Soil and Groundwater Management Plan
NYSDEC Spill #0750698
PIN #08170

Location:

51 Chili Avenue
Rochester, New York

Prepared for:

New York State Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414

LaBella Project No. 2161937-032

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1.0 INTRODUCTION

This Soil and Groundwater Management Plan (SGMP) has been prepared by LaBella Associates, D.P.C. (LaBella) at the request of the New York State Department of Environmental Conservation (NYSDEC) for the property located at 51 Chili Avenue in the City of Rochester, Monroe County, New York, hereinafter referred to as the "Site" (see Figure 1).

This SGMP is intended to be implemented in the event that future ground-intrusive work encounters petroleum-impacted soil or groundwater. This SGMP meets the requirements of the SGMP Criteria of the New York State Department of Environmental Conservation (NYSDEC) Region 8 Spills Unit and is being submitted to support inactivation of NYSDEC Spill #0750698.

2.0 SITE DESCRIPTION AND BACKGROUND

2.1 Site Description & History

The Site is owned by the City of Rochester and comprises approximately 0.12-acres of vacant land located at the intersection of Chili Avenue and Ardmore Street, in a predominately urban area. The Site is zoned R-2 and residential vacant land use code 311. The R-2 Medium-Density Residential District provides a mix of housing choices. The inclusion of single family residential, two-family residential, and multifamily residential. North of the property is bordered by a church and residential usage, St. Mary's Hospital to the East, and more residential to the South and West of the Site.

The Site is bordered by the following properties:

Table 2.1 – Adjacent Properties

Direction	Land Use
North	Church and Residential (beyond Chili Avenue)
East	St. Mary's Hospital (beyond Ardmore Street)
South	Residential
West	Residential

2.2 Summary of Previous Studies

The following environmental reports summarize previous investigations and remedial activities at the Site:

- *Phase I Environmental Site Assessment, 51 Chili Avenue, Rochester, New York* dated September 2009 by LaBella Associates, P.C.
- *Orphan Underground Tank Decommissioning Closure Report – NYSDEC Spill No. 0750698* dated April 14, 2009 by LaBella Associates, P.C.
- *Environmental Subsurface Investigation Report* dated April 2010 by LaBella Associates, P.C.
- *Remedial Action Work Plan, NYSDEC Spill #0750698, 51 Chili Ave, Rochester, New York dated* March 28, 2019 by LaBella Associates, D.P.C.
- *Remedial Action Report, NYSDEC Spill #0750698, 51 Chili Ave, Rochester, New York dated* July 1, 2019 by LaBella Associates, D.P.C.

These aforementioned reports are on file with the NYSDEC and are summarized below.

Please note that at the time the previous environmental work was conducted, the NYSDEC utilized the Technical and Administrative Guidance Memorandum (TAGM) 4046 to determine the soil cleanup levels. The TAGM 4046 guidance document has since been replaced by the NYSDEC Commissioner Policy 51 (CP-51) guidance document to determine soil cleanup levels.

2.2.1 Phase I Environmental Site Assessment, 51 Chili Avenue, Rochester, New York dated September 2009

The Phase I ESA identified the following Recognized Environmental Conditions (RECs) at the Site:

- Presence of On-Site Contamination Associated with the Historic Use of the Site
  The Site was historically utilized as a gasoline filling station and automobile repair shop from approximately 1943 to approximately 1988. Petroleum impaired soils were identified on-Site associated with the removal of an underground lift as described under active NYSDEC Spill #0750698. In addition, numerous permit records obtained from the City of Rochester indicate the installation and removal of at least six (6) underground storage tanks (USTs) and associated pumps islands.

  In June of 2008, ARM Geophysics (ARM) completed a multi-phase geophysical survey of the entire Site for CDM Federal Programs. The ARM report identified seven (7) electromagnetic (EM) anomalies at the Site; however, only two (2) were noted by ARM to be of the size and shape of potential USTs (designated anomalies C and D as shown on Figure 2). A third anomaly (designated anomaly F) was attributed by ARM to be subsurface debris.

- Historic Use of an Adjoining Property
  A laundry facility was identified located adjacent to the east of the Site beyond Ardmore Street from at least 1956 to at least 1970. This facility is currently part of St. Mary's Hospital addressed as 89 Genesee Street. Additionally, no regulatory records were identified associated with this laundry facility.

LaBella recommended a subsurface investigation to assess potential for orphan USTs and impacts to be present at the Site.

2.2.2 Orphan Underground Tank Decommissioning Closure Report – NYSDEC Spill No. 0750698 dated April 14, 2009

LaBella conducted a test pitting study on behalf of the City of Rochester in September 2008 to evaluate EM anomalies C, D and F identified in the ARM report, for the presence of orphan USTs. LaBella's test pit study consisted of excavating one (1) test pit at each of these three (3) anomalies (designated TP-1 through TP-3). One (1) approximate 550-gallon and one (1) approximate 750-gallon orphan UST were encountered during the test pitting study at the location of Anomaly C (TP-3). In addition, stained soils, petroleum odors, and elevated photo-ionization detector (PID) readings were encountered in test pit TP-2. The remaining anomalies identified by ARM were not investigated. The decision not to investigate these anomalies was based on the fact that ARM had concluded that the additional anomalies were not the size or shape of possible USTs.

On March 10, 2009, LaBella observed the decommissioning (removal) of the orphan USTs. Approximately 1,240 gallons of residual fuel oil and waste oil was removed and disposed of off-Site at Norlite Corporation. The orphan USTs were decommissioned in accordance with applicable regulations and disposed of off-Site at Metalico Rochester, Inc. Closure samples were collected from each of the four (4) sidewalls of the excavation. Due to the orphan USTs were recessed into bedrock, closure soil samples were not collected from the bottom of the excavation. Soil samples collected from the sidewalls of the excavation detected petroleum related compounds at concentrations above the NYSDEC TAGM 4046 Recommended Soil Clean-up Objectives (RSCOs).

Based on the closure soil samples and the field observations from test pit TP-2, there is an apparent concern with in regard to soil and potential groundwater impacts at the Site. LaBella recommended that test borings be advanced and monitoring wells be installed to evaluate the extent of impacts.

2.2.3 Environmental Subsurface Investigation Report dated April 2010

LaBella completed a subsurface investigation at the Site in August 2009 that included the completion of 26 geoprobe soil borings, 5 rotary drill rig borings, 5 groundwater monitoring wells (including 4 overburden/bedrock interface wells), and the collection of soil and groundwater samples for laboratory analysis. The investigation locations are shown on Figure 2.

Based upon the findings of this subsurface investigation and the results of the UST closure sampling, as outlined in LaBella's *Orphan Underground Tank Decommissioning Closure Report (see Section 2.2)*, LaBella identified the following Areas of Concern (AOCs) at the Site:

- <u>AOC #1 – Former Tank Pit, Southern Central Portion of Site</u>: During the removal of an apparent 550-gallon heating oil UST (Tank #1) and an apparent 750-gallon waste oil UST (Tank #2) from this portion of the Site in 2009, confirmatory soil samples collected from the eastern and western sidewalls of the UST removal excavation (samples SW-E and SW-W, respectively) were found to contain petroleum-related compounds at concentrations above the NYSDEC TAGM 4046 RSCOs. It appeared that the removed USTs had been recessed into the bedrock at the Site (i.e., bedrock had been removed to allow placement of the USTs). Borings completed adjacent to this former UST removal excavation (e.g., TB-7, TB-9, TB-10, TB-18, and TP-5) found little to no evidence of impairment in the surrounding overburden material, suggesting that remaining petroleum contamination in the overburden in the vicinity of the former UST removal excavation on the southern-central portion of the Site appears to be localized. Although no staining of top of bedrock was noted during the removal of the USTs, these findings do not preclude the possibility that petroleum contamination has migrated downward into the bedrock beneath the Site. No appreciable amounts of groundwater have been found in the overburden formation at the Site. However, recent groundwater investigations completed at the Site have found petroleum contamination in bedrock groundwater on the central and eastern portions of the Site.

