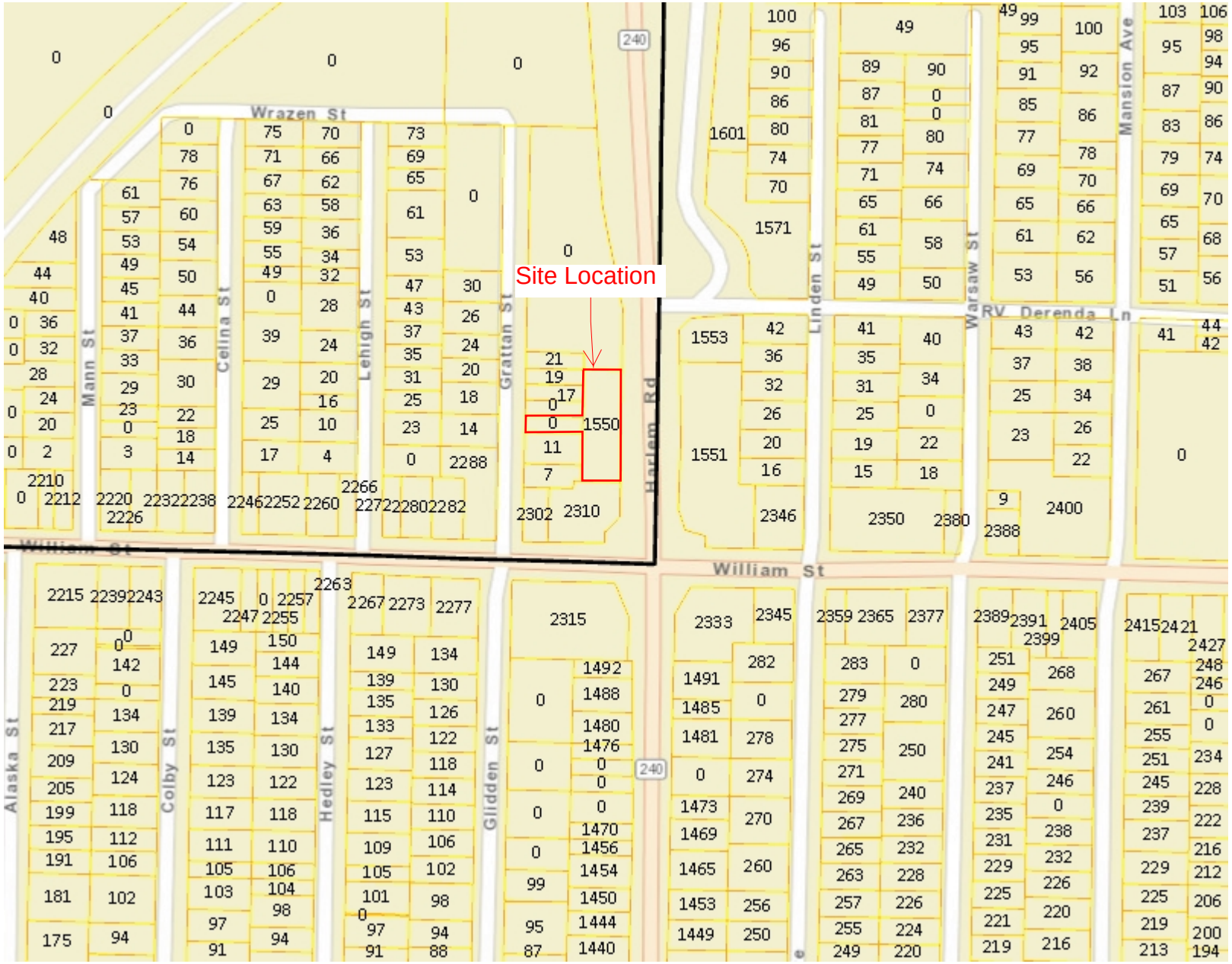
AMERICAN TIRE INC.
BUFFALO, NEW YORK

DRAWN BY: LSH	SCALE: NOT TO SCALE	PROJECT: e1621
CHECKED BY: EB	DATE: 11/17	FIGURE NO: 1



HAZARD EVALUATIONS, INC. *Phase I/II Audits – Site Investigations – Facility Inspections*		
Site Limits 1550 HARLEM ROAD CHEEKTOWAGA, NEW YORK		
AMERICAN TIRE INC. BUFFALO, NEW YORK		
DRAWN BY: EB	SCALE: 1"=40'	PROJECT: e1621
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 2

Erie County On-Line Mapping Application



Legend

- Parcels
- Streams
- Lakes / Ponds
- DEC Wetlands
- National Wetlands Inventory
  - Wetlands
  - No Digital Data
- FEMA Floodplains
- Municipal Boundaries

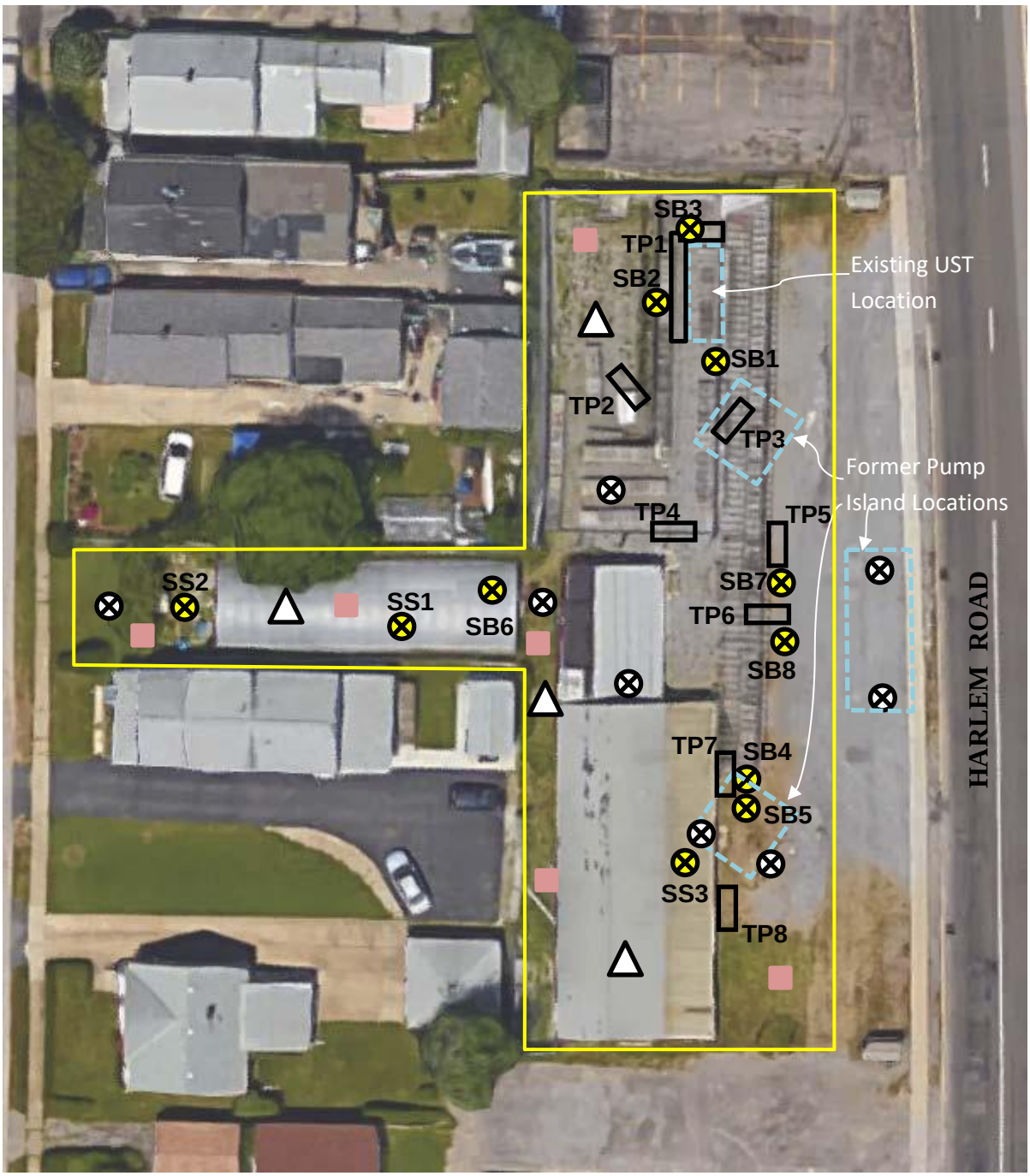
Figure 3 - Neaby Wetland and Floodplain Map

0 376.17 752.3 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
THIS MAP IS NOT TO BE USED FOR NAVIGATION

ERIE COUNTY
DEPARTMENT OF ENVIRONMENT & PLANNING
OFFICE OF GIS

1: 4,514



KEY

⊗ = Soil Boring Location (03/2017)

▯ = Test Pit Location (01/2015)

▪ = Proposed Surface Soil Location

⊗ = Proposed Soil Boring Location

△ = Proposed Soil Boring & Monitoring Well Location

HAZARD EVALUATIONS, INC.

Phase I/II Audits – Site Investigations – Facility Inspections

Proposed Remedial Investigation Locations

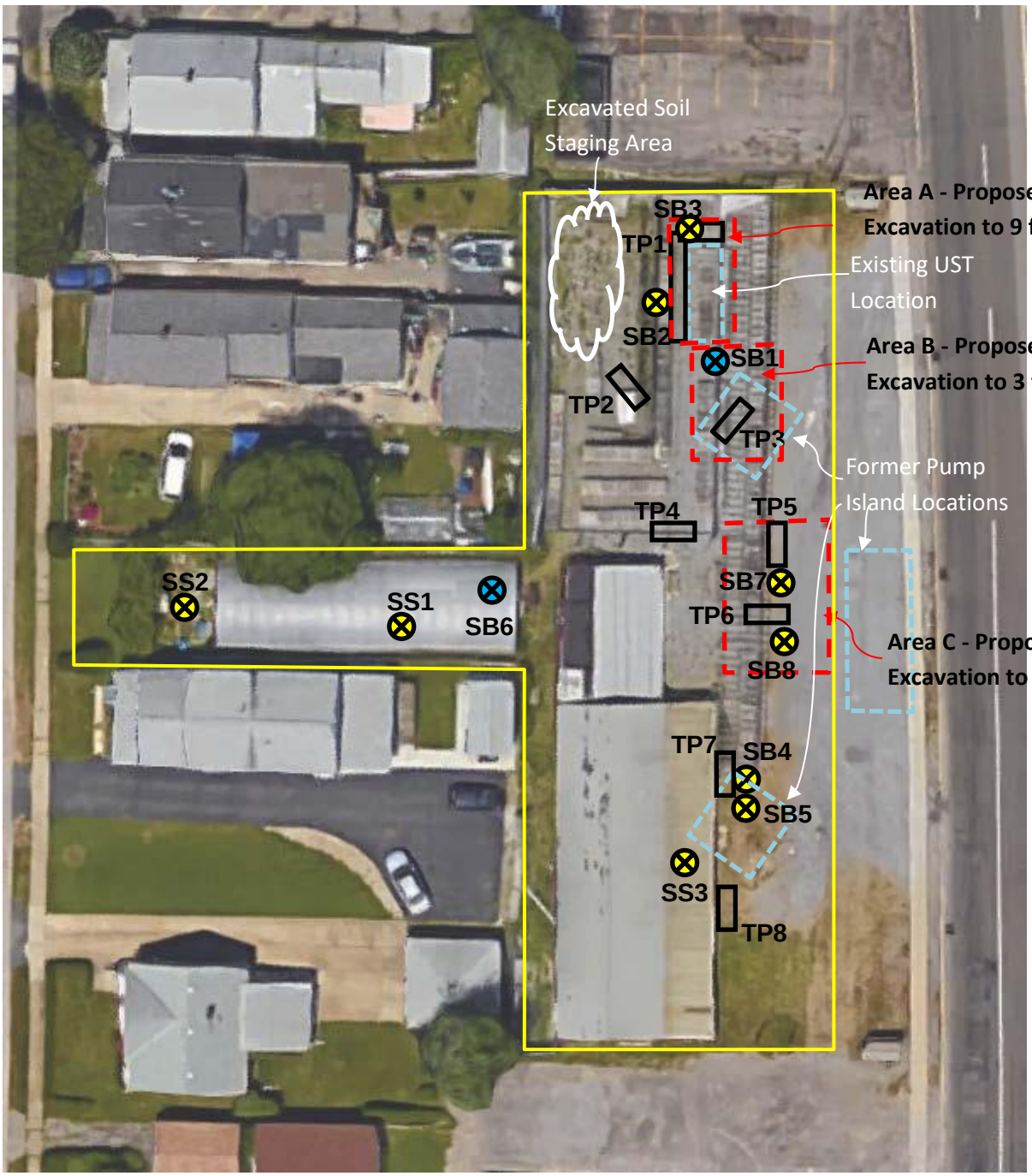
1550 HARLEM ROAD

CHEEKTOWAGA, NEW YORK

AMERICAN TIRE INC.

BUFFALO, NEW YORK

DRAWN BY: EB	SCALE: 1"=40'	PROJECT: e1621
CHECKED BY: MMW	DATE: 02/18 - revised	FIGURE NO: 4



KEY

⊗ = Soil Boring Location (03/2017)

▯ = Test Pit Location (01/2015)

▭ = Proposed IRM Excavation Area

HAZARD EVALUATIONS, INC.

Phase I/II Audits – Site Investigations – Facility Inspections

Proposed IRM Excavation Limits

1550 HARLEM ROAD

CHEEKTOWAGA, NEW YORK

AMERICAN TIRE INC.

BUFFALO, NEW YORK

DRAWN BY: EB	SCALE: 1"=40'	PROJECT: e1621
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 5

Figure 6
BCP Project Schedule
1550 Harlem Road, Cheektowaga, NY

Task	2017								2018																																	
	November				December				January					February				March				April					May				June				July					August			
	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27
RI-IRM Work Plan																																										
Submittal of RI/IRM Work Plan																																										
NYSDEC Review of RI/IRM/AAR Work Plan																																										
45 day public notice for RI/IRM/AAR Work Plan																																										
RI/IRM/AAR Comments and revisions																																										
Acceptance of Work Plan approval																																										
Remedial Investigation - Interim Remedial Measures																																										
Building Demolitions/site clearing																																										
Soil Borings																																										
Groundwater Sampling																																										
UST Removal																																										
Soil Excavation and Backfill																																										
Analaytical Testing																																										
DUSR Preparation																																										
Reporting																																										
Draft RI/IRM Report																																										
NYSDEC Review and comments																																										
30 day comment period																																										
Draft Site Management Plan																																										
Draft Final Engineering Report																																										
NYSDEC Review																																										
Certificate of Completion																																										

Milestone Date
Task by HEI
NYSEC Review
Public Comment
Laboratory analysis/DUSR by Subcontractor
Applicant

* Schedule assumes that RI/IRM work will include removal ofUST and impacted soils and final remedy will be no further action.

TABLES

TABLE 1
Proposed Analytical Testing Program Summary
1550 Harlem Road, Sloan, NY
NYSDEC Brownfield Cleanup Program

Location	Number of Proposed Locations	Matrix	TCL VOCS	TCL SVOCs	TAL METALS Total	TAL METALS dissolved	PCBs	Pest/ Herbs
Surface Soil Samples								
Hand Augers	6	Soil	3	3	3	-	2	6
Duplicate		Soil	0	0	0	-	0	1
MS/MSD		Soil	0	0	0	-	0	2
Rinsate		Water	0	0	0	-	0	1
Total			**3**	**3**	**3**	**0**	**2**	**10**
Soil Borings - Subsurface Samples								
Soil Boring	6	Soil	6	6	6	-	2	4
Duplicate		Soil	1	1	1	-	1	0
MS/MSD		Soil	2	2	2	-	2	0
Rinsate		Water	1	1	1	-	1	0
Total			**10**	**10**	**10**	**0**	**6**	**4**
Monitoring Wells								
Monitoring Well	4	Groundwater	4	4	4	4	4	4
Duplicate		Groundwater	1	1	1	1	1	1
MS/MSD		Groundwater	2	2	2	2	2	2
Rinsate		Water	1	1	1	1	1	1
Trip Blank		Water	1	-	-	-	-	-
Total			**9**	**8**	**8**	**8**	**8**	**8**
Excavation Confirmtion Samples								
Soil Boring	18	Soil	18	18	6	6	6	6
Duplicate		Soil	1	1	1	1	1	1
MS/MSD		Soil	2	2	2	2	2	2
Rinsate		Water	1	1	1	1	1	1
Total			**22**	**22**	**10**	**10**	**10**	**10**
			VOCs	SVOCs	METALS	METALS	PCBs	Pest/ Herbs
	TOTAL SAMPLES		**44**	**43**	**31**	**18**	**26**	**32**

Notes:

TCL VOCs - Target Compound List Volatile Organic Compounds.

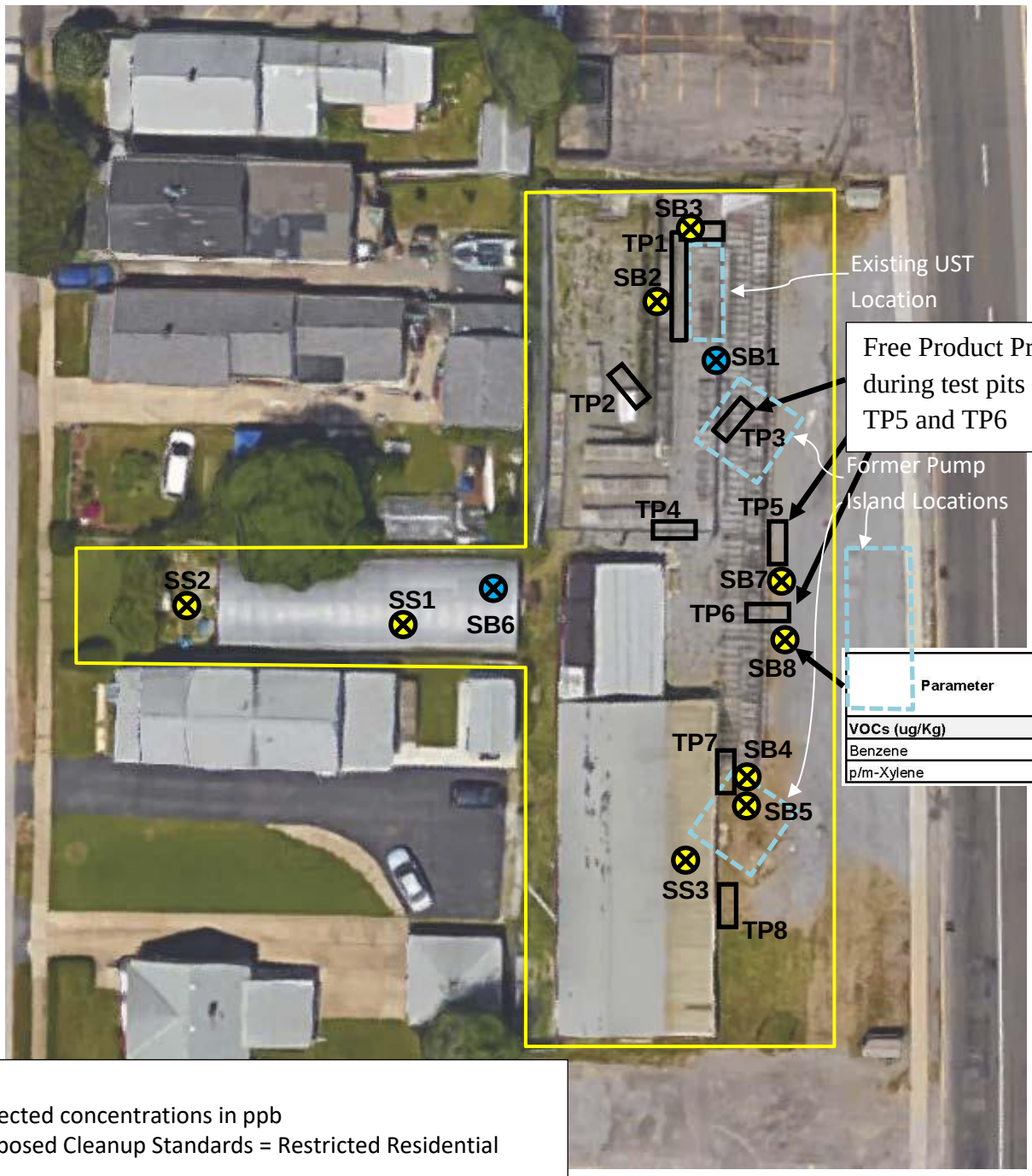
TCL SVOCs - Target Compound List Semi-volatile Organic Compounds.

