

# PROPOSED REMEDIAL ACTION PLAN

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Staubs Textile Services, Inc.  
Operable Unit Number 01: On-Site Soils  
State Superfund Project  
Rochester, Monroe County  
Site No. 828160  
December 2016



Prepared by  
Division of Environmental Remediation  
New York State Department of Environmental Conservation

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## **SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN**

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the above referenced site. The disposal of hazardous wastes at the site has resulted in threats to public health and the environment that would be addressed by the remedy proposed by this Proposed Remedial Action Plan (PRAP). The disposal of hazardous wastes at this site, as more fully described in Section 6 of this document, has contaminated various environmental media. The proposed remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This PRAP identifies the preferred remedy, summarizes the other alternatives considered, and discusses the reasons for the preferred remedy.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 375. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

## **SECTION 2: CITIZEN PARTICIPATION**

The Department seeks input from the community on all PRAPs. This is an opportunity for public participation in the remedy selection process. The public is encouraged to review the reports and documents, which are available at the following repository:

Monroe County Library System  
Monroe Branch Library  
809 Monroe Avenue  
Rochester, NY 14607  
Phone: (585) 428-8202

**A public comment period has been set from:**

**12/22/2016 to 1/23/2017**

**A public meeting is scheduled for the following date:**

**1/11/2017 at 6:30 PM**

**Public meeting location:**

**Rochester City Hall, 30 Church Street, Room 208A**

At the meeting, the findings of the remedial investigation (RI) and the feasibility study (FS) will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP.

Written comments may also be sent through 1/23/2017 to:

Matt Dunham  
NYS Department of Environmental Conservation  
Division of Environmental Remediation  
625 Broadway  
Albany, NY 12233  
matthew.dunham@dec.ny.gov

The Department may modify the proposed remedy or select another of the alternatives presented in this PRAP based on new information or public comments. Therefore, the public is encouraged to review and comment on the proposed remedy identified herein. Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department's final selection of the remedy for this site.

**Receive Site Citizen Participation Information By Email**

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

**SECTION 3: SITE DESCRIPTION AND HISTORY**

Location: This Site is located at 951, 935 East Main Street in the City of Rochester, Monroe

County. The 1.2 acre site is located in a mixed commercial/residential area on the northeast side of the city.

Site Features: The majority of the site is occupied by the vacant on-site building with a paved parking area and loading dock on the west side and a small paved driveway on the east side of the property. The site is bound by East Main Street to the north, commercial properties to the west and east and a residential neighborhood to the south.

Current Zoning/Use(s): The site is currently inactive and is zoned for commercial use.

Historic Use(s): This site has a 70-year history of use as an industrial laundry and dry cleaning service. Operations at the facility ceased in 2005 and it has been vacant since that time.

Site Geology and Hydrogeology: The site is underlain by approximately 20 to 25 feet of overburden materials overlying bedrock. The overburden consists of gray and brown silty sand to sandy silt with little clay and gravel. Groundwater in the overburden beneath the site is 12-15 feet below ground surface with flow to the north.

Operable Unit(s): The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 1 (OU 01) is the on-site source area. OU 02 consists of the bedrock groundwater, off-site groundwater and soil vapor contamination.

Operable Unit (OU) Number 01 is the subject of this document.

A Record of Decision will be issued for OU 02 in the future.

A site location map is attached as Figure 1.

#### **SECTION 4: LAND USE AND PHYSICAL SETTING**

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) are/is being evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

#### **SECTION 5: ENFORCEMENT STATUS**

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a

site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include:

951 East Main Street, LLC

Ben Barnet Cleaners

Staub Textile Services, Inc

Staub & Son, Inc.

Staub Cleaners, Inc.

## **SECTION 6: SITE CONTAMINATION**

### **6.1: Summary of the Remedial Investigation**

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

#### **6.1.1: Standards, Criteria, and Guidance (SCGs)**

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration

guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

### **6.1.2: RI Results**

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

tetrachloroethene (PCE)  
trichloroethene (TCE)

cis-1,2-dichloroethene  
vinyl chloride

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor

### **6.2: Interim Remedial Measures**

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

#### **IRM - Tank Removal**

A focused IRM was completed in October 2012 to identify whether underground storage tanks (UST) existed within the site building. Inside the building five USTs were discovered, excavated and removed. One additional tank was discovered within the site building, in the southwest corner. This tank was closed in place. A 20,000 gallon UST was also excavated and removed from the exterior of the site building. At the completion of the IRM a Construction Completion Report (CCR), dated April 2013, was prepared.

## IRM - Source Area Soil Vapor Extraction (SVE) System

In August 2013, a soil vapor extraction system was installed as part of a pilot test in the former dry cleaner. The system consisted of a SVE skid system (blower, manifold and knockout drum), seven SVE wells, two vapor observation wells, and a catalytic oxidizer to treat the vapor. A review of the pilot test determined that the current system was not cost effective. The SVE system removed on August 20, 2015. Approximately 22,000 pounds of PCE were removed during the operation of the SVE system. At the completion of the IRM a Construction Completion Report (CCR), dated September 2015, was prepared.

### **6.3: Summary of Environmental Assessment**

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 01.

#### For OU 1: On-Site Area

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Based upon investigations conducted to date, the primary contaminants of concern for OU 1 include tetrachloroethene (PCE) and its associated degradation products.

Soil - Tetrachloroethene is found in shallow and deeper soil, predominantly at the south end of the site. Concentrations of tetrachloroethene found on site at levels, up to 70,000 ppm, significantly exceed the soil cleanup objectives for the protection of groundwater (1.3 ppm). Data does not indicate any off-site impacts in soil related to this site.

Groundwater - PCE and its associated degradation products are also found in groundwater at the southern end of the site, substantially exceeding groundwater standard of 5 ppb, with a concentration of PCE up to 252,800 ppb. Groundwater contamination is expected to extend off-site. Additional investigations will be conducted under OU2.

Soil Vapor and Indoor Air – PCE was detected in on-site soil vapor as high as 1,800,000 ug/m<sup>3</sup>. Presently the site building is vacant; therefore there is no current potential for exposure associated with soil vapor intrusion (SVI). SVI samples, consisting of sub-slab vapor and ambient indoor and outdoor air, were collected at four off-site residence from 2011-2013. Based on the results of those samples, continued monitoring is recommended at one off-site residence and no further action is needed at the remaining three off-site residences.

Additional soil vapor intrusion sampling, and any associated actions to address exposure, will be collected under Operable Unit Number 02. The samples will be collected to delineate the nature and extent of soil vapor contamination.

