



**CONESTOGA-ROVERS
& ASSOCIATES**

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February 26, 2009

Reference No. 042271-03

Mr. Charlie Morgan
Lighthouse Pointe Property Associates, LLC
3800 Dewey Avenue
Rochester, New York
U.S.A. 14616

Dear Mr. Morgan:

Re: Work Plan for Groundwater, Soil Vapor, and Indoor Air Sampling
Waterfront Property Development, Rochester, New York

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) is pleased to submit this Work Plan for groundwater, soil vapor, and indoor air sampling activities at the Waterfront Property Development (Site) located in the City of Rochester and the Town of Irondequoit, Monroe County, New York. The Site location is presented on Figure 1.

This work is being completed to obtain more current environmental data for the Site to assist with remedial design. The previous investigation was conducted between October 25 and November 4, 2005 as part of the Remedial Investigation (RI).

This letter is organized as follows:

- 1.0 Introduction
- 2.0 Background
- 3.0 Scope of Work
- 4.0 Quality Assurance/Quality Control (QA/QC) Protocols
- 5.0 Health and Safety Protocols
- 6.0 Schedule
- 7.0 Cost Estimate



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2.0 BACKGROUND

The Site was a freshwater wetland prior to development to its current condition. An approximate 28-acre parcel of land at the north end of the Site was used by the City of Rochester as a municipal landfill (Old Rochester City Landfill) between the late 1940s to approximately 1962, but may have operated as late as 1978.

The results of the RI were reported in the RI Report (CRA, 2006). The RI included waste, soil, sediment, soil vapor, groundwater, and surface water sampling as discussed below.

Exceedances of the draft Brownfield Cleanup Program (BCP) restricted-use residential soil cleanup objectives were observed across the site in waste material and soil. These exceedances were predominantly observed in the northern portion of the Site, north of Pattonwood Drive. The exceedances were for non-volatile compounds. Sediment results did not exceed any New York State BCP restricted-use residential soil cleanup objectives. Soil vapor methane and volatile organic compound (VOC) levels in areas of waste disposal were observed to be elevated.

Exceedances of New York State Ambient Water Quality Standards and guidance values were observed at all monitoring wells for metals. Some of the metals exceedances may have been related to elevated turbidity levels in the groundwater samples. Exceedances of New York State Ambient Water Quality Standards and guidance values for non-metals parameters were observed at one of nine monitoring wells.

Surface water results were acceptable for reasonably anticipated current and future use.

3.0 SCOPE OF WORK

The Scope of Work (SOW) for the investigation activities includes five tasks as follows:

Task 1: Hydraulic Monitoring

Hydraulic monitoring will be conducted at 10 monitoring wells to provide groundwater elevation data across the Site. The monitoring well locations are presented on Figure 2.

Depth to groundwater and to the bottom of the monitoring well will be collected using a Solinst Model 101 water level indicator, or equivalent, from a reference point of known elevation on the monitoring well casing. All hydraulic monitoring data will be collected within a 24-hour period. All measurements will be recorded in a field logbook.



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Task 2: Groundwater Sampling

Groundwater sampling and analysis will be conducted at all 10 monitoring wells to provide groundwater characterization data. Collected groundwater samples will be analyzed for Target Compound List (TCL) VOCs, TCL semi-volatile organic compounds (SVOCs), TCL pesticides and poly-chlorinated biphenyls (PCBs), and Target Analyte List (TAL) metals.

Purging and sampling will be conducted using low-flow techniques. Each well will be purged until field parameter measurements stabilize, or until 10 well volumes have been purged. The field parameters will include pH, temperature, conductivity, and turbidity. In the event that the groundwater recharge to the monitoring well is insufficient to conduct the purging protocol, the well will be pumped dry and allowed to sufficiently recharge prior to sampling. Wells which are purged dry will not be subject to the above purging criteria.

Following purging and stabilization, groundwater samples will be collected directly from the dedicated tubing with the groundwater being discharged directly into the appropriate sample container. All required preservatives will be added to the samples in the manner consistent with the appropriate methodology by either placing the preservative in the sample containers prior to sampling or adding at the sample location immediately after collection.

Samples collected for metals analysis will be filtered in the field using 0.45 μm filter and a peristaltic pump.

All equipment used during sampling which may have come in contact with potentially contaminated waters will be decontaminated or discarded after each sample. All downhole equipment will be decontaminated with potable water. Purge water from monitoring wells and decontamination water will be containerized pending characterization and disposal. The water will be disposed of as hazardous or non-hazardous material, depending on the analytical results.