TAL Metals - Target Analyte List Metals.

TCL PCBs - Target Compound List Polychlorinated Biphenyls.

APPENDIX A

PREVIOUS INVESTIGATION INFORMATION



Parameter	SB8 (0-4')
VOCs (ug/Kg)	
Benzene	10,000
p/m-Xylene	160,000

Notes:
- Detected concentrations in ppb
- Proposed Cleanup Standards = Restricted Residential

= exceeds Restricted Residential SCO

KEY

= Soil Boring Location completed 03/2017

= Soil Boring & Temporary Well Location (03/2017)

= Test Pit Location completed 01/2015

HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

INVESTIGTION LOCATIONS
1550 HARLEM ROAD
CHEEKTOWAGA, NEW YORK

AMERICAN TIRE INC.
BUFFALO, NEW YORK

DRAWN BY: EB	SCALE: 1"=40'	PROJECT: e1621
CHECKED BY: MMW	DATE: 05/17	FIGURE NO: III-A

Table III-A
Soil Analytical Testing Results Summary
1550 Harlem Road, Cheektowaga, NY
March 2017

Parameter	SB1 (1-4')	SB5 (1-3')	SB8 (0-4')	SS1 (0-1')	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial Use
Volatile Organic Compounds EPA Method 8260C TCL + STARS (ug/Kg)								
Benzene	ND	2,300	10,000	NT	60	2,900	4,800	44,000
Ethylbenzene	7,000	6,600	37,000	NT	1,000	30,000	100,000	500,000
Isopropylbenzene	1,400 J	530 J	3,200 J	NT	NV	NV	NV	NV
Methyl cyclohexane	10,000	4,100	38,000	NT	NV	NV	NV	NV
o-Xylene	ND	4,500	60,000	NT	260	100,000	100,000	500,000
p/m-Xylene	7,300	31,000	160,000	NT	260	100,000	100,000	500,000
Toluene	ND	1,900	82,000	NT	700	100,000	100,000	500,000
Semi Volatile Organic Compounds EPA Method 8270D TCL (ug/kg)								
2-Methylnaphthalene	190 J	520	2,700	ND	NV	NV	NV	NV
2-Methylphenol	ND	ND	150 J	ND	330	100,000	100,000	500,000
3-Methylphenol/4-Methylphenol	ND	ND	470	ND	330	34,000	100,000	500,000
Benzo(a)anthracene	ND	ND	58 J	66 J	1,000	1,000	1,000	5,600
Benzo(a)pyrene	ND	ND	ND	65 J	1,000	1,000	1,000	1,000
Benzo(b)fluoranthene	ND	ND	55 J	85 J	1,000	1,000	1,000	5,600
Benzo(ghi)perylene	ND	ND	ND	42 J	100,000	100,000	100,000	500,000
Carbazole	ND	ND	61 J	ND	NV	NV	NV	NV
Chrysene	ND	21	49 J	69 J	1,000	1,000	3,900	56,000
Dibenzofuran	ND	ND	23 J	ND	7,000	14,000	59,000	350,000
Fluoranthene	ND	56 J	140	110 J	100,000	100,000	100,000	500,000
Fluorene	ND	ND	51 J	ND	30,000	100,000	100,000	500,000
Indeno(1,2,3-cd)pyrene	ND	ND	ND	46 J	500	500	500	5,600
Naphthalene	290	620	2,800	ND	12,000	100,000	100,000	500,000
Phenanthrene	ND	39 J	180	67 J	100,000	100,000	100,000	500,000
Pyrene	ND	42 J	110 J	90 J	100,000	100,000	100,000	500,000
Herbicides EPA Method 8151 TCL (ug/kg)								
ND								
Pesticides EPA Method 8081 TCL (ug/kg)								
4,4'-DDD	NT	NT	NT	2.2 P	3.3	2,600	13,000	92,000
4,4'-DDE	NT	NT	NT	2.42	3.3	1,800	8,900	62,000
4,4'-DDT	NT	NT	NT	2.67 J	3.3	1,700	7,900	47,000
cis-Chlordane	NT	NT	NT	0.906 J	94	910	4,200	24,000
Methoxychlor	NT	NT	NT	2.52 J	NV	NV	NV	NV

Notes:

1. Analytical testing performed by Alpha Analytical. Compounds detected in one or more samples are presented in this table. Refer to Appendix for the full analytical report.
2. ug/Kg = parts per billion; mg/kg= parts per million.
3. ND = not detected; NT= not tested; NV= no value.
4. Analytical results compared to NYSDEC Part 375-6; Remedial Program Soil Cleanup Objectives, Table 375-(a) Unrestricted Use Soil Cleanup Objective; and Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.
5. J = Estimated value. The target analyte is below the reporting limit (RL), but above the method dectection limit (MDL).
6. P = The RPD between the results for the two columns exceeds the method-specified criteria.
7. Shading indicates:
   - exceeds UUSCO
   - exceeds RUSCO
   - exceeds RRUSCO

Table III-B
Groundwater Analytical Testing Results Summary
1550 Harlem Road, Cheektowaga, New York
March 2017

Parameter	SB6	Class GA Criteria (ug/L)
Volatile Organic Compounds EPA Method 8260C TCL + STARS (ug/L)		
Acetone	19	50
Chloromethane	1.2 J	NV
Cyclohexane	0.52 J	NV
Methyl cyclohexane	0.55 J	NV
Semi Volatile Organic Compounds EPA Method TCL (ug/L)		
Naphthalene	0.16 JB	10

Notes:

1. Analytical testing performed by Alpha Analytical. Compounds detected in one or more samples are pesented in this table. Refer to Appendix for the full analytical report.
2. ug/L = part per billion.
3. NV= no value.
4. J = Estimated value. The target analyte is below the reporting limit (RL), but above the method dectection limit (MDL).
5. B = Analyte detected above the reporting limit in the associated method blank.
6. Analytical results compared to NYSDEC Class GA criteria obtained from the Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), dated October 1993, revised June 1999,

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SS1

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	N/A
GW Depth While Drilling	1.0'			Drilling Contractor	HEI
GW Depth at Completion	1.0'			Sampler Type:	Shovel

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-1	12	Gray f/c Gravel, little Silt, tr. f/c Sand, moist. (FILL)	0
1				Brown Clayey Silt, some f/c Gravel, little f/c Sand, wet. (FILL)	
				Bottom of Hole 1' bgs	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SS2

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	N/A
GW Depth While Drilling	NWWD			Drilling Contractor	HEI
GW Depth at Completion	NWAC			Sampler Type:	Shovel

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-1.5	18	Gray f/c Gravel, tr. f/c Sand, tr. Silt, moist. (FILL)	0
1				Grades to… and Silt, little f/c Sand.	0
2				Bottom of Hole 1.5' bgs	
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SS3

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	N/A
GW Depth While Drilling	NWWD			Drilling Contractor	HEI
GW Depth at Completion	NWAC			Sampler Type:	Shovel

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-1	12	Gray f/c Gravel, some organic Topsoil, tr. f/c Sand, tr. Silt, moist. (FILL)	0
1				Grades to… some Silt, little f/c Sand, tr. Organic Topsoil.	
				Bottom of Hole 1' bgs	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB1

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	Track Mounted Geoprobe
GW Depth While Drilling	5.0'			Drilling Contractor	TREC
GW Depth at Completion	1.15'			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Gray f/c Gravel and Asphalt, tr. f/c Sand, tr. Silt, moist. (FILL)	
1				Grades to… some f/c Sand, tr. Asphalt.	0.5
				Brown Silt & Clay, little f/c Sand, tr. f/c Gravel, wet. (FILL)	
2					570
				Brown CLAY & SILT, little f/c Sand, tr. f/c Gravel, moist, odor.	
3				Grades to… Dk. Brown, some f/c Sand.	840
	2	4-8	40		860
4				Grades to… tr. f/c Sand, wet.	
				Grades to… saturated.	130
5					
				Grades to… little f/c Sand.	120
6				Grades to… no odor.	
					15
7				Grades to… Gray, some f/c Sand.	
	3	8-12	30		2
8					
					2
9					
					1
10					
					1
11					
					1
12					
				Bottom of Boring 12' bgs	
13				Temporary well installed to 12' bgs	
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB2

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	Track Mounted Geoprobe
GW Depth While Drilling	6.5'			Drilling Contractor	TREC
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
1	1	0-4	36	Brown Clayey Silt and f/c Gravel, little f/c Sand, moist. (FILL)	0.5
2				Grades to… Dk. Brown some f/c Sand, tr. f/c Gravel.	5
3				Grades to… Brown	8
4	2	4-8	36	Red/Brown CLAY & SILT, tr. f/c Sand, tr. f/c Gravel, moist, odor.	40
5					85
6				Grades to… Brown, little f/c Sand, wet.	15
7				Grades to… tr. f/c Sand, saturated.	0.3
8	3	8-12	30	Grades to… Gray, little f/c Sand.	20
9					5
10					5
11					2
12					2
13				Bottom of Boring 12' bgs	
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB3

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	Track Mounted Geoprobe
GW Depth While Drilling	4.0'			Drilling Contractor	TREC
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
1	1	0-4	30	Gray f/c Gravel, some f/c Sand, tr. Slag, tr. Silt, moist. (FILL) Brown Silt & Clay, some f/c Sand, tr. Slag, moist. (FILL) Grades to… Dk. Brown.	0
2					0.5
3				Brown CLAY & SILT, little f/c Sand, tr. f/c Gravel, wet.	0.3
4	2	4-8	48	Grades to… saturated.	0.2
5					0.1
6					0.5
7					0.2
8	3	8-12	0	Grades to… Gray.	0.1
9					
10					
11					
12				Bottom of Boring 12' bgs	
13					
14					
15					
16					
18					
20					
22					
24					

Notes: No sample recovery was obtained from 8-12'.

General Notes:
1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB4

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	Track Mounted Geoprobe
GW Depth While Drilling	NWWD			Drilling Contractor	TREC
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Brown Silt & Clay, some f/c Gravel, little f/c Sand, moist. (FILL)	
1					1.5
2				Grades to… Dk. Brown, tr. f/c Gravel, odor.	314
3					260
				Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist.	
	2	4-8	0		4.5
4					
5					
6					
7					
8				Bottom of Boring 8' bgs	
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:	No sample recovery was obtained from 4-8'.
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB5

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	Track Mounted Geoprobe
GW Depth While Drilling	8.0'			Drilling Contractor	TREC
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Brown Silt & Clay, little f/c Gravel, little f/c Sand, wet. (FILL)	
1					40
				Grades to… moist, odor.	
2					220
				Grades to… Dk. Brown, tr. f/c Gravel.	
3					677
				Light Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist.	
	2	4-8	40		
4					40
5				Grades to… Gray/Brown, little f/c Sand.	0.5
6					0.3
				Grades to… wet.	
7					0.2
8				Grades to… Gray, saturated.	0.1
				Bottom of Boring 8' bgs	
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:	Completed 1 ft. north of SB4.
General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB6

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	Track Mounted Geoprobe
GW Depth While Drilling	8.5'			Drilling Contractor	TREC
GW Depth at Completion	1.0'			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
1	1	0-4	36	Gray f/c Gravel, tr. f/c Sand, tr. Silt, moist. (FILL)	0.1
2				Dk. Brown Clayey Silt, little f/c Sand, little f/c Gravel, tr. Slag, moist. (FILL)	0.3
3				Grades to… tr. f/c Sand, tr. f/c Gravel.	0.2
4	2	4-8	48	Light Brown CLAY & SILT, tr. f/c Sand, tr. f/c Gravel, moist.	0.4
5				Grades to… Gray/Brown, little f/c Sand.	0.2
6					0.1
7					0.3
8	3	8-12	48	Grades to… wet.	0.1
9				Grades to… Brown, some f/c Sand, some f/c Gravel, saturated.	0.3
10				Grades to… little f/c Sand, tr. f/c Gravel.	0.1
11				Grades to… Gray.	0
12					0
13				Bottom of Boring 12' bgs Temporary Well installed to 12' bgs	
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB7

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	Track Mounted Geoprobe
GW Depth While Drilling	4.0			Drilling Contractor	TREC
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Gray f/c Gravel, some Slag, little f/c Sand, tr. Silt, moist. (FILL)	
1					80
2				Dk. Brown Clay & Silt, tr. f/c Sand, tr. f/c Gravel, moist, odor. (FILL)	50
3					860
				Grades to… wet, stained.	
4	2	4-8	40	Grades to… saturated.	500
5					800
				Gray/Brown CLAY & SILT, little f/c Sand, tr. f/c Gravel, odor, wet.	
6					40
7				Grades to… moist, no odor.	10
8					2
9				Bottom of Boring 8' bgs	
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No: SB8

Project Name & Location	WECO Tire Phase II 1550 Harlem Road Cheektowaga, NY			HEI Representative:	E. Betzold
Project Number:	e1621				
Start Date	3/7/2017	End Date	3/7/2017	Type of Drill Rig	Track Mounted Geoprobe
GW Depth While Drilling	4.5'			Drilling Contractor	TREC
GW Depth at Completion	NWAC			Sampler Type:	MC

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
	1	0-4	36	Gray/Brown f/c Gravel, little Slag, tr. f/c Sand, tr. Silt, moist. (FILL)	
1				Grades to… odor.	90
2				Dk. Brown Clay & Silt, little f/c Sand, tr. f/c Gravel, moist. (FILL)	15
3				Grades to… stained, odor.	220
4	2	4-8	40	Grades to… wet.	930
5				Grades to… saturated.	650
6				Gray/Brown CLAY & SILT, little f/c Sand, tr. Gravel, wet, odor.	150
7				Grades to… moist.	50
8				Grades to… no odor.	5
9				Bottom of Boring 8' bgs	
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Test Pit No: TP1

Project Name & Location: Sub Surface Investigation 1550 Harlem Rd.
HEI Representative: E. Betzold
Project Number: 32901
Start Date: 1/22/2015 End Date 1/22/2015
Type of Excavator: Track mounted
Contractor: DirtWorks
Sampler Type: Bucket

Test Pit Depth (ft)	Sample No.	Sample Interval (feet)	OVM Reading (ppm)	SAMPLE DESCRIPTION
1	1	1-4	100	Gray f/c Gravel, some f/c Sand, tr. Slag, tr. Silt, moist. (FILL)
2			225	Brown Silt & Clay, some f/c Sand, tr. Slag, moist, free product, stained, odor. (FILL)
3			315	
4				Brown CLAY & SILT, little f/c Sand, tr. f/c Gravel, wet, free product, staining, odor.
5				Bottom of Excavation 4' bgs
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Notes: Free product was observed through out the excavation along the UST.

