PROPOSED REMEDIAL ACTION PLAN

Former Cleaners Products Supply
Operable Unit Number 01: Remedial Program
State Superfund Project
Sunnyside, Queens County
Site No. 241123
March 2020

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

PROPOSED REMEDIAL ACTION PLAN

Former Cleaners Products Supply
Operable Unit 1
Sunnyside, Queens County
Site No. 241123
March 2020

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 resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the RI indicate that contamination present at Operable Unit 1 (OU-1) of the site no longer poses a threat to human health or the environment. The IRM(s) conducted at OU-1 attained the remediation objectives identified for this operable unit, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy proposed by this Proposed Remedial Action Plan (PRAP). A No Further Action remedy may include site management, which will include continued operation of any remedial system installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the proposed remedy for OU-1. This PRAP identifies the IRM(s) conducted and discusses the basis for No Further Action.

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:

Queens Public Library at Woodside
54-22 Skillman Avenue
Woodside, NY 11377
Phone: 718-429-4700

Queens Community Board #2
43-22 50th Street
Woodside, NY 11377
Phone: 718-533-8773

A public comment period has been set from:

March 11, 2020 to April 10, 2020

A public meeting is scheduled for the following date:

March 24, 2020 at 6:00 PM

Public meeting location:

St. Sebastian's Recreation Center, 39-60 57th Street, Woodside, NY 11377

At the meeting, the findings of the remedial investigation (RI) 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 to:

Kyle Forster
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
kyle.forster@dec.ny.gov

The Department may modify the proposed remedy 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 OU 1.

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: The Former Cleaners Products Supply site is a 0.23-acre parcel located at 50-45 Barnett Avenue, Sunnyside in an urban area of Queens. The site is located approximately 0.2 miles west of the intersection of Woodside Avenue and Barnett Avenue.

Site Features: The site is occupied by a one-story commercial building and is equipped with a soil vapor extraction system.

Current Zoning and Land Use: The site is zoned M1-1 (manufacturing) and currently occupied by a glass company. The buildings to the east of the site along Barnett Avenue consist of a combination of commercial and light industrial uses, including a cabinetry and metal shop, an automotive warehouse, and offices. Other surrounding property uses include a parking area to the west, an active railroad to the north, and an apartment complex and residential properties to the south. Approximately 0.3 miles to the east of the property is another residential area along Woodside Avenue.

Past Use of the Site: Until 2007, the site was used by a dry-cleaning supply business called Cleaners Products Supply, which used aboveground storage tanks to store tetrachloroethene (PCE). This business operated at the site since 1952. The presence of dry-cleaning solvents (primarily PCE) discovered in subsurface soils, soil vapor, and groundwater is believed to be a result of materials handling during this use.

Operable Units: 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-1) is the on-site source area. OU-2 consists of the associated off-site groundwater plume and soil vapor.

Site Geology and Hydrogeology: The direction of groundwater flow is in the north, northwesterly direction but may vary seasonally. According to regional groundwater flow maps and the evaluation of groundwater flow, this location appears to be at a groundwater divide, suggesting that groundwater may flow radially away from the site. Groundwater is present at approximately 24-26 feet below the ground surface.

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 1A and a site vicinity map is attached as Figure 1B.

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, an alternative that restricts the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) is being proposed.

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:

Cleaners Products Supply Inc.

Capitol Glass & Sash Co. Inc.

A Plus Locksmith and Towing Service

New York City Industrial Development Agency (NYC IDA)

All Around Town Locksmith

The PRPs for the site declined to implement a remedial program when requested by the Department. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

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 Supplemental RI Report, and the Expanded Supplemental Groundwater Investigation 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:

- air
- groundwater
- soil
- indoor air
- soil vapor
- sub-slab 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)

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM described in Section 6.2. More complete information can be found in the RI Report, Supplemental RI Report, Expanded Supplemental Groundwater Investigation, and the IRM Construction Completion Report.

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 has been completed at this site based on conditions observed during the RI.

SVE IRM

Following successful results of a Soil vapor extraction (SVE) pilot test performed in March 2016, an SVE system was installed in June 2017 to remove tetrachloroethene (PCE) from the subsurface. PCE is physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries PCE from the soil to the SVE wells. The air extracted from the SVE wells is treated as necessary prior to being discharged to the atmosphere. Treatment of the air discharge is no longer occurring since effluent vapor concentrations have decreased to levels no longer requiring treatment according to Division of Air requirements contained in 6 NYCRR Part 212. The SVE system continues to operate and protect occupants from exposures related to soil vapor intrusion verified by indoor air sampling, and sub-slab vacuum monitoring. The SVE system is equipped with remote telemetry that provides real time notifications of system shut-down or other issues, such that they can be addressed by DEC's contractor. Installation of the SVE System is documented in the March 2018 Construction Completion Report.