Following sample collection, the groundwater samples will immediately be stored in a cooler on ice. Samples will be submitted to TestAmerica located in North Canton, Ohio under appropriate chain-of-custody protocols for analysis.

QA/QC samples will be collected for chemical analysis as discussed in Section 4.0.



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Task 3: Soil Vapor Monitoring and Sampling

Soil vapor monitoring (field parameters) will be performed at the 20 on-Site soil vapor probe locations to measure the parameters of pressure, methane, carbon dioxide, oxygen, and total organic vapors (TOVs). The soil vapor probe locations are presented on Figure 3.

At each soil vapor probe, a minimum of five sets of readings of these parameters will be recorded at 30-second intervals using a Landtec GEM-500 instrument (GEM) and a photoionization detector (PID), or equivalent. The 10 soil vapor probe locations that exhibit the highest methane and TOV readings will be sampled for VOC analysis.

Soil vapor samples will be collected for VOC analysis at 10 on-Site soil vapor probe locations using SUMMA® canisters. A new piece of Teflon® tubing, and appropriate fittings will be used to connect between the soil vapor probe sample port and the canister. The valve on the canister will be opened and allowed to fill. Once the canister is almost full, the valve will be closed. Following sample collection, the canisters will be shipped to TestAmerica under appropriate chain-of-custody protocols.

Task 4: Indoor Air Sampling

Indoor air sampling for methane and VOCs is proposed to be conducted at five locations, provided that property access is granted by the current tenants/landowners. The proposed sampling locations are presented on Figure 4. The New York State Department of Health (NYSDOH), Indoor Air Sampling and Analysis Guidance (NYSDOH, 2005), will be followed to the extent practical.

Prior to sample collection, a pre-sampling inspection of the building will be performed to identify any conditions that may affect or interfere with the sampling. During the pre-sampling inspection, the NYSDOH, Indoor Air Quality Questionnaire and Building Inventory Form, will be completed to the extent possible. This form is attached as Attachment A.

Indoor air sampling for VOCs will be completed using SUMMA® canisters. A laboratory-calibrated flow controller will be connected to the canister. Flow controllers will be set to collect air samples at an approximate rate of 4 mL per minute (assumes a 6-L canister volume) for a 24-hour period. Once the canister is almost full, the valve will be closed. Tedlar bags will be used to collect samples for methane analysis. Following sample collection, the canisters and Tedlar bags will be shipped to TestAmerica under appropriate chain-of-custody protocols.



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Task 5: Preparation of a Summary Report

The results of the aforementioned tasks will be summarized in a report including a summary and evaluation of the analytical results.

4.0 QUALITY ASSURANCE/QUALITY CONTROL PROTOCOLS

Care will be taken during all aspects of sample collection to help ensure that high-quality data are obtained. Appropriate QA/QC measures will be taken such that they conform to the extent practical with Section 2 of NYSDEC's Draft DER-10 Technical Guidance for Site Investigation and Remediation (NYSDEC, 2002). This will include at a minimum one field duplicate and field blank for groundwater, soil vapor, and indoor air samples. In addition to a rinsate blank, MS/MSD, and trip blank (VOC analysis only) for groundwater.

5.0 HEALTH AND SAFETY PROTOCOLS

The site-specific health and safety plan (HASP) will be updated to include the proposed Site activities and will be adhered to during implementation of this Work Plan.

6.0 SCHEDULE

It is anticipated the field activities can be completed within one month of receiving notice to proceed. The summary report will be prepared within one month after receipt of the final laboratory report.

7.0 COST ESTIMATE

The estimated cost (including labor, disbursements, and subcontractor) to complete the aforementioned tasks are presented below:

Groundwater, Soil Vapor, and Indoor Air Sampling	\$5,150
Preparation of Summary Report	\$3,600
Laboratory Analysis	<u>\$14,000</u>
Total:	\$22,750



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Should you have any questions regarding this letter, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