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of test pit completion. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Test Pit No: TP2

Project Name & Location	Sub Surface Investigation 1550 Harlem Rd.	HEI Representative:	E. Betzold
Project Number:	32901		
Start Date	1/22/2015 End Date 1/22/2015	Type of Excavator:	Track mounted
		Contractor:	DirtWorks
		Sampler Type:	Bucket

Test Pit Depth (ft)	Sample No.	Sample Interval (feet)	OVM Reading (ppm)	SAMPLE DESCRIPTION
1	1	1-4.5	ND	Brown Clayey Silt and f/c Gravel, little f/c Sand, moist. (FILL)
2			ND	
3			ND	
4	2	4.5-6.5	ND	Red/Brown CLAY & SILT, tr. f/c Sand, tr. f/c Gravel, moist.
5				
6	3	6.5-8.5	900	Grades to… wet, odor.
7				
8			1,200	
9	4	9-9.5	1	Grades to… no odor.
10				Bottom of Excavation 9.5' bgs
11				
12				
13				
14				
15				

Notes:

General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of test pit completion. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Test Pit No: TP3

Project Name & Location	Sub Surface Investigation 1550 Harlem Rd.	HEI Representative:	E. Betzold
Project Number:	32901		
Start Date	1/22/2015 End Date 1/22/2015	Type of Excavator:	Track mounted
		Contractor:	DirtWorks
		Sampler Type:	Bucket

Test Pit Depth (ft)	Sample No.	Sample Interval (feet)	OVM Reading (ppm)	SAMPLE DESCRIPTION
1	1	1-3		Gray f/c Gravel, some Asphalt, tr. f/c Sand, tr. Silt, moist. (FILL)
2				Grades to… some f/c Sand, tr. Asphalt.
3	2	3-5.5	1,700	Brown CLAY & SILT, little f/c Sand, tr. f/c Gravel, moist, free product, stained, odor.
4				Grades to… wet.
5				Grades to… saturated.
6	3	5.5-8	500	
7			7	Grades to… no odor.
8				Bottom of Excavation 8' bgs
9				
10				
11				
12				
13				
14				
15				

Notes:

General Notes:	
	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
	2 - Groundwater (GW) depths approximate at time of test pit completion. Fluctuations in groundwater may occur.
	3 - f=fine; m=medium; c=coarse
	4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Test Pit No: TP4

Project Name & Location	Sub Surface Investigation 1550 Harlem Rd.	HEI Representative:	E. Betzold
Project Number:	32901		
Start Date	1/22/2015 End Date 1/22/2015	Type of Excavator:	Track mounted
		Contractor:	DirtWorks
		Sampler Type:	Bucket

Test Pit Depth (ft)	Sample No.	Sample Interval (feet)	OVM Reading (ppm)	SAMPLE DESCRIPTION
1	1	1-2.5	0	Gray f/c Gravel, tr. f/c Sand, tr. Silt, moist. (FILL)
2	2	2.5-4	4.5	Dk. Brown Clayey Silt, little f/c Sand, little f/c Gravel, tr. Slag, moist. (FILL)
3				Grades to… tr. f/c Sand, tr. f/c Gravel.
4			0.6	Light Brown CLAY & SILT, tr. f/c Sand, tr. f/c Gravel, moist.
5				Bottom of Excavation 4' bgs
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Notes:

General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of test pit completion. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Test Pit No: TP5

Project Name & Location	Sub Surface Investigation 1550 Harlem Rd.	HEI Representative:	E. Betzold
Project Number:	32901		
Start Date	1/22/2015 End Date 1/22/2015	Type of Excavator:	Track mounted
		Contractor:	DirtWorks
		Sampler Type:	Bucket

Test Pit Depth (ft)	Sample No.	Sample Interval (feet)	OVM Reading (ppm)	SAMPLE DESCRIPTION
1	1	1-2.5		Gray f/c Gravel, some Slag, little f/c Sand, tr. Silt, moist. (FILL)
2			900	Dk. Brown Clay & Silt, tr. f/c Sand, tr. f/c Gravel, moist, odor. (FILL)
3	2	2.5-5		Grades to… wet, stained.
4				Grades to… free product, saturated.
5	3	5-8	1,800	
6				Gray/Brown CLAY & SILT, little f/c Sand, tr. f/c Gravel, odor, wet.
7			600	
8			10	Grades to… moist, no odor.
9				Bottom of Excavation 8' bgs
10				
11				
12				
13				
14				
15				

Notes:

General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of test pit completion. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Test Pit No: TP6

Project Name & Location	Sub Surface Investigation 1550 Harlem Rd.	HEI Representative:	E. Betzold
Project Number:	32901		
Start Date	1/22/2015 End Date 1/22/2015	Type of Excavator:	Track mounted
		Contractor:	DirtWorks
		Sampler Type:	Bucket

Test Pit Depth (ft)	Sample No.	Sample Interval (feet)	OVM Reading (ppm)	SAMPLE DESCRIPTION
1	1	0-1.5		Gray/Brown f/c Gravel, little Slag, tr. f/c Sand, tr. Silt, moist. (FILL)
				Grades to… free product, stained, odor.
	2	1.5-3	1,975	
2				Dk. Brown Clay & Silt, little f/c Sand, tr. f/c Gravel, moist. (FILL)
3	3	3-5	2,000	Grades to… free product, stained, odor.
4				Grades to… wet.
				Grades to… saturated.
5			2,000	
				Bottom of Excavation 5' bgs
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Notes:

General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of test pit completion. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Test Pit No: TP7

Project Name & Location	Sub Surface Investigation 1550 Harlem Rd.	HEI Representative:	E. Betzold
Project Number:	32901		
Start Date	1/22/2015 End Date 1/22/2015	Type of Excavator:	Track mounted
		Contractor:	DirtWorks
		Sampler Type:	Bucket

Test Pit Depth (ft)	Sample No.	Sample Interval (feet)	OVM Reading (ppm)	SAMPLE DESCRIPTION
1	1	1-4		Brown Silt & Clay, little f/c Gravel, little f/c Sand, moist. (FILL)
2			200	
3				Grades to… odor, stained.
4	2	4-6.5	200	Light Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist, odor, stained.
5				Grades to… no odor/stained.
6			5	Grades to… wet.
7				Bottom of Excavation 6.5' bgs
8				
9				
10				
11				
12				
13				
14				
15				

Notes:

General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of test pit completion. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

HAZARD EVALUATIONS
3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Test Pit No: TP8

Project Name & Location	Sub Surface Investigation 1550 Harlem Rd.	HEI Representative:	E. Betzold
Project Number:	32901		
Start Date	1/22/2015 End Date 1/22/2015	Type of Excavator:	Track mounted
		Contractor:	DirtWorks
		Sampler Type:	Bucket

Test Pit Depth (ft)	Sample No.	Sample Interval (feet)	OVM Reading (ppm)	SAMPLE DESCRIPTION
1	1	1-2.5	1.2	Brown Silt & Clay, little f/c Gravel, little f/c Sand, moist. (FILL)
2	2	2.5-4.5	1	Light Brown CLAY & SILT, tr. f/c Sand, tr. Gravel, moist.
3				
4				
5				Bottom of Excavation 4.5' bgs
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Notes:

General Notes:	1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate. 2 - Groundwater (GW) depths approximate at time of test pit completion. Fluctuations in groundwater may occur. 3 - f=fine; m=medium; c=coarse 4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

APPENDIX B

QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN

BROWNFIELD CLEANUP PROGRAM
For
1550 HARLEM ROAD SITE
1550 Harlem Road, Cheektowaga, New York 14206
BCP # C915321

Prepared For:
American Tire, Inc.
397 Ludington Street, Cheektowaga, NY 14206
HEI Project No: e1621

Prepared By:
Hazard Evaluations, Inc.
3636 North Buffalo Road
Orchard Park, New York 14127
(716) 667-3130

February 14, 2018

HAZARD EVALUATIONS

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1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) has been developed by Hazard Evaluations Inc. (HEI) as prepared for the 1550 Harlem Road Site, located at 1550 Harlem Road in the Town of Cheektowaga, New York. The QAPP was prepared in general accordance with the requirements of Section 2.4 of the NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation, dated May 2010 (DER-10).

The QAPP is designed to produce data of the quality necessary to achieve the project objectives. The objective of the QA/QC protocol and procedures is to ensure the information, data, and decisions associated with the project are technically sound and properly documented.

1.1 Project Scope

This QAPP presents the project scope, objectives, organization, planned activities, data quality objectives, quality assurance/quality control (QA/QC) procedures and sampling procedures. This project involves test borings, monitoring well installation, monitoring well development, subsurface soil and groundwater sample collection, as well as interim remedial measures (IRM) to include UST removal and soil excavation. Proposed sampling locations are included on Figure 1 and a summary of the anticipated number of samples and analytical testing is included on Table 1. The project goal associated with the RI/IRM includes the following:

- Define the nature and extent of on-site contamination in both soil and groundwater.
- Identify on-site source areas of contamination, if any.
- Collect data of sufficient quantity and quality to evaluate potential threats to the public health and environment.
- Collect data of sufficient quantity and quality to evaluate remedial alternatives.
- The IRM will mitigate risks at the site associated with the known UST. The planned IRM includes tank removal, excavation and off-site disposal of impacted soils.

1.2 Project Organization

The general responsibilities of key project personnel are listed below. Resumes are included in Attachment A.

Project Manager	Ms. Michele Wittman, HEI Director of Site Services, will have responsibility for overall program/project management and coordination with NYSDEC and subcontractors.
Technical Coordinator	Mr. Sean R. Carter, PE, is responsible for review of project documents and all engineering aspects and responsibilities.

Field Team	Mr. Eric Betzold will have overall responsibility for on-Site implementation of the Site Investigation project activities. The technical team will consist of experienced professionals (engineers, geologists, scientists) to gather and analyze data, prepare project documentation and collection of various soil and groundwater samples.
QA Officer	Mr. Mark Hanna, CHMM, will serve as Quality Assurance Officer (QAO), and will be responsible for laboratory and data validation subcontractor procurement and assignment, as well as data usability reports. The QA may conduct audits of the operations at the site to ensure that work is being performed in accordance with the QAAP.

1.3 Project Sub-Contractors

Subcontractor specialists will be contracted for services relating to drilling and monitoring well installation, laboratory/analytical services, data validation services, field surveying, and waste transportation and disposal. The subcontractors will be determined approved by NYSDEC prior to beginning of site work:

Laboratory Analysis -	Alpha Analytical - A laboratory certified under the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) will perform the analysis
Data Validation -	Data Validation Services
Exploration Services -	Matrix Environmental Technologies Inc.
Surveying -	To be determined

2.0 FIELD INVESTIGATION PROCEDURES

Field sampling at the 1550 Harlem Road Site has been designed to obtain representative samples of various environmental media to assess impact that the site may have to human health and the environment. The field investigation procedures include sampling for subsurface soils, groundwater, air and vapor samples.

Proposed sampling locations are included within the RI/IRM/AAR Work Plan. Environmental sampling and other field activities will be performed in general accordance with the appropriate techniques presented in the following guidance document.

- DER-10: Technical Guidance for Site Investigations and Remediation; NYSDEC Division of Environmental Remediation, May 2010.

Field activities are described in the following sections and in the RI/IRM/AAR Work Plan.

2.1 Air Monitoring

Air monitoring/screening of volatile compounds for health and safety concerns will be performed with a portable organic vapor meter (OVM) equipped with a photoionization detector (PID) that is using a 10.6 electron volt (eV) bulb. Monitoring will be done during invasive activities such as soil borings, monitoring well installation, well development, sampling, and IRM activities. Detections above background during air monitoring will require that the work be stopped until air monitoring levels decrease to background levels or until health and safety protocol are upgraded and approved by NYSDEC. On-site personnel will be outfitted in modified Level D personnel protection (hardhat, safety glasses, work boots and gloves).

2.2 Soil Screening and Logging

Subsurface soil samples will be collected from direct push macro-core samplers in general accordance with American Society for Testing and Material (ASTM) D6282-98 Standard Guide for Direct Push Soil Samples for Environmental Site Characteristics. Subsurface soil sampling from split-spoon samples advanced ahead of hollow steam augers will be completed in general accordance with ASTM D1586-99. A soil boring log will be prepared for each location to include date, boring location, drill rig type, blow counts, sample identification, sample depth interval, percent recovery, OVM reading, stratigraphic boundaries, and well installation information.

Subsurface soil will be sampled by opening the split spoon sampler (borings) or slicing the core vertically down the middle with a sharp blade. Soil samples will be visually examined for evidence of suspect contamination (e.g., staining, odor) and field screened with a calibrated OVM. Portions of the soil samples may be placed in containers for future analytical testing. Different portions of the soil samples will be placed within sealable plastic bags and will be field screened the same day as collected. Prior to screening, the soil samples will be allowed to equilibrate to ambient temperature. The OVM sampling port will be placed within a corner of the bag. The peak reading will be recorded on the boring log.

2.3 Soil Sample Collection

Soil samples selected for VOC analysis will be collected using an Encore or Terracore sampling kit, limiting headspace by compacting the soil into the container. Samples for VOC will be placed into the appropriate container immediately after opening of sampler, prior to making any field measurements or sample homogenization.

Remaining soil samples will be homogenized using a "coning and quartering" procedure. The soil will be removed from the sampling equipment and transferred to a clean surface (metal foil, steel pan, bowl, etc.) and thoroughly mixed to provide a

more homogeneous sample to the lab. An aliquot of the sample will then be transferred to the required sample containers and sealed with the appropriate cap.

2.4 Soil Borings

Soil borings will be completed using either direct push subsurface investigation techniques or rotary drilling with continuous split spoon sampling and hollow stem augers. Drilling cuttings will be visually inspected and screened with an OVM and managed consistent with DER-10 requirements. Soil sampling will be conducted to define the subsurface conditions. During continuous sampling process, soil samples will be field screened for the presence of VOCs using an OVM. Soil samples for laboratory analysis will be selected in the field based on visual/olfactory observations and OVM screening results.

The drill rig/ soil probe rig, tools, augers, etc. will be decontaminated between holes at an on-site temporary decontamination pad or area. Decontamination will be accomplished using steam cleaning or high pressure wash equipment. Direct push sampling equipment and split spoon sampling devices will be cleaned manually with non-phosphate detergent (i.e., Alconox) wash and potable water followed by a potable water rinse or a second steam cleaning followed by a distilled/deionized water rinse. All equipment will be cleaned prior to leaving the Site.

2.5 Monitoring Well Installation

Monitoring wells will be constructed of 2-inch ID flush coupled Schedule 40, polyvinyl chloride (PVC) riser and screen. The actual installation depth and screen depth will be selected based groundwater depth, observation of subsurface materials and headspace screening test results. In general, the screen will consist of a maximum 10 foot length of 0.010-inch machine slotted well screen. A schematic of the well construction detail is provided as Figure 2.

Following placement of the assembled screen and riser, the borehole will be backfilled. The well screen depth will be backfilled with silica sand filter pack (estimated at size #0) from the base to a minimum of one (1) foot above the well screen. A minimum 1-foot layer of bentonite pellets will be placed above the sand filter and allowed to hydrate. A mixture of cement/bentonite water will be placed above the bentonite seal. The monitoring well will be completed by placing a locking steel casing or road box over the riser. Concrete will be then placed in the borehole around the protective casing and sloped away from the casing.

2.6 Monitoring Well Development and Sampling

2.6.1 Monitoring Well Development

Monitoring wells will be developed by utilizing either a dedicated tubing or new dedicated disposable bailer, depending on the field conditions. Fluids will not be added during development process. New, dedicated well development equipment will be utilized prior to development of each well. The well development procedure is listed below.

- Well cover will be unlocked. OVM will be used to survey the ambient air and air directly at the top of the well.
- A pre-development static water level measurement will be taken.
- Sound the bottom of the well and agitate/loosen accumulated sediment.
- Calculate water volume in the well.
- Obtain initial field water quality measurements, including pH, specific conductance, turbidity, and temperature obtained using a Horiba U-22 water quality meter (or equivalent).
- Alternate water agitation methods such as moving a bailer or pump tubing up and down inside screened interval coupled with water removal methods (pumping or bailing) in order to suspend and remove solids/sediment from the wells.
- Water quality meter measurements should be recorded every one to three gallons of water removed. Record water quantities removed and water quality measurements.
- Development can cease when the following water quality criteria are met, or at least 5 well volumes have been removed.
    - Water is clear and free of sediment and turbidity is less than 50 nephelometric turbity units (NTUs)
    - pH is +/- 0.1 standard unit between readings
    - Specific conductivities is +/-3% between readings
    - Temperature is +/-10% between readings
- Record post-development water level readings. Development information will be recorded on well development logs.

After the water level has returned to its pre-purge level (or within a maximum of two hours, if the well has recharged sufficiently to allow sampling), samples will be collected from the middle of the screened portion of the well for overburden wells. If the water level is slow to recharge and does not reach to its pre-purge level within two hours, then samples can be collected after sufficient water has recharged, and the degree of recharge indicated in field notes with time and depth to water noted.

2.6.2 Groundwater Sampling

Groundwater samples will be collected by utilizing low-flow sampling techniques with dedicated tubing or by conventional methods using a new dedicated disposable bailer. A peristaltic pump and new disposable high density polyethylene (HDPE) tubing will be used at each location. Tubing and sampling equipment will be clean upon arrival at the Site. After removal of three well volumes or well purging, the well should be sampled.

A Well Data Sheet should be completed during groundwater sampling. Each well to be sampled will have designated pre-labeled, certified clean, sample bottles. The following steps describe the groundwater sample procedure.

- Unlock and remove well cap. Test the air at the wellhead with the OVM.
- Measure the static water level. Determine the total well volume.
- Slowly lower the dedicated bailer or tubing into the well. Purge the well, minimum of three well volumes. If the well goes dry during bailing, allow for full recovery and sample. If recovery takes longer than 20 minutes, proceed to next well but return to sample within 24 hours.
- Fill the appropriate sample bottles. Two or three (depending on laboratory-specific requirements) 40-ml glass vials (with Teflon septa) will be used to collect samples for VOCs. Sample collection with the following sample collection order: volatile organic compounds, semi-volatile organic compounds, PCBs/pesticides/herbicides and metals. If the well should go dry during sampling, the well should to be re-sampled the next day. The second attempt to sample the well will proceed with the same sample order.
- Preservative for the various sampling preservatives will be added by the laboratory provided jars. The following parameters required additional special handling.
  - VOC samples must be free of air bubbles. When the container is determined to be bubble free, the sample containers should be immediately chilled.
  - Metals analysis should be preserved with nitric acid to a pH less than 2.
- Record pertinent information in the field logbook and well data sheet.
- Lock well, inspect well site, and note any maintenance required.
- Purge water will be containerized for future disposal.

2.7 Soil Vapor Intrusion Sampling

Soil vapor intrusion (SVI) investigation will be completed to assess potential for soil vapor intrusion concerns associated with the current on-site building. The SVI work will be in done in general accordance with NYDOH Final document entitled “Guidance for Evaluating Soil Vapor Intrusion in the State of New York” dated October 2006. Specifically, the scope of work will include the following:

2.7 Background Samples

Due to the historical usage and known concerns of the site, soils and groundwater samples have not been pre-designed as likely to characterize site background conditions.

2.8 Equipment Decontamination

In order to reduce the potential for cross-contamination of samples collected during the project, sampling equipment will be decontaminated to ensure that data is acceptable. It is anticipated that most of the materials used in sample collection will be disposable one-time use materials, such as sampling containers, bailers, tubing, gloves, etc.

Non-dedicated material such as split spoon samples, stainless steel mixing bowls, drill rig, water-level indicator, etc., will be decontaminated by the following methods:

- Steam clean the equipment within a dedicated decontamination area; or
- Decontamination typically involves scrubbing/washing with a laboratory grade detergent (e.g. alconox) to remove visible contamination, followed by potable (tap) water and analyte-free water rinses. Tap water may be used from any treated municipal water system.

The effectiveness of the equipment decontamination of non-dedicated sampling equipment will be evaluated via analytical testing of equipment rinsate blanks. Decontamination liquids, disposable equipment, and PPE will be containerized for future disposal.

2.9 IRM Activities

IRM activities are planned as part of the RI/IRM field activities to include UST removal and soil excavation. Specific information on location and depth of excavation areas are include within the RI/IRM/AAR Work Plan.

2.9.1 UST Excavation

If a UST is identified during IRM excavation, the UST will be removed to prevent further movement of contaminants. The following general procedures will be followed.

- DEC will be notified of tank removal at least 10-days in advance.
- Tank removal will be completed in general conformance with NYSDEC Memorandum for Permanent Closure of Petroleum Storage Tanks, dated January 20, 1987.
  - Remove all product, if present. Drain and flush piping lines into tank. Remove entire tank contents including tank bottom, product, water and sediments.
  - Expose tank and lines. Remove fill and vent lines. Temporarily plug tank openings.
  - Complete excavation on sides of tank, removed tank and place in a secure location.

- The tank atmosphere should be made save (via dry ice, or other acceptable method). The tank atmosphere must be tested to ensure it is safe with an oxygen meter. For save condition, the reading should be 6-7% oxygen and/or lower explosive limit (LEL) of 10-20%.
- The tank will be cleaned on-site. Tank cleaning waste will be containerized and disposed off-site. The certified clean tank will be taken to a scrap yard for recycling.

- If there is evidence of impacted soil, the excavation will continue until contaminated soil is removed or until further excavation is no longer feasible. Once excavation is complete, confirmation soil samples will be taken.