- <u>AOC #2 – Former Fuel Islands and USTs, Northern Central Portion of Site</u>: Borings completed in this portion of the Site (e.g., TB-2, TB-25, and B-3) revealed evidence of impairment in overburden soil, including petroleum-related compounds at concentrations above the NYSDEC TAGM 4046 RSCOs. Petroleum contamination in this area of the Site appears to be situated near the top of bedrock, in both overburden soil and the weathered top of bedrock. Based upon historic mapping for the Site, the northern central portion of the Site historically contained fuel islands and petroleum storage tanks. As noted previously, recent groundwater investigations completed at the Site have found petroleum contamination in bedrock groundwater on the central and eastern portions of the Site.

- AOC #3 – Former On-Site Building and Hydraulic Lift, Southeastern Portion of Site: Borings completed on the southeastern portion of the Site (e.g., TB-23 and B-2) found the deepest depth to bedrock at the Site (13± feet below the ground surface (bgs) in boring/well B-2/MW-2), as well as significant evidence of impairment associated with overburden soil and groundwater. It is understood the most recent structure at the Site, a former auto repair facility, was situated on the southeastern portion of the Site and this structure contained hydraulic lifts with underground components that were removed in August 2007. It appears that contamination from this former structure and/or hydraulic lifts remains in the subsurface on the southeastern portion of the Site.

2.2.4 Remedial Action Work Plan

LaBella prepared a Remedial Action Work Plan (RAWP) for the Site dated March 28, 2019. The objective of the RAWP was to outline procedures to remove source area soils and bedrock impacted with petroleum at concentrations above CP-51 SCLs to the extent feasible from the approximate three AOCs and dispose at a NYSDEC Part 360 permitted landfill. An additional objective was to reduce concentrations of petroleum related VOCs in groundwater via dewatering during the remedial excavations and the application of an oxygen release compounds (ORC) pellets into the remedial excavations.

2.2.5 Remedial Action Report

LaBella prepared a Remedial Action Report (RAR) for the Site dated July 1, 2019. Remedial actions performed at the site included the removal and disposal of 265.66 tons of source area petroleum impacted soil and bedrock, approximately 1,000 gallons of petroleum impacted groundwater, and the application of 606.1 pounds of an ORC Advanced® to enhance degradation of petroleum compounds in bedrock groundwater.

Laboratory analysis of post excavation confirmatory soil samples indicate that all detected VOCs are generally below their respective CP-51 SCLs, with the exception of two confirmatory soil samples, AOC 2 N Sidewall and AOC 2 S Sidewall. Sample AOC 2 N Sidewall was collected adjacent to the Chili Avenue right-of-way where the excavation could not be advanced further; and sample AOC 1 S Sidewall was collected at the south property line where the excavation could not be advance further. Confirmation soil sample results are summarized on Table. Confirmation sample locations are shown on Figure 2.

Post remedial groundwater sampling was conducted at the site on November 5, 2019 from wells MW-1, MW-2R, MW-3R, MW-4R, and MW-5. The well locations are shown on Figure 2. The results were compared to the TOGS 1.1.1 AWQS and summarized in Table 2 (attached) and to previous groundwater samples collected at the site. None of the results exceeded the TOGS 1.1.1 AWQS, except for one VOC (tert-butylbenzene) was detected at a concentration of 8.3 ug/l in well MW-3R which is above the TOGS 1.1.1 AWQS of 5 ug/l.

3.0 OBJECTIVE

This SGMP is intended to provide guidance for the identification and management of residual petroleum-impacted soil and groundwater that may be encountered during construction-related excavations (e.g., subsurface utility work, etc.) at the Site. The development of this SGMP was required based on the identification of soil with concentrations of petroleum compounds above their respective NYSDEC CP-51 SCLs. The SGMP applies to the entire Site as shown on Figure 2.

This SGMP has been prepared in general accordance with current United States Environmental Protection Agency (USEPA) and NYSDEC non-hazardous waste disposal regulations and guidelines. In addition, this SGMP has been designed to satisfy the requirements of the "Soil and Groundwater Management Plan Criteria" of the NYSDEC Region 8 Spills Unit and to satisfy the requirements established by the NYSDEC regarding the handling of petroleum-impacted media generated during construction.

Responsibility for implementation of this SGMP will belong to the current owner of the Site at the time of subsurface disturbance as well as parties conducting the subsurface work. This SGMP has been provided to the property owner, and should be provided to contractors or future owners whose activities may disturb the subsurface at the Site. Additional parties to which the SGMP has been distributed are listed in Section 3.3.

3.1 Applicability of the Plan

This SGMP applies to any activity that disturbs the subsurface at the Site.

3.2 Notification

Upon discovery of any petroleum-impacted media the NYSDEC Spill Hotline (1-800-457-7362 as of August 2019) must be notified within two (2) hours of discovery. Notification to the NYSDEC may be made by the contractor encountering the material, the property owner, the property owners' legal counsel, the environmental consultant or anyone with knowledge of the Spill. The NYSDEC representative as of March 2019 is:

Mr. Michael Zamiarski, P.E.
Spill Prevention and Response Section
NYSDEC - Region 8
6274 East Avon-Lima Road
Avon, New York 14414
mike.zamiarski@dec.ny.gov
585-226-5438

3.3 Distribution

One (1) electronic copy of this SGMP will be distributed to the following parties following approval of the plan by the NYSDEC:

NYSDEC:
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4.0 SOIL AND GROUNDWATER MANAGEMENT PLAN

This section of the SGMP details field screening and the classification system to be used to segregate excavated soil during potential future subsurface work at the Site. The method to screen and segregate soil will rely on visual evidence of impairment, olfactory evidence of impairment, and PID readings.

NOTE: Responsibility for implementation of this SGMP will belong to both the owner of the Site and to the parties conducting the subsurface work. Any petroleum-impacted soil or groundwater encountered must be managed in accordance with all applicable Federal, State, and Local laws/regulations. The following is a general guidance for the handling and disposal of materials impacted by residual petroleum that may be encountered during future work at the Site.

4.1 Development of Screening Procedures for Excavated Soil

Upon encountering potentially impacted soil, on-site contractors should follow their own company's Health and Safety Plan (HASP) to provide for worker protection. Three (3) classes of soil have been defined for the Site and will be managed and handled in a manner dictated by evidence of environmental impairment. The classes of material are to be applied to all material removed from excavations at the Site. The Three (3) classes of material are described in Table 4.1 below.

Table 4.1 - Material Classifications

Class of Material	Description	Screening Parameter	Management/ Re-use of Material
Class 1	Soil and fill materials free of petroleum impacts.	No discernable odor or staining and PID Readings ≤25 ppm;	Unrestricted use anywhere on the Site. Sampling per 6NYCRR Part 360 regulations to determine potential off-site re-use, or off-site disposal at 6NYCRR Part 360 landfill.
Class 2	Soil and fill materials with low to moderate petroleum impacts.	PID Readings 25 to 100 ppm without significant nuisance odors	Sample in accordance with the NYSDEC CP-51 guidance document. Depending on sampling results, use on-site as fill, placed under at least 1 ft of Class 1 material or imported 'clean' material, or off-site disposal at 6NYCRR Part 360 landfill. Requires authorization by NYSDEC prior to reuse,
Class 3	Soil and fill material with petroleum impacts.	PID readings ≥ 100 ppm and PID readings greater than 25 ppm with significant nuisance odors	Restricted off-site disposal per 6NYCRR Part 360 requirements. May only be reused on Site with NYSDEC authorization.

Note: CP-51 denotes NYSDEC Commissioner Policy 51 Guidance Document

4.2 Cover Thickness and Procedures for Class 1, 2, and 3 Materials

Class 1 Material

All Class 1 materials deemed acceptable for reuse on-site only by visual inspection and PID readings ≤25 ppm. Sampling per 6NYCRR Part 360 shall be conducted to determine potential off-site reuse or disposed at a 6 NYCRR Part 360 landfill.