#### **6.4: Summary of Human Exposure Pathways**

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the groundwater and/or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of the buildings, is referred to as soil vapor intrusion. Because the on-site building is vacant, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site development. Soil vapor intrusion sampling indicates actions, including continued monitoring, are recommended to prevent potential exposure at one off-site residence. Additional evaluation is needed to determine whether actions are needed to address soil vapor intrusion off-site.

#### **6.5: Summary of the Remediation Objectives**

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

##### **Groundwater**

###### **RAOs for Public Health Protection**

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

###### **RAOs for Environmental Protection**

- Remove the source of ground or surface water contamination.

##### **Soil**

###### **RAOs for Public Health Protection**



- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

**RAOs for Environmental Protection**

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

**Soil Vapor**

**RAOs for Public Health Protection**

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

**SECTION 7: SUMMARY OF THE PROPOSED REMEDY**

To be selected, the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the FS report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's proposed remedy is set forth at Exhibit D.

The proposed remedy is referred to as the Soil Excavation and Off-Site Disposal remedy.

The estimated present worth cost to implement the remedy is \$1,789,200. The cost to construct the remedy is estimated to be \$1,734,000 and the estimated average annual cost is \$55,200.

The elements of the proposed remedy are as follows:

The elements of the selected remedy, shown on Figure 6, are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principals and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- o Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- o Reducing direct and indirect greenhouse gas and other emissions;
- o Increasing energy efficiency and minimizing use of non-renewable energy;
- o Conserving and efficiently managing resources and materials;
- o Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- o Maximizing habitat value and creating habitat when possible;
- o Fostering green and healthy communities and working landscapes which balance ecological, economic goals; and
- o Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. The existing on-site building(s) will be demolished. Excavation and off-site disposal of all on-site soils which exceed Commercial SCOs and treatment of on-site soils using in-situ chemical treatment which exceed protection of groundwater SCOs, as defined by 6 NYCRR Part 375-6.8. The total volume of soils excavated is approximately 2074 cubic yards. Dewatering and treating the groundwater during excavation. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

Vapor Mitigation System: Any on-site buildings will be required to have a sub-slab depressurization system, or a similar engineered system, to mitigate the migration of vapors into the building from soil and/or groundwater.

3. Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- o require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
- o allow the use and development of the controlled property for commercial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- o restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and

- o require compliance with the Department approved Site Management Plan.
4. A Site Management Plan is required, which will include the following:

An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to assure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: Will include the implementation of land-use restrictions as set forth above.

Engineering Controls: The Vapor Mitigation System as discussed in paragraph 2

This plan includes, but may not be limited to:

- o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
  - o description of the provisions of the environmental easement including any land use restrictions;
  - o provisions for the management and inspection of the identified engineering controls;
  - o maintaining site access controls and Department notification; and
  - o the steps necessary for the periodic reviews and certification of the institutional controls.
- b) A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- o Monitoring of soil, groundwater or soil vapor to assess the performance and effectiveness of the remedy;
  - o Schedule of monitoring and frequency of submittals to the Department.

## **Exhibit A**

### **Nature and Extent of Contamination**

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into volatile organic compounds (VOCs). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

### **Waste/Source Areas**

As described in the RI report, waste/source materials were identified at the site and are impacting soil.

Wastes are defined in 6 NYCRR Part 375-1.2(aw) and include solid, industrial and/or hazardous wastes. Source areas are defined in 6 NYCRR Part 375(au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium.

As a result of the historic use of the site, dry cleaning chemicals were either spilled to the ground surface or to floor drains, where they flowed/leaked into the soil at the site. The historic source area is located beneath the vacant, on-site building. In August 2013, as part of an IRM, a soil vapor extraction (SVE) system was installed as part of a limited source treatment. While some significant mass removal was achieved, a significant source area under the building remains. The SVE system was removed in August 2015.

Certain waste/source areas identified at the site were addressed by the IRM(s) described in Section 6.2. The remaining waste/source area(s) identified during the RI will be addressed in the remedy selection process.

### **Groundwater**

Groundwater samples were collected from overburden and bedrock monitoring wells. The samples were collected to assess groundwater conditions on-site. The results indicate that contamination in shallow groundwater at the site exceeds the SCGs for volatile organic compounds. Contaminant levels in bedrock groundwater exceeded the guidance values for volatile organic compounds. Additional groundwater samples will be collected from overburden and bedrock monitoring wells under Operable Unit Number 02. The samples will be collected to assess groundwater conditions on-site and off-site.

**Table #1 - Groundwater**

Detected Constituents	Concentration Range Detected (ppb) <sup>a</sup>	SCG <sup>b</sup> (ppb)	Frequency Exceeding SCG
<b>VOCs</b>			
Tetrachloroethene (PCE)	0 – 252,000	5	10/12
Trichloroethene (TCE)	0 – 22,110	5	3/12
cis-1,2-Dichloroethene	0 – 51,500	5	8/12
Vinyl Chloride	0 – 2,500	2	3/8

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Based on the findings of the RI, the past disposal of hazardous waste has resulted in the contamination of groundwater. The site contaminants identified in groundwater which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, tetrachloroethene (PCE) and its associated degradation products.

### Soil

Soil samples were collected at the site during the RI, from on-site and off-site locations to further delineate the historic source area and to evaluate the progress of the IRMs. Soil samples were collected in the vicinity of the historic source area, beneath the former on-site building, east to an adjacent property and on the western portion of the site for analytical analysis primarily for VOCs.

The RI soil sampling results were compared to the applicable Soil Cleanup Objectives (SCOs) for unrestricted use and restricted use/protection of groundwater, as discussed in Section 3, and indicate that the primary contaminants of concern on-site are VOCs. Based on the comparison of the soil sampling results to the restricted use SCOs, the protection of groundwater SCOs were selected for the evaluation of the data.

The soil VOC results reveal that a VOC contaminant source still exists on the site. The VOC contamination exceeding the unrestricted and protection of groundwater SCOs was determined to extend from the historic source area north beneath the concrete slab of the former Staubs Building as shown in Figure 2. The estimated area of soil VOC contamination is approximately 10,000 square feet and extends from approximately 3 to 20 feet bgs, for a total volume of approximately 7,425 cubic yards. Data does not indicate any off-site impacts in soil related to this site.

**Table #2 - Soil**

Detected Constituents	Concentration Range Detected (ppm) <sup>a</sup>	Unrestricted SCG <sup>b</sup> (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG <sup>c</sup> (ppm)	Frequency Exceeding Restricted SCG
<b>VOCs</b>					
Tetrachloroethene (PCE)	0 - 70,000	1.3	72/118	1.3	72/118
Trichloroethene (TCE)	0 – 1,600	0.47	27/118	0.47	27/118
cis-1,2-Dichloroethene	0 – 7.5	0.25	14/118	0.25	14/118
Vinyl Chloride	0	0.02	0/118	0.02	0/118

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, tetrachloroethene (PCE) and its associated degradation products.

### Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of soil vapor, sub-slab soil vapor under structures, and indoor air inside structures. At this site due to the presence of buildings in the impacted area soil vapor intrusion (SVI) samples, consisting of sub-slab vapor and ambient indoor and outdoor air, were collected to determine whether actions are needed to address exposures to site-related contaminants.

The soil vapor intrusion sampling was conducted during the 2011, 2012 and 2013 heating seasons and included the sampling of four structures. For each structure sampled, sub-slab soil vapor and indoor air samples were collected in order to determine whether actions are needed to address exposures to site-related contaminants. Outdoor air samples were collected concurrently with the sub-slab soil vapor and indoor air samples in order to evaluate outdoor air (background) quality in the vicinity of the study area. The results of the soil vapor intrusion sampling primarily indicated the presence of PCE and TCE. Based on the SVI sampling results, no VOCs detected in an indoor air samples exceeded its respective SCG. Site related VOCs were found in sub-slab vapor at structures both on- and off-site.

Sample results were evaluated in accordance with the NYSDOH Soil Vapor Intrusion Guidance in order to determine whether actions were needed to address exposure via soil vapor intrusion. Based on the sampling results, continued monitoring at one off-site structure was recommended. Additional soil vapor intrusion sampling will be collected under Operable Unit Number 02. The samples will be collected to delineate the nature and extent of soil vapor contamination.

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of soil vapor. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, tetrachloroethene (PCE) and its associated degradation products.

## Exhibit B

### Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

#### **Alternative 1: No Action**

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

#### **Alternative 2: No Further Action with Site Management**

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2 and Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of the IRM. This alternative maintains engineering controls which were part of the IRM and includes institutional controls, in the form of an environmental easement and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the IRMs.

*Present Worth:* ..... \$144,700.00  
*Capital Cost:* ..... \$83,900.00  
*Annual Costs:* ..... \$60,800.00

#### **Alternative 3: Restoration to Pre-Disposal or Unrestricted Conditions**

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8(a). This alternative will involve demolition of the on-site building, excavation and off-site disposal of all waste and soil contamination above the unrestricted soil cleanup objectives. The remedy will not rely on institutional or engineering controls to prevent future exposure. There is no Site Management, no restrictions, and no periodic review. This remedy will have no annual cost, only the capital cost.

*Capital Cost:* ..... \$5,927,000.00

#### **Alternative 4: Soil Excavation, Off-Site Disposal and In-Situ Chemical Treatment**

This alternative is an aggressive approach to remediating the site aimed at excavation of soil exceeding commercial SCOs and the treatment of soil using in-situ chemical treatment exceeding protection of groundwater SCOs. This alternative includes the demolition of the abandoned Staubs Textile Services, Inc. building, installation of temporary sheet piling and excavation of approximately 2,074 cubic yards of contaminated soils above and below the water table to bedrock, dewatering and treating the groundwater during excavation and the removal and disposal of any underground storage tanks encountered during the excavation. Confirmation sampling for VOCs would be conducted during excavation activities, with analytical results verifying attainment



of remediation goals. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

Treatment of the saturated soil would be implemented using in-situ chemical treatment, either chemical oxidation or chemical reduction depending on the results of the bench and pilot scale tests. Depending on the contact time chemical oxidants are capable of converting the VOC mass to a non-toxic compound; however multiple treatments will be required.

*Present Worth:* ..... \$1,789,200.00  
*Capital Cost:* ..... \$1,734,000.00  
*Annual Costs:* ..... \$55,200.00

### **Alternative 5: Soil Vapor Extraction and In-Situ Chemical Treatment**

This alternative includes installation of a soil-vapor extraction (SVE) system, multiple in-situ chemical injections, long-term environmental monitoring to evaluate the effectiveness of the treatment system and injections, locate and remove any on-site underground storage tanks and the implementation of institutional controls to limit site use and site access. A pre-design investigation would be conducted to develop design parameters that would include a SVE pilot test and bench scale tests to determine the in-situ chemical product and application rate.

Soil vapor extraction (SVE) would be implemented to address soil contamination in the unsaturated zone. Long term system monitoring would be required to establish baseline concentrations of VOC vapors extracted by the SVE system, and to allow for monitoring of system performance over time. The effectiveness and performance of the SVE system would be evaluated over time, including preparation of periodic reports presenting concentration trends and discussion of system performance.

Treatment of the saturated soil and groundwater would be implemented using in-situ chemical treatment, either chemical oxidation or chemical reduction depending on the results of the bench and pilot scale tests. Depending on the contact time chemical oxidants are capable of converting the VOC mass to a non-toxic compound; however multiple treatments will be required.

*Present Worth:* ..... \$538,200.00  
*Capital Cost:* ..... \$ 150,200.00  
*Annual Costs:* ..... \$ 388,000.00

**Exhibit C****Remedial Alternative Costs**

<b>Remedial Alternative</b>	<b>Capital Cost (\$)</b>	<b>Annual Costs (\$)</b>	<b>Total Present Worth (\$)</b>
#1 No Action	0	0	0
#2 No Further Action	\$83,900.00	\$60,800.00	\$144,700.00
#3 Restoration to Pre-Disposal or Unrestricted Conditions	\$5,927,000.00	\$0	\$5,927,000.00
# 4 Soil Excavation, Off-Site Disposal and In-Situ Chemical Treatment	\$1,734,000.00	\$55,200.00	\$1,789,200.00
# 5 Soil Vapor Extraction and In-Situ Chemical Treatment	\$ 150,200.00	\$ 388,000.00	\$538,200.00

## **Exhibit D**

### **SUMMARY OF THE PROPOSED REMEDY**

The Department is proposing Alternative 4, as the remedy for this site. Alternative 4 would achieve the remediation goals for the site by excavation of contaminated soils exceeding remediation goals, dewatering and treating the groundwater during excavation, backfilling of the excavation and the transportation of debris and contaminated soils to an off-site treatment and/or disposal facility. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure 6.