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.

Remediation at Operable Unit 01 is complete. Prior to remediation, the primary contaminant of concern was tetrachloroethene in soil, groundwater, and soil vapor. Remedial actions have successfully achieved soil cleanup objectives for commercial use. After the SVE system became operational, indoor air concentrations of PCE within the site building have been reduced to 2.6 to

4.8 micrograms per cubic meter (µg/m³), and are below the NYSDOH Air Guideline of 30 µg/m³. Prior to implementing the SVE system, indoor air concentrations ranged from 540 to 870 µg/m³. Residual contamination in the soil, groundwater, and soil vapor is being managed under interim site management and an Operation & Maintenance Manual until a Record of Decision for Operable Unit 02 is issued. A soil vapor intrusion evaluation will be completed, and appropriate actions implemented, in the event the SVE system is shut down in the existing OU-1 building or for any future buildings developed at the site.

For OU-1, On-site Areas:

Soils and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyl's (PCBs), and metals. Groundwater has also been analyzed for 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS).

Soil: Before implementing the IRM for OU-1, PCE was detected in soil at concentrations up to 71 parts per million (ppm) which is below the 6 NYCRR commercial use soil cleanup objective (CUSCO) of 150 ppm, but above the protection of groundwater soil cleanup objective (PGWSCO) of 1.3 ppm. PCE was detected inside the building at depths ranging from 5 to 17 feet below ground surface. No other compounds, (SVOCs, metals, pesticides, or PCBs) were detected above CUSCOs.

Groundwater: PCE is present in on-site groundwater at concentrations up to 12 parts per billion (ppb) based on the most recent sampling. Prior to operating the SVE system, PCE was detected in on-site groundwater at concentrations up to 1,500 ppb (NYSDEC Class GA standard is 5 ppb).

Off-site Areas, to be addressed under forthcoming ROD for OU-2:

Soil, groundwater, and soil vapor were analyzed for VOCs.

Soil: PCE was detected at and above the PGWSCO at two off-site locations at a concentration of 1.3 ppm 22 – 24 feet below grade to the west-southwest, and at 14 ppm 15 - 20 feet below grade immediately to the west in the adjacent parking lot.

Groundwater: PCE has been detected at off-site locations at concentrations up to 22,000 ppb. However, the latest groundwater sampling revealed the highest off-site concentrations of PCE at 440 ppb. The off-site groundwater plume is being managed under OU-2.

Off-site soil vapor: Soil vapor intrusion evaluations were performed at properties near the site and the results did not warrant any further action, provided the on-site source was addressed. Further evaluation off-site soil vapor will continue to ensure potential exposures to soil vapor intrusion are addressed.

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.*

People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by site related contamination. People will not come into contact with contaminated soil or groundwater unless they dig below the sites surface/site cover (concrete building foundation). Volatile organic compounds in soil vapor (air spaces within the soil) may move into 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 buildings, is referred to as soil vapor intrusion. A soil vapor extraction system (system that ventilates/removes air beneath the building) has been installed at the site to prevent the indoor air quality from being affected by the contamination in soil vapor beneath the buildings. The potential exists for indoor air impacts to site contaminants via the soil vapor intrusion pathway for off-site buildings.

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

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- 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 PROPOSED REMEDY

Based on the results of the investigations at OU-1, the IRM that has been performed, and the evaluation presented here, the Department is proposing No Further Action as the remedy for OU-1. This No Further Action remedy includes continued operation of the SVE system, monitoring of groundwater, indoor air, subslab soil vapor, and soil vapor, and the implementation of institutional and engineering controls (ICs/ECs), as the proposed remedy for OU-1. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed, and the proposed institutional and engineering controls are listed below:

1. Soil Vapor Extraction (SVE)

Soil vapor extraction (SVE) was implemented to remove volatile organic compounds (VOCs) from the subsurface. VOCs are physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere.

Five SVE wells were installed into the vadose zone and screened from 6 to 16 feet below ground surface. The air containing VOCs extracted from the SVE wells was treated by passing the air stream through activated carbon which removes the VOCs from the air prior to it being discharged to the atmosphere. Vapor concentrations have subsequently decreased to levels where effluent treatment is no longer needed according to Division of Air requirements contained in 6 NYCRR Part 212.

2. Cover System

A site cover currently exists in areas not occupied by buildings and will be maintained to allow for commercial use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

3. Institutional Control

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

- 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);
- 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;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOHMH; and
- require compliance with the Department approved Site Management Plan.