2.9.2 IRM Confirmation Samples

IRM confirmation soil samples are anticipated to be collected from the UST excavation and soil excavation areas. IRM confirmation samples will be collected using disposable or dedicated stainless steel spoons or hand trowels from excavation walls and floor. Based on DER-10 requirements, one sample will be collected every 30 linear feet of sidewall and one sample for every 900 square feet of excavation bottom. To minimize volatilization, confirmation samples will be collected from the soils located two to four inches inside the walls or floor of the excavation. The retrieved soil sample will be placed directly into parameter specific glass containers. Each sample container will be appropriately labeled and transported to the contracted laboratory.

Underground storage tank (UST) excavation confirmation samples will be collected after extent of impacted soil has been removed. A minimum of five (5) soil samples will be collected, including four sidewall and one bottom sample for every complete 30 linear feet of sidewall. The samples will be biased based on field screening toward the suspected location of greatest contamination.

2.10 Storage and Disposal of Investigation-Derived Waste

The sampling methods and equipment have been selected to limit the need for decontamination and the volume of waste material to be generated. Investigation-derived material (e.g., drill cuttings and purge water) generated will be presumed to be non-hazardous waste and will be disposed at the boring or well from which the material was derived. Excess auger cuttings will be drummed and stored on-Site for future disposal. Monitoring well development/purge water will be containerized in 55-gallon drums for testing and future off-site disposal.

Personal protective equipment and disposable sampling equipment will be placed in plastic garbage bags for disposal as a non-hazardous waste.

Decontamination water used in steam cleaning and/or spoon washing, and rinse water, including detergent, may be generated during Site work. Tap and analyte-free water used for rinsing will be allowed to percolate back into the ground, or will be disposed into a sanitary system. Non-phosphate detergent and water rinse will be disposed into a sanitary system.

2.11 Survey/Site Mapping

A base map will be prepared by a New York State licensed surveyor. This will allow measurement of the actual exploration locations and elevations. The base map will include property lines, buildings, fence lines, and other key site features. The surveyor will establish the horizontal location and vertical elevations. The map will include the RI investigation/sampling locations, as well as completed IRM work excavation limits. Monitoring well vertical measurements will include the ground surface at exploration locations, plus the top of casing and top of riser at monitoring well locations. The top of riser will serve as the water level monitoring point. Soil/fill boring locations will be field located and incorporated within the survey. Elevations of the ground surface and top of PVC riser will be measured for each monitoring well.

3.0 SAMPLE HANDLING and MANAGEMENT

Various environmental samples will be collected during the RI/IRM investigation work. The procedures below will assist in documentation and tracing of the various samples. During sampling, field personnel will wear disposable or latex or nitrile gloves. Gloves will be changed and discarded between sampling locations.

Laboratory analysis samples will be placed in new laboratory-grade containers. Appropriate sample preservatives will be added to the sample containers by the laboratory prior to delivery to the project site. The specific volume and preservation of samples, if any, is summarized on Table 2. Samples will be shipped to the laboratory within 48-hours from sample collection. Samples will be kept in coolers, on ice, for shipment to the analytical laboratory.

3.1 Sample Label and Identification

Each field and QC sample will be identified by a self-adhesive, non-removable label placed on the sample containers. The label information will include, at a minimum, client name, site location, data and time of collection, sample identification number, sampler's name, and notes, as needed recorded in waterproof ink. All sample bottles within each shipping container will be individually labeled with the laboratory provided label.

Each sample will with a unique identification using the following test location designations:

Designation	Media Type	Sample Location	Example
SB	Soil	Soil boring number with sample depth interval (x-x')	SB1 (8-10')
MW	Groundwater	Monitoring well with well number	MW2
EX	Soil	Excavation confirmation sample with sample depth interval	EX3 (1-2')
SSV	Sub-slab vapor	Sub-slab vapor intrusion sample	SSV4
AA	Ambient air	Indoor air sample, concurrent with SSV	AA4
TB	Trip blank	None – include day/month/year	TB1 – 10/25/16
RB	Rinsate blank	Any – rinsate of sampling equipment; include day/month/year	RB2 – 10/25/16
MS/MSD	Matrix spike/ matrix spike duplicate	Any – identify original sample location	SB1 MS MW2 MSD

Quality control (QC) field duplicate samples will be submitted blind to the laboratory; a fictitious sample identification will be created using the same system as the original. The sample identifications (of the original sample and its field duplicate) will be marked in the project specific field book and on the copy of the chain-of-custody kept by the sampler and copied to the project manager.

3.2 Chain of Custody

A chain-of-custody form will trace the path of sample containers from the project site to the laboratory. An example Chain of Custody is included in Attachment 2. The chain-of-custody documentation will accompany the samples from their inception until analysis. Pertinent field information will be included on the chain-of-custody, including client name, project name/location, sampler name, sample identification number, date, time, media, grab/composite, number of containers, analysis required, and preservation.

Samples will be packaged into coolers used for shipment. The cooler will be packed with ice (or equivalent) to maintain sample temperature at 4 ^{o}C. The chain of custody forms will be signed and placed in a sealed plastic bag in the cooler. The cooler will be sealed and custody seal placed over the cooler opening, designed to break if opened or disturbed. The custody seal will be signed and dated. Shipping tape will be wrapped around the cooler and over the custody seal. Sample receipt personnel at the laboratory will document whether the custody seals remained intact upon arrival and lab personnel will sign the chain-of-custody form.

4.0 FIELD DOCUMENTATION

Daily field activities will be recorded in a bound field notebook. The field notebook will include the following daily information for Site activities:

- Date, time of arrival, time of departure, weather conditions.
- Field staff, sub-contractors or other personnel on site.
- Description of field activities and location of work area.
- Equipment used on site (such as drill rig, operator)
- Field observations and descriptions, such as soil descriptions, well/piezometer installation information, evidence of contamination, staining, odors, etc.
- Field measurements (OVM, water quality readings) and calibration
- Sampling locations, depths, identification numbers, time, etc.
- Sampling location measurements.
- Chain of custody information
- Modifications to scope of work or issues encountered.

Field notes may be transferred to soil boring logs, or monitoring well forms as part of the RI/IRM/AAR. Typical forms to be utilized during the field investigation are presented in Attachment 2 and include:

- Daily Field Report
- Soil Boring Log
- Monitoring Well Installation Log
- Well Development Data Sheet
- Chain of Custody

5.0 ANALYTICAL LABORATORY QA/QC PROTOCOLS

This section describes the analytical methods, principles and procedures that will be used to generate quality data. These protocols include laboratory calibration, field equipment calibration, QC sample collection and analysis, quantitative evaluation of data quality protocols and data qualification, if necessary.

5.1 Analytical Methods, Procedures and Calibration

Chemical analysis for samples collected during the field work will be completed by a laboratory capable of performing project specific analysis as included in this QAAP.

5.1.2 Analytical Methods

Sample analytical analysis will be consistent with the NYSDEC ASP Category B requirements. Specific methods and references for each parameter including sample preservation and holding times are shown on Table 2. Quantification and detections limits for all analysis are those specified under the appropriate test methods.

5.1.3 Laboratory Instrumentation & Equipment

Laboratory instruments and equipment will be calibrated following SW-846 analytical methods protocol and laboratory requirements.

5.1.3 Field Equipment

Various field equipment will be used during the project. Calibration of the field equipment will be complete in accordance with manufacture's specifications, prior to the start of each day.

Organic Vapor Meter – Real-time monitoring for VOCs will be done with an organic vapor meter (OVM) equipped with a photoionization detector (PID) to evaluate the nature and extent of potential petroleum or solvent impacts at the site. The OVM will be calibrated on a daily basis in accordance with manufacturer's specifications.

Particulate Monitoring Equipment – Particulate air monitoring will be completed during soil excavation activities as part of the IRM as noted in the Community Air Monitoring Program (CAMP). Measurements will be collected along the upwind perimeter of the excavation areas to assess the amount of particulates naturally occurring in the air. The particulate meter will be regularly calibrated in accordance with the manufacturer's specifications.

Additional Field Equipment – Additional field equipment will be used as part of the project including an electric static water level indicator and Horiba U-22 water quality meter that measures pH, specific conductivity, temperature, dissolved oxygen, oxygen reduction potential and turbidity. The meters will be calibrated in accordance with the manufacturer's specifications.

5.2 Quality Control Samples

Analytical methods, summarized on Table 2, to be utilized for laboratory sample analysis address the quality control to be used and the frequency of replicates, blanks and calibration standards for laboratory analytical equipment. Several types of field QC samples will be collected and submitted for laboratory analysis including trip blanks, sample duplicate, matrix spike and matrix spike duplicate.

Trip blanks – A trip blank sample monitors for potential impacts due to handling, transport, cross contamination from other samples during storage or laboratory contamination. The trip blanks, for aqueous VOCs only, will consist of analyte free reagent grade water in VOC sampling containers to be used for the project. Trip blanks will be prepared at the laboratory, sealed, transported to the Site and returned without being opened to assess contamination that may have occurred during transport. Trip blanks will be submitted at a rate of one per cooler when aqueous VOCs are shipped to the laboratory.

Blind duplicates – Blind duplicate samples are used to monitor field and laboratory precision, as well as matrix heterogeneity. The samples are separate aliquots of the same sample, collected from the same location, at the same time, in the same manner as the first, and placed into a separate container. Each duplicate sample will be analyzed for the same parameters

as the original sample collected that day. Blind duplicates will be collected at a frequency of 1 per 20 environmental samples of a given matrices (i.e. soil or groundwater).

Matrix spike/matrix spike duplicate (MS/MSD) are used to monitor precision and accuracy of the analytical method on various matrices. The samples are spiked with known quantities of target analytes at the laboratory. The MS/MSD will be collected at a frequency of 1 pair per 20 environmental samples of a given matrices (i.e. soil or groundwater).

Rinsate Blanks – Rinsate blank is used to indicate potential contamination from sample instruments used to collect and/or transfer samples. The rinsate blank will be generated by passing distilled water through and over cleaned sampling equipment. Rinsate blank samples will not be performed when dedicated disposal equipment is used. The rinsate blank will be collected at a frequency of 1 per 20 environmental samples of a given matrices (i.e. soil or groundwater).

5.3 Corrective Actions

If instrument performance or data fall outside acceptable limits, then corrective actions will be taken to resolve problems and restore proper functioning of the analytical system. Actions may include recalibration or standardization of instruments, acquiring new standards, replacing equipment, repairing equipment, and reanalyzing samples or redoing sections of work. Subcontractors providing analytical services should perform their own internal laboratory audits and calibration procedures with data review conducted at a frequency so that errors and problems are detected early, thus avoiding the prospect of redoing large segments of work.

6.0 DATA USABILITY

The main objective of the DUSR is to determine whether the data presented meets the project-specific needs for data quality and data use. Data validation will be performed and a Data Usability Summary Report (DUSR) will be prepared to meet the NYSDEC requirements for analytical data generated during the RI/IRM. The DUSR will be completed in general accordance with Appendix 2B of DER-10. The findings of the DUSR will be incorporated in the RI/IRM/AAR report. Waste characterization samples will not be validated.

TABLES

TABLE 1
Proposed Analytical Testing Program Summary
1550 Harlem Road, Sloan, NY
NYSDEC Brownfield Cleanup Program

Location	Number of Proposed Locations	Matrix	TCL VOCS	TCL SVOCs	TAL METALS Total	TAL METALS dissolved	PCBs	Pest/ Herbs
Surface Soil Samples								
Hand Augers	6	Soil	3	3	3	-	2	6
Duplicate		Soil	0	0	0	-	0	1
MS/MSD		Soil	0	0	0	-	0	2
Rinsate		Water	0	0	0	-	0	1
Total			**3**	**3**	**3**	**0**	**2**	**10**
Soil Borings - Subsurface Samples								
Soil Boring	6	Soil	6	6	6	-	2	4
Duplicate		Soil	1	1	1	-	1	0
MS/MSD		Soil	2	2	2	-	2	0
Rinsate		Water	1	1	1	-	1	0
Total			**10**	**10**	**10**	**0**	**6**	**4**
Monitoring Wells								
Monitoring Well	4	Groundwater	4	4	4	4	4	4
Duplicate		Groundwater	1	1	1	1	1	1
MS/MSD		Groundwater	2	2	2	2	2	2
Rinsate		Water	1	1	1	1	1	1
Trip Blank		Water	1	-	-	-	-	-
Total			**9**	**8**	**8**	**8**	**8**	**8**
Excavation Confirmtion Samples								
Soil Boring	18	Soil	18	18	6	6	6	6
Duplicate		Soil	1	1	1	1	1	1
MS/MSD		Soil	2	2	2	2	2	2
Rinsate		Water	1	1	1	1	1	1
Total			**22**	**22**	**10**	**10**	**10**	**10**
			VOCs	SVOCs	METALS	METALS	PCBs	Pest/ Herbs
	TOTAL SAMPLES		**44**	**43**	**31**	**18**	**26**	**32**

Notes:

TCL VOCs - Target Compound List Volatile Organic Compounds.

TCL SVOCs - Target Compound List Semi-volatile Organic Compounds.

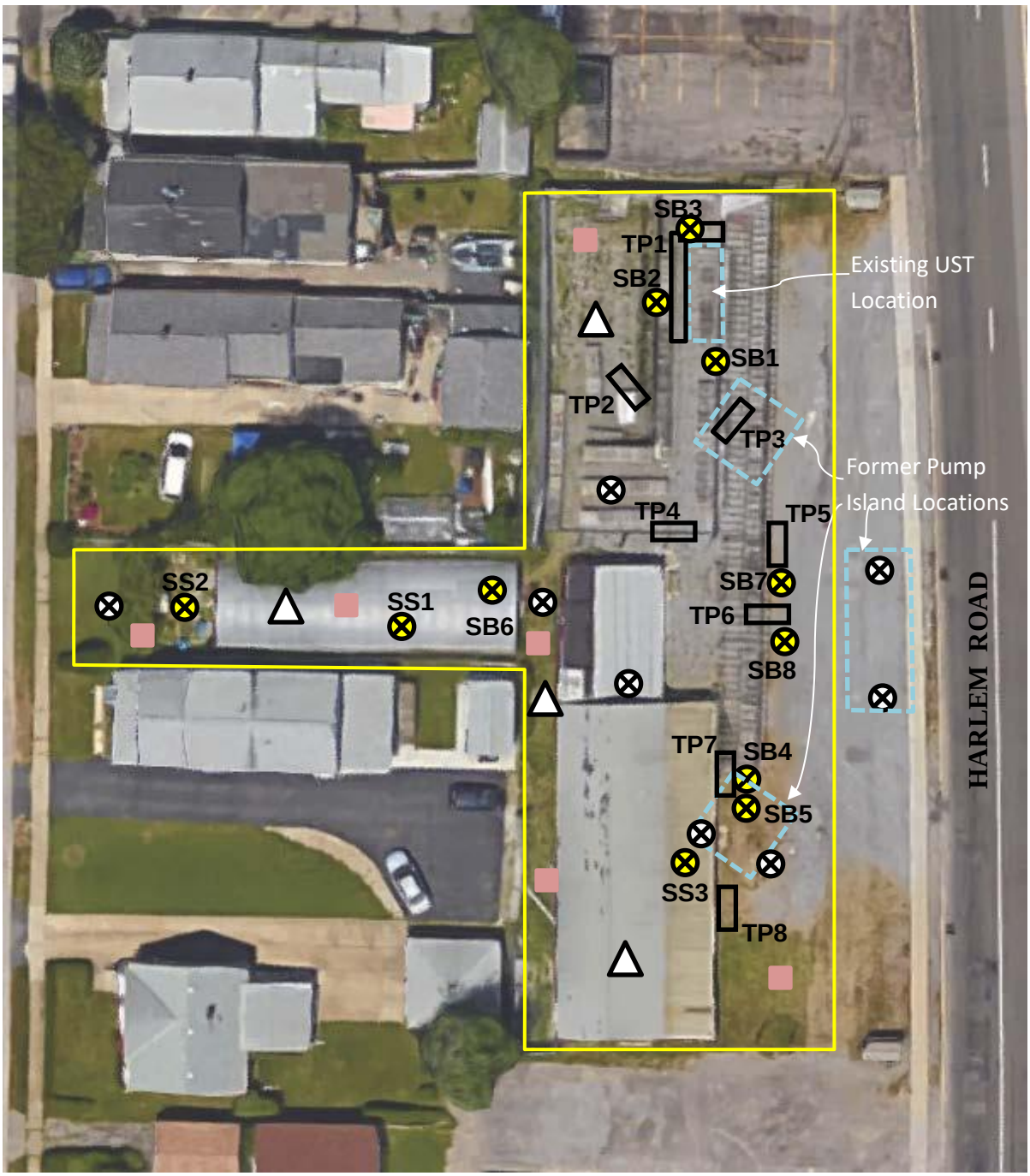
TAL Metals - Target Analyte List Metals.

TCL PCBs - Target Compound List Polychlorinated Biphenyls.

TABLE 2
Sample Container, Volume, Preserving and Holding Time Requirements
1550 Harlem Road
Cheektowaga, NY
NYSDEC Brownfield Cleanup Program

PARAMETER DESCRIPTION	MATRIX	METHOD NO.	Quantity/ Bottle Type	Preservation	Holding Time
Soil Samples					
Volatiles, TCL list	Soil	5035/3035A/8260	Encore or Terracore Samplers	Freeze within 48 hours	Freeze within 48 hours 14 days
Semi-Volatiles, TCL list	Soil	8270	(1) 4oz glass jar	Cool, 4 C	14 days
Metals, TAL (no CN)	Soil	6010/7000	(1) 4oz glass jar	none	180 days, Mercury 28 days
PCBs	Soil	8082	(1) 4oz glass jar	Cool, 4 C	365 days/40 days from extraction
Pesticides	Soil	8081	(1) 4oz glass jar	Cool, 4 C	14 days/40 days from extraction
Herbicides	Soil	8151	(1) 4oz glass jar	Cool, 4 C	14 days/40 days from extraction
Monitoring Wells					
Volatiles, TCL list	Water	8260	(3) 40ml vial	Cool, 4 C, HCL	14 days
Semi-Volatiles, TCL list	Water	8270	(2) 1 liter amber	Cool, 4 C	7 days
PCBs	Water	8082	(2) 1 liter amber	Cool, 4 C	7 days/40 days from extraction
Pesticides	Water	8081	(2) 500ml amber	Cool, 4 C	7 days/40 days from extraction
Herbicides	Water	8151	(2) 1 liter amber	Cool, 4 C	7 days/40 days from extraction
Metals, TAL	Water	6010	(1) 250ml plastic	HNO3	180 days
Mercury, Total	Water	7000	(1) 250ml plastic	HNO3	28 days
Metals, TAL (dissolved) field filtered	Water	6010	(1) 250ml plastic	HNO3	180 days
Mercury, Dissolved	Water	7000	(1) 250ml plastic	HNO3	28 days

FIGURES



KEY

⊗ = Soil Boring Location (03/2017)

▯ = Test Pit Location (01/2015)

▪ = Proposed Surface Soil Location

⊗ = Proposed Soil Boring Location

△ = Proposed Soil Boring & Monitoring Well Location

HAZARD EVALUATIONS, INC.