### **Basis for Selection**

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy Alternative 4 would satisfy this criterion by removing the contaminated soils, exceeding remediation goals, for off-site treatment and/or disposal. Alternative 4 addresses the source of the contamination, which is the most significant threat to public health and the environment. Alternative 1 (No Action) does not provide any protection to public health and the environment and will not be evaluated further. Alternative 3, by removing all soil contaminated above the unrestricted soil cleanup objective, meets the threshold criteria. Alternative 5 also complies with this criterion but to a lesser degree or with lower certainty.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternatives 3 and 4 comply with SCGs to the extent practicable. They address source areas of contamination and comply with the protection of groundwater soil cleanup objectives. It also creates the conditions necessary to restore groundwater quality to the extent practicable. Alternatives 2 and 5 also comply with this criterion but to a lesser degree or with lower certainty. Because Alternatives 2, 3, 4, and 5 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site. It is expected Alternatives 3 and 4 will achieve groundwater SCGs in less than 5 years, while groundwater contamination above SCGs will remain on-site under Alternatives 2 and 5 for many years.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the

engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated overburden soils (Alternatives 3 and 4). Alternative 3 results in removal of all of the chemical contamination at the site and removes the need for property use restrictions and long-term monitoring. Alternative 4 would result in the removal of contaminated soils exceeding remediation goals and almost all of the contaminated soil below the water table, but it also requires an environmental easement and long-term monitoring. For Alternative 2, site management remains effective, but it will not be desirable in the long term. The mixed results of the pilot testing of Alternative 5 call into question its long-term effectiveness.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2 would control potential exposures with institutional controls only and will not reduce the toxicity, mobility or volume of contaminants remaining. Alternatives 3 and 4 reduce the toxicity, mobility and volume of on-site waste by transferring the material to an approved off-site location. However, depending on the disposal facility, the volume of the material would not be reduced. Only Alternatives 4 and 5 would permanently reduce the toxicity, mobility and volume of contaminants by use of physical and chemical treatment.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 2 through 5 all have short-term impacts which could easily be controlled, however, Alternative 2 would have the smallest impact. While the short term impacts are greatest in terms of disruption due to construction with Alternatives 3 and 4, the time needed to achieve the remediation goals is the shortest with these alternatives. Alternative 5 takes the longest to achieve the remediation goals.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternatives 2 and 4 are favorable in that they are readily implementable. Alternative 3 is also implementable, but the volume of soil excavated under this alternative would necessitate increased truck traffic on local roads for several months. The results of the pilot testing indicate some uncertainty regarding the implementability of Alternative 5 due to the levels of soil contamination.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The costs of the alternatives vary significantly. Alternative 2 has a low cost, but the contaminated soil would not be addressed other than by institutional controls. With its large volume of soil to be handled, Alternative 3 (Restoration to Pre-Disposal or Unrestricted Conditions) would have the highest cost. Excavation and off-site

disposal (Alternative 4) would be much less expensive than Alternative 3, yet it would provide equal protection of the groundwater resource. The present worth costs of Alternatives 4 and 5 are similar to each other, although the capital cost for Alternative 5 would be higher than that of Alternative 4. The long-term maintenance cost of Alternative 4 would be lower than long-term maintenance under Alternative 5.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

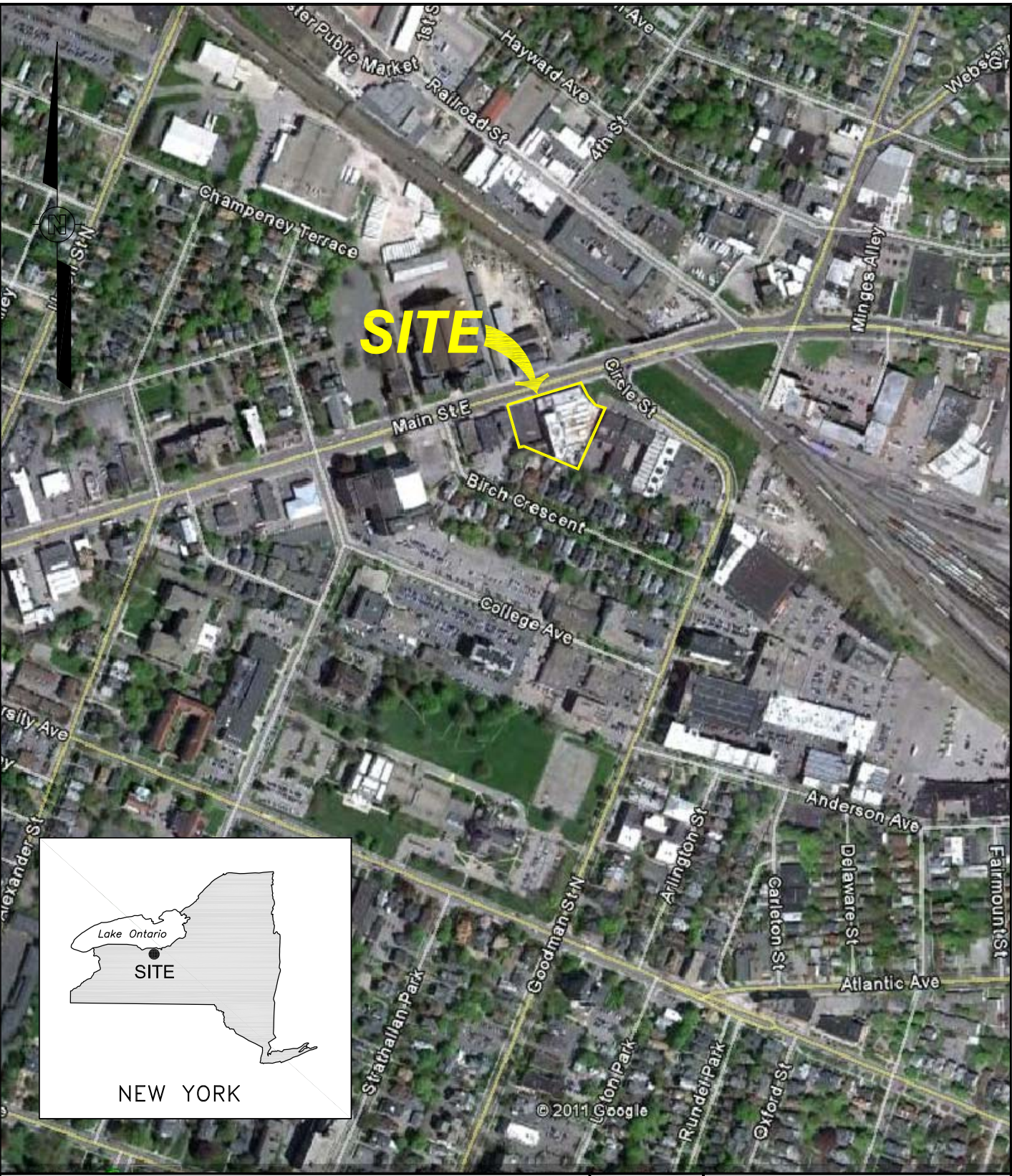
Since the anticipated use of the site is commercial, Alternatives 2 and 5 would be less desirable because at least some contaminated soil would remain on the property whereas Alternative 3 and 4 would remove or treat the contaminated soil permanently. However, the residual contamination with Alternative 4 would be controllable with implementation of a Site Management Plan. With Alternative 3, all of the overburden soil would be removed and restrictions on the site use would not be necessary.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 4 is being proposed because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	02/19/13	N. Robertson	A. Smith	H. Fariello	C. Byers	134685-24A1