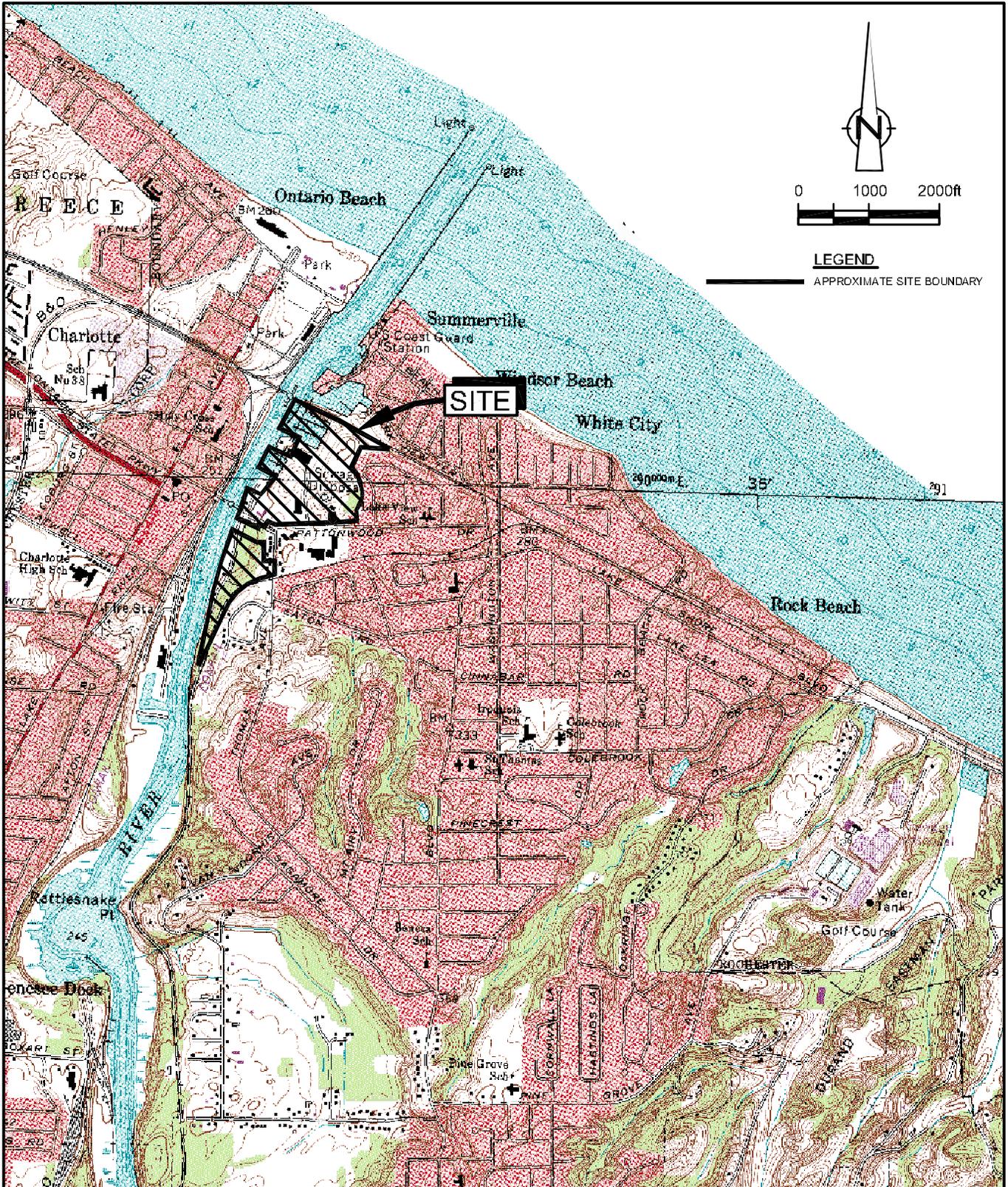
A handwritten signature in blue ink, appearing to be 'Ian K. Richardson', is written over the company name.

for Ian K. Richardson, PE

PT/ev/8

Encl.