Phase I/II Audits – Site Investigations – Facility Inspections

Proposed Remedial Investigation Locations

1550 HARLEM ROAD

CHEEKTOWAGA, NEW YORK

AMERICAN TIRE INC.

BUFFALO, NEW YORK

DRAWN BY: EB	SCALE: 1"=40'	PROJECT: e1621
CHECKED BY: MMW	DATE: 02/18 - revised	FIGURE NO: 1

Hazard Evaluations, Inc.	Date started: Date finished:	Hole No.: Sheet 1 of 1
Client: Location:		
Project No.: Proj. Mgr:	Drilling Co. Driller: Drill Rig:	Weather:

Depth (ft.)	Sample No.	Sample Depth (ft.)	Sample Blows /6"	Well Construction Details	Field Analytical Readings	Well Details	Groundwater and Other Observations
				1" well completed w/ flush road box			
				Cement/bentonite mix (1' - 2')			
4	2	4-8		Bentonite pellets (2'-4')			
				1" sch. 40 PVC riser (0'-5')			
8	3	8-12		#0 sand (4'-15')			
12	4	12-15	N/A: Well completed w/ geoprobe drill rig	1" sch. 40 PVC (.010 slot screen).			
				Bottom of screen 15 feet bg.			
				Bottom of borehole 15 feet bg.			
16							
24							
30							

S=Split Spoon: _____ T= Shelby Tube: _____

R= Rock Core: _____ WH = Weight of Hammer

N = ASTM D1586

Backfill Well Key:

- Grout
- Cement/ Bentonite
- Sand
- Bentonite

Attachment 1

Resumes

HAZARD EVALUATIONS

Michele M. Wittman, P.G.
Director of Site Services

Ms. Wittman is a Geologist with over 24 years of professional experience in conducting a variety of environmental projects for both private and public clients. Clients have included industry, governmental agencies, developers, legal firms, financial institutions, and engineering firms. Project work has included conducting and managing Phase I and Phase II Environmental Site Assessments throughout New York and surrounding states, Brownfield Cleanup Program project investigations and site remediation, hydrogeologic investigations, remedial option evaluation and cost estimating, and remediation of soil and groundwater.

Ms. Wittman's responsibilities have ranged from supervising field and technical activities, completion of field work including soil classification, well installation, collection of environmental laboratory samples, excavation oversight; training staff, data analysis, report preparation and review, and client contact. Additionally, responsible for developing and maintaining client relationships, account and project management, bidding, contracting and scheduling and financial management including budgets, proposals, profit/loss assessment. Ms. Wittman has also acted as business manager which included business development and client management, generation of marketing materials; supervising administration staff, and office management.

Ms. Wittman also previously held the position as Assistant Vice President and Environmental Risk Analysis Officer at an international financial institution. During her tenure at this position, Ms. Wittman reviewed hundreds of environmental reports and provided remedial cost estimates to evaluate the potential risk and future losses.

Education

B.A., 1994, Geology, State University of New York at Buffalo

B.S., 1994, Social Sciences-Environmental Studies, State University of New York at Buffalo

Professional Registrations

2002, Professional Geologist, Washington, #29940

Key Skills

- Brownfield Cleanup Program
- Environmental Site Assessments
- Remedial Investigations
- Feasibility Studies
- Geologic Evaluations
- Hydrogeologic Investigations
- Soil Testing
- Budgeting & Cost Controls
- Bidding/Estimating/Proposals
- Subcontractor/Crew Management

Affiliations and Certifications

New York State Council of Professional Geologists, Member
Buffalo Association of Professional Geologists, Member
Air and Waste Management Association of Western New York, Member
OSHA 40 Hour 29 CFR 1910. (HAZWOPER) Certification

Project Highlights

Brownfield Cleanup Program - Commercial Facility, North Tonawanda, New York
Reviewed previous Phase I and II work done by others for a client that purchased property and held responsible for previous owner spill associated with historic gasoline station. Completed additional investigation and provided remedial recommendations and cost estimate. After discussion regarding property development, completed Brownfield Cleanup Program application and approval. Field work anticipated for Winter 2014/2015.

Remedial Action Plan Evaluation – Former Bulk Petroleum Terminal, Rochester, New York
Developed Remedial Action Plan for former terminal property that underwent extensive subsurface investigations resulting in over 70 borings and 80 soil sample analyses. Initial remedial estimates (by others) included significant soil excavation and remedial costs. Our evaluation included comparison to NYSDEC CP-51 soil guidance for assessment of potential remediation. As such, based on minimal groundwater contamination and identification of significant impacts at greater depths, and negotiation with NYSDEC, no soil remediation was needed.

Management of Environmental Conditions – Retail Gasoline Chain, Western New York
Evaluated environmental concerns associated with 75 different retail gasoline stations. Reviewed regulatory information, previous reports, and data analysis to assess current environmental status. Developed a summary of findings and recommendation of action for each property. Further evaluations included Phase II investigation and continued monitoring of remedial efforts. Developed remedial cost estimate ranges for locations current undergoing remedial work.

Voluntary Cleanup Program - Commercial Facility, Hamburg, New York
Completed a Phase I ESA and identified historical dry cleaner. Conducted investigation and identified contamination beneath the building floor slab and behind the building (i.e. back door). Interim remedial measures (IRM) included soil removal, resulting in approximately 200 tons of soil that was disposed at a hazardous waste landfill. A soil vapor intrusion study was done and identified the presence of compounds To achieve site closure, negotiated a remedial solution that included confirmation sampling of soils around the building structure and installation of a sub-slab depressurization/vent system.

Contract to Closure, Remedial Activities, Commercial Facility, Rochester, New York.
Two former gasoline stations were located at adjoining properties. Our client wanted to develop the Site for commercial use. Completed a Site Investigation and identified subsurface soil contamination, groundwater contamination and separate phase product. Developed a Remedial Work Plan that included removal of separate phase product and implementation of in-situ chemical oxidation via hydrogen peroxide injections to further reduce contaminants in soil and groundwater. Remedial action also included asbestos abatement and building. The Site received a “no further action” letter and has been developed as a retail bank.

True Bethel Baptist Church – Technical Consultant
Senior Project Manager on the NYSDEC first ever Technical Assistance Grant (TAG) to a community group impacted by a brownfield site. Reviewed site technical documents, attended public meetings and interacted on behalf of the community with NYSDEC and its representatives and contractors on the Site.

Other Environmental Projects
Managed and completed hundreds of Phase I, Phase II, and remediation projects for variety of clients, including lawyers, financial institutions, retail clients and municipal agencies throughout WNY

Sean R. Carter, P.E.
President/Principal Engineer

Education

M.S., Agricultural and Biological Engineering
Cornell University

B.S., Agricultural and Biological Engineering
Cornell University

Professional Registrations

2006, Licensed Professional Engineer, New York State, #083593-1

2011, Licensed Professional Engineer, Pennsylvania #PE078921

Affiliations and Certifications

Certified for Work at Hazardous Waste Sites (OSHA 29 CFR 1910.120)

ASTM Risk-Based Corrective Action (RBCA) Certified

American Chemical Society

American Society of Civil Engineers

National Groundwater Association

Summary of Experience

Mr. Carter is an Environmental Engineer with over 20 years experience in remediation, water, air and waste treatment processes. He has designed, field-tested and operated biological, chemical and physical treatment systems for a wide range of waste streams. He was the design engineer for the Matrix Oxygen Injection System and MATRIX® Biofilter. Mr. Carter takes on challenging remediation projects that require creative solutions to meet client and regulatory goals. He also works on projects with shared risks and guaranteed or performance based contracts.

His professional career began in agricultural waste management and wastewater treatment. At Cornell University he worked on a team of engineers and microbiologists to develop biotreatment systems for solvent contaminated groundwater, industrial waste and sewage. His research focused on the bench scale development of anaerobic reactors for the dechlorination of halogenated organics. He currently provides innovative technologies and remediation consulting services to a wide range of companies in the environmental field.

Areas of Specialization

- Remediation System Design
- Application of Microbial Processes to Site Assessment and Remediation
- Biological Treatment of Soils and Groundwater
- Protection and Treatment of Aquifers and Potable Water
- Design of Biofiltration Systems for Air Treatment
- Remediation and Redevelopment of Distressed Properties
- Agricultural Waste Management
- Wastewater Treatment

Publications

S.R. Carter, N. Minute, H. Akers, T. Ruth, and T. France (2013). Remediation of a Petroleum Hydrocarbon Plume in Low-Permeability Soils Using Engineered Biobarriers, Battelle International Symposium on Bioremediation and Sustainable Environmental Technologies Conference, June 10-13, 2013. Jacksonville, Florida.

J.M. Baker, D.M. Conley, S.R. Carter, and J.P. Gwinn (2013). Stimulating Intrinsic Biodegradation with Oxygen (o2) Injection: A Success Story, Battelle International Symposium on Bioremediation and Sustainable Environmental Technologies Conference, June 10-13, 2013. Jacksonville, Florida.

Biondolillo, J., Peck, D., Carter, S.R., and Porter, D. (2011). Bioremediation of a Petroleum and Solvent Plume During Redevelopment of a Municipal Facility, Battelle International Symposium on Bioremediation and Sustainable Environmental Technologies Conference, June 27-30, 2011, Reno, Nevada.

Butler, C., Mott-Smith, E., Turner, T.R., Spalvins, E., and Carter, S.R. (2011). Injection of Oxygen in Deep Horizontal Wells for the Biostimulation of PAH Degradation at a Former Wood Treating Superfund Site, Battelle International Symposium on Bioremediation and Sustainable Environmental Technologies Conference, June 27-30, 2011, Reno, Nevada.

O'Neil, M.J., Parillo, J.R., Terry, D.B., Ryan, W.J., Leissing, T.O., Carter, S.R., Cross, G.W., and Omorogbe, A.M., Evaluation of the Hydrologic Effects of Oxygen Injection for Biostimulation in an Upper Glacial Aquifer on Long Island, National Ground Water Association, Northeast Regional Conference, June 23 and 24, 2008, Long Island, NY.

Morse, W.R., Brochu, W.J., Carter, S.R., Gibbs, J.A., Begley, J.F., Perriello, F.A., DiCesare, G.A. (2002). Treatment of MTBE Impacted Sites Using Biostimulation, National Petroleum Retailers Association, 2002 Environmental Conference, September 8-10, 2002, New Orleans, LA.

Zamojski, L.D., Stachowski, J.R. and Carter, S.R. (1999). A case history of enhanced bioremediation utilizing pure oxygen injection, In: *In Situ* Bioremediation of Petroleum Hydrocarbons and Other Organic Compounds, Bruce C. Alleman and Andrea Leeson (Eds.), Battelle Press, 5(3): 65-70, 1999.

Zamojski, L.D., Stachowski, J.R. and Carter, S.R. (1998) . Biodegradation case history at a heavily contaminated petroleum site utilizing pure oxygen injection, IGT International Symposium on Environmental Biotechnologies and Site Remediation Technologies, Orlando, FL.

Carter, S.R. (1998). Process increases pure oxygen to aid in biodegradation of MTBE, Soil & Groundwater Cleanup.

Carter, S.R. and Clark. J.E. (1995). Oxygen-enhanced *in situ* bioremediation in a sand and gravel aquifer, In: *In Situ* Aeration: Air sparging, Bioventing and Related Remediation Processes, Robert E. Hinchee, Ross N. Miller and Paul C. Johnson (Eds.), Battelle Press.

Carter, S.R. and Jewell. W. J. (1993). Biotransformation of tetrachloroethylene by anaerobic attached films at low temperatures, *Water Research*, 27(4): 607-614.

Jewell, W.J., Carter, S.R., Fennell, D.E., Hicks, E.E., Nelson, Y.M., Nock, T.D., Richards, B.K. and Wilson, M.S. (1993). Methanotrophs for biological pollution control: TCE removal and nutrient removal with the expanded bed, Two year final report, January 1, 1991 - December 31, 1992, GRI - 93/10455, Gas Research Institute, Chicago, IL.

Carter, S.R. (1991). Low temperature biodegradation of tetrachloroethylene in an anaerobic attached film process, M.S. Thesis, Cornell University, Ithaca, NY.

Jewell, W.J., Carter, S.R., Chu, K.H., Fennell, D.E., Nelson, Y.M., White, T.E. and Wilson, M.S. (1990). Methanotrophs for biological pollution control: TCE removal and nutrient removal with expanded bed, Annual report, April 1, 1990 - December 31, 1990, GRI - 91/0274, Gas Research Institute, Chicago, IL.

Abstracts

Carter, S.R., Morse, W.R., Davis, G., Reynolds , S. and Pfiffner, S.M. (2003). MTBE biodegradation under oxygen-enhanced conditions; field and laboratory results, Seventh International In Situ and On-Site Bioremediation Symposium, June 2-5, 2003, Orlando, FL.

Carter, S.R., Gibbs, J.A. and Morse, W.R., (2001). Biodegradation of MTBE in groundwater under oxygen-enhanced conditions, presented at the Sixth International In Situ and On-Site Bioremediation Symposium, June 4-7, 2001, San Diego, CA.

Carter, S.R., Bender, D.J., and Morse, W.R. (1999). An innovative oxygen injection process for the treatment of groundwater, presented at the Fifth International In Situ and On-Site Bioremediation Symposium, San Diego, CA.

Carter, S.R. and Oppenheim, J.R. (1997). Control of volatile organic compounds and odor causing agents from air streams with a biofiltration process, presented at New York Water Environment Association, Inc., 69th Annual Conference, New York, NY.

Carter, S. R., Bullock, J.M. and Morse, W.R. (1997). Enhanced biodegradation of MTBE and BTEX using pure oxygen injection, *In Situ* and On-Site Bioremediation, Volume 4, Fourth International In Situ and On-Site Symposium, Pg. 147.

Carter, S.R., (1995). Full-scale treatment of vapor-phase petroleum hydrocarbons with a novel biofiltration process, *In Situ* and On-Site Bioreclamation, The Third International Symposium, Poster Abstract, April 24-27, 1995, San Diego, CA.

Carter, S.R. and Jewell, W. J. (1993). Biotransformation of tetracholorethylene (PCE) by an anaerobic attached film process at 15°C, *In Situ* and On-Site Bioreclamation, The Second International Symposium, Poster Abstracts, April 5-8, 1993, San Diego, CA.

Patents and Trademarks

U.S. Patent No. 5,891,711, Bioremediation apparatus for the removal of volatile organic compounds in hydrocarbon contaminated vapors

U.S. Patent No. 5,874,001, Groundwater remediation method, Oxygen injection process for the *in situ* bioremediation of groundwater

Registration No. 2,158,194, MATRIX®, Biofilters for non-laboratory use, namely, for bioremediation

HAZARD EVALUATIONS

C. Mark Hanna, CHMM
President, Principal

Mr. Hanna has over 34 years of experience in environmental pollution control and health/safety services. As principal for Hazard Evaluations, Inc., Mr. Hanna is responsible for all technical services. He specializes in hazardous materials/wastes management, site assessment and remediation, industrial compliance auditing, chemical exposure assessment, safety program development and implementation, and Process Safety Management and Risk Management Planning programs.

Mr. Hanna's career has included over 40 federal/state Superfund projects and over 1,500 due diligence projects. His industrial experience focuses on air, water, waste and chemical management compliance aspects at metal working, wood working, foundry, electroplating, printing and food production facilities.

Education

B.A., 1975, Biology, S.U.C. at Oswego, N.Y.

M.S., 1977, Natural Sciences (Toxicology Concentration), S.U.N.Y. at Buffalo, N.Y.

MEPC, 1982, Pollution Control, Pennsylvania State University

M.S., 1983 Forest Hydrology (Hydrogeology Minor), Pennsylvania State University

Professional Registrations

1985, Certified Hazardous Materials Manager, Senior Level

1989-1998, Registered Environmental Professional

1997, Certified Hazardous Materials Manager, Master Level

Key Skills

- Industrial Emission Permits and Controls
- Hazardous/Solid Waste Management
- Industrial Wastewater Pretreatment and Discharge Permits
- Waste Reduction and Pollution Prevention Programs
- Petroleum and Chemical Bulk Storage
- Industrial Stormwater Management
- Environmental Site Assessments
- Environmental Compliance Assessment
- Industrial Risk Management Program and Audit
- Remedial Investigations
- Brownfield Cleanup Program
- Budgeting & Cost Controls

Affiliations and Certifications

Academy of Hazardous Materials Management, Member
Erie County Local Emergency Planning Committee, Member
New York Water Environment Association, Member
International Institute of Ammonia Refrigeration, Member
OSHA 40 Hour 29 CFR 1910. (HAZWOPER) Certification

Environmental Project Highlights

- Performed site characterization for subsurface TCE contamination from historical improper disposal via septic system. Developed Interim Remedial Measures and Remedial Alternatives Reports and Work Plan for this Voluntary Brownfield Cleanup. Installed two banks of piezometers to allow both extraction of contaminated groundwater and injection of Potassium permanganate using continuously operating metering pumps. Recovered over 60 gallons of free product and significantly reduced contamination in groundwater in one year.

- Project Manager for the remediation of numerous (85+) underground petroleum storage tank sites located throughout Western New York. The primary method of remediation has been excavation/removal with appropriate management of tank contents and/or residues, cleaning and scrapping of the tanks and piping, and site restoration. Where petroleum releases were detected, excavation/removal of contaminated soil/fill was completed the majority of the time, with soil management including off-site disposal or on-site bio-treatment. In several cases, on-site vapor extraction systems or chemical oxidation systems with groundwater monitoring have been installed as the recommended remedial method.

- Project Manager for industrial site restoration project which involved the characterization of Lead-contaminated kiln brick surfaces. Appropriate characterization allowed demolition debris from kiln to be disposed of in-place on-site as solid waste material as authorized by NYSDEC. Area was then backfilled with structural flowable fill to allow reuse of floor space for manufacturing.

- Completed investigation and remediation (excavate and remove) of subsurface Lead contamination at an historical industrial site in Buffalo (NY).

- Project Manager for non-hazardous aspects of site remediation at former Frontier Chemical-Pendleton Site. Remedial tasks included sampling/analysis of wastes, emptying, cleaning and scrapping of bulk storage tanks and collecting/disposing of various on-site residuals.

- Project Manager for the installation of groundwater monitoring wells at AL Tech Specialty Steel's solid waste management unit located in Watervliet, NY. Prepared Closure Plan and Bid Specifications for the related RCRA surface impoundment. Addressed technical impact of surface run-off from adjacent landfill, steep terrain and on-site source for cover material. Prepared response package required by NYSDEC regarding the basis of design and construction practices completed during closure.

- Project Manager for the remediation of a cutting oil spill at a Lockport, NY machine shop. Cleanup activities included an underground storage tank removal, scarification of surface soils and inoculation of contaminated soils with petroleum biodegrading bacteria. Responsibilities included coordination of subcontractors, soil sampling, and preparation of report certifying contamination removal.