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 Plotted By: steven.walsh

REFERENCE:  
 MAP FROM [www.google.com](http://www.google.com)

"DRAWING NOT TO SCALE"



Shaw Environmental, Inc.  
 (A CB&I Company)  
 13 British American Boulevard  
 Latham, New York 12110-1405

NEW YORK STATE DEPARTMENT OF  
 ENVIORNENTAL CONSERVATION

**FIGURE 1**  
**SITE LOCATION MAP**  
 STAUBS TEXTILE SERVICE  
 935-951 EAST MAIN STREET  
 ROCHESTER, MONROE COUNTY, NEW YORK

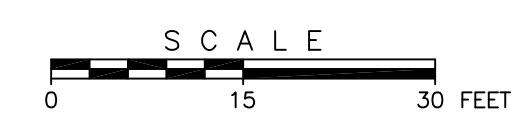
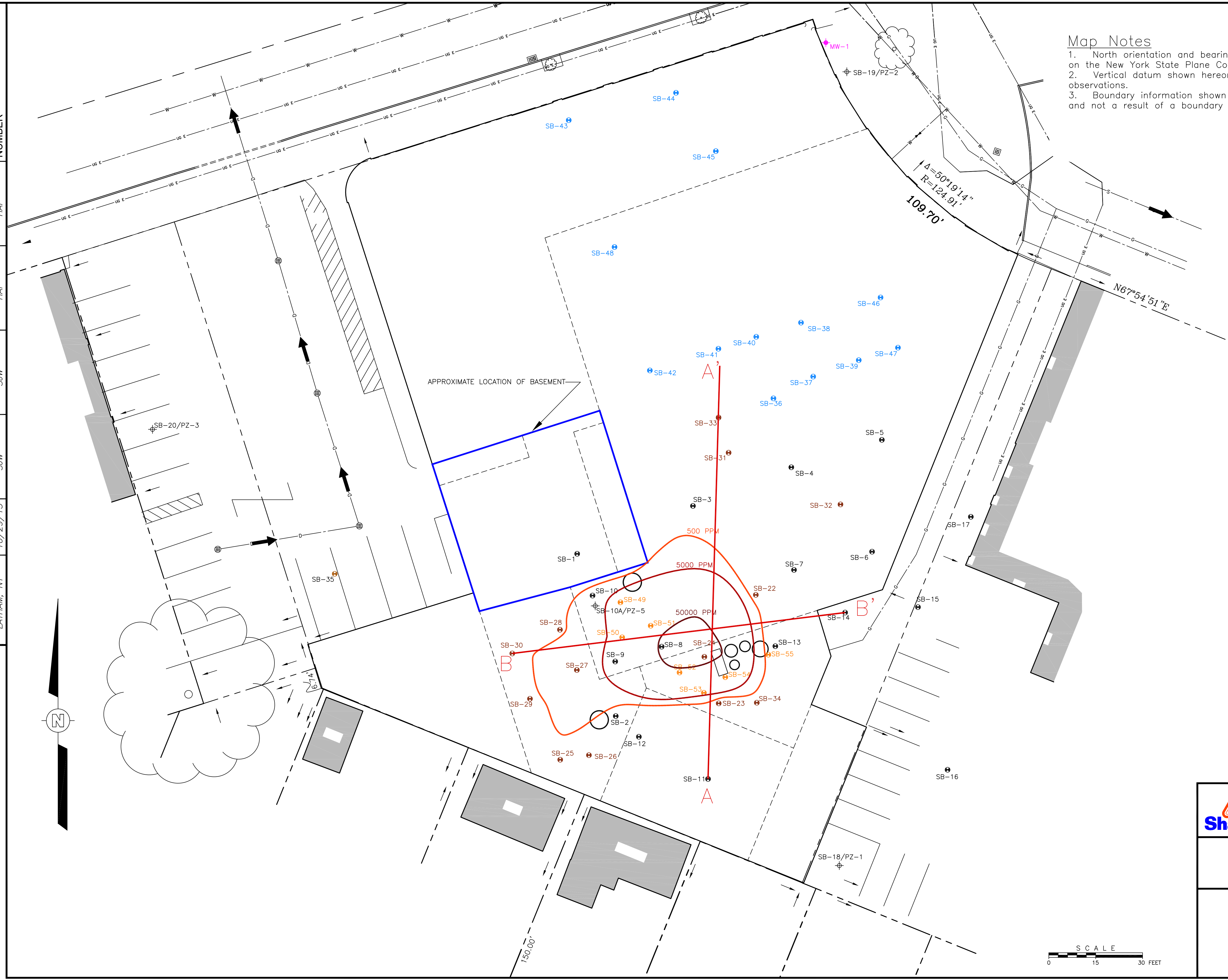
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 APPROVED BY HAF  
 CHECKED BY HAF  
 DRAWN BY S/W  
 DESIGNED BY S/W  
 DATE 10/29/13  
 OFFICE LATHAM, NY

**Map Notes**


1. North orientation and bearings are referenced to Grid North and are based on the New York State Plane Coordinate System, West Zone, NAD 83.
2. Vertical datum shown hereon is NAVD 88 and was obtained through GPS observations.
3. Boundary information shown is approximate as protracted from tax mapping and not a result of a boundary survey.