Class 2 Material

Class 2 materials deemed acceptable for reuse on-site based on visual inspection, PID readings between 25 to 100 ppm, and sampling results in accordance with CP-51 guidance document will require a minimum of 1-ft thickness of topsoil or other clean soil if the area is not to be paved. Alternatively, no soil cover is required if the area is to be paved or covered with other impervious building materials (e.g., concrete). Also requires, NYSDEC approval prior to reuse.

Class 3 Material

Class 3 materials deemed acceptable for reuse by the NYSDEC based on laboratory analytical data and visual inspection can be permanently placed on-site. Placement of Class 3 materials will require a minimum of 1-ft thickness of topsoil or other clean soil if the area is not to be paved. Alternatively, no soil cover is required if area is to be paved or covered with other impervious building materials (e.g., concrete).

4.3 Waste Disposal and Tracking

All Treatment, Storage and Disposal (TSD) facilities and waste transporters must provide evidence of applicable NYSDEC permits prior to handling, transporting, and/or receiving petroleum impacted media.

All operators necessary for the removal and disposal of contaminated media shall comply with the applicable Federal, State, and local laws, regulations, and policies. The Contractor shall provide the owner with documentation that the receiving facility is permitted to receive the accepted waste and the waste transporter is permitted to haul such wastes. Waste Disposal procedures are categorized below.

Non-Impacted Soil and Fill Material

This category is anticipated to include Class 1 material as described in Section 4.1. Non-impacted soil and fill material will be sampled in accordance with 6NYCRR Part 360 regulations in the event that this material is proposed to be moved off-site. No material shall be moved for off-site reuse prior to the receipt of the sampling results and authorization from the Site owner. If the sampling results indicate this material can be re-used off-site, the material shall be managed in accordance with 6NYCRR Part 360 regulations.

Non-Hazardous Petroleum Impacted Soil

This category is anticipated to include Class 2 and 3 materials as listed in Section 4.1 pending sample results. Non-hazardous waste may be disposed of at a NYSDEC Part 360 landfill and transported by a NYSDEC Part 364 permitted waste hauler. Waste characterization sampling and analysis will be conducted in accordance with the accepting NYSDEC Part 360 landfill. This material must be removed from the Site within 60-days of generation.

Petroleum Impacted Water

In the event that groundwater exhibiting a petroleum odor and/or sheen is encountered, the water will be sampled in place or pumped to a holding tank pending waste characterization. Waste characterization analysis parameters will be dependent upon the accepting waste disposal facility. Upon characterization and NYSDEC approval, this water may be managed in one of the following ways:

1. Disposal to sanitary sewer under permit with the local municipality; or
2. Transportation and off-site disposal at an approved facility.

4.4 Waste Disposal Documentation

Documentation of proper disposal, including copies of all waste disposal manifests and disposal facility receipts shall be submitted to the NYSDEC and Site owner in a reasonable timeframe subsequent to removal of petroleum impacted media from the Site.

4.5 Follow-up Sampling

Subsequent to removal of any Class 2 and 3 Material, post-excavation confirmatory soil samples will be collected in accordance with the requirements of DER-10.

5.0 DECONTAMINATION OF EQUIPMENT

It is recommended that all equipment used on the work site and that comes in contact with impacted soil be decontaminated using manual methods to scrape off residual soil from construction activities. Extreme petroleum residue may require steam cleaning or other methods.

6.0 AIR MONITORING

In the event that subsurface work is to be completed in the area of known petroleum impacts or petroleum impacts are identified in other areas of the Site, air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working onsite. Refer to the HASP included in Appendix 2 for a description of personal protective equipment (PPE).

The Air Monitor will utilize a PID to screen the ambient air in the work areas for total VOCs. Work area ambient air will generally be monitored within and downwind of the work area. Air monitoring of the work areas and downwind of the work areas will be performed at least every 60 minutes using a PID.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone, then either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8-hours of use or more frequently, if necessary. If PID readings are sustained in the work area at levels above 25 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

7.0 HEALTH AND SAFETY PLAN

This SGMP contains a Site Specific HASP for the Site as required by the NYSDEC Region 8 SGMP guidance. The included HASP has been developed by LaBella Associates, D.P.C. is designated for **LaBella personnel only** should they be involved in future intrusive site work. A copy of this HASP is included in Appendix 1.

The LaBella Associates, D.P.C. HASP is included as an example. Contactor(s) will need to develop and rely on their own HASP to manage health and safety issues associated with potential exposure to site chemicals of concern and any other potential issues. LaBella Associates, D.P.C. assumes no liability for the health and safety of personnel not employed or subcontracted by LaBella Associates, D.P.C.

8.0 ENGINEERING CONTROLS

Engineering controls may be warranted as part of the future redevelopment conducted in the vicinity of NYSDEC Spill #0750698. These engineering controls may include (but are not limited to) measures to mitigate the potential for petroleum-impacted soil vapor intrusion into future buildings planned in the area of NYSDEC Spill #0750698, such as inclusion of a vapor barrier or sub-slab depressurization system into the building design. In the event that engineering controls are deemed necessary, the appropriate regulatory agencies (i.e., the NYSDEC) should be consulted to approve proposed controls.

TABLE

Table 1
Confirmation Soil Sample Analytical Results
Volatile Organic Compounds in Groundwater
51 Chili Avenue, Rochester, New York

Sample ID	Units	NYSDEC CP-51 Soil Cleanup Levels (SCLs)	AOC 1 W Sidewall		AOC 1 N Sidewall		AOC 1 E Sidewall		AOC 1 S Sidewall		AOC 2 W Sidewall		AOC 2 N Sidewall	
Sample Date			4/4/2019		4/4/2019		4/4/2019		4/4/2019		4/8/2019		4/8/2019	
Sample Depth			5'		5'		5'		5'		5'		5'	
1,2,4-Trimethylbenzene	ug/kg	3600	1.0	U	1.0	U	1.1	U	480	J	1.1	U	**230000**	
1,3,5-Trimethylbenzene	ug/kg	8400	0.34	U	0.34	U	0.37	U	350	U	5.9	F1,vs	**69000**	
4-Isopropyltoluene	ug/kg	10000	0.42	U	0.42	U	0.46	U	390	U	0.50	J,F1,vs	5800	
Benzene	ug/kg	60	0.26	U	0.26	U	0.28	U	220	U	0.28	U	620	U
Ethylbenzene	ug/kg	1000	0.36	U	0.37	U	0.40	U	340	U	1.1	J,F1,vs	**22000**	
Isopropylbenzene	ug/kg	2300	0.79	U	0.80	U	0.87	U	170	U	0.86	v	**7400**	
Methyl tert-butyl ether	ug/kg	930	0.51	U	0.52	U	0.57	U	440	U	0.56	U	1200	U
m,p-Xylene	ug/kg	*	0.88	U	0.89	U	0.97	U	640	U	0.95	U	61000	
Naphthalene	ug/kg	12000	0.70	U	0.71	U	0.77	U	2500		1.4	J,vs	**42000**	
n-Butylbenzene	ug/kg	12000	0.45	U	0.46	U	0.50	U	460	J	0.49	U	**42000**	
n-Propylbenzene	ug/kg	3900	0.42	U	0.42	U	0.46	U	300	U	2.1	J,vs	**26000**	
0-Xylene	ug/kg	*	0.68	U	0.69	U	0.75	U	150	U	2.1	J,F1,vs	7100	B
sec-Butylbenzene	ug/kg	11000	0.45	U	0.46	U	0.50	U	420	U	0.78	J,F1,vs	9200	
Toluene	ug/kg	700	0.40	U	0.40	U	0.44	U	310	U	0.43	U	870	U
Total Xylenes	ug/kg	260	0.88	U	0.89	U	0.97	U	640	U	2.1	J,F1,vs	**68000**	
tert-Butylbenzene	ug/kg	5900	0.54	U	0.55	U	0.60	U	320	U	0.59	U	910	U

