SOIL AND GROUNDWATER MANAGEMENT PLAN
330 THURSTON ROAD
ROCHESTER, NEW YORK

NYSDEC SPILL #9710628

Prepared for: City of Rochester
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, New York 14614-1278

Prepared by: Day Environmental, Inc.
1563 Lyell Avenue
Rochester, New York 14606

Project #: 5298S-16

Date: December 2016

TABLE OF CONTENTS

1.0 INTRODUCTION

On behalf of the City of Rochester (City), Day Environmental Inc. (DAY) prepared this Soil and Groundwater Management Plan (SGMP) for property addressed as 330 Thurston Road, Rochester, New York (Site). The SGMP should be implemented when work has the potential to disturb soil and/or groundwater that is contaminated with residual petroleum constituents at the Site.

1.1 Site Background

The Site consists of an approximate 0.17-acre parcel of land that is currently improved as a pocket park, and is anticipated to continue to be used for this purpose. The location of the Site is shown on the Locus Map included as Figure 1.

In December 1997 during beautification activities, a City crew noted petroleum/gas odors when soil was disturbed at the Site. The New York State Department of Environmental Conservation (NYSDEC) was notified, and Spill #9710628 was opened. The Site was acquired by the City through foreclosure in 1998, and is currently owned by the City.

The Site was reportedly used as a retail gasoline station from 1930 to 1974. In 1974, the site was converted to a donut shop that operated until 1994 at which time it was abandoned. The site was believed to contain at least two gasoline underground storage tanks (USTs): one with a 2,000 gallon capacity, and one with a 3,000 gallon capacity. In addition, previous investigations and interviews with area residents indicated the possibility of a UST on the southern side of the Site that was suspected to contain gasoline or waste oil.

A visual survey of the area immediately surrounding the site identified the following uses:

- North: Residential
- East: Commercial and Residential
- South: Commercial and Residential
- West: Residential

Drinking water for the Site and surrounding area is supplied by the City of Rochester public water system. Subsurface utilities include natural gas, water, sewer and electric. Additional electric and telephone service is overhead.

1.2 Statement of Purpose

The purpose of this SGMP is to present procedures to evaluate and manage soil and groundwater that is contaminated with residual petroleum if such impacts are encountered during future subsurface activities. This SGMP was prepared in general accordance with the NYSDEC Region 8 Spills Unit document titled "*Soil and Groundwater Management Plan Criteria*" updated August 2016. Parties that engage in subsurface activities at the Site should utilize this SGMP, as necessary.

2.0 PREVIOUS ENVIRONMENTAL WORK AND SUBSURFACE CONDITIONS

As documented in a Subsurface Investigation Report dated March 2000, eight test pits (designated as TP1 through TP8) were excavated in December 1999 to assist in locating any USTs and quantifying subsurface petroleum contamination. The approximate locations of these test pits are shown on Figure 2. The results of the investigation did not identify any USTs, but did identify evidence of subsurface petroleum contamination, and also some piping, at five of the eight test pits (i.e., TP1, TP3, TP5, TP6 and TP7).

As documented in a Tank Closure Assessment/Source Removal and Geoprobe Subsurface Investigation Report dated March 2000, 11 test pits (not specifically designated) were excavated in February 2000. During excavation of the largest centrally located test pit, one 1,000-gallon capacity UST was encountered, which was also removed in February 2000. Contaminated soils that exhibited photoionization detector (PID) readings above 10 parts per million (ppm) were removed to depths ranging between 4 and 6 feet across the Site. In addition, contaminated soil in the area of the 1,000-gallon UST was removed to a depth of approximately 18 feet below the ground surface (bgs), which was the reach of the excavator. Contaminated soil removed from the Site was placed into roll-offs, transported off-site, and disposed at the Mill Seat Landfill in February 2000. A total of approximately 370 tons of contaminated soil was removed from the Site. In March 2000, 17 direct-push Geoprobe test borings (designated as GP1 through GP17) were advanced to depths ranging between approximately 10 and 15 feet bgs. Headspace analysis results indicated that contaminated soils (i.e., soils with PID readings greater than 10 ppm) were generally not present above 4 to 6 feet bgs, and soil samples collected from 2 and 4 feet bgs did not contain petroleum contamination above NYSDEC Spill Technology and Remediation Series (STARS) guidelines. Petroleum contaminated soil encountered at many of the test boring locations was generally at highest concentrations in samples collected between 8 and 12 feet bgs, many of which exceeded NYSDEC STARS guidelines. Evidence of petroleum contamination in soil samples from depths greater than 12 feet were shown to significantly decrease in relation to the levels encountered between 8 and 12 feet bgs. The approximate locations of the 11 test pits and 17 test borings advanced in 2000, and the approximate location of the 1,000-gallon UST that was removed in 2000, are shown on Figure 2.

In December 2000, five overburden groundwater monitoring wells were installed at the Site (designated as MW001 though MW005). The approximate locations of these five monitoring wells are shown on Figure 2. Between December 2000 and August 2016, 29 rounds of groundwater sampling were conducted. Select groundwater monitoring data are summarized on the following tables:

- Table 1 shows the groundwater elevation for the last sampling event (August 9, 2016). As shown, well MW004 could not be located. The depth to the top of groundwater at the other four wells ranged between 11.15 feet and 12.57 feet below top of casing, and the groundwater elevation data indicates groundwater was generally flat with apparent flow direction towards the west/northwest across the Site. Table 1 also documents that light non-aqueous phase liquid (LNAPL, or free product) was not detected in wells MW001, MW002, MW003 or MW005 during the August 9, 2016 sampling event.

- Table 2 summarizes the volatile organic compound (VOC) test results for the groundwater samples collected on August 9, 2016 from monitoring wells MW001, MW002, MW003 and MW005. [Note: Well MW004 could not be located in the field during this sampling event.] As shown, petroleum-related VOCs were detected in groundwater samples from monitoring wells MW-001, MW002 and MW003, and some of the concentrations of specific VOCs detected in the groundwater samples from these three wells exceeded NYSDEC Technical and Operational Guidance Series (TOGS 1.1.1) groundwater standards. VOCs were not detected in the groundwater sample from well MW005.

- Table 3 provides select data for the 29 groundwater sampling events conducted between December 29, 2000 and August 9, 2016. The data presented included methyl tert-butyl ether (MTBE) results, total Benzene, Toluene, Ethylbenzene and Xylene (BTEX) results, Benzene results, total Volatile Aromatics results, measured depths to the top of the groundwater table, and notes concerning evidence of free product. In general, MTBE was not detected in groundwater samples at the Site; concentrations of Benzene, total BTEX and total Volatile Aromatics detected in groundwater samples from the five wells have decreased over time; free product was only detected at well MW003 in the past, and measured water table depths during the cumulative monitoring events ranged between 5.31 feet and 13.32 feet.

The geology of the site consists of unconsolidated glacial soils overlying carbonate bedrock. Geologic maps of the Rochester region indicate that the unconsolidated glacial soils consist of lacustrine silt and clay deposited in the late Pleistocene. The bedrock under the site is Eramosa (a/k/a Lockport) Dolomite consisting of dolomitic limestone and shale. The depth to bedrock is estimated at 15 feet bgs. Groundwater is reported to occur in the upper portion of the bedrock and the depth to the water table is estimated to be 20 feet bgs.

3.0 SITE CONTACTS

A copy of this SGMP has been provided to the NYSDEC, the Monroe County Department of Public Health (MCDPH), and the City. In the event that subsurface material (e.g., soil, groundwater, etc.) containing petroleum contamination is encountered during future Site activities, the NYSDEC Spill Unit must be notified within two hours. The contact information for NYSDEC is listed below.

NYSDEC Contact as of November 2016:

Mr. Michael F. Zamiarski, P.E.
Environmental Engineer II, Spill Prevention & Response
New York State Department of Environmental Conservation
6274 E. Avon-Lima Rd., Avon, NY 14414
mike.zamiarski@dec.ny.gov
(585) 226-5438
Spills Hotline: (800) 457-7362

MCDPH Contact as of November 2016:

Mr. John Frazer, P.E.
Manager of Environmental Health
Monroe County Department of Public Health
111 Westfall Road, Room 976, Rochester, NY 14620
jfrazer@monroecounty.gov
(585) 753-5564

In the event that environmental media (e.g., soil, groundwater, etc.) containing petroleum contamination is encountered during future Site activities, the impacts will need to be addressed at that time in accordance with this SGMP. The current owner is ultimately responsible for implementing and following the SGMP. Following notification to the NYSDEC, the following party should also be contacted.

City of Rochester (Current Owner), contact as of November 2016:

Ms. Jane MH Forbes
Environmental Specialist
City of Rochester – Division of Environmental Quality
30 Church Street Room 300B
Rochester, NY 14614
jane.forbes@cityofrochester.gov
585-428-7892 (office)

4.0 SOIL AND GROUNDWATER MANAGEMENT PLAN

This SGMP provides procedures to identify residual subsurface petroleum contamination associated with NYSDEC Spill #9710628 that could be encountered during future subsurface activities conducted at the Site. In addition, this SGMP provides options for the management, disposal and/or re-use of subsurface material impacted with petroleum. The procedures presented herein are intended to reduce potential exposure to workers conducting subsurface activities at the Site should petroleum-impacted subsurface materials be encountered that require management.