- Project Manager for industrial site restoration project for solid waste materials abandoned on-site in the on-site production of flowable fill as authorized by a NYSDEC Beneficial Use Determination. Flowable fill produced was used as structural fill to backfill subfloor tanks and large vaults to grade within the facility to allow reuse of the floor space. Tasks included CBS-registered process tank fluid removal and management, basement vault water management, chemical lab packing and disposal, PCBs-contaminated concrete characterization and disposal, UST closure and soil management, scrap and demolition debris management, and subsequent SEQR filing and Phase I Environmental Site Assessment.

Regulatory Compliance Project Highlights

- Project Manager for the development of numerous Process Safety Management and/or Risk Management Plan programs utilizing anhydrous ammonia for refrigeration, including Sorrento Lactalis, Inc.'s South Park (Buffalo, NY), Goshen, NY, Nampa, ID and San Jose, CA facilities, Upstate Niagara Cooperative, Inc.'s Culture (West Seneca, NY), Dale Road (Cheektowaga, NY) and Fulton (Rochester, NY) facilities, as well as Rosina Foods, Inc. (West Seneca, NY), Steuben Foods, Inc. (Elma, NY), Elmhurst Dairy, Inc. (Jamaica, NY), and Sodus Cold Storage, Inc. (Sodus, NY). Responsibilities included coordinating written program preparation, Process Hazard Analysis development, preparing release scenarios, evaluating and upgrading SOPs, developing MOC methods, etc.

- Provided consulting services to over 75 facilities nationwide regarding SARA Title III reporting requirements. Services included regulations and process reviews, mass balance calculations, purchasing and process data evaluation, database development and USEPA Tier Two and Form R preparation.

- Project Manager for numerous environmental compliance audits including, Mod-Pac Corp., Buffalo, NY (commercial printing), Sahlen Packing Co., Inc., Buffalo, NY (meat packing), Upstate Niagara Cooperative, Inc., Buffalo, NY (dairy products), MoldTech, Inc., Lancaster, NY (plastics), Sorrento Lactalis, Inc., Buffalo, NY (cheese manufacturing), Chautauqua Hardware Corp., Jamestown, NY (brass hardware), Thomson Professional Publishing, Webster, NY (printed media), Buffalo China, Inc., Buffalo, NY (lead glazed china), Brainerd Manufacturing Co., East Rochester, NY (electroplating and finishing), Falconer Die Casting Co., Inc., Lakewood, NY (aluminum and zinc casting), and Jensen Fittings Corp., North Tonawanda, NY (stainless pipe fittings). These audits emphasized the inspection of all manufacturing operations, hazardous materials and hazardous waste handling, wastewater treatment operations, air emissions and facility records to evaluate current practices with regard to RCRA, SARA, New York State Parts 200 (air), 360 (solid waste) and 370 (hazardous waste) regulations, USEPA Categorical Pretreatment Standards, UIC NESHAP & CFATS regulations, New York State SPDES regulations, and local sewer authority and fire and building department codes.

- Oversaw the modification of an industrial wastewater pre-treatment system for Whiting Door Manufacturing. Evaluated plant manufacturing wastewater sources, modified existing pretreatment system, developed wastewater pretreatment schedule, and completed wastewater discharge monitoring. Developed a Toxic Organics Management Plan to reduce cost of wastewater monitoring. Evaluated and assisted with the revision of municipal Industrial User Permit.

- Project Manager for Title V Clean Air Act permit development for Whiting Door Manufacturing Corp., Dinaire, Inc., Metalico Aluminum Recovery, Inc. and Flexo Transparent, Inc. Continued services include annual emission statements, 12-month rolling emissions determinations and semi-annual compliance reporting.

- Project Manager for Clean Air Act and/or NYSDEC Part 228 determinations and State Air Facility Permit or Air Facility Registration development for numerous industrial clients including Niagara Ceramics Corporation, Buffalo Metal Casting Co., Inc., ITT Standard/XYLEM, Metalico Rochester, Inc., Ulrich Planfiling Equipment Corp., United Silicone, Inc., U.S. Chrome Corp., Metalico Aluminum Recovery, Inc., Truck-Lite Co., Inc., Jensen Fittings Corp., API Delavan, Inc., Tapecon Inc., Dura-Plating, Inc., Buffalo China, Inc., Forsyth Industries, Inc., Jamestown Laminating Co., Classic Brass Inc., Ivaco Steel Processing (New York), LLC, Innovative Tool & Machine Co., Inc., and Whiting Door Manufacturing, Inc.

Steven L. Marchetti
Senior Project Manager

Education

B.S., Environmental Studies
SUNY College of Environmental Science and Forestry, Syracuse, New York

Affiliations and Certifications

Certified for Work at Hazardous Waste Sites (OSHA 29 CFR 1910.120)

10 Hour OSHA Outreach Construction Safety Training

Summary of Experience

Mr. Marchetti joined Matrix Environmental in 1995 as an environmental technician. He was soon advanced to Senior Project Manager due to his expertise, productivity and client management skills. Mr. Marchetti assumes the major responsibility for two major retail petroleum clients. He also prepares monthly schedules for all technical and professional site personnel, and coordinates this schedule with subcontractors and all other third party professionals. He also coordinates any rescheduling on both a weekly and daily basis as the need arises. In addition, he is also responsible for providing tools, equipment and services during the preparation and actual execution of remedial or investigative actions at project sites and manages the expenditures, subcontractors and project personnel.

He has a strong background in Environmental Studies, Health & Safety, site investigations, remedial design, NYSDEC and remedial O&M program management & optimization. He is currently managing public sector programs at both the state and local level. These programs include general term contracts that provide various services including: SPDES Permitting, Phase I, II, III site investigations & remediation, Brownfields Assessment & Cleanup, Indoor Air Quality studies, PBS projects, and Health & Safety planning. He has planned, managed and reported on voluntary cleanup and Brownfield programs.

Areas of Specialization

- Experience with all phases of Environmental Site Assessments and Remediation
- Soil, groundwater and air sampling analysis
- Coordination for onsite drilling and knowledge of well installation methods and applications
- Technical field service support for installation, operation and maintenance of remediation systems
- Executes remedial investigations and prepares feasibility studies
- Manages and coordinates numerous projects
- Data analysis and technical report preparation
- Schedules personnel and coordinates with subcontractors for field operations

HAZARD EVALUATIONS

Eric J. Betzold
Project Geologist

Mr. Betzold is a Geologist with over four years of experience in conducting a variety of environmental investigations and remediation at various types of properties. As a Project Geologist, Mr. Betzold has performed Phase I Environmental Site Assessments to include historical review, site reconnaissance and report preparation. Mr. Betzold's responsibilities with Phase II Environmental Site Assessments include soil borings, test pits, soil sampling, groundwater monitoring well installation and samplings. Additionally, Mr. Betzold completed evaluation and reporting requirements.

In addition to his duties in the site assessment field, Mr. Betzold is involved in local Western New York Stormwater and Wastewater compliance work, including sampling and data interpretations. Mr. Betzold plays a key role in report preparation under a multitude of environmental compliance requirements.

Education

B.A., Geology, 2012, State University of New York at Buffalo

Key Skills

- Environmental Site Assessments
- NYSDEC Stormwater Compliance
- BSA & ECSA Wastewater Compliance
- NYSDEC MSGP Compliance
- Geologic Interpretation
- Soil Testing
- Field Technology
- Project Management
- Assessment of Vapor Intrusion

Affiliations and Certifications

OSHA 40 Hour 20 CFR 1910. (HAZWOPER) Certification

Attachment 2

Field Forms

HAZARD EVALUATIONS

Date: _____ Project No.: _____

Client: _____

Project: _____

Site: _____

Weather: _____

3752 N. Buffalo Rd.
Orchard Park, NY 14127
P (716) 667-3130
F (716) 667-3156

FIELD INVESTIGATION REPORT

(Start typing here making sure underline is on and text is justified. Hit tab at the end of the very last row to extend the underline to the right margin).

Signature _____ Title _____

HAZARD EVALUATIONS

3752 N. Buffalo Road
Orchard Park, NY 14127
716-667-3130

Boring No:

Project Name & Location _____ HEI Representative: _____

Project Number: _____

Start Date _____ End Date _____ Type of Drill Rig _____

GW Depth While Drilling _____ Drilling Contractor _____

GW Depth at Completion _____ Sampler Type: _____

Sample Depth (ft)	Sample No.	Sample Interval (feet)	Recovery (inches)	SAMPLE DESCRIPTION	OVM Reading (ppm)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
18					
20					
22					
24					

Notes:

General Notes:

1 - Boundary between soil types represented with stratification line. Transitions may be gradual. Depths are approximate.
2 - Groundwater (GW) depths approximate at time of sampling. Fluctuations in groundwater may occur.
3 - f=fine; m=medium; c=coarse
4 - and (36-50%); some (21-35%); little (11-20%); trace (1-10%)

MC - Geoprobe Macrocore SS - Split Spoon SH - Shelby Tube BC - Bedrock Core

HAZARD EVALUATIONS

Field Investigations- Equipment Recovery

Client: _____
Job number: _____
Description: _____
Date: _____

Sampling Equipment	No.	Date:
Water Bailers		
Drum thieves		
Hand Auger		
Hand Trowels		
OVM		
pH Meter		
Water level Tape		
15' sludge judge		
6' Polyethylene scoop		
6' Stainless steel scoop		
3' Stainless steel scoop		
ISCO Peristaltic Pump		
Marine Battery		
3/8" vinyl tubing		
3/8 poly tubing		
1/4" poly tubing		
Whirl Pak soil bags		
UST dip stick		
Indicator paste		
Water dye		
Other		

PPE	No.	Date:
Level D		
Level C		
Other		

Mechanical Equipment		
Dayton electric pump		
Typhoon electric pump		
2" discharge pump(elec.)		
2" discharge pump (gas)		
2" layflat hose		
Generator		
Floor Corer		
Magnetometer		
Cordless drill		
Reciprocating saw		
Blower (smoke testing)		
Company Vehicle		
Other		

Miscellaneous Equipment		
Manhole Opener		
Garbage Bags		
Cement Filler		
Asphalt patch		
Absorbant Pads		
Absorbant socks		
Other		

Signature: _____ Title: _____

Well Data Sheet

Date: Job #:

Crew:

Well Depth:

Initial *Phase* Level:

Initial *Water* Level:

Volume Calculation:

DTB-DTW*_____=1-well vol

Purge Record

Time	Volume	pH	Cond.	Temp.	Turbidity

Purge Method: Bailer/Submersible Pump

Initial Water Quality

Final Water Quality

SAMPLE RECORD

Date:

Time:

Crew:

Method:

Sample ID:

Water Quality:

pH:

Conductivity:

Temperature:

Turbidity:

Volume:

Analysis:

Chain of Custody #:

Sample Type:

Diameter	Multiply by
1"	0.041
2"	0.163
3"	0.367
4"	0.653
6"	1.468
8"	2.61

Comments:

Signature:

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page
of

Date Rec'd in Lab

ALPHA Job #

Client Information
Client:
Address:
Phone:
Fax:
Email:

Project Information
Project Name:
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager:
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ **Done**
☐ **Lab to do**
Preservation
☐ **Lab to do**
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	**Sample Specific Comments**

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

APPENDIX C

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

BROWNFIELD CLEANUP PROGRAM
For
1550 HARLEM ROAD SITE
1550 Harlem Road, Cheektowaga, New York 14206
BCP # C915321

Prepared For:
American Tire, Inc.
397 Ludington Street, Cheektowaga, NY 14206
HEI Project No: e1621

Prepared By:
Hazard Evaluations, Inc.
3636 North Buffalo Road
Orchard Park, New York 14127
(716) 667-3130

February 14, 2018

HAZARD EVALUATIONS

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1.0 INTRODUCTION

This Health & Safety Plan (HASP) has been developed for the Remedial Investigation/Interim Remedial Measures/Alternatives Analysis Report (RI/IRM/AAR) to be completed by Hazard Evaluations, Inc. (HEI) and Matrix Environmental Technologies Inc. for the 1550 Harlem Road Site at 1550 Harlem Road in Cheektowaga, Erie County, New York as shown on Figure 1, on behalf of American Tire, Inc. (Volunteer) as part of the Brownfield Cleanup Program (BCP). The proposed work will include completion of soil boring, installation of monitoring wells, soil and groundwater sampling, soil excavation and sampling and report preparation. Such activities mandate the performance of tasks with a potential to expose remediation workers to various environmental contaminants previously identified on-site, primarily involving VOC and/or SVOC impacts associated with abandoned underground storage tank (UST). A general listing of the work tasks to be completed is as follows:

1. Soil sampling using a direct push method (Geoprobe) and hollow stem auger equipment
2. Soil sample collection and analysis
3. Monitoring well installation, purging and development
4. Groundwater sampling using disposable bailers, and analysis
5. Underground storage tank removal
6. Excavation and off-site disposal of contaminated soil
7. Backfilling of excavated area with clean fill and regrading

The intent of this HASP is to identify and present appropriate safety procedures to be followed by investigation/remediation workers involved with project activities throughout the performance of the RI/IRM. Such procedures are designed to reduce the risk of remediation worker exposure to the primary substances of concern.

The procedures also address several other physical hazards that may be encountered during the RI/IRM activities. Recommended safety procedures presented herein may be modified as the RI/IRM proceeds based upon conditions encountered at the site, with the mutual agreement of HEI, METI, NYSDEC, NYSDOH and Volunteer. A copy of this HASP (including any modifications) will be maintained on-site throughout the RI/IRM field work to be used as a reference by HEI, METI and their subcontractors. An initial safety meeting will be conducted at the site prior to the initiation of the sampling activities to inform all affected remediation workers of potential exposures and hazards.

2.0 SITE DESCRIPTION AND HISTORY

2.1 Site Description

The site is addressed as 1550 Harlem Road in the Village of Sloan, Town of Cheektowaga, Erie County, New York and and consists of two parcels totaling

approximately 0.43 acres of land. The site is bound to the east by Harlem Road, to the west by Gratton Street and residential properties, to the north by a commercial uses (Romar Industrial Plaza) and to the south by commercial uses (H&V Sales). The property is located within an urban area, utilized for commercial and residential purposes.

The 1550 Harlem Road Site is improved with one approximate 4,075 square foot one-story building located on the southern and central portion of the site. Historic features associated with a former greenhouse and outdoor nursery structures are located in the western and northern portion of the site, as well as paved parking areas in the eastern areas.

2.2 Site History

The site was originally developed as a gasoline station in the late 1950s or early 1960s, and continued to be used as a gas station until the 1970s. The site then remained vacant for a period of several years before being converted into a nursery/garden center in the early to mid 1980s. The site continued to be operated as a nursery/garden center until early 2014 and has been vacant since that time.

3.0 ASSIGNED RESPONSIBILITIES

Specific safety responsibilities have been established for the performance of the RI/IRM as indicated below:

3.1 Environmental Health & Safety Manager

The Environmental Health & Safety Manager (EHSM) has the authority to commit any resources necessary to implement an effective RI/IRM safety program, thereby protecting the health of affected site workers. The EHSM will delegate responsibilities, as necessary, to the Project Manager (PM) in order to facilitate various aspects of this HASP. The resolution of any on-site safety issues encountered during the RI/IRM will be coordinated by the EHSM.

3.2 Project Manager

The Project Manager (PM) will be responsible for the overall project including implementation of the HASP. The PM will coordinate with the Site Safety Officer (SSO) to ensure that project goals of the project are met in a manner consistent with the HASP requirements.

3.3 Site Safety Officer

The Site Safety Officer (SSO) will be responsible for ensuring that the recommended safety procedures are followed during sampling activities. The SSO will supervise HEI/METI employees and subcontractors throughout the field work. The SSO is knowledgeable of general construction safety practices and remediation worker protection techniques. Responsibilities will include:

- Ensuring day to day compliance with HASP safety procedures;
- Maintaining adequate PPE supplies
- Calibration and maintenance of monitoring instruments
- Authority to stop work activities any time unsafe work conditions are identified;
- Implementing personnel decontamination procedures;
- Initiate emergency response procedures; and
- Maintain a diary of activities with safety relevance;
- Establishing and assuring adequate records of all:
  - Occupational injuries and illnesses;
  - Accident investigations;
  - Reports to insurance carrier or state compensation agencies;
  - Records and reports required by local, state and/or federal agencies;
  - Property or equipment damage.

3.4 Site Workers

Affected site workers will include HEI/METI employee and subcontractor employees. Site workers must comply with aspects of the HASP and its safety procedures. Personnel entering the site will have completed training requirements for hazardous waste site operations in accordance with OSHA 29CFR 1910.120 (c); 29CRF 1910.146 (d) and 29CFR 1910.147 (c). Site workers and SSO must have completed appropriate medical surveillance as required by OSHA 29CRF 1910.120(f).

3.5 Subcontractors

Various subcontractors will be utilized on the site during RI/IRM activities, such as driller and excavation contractor. Subcontractors are responsible for development of their own HASP that is at least as stringent. A copy of this HASP will be provided to the subcontractors for information purposes. Subcontractors will be informed of potential health and safety hazards, as well as environmental monitoring data collected during field activities.

4.0 TRAINING and SAFTETY MEETINGS

4.1 Training

Site personnel assigned to the site will be in compliance with the training requirements of 29 CFR 1910 and 1926 as listed below. Site personnel will have met one of the following requirements prior to the start of on-site activities.

- A 40 hour minimum hazardous materials safety and health course, as stipulated in 29 CFR 1926.65 e(3); and

- An 8 hour minimum refresher course per year after the 40 hour minimum training has occurred (29 CFR 1926.65.e[8]).

On-site managers and supervisors must be in compliance with the additional supervisory training requirements of 29 CFR 1926.65.e(4). Emergency responders must be in compliance with the additional training requirements of 29 CFR 1926.65.e(7). Appropriate certificates of participating in training programs will be maintained at HEI/METI offices.

4.2 Safety Meetings

Site workers and subcontractors will be familiar with the site and facility layout, have an understanding of known and potential hazards, and details within this HASP. On-site safety meetings will occur daily, or as needed to assist site workers and subcontractors in conducting activities safely. Attending personnel must sign an attendance sheet. Site workers must attend a safety meeting prior to being allowed to work on-site.

5.0 PERSONAL PROTECTIVE EQUIPMENT

An important aspect for site worker safety is correct selection of personal protective equipment (PPE). The levels of protection listed below are based on 29 DFR 1910.120. The majority of site activities will be conducted in Level D protection. This level of protection was selected based on the types and measured concentrations of the hazardous substances in the samples previously collected and their associated hazards and/or toxicity; and potential or measured exposure to substances in air, splashes of liquids or others indirect contact with material due to the task being performed.

- Level D will generally consist of the following:
  - Coveralls; or long pants and long sleeve shirt to provide protection from dermal contact with soil
  - High visibility safety vest
  - Steel toe work boots
  - Safety glasses
  - Hard hat
  - Chemical-resistant gloves

  Additional equipment can be donned at SSO requirements, including disposable boots, hearing protection, safety vest, or disposable outer chemical coveralls (Tyvek suits).

