PROPOSED REMEDIAL ACTION PLAN

American Drive-In Cleaners
State Superfund Project
Hicksville, Nassau County
Site No. 130186
December 2014

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

PROPOSED REMEDIAL ACTION PLAN

American Drive-In Cleaners
Hicksville, Nassau County
Site No. 130186
December 2014

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:

Hicksville Public Library
169 Jeruselum Avenue
Hicksville, NY 11801
Phone: (516) 931-1417

A public comment period has been set from:

12/11/14 to 1/10/2015

A public meeting is scheduled for the following date:

12/17/2014 at 7:00 PM

Public meeting location:

Bethpage Ice Rink Community Room, 1001 Stewart Ave, Bethpage, NY 11714

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 1/10/2015 to:

Melissa Sweet
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, NY 12233
mlsweet@gw.dec.state.ny.us

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: The American Drive-In Cleaners site is located at 418 S. Oyster Bay Rd, Hicksville, Nassau County. It is the northernmost unit in the retail shopping plaza located at this address. It

is located in a commercial and residential area. The property is bounded by Woodbury Road to the north and S. Oyster Bay Road to the east. Two commercial lots are located to the northeast and the property is bounded by residential lots to the south and west. Hicksville Elementary School is located approximately 1,600 feet to the northwest.

Site Features: This site is the northernmost tenant unit within a large L-shaped one-story retail shopping complex. It occupies 4,028 square feet of the total 30,437 sq ft of the structure. There is a basement underlying the two eastern-most tenant units.

Current Zoning/Use(s): The site is an active dry-cleaner that uses tetrachloroethene (PCE). The entire property is zoned commercial and comprises 30,437 sq ft of retail space on a 5.82 acre parcel, the remaining area of which is paved. Public Supply Well 11-1 is located approximately 4,400 feet to the south of the site.

Past Use(s) of the Site: The building was built in 1956 and the dry-cleaner has operated in that location since that time. In September 1995, two floor drains were investigated as EPA class V (shallow) Underground Injection Control Program (UIC) dry wells and closed. The floor drains were excavated to a depth of 5.5 ft and filled with sand and sealed with concrete.

In November 2006, the Hicksville Water District Well 11-1 (N-10555) detected PCE at 8.2 ppb exceeding the drinking water standards and the well was removed from service. A records search of known PCE-contaminated sites within the vicinity determined that the American Drive-In Cleaners Site was a possible source. In October 2008, a granular activated carbon (GAC) treatment system was installed on Well 11-1 and it was returned to service.

In 2009, a Site Characterization undertaken by the Department determined that groundwater on-site was contaminated with PCE, but no definitive determination could be made as to whether this was the source of the Hicksville Well 11-1 contamination.

The Remedial Investigation has determined that the American Drive-In Cleaners site is not the source of contamination for the Well 11-1.

Site Geology and Hydrogeology: The depth to water is approximately 90 feet below ground surface with flow to the south. This is the Upper Glacial Aquifer and the underlying soil is sand with some gravel.

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:

Josam Associates LLC

The Department and Josam Associates entered into a Consent Order on February 4, 2009. The Order obligates the responsible party to implement a full remedial program.

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
- indoor air
- 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 at this site is/are:

TETRACHLOROETHYLENE (PCE) cis-1,2-Dichloroethene
TRICHLOROETHENE (TCE)

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

- groundwater
- soil
- soil vapor intrusion
- indoor air

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.

There were no IRMs performed at this site during the RI.

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.

Nature and Extent of Contamination: The primary contaminant of concern at the Site is tetrachloroethylene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (DCE).

Soils

An investigation in 1995 determined that the soil had been contaminated with PCE through floor drains located within the building. As part of an Underground Injection Control Program (UIC) closure, soil was excavated beneath the floor drains to 5.5 ft below ground surface (bgs) and endpoint samples indicated contamination, though reduced, was still present at maximum concentration of 3,600ppm for PCE and 540ppm for total petroleum hydrocarbons (TPH). A subsequent soil boring taken beneath the floor drain indicated that PCE was present, but below the applicable soil cleanup guidelines at that time). The cesspools and other areas were not investigated.

A Site Characterization by the Department was completed on-site in 2009. Subsurface soil immediately southeast (downgradient) of the dry cleaner exhibited PCE below the protection of groundwater soil cleanup objective (1.3 ppm).