4.1 Potentially Contaminated Material

This section describes the petroleum-impacted media and provides information on the identification, handling, analytical laboratory testing, disposal, or re-use of these materials.

4.1.1 In-Field Identification

During subsurface activities, petroleum impacted soil or groundwater may be encountered. Petroleum-impacted soil may be stained gray or black, contain a rainbow-type sheen, and emit petroleum-type odor. Petroleum-impacted groundwater may emit a petroleum-type odor, and could contain a floating sheen. Free petroleum product has not been detected in the soil or on the groundwater surface. However, free petroleum product, if encountered, would exhibit an oily type texture, a strong petroleum-type odor, likely an amber to dark brown/black color, and would be floating on the groundwater surface. Elevated PID readings exceeding background measurements on ambient air above soil or groundwater is also indicative of the presence of VOCs associated with petroleum contamination.

4.1.2 Handling

Petroleum-impacted soil and groundwater that are encountered must be managed in accordance with applicable federal, state, and local regulations. During intrusive work, soil and liquids (e.g., water) being disturbed or removed must be assessed for field evidence of petroleum contamination (e.g., petroleum-type odors, staining, free product, sheen). In addition, the ambient air above removed or excavated media must be screened for total VOCs using a PID. The following is general guidance for the handling of materials that are potentially contaminated with residual petroleum that may be encountered during subsurface work at the Site:

<u>Petroleum-Contaminated Soil</u>

Soil should be considered to be petroleum-contaminated if: 1) PID readings on ambient air above a sample of the soil exceed 10 parts per million (ppm); or 2) the soil exhibits a petroleum nuisance odor, sheen or free product. Petroleum-contaminated soil that is excavated or disturbed should be segregated from non-impacted media, and handled in one or more of the following methods:

- Place on, and cover with, two layers of plastic sheeting that total at least 12 millimeters in thickness. Secure plastic sheeting with sand bags or other suitable inert weights, and replace as needed if damaged by wind, site activities or other factors.

- Place in New York State Department of Transportation (NYSDOT)-approved 55-gallon drums with secure lids. Label drums with date, contents, and generator.
- Place in one or more lined roll-off with secure cover.

Petroleum-Contaminated Liquids

Petroleum-impacted groundwater, petroleum-impacted standing water, and free petroleum product (if encountered) removed from the subsurface (e.g., excavations, etc.), must be containerized (i.e., placed in sealed NYSDOT-approved 55-gallon drums, holding tanks or frac tanks) prior to characterization and disposal. Any subsurface liquid or water (including groundwater, stormwater, and snow melt in excavations, trenches, boreholes, etc.) that is encountered at the Site must be considered petroleum-contaminated unless it can be proved otherwise via appropriate analytical laboratory testing and/or other method that is acceptable to the NYSDEC. A suitable pump will need to be utilized to pump the free petroleum product and/or petroleum-contaminated water from the work areas (e.g., excavation) until such time that the work is completed. To the extent practicable, free petroleum product (if encountered) should be segregated/removed from petroleum-contaminated water, and stored/staged separately. In addition, petroleum-contaminated groundwater may require pre-treatment prior to waste characterization sampling and testing.

4.1.3 Characterization

Petroleum-contaminated soil and groundwater must be characterized in accordance with applicable federal, state, and local regulations and disposal facility requirements. The following is general guidance for characterizing these media.

Petroleum-Contaminated Soil

Representative samples of the stockpiled soil will be collected, and the samples will be submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified analytical laboratory for testing of appropriate waste characterization parameters. The proposed waste disposal company will identify the number of samples and the test parameters required. However, based on the results of previous analytical laboratory testing conducted for this Site and disposal facility requirements in the Greater Rochester area, it is anticipated that the waste characterization sampling and analysis program required by the disposal facility may include, but not be limited to, one or more of the following:

- Collect one sample for the first 500 tons of soil, and one sample for each 1,000 tons thereafter.
- Test each sample at a NYSDOH ELAP-certified analytical laboratory for:
  - United States Environmental Protection Agency (USEPA) target compound list (TCL) VOCs using USEPA Method 8260;
  - USEPA TCL semi-volatile organic compounds (SVOCs) using USEPA Method 8270;
  - Total lead using USEPA Method 6010; and
  - Flashpoint using USEPA Method 1010 or 1030.

Petroleum-Contaminated Liquids

Representative samples of each type of liquid (e.g., water, free product) will be collected, and the samples will be submitted to a NYSDOH ELAP-certified analytical laboratory for testing of appropriate waste characterization parameters. The proposed waste disposal company or wastewater treatment facility will identify the number of samples and the test parameters required. However, based on the results of previous analytical laboratory testing conducted for this Site, it is anticipated that the waste characterization sampling and analysis program that is required for petroleum-contaminated water and free product (if encountered) may include, but not be limited to, one or more of the following:

- Collect one sample for each type of liquid media (e.g., water, free product if present).
- Test each sample at a NYSDOH ELAP-certified analytical laboratory for:
  - Purgeable Organic VOCs using USEPA Method 624;
  - SVOCs using USEPA Method 625;
  - Total lead using USEPA Method 200.7; and
  - Flashpoint using USEPA Method 1010 or 1030.

4.1.4 Disposal and Re-Use Options

This section addresses disposal and re-use options for petroleum-contaminated soil and liquids.

Petroleum-Contaminated Soil

If the petroleum-contaminated soil is to be disposed, a waste profile will be prepared and submitted to the waste disposal company to obtain approval for disposal at an appropriate waste disposal facility (e.g., regulated landfill). Once approved, load the petroleum-contaminated soil and any plastic sheeting or drums onto NYSDEC Part 364 permitted trucks or trailers, and transport the material to the approved waste disposal facility for disposal.

As an option, waste characterization samples can be collected and analyzed, and waste profiling can be approved for a designated waste disposal facility (e.g., regulated landfill) prior to excavation so that the material can be direct loaded onto NYSDEC Part 364 permitted trucks and transported to the designated waste disposal facility for disposal.

The NYSDEC must be notified if displaced soil is being considered for on-site or off-site re-use. In this case, the NYSDEC may require additional sampling and analytical laboratory testing of the petroleum-contaminated soil, and the re-use options will depend on the test results. If soil is to be re-used, its geotechnical properties should also be considered. Potential outcomes include, but may not be limited to, the following:

- With approval from the NYSDEC, displaced soil that does not exceed 6 New York Codes, Rules and Regulations (NYCRR) Part 375 Unrestricted Use SCOs, or NYSDEC CP-51 SCLs may be re-used on-site, or re-used off-site.

- With approval from the NYSDEC, soil that exceeds 6 NYCRR Part 375 Unrestricted Use SCOs, or NYSDEC CP-51 SCLs may be allowed to be re-used on-site at depths greater than four feet bgs.

Petroleum-Contaminated Liquids

Options for addressing petroleum-contaminated liquids (e.g., groundwater, stormwater, snowmelt) may include:

- Discharge to a Publicly Owned Treatment Works (POTW) sanitary or combined sewer system under a Monroe County, NY sewer use permit in accordance with applicable regulations. If the water contains free product, a petroleum sheen or exceeds Monroe County sewer use limits or other criteria, it will require pre-treatment and re-testing prior to discharge under a sewer use permit.
- Off-site transport, and treatment or disposal, in accordance with applicable regulations.

Although not anticipated, options for addressing free product may include off-site transport, and recycling or disposal, in accordance with applicable regulations.

4.2 Health and Safety

The Site owner (currently the City) is responsible for making Site workers involved with intrusive activities (e.g., excavation, dewatering, etc.) aware of the potential harmful exposures that may be present in subsurface media at the Site. This SGMP should be provided to Site workers for their review. The Site owner will discuss with the Site workers the proper identification, handling, and disposal methods described herein, and will caution the Site workers to avoid or minimize disturbance of impacted material in order to reduce or eliminate exposure to contaminants. Areas that have been disturbed (e.g., excavated, etc.) that contain petroleum-contaminated material should be restored (e.g., backfilled/covered with clean soil/fill cover, paved, etc.).

The entity conducting intrusive activities (e.g., excavation, dewatering, etc.) that have the potential to disturb petroleum-contaminated media must conduct its work in accordance with a NYSDEC-accepted Health and Safety Plan (HASP). A NYSDEC-accepted HASP that contains on-site air monitoring requirements and a Community Air Monitoring Plan (CAMP) is included as Appendix A. The entity can implement this HASP during its intrusive activities, or can prepare and implement its own HASP, which must first be accepted by the NYSDEC and the City.

5.0 ENGINEERING CONTROLS

As documented in the March 2000 Tank Closure Assessment/Source Removal and Geoprobe Subsurface Investigation Report, at least the top four feet of soil across the Site was deemed clean (i.e., did not contain petroleum contamination at concentrations requiring remediation). Since the Site is currently used as a pocket park with landscaping and plantings, any future intrusive work will be conducted in a manner to ensure that the top four feet of soil across the Site remains clean.

Prior to the construction of any enclosed structures (e.g., buildings) on the Site, the potential for soil vapor intrusion (SVI) must be evaluated, and any potential SVI impacts that are identified must be mitigated. Mitigation measures may include, but are not limited to, the use of engineering controls such as a vapor barrier and sub-slab depressurization system. Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the most recent NYSDOH "Guidance for Evaluating Vapor Intrusion in the State of New York" and construction details of any planned enclosed structures. The City and the NYSDEC must be notified and consulted to approve any SVI evaluation and mitigation measures associated with any planned enclosed structures.