c.c.: Alan Knauf, Knauf Shaw LLP

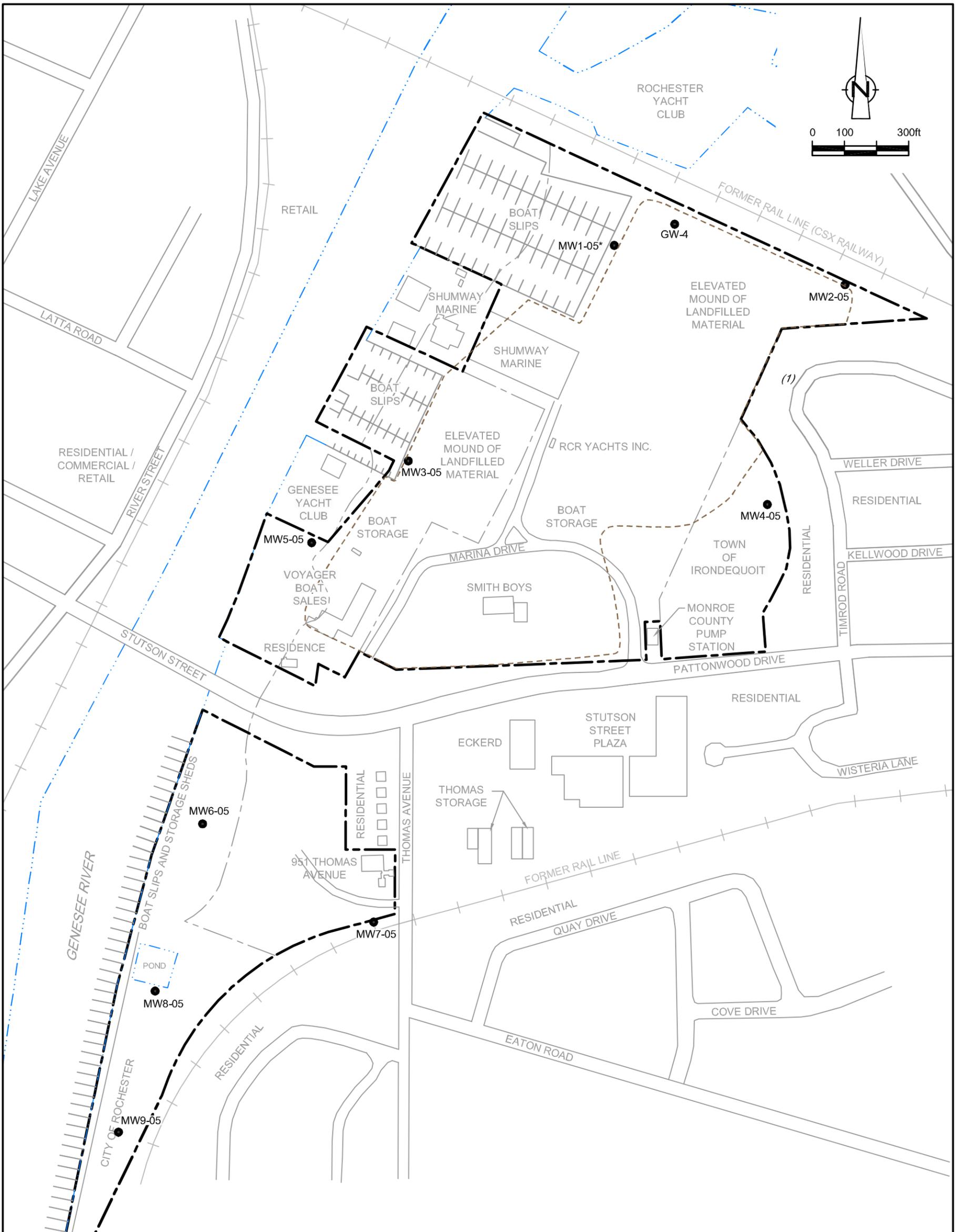


SOURCE: USGS QUADRANGLE MAPS:
 ROCHESTER EAST, NEW YORK
 ROCHESTER WEST, NEW YORK

figure 1

SITE LOCATION
WATERFRONT PROPERTY DEVELOPMENT
Rochester, New York





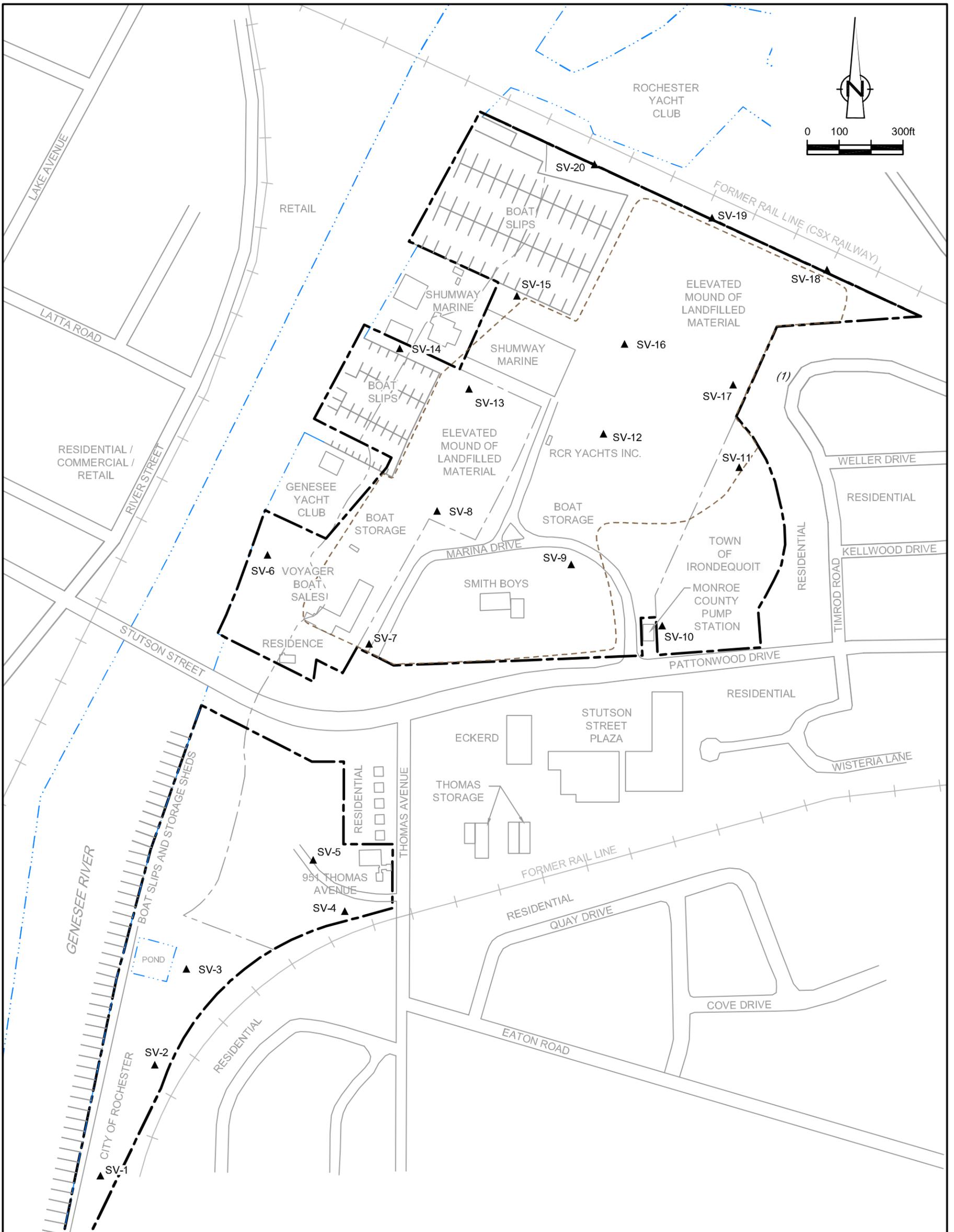
LEGEND

- SITE BOUNDARY
- RAILROAD
- SHORELINE/EDGE OF WATER
- APPROXIMATE LIMIT OF WASTE
- MW3-05
- (1) NOT SURVEYED-APPROXIMATE LOCATION SHOWN
- WASTE EXTENDS BEYOND THE PROPERTY BOUNDARY IN THIS AREA

NOTE: PROPERTY BOUNDARIES AND LOCATION OF BUILDINGS ARE APPROXIMATE AND BASED ON INFORMATION PROVIDED BY LIGHTHOUSE POINTE PROPERTY ASSOCIATES, L.L.C.

figure 2
MONITORING WELL LOCATIONS
WATERFRONT PROPERTY DEVELOPMENT
Rochester, New York