Sample ID	Units	NYSDEC CP-51 Soil Cleanup Levels (SCLs)	AOC 2 E Sidewall		AOC 2 S Sidewall		AOC 3 W Sidewall		AOC 3 N Sidewall		AOC 3 E Sidewall		AOC 3 S Sidewall	
Sample Date			4/8/2019		4/8/2019		4/4/2019		4/4/2019		4/4/2019		4/4/2019	
Sample Depth			5'		5'		5'		5'		5'		5'	
1,2,4-Trimethylbenzene	ug/kg	3600	480		290	U	1.1	U	1.3	U	13	vs	1.1	J,vs
1,3,5-Trimethylbenzene	ug/kg	8400	270		310	U	0.36	U	0.44	U	13	vs	1.3	J,vs
4-Isopropyltoluene	ug/kg	10000	45	J	350	U	0.45	U	0.54	U	2.8	J,vs	0.48	U,vs
Benzene	ug/kg	60	25	U	200	U	0.28	U	0.33	U	0.30	U	0.29	U,vs
Ethylbenzene	ug/kg	1000	110	J	300	U	0.39	U	0.47	U	3.2	J,vs	0.83	J,vs
Isopropylbenzene	ug/kg	2300	76	J	1400		0.85	U	1.0	U	2.7	J,vs	0.90	U,vs
Methyl tert-butyl ether	ug/kg	930	50	U	390	U	0.56	U	0.67	U	0.60	U	0.59	U,vs
m,p-Xylene	ug/kg	*	200	J	570	U	0.95	U	1.1	U	4.7	J,vs	1.1	J,vs
Naphthalene	ug/kg	12000	640		1900		0.76	U	0.91	U	1.9	J,vs	0.80	U,vs
n-Butylbenzene	ug/kg	12000	320		2800		0.49	U	0.59	U	6.5	vs	0.68	J,vs
n-Propylbenzene	ug/kg	3900	340		**5600**		0.45	U	0.54	U	9.0	vs	1.1	J,vs
0-Xylene	ug/kg	*	60	J,B	130	U	0.74	U	0.89	U	1.6	J,vs	0.78	U,vs
sec-Butylbenzene	ug/kg	11000	95	J	1700		0.49	U	0.59	U	5.1	J,vs	0.78	J,vs
Toluene	ug/kg	700	35	U	280	U	0.43	U	0.51	U	0.46	U	0.45	U,vs
Total Xylenes	ug/kg	260	260		570	U	0.95	U	1.1	U	6.3	J,vs	1.1	J,vs
tert-Butylbenzene	ug/kg	5900	36	U	290	U	0.59	U	0.71	U	0.63	J,vs	0.62	U,vs

Notes:
Yellow Highlighted Type denotes a reported concentration that exceeds its respective NYSDEC CP-51 Soil Cleanup Levels
U denotes that the constituent was Not Detected above the metyhod detection limti shown.
"*" indicates No Standard
J = indicates an estimated value that is below the method detection limit.
F1 - MS and/or MSD is outside of acceptance limits
ug/kg - micrograms per kilogram
vs - reported analyses below 200 ug/kg may be biased low due to the sample not being collected according to 5035A-L
B - compounds was also found in the blank sample

Table 2
Groundwater Sample Analytical Results
Volatile Organic Compounds in Groundwater
51 Chili Avenue, Rochester, New York

Well ID	Units	NYSDEC TOGS 1.1.1 Groundwater Standards and Guidance Values	MW-1		MW-1		MW-1	
Sample Event			Pre-Remediation		Pre-Remediation		Post Remediation	
Sample Date			10/2/2009		3/18/2019		11/5/2019	
Sample Depth			3'-8'		3'-8'		3'-8'	
1,2,4-Trimethylbenzene	ug/l	5	770	D	1.5	U	1.5	U
1,3,5-Trimethylbenzene	ug/l	5	190	D	1.5	U	1.5	U
4-Isopropyltoluene	ug/l	5	5	U	0.62	U	0.62	U
Benzene	ug/l	1	440	D	23		0.82	U
Ethylbenzene	ug/l	5	990	D	16		1.5	U
Isopropylbenzene	ug/l	5	63		23		1.6	U
Methyl tert-butyl ether	ug/l	10	5	U	2.0	U	0.32	U
Xylene (Total)	ug/l	5	2,300	D	3.3	J	1.3	U
Naphthalene	ug/l	10	260	D	0.91	J	1.9	J
n-Butylbenzene	ug/l	5	24		2.6		1.3	U
n-Propylbenzene	ug/l	5	150		53		3.6	
sec-Butylbenzene	ug/l	5	8.4		2.0	U	1.5	U
Toluene	ug/l	5	620	D	1.8	J	1.0	U
tert-Butylbenzene	ug/l	5	NS		2.0	U	1.6	U
Total VOCs	ug/l	NS	5,815		124	j	5.5	J

Notes:
Yellow Highlighted Type denotes a reported concentration that exceeds its respective NYSDEC TOGS 1.1.1 Groundwater Standard or Guidance Value.
U denotes that the constituent was Not Detected above the metyhod detection limti shown.
"NS" indicates "Not Specified"
J = indicates an estimated value that is below the method detection limit.
D = indicates dilution of the sample or extract was performed
ug/l denotes micrograms per liter

Table 2
Groundwater Sample Analytical Results
Volatile Organic Compounds in Groundwater
51 Chili Avenue, Rochester, New York

Well ID	Units	NYSDEC TOGS 1.1.1 Groundwater Standards and Guidance Values	MW-2		MW-2		MW-2		MW-2R	
Sample Event			Pre-Remediation		Pre-Remediation		Pre-Remediation		Post Remediation	
Sample Date			10/2/2009		3/9/2010		3/18/2019		11/5/2019	
Sample Depth			3'-13'		3'-13'		3'-13'		6.5'-11.5'	
1,2,4-Trimethylbenzene	ug/l	5	2.1	J	5.0	U	3.0	U	3.0	U
1,3,5-Trimethylbenzene	ug/l	5	5.0	U	5.0	U	3.1	U	3.1	U
4-Isopropyltoluene	ug/l	5	5.0	U	5.0	U	1.2	U	1.2	U
Benzene	ug/l	1	5.0	U	5.0	U	1.6	U	1.6	U
Ethylbenzene	ug/l	5	1.0	J	5.0	U	3.0	U	3.0	U
Isopropylbenzene	ug/l	5	1.6	J	5.0	U	3.2	U	3.2	U
Methyl tert-butyl ether	ug/l	10	5.0	U	5.0	U	0.6	U	0.6	U
Xylene (Total)	ug/l	5	2.4	J	5.0	U	2.6	U	2.6	U
Naphthalene	ug/l	10	2.0	J	5.0	U	1.7	U	1.7	U
n-Butylbenzene	ug/l	5	5.0	U	5.0	U	2.6	U	2.6	U
n-Propylbenzene	ug/l	5	5.0	U	5.0	U	2.8	U	2.8	U
sec-Butylbenzene	ug/l	5	1.3	J	5.0	U	3.0	U	3.0	U
Toluene	ug/l	5	5.0	U	5.0	U	2.0	U	2.0	U
tert-Butylbenzene	ug/l	5	NS		NS		3.2	U	2.6	U
Total VOCs	ug/l	NS	10	J	2.0		0.0		0.0	

Notes:
U denotes that the constituent was Not Detected above the metyhod detection limti shown.
"NS" indicates "Not Specified"
J = indicates an estimated value that is below the method detection limit.
ug/l denoted micrograms per liter

Table 2
Groundwater Sample Analytical Results
Volatile Organic Compounds in Groundwater
51 Chili Avenue, Rochester, New York