6.0 INSTITUTIONAL CONTROLS

As an institutional control, the Site is flagged in the City Building Information System (BIS), which requires the City's Division of Environmental Quality (DEQ) to be consulted prior to issuing permits for the Site. This institutional control ensures that the environmental conditions at the Site are evaluated prior to new construction. If a permit is approved that has the potential to result in encountering impacted material, City DEQ will provide a copy of this SGMP to the involved parties, notify the involved parties of the environmental conditions at the Site, and require the work to be completed in accordance with the SGMP.

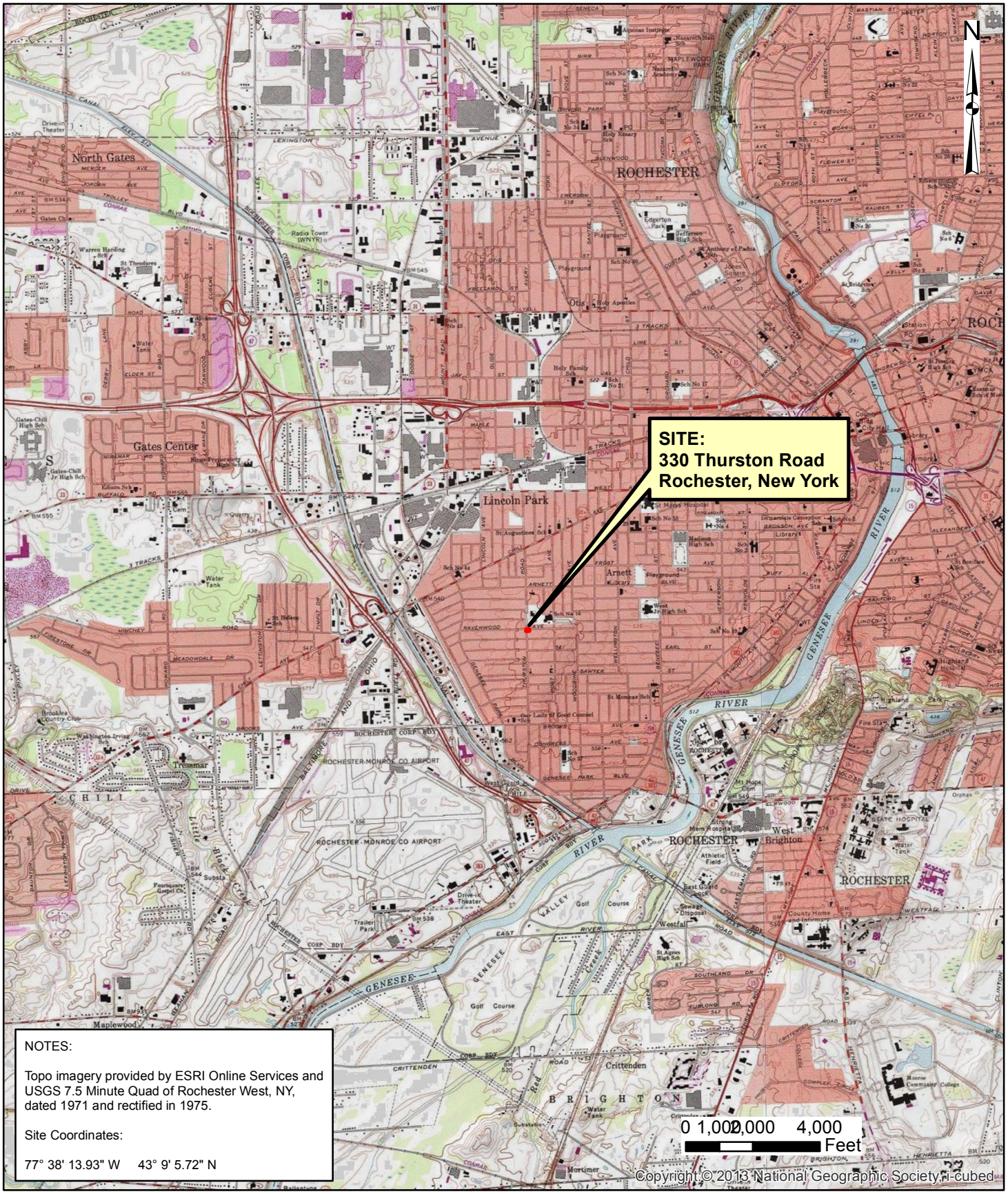
Chapter 59 (Health and Sanitation), Article III (Nuisances and Sanitation) § 59-27 (Water Supply) of the current Charter and Code of the City of Rochester, New York states:

A. No person shall use for drinking purposes, or in the preparation of food intended for human consumption, any water except the potable water supply authorized for public use by the City of Rochester; and

B. Other water supplies, wells or springs used for cooling and washing purposes only, where food is prepared or sold for human consumption, shall be tested and approved by the Monroe County Health Director. All auxiliary water supplies used for commercial or industrial use shall have all hydrants and faucets conspicuously posted indicating that such water is not for drinking use, and such water supplies shall not be cross-connected or interconnected with the public water supply."

This City Code has been interpreted to represent an institutional control that prohibits groundwater within the City limits, including the Site, from being used as a source of potable water.

FIGURES



NOTES:

Topo imagery provided by ESRI Online Services and USGS 7.5 Minute Quad of Rochester West, NY, dated 1971 and rectified in 1975.

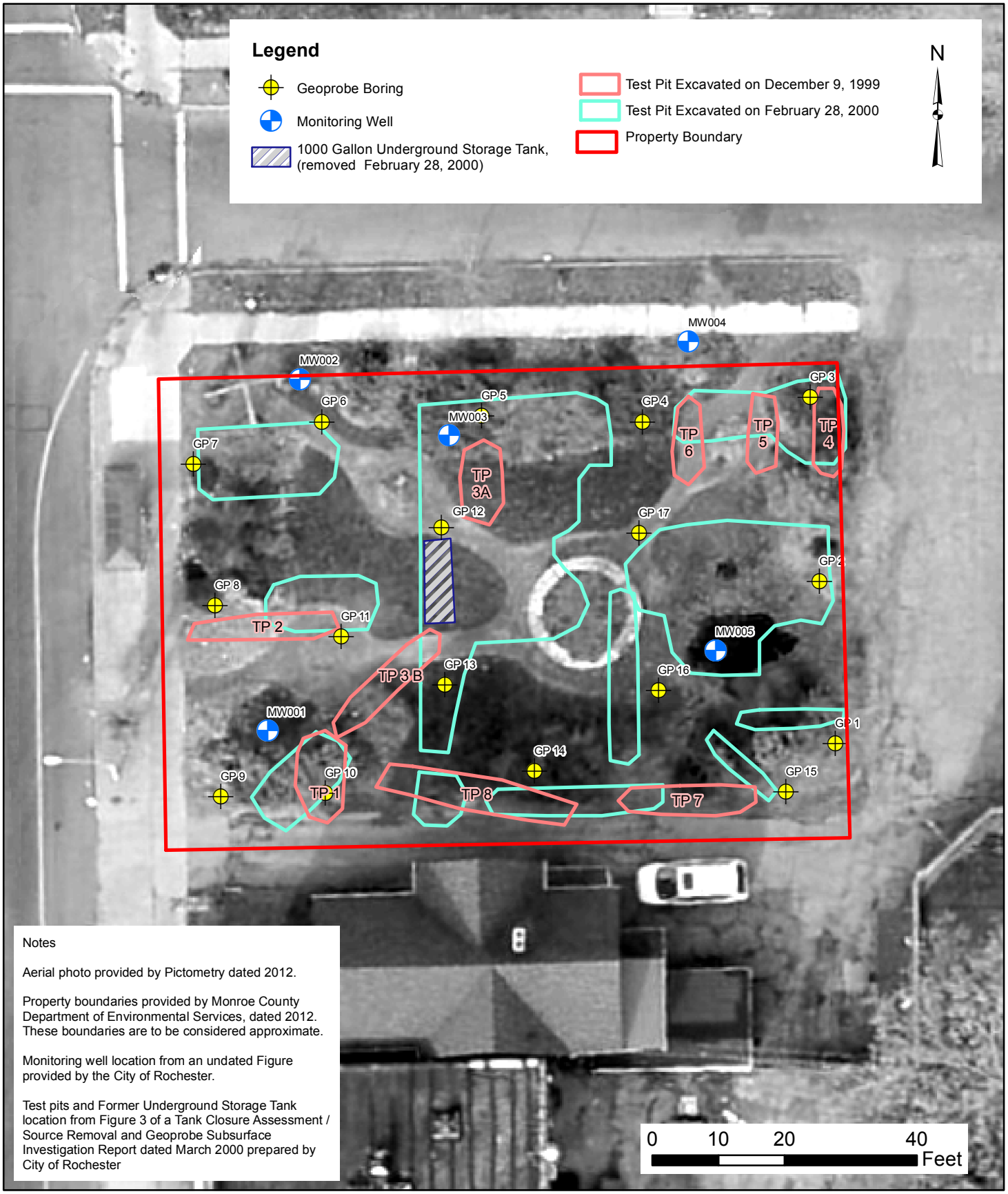
Site Coordinates:

77° 38' 13.93" W 43° 9' 5.72" N

Document Path: E:\GIS Mapping\Rocity\5298S-16\5298S-16Rocity - Locus.mxd

Last Date Saved: 22 Nov 2016

Date: 09-02-2016 Drawn By: CCD Scale: AS NOTED	**DAY ENVIRONMENTAL, INC.** Environmental Consultants Rochester, New York 14606 New York, New York 10170	Project Title: 330 THURSTON ROAD ROCHESTER, NEW YORK SOIL AND GROUNDWATER MANAGEMENT PLAN Drawing Title: Project Locus Map	Project No.: 5298S-16 FIGURE 1



Notes

Aerial photo provided by Pictometry dated 2012.