LEGEND

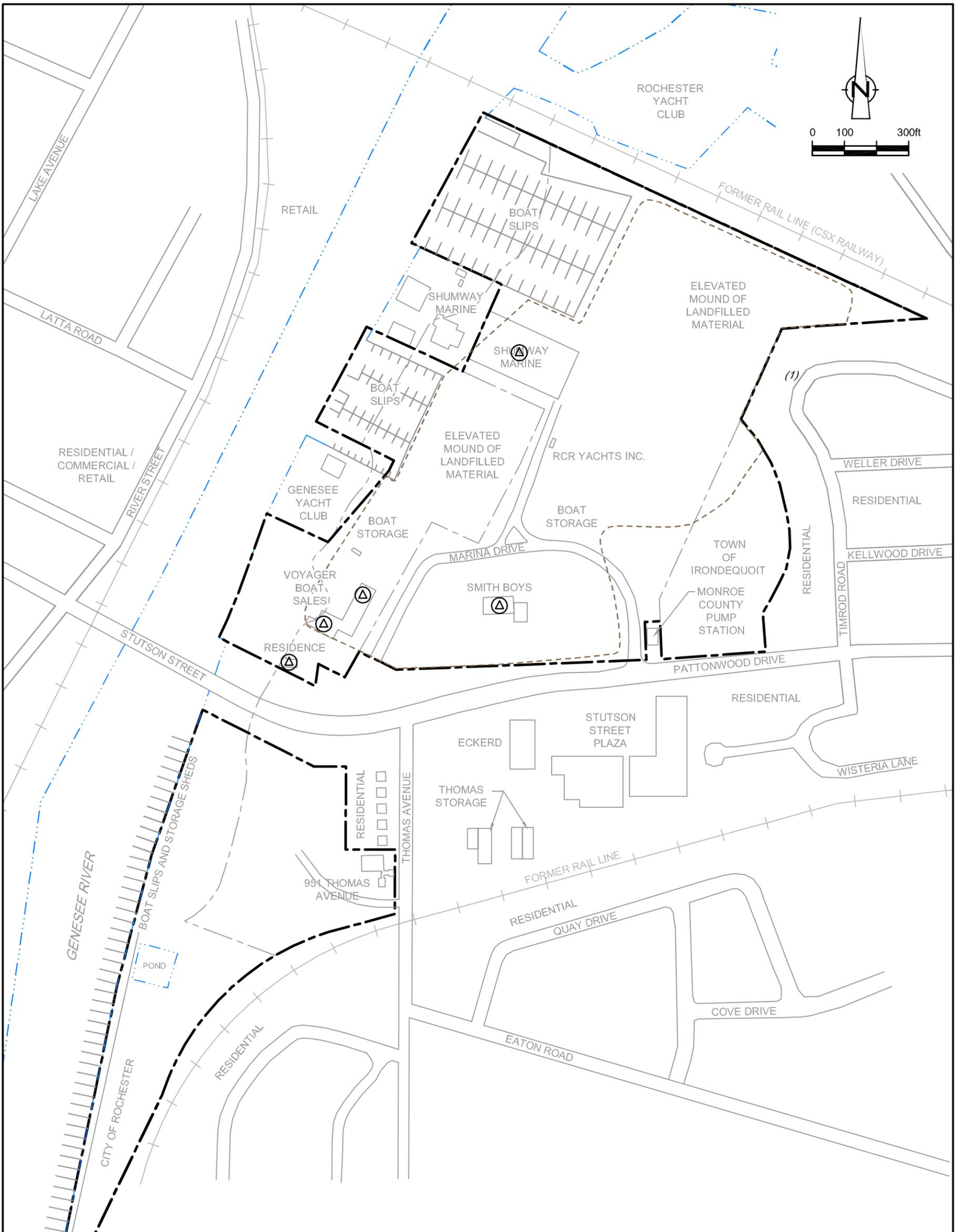
- SITE BOUNDARY
- RAILROAD
- SHORELINE/EDGE OF WATER
- APPROXIMATE LIMIT OF WASTE
- ▲ SV-1 SOIL VAPOR PROBE
- (1) WASTE EXTENDS BEYOND THE PROPERTY BOUNDARY IN THIS AREA

NOTE: PROPERTY BOUNDARIES AND LOCATION OF BUILDINGS ARE APPROXIMATE AND BASED ON INFORMATION PROVIDED BY LIGHTHOUSE POINTE PROPERTY ASSOCIATES, L.L.C.

figure 3

**SOIL VAPOR PROBE LOCATIONS
WATERFRONT PROPERTY DEVELOPMENT
Rochester, New York**





- LEGEND**
- SITE BOUNDARY
 - RAILROAD
 - - - SHORELINE/EDGE OF WATER
 - - - APPROXIMATE LIMIT OF WASTE
 - (1) WASTE EXTENDS BEYOND THE PROPERTY BOUNDARY IN THIS AREA
 - (A) PROPOSED INDOOR AIR SAMPLING LOCATION

NOTE: PROPERTY BOUNDARIES AND LOCATION OF BUILDINGS ARE APPROXIMATE AND BASED ON INFORMATION PROVIDED BY LIGHTHOUSE POINTE PROPERTY ASSOCIATES, L.L.C.

figure 4
PROPOSED INDOOR AIR SAMPLING LOCATIONS
WATERFRONT PROPERTY DEVELOPMENT
Rochester, New York



ATTACHMENT A

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY

**NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH**

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No. _____

Purpose of Investigation _____

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ___)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

- | | | |
|-------------|--------|----------------------|
| Residential | School | Commercial/Multi-use |
| Industrial | Church | Other: _____ |

If the property is residential, type? (Circle appropriate response)