Well ID	Units	NYSDEC TOGS 1.1.1 Groundwater Standards and Guidance Values	MW-3		MW-3		MW-3R	
Sample Event			Pre-Remediation		Pre-Remediation		Post Remediation	
Sample Date			10/2/2009		3/18/2009		11/5/2019	
Sample Depth			4.5'-14.5'		4.5'-14.5'		3-8'	
1,2,4-Trimethylbenzene	ug/l	5	**330**	D	1.5	U	3.0	U
1,3,5-Trimethylbenzene	ug/l	5	**110**		1.5	U	3.0	U
4-Isopropyltoluene	ug/l	5	**8.6**		1.2	J	1.2	U
Benzene	ug/l	1	**180**		**31**		1.6	U
Ethylbenzene	ug/l	5	**650**	D	**48**		3.0	U
Isopropylbenzene	ug/l	5	**65**		**29**		3.2	U
Methyl tert-butyl ether	ug/l	10	5.0	U	0.32	U	0.64	U
Xylene (Total)	ug/l	5	**220**		**9.1**		**5.0**	J
Naphthalene	ug/l	10	**350**	D	**140**		**2.0**	J
n-Butylbenzene	ug/l	5	**15**		2.6	U	2.6	U
n-Propylbenzene	ug/l	5	**140**		**64**		2.8	U
sec-Butylbenzene	ug/l	5	**6.2**		3.0	U	3.0	U
Toluene	ug/l	5	**18**		2.0	U	**3.2**	J
tert-Butylbenzene	ug/l	5	NT		3.0	U	**8.3**	
Total VOCs	ug/l	NS	2,028		322.3	J	18.5	J

Notes:
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U denotes that the constituent was Not Detected above the metyhod detection limti shown.
"NS" indicates "Not Specified"
J = indicates an estimated value that is below the method detection limit.
D = indicates dilution of the sample or extract was performed
ug/l denotes micrograms per liter

Table 2
Groundwater Sample Analytical Results
Volatile Organic Compounds in Groundwater
51 Chili Avenue, Rochester, New York

Well ID	Units	NYSDEC TOGS 1.1.1 Groundwater Standards and Guidance Values	MW-4		MW-4		MW-4R	
Sample Event			Pre-Remediation		Pre-Remediation		Post Remediation	
Sample Date			10/2/2009		3/18/2019		11/5/2019	
Sample Depth			3'-13'		3'-13'		3.0-8.0'	
1,2,4-Trimethylbenzene	ug/l	5	**1,100**	D	**45**		1.5	U
1,3,5-Trimethylbenzene	ug/l	5	**410**	D	**11**		1.5	U
4-Isopropyltoluene	ug/l	5	5.0	U	1.6	U	0.62	U
Benzene	ug/l	1	**560**	D	**190**		0.82	U
Ethylbenzene	ug/l	5	**570**	D	**110**		1.5	U
Isopropylbenzene	ug/l	5	**41**		**7.7**		1.6	U
Methyl tert-butyl ether	ug/l	10	4.7	J	0.92	J	0.32	U
Xylene (Total)	ug/l	5	**3,600**	D	**330**		1.3	U
Naphthalene	ug/l	10	**260**	D	**37**		0.86	U
n-Butylbenzene	ug/l	5	5.0	U	3.2	U	1.3	U
n-Propylbenzene	ug/l	5	**94**		**16**		1.4	U
sec-Butylbenzene	ug/l	5	**8.8**		3.8	U	1.5	U
Toluene	ug/l	5	**1,200**	D	**45**		1.0	U
tert-Butylbenzene	ug/l	5	NT		4.1	U	1.6	U
Total VOCs	ug/l	NS	7,849	J	793	J	0	
Total TICs	ug/l	NS	2,400		--		--	
Total VOCs + TICs	ug/l	NS	10,249		--		--	

Notes:

Yellow Highlighted Type denotes a reported concentration that exceeds its respective NYSDEC TOGS 1.1.1 Groundwater Standard or Guidance Value.
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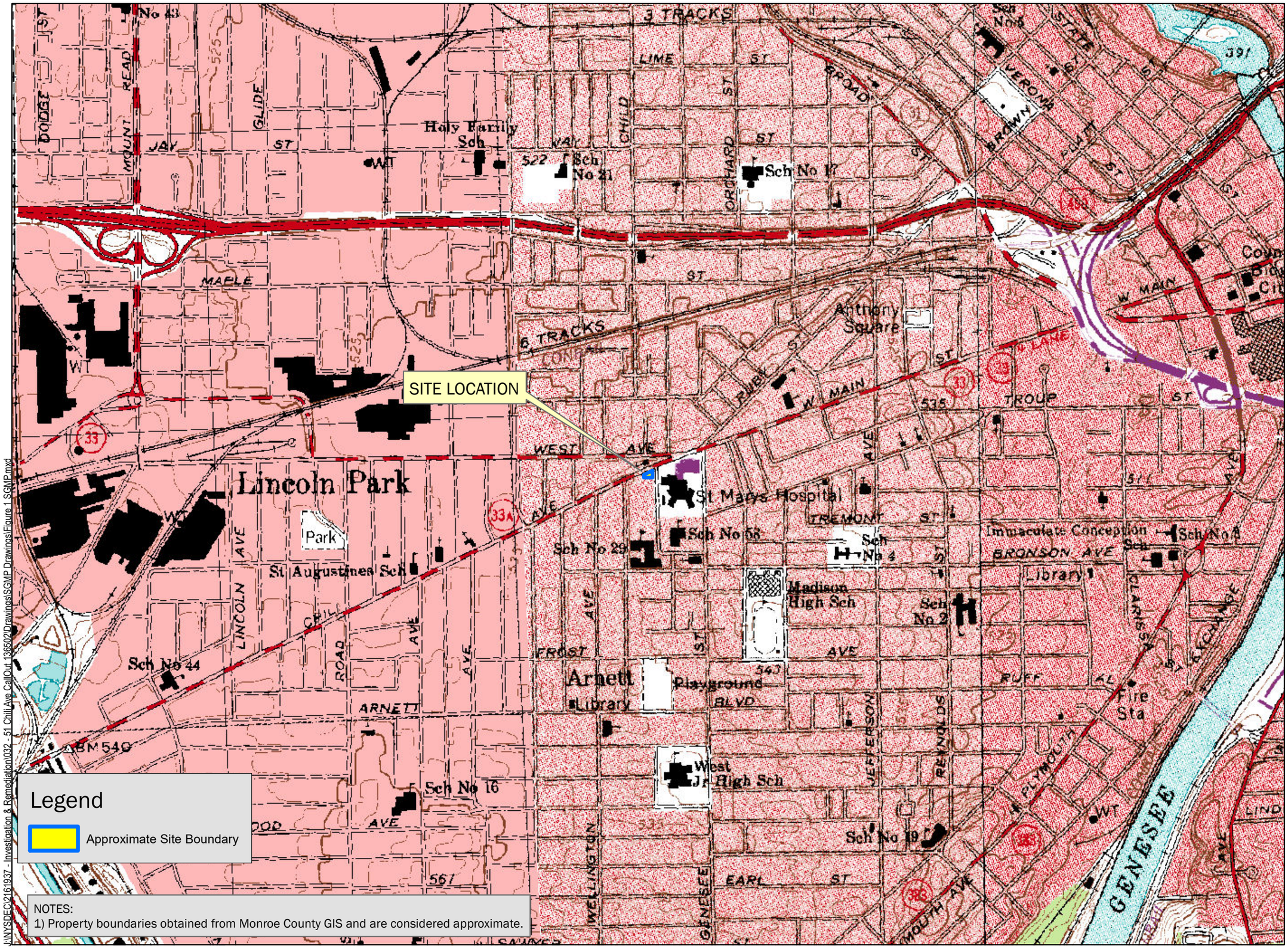
"NS" indicates "Not Specified"
J = indicates an estimated value that is below the method detection limit.
D = indicates dilution of the sample or extract was performed
ug/l denotes micrograms per liter