Property boundaries provided by Monroe County Department of Environmental Services, dated 2012. These boundaries are to be considered approximate.

Monitoring well location from an undated Figure provided by the City of Rochester.

Test pits and Former Underground Storage Tank location from Figure 3 of a Tank Closure Assessment / Source Removal and Geoprobe Subsurface Investigation Report dated March 2000 prepared by City of Rochester

Document Path: E:\GIS Mapping\Rocity\5298S-16\5298S-16Rocity - Site Plan with test pits.mxd

Last Date Saved: 28 Nov 2016

Date: 11-21-2016 Drawn By: CCD Scale: AS NOTED	**DAY ENVIRONMENTAL, INC.** **Environmental Consultants** **Rochester, New York 14606** **New York, New York 10170**	Project Title: 330 THURSTON ROAD ROCHESTER, NEW YORK SOIL AND GROUNDWATER MANAGEMENT PLAN Drawing Title: Site Plan with Previous Test Locations	Project No. 5298S-16 FIGURE 2

TABLES

Table 1

330 Thurston Road, Rochester, New York
Groundwater Elevation Data
August 9, 2016

Monitoring Well Designation	Date Sampled	Total Depth of Well (ft.)	Monitoring Well Diameter (in.)	Casing Reference Elevation (ft.)	Depth to Product (ft.)	Depth to Water (ft.)	Product Thickness (ft.)	Adjusted Groundwater Depth (ft.)	Calculated Groundwater Elevation (ft.)
MW001	8/9/2016	23.0	2.0	96.76	0.00	11.60	0.00	11.60	85.16
MW002	8/9/2016	24.0	2.0	97.19	0.00	12.57	0.00	12.57	84.62
MW003	8/9/2016	25.0	2.0	97.45	0.00	11.92	0.00	11.92	85.53
MW004	8/9/2016	25.0	2.0	96.27	Not located	Not located	Not located	Not located	Not located
MW005	8/9/2016	26.0	2.0	96.76	0.00	11.15	0.00	11.15	85.61

Table 2

330 Thurston Road, Rochester, New York
Groundwater Analysis Results
Summary of Detected Compounds
August 9, 2016

Analysis Method	Constituent	Well ID					TOGS 1.1.1 Guidance Value (1)
		MW001	MW002	MW003	MW004	MW005	
8260 B	Benzene	--	**11.3**	**16.5**	NS	--	1
	n-Butylbenzene	--	--	--	NS	--	5
	sec-butylbenzene	--	--	--	NS	--	5
	tert-Butylbenzene	--	--	--	NS	--	5
	Ethylbenzene	**168.0**	**30.8**	**55.8**	NS	--	5
	n-Propylbenzene	**147.0**	**57.8**	**33.3**	NS	--	5
	Isopropylbenzene	**59.0**	**33.5**	**19.5**	NS	--	5
	p-Isopropyltoluene	--	--	**15.1**	NS	--	5
	Naphthalene	**128.0**	**137.0**	**49.6**	NS	--	10
	Toluene	--	--	**11.5**	NS	--	5
	1,2,4-Trimethylbenzene	**1,030.0**	**64.2**	**238.0**	NS	--	5
	1,3,5-Trimethylbenzene	**235.0**	**26.5**	**88.8**	NS	--	5
	m,p-Xylene	**853.0**	**146.0**	**232.0**	NS	--	5
	o-Xylene	**21.4**	--	--	NS	--	5
	Total VOCs	2,641.4	507.1	760.1	NS	0.00	NA
	Total BTEX	1,042.4	188.1	315.8	NS	0.00	NA

Results are reported in micrograms per liter (ug/L) or parts per billion (ppb)

(1) - New York State Department of Environmental Conservation (NYSDEC) June 1998 Division of Water Technical and Operational and Guidance Series 1.1.1 (TOGS 1.1.1) Ambient Groundwater Standards and Guidance Values as amended by April 2000 Supplemental Table.

Bold text denotes detected analyte exceeds respective NYSDEC TOGS 1.1.1 Groundwater Standard or Guidance Value

-- denotes analyte was not detected above the reported laboratory detection limit

NA = Not Applicable

NS = Not Sampled

Table 3
330 Thurston Road, Rochester, New York
Historical VOC Concentrations

Constituent	MW001	*Depth to water MW001*	MW002	*Depth to water MW002*	MW003	*Depth to water MW003*	MW004	*Depth to water MW004*	MW005	*Depth to water MW005*	T.O.G.s 1.1.1 Guidance Value (1)
				Groundwater Target Compounds Sample Results							
Methyl tert-Butyl Ether (MTBE)											
12/29/00	ND(20.0)	*10.05*	ND(20.0)	*10.62*	ND(20.0)	*10.53*	ND(20.0)	*9.47*	ND(20.0)	*10.22*	10.0
4/3/01	ND(20.0)	*6.85*	ND(20.0)	*7.10*	ND(20.0)	*7.05*	ND(20.0)	*5.96*	ND(20.0)	*6.31*	10.0
6/19/01	N/A	*10.02*	N/A	*11.41*	N/A	*10.32*	N/A	*9.45*	N/A	*9.68*	10.0
9/17/01	N/A	*11.67*	N/A	*12.52*	N/A	*12.30*	N/A	*11.47*	N/A	*12.99*	10.0
12/19/01	ND(20.0)	*9.91*	ND(20.0)	*10.31*	ND(20.0)	*9.27*	ND(2.0)	*8.95*	ND(2.0)	*9.28*	10.0
4/16/02	ND(20.0)	*7.63*	ND(20.0)	*8.03*	ND(10.0)	*7.46*	ND(2.0)	*6.64*	ND(2.0)	*7.33*	10.0
7/30/02	ND(20.0)	*10.55*	ND(20.0)	*11.00*	ND(20.0)	*10.35*	ND(2.0)	*9.70*	ND(2.0)	*9.95*	10.0
11/20/02	ND(20.0)	*10.95*	ND(20.0)	*11.44*	free product	*10.89*	ND(2.0)	*10.05*	ND(2.0)	*10.88*	10.0
3/26/03	ND(20.0)	*7.90*	ND(20.0)	*7.26*	ND(200)	*6.65*	ND(2.0)	*5.88*	ND(2.0)	*5.75*	10.0
8/4/03	ND(20.0)	*10.47*	ND(20.0)	*10.74*	free product	*10.60*	ND(2.0)	*9.64*	ND(2.0)	*10.14*	10.0
12/23/03	ND(20.0)	*10.87*	ND(20.0)	*10.96*	free product	*10.46*	ND(2.0)	*9.98*	ND(2.0)	*10.31*	10.0
4/21/04	ND(20.0)	*6.97*	ND(20.0)	*7.24*	ND(20.0)	*7.24*	ND(2.0)	*6.14*	ND(2.0)	*6.09*	10.0
6/9/04	ND(20.0)	*8.92*	ND(20.0)	*9.21*	ND(20.0)	*9.06*	ND(2.0)	*7.90*	ND(2.0)	*7.76*	10.0
9/23/04	ND(20.0)	*8.89*	ND(20.0)	*9.30*	ND(20.0)	*9.60*	ND(2.0)	*8.20*	ND(2.0)	*8.55*	10.0
12/30/04	ND(20.0)	*8.61*	ND(20.0)	*9.27*	ND(20.0)	*8.71*	ND(2.0)	*8.11*	ND(2.0)	*8.21*	10.0
3/29/05	ND(20.0)	*6.95*	ND(20.0)	*7.34*	ND(20.0)	*6.72*	ND(2.0)	*5.95*	ND(2.0)	*5.31*	10.0
10/3/05	ND(2.0)	*	ND(2.0)	*	ND(2.0)	*	ND(2.0)	*8.78*	ND(2.0)	*9.02*	10.0
1/27/06	ND(20.0)	*8.10*	ND(20.0)	*8.58*	ND(20.0)	*7.72*	ND(2.0)	*7.36*	ND(2.0)	*6.93*	10.0
4/11/06	ND(20.0)	*8.90*	ND(20.0)	*9.31*	ND(5.0)	*8.76*	ND(2.0)	*8.10*	ND(2.0)	*7.96*	10.0
7/13/06	ND(20.0)	*8.31*	ND(20.0)	*8.77*	ND(20.0)	*7.35*	ND(2.0)	*7.45*	ND(2.0)	*7.57*	10.0
3/23/07	ND(20.0)	*7.14*	ND(20.0)	*7.40*	ND(20.0)	*6.39*	ND(2.0)	*6.01*	ND(2.0)	*5.61*	10.0
9/25/07	--	*12.75*	--	*13.32*	NS	*12.96*	--	*12.05*	--	*12.93*	10.0
3/26/08	ND(20.0)	*NA*	ND(20.0)	*NA*	ND(20.0)	*NA*	ND(2.0)	*NA*	ND(2.0)	*NA*	10.0
9/11/08	ND	*11.05*	ND	*11.40*	NS	*8.85*	ND	*10.13*	ND	*10.43*	10.0
3/15/09	ND(20.0)	*6.98*	ND(20.0)	*7.21*	ND(20.0)	*6.20*	ND(2.0)	*5.92*	ND(2.0)	*6.42*	10.0
9/25/09	ND(20.0)	*6.98*	ND(20.0)	*7.21*	NS	*6.20*	ND(2.0)	*5.92*	NS	*6.42*	10.0
3/12/10	ND(20.0)	*7.15*	ND(20.0)	*7.05*	NS	*6.10*	ND(2.0)	*5.70*	NS	*NS*	10.0
9/17/10	ND(20.0)	*10.82*	ND(20.0)	*11.58*	NS	*10.95*	ND(2.0)	*10.10*	ND(2.0)	*10.27*	10.0
8/9/16	ND(20.0)	*11.60*	ND(20.0)	*12.57*	ND(10.0)	*11.92*	NS	*Not located*	ND(2.0)	*11.15*	10.0