- | | | |
|--------------|-----------------|-------------------|
| Ranch | 2-Family | 3-Family |
| Raised Ranch | Split Level | Colonial |
| Cape Cod | Contemporary | Mobile Home |
| Duplex | Apartment House | Townhouses/Condos |
| Modular | Log Home | Other:_____ |

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors _____ Building age _____

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

- a. Above grade construction: wood frame concrete stone brick
- b. Basement type: full crawlspace slab other _____
- c. Basement floor: concrete dirt stone other _____
- d. Basement floor: uncovered covered covered with _____
- e. Concrete floor: unsealed sealed sealed with _____
- f. Foundation walls: poured block stone other _____
- g. Foundation walls: unsealed sealed sealed with _____
- h. The basement is: wet damp dry moldy
- i. The basement is: finished unfinished partially finished
- j. Sump present? Y / N
- k. Water in sump? Y / N / not applicable

Basement/Lowest level depth below grade: _____(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

- | | | |
|---------------------|------------------|---------------------|
| Hot air circulation | Heat pump | Hot water baseboard |
| Space Heaters | Stream radiation | Radiant floor |
| Electric baseboard | Wood stove | Outdoor wood boiler |
| | | Other _____ |

The primary type of fuel used is:

- | | | |
|-------------|----------|----------|
| Natural Gas | Fuel Oil | Kerosene |
| Electric | Propane | Solar |
| Wood | Coal | |

Domestic hot water tank fueled by: _____

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning: Central Air Window units Open Windows None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)

Basement	_____
1 st Floor	_____
2 nd Floor	_____
3 rd Floor	_____
4 th Floor	_____

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- a. Is there an attached garage? Y / N
- b. Does the garage have a separate heating unit? Y / N / NA
- c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA
Please specify _____
- d. Has the building ever had a fire? Y / N When? _____
- e. Is a kerosene or unvented gas space heater present? Y / N Where? _____
- f. Is there a workshop or hobby/craft area? Y / N Where & Type? _____
- g. Is there smoking in the building? Y / N How frequently? _____
- h. Have cleaning products been used recently? Y / N When & Type? _____
- i. Have cosmetic products been used recently? Y / N When & Type? _____

- j. Has painting/staining been done in the last 6 months? Y / N Where & When? _____
- k. Is there new carpet, drapes or other textiles? Y / N Where & When? _____
- l. Have air fresheners been used recently? Y / N When & Type? _____
- m. Is there a kitchen exhaust fan? Y / N If yes, where vented? _____
- n. Is there a bathroom exhaust fan? Y / N If yes, where vented? _____
- o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N
- p. Has there been a pesticide application? Y / N When & Type? _____

Are there odors in the building? Y / N
 If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / N
 (e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

- Yes, use dry-cleaning regularly (weekly)
- Yes, use dry-cleaning infrequently (monthly or less)
- Yes, work at a dry-cleaning service
- No
- Unknown

Is there a radon mitigation system for the building/structure? Y / N Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _____
Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _____

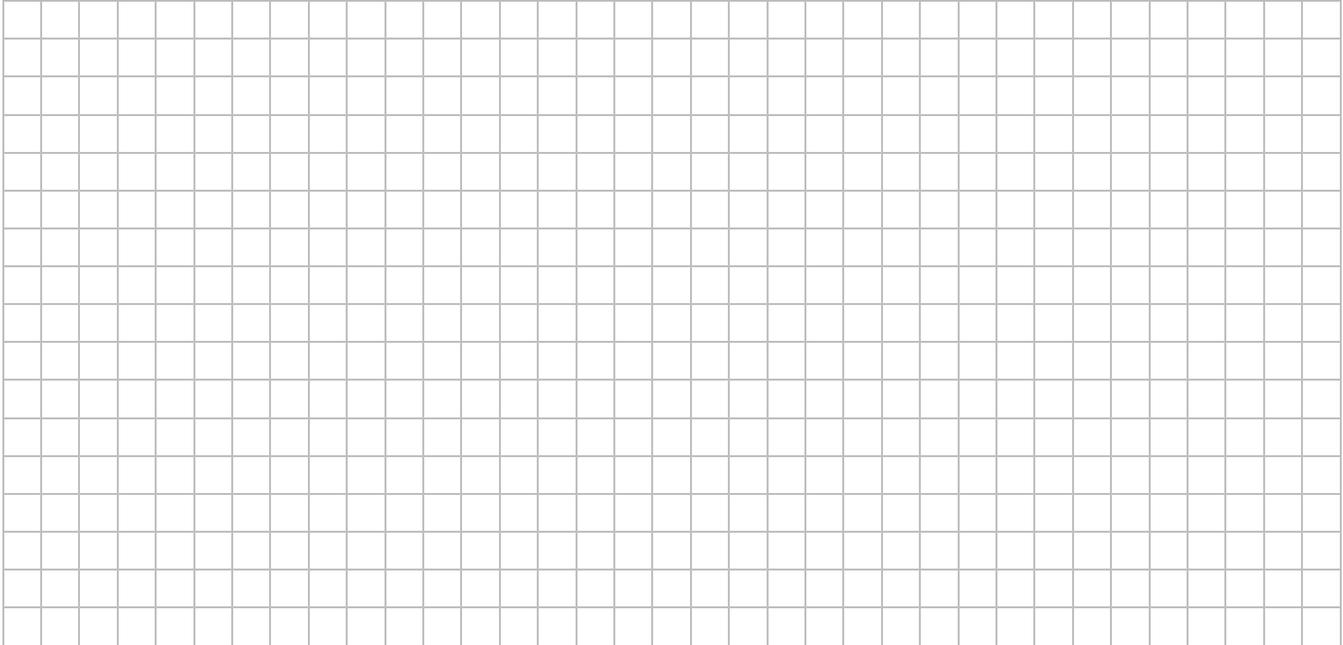
10. RELOCATION INFORMATION (for oil spill residential emergency)