4. Site Management Plan

A Site Management Plan is required, which includes the following:

a. 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 ensure the following institutional and engineering controls remain in place and effective:

Institutional Controls:

- The Environmental Easement discussed in Paragraph 3 above.

Engineering Controls:

- The cover system discussed in Paragraph 2, and
- The soil vapor extraction system discussed in Paragraph 1 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a provision for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible. The nature and extent of contamination in areas where access was previously limited or unavailable will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department determination of the need for a remedy, a Remedial Action Work Plan (RAWP) will be developed for the final remedy for the site, including removal and/or treatment of any source areas to the extent feasible. Citizen Participation Plan (CPP) activities will continue through this process. Any necessary remediation will be completed prior to, or in association with, redevelopment. This includes areas under existing buildings on OU1;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper one foot of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - monitoring of groundwater, indoor air, subslab soil vapor, and soil vapor to assess the performance and effectiveness of the remedy;
   - a schedule of monitoring and frequency of submittals to the Department; and
   - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation (SVE) system. The plan includes, but is not limited to:
   - procedures for operating and maintaining the system; and
   - compliance inspection of the SVE system to ensure proper O&M as well as providing the data for any necessary reporting.

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), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and inorganics (metals and cyanide). 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 groundwater, soil, and/or soil vapor.

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 were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. A source area was identified at Operable Unit 1 (OU-1) beneath the building slab in subsurface soils. Detections of tetrachloroethene (PCE) were likely from periodic releases during transfer and handling of dry-cleaning chemicals. Prior to source area remediation via the IRM described in Section 6.2, PCE was present throughout the building footprint at depths ranging from 5 to 13 feet below grade. Groundwater in the immediate vicinity of the site was impacted from this source area, with a secondary off-site source area on the corner of Woodside and Barnett Avenue with significantly more elevated concentrations of PCE. The second source area will be addressed under the remedial program for OU-2.

The source area identified at the site was addressed by the IRM described in Section 6.2.

Groundwater

Groundwater samples were collected from monitoring wells screened in the upper 10 feet to target the shallow water table, and from wells screened within the deeper groundwater zone approximately 30 feet below the shallow monitoring wells. On-site groundwater and groundwater in the immediate vicinity of the site was impacted with PCE, while groundwater further to the east (OU-2; to be addressed separately) of the site was impacted with PCE and PCE-related degradation products, including trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE). With the source area addressed by the IRM described in Section 6.2, PCE concentrations in groundwater in the immediate vicinity of the site have been significantly reduced as shown in Figure 2A and 2B. The local community is served by a municipal water supply and no private wells are located in the vicinity of the site.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
tetrachloroethene	0.55 – 12	5	1/3

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).

On-site groundwater contamination identified during the RI was addressed during the IRM described in Section 6.2. Off-site groundwater will be addressed during the remedy selection process for OU-2.

Soil

Subsurface soil samples were collected at the site during the RI from a depth of approximately 2 - 24 feet below grade to assess soil contamination impacts to groundwater. The results shown below on Table 2 and in Figure 3 indicated that soils within OU-1 exceeded the unrestricted and protection of groundwater SCOs for volatile organic compounds.

Table 2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Commercial Use SCG[c] (ppm)	Frequency Exceeding Restricte
VOCs					
tetrachloroethene	0.0012 – 71	1.3	19/38	150	0/38

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), 375-6.8(b), Unrestricted Soil Cleanup Objectives; the Unrestricted SCO is the same as the Protection of Groundwater Soil Cleanup Objective for tetrachloroethene.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.

Soil contamination identified during the RI was addressed during the IRM described in Section 6.2.

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. Due to the presence of buildings in the impacted area a full suite of samples was collected to evaluate whether soil vapor intrusion was occurring.

Soil vapor samples were collected from the sub-slab and indoor air of the former dry-cleaning supply business that is now occupied by Capitol Glass and Sash. Soil vapor sampling was also performed at various

off-site structures along Barnett Avenue and at residential properties to assess the potential for soil vapor intrusion. In addition to soil vapor intrusion sampling, soil gas sampling was performed along Barnett Avenue and Woodside Avenue to determine the off-site vapor impacts from the site. The results indicated that PCE was present in the sub-slab vapor and indoor air at the Capitol Glass and Sash building as well as the neighboring property along Barnett Avenue. Figure 4 shows the concentrations of dry-cleaning solvents that were detected in indoor air prior to, and after the IRM was implemented for OU-1.