All results expressed in micrograms per liter (ug/L) or parts per billion (ppb)

(1) - New York State Department of Environmental Conservation (NYSDEC) June 1998 Division of Water Technical and Operational and Guidance Series 1.1.1 (TOGS 1.1.1)

Ambient Groundwater Standards and Guidance Values as ammended by April 2000 Supplemental Table.

Bold text denotes analyte was detected above NYSDEC Groundwater Standards

NS denotes well not sampled

ND denotes analyte was not detected above the reported laboratory detection limit

NA denotes Not Applicable

Table 3 (cont.)
330 Thurston Road, Rochester, New York
Historical VOC Concentrations

Constituent	MW001	*Depth to water MW001*	MW002	*Depth to water MW002*	MW003	*Depth to water MW003*	MW004	*Depth to water MW004*	MW005	*Depth to water MW005*	T.O.G.s 1.1.1 Guidance Value (1)
					Groundwater Target Compounds Sample Results						
Total BTEX											
12/29/00	916.0	*10.05*	1,633.7	*10.62*	3,764.0	*10.53*	124.5	*9.47*	159.9	*10.22*	N/A
4/3/01	1,293.1	*6.85*	1,914.7	*7.10*	4,478.3	*7.05*	3.1	*5.96*	1,021.7	*6.31*	N/A
6/19/01	10.5	*10.02*	1,500.2	*11.41*	2,768.0	*10.32*	128.4	*9.45*	43.4	*9.68*	N/A
9/17/01	4,040.7	*11.67*	2,807.1	*12.52*	3,994.2	*12.30*	43.6	*11.47*	163.5	*12.99*	N/A
12/19/01	2,946.2	*9.91*	2,608.8	*10.31*	3,292.0	*9.27*	6.2	*8.95*	2.2	*9.28*	N/A
4/16/02	2,727.4	*7.63*	1,762.8	*8.03*	2,963.0	*7.46*	261.6	*6.64*	277.2	*7.33*	N/A
7/30/02	221.8	*10.55*	2,401.2	*11.00*	3,940.0	*10.35*	28.6	*9.70*	53.1	*9.95*	N/A
11/20/02	5,413.9	*10.95*	3,204.8	*11.44*	free product	*10.89*	13.9	*10.05*	196.4	*10.88*	N/A
3/26/03	3,335.1	*7.90*	2,977.3	*7.26*	4,177.0	*6.65*	ND(5.0)	*5.88*	53.2	*5.75*	N/A
8/4/03	3,058.3	*10.47*	3,114.0	*10.74*	free product	*10.60*	24.6	*9.64*	95.5	*10.14*	N/A
12/23/03	3,464.1	*10.87*	2,952.8	*10.96*	free product	*10.46*	ND(2.0)	*9.98*	6.8	*10.31*	N/A
4/21/04	384.0	*6.97*	1,005.9	*7.24*	2,570.0	*7.24*	36.1	*6.14*	61.5	*6.09*	N/A
6/9/04	1,406.5	*8.92*	1,922.0	*9.21*	2,850.0	*9.06*	135.0	*7.90*	6.9	*7.76*	N/A
9/23/04	1,710.5	*8.89*	1,713.0	*9.30*	2,847.0	*9.60*	67.0	*8.20*	61.5	*8.55*	N/A
12/30/04	2,121.0	*8.61*	2,143.7	*9.27*	1,366.0	*8.71*	204.1	*8.11*	3.6	*8.21*	N/A
3/29/05	3,326.1	*6.95*	2,792.5	*7.34*	4,493.0	*6.72*	ND(5.0)	*5.95*	13.7	*5.31*	N/A
10/3/05	ND(2.0)	*	ND(2.0)	*	21.3	*	86.6	*8.78*	ND(2.0)	*9.02*	N/A
1/27/06	1,838.9	*8.10*	1,962.3	*8.58*	2,967.0	*7.72*	96.0	*7.36*	80.2	*6.93*	N/A
4/11/06	2,518.3	*8.90*	1,986.6	*9.31*	1,850.0	*8.76*	32.5	*8.10*	8.2	*7.96*	N/A
7/13/06	1,685.1	*8.31*	2,430.0	*8.77*	2,858.0	*7.35*	ND(2.0)	*7.45*	ND(2.0)	*7.57*	N/A
3/23/07	1,870.2	*7.14*	2,217.2	*7.40*	2,382.6	*6.39*	7.0	*6.01*	25.6	*5.61*	N/A
9/25/07	3,674.0	*12.75*	3,060.5	*13.32*	NS	*12.96*	--	*12.05*	5.0	*12.93*	N/A
3/26/08	1,800.5	*NA*	2,242.6	*NA*	3,320.0	*NA*	57.6	*NA*	115.5	*NA*	N/A
9/11/08	1,880.7	*11.05*	2,339.1	*11.40*	NS	*8.85*	2.8	*10.13*	0.0	*10.43*	N/A
3/15/09	1,923.8	*6.98*	1,908.3	*7.21*	3,340.3	*6.20*	126.6	*5.92*	89.8	*6.42*	N/A
9/25/09	2,806.6	*11.22*	1,513.8	*12.00*	NS-prod.	*11.48*	ND (5.0)	*10.48*	NS-no access	*NS*	N/A
3/12/10	3,074.0	*7.15*	3,074.0	*7.05*	NS-prod.	*6.10*	58.1	*5.70*	NS-no access	*NS*	NA
9/17/10	2,870.7	*10.82*	1,458.9	*11.58*	NS-prod.	*10.95*	0.7	*10.10*	0.0	*10.27*	N/A
8/9/16	1,042.4	*11.60*	188.1	*12.57*	315.8	*11.92*	NS	*NS*	0.0	*11.15*	N/A

All results expressed in micrograms per liter (ug/L) or parts per billion (ppb)

(1) - New York State Department of Environmental Conservation (NYSDEC) June 1998 Division of Water Technical and Operational and Guidance Series 1.1.1 (TOGS 1.1.1)

Ambient Groundwater Standards and Guidance Values as ammended by April 2000 Supplemental Table.

Bold text denotes analyte was detected above NYSDEC Groundwater Standards

NS denotes well not sampled

ND denotes analyte was not detected above the reported laboratory detection limit

NA denotes Not Applicable

Table 3 (cont.)
330 Thurston Road, Rochester, New York
Historical VOC Concentrations