**LEGEND**

- SB-5 ● FIRST ROUND SOIL BORING
- PZ-1 (SB-18) ⊕ FIRST ROUND SOIL BORING/PIEZOMETER
- SB-33 ● SECOND ROUND SOIL BORING
- SB-35 ● GEOTECHNICAL BORING
- PCE CONCENTRATION
- 50,000 PPM
- 5,000 PPM
- 500 PPM
- APPROXIMATE LOCATION OF BASEMENT
- LOCATION OF UST

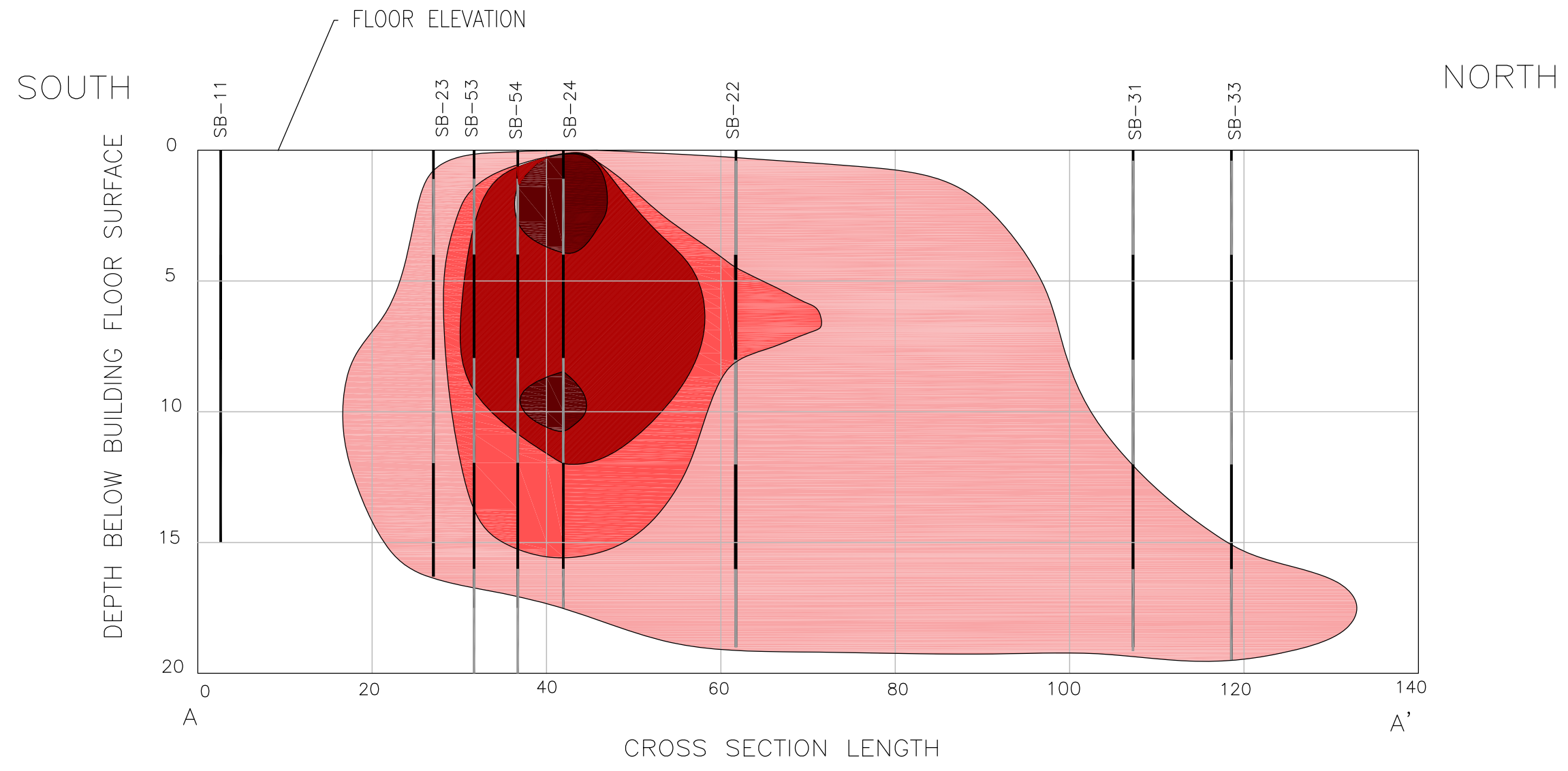


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 Plotted By: steven.walsh


**Shaw Environmental, Inc.**  
 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 ROCHESTER, NEW YORK  
**FIGURE 2**  
**PCE ISOCON MAP**  
 STAUBS TEXTILE SERVICE  
 935 & 951 EAST MAIN STREET  
 MONROE CO., ROCHESTER, NEW YORK

OFFICE: LATHAM, NY  
 DATE: 12/4/13  
 DESIGNED BY: S/JW  
 DRAWN BY: S/JW  
 CHECKED BY: HAF  
 APPROVED BY: HAF  
 DRAWING NUMBER: 134685-24B1

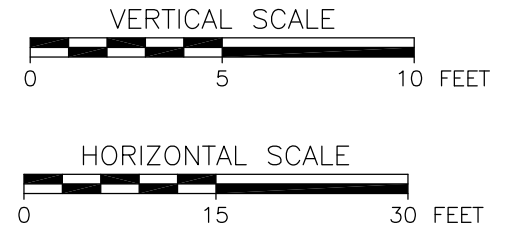
### PCE CROSS-SECTION A-A'




**LEGEND**

- SB-9 | SOIL BORING LOCATION
- | SOIL BORING SAMPLING INTERVALS
- 1.3 PPM PCE CONTOUR
- 150 PPM PCE CONTOUR
- 5,000 PPM PCE CONTOUR
- 50,000 PPM PCE CONTOUR

- NOTES:**
- BORINGS MAY NOT LIE ON LINE, AND MAY HAVE BEEN PROJECTED ONTO LINE. SEE FIGURE 5 FOR EXACT LOCATIONS.
  - SAMPLE INTERVALS ARE SHOWN IN ALTERNATING GREY AND BLACK COLUMNS
  - ANALYTICAL DATA CAN BE FOUND IN THE TABLES SECTION OF THE REPORT.
  - SB-54 (0-8 FT) IS CONSIDERED ANOMALOUS AND NOT USED FOR THIS CONTOUR.
  - SOIL BORINGS 49-55 REPRESENT SOIL CONCENTRATIONS POST IRM#1: CONSTRUCTION COMPLETION REPORT #1 (UST CLOSURE/REMOVAL) ACTIVITIES.