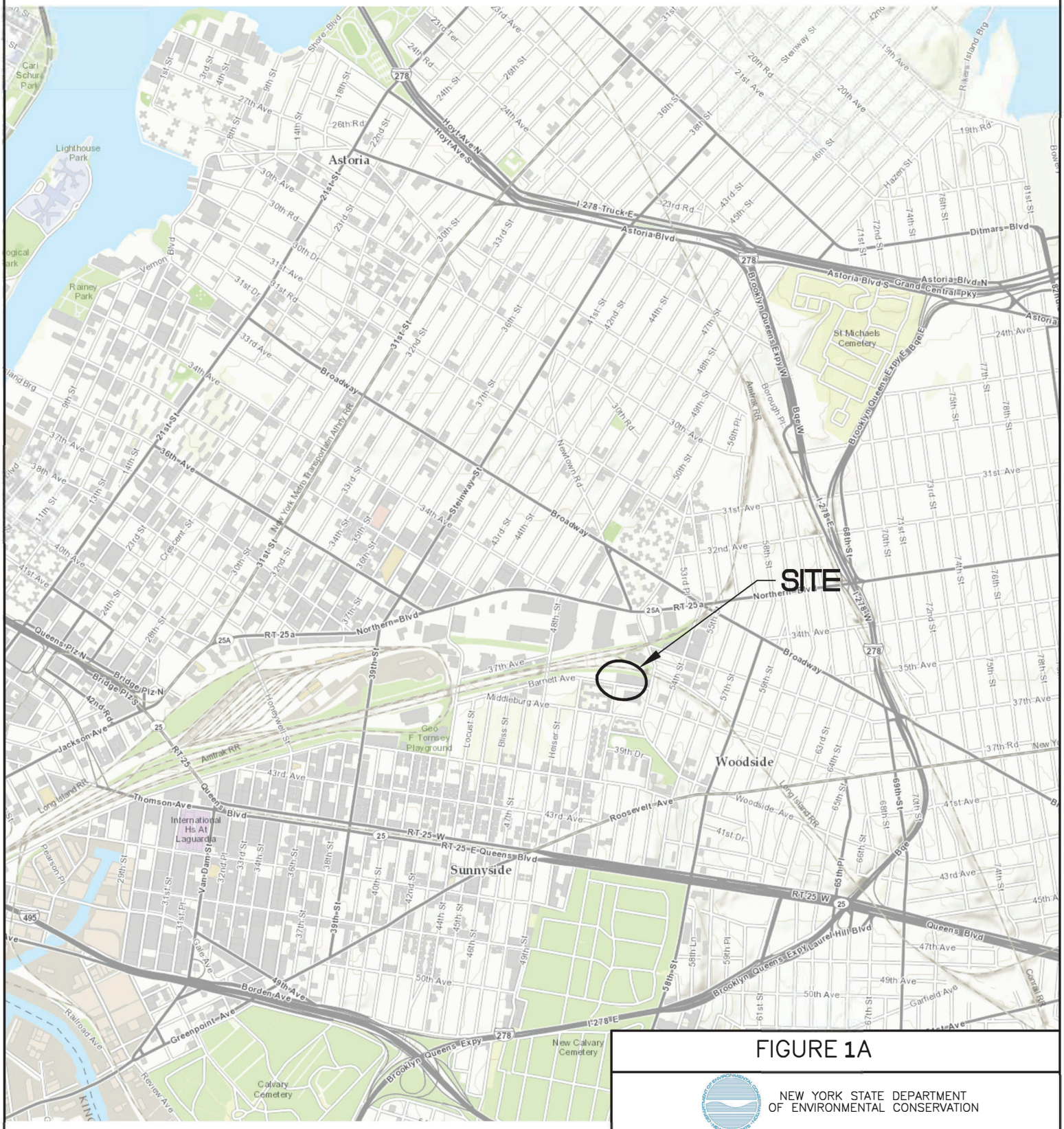
Table 3 – Air Results

Detected Constituents	Concentration Range Detected in Indoor Air before SVE IRM ($\mu g/m^3$)[a]	NYSDOH Air Guideline ($\mu g/m^3$)	Concentration Range Detected in Indoor Air after SVE IRM ($\mu g/m^3$)
VOCs			
tetrachloroethene	540 – 870	30	2.6 – 4.8

a - $\mu g/m^3$: micrograms per cubic meter;

Approximately 300 pounds of PCE was estimated to be present beneath OU-1 using soil data collected during the Site Characterization and Remedial Investigation. Since the soil vapor extraction (SVE) system began operating in June 2017, mass removal rates were measured on a weekly and monthly basis. This data was used to calculate an estimated cumulative mass removal of approximately 300 pounds. These estimates, coupled with a decrease in PCE mass-removal to an asymptotic rate, indicate that the majority of PCE has been removed from the subsurface. Continued operation and monitoring of the SVE system will address residual PCE in subsurface soil.