- Level C will generally consist of the following:
  - Full or half face air purifying respirator (APR) equipped with appropriate organic vapor canisters and/or other chemical cartridges.
  - Chemical resistant clothing, such as Tyvek suit. Suits will be one piece with booties, hood, and elastic wristbands.

- High visibility safety vest (disposable)
- Outer chemical-resistant gloves (i.e. nitrile or neoprene) and inner latex gloves
- Steel toe work boots
- Hard hat

○ Level B will generally consist of the following:
- Self-contained breathing apparatus (SCBA) in a pressure demand mode, or supplied air with escape SCBA.
- Chemical resistant closing, such as Tyvek suit. Suits will be one piece with booties, hood, and elastic wristbands.
- High visibility safety vest (disposable)
- Outer chemical-resistant gloves (i.e. nitrile or neoprene) and inner latex gloves
- Chemical resistant tape over PPE as needed (i.e. at glove/Tyvek location)
- Steel toe work boots
- Hard hat

6.0 HAZARD ANALYSIS

Many hazards are associated with environmental work on a site. The hazards listed below deal specifically with those hazards associated with the management of potentially contaminated soil, air, and groundwater, physical hazards, as well as environmental hazards.

6.1 Chemical Hazards

The primary chemical hazard substance known or suspected at the subject site include volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) associated with past petroleum storage. A summary of hazards associated with these chemicals is include on Table 1. The list has been developed based on planned activities and potential site conditions. The most likely routes of chemical exposure during site work includes skin absorption and inhalation of airborne dust particles. The information was used to develop the levels of personal protective equipment (PPE).

6.2 Physical/General Hazards

Based on the proposed scope of work to be completed, the following potential physical hazards have been identified:

○ Slip/Trip/Fall – Due to the timing of the project, some areas may have icy surfaces that will increase the possibility of accidental falls. Additionally, good housekeeping practices such as cleaning up garbage, and stored materials

from the work area are essential to reduce the occurrence of trips and falls the trip hazards.

- Vehicle and machinery in motion hazards – A drill rig will be utilized for soil sample collection. To minimize potential hazards, the drilling subcontractor will be responsible for health and safety of its personnel, equipment and operations. Utilities must be called in via Dig Safely New York and/or site owner. Cones and flags will be set up around each work area, as necessary. Workers must be aware of pinch points when setting the rig and lowering mast/pull rods. PPE must be worn to prevent eye injury. All body parts, clothing and manual tools must be kept 3-5' from moving equipment when possible. Gloves and PPE must be worn when working with rods and cleaning equipment. Monitoring of the breathing zone will be completed as necessary to ensure vapors are below action levels. Each worker must have an awareness of muscle strain. All sampling liners must be opened in a motion away from body and hands. The rig cannot be moved with the mast in a raised position.

- Electrical – Heavy equipment (e.g., excavator, backhoe, drill rig) shall not be operated within 10 feet of high voltage lines. Working near wet areas should also be taken into consideration when working with electrical equipment; Surge protectors and ground fault protectors must be used in such conditions.

- Noise – Heavy machinery creates excessive and loud noise levels. Over exposure can result in hearing damage or loss. Proper hearing protection shall be worn during exposure to noise from heavy equipment.

- Underground utilities– The proper utility clearance will be obtained before conducting any digging or drilling operations.

- Excavation and soil sampling through use of heavy equipment – Excavations that are greater than 4 feet in depth require a protective system prior to entry into the excavation. The Project Manager will be responsible for determining if the excavation requires safety shoring. Personnel will not be permitted to work under suspended or raised loads, and shall always wear highly visible clothing. Personal protective equipment (PPE), including steel-toed boots, safety glasses, hard hats must be worn; personnel should not walk directly in back of, or to the side of, heavy equipment without the operator's knowledge. Engineering controls can be implemented such as water for particulate control.

- Cold Stress – Site work is scheduled during the winter and early spring months; therefore cold weather may present hazards. Frostbite and hypothermia can occur quickly and the signs and symptoms of such should be known. Signs of hypothermia include slurred speech, confusion, and an overall warm sensation. Frostbite can be identified by red/frozen skin, numbness, and lack of sensation on the skin. In each case, the victim should be moved to a warm place. With frostbite, the affected area should be placed in warm water and

wrapped with a warm towel. Medical attention is necessary after initial treatment.

- Heat stress - Although not anticipated due to the time of year operations will occur, heat stress is a severe hazard that can result in heat fatigue or even heat stroke. Signs and symptoms of heat stroke include red, dry, and hot skin as well as confusion, a rapid pulse, and nausea. Adequate shade and drinking liquids should be provided to personnel working in hot weather conditions. If a person is suspected to be suffering from heat fatigue or stroke, transport to a cool place and place cold compresses on the neck and armpits; call 911 immediately.

- Weather (i.e. lightning storm) – On-site personnel shall cease operation at the first sign of a thunderstorm/lightning strike. Workers should seek shelter within a permanent building and stay away from tall structures trees, telephone poles, and drill rigs/equipment.

6.3 Biological Hazards

Biological hazards can be caused by contact with land animals, birds, insects, and plants. Irritation, illness, and, in extreme cases, permanent disability or death can occur. The site is located in an urban area within the Town of Cheektowaga and field work will occur in winter/early spring. Rodents are considered the most likely biological hazards at this site. Contact with rodents, more specifically rats, shall be avoided. If bitten or scratched by any type of rodent or fur-bearing animal, medical treatment should be sought immediately. Insect bites and stings are not considered a serious threat due to time of year. Insect bites and stings can cause irritation and transmit disease. If stung by an insect, apply cold water and soap and immediately apply a cold compress to the area to limit swelling. If the victim is allergic to such bite or sting, immediate medical care may be necessary.

7.0 SITE MONITORING

Air monitoring will be performed on-site in order to track contamination levels. By knowing these levels, safety is insured for personnel working on-site. A Photoionization Detector (PID) equipped with a 10.6 eV lamp will be utilized during field monitoring.

7.1 Soil Borings and Monitoring Wells

On-site monitoring will be completed by the SSO or site worker assigned to oversee drilling operations, soil sampling and monitoring well installation/sampling. The PID will be utilized to monitor the breathing zone, the borehole, and subsurface samples for the presence of volatile organic compounds (VOCs). Auger spoils will also be monitored. Fluids produced from monitoring well development and sampling will also be monitored with the PID.

7.2 Interim Remedial Measures

Interim remedial measures (IRM) are planned as part of the site remedy and expected to including removal of UST and contaminated soil. Monitoring will be done during excavation and sampling activities when HEI/METI site workers are within the work zone.

7.3 Action Levels

Work area ambient air monitoring for VOCs will be completed within the breathing zone periodically. Action levels will be based on the PID readings. The action level assumes that background level of organics is close to non-detect. Background VOC readings will be recorded daily. Action levels are listed below.

Sustained PID Reading	Action	Minimum Respiratory Protection
0 to 10 ppm	None	None – Level D
10 to 25 ppm	Monitor for 15 minutes; if concentration does not decrease to under 10 ppm, upgrade PPE; consider venting area	Full-face Air-purifying respirator with organic vapor cartridges – Level C
>25 ppm	Monitor for 15 minutes; Consider venting area, upgrade PPE	Suspend work or supplied-air full face respirator – Level B

7.4 Particulate Monitoring

Monitoring for particulates will be completed periodically in the site worker breathing zone. The decision to upgrade levels of PPE will be made in conjunction with consideration for weather conditions, wind conditions and anticipated duration of field activity. Background particulate concentrations will be measured and recorded on a daily basis.

8.0 COMMUNITY AIR MONITORING PLAN

A Community Air Monitoring Program (CAMP) requires monitoring of VOCs and particulates at downwind locations and is intended to provide a level of protection for neighboring residences and businesses. Continuous monitoring will during ground intrusive activities. The completed CAMP is attached in Attachment A.

9.0 SITE ACTIVITY AREAS AND ACCESS CONTROL

Prior to the initiation of the RI/IRM, three work zones will be established to facilitate the implementation of the HASP. Prior to commencement of field work, a further definition of where these zones will be set up will be established. Guidelines for establishing work areas follows.

- Exclusion Zone (EZ) – Primary exclusion zones will be established around each intrusive field activity, such as soil boring or excavation area. Locations will be identified by the placement of orange cones. Site workers in these

areas must wear appropriate PPE. Upon leaving Work Zone, if PPE becomes contaminated, site workers must remove and dispose of gloves and any other disposable PPE. After removing the PPE, site workers should thoroughly wash their hands. Access to the EZ will be limited to site workers only for both safety and data integrity purposes.

- Contamination Reduction Zone (CRZ) – A CRZ will be established between the EX and property limit, and provides an area for decontamination of site equipment. The specific location of this pad will be field determined, but will be out of the way of site activities and sampling activities. Portable wash stations will be set up in the CRZ and will consist of a potable water supply, hand soap and disposable towels. An Alconox solution will be available to decontaminate equipment used in the sampling locations. The SSO will monitor equipment cleaning procedures to ensure their effectiveness. Equipment will be adequately cleaned and site workers will remove contaminated PPE prior to either entering the Support Zone or leaving the site for the day once sampling activities have been completed. A fire extinguisher and first aid kit will be located in this area.

- Support Zone (SZ) – The SZ is considered to be clean, and PPE are not required. The SZ will be an area on-site adjacent to the CRZ in which supplies or equipment are stored and maintained. PPE is donned in the SZ prior to entering the CRZ.

10.0 DECONTAMINATION PROCEDURES

Decontamination procedures for personal and equipment will be implemented when exiting work area. Decontamination involves physically removing contaminants and general include removal of contamination, avoiding spreading contamination from the work zone, and avoiding exposure of unprotected personnel outside the work zone to contaminants.

10.1 Prevention of Contamination

The first step in decontamination is to establish standard operating procedures that minimize contact with hazardous substances, and thereby the potential for contamination. Site workers should be aware of the importance of minimizing contact with hazardous substances and the use of appropriate practices and procedures for site operations. HEI/METI utilizes this approach by ensuring site workers:

- Stress work practices that minimize contact with hazardous substances (e.g., do not walk through areas of obvious contamination, do not directly touch potentially hazardous substances, etc.);

- Protect sampling instruments from gross contamination by bagging; make openings in the bag for sample ports and sensors that contact site materials;

- Wear disposable outer garments and use disposable equipment where appropriate.

10.2 Personal Decontamination

The degree of contamination exposure is a function of both a particular task and the physical environment in which it takes place. The following decontamination procedures will remain flexible, thereby allowing the decontamination crew to respond appropriately to changing conditions at the site. It is expected that site workers will be exposed to soil/fill potentially contaminated with petroleum compounds. On-site sampling activities will be carried out in such a manner as to avoid gross contamination of site workers, personal protective equipment, machinery and equipment.

Between sampling locations (or sometimes between samples at one sampling location), and upon the completion of the daily field activities, site workers will proceed to the CRZ. Equipment (e.g., sampling tubes, shovels, tools, etc.) will be decontaminated in this area. Prior to leaving the site for breaks, at the end of the work shift, or when PPE has been grossly contaminated, disposable boot covers, gloves, and suits will be removed and placed in a drum designated for the disposal of these materials. After removing PPE, each site worker will wash with soap and fresh water prior to donning new PPE or leaving the site for the day. All wash water and rinse water will be collected and disposed of in accordance with appropriate regulations.

10.3 Decontamination during Medical Emergencies

In the event of a minor, non-life-threatening injury or medical problem, site workers should follow the decontamination procedures as defined above and then administer first aid. If prompt, live-saving first aid is required, decontamination procedures should be omitted and immediate first aid should be administered, unless the environmental conditions are considered immediately dangerous to Life or Health (IDLH). In this case, the victim should be moved to a clean area and life-saving care should be instituted immediately without considering decontamination.

Outside garments can be removed (depending on the weather) if they do not cause delays, interfere with treatment or aggravate the problem. Respirators and backpacks must always be removed. Chemical-resistant clothing can be cut away. If the outer contaminated garments cannot be safely removed, the individual should be wrapped in plastic, rubber or blankets to help prevent contaminating the insides of ambulances and medical personnel. Outside garments will then be removed at the medical facility. No attempt should be made to wash or rinse the victim at the site. One exception would be if it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life.

10.4 Decontamination of Equipment

Decontamination efforts will be conducted in the CRZ. Gross contamination

will first be removed with plastic scrapers or other appropriate tools. The equipment will be decontaminated at a temporary equipment decontamination pad in the CRZ via hand washing or pressure washing. Alconox and water will then be used to wash the equipment with a cleaning brush. The equipment will then be rinsed with deionized water. The equipment will then be allowed to air dry for a sufficient time prior to reuse or removal from the site. Downhole tools and augers can be hand washed or pressure washed.

The decontamination of the direct push drilling rig will be undertaken (if necessary) when all on-site activities have been completed. Initially, scraping of the equipment will remove heavily caked materials prior to washing. Washing will then be accomplished Alconox and water or pressure washing. Water generated during decontamination activities will be collected, stored and profiled for future off-site disposal.

10.5 Disposal of the Contaminated Materials

Potentially contaminated materials (gloves, clothing, sample sleeves etc.) will be bagged and segregated for proper disposal. Investigation derived waste will be managed in accordance with NYSDEC guidance regulations. For this project, it is expected that soils will be disposed as part of the IRM. All fluids collected during groundwater sampling will be containerized and managed appropriately subsequent to field activities.

11.0 EMERGENCY RESPONSE

In the event of an emergency, the SSO will coordinate on-site emergency response activities. Appropriate authorities will be immediately notified of the nature and extent of the emergency. Emergency contact list is include on Table 2. The route and directions to the hospital are included as Figure 2.

11.1 Response Procedures

In the event of an emergency or acute exposure symptom, remediation workers will signal distress to the SSO. The SSO will be responsible for the response to emergencies and must:

- Have available a summary of the associated risk potential of the project so that it can be provided to any authorities or response personnel in the event of an emergency;
- Maintain an Emergency Contact List (Table 2) and post in a visible location a map detailing directions to the nearest hospital (Figure 2); and
- Ensure appropriate safety equipment is available at the site.

11.2 Communications

Cell phones will be the primary means of communicating with emergency support services/facilities.

11.3 Evacuation

In the event of an emergency situation, such as fire, explosion, etc., all personnel will evacuate and assemble in a designated assembly area. The SSO will contact outside services (i.e. police, fire, etc.) as required. Under no circumstances will personnel be allowed to re-enter the area once the emergency signal has been given. The SSO must see that emergency equipment is available and emergency personnel notified.

11.4 Fire or Explosion

Immediately evaluate the site. The Town of Cheektowaga Fire Department will then be notified immediately, and advised of the situation and the identification of any hazardous materials involved.

11.5 Personal Injury

Only basic emergency first aid will be applied on-site as deemed necessary. The SSO will supply available chemical specific information to appropriate medical personnel, as requested. First Aid kits supplied by HEI/METI and its subcontractors will conform to Red Cross and other applicable good health standards, and will consist of a weatherproof container with individually sealed packages for each type of item. First Aid kits will be fully equipped before being sent to the site.

11.6 Adverse Weather Conditions

In the event of adverse weather conditions, the SSO will determine if work can continue without sacrificing the safety of remediation workers. Some of the items to be considered prior to determining if work should continue are the potential for heat stress, inclement weather-related working conditions (heavy snow) and the operation of field instruments.

11.7 Traffic, Heavy Equipment & Machinery

Site workers must remain aware of the heavy equipment and machinery being used during RI/IRM activities. Site workers will be required to wear a high visibility safety vest during on-site work activities.

11.8 Utilities

Prior to the beginning site activities, all available drawings of the facility will be examined to determine the presence of underground or sub-slab utilities. HEI anticipates that a magnetic pipe and cable locator will be effective in the prevention of encountering underground utilities.

11.9 Emergency Contingency Plan

In the case of a spill emergency (e.g., tank/drum release, spill, fire, etc.), this section will describe the procedures to be followed during the event.

11.9.1 Contamination Emergency

It is unlikely that a contamination emergency will occur; however, if such an emergency does occur, the specific work area shall be shut down and immediately secured. The area in which the contamination occurred shall not

be entered until the arrival of trained personnel who are properly equipped with the appropriate PPE and monitoring instrumentation.

11.9.2 Spill/Air Release

In the event of a spill or air release of hazardous materials on-site, the specific area of the spill or release shall be shut down and immediately secured. The area in which the spill or release occurred shall not be entered until the cause can be determined and site safety can be evaluated. The NYSDEC Spill Response unit shall be notified immediately. The spilled material shall be immediately contained.

11.9.3 Unknown Drums or USTs

In the event that unidentified containerized substances, including USTs, are discovered during soil sampling or soil excavation, work will be ceased immediately until hazards are addressed. The SSO will then visually assess the situation and identify any leaks or releases from the container. If leaking is identified, the spilled material shall be immediately contained. Upon visual assessment of releases and safety, properly trained personnel will then sample and remove/dispose of the waste/container.

11.10 Additional Safety Practices

The following are important safety precautions and practices that will be enforced during the field activities.

- Eating, drinking, smoking, chewing gum or tobacco or any activity that increases the probability of hand-to mouth transfer and ingestion of hazardous substances is prohibited during the RI/IRM activities.
- Remediation worker hands and face must be thoroughly washed before leaving the CRZ or before eating, drinking or other activity.
- Contact with potentially contaminated surfaces should be avoided whenever possible.
- The number of remediation workers and the amount of equipment should be minimized.
- Alcoholic beverages will not be consumed during work hours by site personnel; Personnel using prescription drugs may be limited in performing specific task (i.e. operating heavy equipment) without written authorization from physician.

12.0 RECORDS AND REPORTING

The SSO will be responsible for establishing and maintaining adequate records of activities which take place at the site. The records will pertain to site workers involved in the project, regardless of their employer, as well as any agency personnel. A basic list of the information to be maintained is as follows:

- Occupational injuries or illnesses.
- Accident investigations.
- Reports to insurance carrier or State Compensation agencies.

- Records and reports required by local, state and federal 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.
- Related correspondence.
- Safety training level.