Table 2
Groundwater Sample Analytical Results
Volatile Organic Compounds in Groundwater
51 Chili Avenue, Rochester, New York

Well ID	Units	NYSDEC TOGS 1.1.1 Groundwater Standards and Guidance Values	MW-5		MW-5		MW-5		MW-5	
Sample Event			Pre-Remediation		Pre-Remediation		Pre-Remediation		Post Remediation	
Sample Date			10/2/2009		3/9/2010		3/9/2019		11/5/2019	
Sample Depth			2.5'-10'		2.5'-10'		2.5'-10'		2.5'-10'	
1,2,4-Trimethylbenzene	ug/l	5	**450**	D	5.0	U	0.82	J	0.75	U
1,3,5-Trimethylbenzene	ug/l	5	**100**		5.0	U	0.77	U	0.77	U
4-Isopropyltoluene	ug/l	5	5.0	U	5.0	U	0.31	U	0.31	U
Benzene	ug/l	1	**280**	D	5.0	U	0.62	J	**0.49**	J
Ethylbenzene	ug/l	5	**480**	D	5.0	U	0.74	U	0.74	U
Isopropylbenzene	ug/l	5	**27**		5.0	U	0.79	U	0.79	U
Methyl tert-butyl ether	ug/l	10	1.5	J	5.0	U	0.16	U	0.16	U
Xylene (Total)	ug/l	5	**910**	D	5.0	U	0.75	J	0.66	U
Naphthalene	ug/l	10	**110**		5.0	U	0.43	U	0.43	U
n-Butylbenzene	ug/l	5	5.0	U	5.0	U	0.61	U	0.64	U
n-Propylbenzene	ug/l	5	**69**		5.0	U	0.71	J	0.69	U
sec-Butylbenzene	ug/l	5	3.6	J	5.0	U	0.75	U	0.75	U
Toluene	ug/l	5	**400**	D	1.4	J	0.51	U	0.51	U
tert-Butylbenzene	ug/l	5	NT		NT		0.81	U	0.81	U
Total VOCs	ug/l	NS	2,831	J	1.4	J	2.90	J	0.49	J

Notes:
Yellow Highlighted Type denotes a reported concentration that exceeds its respective NYSDEC TOGS 1.1.1 Groundwater Standard or Guidance Value.
U denotes that the constituent was Not Detected above the metyhod detection limti shown.
"NS" indicates "Not Specified"
J = indicates an estimated value that is below the method detection limit.
D = indicates dilution of the sample or extract was performed
ug/l denotes micrograms per liter

FIGURES



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LaBella
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Feet

1 inch = 1,000 feet

INTENDED TO PRINT AS: 11" X 17"

CLIENT:

NYSDEC
PIN #08170
CALL OUT #136502

PROJECT:

SOIL AND GROUNDWATER MANAGMENT PLAN
NYSDEC SPILL #0750698
51 CHILI AVENUE
ROCHESTER, NEW YORK

DRAWING NAME:

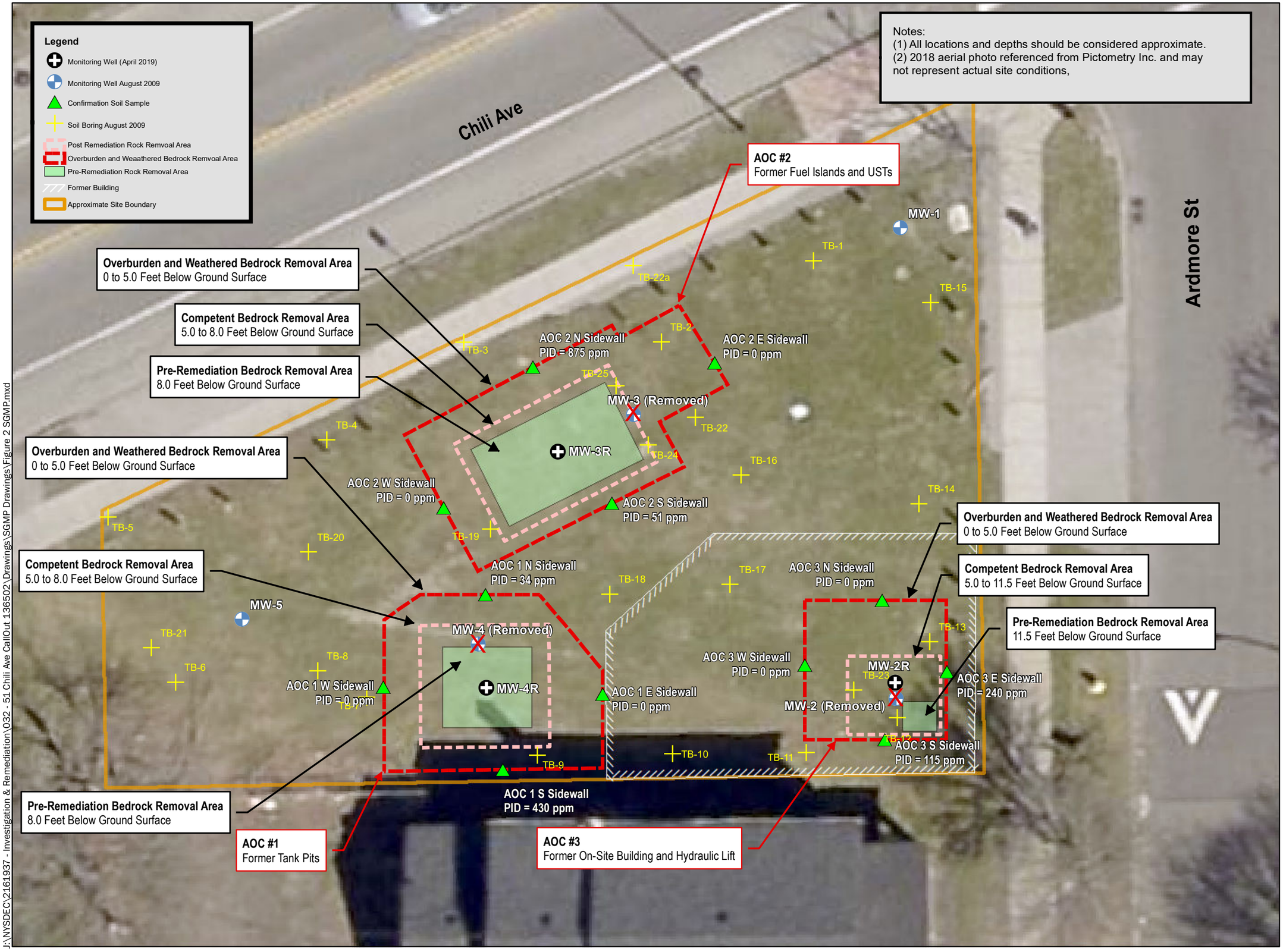
SITE LOCATION MAP

PROJECT #/DRAWING #/ DATE

2161937-032

FIGURE 1

8/20/2019



LaBella
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Feet
1 inch = 10 feet

INTENDED TO PRINT AS: 11" X 17"

CLIENT:

NYSDEC
PIN #08170
CALL OUT #136502

PROJECT:

SOIL AND GROUNDWATER MANAGMENT PLAN
NYSDEC SPILL #0750698
51 CHILI AVENUE
ROCHESTER, NEW YORK

DRAWING NAME:

REMEDIAL EXCAVATION AREAS AND CONFIRMATION SAMPLE LOCATIONS

PROJECT #/DRAWING #/ DATE

2161937-032

FIGURE 2

8/20/2019

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APPENDIX 1

Health and Safety Plan

Health and Safety Plan
NYSDEC Spill #0750698
PIN #08170

Location:

51 Chili Avenue
Rochester, New York

LaBella Project No. 2161937-032

August 19, 2019

LaBella
Powered by partnership.