Based on the concentrations detected in comparison with the NYSDOH Soil Vapor Intrusion Guidance, soil vapor contamination identified during the RI was addressed during the IRM described in Section 6.2.



The base map was designed and developed by ESRI based on the topographic map templates that are available through the ArcGIS Resource Centers.

2000 1000 0 2000 4000

SCALE: 1"=2000'

FIGURE 1A

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORMER CLEANER PRODUCTS SUPPLY

SITE LOCATION MAP

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

FILE NAME: P:\NYSDEC PROGRAM\448670 WA #15 FORMER CLEANERS PRODUCTS SUPPLY RIFS\10.0 TECHNICAL CATAGORIES\10.1 CAD\FIGURES\PRELIMINARY\448670-SK003.DWG
PLOT DATE: 3/2/2017 2:13 PM PLOTTED BY: GOLDTHWAIT, JAMES

Former Cleaners Products Supply
Site No. 241123
Figure 1B
Site Vicinity Map

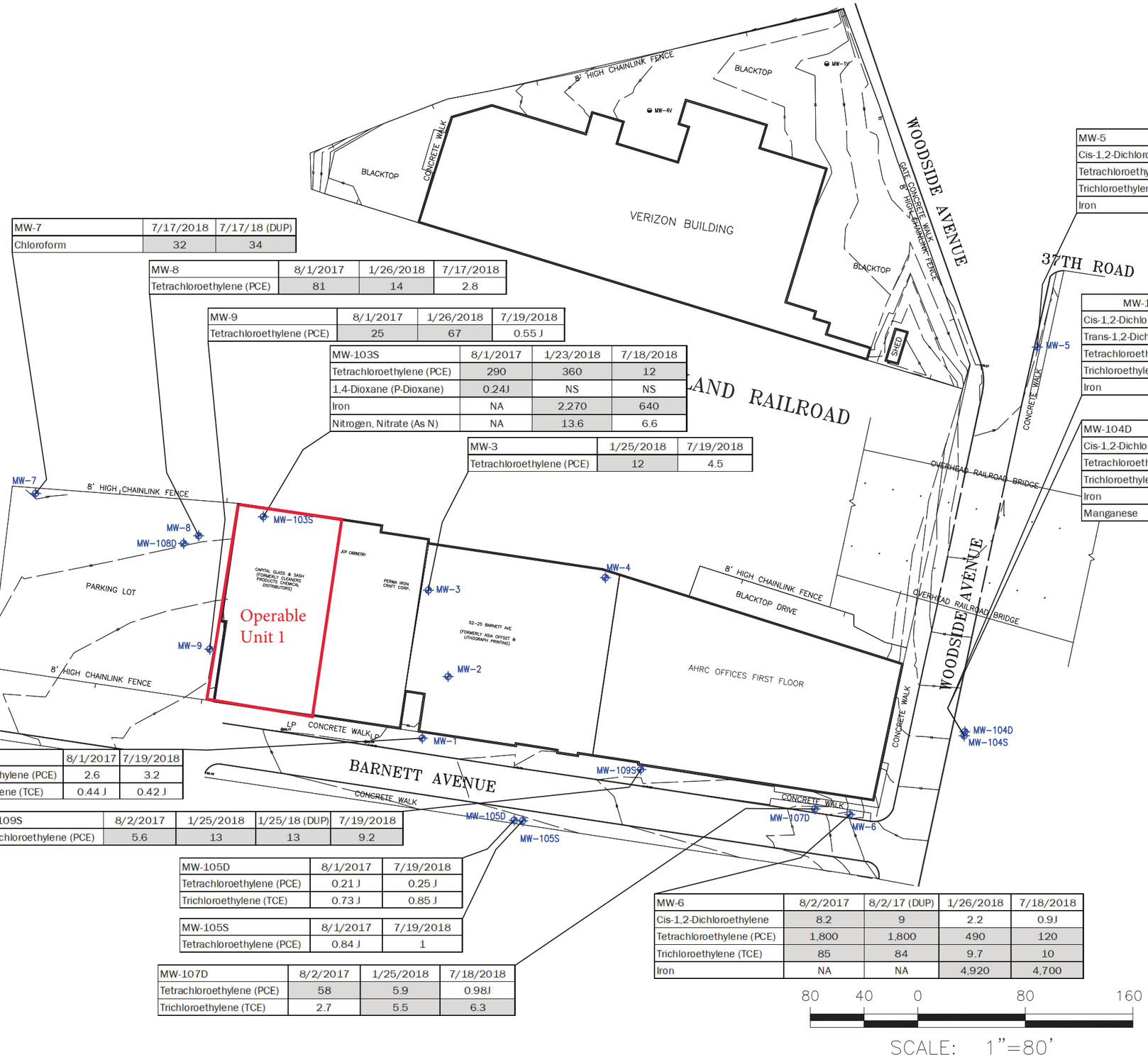
Operable Unit 01

*The associated groundwater plume is being managed separately under Operable Unit 02, and will be addressed under a forthcoming Record of Decision.