Constituent	MW001	*Depth to water MW001*	MW002	*Depth to water MW002*	MW003	*Depth to water MW003*	MW004	*Depth to water MW004*	MW005	*Depth to water MW005*	T.O.G.s 1.1.1 Guidance Value (1)
				Groundwater Target Compounds Sample Results							
Benzene											
12/29/00	**39.8**	*10.05*	**199.0**	*10.62*	**833.0**	*10.53*	**8.5**	*9.47*	**21.3**	*10.22*	1.0
4/3/01	**58.3**	*6.85*	**82.5**	*7.10*	**373.7**	*7.05*	ND(20.0)	*5.96*	**58.3**	*6.31*	1.0
6/19/01	ND(2.0)	*10.02*	**83.0**	*11.41*	**336.0**	*10.32*	**12.0**	*9.45*	**6.5**	*9.68*	1.0
9/17/01	ND(20)	*11.67*	**28.2**	*12.52*	**460.7**	*12.30*	**9.7**	*11.47*	**23.8**	*12.99*	1.0
12/19/01	**23.7**	*9.91*	**21.3**	*10.31*	**335.0**	*9.27*	ND(2.0)	*8.95*	ND(2.0)	*9.28*	1.0
4/16/02	ND(20.0)	*7.63*	**26.4**	*8.03*	**253.0**	*7.46*	**10.9**	*6.64*	**11.1**	*7.33*	1.0
7/30/02	**13.3**	*10.55*	**102.0**	*11.00*	**213.0**	*10.35*	**5.1**	*9.70*	**13.0**	*9.95*	1.0
11/20/02	**50.7**	*10.95*	**33.3**	*11.44*	free product	*10.89*	**0.8**	*10.05*	**19.2**	*10.88*	1.0
3/26/03	**9.3**	*7.90*	**54.3**	*7.26*	**200.0**	*6.65*	ND(0.70)	*5.88*	**3.5**	*5.75*	1.0
8/4/03	**9.7**	*10.47*	**30.5**	*10.74*	free product	*10.60*	**7.0**	*9.64*	**8.0**	*10.14*	1.0
12/23/03	**11.4**	*10.87*	**27.9**	*10.96*	free product	*10.46*	ND(0.70)	*9.98*	**0.9**	*10.31*	1.0
4/21/04	ND(0.70)	*6.97*	**43.8**	*7.24*	**180.0**	*7.24*	**2.0**	*6.14*	**2.2**	*6.09*	1.0
6/9/04	ND(0.70)	*8.92*	**26.6**	*9.21*	247.0	*9.06*	10.3	*7.90*	**1.9**	*7.76*	1.0
9/23/04	ND(0.70)	*8.89*	**27.3**	*9.30*	**179.0**	*9.60*	**11.4**	*8.20*	**2.2**	*8.55*	1.0
12/30/04	ND(7.0)	*8.61*	**19.1**	*9.27*	**133.0**	*8.71*	**13.9**	*8.11*	**1.4**	*8.21*	1.0
3/29/05	ND(7.0)	*6.95*	**19.7**	*7.34*	**215.0**	*6.72*	ND(7.0)	*5.95*	ND(7.0)	*5.31*	1.0
10/3/05	ND(0.7)	*	ND(0.7)	*	**4.5**	*	**17.4**	*8.78*	ND(0.7)	*9.02*	1.0
1/27/06	ND(7.0)	*8.10*	**17.2**	*8.58*	**119.0**	*7.72*	**8.3**	*7.36*	**5.5**	*6.93*	1.0
4/11/06	ND(7.0)	*8.90*	**19.6**	*9.31*	**190.0**	*8.76*	**5.7**	*8.10*	ND(0.7)	*7.96*	1.0
7/13/06	ND(7.0)	*8.31*	**12.8**	*8.77*	**338.0**	*7.35*	ND(0.70)	*7.45*	ND(0.7)	*7.57*	1.0
3/23/07	ND(7.0)	*7.14*	**10.6**	*7.40*	**94.6**	*6.39*	0.8	*6.01*	**2.5**	*5.61*	1.0
9/25/07	--	*12.75*	**12.5**	*13.32*	NS	*12.96*	--	*12.05*	--	*12.93*	1.0
3/26/08	--	*NA*	**12.8**	*NA*	**104.0**	*NA*	**1.9**	*NA*	**13.4**	*NA*	1.0
9/11/08	ND	*11.05*	**11.3**	*11.40*	NS	*8.85*	ND	*10.13*	ND	*10.43*	1.0
3/15/09	ND(7.0)	*6.98*	**10.8**	*7.21*	**77.3**	*6.20*	**2.8**	*5.92*	**3.7**	*6.42*	1.0
9/25/09	ND(7.0)	*11.22*	**8.7**	*12.00*	NS-prod.	*11.48*	ND(0.70)	*10.48*	NS-no acces	*NS*	1.0
3/12/10	ND(7.0)	*7.15*	ND(7.0)	*7.05*	NS-prod.	*6.10*	**9.9**	*5.70*	NS-no acces	*NS*	1.0
9/17/10	ND(7.0)	*10.82*	**8.9**	*11.58*	NS-prod.	*10.95*	0.7	*10.10*	ND(.7)	*10.27*	1.0
8/9/16	ND(10.0)	*11.60*	**11.3**	*12.57*	**16.5**	*11.92*	NS	*NS*	ND(1.0)	*11.15*	1.0

All results expressed in micrograms per liter (ug/L) or parts per billion (ppb)

(1) - New York State Department of Environmental Conservation (NYSDEC) June 1998 Division of Water Technical and Operational and Guidance Series 1.1.1 (TOGS 1.1.1)

Ambient Groundwater Standards and Guidance Values as ammended by April 2000 Supplemental Table.

Bold text denotes analyte was detected above NYSDEC Groundwater Standards

NS denotes well not sampled

ND denotes analyte was not detected above the reported laboratory detection limit

NA denotes Not Applicable

Table 3 (cont.)
330 Thurston Road, Rochester, New York
Historical VOC Concentrations

Constituent	MW001	*Depth to water MW001*	MW002	*Depth to water MW002*	MW003	*Depth to water MW003*	MW004	*Depth to water MW004*	MW005	*Depth to water MW005*	T.O.G.s 1.1.1 Guidance Value (1)
					Groundwater Target Compounds Sample Results						
Total Volatile Aromatics											
12/29/00	1,279.2	*10.05*	2,119.0	*10.62*	4,732.6	*10.53*	124.5	*9.47*	190.9	*10.22*	N/A
4/3/01	1,734.0	*6.85*	2,589.0	*7.10*	5,596.2	*7.05*	3.1	*5.96*	1,205.9	*6.31*	N/A
6/19/01	75.6	*10.02*	2,031.5	*11.41*	3,529.0	*10.32*	146.4	*9.45*	54.8	*9.68*	N/A
9/17/01	5,695.4	*11.67*	3,901.7	*12.52*	5,333.9	*12.30*	53.0	*11.47*	214.8	*12.99*	N/A
12/19/01	4,187.2	*9.91*	3,545.4	*10.31*	4,828.0	*9.27*	6.2	*8.95*	2.2	*9.28*	N/A
4/16/02	4,135.6	*7.63*	2,409.2	*8.03*	4,505.8	*7.46*	330.3	*6.64*	349.4	*7.33*	N/A
7/30/02	3,428.8	*10.55*	3,280.6	*11.00*	7,243.1	*10.35*	30.6	*9.70*	71.6	*9.95*	N/A
11/20/02	7,539.2	*10.95*	4,438.9	*11.44*	free product	*10.89*	13.9	*10.05*	248.6	*10.88*	N/A
3/26/03	4,942.1	*7.90*	4,127.0	*7.26*	5,757.0	*6.65*	ND(5.0)	*5.88*	89.2	*5.75*	N/A
8/4/03	4,356.0	*10.47*	4,066.9	*10.74*	free product	*10.60*	31.6	*9.64*	109.2	*10.14*	N/A
12/23/03	5,636.2	*10.87*	4,142.0	*10.96*	free product	*10.46*	ND(5.0)	*9.98*	10.0	*10.31*	N/A
4/21/04	509.0	*6.97*	1,272.9	*7.24*	3,753.2	*7.24*	38.6	*6.14*	69.4	*6.09*	N/A
6/9/04	2,233.1	*8.92*	2,415.7	*9.21*	3,509.0	*9.06*	155.3	*7.90*	6.9	*7.76*	N/A
9/23/04	2,869.2	*8.89*	2,364.6	*9.30*	3,791.5	*9.60*	75.4	*8.20*	69.4	*8.55*	N/A
12/30/04	3,633.0	*8.61*	2,978.3	*9.27*	1,878.1	*8.71*	230.0	*8.11*	3.6	*8.21*	N/A
3/29/05	5,492.8	*6.95*	4,363.2	*7.34*	8,698.0	*6.72*	ND(5.0)	*5.95*	17.5	*5.31*	N/A
10/3/05	ND(2.0)	*	ND(2.0)	*	23.9	*	92.7	*8.78*	ND(2.0)	*9.02*	N/A
1/27/06	3,047.0	*8.10*	2,420.1	*8.58*	3,920.5	*7.72*	180.6	*7.36*	94.1	*6.93*	N/A
4/11/06	4,454.9	*8.90*	2,696.6	*9.31*	2,662.1	*8.76*	34.8	*8.10*	8.2	*7.96*	N/A
7/13/06	3,283.0	*8.31*	3,513.3	*8.77*	4,104.1	*7.35*	ND(2.0)	*7.45*	ND(2.0)	*7.57*	N/A
3/23/07	3,411.2	*7.14*	3,121.5	*7.40*	2,382.6	*6.39*	7.0	*6.01*	25.6	*5.61*	N/A
9/25/07	5,532.0	*12.75*	4,601.3	*13.32*	NS	*12.96*	0.0	*12.05*	5.0	*12.93*	N/A
3/26/08	3,049.5	*7.20*	3,162.9	*7.45*	4,745.5	*6.40*	65.6	*6.15*	512.6	*6.36*	N/A
9/11/08	3,266.6	*11.05*	3,537.3	*11.40*	NS	*8.85*	2.8	*10.13*	0.0	*10.43*	N/A
3/15/09	3,612.1	*6.98*	3,039.9	*7.21*	4,955.5	*6.20*	139.3	*5.92*	108.5	*6.42*	N\A
9/25/09	4,460.8	*7.15*	2,411.4	*7.05*	NS-product	*6.10*	0.0	*5.70*	NS-no acces	*NS*	N\A
3/12/10	5,764.2	*7.15*	4,614.9	*7.05*	NS-prod.	*6.10*	68.1	*5.70*	NS-no acces	*NS*	N\A
9/17/10	4,970.9	*10.82*	2,524.7	*11.58*	NS- product	*10.95*	0.7	*10.10*	0.0	*10.27*	N/A
8/9/16	2,641.4	*10.82*	507.1	*11.58*	315.8	*10.95*	NS	*NS*	0.0	*10.27*	N/A

All results expressed in micrograms per liter (ug/L) or parts per billion (ppb)

(1) - New York State Department of Environmental Conservation (NYSDEC) June 1998 Division of Water Technical and Operational and Guidance Series 1.1.1 (TOGS 1.1.1)

Ambient Groundwater Standards and Guidance Values as ammended by April 2000 Supplemental Table.