- a. Provide reasons why relocation is recommended: _____
- b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel
- c. Responsibility for costs associated with reimbursement explained? Y / N
- d. Relocation package provided and explained to residents? Y / N

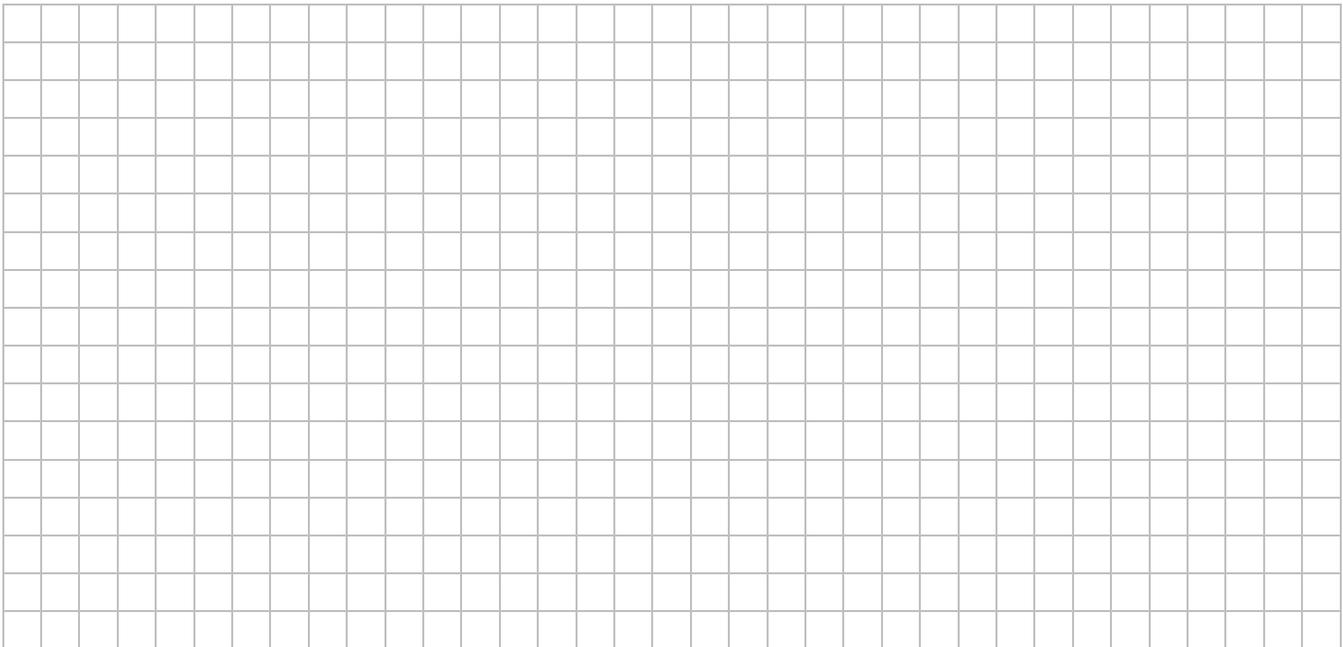
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