Tables

Table 1
Hazard Characteristics of Potential Contaminants of Concern

Contaminant	Potentially Impacted Media	Carcinogenicity/Symptoms of Acute Exposure	Occupational Exposure Values* ACGIH TLV OSHA PEL NIOSH IDLH
Benzene	Soil, Groundwater	Confirmed human carcinogen. Symptoms include irritation to eyes, skin, nose, respiratory system; headache; nausea; giddiness, fatigue.	PEL - 10 ppm; IDLH - 500 ppm; TLV - 0.5 ppm; STEL - 2.5 ppm
Chlorinated Organic Compounds	Soil, Groundwater	Exposure to the vapors of many chlorinated organic compounds such as vinyl chloride, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene and 1,2-dichloroethylene and other chlorinated hydrocarbons may result in various symptoms including irritation of the eyes, nose and throat, drowsiness, dizziness, headache, blurred vision, uncoordination, mental confusion, flushed skin, tremors, nausea, vomiting, fatigue and cardiac arrhythmia. The liquid if splashed in the eyes, may cause burning irritation and damage. Repeated or prolonged skin contact with the liquid may cause dermatitis. Some of these compounds are considered to be potential human car-cinogens.	Refer to 29 CFR 1910.1017 for exposure values
Toluene	Soil, Groundwater	Insufficient data from carcinogenic studies to classify substance as a potential carcinogen. Symptoms include irritation to eyes, nose; fatigue; weakness; euphoria; headache; lacrimation.	PEL - 10 ppm; IDLH - 500 ppm; TLV - 20 ppm; STEL - 150 ppm
Ethyl Benzene	Soil, Groundwater	Confirmed animal carcinogen with unknown relevance to humans. Symptoms include irritation to eyes, skin, mucous membranes; headache; narcosis.	PEL - 5 ppm; IDLH - 800 ppm; TLV - 20 ppm; STEL - 30 ppm
o-, m-, and p-Xylenes	Soil, Groundwater	Insufficient data from carcinogenic studies to classify substance as a potential carcinogen. Symptoms include irritation to eyes, nose, throat; dizziness; excitement; drowsiness; nausea; vomiting.	PEL - 100 ppm; IDLH - 900 ppm; TLV - 100 ppm; STEL - 150 ppm
Polynuclear Aromatic Hydrocarbons (PAH's)	Soil, Groundwater	Many PAH's found in fuel oil and coal tar pitch volatiles (creosote) are confirmed human carcinogens. Symptoms include dermatitis and bronchitis.	Some PAH's have no established exposure values. Others considered coal tar pitch volatiles have an ACGIH TLV and OSHA PEL value of 0.2 mg/m^3.
Cadmium	Soil	Suspected human carcinogen. Symptoms include pulmonary edema; difficulty breathing; cough; tightness in chest; substernal pain; headache; chills; nausea; vomiting; diarrhea; asnosmia.	PEL - 0.2 mg/m3; IDLH - 50 mg/m3; TLV - 0.01 mg/m3 (these limits are expressed for Cd dust)
Chromium	Soil	Hexavalent chromium compounds are confirmed human carcinogens. Symptoms include irritation to the respiratory system; nasal septum perforation; sensitization dermatitis (hexavalents). Irritation to the eyes; sensitization dermatitis (trivalents).	PEL - 0.5 mg/m3; IDLH - 250 mg/m3; TLV - mg/m3 (insoluable)
Lead	Soil	Confirmed animal carcinogen with unknown relevance to humans. Symptoms include weakness; tremor; irritation to eye; constipation; abdominal pain.	PEL - 0.05 mg/m3; IDLH - 100 mg/m3; TLV - 0.5 mg/m3
Mercury	Soil	Insufficient data from carcinogenic studies to classify substance as a potential carcinogen. Symptoms include irritation to eyes, skin; cough; chest pain; difficulty breathing; irritability; indecision; headache; fatigue; weakness; salivation.	PEL - 0.025 mg/m3 (acceptable ceiling concentration); IDLH - 2 mg/m3; TLV - 0.025 mg/m3 (elemental/inorganic)
Polychlorinated Biphenyl (PCBs)	Soil	Confirmed human carcinogen. Symptoms include dermal and ocular lesions, irregular menstrual cycles and a lowered immune response. Other symptoms included fatigue, headache, cough, and unusual skin sores	PEL - 1 mg/m3; IDLH - 5 mg/m3; TLV - 1 mg/m3

ACGIH TLV – American Conference of Governmental Industrial Hygienists Threshold Limit Value; Concentrations in ppm of mg/m3 based on an 8-hour TWA

OSHA PEL – Occupational Safety and Health Admiration Permissible Exposure Limits; Concentrations are shown in parts per million (ppm) or milligrams per cubic meter (mg/m3) based on an 8-hour time weighted average (TWA)

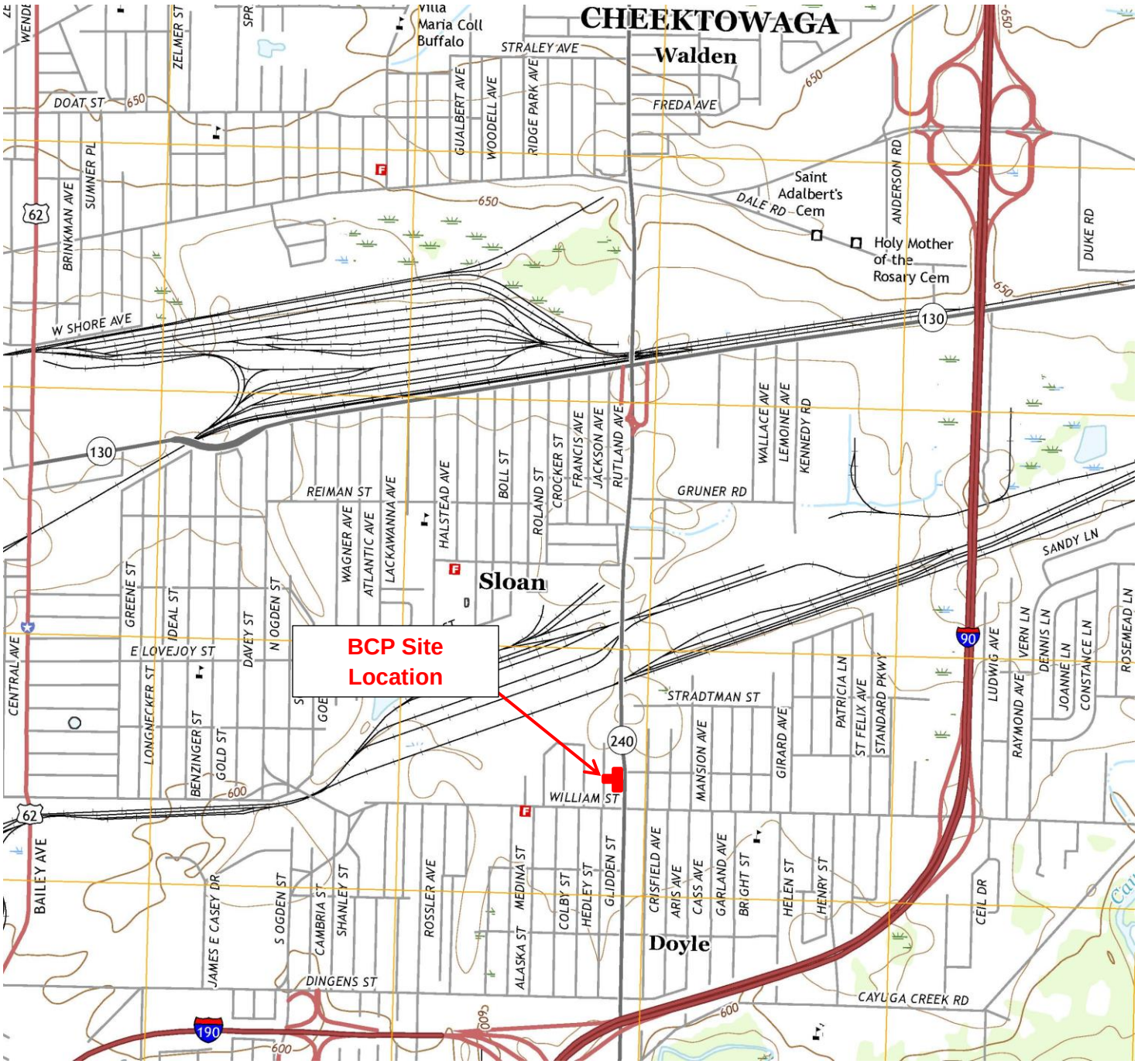
NIOSH IDLH – National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health; Concentrations in ppm or mg/m3

OSHA STEL - Short Term Exposure Limit

Table 2
Emergency Contacts

Agency	Contact	Phone Number
Cheektowaga Police	Emergency	911
Cheektowaga Fire/First Aid	Emergency	911
Ambulance	Emergency	911
Poison Control Center	Emergency	911
Hospital	Sisters of Charity Hospital St. Joseph Campus 2605 Harlem Road Cheektowaga, NY 14225	(716) 891-2400
NYSDOH	Krista Anders Empire State Plaza Corning Tower Room 1787 Albany, NY 12237	(518) 402-7860
NYSDEC	Jaspal Walia 270 Michigan Ave. Buffalo, NY 14203	(716) 851-7220
NYSDEC	SPILL Hotline	(800) 457-7362
Hazard Evaluations	Michele Wittman 3752 N. Buffalo Rd. Orchard Park, NY 14127	Office: (716) 667-3130 Cell: (716) 574-1513
Matrix Environmental Technologies Inc	Steve Marchetti 3730 California Road Orchard Park, NY 14127	(716) 668-0745
America Tire, Inc. (Volunteer)	Robert Wilson 397 Ludington Street Cheektowaga, NY 14206	(716) 896-1107
Directions to Hospital - Head north on Harlem Road for 2.2 miles. Sisters of Charity Hospital is located on the right.		

Figures



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HAZARD EVALUATIONS, INC.
Phase I/II Audits – Site Investigations – Facility Inspections

SITE LOCATION MAP
1550 HARLEM ROAD
CHEEKTOWAGA, NEW YORK

AMERICAN TIRE INC.
BUFFALO, NEW YORK

DRAWN BY: LSH	SCALE: NOT TO SCALE	PROJECT: e1621
CHECKED BY: EB	DATE: 11/17	FIGURE NO: 1

Attachment A

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN

BROWNFIELD CLEANUP PROGRAM
For
1550 HARLEM ROAD SITE
1550 Harlem Road, Cheektowaga, New York 14206
BCP # C915321

Prepared For:
American Tire, Inc.
397 Ludington Street, Cheektowaga, NY 14206
HEI Project No: e1621

Prepared By:
Hazard Evaluations, Inc.
3636 North Buffalo Road
Orchard Park, New York 14127
(716) 667-3130

February 14, 2018

HAZARD EVALUATIONS

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1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been developed for the Remedial Investigation/Interim Remedial Measures/Alternatives Analysis Report (RI/IRM/AAR) to be completed by Hazard Evaluations, Inc. (HEI) and Matrix Environmental Technologies Inc. (METI) for the 1550 Harlem Road Site, located at 1550 Harlem Road in the Town of Cheektowaga, New York on behalf of American Tires, Inc. (Volunteer) as part of the Brownfield Cleanup Program (BCP).

The CAMP requires real-time monitoring of volatile organic compounds (VOCs) and particulates (dust) at downwind perimeter of each designated work area. The CAMP will be implemented during the UST removal and excavation of impacted soil. This CAMP will be completed in general accordance with NYSDEC DER-10 Appendix 1A, as included in Attachment A. A figure showing proposed monitoring points is included as Figure 1.

2.0 VOLATILE ORGANIC COMPOUND AIR MONITORING

VOCs will be monitored at the downwind perimeter of the work are on a continuous basis and periodically during non-intrusive activities. VOC monitoring will be done using an organic vapor meter (OVM) equipped with a photoionization detector (PID) to provide real-time recordable air monitoring data.

VOCs will also be monitored and recorded at the downwind perimeter of the immediate work area(s). Upwind concentrations will be measured at the beginning of each day before activities begin and periodically throughout the day to establish background conditions. The downwind VOC monitoring device will also be checked periodically throughout the day to assess emissions and the need for corrective action. VOC monitoring action levels as per *DER-10 Technical Guidance for Site Investigations and Remediation* is as follows:

- 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 the organic vapor level at the perimeter of the work area 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 take 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 than that 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 shut down.

3.0 PARTICULATE AIR MONITORING

The remediation crew will make all efforts to suppress dust and particulate matter during the handling of contaminated soil. Fugitive dust and particulate monitoring will be completed in accordance with DER-10 Appendix 1B, as included in Attachment B. The following techniques have been shown to be effective for the controlling 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/or
(g) Reducing the excavation size and/or number of excavations.

Care will be taken not to use excess water, which can result in unacceptably wet site conditions. Use of atomizing sprays will prevent overly wet conditions, conserve water and provide an effective means of suppressing fugitive dust.

Weather conditions will be evaluated during remedial work. When extreme wind conditions make dust control ineffective, as a last resort, remedial actions may need to be suspended.

Dust and particulate monitoring will be conducted near approximate upwind and downwind perimeters of the work area, when possible. If visual evidence of dust is apparent in other locations, monitoring equipment will be placed where necessary. Dust monitoring may be suspended during period of precipitation and snow cover.

Particulate air monitoring will be done with a DataRAM-4 (or similar), which will be capable of reading particles less than 10 micrometers in size (PM-10) and equipped with an audible alarm feature which will indicate exceedances. Dust monitoring devices will be recorded periodically throughout the day to assess emissions and the need for corrective actions. Particulate monitoring action levels as per *DER-10 Technical Guidance for Site Investigations and Remediation* is as follows:

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background 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 (µg/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 (µg/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/m3 of the upwind level and in preventing visible dust migration.

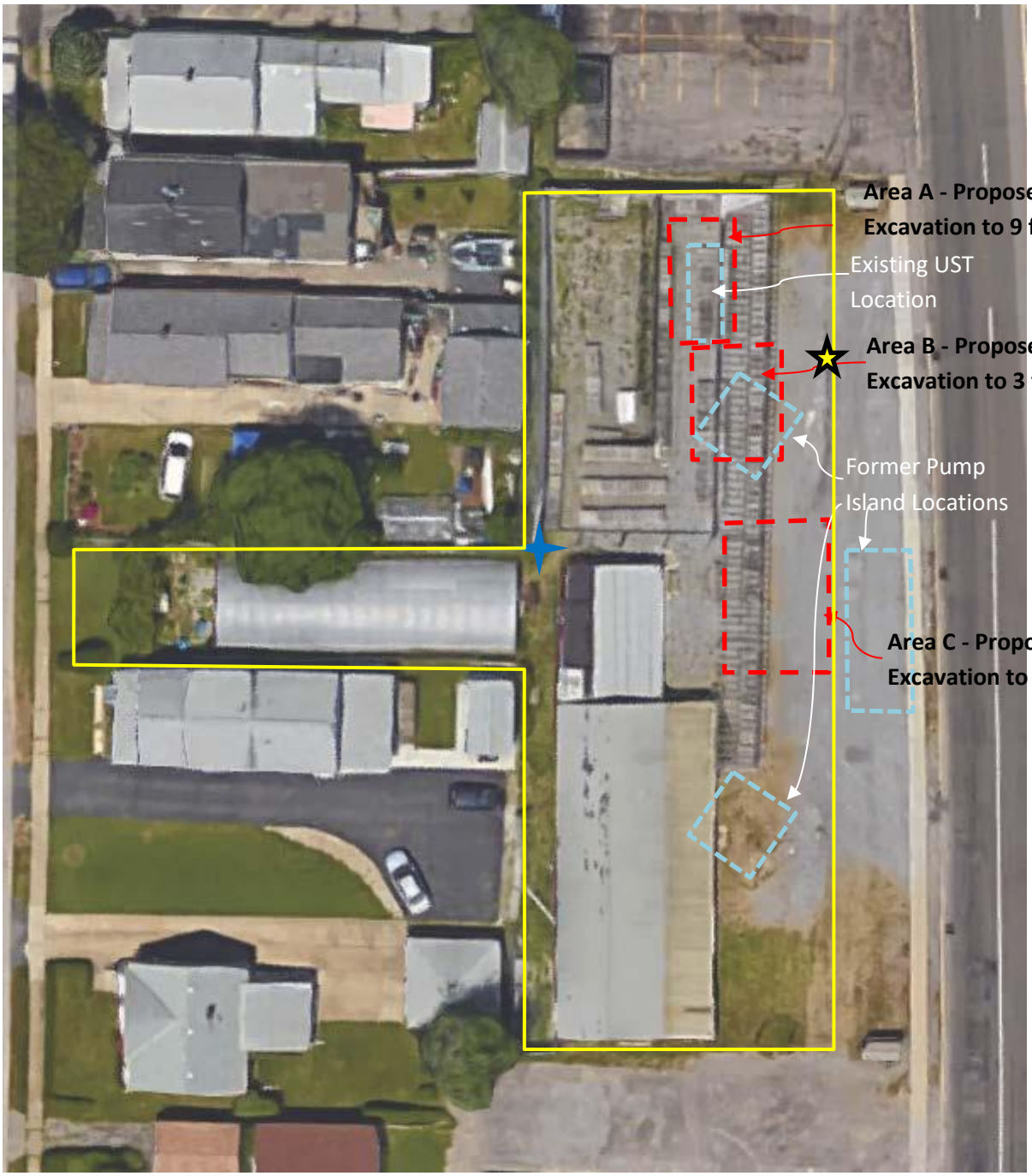
4.0 DOCUMENTATION

All 15-minute readings will be recorded and be available for or State (NYSDEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

5.0 WIND DIRECTION

Prevailing wind direction will be recorded at the beginning of each work day by visual observations of an on-site windsock. As wind direction may change throughout the work day, direction will be reestablished if a significant change in direction is observed. The wind direction results will be utilized to determine the placement of the monitoring equipment.

Figures



KEY	
★	Down-wind site perimeter monitoring location stations
✦	Up-wind site perimeter monitoring location stations
= =	Proposed Excavation limits

HAZARD EVALUATIONS, INC.

Phase I/II Audits – Site Investigations – Facility Inspections

Potential Air Monitoring Device Locations

1550 HARLEM ROAD

CHEEKTOWAGA, NEW YORK

AMERICAN TIRE INC.

BUFFALO, NEW YORK

DRAWN BY: EB	SCALE: 1"=40'	PROJECT: e1621
CHECKED BY: MMW	DATE: 11/17	FIGURE NO: 1

Attachment A

NYSDEC DER-10 Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Appendix 1A
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

Attachment B

NYSDEC DER-10 Appendix 1B
Fugitive Dust and Particulate Monitoring

Appendix 1B
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 1C
DEC Permits Subject to Exemption

In accordance with section 1.10, exemptions from the following permit programs may be granted to the person responsible for conducting the remedial programs undertaken pursuant to section 1.2:

Air - Title 5 permits
Air - State permits
Air - Registrations
Ballast Discharge
Chemical Control
Coastal Erosion Hazard Areas
Construction of Hazardous Waste Management Facilities
Construction of Solid Waste Management Facilities
Dams
Excavation and Fill in Navigatable Waters (Article 15)
Flood Hazard Area Development
Freshwater Wetland
Hazardous Waste
Long Island Wells
Mined Land Reclamation
Navigation Law - Docks
Navigation Law - Floating Objects
Navigation Law - Marinas
Non-Industrial Waste Transport
Operation of Solid Waste Management Facilities
Operation of Hazardous Waste Management Facilities
State Pollution Discharge Elimination Systems (SPDES)
Stream Disturbance
Tidal Wetlands
Water Quality Certification
Water Supply
Wild, Scenic and Recreational Rivers