A Remedial Investigation was implemented in 2009. Soil samples were collected and analyzed for VOCs around the former floor drains, cesspool, and the transition between the Upper Glacial and Magothy aquifers. During the Remedial Investigation, the area immediately surrounding the former floor drains (source area), was sampled down to 12 ft bgs. The sample at the 9-10 ft interval exhibited 64ppm PCE, exceeding the unresticted (1.3 ppm) and the residential soil cleanup objectives (5.5 ppm). However at the 12 ft interval exhibited only 0.0013 ppm of PCE. TCE and DCE were also found within the interior floor drain samples, however the results were very low and did not exceed standards.

The off-site area around the cesspool was also sampled and PCE and TCE were found at low levels. They did not exceed the unrestricted standard. PCE was found in one soil sample at the aquifer transition at a very low level.

Groundwater

Groundwater in the immediate vicinity of the dry cleaner was found to be contaminated with up to 160 ppb of PCE, 17 ppb of TCE, and 82 ppb of cis-1,2-DCE during the Site Characterization. These contaminants exceeded their groundwater standard of 5 ppb. Samples collected from the deep aquifer, the Magothy, did not exhibit any results for PCE, TCE, or DCE.

During the Remedial Investigation, the groundwater was sampled and analyzed for VOCs from the existing wells as well as newly installed deep wells at the bottom of the Upper Glacial aquifer. The general trend of decreasing concentration of contaminants over time was observed. Also there was a decreasing trend of contaminant concentrations the further the well was from the source area (the floor drains). The highest observed concentrations were 130 ppb of PCE, 23 ppb of TCE, and 85 ppb of DCE.

Soil Vapor, Sub-slab vapor, and Indoor Air
During the Site Characterization the on-site sub-slab vapor exhibited 1,800,000 ug/m3 PCE. Since PCE is in use at the site, no indoor air sample was collected.
As part of Remedial Investigation, Soil Vapor Samples, sub-slab vapor, and indoor air samples were collected.
Soil vapor samples were collected at the perimeter of the property to assess the potential for soil vapor intrusion (SVI) at the residential properties at the boundaries of the property. At the western boundary, the highest soil vapor result was 480 ug/m3 PCE. At the southern boundary, the result was 5.5 ug/m3 PCE.

No on-site SVI sampling occured at the current dry cleaner (the site) due to the use of PCE. Sample results from tenant units located due south of the site all had sub-slab results greater than 1000 ug/m3 of PCE, indicating there is a high potential for soil vapor intrusion. Tenant units to the southeast exhibited PCE results that were generally less than 1000 ug/m3 but greater than 100 ug/m3 except for one sample point. These results indicate that further testing is needed to make a determination as to the need for mitigation. TCE was found exceeding 250 ug/m3 in the 3rd and 4th tenant units south of the site and one tenant unit southeast of the site indicating the high potential for soil vapor intrusion. DCE was found in low levels at multiple tenant units and vinyl chloride was not detected. Mitigation is recommended for the two tenant units south of the site due to the high sub-slab soil vapor results. Further testing is recommended for the rest of the building due to the need for indoor air sampling in conjunction with sub-slab vapor sampling.

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 site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not impacted by site-related contaminants. Volatile organic compounds in the groundwater 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 buildings, is referred to as soil vapor intrusion. Sampling identified the potential for impacts to indoor air quality in the on and off-site commercial spaces in the retail shopping plaza. Sampling indicates soil vapor intrusion is not a concern for properties beyond the shopping plaza.

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

- 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 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 Vapor Extraction, Soil Vapor Intrusion Mitigation, and Site Management Plan remedy.

The estimated present worth cost to implement the remedy is $609,000. The cost to construct the remedy is estimated to be $129,000 and the estimated average annual cost is $77,000.

The elements of the proposed remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles 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;

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

2. Soil Vapor Extraction (SVE)

A soil vapor extraction (SVE) system will be installed to remove volatile organic compounds (VOCs) from the subsurface soil at the source area of the contamination (the former dry wells). VOCs will be 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 will be treated (see below) prior to being discharged to the atmosphere.

Two or more SVE wells will be installed in the vadose zone. The extracted air containing VOCs extracted from the SVE wells will be treated by passing the air stream through activated carbon, which removes the VOCs from the air prior to being discharged to the atmosphere. These SVE wells will be placed to treat the source area as well as to provide protection from soil vapor intrusion to tenants of units 414 and 416 S. Oyster Bay Road.