  
 SHAW ENVIRONMENTAL, INC. (A CB&I COMPANY)

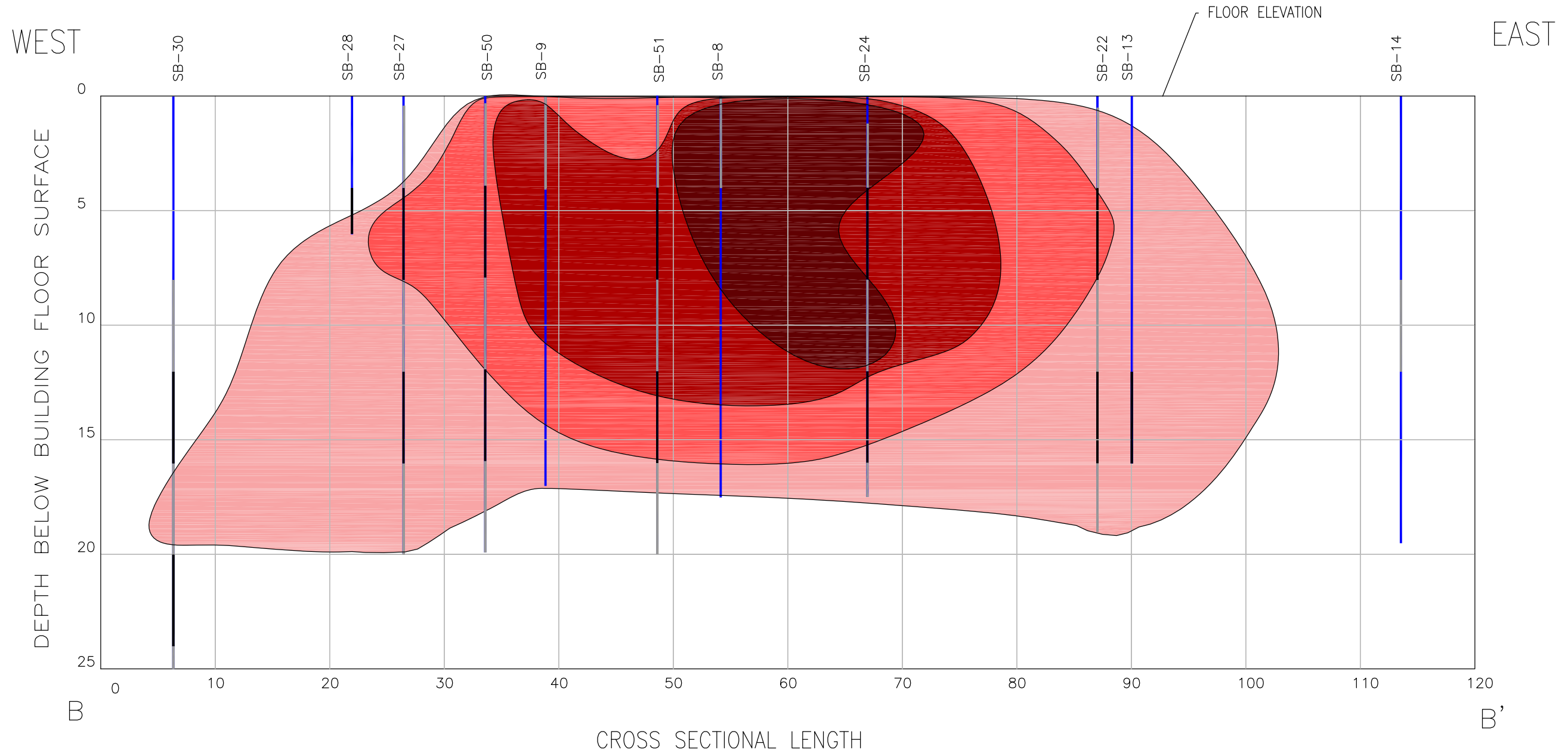
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**FIGURE 3**  
**PCE CROSS-SECTION A-A'**  
 STAUBS TEXTILE SERVICE  
 935 & 951 EAST MAIN STREET  
 MONROE CO., ROCHESTER, NEW YORK

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 Plotted By: steven.walsh



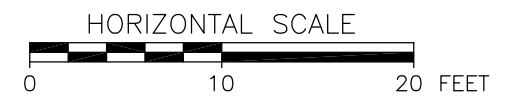
# PCE CROSS-SECTION B-B'



- NOTES:**
- BORINGS MAY NOT LIE ON LINE, AND MAY HAVE BEEN PROJECTED ONTO LINE. SEE FIGURE 5 FOR EXACT LOCATIONS.
  - SAMPLE INTERVALS ARE SHOWN IN ALTERNATING GREY AND BLACK COLUMNS
  - ANALYTICAL DATA CAN BE FOUND IN THE TABLES SECTION OF THE REPORT.
  - SOIL BORINGS 49-55 REPRESENT SOIL CONCENTRATIONS POST IRM#1: CONSTRUCTION COMPLETION REPORT #1 (UST CLOSURE/REMOVAL) ACTIVITIES.

**LEGEND**

- SB-9 | SOIL BORING LOCATION
- | SOIL BORING SAMPLING INTERVALS
- 1.3 PPM PCE CONTOUR
- 150 PPM PCE CONTOUR
- 5,000 PPM PCE CONTOUR
- 50,000 PPM PCE CONTOUR
- 2.7 PCE CONCENTRATION AT PARTICULAR DEPTH



OFFICE	DATE	DESIGNED BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
LATHAM, NY	12/04/13	SJW	HAF	HAF	134685-24B2

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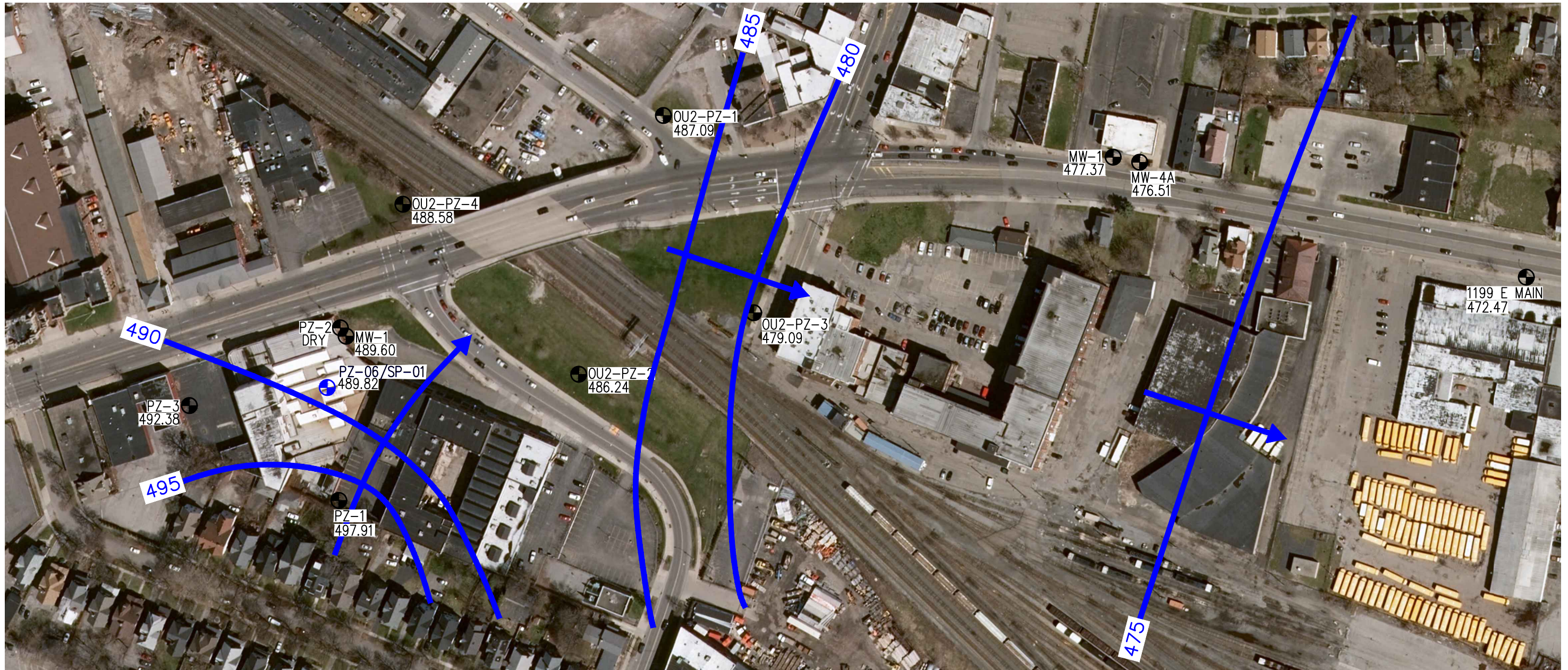
**CBI**  
 SHAW ENVIRONMENTAL, INC. (A CB&I COMPANY)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION





**FIGURE 4**

**PCE CROSS-SECTION B-B'**

STAUBS TEXTILE SERVICE  
 935 & 951 EAST MAIN STREET  
 MONROE CO., ROCHESTER, NEW YORK



## LEGEND

- MW-2  MONITORING WELL/PIEZOMETER LOCATION
- 495  GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
-  GROUNDWATER FLOW DIRECTION
- 492.38  GROUNDWATER ELEVATION

## STAUB'S SITE PLAN

SCALE: 1" = 150'-0"

## NOTES

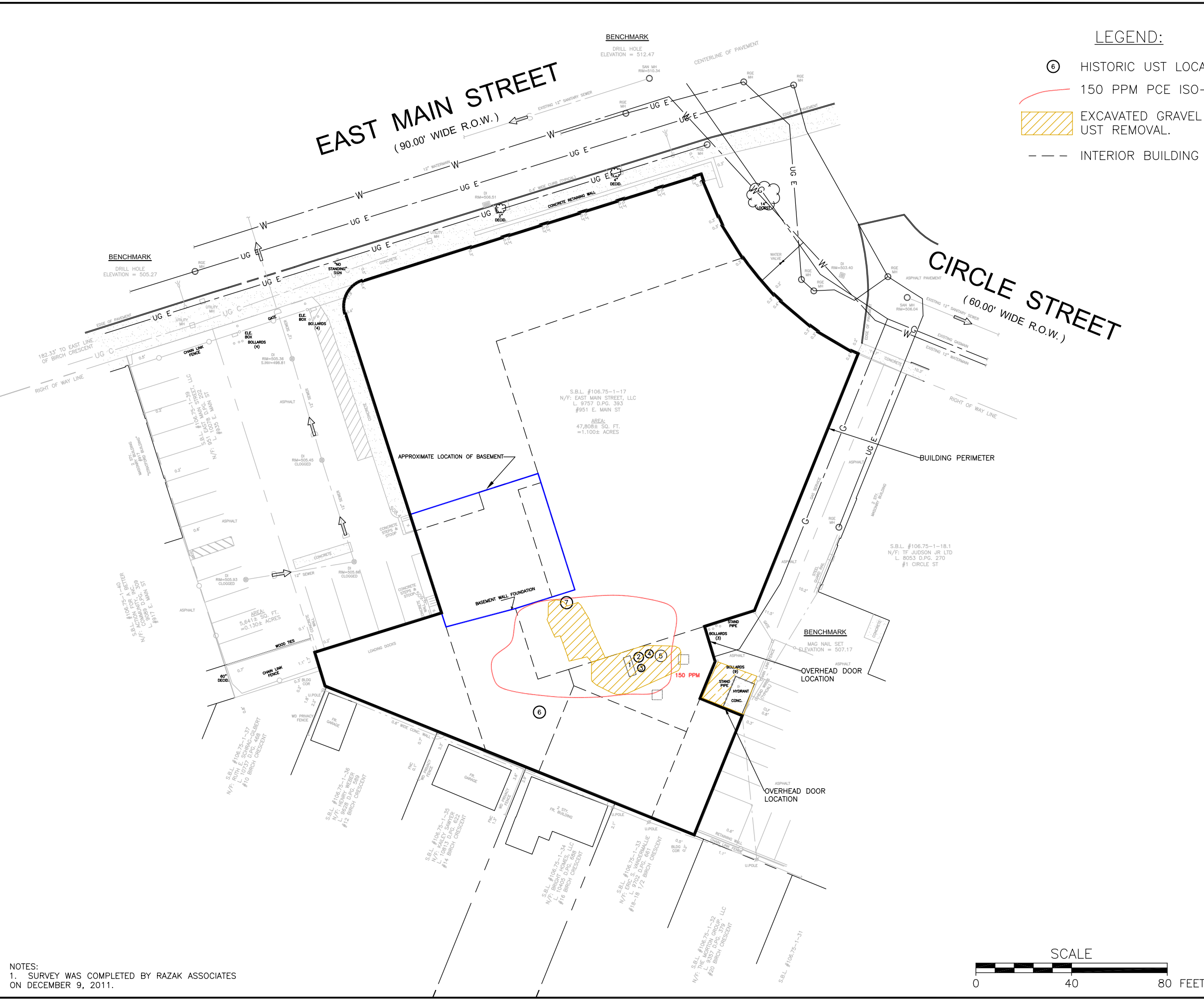
1. AERIAL PHOTOGRAPHY FROM NEW YORK STATE GIS CLEARINGHOUSE - 2015.
2. GROUNDWATER ELEVATION MEASUREMENTS WERE COLLECTED ON JUNE 22, 2016.

SCALE IN FEET



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 DATE: 01/14/14  
 DESIGNED BY: HAF  
 DRAWN BY: M/S  
 CHECKED BY: HAF  
 APPROVED BY: HAF  
 DRAWING NUMBER: 134685-24B23



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 LATHAM NEW YORK, 12110-1405

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**FIGURE 6**

STAUBS TEXTILE SERVICE  
 935-951 EAST MAIN STREET  
 ROCHESTER, MONROE COUNTY, NEW YORK