N

0 100 200 400 600 800 Feet

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation



MW-7	7/17/2018	7/17/18 (DUP)
Chloroform	32	34

MW-8	8/1/2017	1/26/2018	7/17/2018
Tetrachloroethylene (PCE)	81	14	2.8

MW-9	8/1/2017	1/26/2018	7/19/2018
Tetrachloroethylene (PCE)	25	67	0.55 J

MW-103S	8/1/2017	1/23/2018	7/18/2018
Tetrachloroethylene (PCE)	290	360	12
1,4-Dioxane (P-Dioxane)	0.24J	NS	NS
Iron	NA	2,270	640
Nitrogen, Nitrate (As N)	NA	13.6	6.6

MW-3	1/25/2018	7/19/2018
Tetrachloroethylene (PCE)	12	4.5

MW-5	8/1/2017	1/23/2018	7/18/2018
Cis-1,2-Dichloroethylene	23	29	20
Tetrachloroethylene (PCE)	340	24	260
Trichloroethylene (TCE)	42	49	44
Iron	NA	364	310

MW-104S	8/1/2017	1/25/2018	7/18/2018
Cis-1,2-Dichloroethylene	110	26	840
Trans-1,2-Dichloroethene	5	1.7J	30
Tetrachloroethylene (PCE)	260	620	130
Trichloroethylene (TCE)	160	59	180
Iron	NS	6,640	3,900

MW-104D	8/1/2017	1/25/2018	7/18/2018
Cis-1,2-Dichloroethylene	32	17	39
Tetrachloroethylene (PCE)	430	660	180
Trichloroethylene (TCE)	150	75	56
Iron	NA	11,400	13,000
Manganese	NA	1,880	2,600

LEGEND:

MONITORING WELL

PARAMETERS

ANALYSIS NAME	NYSDEC AWQS
CHLOROFORM	7
CIS-1,2-DICHLOROETHYLENE	5
TRANS-1,2-DICHLOROETHENE	5
TETRACHLOROETHYLENE (PCE)	5
TRICHLOROETHYLENE (TCE)	5
1,4-DIOXANE (P-DIOXANE)	NS
IRON	300
MANGANESE	300
NITROGEN, NITRATE (AS N)	10

EXCEEDANCES OF NYSDEC AMBIENT WATER QUALITY STANDARDS/GUIDANCE CRITERIA ARE IN SHADED CELLS

MW-1	8/1/2017	7/19/2018
Tetrachloroethylene (PCE)	2.6	3.2
Trichloroethylene (TCE)	0.44 J	0.42 J

MW-109S	8/2/2017	1/25/2018	1/25/18 (DUP)	7/19/2018
Tetrachloroethylene (PCE)	5.6	13	13	9.2

MW-105D	8/1/2017	7/19/2018
Tetrachloroethylene (PCE)	0.21 J	0.25 J
Trichloroethylene (TCE)	0.73 J	0.85 J

MW-105S	8/1/2017	7/19/2018
Tetrachloroethylene (PCE)	0.84 J	1

MW-107D	8/2/2017	1/25/2018	7/18/2018
Tetrachloroethylene (PCE)	58	5.9	0.98J
Trichloroethylene (TCE)	2.7	5.5	6.3

MW-6	8/2/2017	8/2/17 (DUP)	1/26/2018	7/18/2018
Cis-1,2-Dichloroethylene	8.2	9	2.2	0.9J
Tetrachloroethylene (PCE)	1,800	1,800	490	120
Trichloroethylene (TCE)	85	84	9.7	10
Iron	NA	NA	4,920	4,700

80 40 0 80 160

SCALE: 1"=80'

FIGURE 2A

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORMER CLEANER PRODUCTS SUPPLY GROUNDWATER INVESTIGATION JULY 2017, JANUARY 2018, & JULY 2018