Bold text denotes analyte was detected above NYSDEC Groundwater Standards

NS denotes well not sampled

ND denotes analyte was not detected above the reported laboratory detection limit

NA denotes Not Applicable

APPENDIX A

Health and Safety Plan

HEALTH AND SAFETY PLAN

330 THURSTON ROAD
ROCHESTER, NEW YORK

NYSDEC SPILL #9710628

Prepared for: City of Rochester
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, New York 14614-1278

Prepared by: Day Environmental, Inc.
1563 Lyell Avenue
Rochester, New York 14606

Project No.: 5298S-16

Date: December 2016

TABLE OF CONTENTS

ATTACHMENTS

1.0 INTRODUCTION

This Health and Safety Plan (HASP) outlines the policies and procedures necessary to protect workers and the public from potential environmental hazards associated with residual petroleum contamination that are posed during intrusive work at 330 Thurston Road, Rochester, New York (Site). As outlined in this HASP, project activities shall be conducted in a manner to minimize the probability of injury, accident, or incident occurrence.

This HASP can be modified to cover other site activities when appropriate. The owner of the property, its contractors, and other site workers will be responsible for the development and/or implementation of health and safety provisions associated with normal construction activities or site activities.

2.0 SAFETY RESPONSIBILITY

Any entity (including contractors, consultants, state or local agencies, or other parties) and their employees that are involved with intrusive work at this Site will be responsible for their own safety while on-site. The entity's employees will be required to understand the information contained in this HASP, and must follow the recommendations that are made in this document. As an alternative, the entity can prepare and implement its own HASP, which must first be accepted by the NYSDEC and the City.

3.0 JOB HAZARD ANALYSIS

There are many hazards associated with intrusive work, and this HASP discusses some of the anticipated hazards for this Site. The hazards listed below deal specifically with those hazards associated with the disturbance and management of potentially contaminated media (e.g., soil, groundwater, etc.).

3.1 Chemical Hazards

Chemical substances can enter the unprotected body by inhalation, skin absorption, ingestion, or through a puncture wound (injection). A contaminant can cause damage to the point of contact or can act systemically, causing a toxic effect at a part of the body distant from the point of initial contact.

A list of selected site-specific contaminants that have been detected at the Site at concentrations that exceed regulatory criteria is presented below. The contaminants detected at the Site appear potentially attributable to past operations on the Site. This list also presents the permissible exposure limits (PELs) and levels that are considered immediately dangerous to life and health (IDLH).

CONSTITUENT	OSHA PEL	IDLH
Benzene	1 ppm	500 ppm
Ethylbenzene	100 ppm	800 ppm
1,2,4-Trimethylbenzene	NA	NA
1,3,5-Trimethylbenzene	NA	NA
Toluene	200 ppm	500 ppm
Mixed Xylenes	100 ppm	900 ppm
Isopropylbenzene	50 ppm	900 ppm
n-Butylbenzene	NA	NA
sec-Butylbenzene	NA	NA
tert-Butylbenzene	NA	NA
p-Isopropyltoluene	NA	NA
n-Propylbenzene	NA	NA
Naphthalene	10 ppm	250 ppm

Notes:
PEL = OSHA Permissible Exposure Limits (TWA for 8-hour day) NA = Not Available
IDLH = Immediately Dangerous to Life or Health Concentration ppm = Parts Per Million

The potential routes of exposure for these analytes and chemicals include inhalation, ingestion, skin absorption and skin/eye contact. The potential for exposure through any one of these routes will depend on the activity conducted. The most likely routes of exposure during intrusive activities include inhalation and skin contact.

3.2 Physical Hazards

There are physical hazards associated with this Site, which might compound the chemical hazards. Hazard identification, training, adherence to the planned Site activities, and careful housekeeping can prevent many problems or accidents arising from physical hazards. Potential physical hazards associated with this Site and suggested preventative measures include:

- Slip/Trip/Fall Hazards - Some areas may have wet surfaces that will greatly increase the possibility of inadvertent slips. Caution must be exercised due to slippery surfaces in conjunction with the fall hazard. Good housekeeping practices are essential to minimize the trip hazards.

- Small Quantity Flammable Liquids - Small quantities of flammable liquids will be stored in "safety" cans and labeled according to contents.

- Electrical Hazards - Electrical devices and equipment shall be de-energized prior to working near them. All extension cords will be kept out of water, protected from crushing, and inspected regularly to ensure structural integrity. Temporary electrical circuits will be protected with ground fault circuit interrupters. Only qualified electricians are authorized to work on electrical circuits. Heavy equipment (e.g., backhoe, drill-rig) shall not be operated within 10 feet of high voltage lines, unless proper protection from the high voltage lines is provided by the appropriate utility company.

- Noise - Work around large equipment often creates excessive noise. The effects of noise can include:

  - Workers being startled, annoyed, or distracted.

  - Physical damage to the ear resulting in pain, or temporary and/or permanent hearing loss.

  - Communication interference that may increase potential hazards due to the inability to warn of danger and proper safety precautions to be taken.

  Proper hearing protection will be worn as deemed necessary. In general, feasible administrative or engineering controls shall be utilized when on-site personnel are subjected to noise exceeding an 8-hour time weighted average sound level of 90 d(B)A (decibels on the A-weighted scale). In addition, whenever employee noise exposures equal or exceed an 8-hour time weighted average sound level of 85 d(B)A, employers shall administer a continuing effective hearing conservation program as described in OSHA Regulation 29 CFR Part 1910.95.

- Heavy Equipment - Each morning before start-up, heavy equipment will be inspected to ensure safety equipment and devices are operational and ready for immediate use.

- Subsurface and Overhead Hazards - Before any excavation activity, efforts will be made to determine whether underground utilities and potential overhead hazards will be encountered. Underground utility clearance must be obtained prior to subsurface work.

3.3 Environmental Hazards

Environmental factors such as weather, wild animals, insects, and irritant plants can pose a hazard when performing outdoor tasks. The entity conducting the work shall make every reasonable effort to alleviate these hazards should they arise.

3.3.1 Heat Stress

The combination of warm ambient temperature and protective clothing increases the potential for heat stress. In particular:

- Heat rash
- Heat cramps
- Heat exhaustion
- Heat stroke

The entity conducting the work will encourage Site workers to increase consumption of water or electrolyte-containing beverages such as Gatorade® when the potential for heat stress exists. In addition, workers will be encouraged to take rests whenever they feel any adverse effects that may be heat-related.

3.3.2 Exposure to Cold

With outdoor work in the winter months, the potential exists for hypothermia and frostbite. Protective clothing greatly reduces the possibility of hypothermia in workers. However, the entity conducting the work will instruct Site workers to wear warm clothing and to stop work to obtain more clothing if they become too cold. The Site workers will also be advised to change into dry clothes if their clothing becomes wet from perspiration or from exposure to precipitation.

4.0 SITE CONTROLS

To prevent migration of contamination caused through tracking by personnel or equipment, work areas, and personal protective equipment staging/decontamination areas will be specified prior to beginning operations.

4.1 Site Zones

In the area where contaminated materials present the potential for worker exposure (work zone), personnel entering the area must wear the mandated level of protection for the area. A "transition zone" shall be established where personnel can begin personal and equipment decontamination procedures. This can reduce potential off-site migration of contaminated media. Contaminated equipment or clothing will not be allowed outside the transition zone (e.g., on clean portions of the Site) unless properly containerized for disposal. Operational support facilities will be located outside the transition zone (i.e., in a "support zone"), and normal work clothing and support equipment are appropriate in this area. If possible, the support zone should be located upwind of work activities that have the potential to encountered contamination.

4.2 General

The following items will be requirements to protect the health and safety of workers during implementation of activities that disturb impacted material.

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and ingestion of contamination shall not occur in the work zone and transition zone during disturbance of impacted material.

- Personnel admitted in the work zone shall be properly trained in health and safety techniques and equipment usage.

- No personnel shall be admitted in the work zone without the proper safety equipment.

- Proper decontamination procedures shall be followed before leaving the Site.

5.0 PROTECTIVE EQUIPMENT

This section addresses the various levels of PPE which are or may be required at this job site. Personnel entering the work zone and transition zone shall be trained in the use of the anticipated PPE to be utilized.

5.1 Anticipated Protection Levels

TASK	PROTECTION LEVEL	COMMENTS/MODIFICATIONS
Site mobilization	D	
Site preparation	D	
Extrusive work (e.g., surveying, etc.)	D	
Intrusive work (e.g., soil excavation, dewatering, etc.)	C//D	Based on air monitoring
Support zone	D	
Site demobilization	D	

5.2 Protection Level Descriptions

This section lists the typical requirements for each protection level.

5.2.1 Level D

Level D consists of the following:

- Work clothing as prescribed by weather
- Steel-toed or composite-toed work boots
- Safety glasses
- Hard hat
- Work Gloves
- Chemical resistant protective gloves (e.g., disposable nitrile) during sampling or handling of potentially contaminated media
- Additional outer protective wear, such as face shield, side shields on safety glasses, and splash proof clothing (Saran coated Tyvek), if workers have a potential to be exposed to impacted liquids

5.2.2 Level C

Level C consists of the following:

- Air-purifying respirator with appropriate cartridges

- Work clothing as prescribed by weather
- Steel-toed or composite-toed work boots
- Safety glasses
- Hard hat
- Work Gloves
- Chemical resistant protective gloves (e.g., disposable nitrile) during sampling or handling of potentially contaminated media
- Additional outer protective wear, such as face shield, side shields on safety glasses, and splash proof clothing (Saran coated Tyvek), if workers have a potential to be exposed to impacted liquids
- Nitrile, neoprene, or PVC overboots and/or outer gloves, as deemed appropriate

Note: If the need for higher levels of PPE (e.g., Level A or Level B) becomes evident, the activities must be ceased until Site conditions are further evaluated, and any necessary modifications to the HASP have been accepted by the NYSDEC and the City.