300 State Street, Suite 201 | Rochester, NY 14614 | p 585-454-6110 | f 585-454-3066

Table of Contents

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SITE HEALTH AND SAFETY PLAN

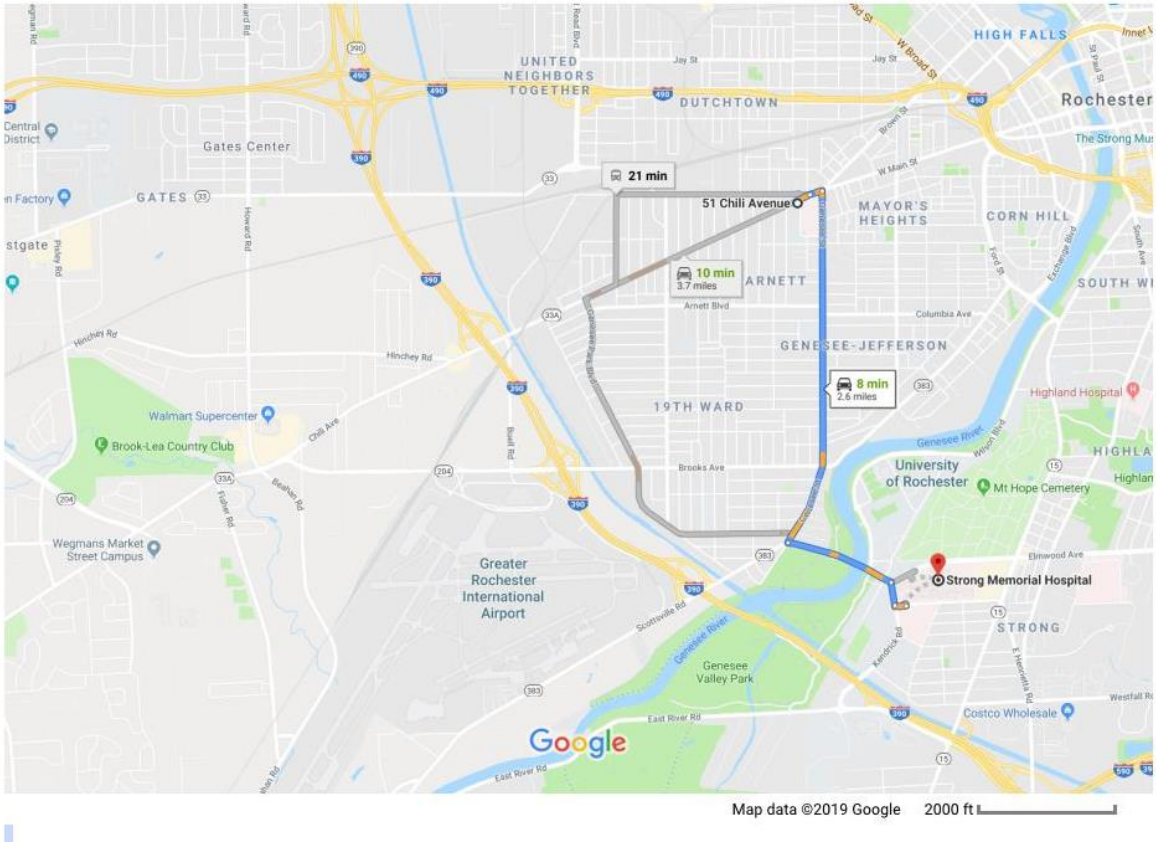
Project Title:	51 Chili Avenue
Project Number:	2161937-032
Project Location (Site):	51 Chili Avenue, Rochester, NY
Environmental Director:	Gregory Senecal, CHMM
Project Manager:	Michael Pelychaty, P.G.
Plan Review Date:	_____
Plan Approval Date:	_____
Plan Approved By:	_____ Mr. Richard Rote, CIH
Site Safety Supervisor:	To Be Determined
Site Contact:	To Be Determined
Safety Director:	Rick Rote, CIH
Proposed Date(s) of Field Activities:	To Be Determined
Site Conditions:	Generally level
Site Environmental Information Provided By:	Remedial Action Report prepared by LaBella Associates, D.P.C., dated July 1, 2019
Air Monitoring Provided By:	LaBella Associates, D.P.C.
Site Control Provided By:	Contractor(s)

EMERGENCY CONTACTS

	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Rochester General Hospital	585-922-4000
Poison Control Center:	Finger Lakes Poison Control	585-273-4621
Police (local, state):	Monroe County Sheriff	911
Fire Department:	Rochester Fire Department	911
Site Contact:	TBD	
Agency Contact:	NYSDEC – Mike Zamiarski	585-226-5438
	Finger Lakes Poison Control	1-800-222-1222
Environmental Director:	Greg Senecal, CHMM	Direct: 585-295-6243
Project Manager:	Michael Pelychaty, PG	Direct: 585-295-6253
Site Safety Supervisor:	To Be Determined	
Safety Director	Rick Rote, CIH	Direct: 704-941-2123

MAP AND DIRECTIONS TO THE MEDICAL FACILITY
- ROCHESTER GENERAL HOSPITAL

Google Maps 51 Chili Ave, Rochester, NY 14611 to Strong Memorial Hospital, Rochester, NY Drive 2.6 miles, 8 min



51 Chili Ave
1. Head northeast on Chili Ave toward Ardmore St
2. Merge onto W Main St
3. Turn right onto Genesee St
Pass by Family Dollar (on the right in 1.1 mi)
4. Use the left 2 lanes to turn left onto Elmwood Ave
5. Turn right onto Kendrick Rd
6. Turn left onto Crittenden Blvd
7. Make a U-turn
Strong Memorial Hospital

1.0 Introduction

The purpose of this Health and Safety Plan (HASP) it to provide guidelines for responding to potential health and safety issues that may be encountered during work associated or the property located 51 Chili Avenue, Rochester, New York. This HASP only reflects the policies of LaBella Associates D.P.C. The requirements of this HASP are applicable to all approved LaBella personnel at the work site. This document's project specifications and the Community Air Monitoring Plan (CAMP) are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP were developed in general accordance with 29 CFR 1910 and 29 CFR 1926 and do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body.

2.0 Responsibilities

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is applicable only to activities of approved LaBella personnel and their authorized visitors. The Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of LaBella employees to follow the requirements of this HASP, and all applicable company safety procedures.

3.0 Activities Covered

The activities covered under this HASP are limited to the following:

- Management of environmental investigation and remediation activities
- Environmental Monitoring
- Collection of samples
- Management of excavated soil and fill.

4.0 Work Area Access and Site Control

The contractor(s) will have primary responsibility for work area access and site control. However, a minimum requirement for work area designation and control will consist of:

- Drilling (Geoprobe/Rotary) – Orange cones to establish at least a 10-foot by 10-foot work area
- Excavations – Orange cones and orange temporary fencing to establish at least 10-feet of distance between test pit and fencing.

5.0 Potential Health and Safety Hazards

This section lists some potential health and safety hazards that project personnel may encounter at the project site and some actions to be implemented by approved personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times, the Site Safety Officer has responsibility for site safety and his or her instructions must be followed.

5.1 Hazards Due to Heavy Machinery

Potential Hazard:
Heavy machinery including trucks, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

Protective Action:
Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A hard hat, safety glasses and steel toe shoes are required.

5.2 Excavation Hazards

Potential Hazard:
Excavations and trenches can collapse, causing injury or death. Edges of excavations can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches. Excavations that require working within the excavation will require air monitoring in the breathing zone (refer to Section 9.0).

Excavations left open create a fall hazard which can cause injury or death.

Protective Action:
Personnel must receive approval from the Project Manager to enter an excavation for any reason. Subsequently, approved personnel are to receive authorization for entry from the Site Safety Officer. Approved personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped. Additional personal protective equipment may be required based on the air monitoring.

Personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable. All excavations will be backfilled by the end of each day. Additionally, no test pit will be left unattended during the day.

Fencing and/or barriers accompanied by "no trespassing" signs should be placed around all excavations when left open for any period of time when work is not being conducted.