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

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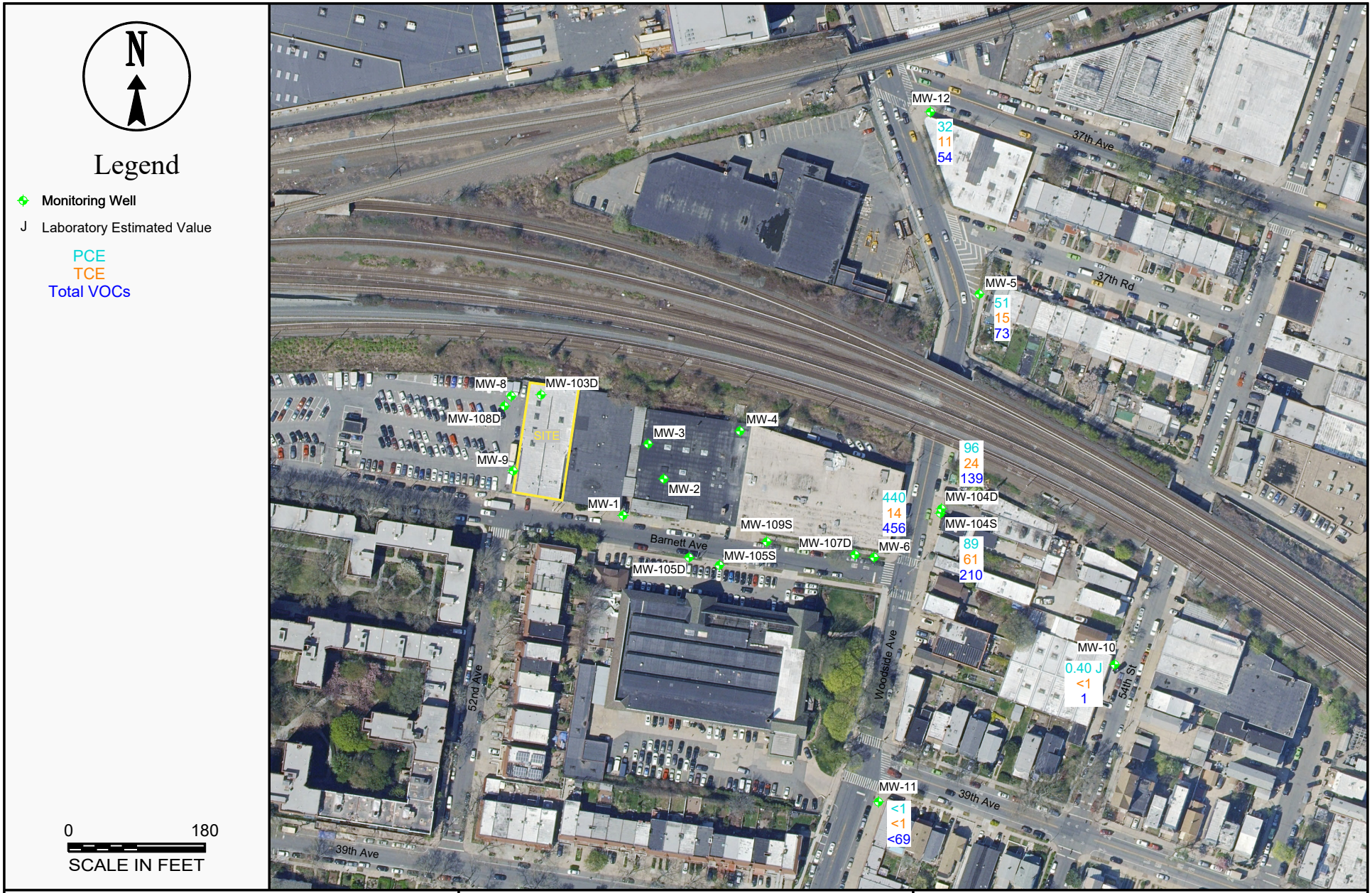

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Figure 2B - Groundwater Analytical Results (µg/L) November 5, 2019

Former Cleaners Products Supply
50-45 Barnett Avenue
Sunnyside, NY
NYSDEC Site #241123