5.3 Respiratory Protection

Any respirator used will meet the requirements of OSHA 29 CFR 1910.134. Both the respirator and cartridges specified shall be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910). Air purifying respirators shall not be worn if contaminant levels exceed designated use concentrations. The workers will wear respirators with approval for: organic vapors, dusts, fumes and mists.

No personnel who have facial hair, which interferes with the respirator's sealing surface, will be permitted to wear a respirator and will not be permitted to work in areas requiring respirator use.

Only workers who have been certified by a physician as being physically capable of respirator usage shall be issued a respirator. Personnel unable to pass a respiratory fit test or without medical clearance for respirator use will not be permitted to enter or work in areas on-site that require respirator protection.

6.0 DECONTAMINATION PROCEDURES

This section describes the procedures necessary to ensure that both personnel and equipment are free from contamination when they leave the work Site.

6.1 Personnel Decontamination

Personnel involved with activities that involve disturbing petroleum-contaminated media will follow the decontamination procedures described herein to ensure that material which workers may have contacted in the work zone and/or transition zone does not result in personal exposure and is not spread to clean areas of the Site or off-site. This sequence describes the general decontamination procedure. The specific stages can vary depending on the Site, the task, and the protection level, etc.

1. Leave work zone and go to transition zone
2. Remove soil/debris from boots and gloves
3. Remove boots
4. Remove gloves
5. Remove Tyvek suit and discard, if applicable
6. Remove and wash respirator, if applicable
7. Go to support zone

6.2 Equipment Decontamination

Impacted equipment shall be decontaminated in the transition zone before leaving the Site. Decontamination procedures can vary depending upon the contaminant involved, but may include sweeping, wiping, scraping, hosing, or steam cleaning the exterior of the equipment. Personnel performing this task will wear the proper PPE.

6.3 Disposal

Decontamination wastes (e.g., disposable clothing, soil removed from equipment, decontamination water, etc.) will be treated as contaminated waste and be disposed of in accordance with provisions of the SGMP and applicable regulations.

7.0 AIR MONITORING

During intrusive activities that have the potential to disturb impacted media, air monitoring with a photoionization detector (PID) will be conducted in order to determine airborne VOC levels. This ensures that respiratory protection is adequate to protect personnel against the chemicals that are encountered and that chemical contaminants are not migrating off-site.

An upwind PID measurement will be taken each day before operations begin in an area to determine the amount of VOCs naturally occurring in the air. This is referred to as a background level. Levels of VOCs will periodically be measured in the worker breathing zone air within the work zone and transition zone.

The following chart identifies the direct reading instrumentation that will be utilized and appropriate action levels.

Monitoring Device	Action level	Response/Level of Personal Protective Equipment (PPE)
PID Volatile Organic Compound Meter	< 5 ppm (above background) in breathing zone, sustained 5 minutes	Level D
	>5-25 ppm in breathing zone, sustained 5 minutes	Level C
	> 25 ppm	Stop work and evaluate condition with the NYSDEC and the City

7.1 Community Air Monitoring Plan

If PID readings >5 ppm (above background) are recorded in the breathing zone, sustained 5 minutes, then continuous real-time monitoring for VOCs must be conducted at the downwind perimeter of the work area. This Community Air Monitoring Plan (CAMP) is based on the NYSDOH Generic CAMP included as Appendix 1A of the NYSDEC document titled *"DER-10, Technical Guidance for Site Investigation and Remediation"* dated May 2010. 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 intrusive 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 intrusive work activities did not spread contaminants off-site through the air. Reliance on the CAMP should not preclude simple, common sense measures to keep VOCs and odors at a minimum around the work areas.

The PID should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The PID should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

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

- If total organic vapor levels at the downwind perimeter of the work 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 work zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

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

- The 15-minute readings must be recorded and made available for NYSDEC and City personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

8.0 EMERGENCY RESPONSE

To provide first-line assistance to field personnel in the case of illness or injury, the following items should be made immediately available on the Site:

- First-aid kit
- Portable emergency eye wash
- Supply of clean water

The following telephone numbers are listed in case there is an emergency at the Site:

Fire/Police Department: 911

Poison Control Center: (800) 222-1222

NYSDEC Spills Hotline: (800) 457-7362

NYSDEC Local Office: (585) 226-2466

NYSDEC (Mike Zamiarski, P.E.): (585) 226-5438

MCDPH (John Frazer, P.E.): (585) 753-5564

City of Rochester DEQ (Jane Forbes): (585) 428-7892

Nearest Hospital: Strong Memorial Hospital
601 Elmwood Avenue
Rochester, NY 14642

Hospital Emergency Phone Number: (585) 275-4551

Directions to the Hospital: Refer to Attachment 1

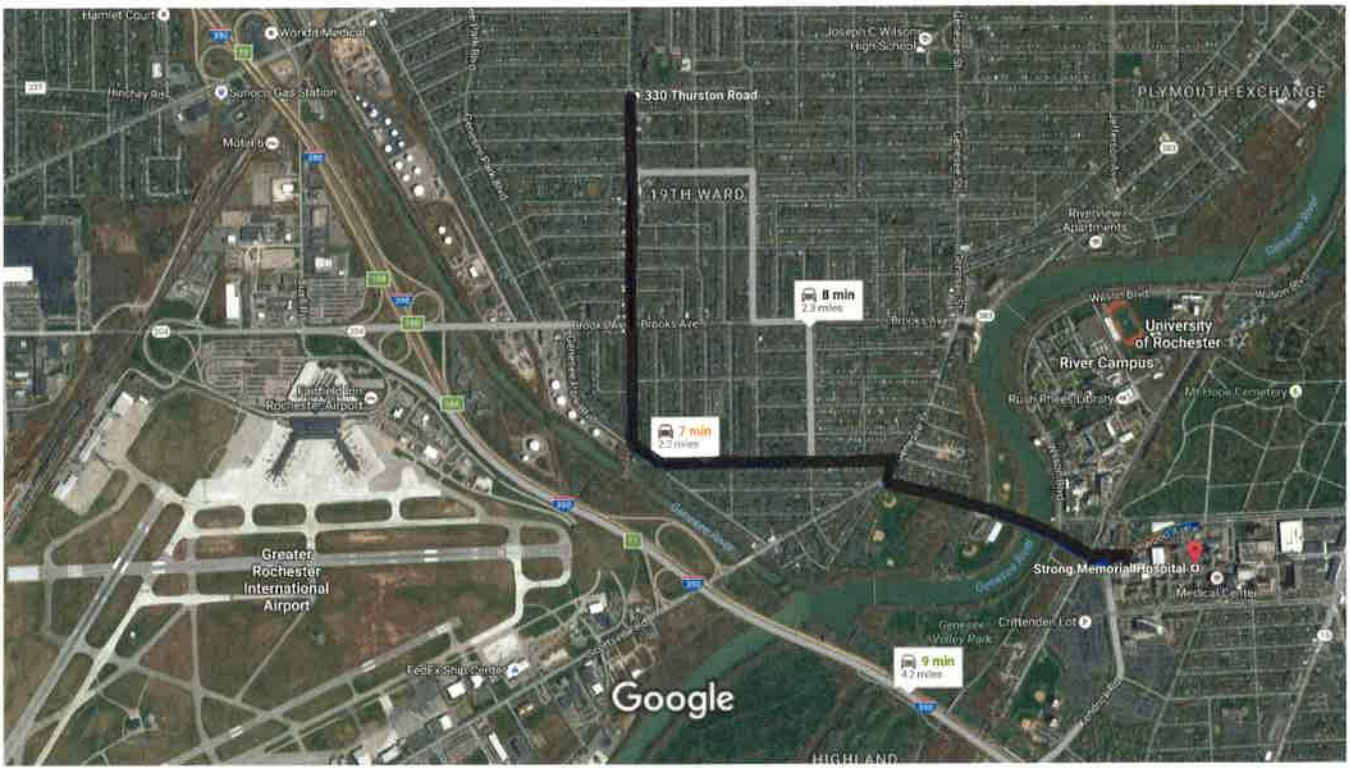
ATTACHMENT 1

Directions to the Hospital

Google Maps

330 Thurston Road, Rochester, NY to Strong Memorial Hospital, 601 Elmwood Avenue

Drive 2.2 miles, 7 min



Imagery ©2016 Cnes/Spot Image, DigitalGlobe, New York GIS, USDA Farm Service Agency, Map data ©2016 Google 1000 ft

330 Thurston Road

Rochester, NY 14619

1. Head south on Thurston Rd toward Penhurst St — 0.8 mi
2. Turn left onto Genesee Park Blvd — 0.6 mi
3. Turn right onto Genesee St — 240 ft
4. Use the left 2 lanes to turn left onto Elmwood Ave — 0.8 mi

Strong Memorial Hospital, 601 Elmwood Avenue

Rochester, NY 14642

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.