5.3 Cuts, Punctures and Other Injuries

Potential Hazard:
In any excavation or construction, work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

Protective Action:
The Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the Project Manager. Serious injuries are to be reported immediately to the Site Safety Officer

5.4 Injury Due to Exposure of Chemical Hazards

Potential Hazards:
Volatile organic vapors from petroleum products, chlorinated solvents or other chemicals may be encountered during excavation activities at the project work site. Inhalation of high concentrations of organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis.

Protective Action:
The presence of organic vapors may be detected by their odor and by monitoring instrumentation. Approved employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring (refer to Section 9.0 and to the Modified CAMP in Appendix 7) of the work area will be performed at least every 60 minutes or more often using a Photoionization Detector (PID). Personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period. In the event that sustained total volatile organic compound (VOC) readings of 25 ppm is encountered personnel should upgrade personal protective equipment to Level C (refer to Section 8.0) and an Exclusion Zone should be established around the work area to limit and monitor access to this area (refer to Section 6.0).

5.5 Injuries Due to Extreme Hot or Cold Weather Conditions

Potential Hazards:
Extreme hot weather conditions can cause heat exhaustion, heat stress and heat stroke or extreme cold weather conditions can cause hypothermia.

Protective Action:
Precaution measures should be taken such as dress appropriately for the weather conditions and drink plenty of fluid. If personnel should suffer from any of the above conditions, proper techniques should be taken to cool down or heat up the body and taken to the nearest hospital if needed.

5.6 Potential Exposure to Asbestos

Potential Hazards:
During ground intrusive activities (e.g., test pitting or drilling) soil containing asbestos may be encountered. Asbestos is friable when dry and can be inhaled when exposed to air.

Protective Action:
The presence of asbestos can be identified through visual observation of a white magnesium silicate material. If encountered, work should be halted and a sample of the suspected asbestos should be collected and placed in a plastic sealable bag. This sample should be sent to the asbestos laboratory at LaBella Associates for analysis.

6.0 Work Zones

In the event that conditions warrant establishing various work zones (i.e., based on hazards - Section 5.4), the following work zones should be established:

Exclusion Zone (EZ):
The EZ will be established in the immediate vicinity and adjacent downwind direction of site activities that elevate breathing zone VOC concentrations to unacceptable levels based on field screening. These site activities include contaminated soil excavation and soil sampling activities. If access to the site is required to accommodate non-project related personnel then an EZ will be established by constructing a barrier around the work area (yellow caution tape and/or construction fencing). The EZ barrier shall encompass the work area and any equipment staging/soil staging areas necessary to perform the associated work. The contractor(s) will be responsible for establishing the EZ and limiting access to approved personnel. Depending on the condition for establishing the EZ, access to the EZ may require adequate PPE (e.g., Level C).

Contaminant Reduction Zone (CRZ):
The CRZ will be the area where personnel entering the EZ will don proper PPE prior to entering the EZ and the area where PPE may be removed. The CRZ will also be the area where decontamination of equipment and personnel will be conducted as necessary.

7.0 Decontamination Procedures

Upon leaving the work area, approved personnel shall decontaminate footwear as needed. Under normal work conditions, detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. Personnel assigned to this project should be prepared with a change of clothing whenever on site.

Personnel will use the contractor's disposal container for disposal of PPE.

8.0 Personal Protective Equipment

Generally, site conditions at this work site require level of protection of Level D or modified Level D. However, air monitoring will be conducted to determine if up-grading to Level C PPE is required (refer to Section 9.0). Descriptions of the typical safety equipment associated with Level D and Level C are provided below:

Level D:
Hard hat, safety glasses, rubber nitrile sampling gloves, steel toe construction grade boots, etc.

Level C:
Level D PPE and full or ½-face respirator and tyvek suit (if necessary). [*Note: Organic vapor cartridges are to be changed after each 8-hours of use or more frequently.*]

9.0 Air Monitoring

According to 29 CFR 1910.120(h), air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working onsite. Air monitoring identified in this HASP is only intended to monitor air for workers involved with the RI. Please refer to the Site Specific CAMP for further details on air monitoring at the Site required for protection of the Site occupants and neighboring properties.

The Air Monitor will utilize a photoionization Detector (PID) to screen the ambient air in the work areas for total Volatile Organic Compounds (VOCs), a DustTrak tm Model 8520 aerosol monitor or equivalent for measuring particulates. [*Note: Radiation monitoring requirements are identified in 5.7 above.*] Air monitoring of the work areas will be performed at least every 15 minutes or more often using a PID, and the DustTrak meter.

If sustained PID readings of greater than 10 ppm are recorded in the breathing zone, then either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8-hours of use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 10 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

If dust concentrations exceed the upwind concentration by 150 µg/m^3 (0.15 mg/m^3) consistently for a 10 minute period within the work area or at the downwind location, then LaBella personnel may not re-enter the work area until dust concentrations in the work area decrease below 150 µg/m^3 (0.15 mg/m^3), which may be accomplished by the construction manager implementing dust control or suppression measures.

10.0 Emergency Action Plan

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible and wait at the assigned 'safe area'. Follow the instructions of the Site Safety Officer.

Employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

11.0 Medical Surveillance

Medical surveillance will be provided to all employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

12.0 Employee Training

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

Individuals involved with the remedial investigation must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

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Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	STEL	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization Potential	^{232}Thorium Action Level
Acetone	750	500	NA	2.15	13.2	20,000	Sweet	4.58	9.69	NA
Anthracene	0.2	0.2	NA	NA	NA	NA	Faint aromatic	NA	NA	NA
Benzene	1	0.5	5	1.3	7.9	3000	Pleasant	8.65	9.24	NA
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.1	NA	NA	NA	700	NA	NA	NA	NA
Benzo (a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (k) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	10.88	NA
Carbon Disulfide	20	1	NA	1.3	50	500	Odorless or strong garlic type	0.096	10.07	NA
Chlorobenzene	75	10	NA	1.3	9.6	2,400	Faint almond	0.741	9.07	NA
Chloroform	50	2	NA	NA	NA	1,000	ethereal odor	11.7	11.42	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene	200	200	NA	9.7	12.8	400	Acrid	NA	9.65	NA
1,2-Dichlorobenzene	50	25	NA	2.2	9.2		Pleasant		9.07	NA
Ethylbenzene	100	100	NA	1	6.7	2,000	Ether	2.3	8.76	NA
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	500	50	NA	12	23	5,000	Chloroform-like	10.2	11.35	NA
Naphthalene	10, Skin	10	NA	0.9	5.9	250	Moth Balls	0.3	8.12	NA
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane	NA	NA	NA	NA	NA	NA	Sweet	NA	NA	NA
Toluene	100	100	NA	0.9	9.5	2,000	Sweet	2.1	8.82	NA
Trichloroethylene	100	50	NA	8	12.5	1,000	Chloroform	1.36	9.45	NA
1,2,4-Trimethylbenzene	NA	25	NA	0.9	6.4	NA	Distinct	2.4	NA	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	NA	Distinct	2.4	NA	NA
Vinyl Chloride	1	1	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (o,m,p)	100	100	NA	1	7	1,000	Sweet	1.1	8.56	NA
Metals										
Arsenic	0.01	0.2	NA	NA	NA	100, Ca	Almond	NA	NA	NA
Cadmium	0.2	0.5	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	1	0.5	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.05	0.15	NA	NA	NA	700	NA	NA	NA	NA
Mercury	0.05	0.05	NA	NA	NA	28	Odorless	NA	NA	NA
Selenium	0.2	0.02	NA	NA	NA	Unknown	NA	NA	NA	NA
Other										
Asbestos	0.1 (f/cc)	NA	1.0 (f/cc)	NA	NA	NA	NA	NA	NA	NA

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003.
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

Notes:
1. All values are given in parts per million (PPM) unless otherwise indicated.
2. Ca = Possible Human Carcinogen, no IDLH information.