FC-MW-108D	
12/2/15	29.5–30'
PCE	0.05

FC-GP-101			
4/8/15	5–8'	8–12'	20–24'
PCE	12	20	0.086

FC-MW-103S			
4/7/15	8–12'	8–12' (DUP)	20–24'
PCE	7.2	5	0.025

FC-GP-102			
4/7/15	5–8'	8–12'	20–22'
PCE	3.1	4.2	0.032

FC-SVE-04		
10/6/16	2.5'	15'
PCE	0.021 J	0.28 J

FC-GP-103			
4/8/15	5–8'	12–13'	20–24'
PCE	3	11	0.041

FC-GP-104				
4/10/15	5–7'	11–12'	16–17'	
PCE	0.78	37	0.019	

FC-GP-105				
4/9/15	7–8'	10–11'	16–18'	
PCE	0.64	52	0.049	

FC-MW-104S		
4/21/15	20–20.5'	29.5–30'
PCE	ND	0.015

FC-MW-104D		
4/21/15	61.5–62'	
PCE	ND	

FC-SVE-05			
10/6/16	3.5'	3.5' (DUP)	15'
PCE	0.0099 J	0.009 J	0.014 J

FC-GP-110	
4/22/15	23–23.5'
PCE	0.015

FC-GP-106			
4/8/15	5–8'	11–12'	15–16'
PCE	1.5	25	0.15 J

FC-GP-109	
4/10/15	16–20'
PCE	0.0024

FC-GP-108	
4/21/15	23.5–24'
PCE	0.0097

FC-GP-107			
4/9/15	5–7'	7–8'	14–15'
PCE	0.035	23	0.0092

FC-MW-105S		
4/13/15	12–16'	20–24'
PCE	ND	0.00052 J

FC-MW-105D	
4/15/15	65–66'
PCE	ND

FC-GP-111		
4/10/15	12–13'	12–13' (DUP)
PCE	0.0012 J	0.00072 J

FC-MW-109S			
2/18/16	10–15'	(10–15')DUP	15–20'
PCE	0.04	0.044	1.0013

FC-MW-107D		
4/16/15	16–18'	22–24'
PCE	0.041	1.3

MW-103S
GP-101/SV-107
GP-102/SV-108
MW-8
MW-108D
SVE-4
GP-103/SV-109
JCP CABINETRY
CAPITAL GLASS & SASH (FORMERLY CLEANERS PRODUCTS CHEMICAL DISTRIBUTORS)
PERMA IRON CRAFT CORP.
GP-104/SV-110
GP-106/SV-112
GP-105/SV-111
MW-3
MW-4
52–25 BARNETT AVE
(FORMERLY ASIA OFFSET & LITHOGRAPH PRINTING)
MW-9
MW-2
GP-107/SV-113
SVE-5
GP-108
GP-109
MW-1
GP-110
MW-109S
GP-111
MW-105D
MW-105S
MW-107D
MW-6
MW-104D
MW-104S
8' HIGH CHAINLINK FENCE
BLACKTOP DRIVE
AHRC OFFICES FIRST FLOOR
OVERHEAD RAILROA
WOODSIDE AVENUE
RAILROAD BR
CONCRETE WALK
BARNETT AVENUE

LEGEND:

- MONITORING WELL
- PHASE I SUBSURFACE SOIL SAMPLE
- PHASE II SUBSURFACE SOIL SAMPLE
- PHASE III SUBSURFACE SOIL SAMPLE

NYSDEC SOIL CLENAUP OBJECTIVES

Analyte	Protection of Groundwater Soil (mg/kg)	Commercial Protection of Human Health Soil (mg/kg)
PCE	1.3	150

– EXCEEDANCES OF PROTECTION OF GROUNDWATER SOIL CLEANUP OBJECTIVES ARE IN SHADED CELLS

– EXCEEDANCES OF COMMERCIAL PROTECTION OF HUMAN HEALTH SOIL CLEANUP OBJECTIVES ARE BOLD/ITALICIZED

40 20 0 40 80

SCALE: 1"=40'

FIGURE 3

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORMER CLEANER PRODUCTS SUPPLY SUBSURFACE SOIL SAMPLE PHASE I, PHASE II, & PHASE III

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315–451–9560

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*2014 data is pre-IRM and 2018 data was collected after the SVE system came online in June 2017

383T-IA2	3/25/2014
PCE	540

50-45-ID-WORK SHOP	3/12/2018
PCE	4.8
Butane	170
Ethanol	1,700

52-07-ID-METAL SHOP	3/12/2018
Acetone	14,000 J
Ethyl Acetate	310
Ethanol	110
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	360
N-Heptane	170
Toluene	4,200

50-45-ID-OFFICE	3/12/2018
PCE	2.60
Butane	150
Ethanol	2,000

383T-IA1	3/25/2014
PCE	870

52-07-ID-OFFICE	3/12/2018
Acetone	260
Cyclohexane	110
Xylenes	190
M,P-Xylenes	150
Styrene	110
Toluene	360

LEGEND:

VAPOR SAMPLE POINT

INDOOR AIR QUALITY SAMPLE

80 40 0 80 160

SCALE: 1"=80'

FIGURE 4

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FORMER CLEANER PRODUCTS SUPPLY
INDOOR AIR DETECTED
COMPOUND SUMMARY
MARCH 2018

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, N.Y. 13212, PHONE: 315-451-9560

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