3. Cover System

A site cover currently exists and will be maintained to allow for commercial use of the site. Any site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where a soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Soil Vapor Intrusion Mitigation

As indicated in Paragraph 2, two or more SVE wells will be installed to provide protection from soil vapor intrusion to tenants of units 414 and 416 S. Oyster Bay Road. In the remaining portion of the building that is off-site but within the property boundary, a program of building slab maintenance will act as a mitigation measure for soil vapor intrusion. Building slab maintenance will require an initial inspection and sealing of any cracks or utility penetrations. A periodic inspection will be performed to confirm continued integrity of the slab and identify additional maintenance needs. If it appears that building slab maintenance is not addressing soil vapor intrusion then additional measures to address will be evaluated and implemented.

5. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires 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);
- allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts 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
- requires compliance with the Department approved Site Management Plan.

6. 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/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in paragraph 5.

Engineering Controls: The soil vapor extraction system discussed in Paragraph 2 and 4, the cover system discussed in Paragraph 3, and the soil vapor intrusion mitigation discussed in Paragraph 4.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavation in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use, and/or groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion if use of the COCs within the existing on-site building ceases and for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- property owners to the west of the site declined soil vapor intrusion sampling (sub-slab vapor and indoor air) in 2012. Should the owners request to have their properties sampled in the future, the NYSDEC, in consultation with the NYSDOH, shall determine if soil vapor intrusion sampling is still appropriate. If necessary, soil vapor intrusion sampling will be completed and actions recommended to address exposures related to soil vapor intrusion will be implemented;
- 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, and soil vapor to assess the performance and effectiveness of the remedy;
- installation of well in the Magothy aquifer downgradient of the site to add to the monitoring well network
- a schedule of monitoring and frequency of submittals to the Department;
- monitoring for vapor intrusion for the existing on-site building, any buildings developed on the site, or as may be needed in buildings to the west of 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, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of soil vapor extraction system to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

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. 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.

The primary volatile organic compound (VOC) found to exceed applicable standards throughout the site is tetrachloroethene (PCE), a dry-cleaning chemical. Therefore, the analytical data from various media (soil vapor, groundwater, soil) are discussed with specific evaluation of this VOC and its daughter compounds trichloroethene (TCE) and cis-1,2-dichloroethene (DCE).

Groundwater

As part of the Site Characterization, several monitoring wells and hydropunch samples were installed around the strip mall property, on which the dry cleaner is present. These groundwater samples indicated that there was PCE, TCE, and DCE contamination in the groundwater. Samples were collected from the deeper aquifer, the Magothy, and showed no contamination.

As part of the Remedial Investigation, Groundwater samples (locations shown in figure 2) were collected from groundwater table monitoring wells and deep monitoring wells screened at the bottom of the Upper Glacial aquifer. The results indicate that PCE, TCE, and DCE (chlorinated volatile organic compound (cVOCs)) exceed the SCGs in both the shallow and deep aquifer in the immediate vicinity of the site. The shallow wells exhibited concentrations of cVOCs that were greater than their deep counterpart. The wells located at the perimeters of the shopping center property had low concentrations or were non-detect for cVOCs. Comparing results over time, generally cVOC concentrations have decreased or remained approximately the same in wells that were sampled in 2008 and again in 2010.

The data collected on the Upper Glacial to the Magothy transition depth and the data collected during the Site Characterization in the Magothy groundwater to the southeast near site boundaries indicate that the CVOC contamination does not extend beyond the site or into the Magothy, therefore the public supply well is not being impacted.

The toluene exceedance in one well is suspected to be runoff contamination from a damaged monitoring well. The methylene chloride exceedance is suspected to be contamination from the laboratory.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
Tetrachloroethene	ND - 130	5	7/13
Trichloroethene	ND – 23	5	4/13
Cis-1,2-Dichloroethene	ND – 85	5	6/13
Toluene	ND – 640	5	1/13
Methylene Chloride	ND – 13JB	5	1/13

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).
J – Estimated Concentration below Reporting Limit
B – Analyte detected in an associated blank sample

Based on the findings of the RI, the past disposal of hazardous waste associated with the operation of the dry-cleaners has resulted in the contamination of groundwater. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: PCE, TCE, and DCE.

Soil

Soil samples were collected from below the floor of the dry-cleaners and in the cesspool area as seen in Figure 3. Below the floor, just outside of the area that was previously excavated and is considered to be the source area, samples were collected from two locations. One location was sampled at three depths and another was sampled at two depths. These samples were all subsurface samples ranging from 0.3-1 ft to 12 ft bgs. The samples collected at 3.5 -4.5 ft and 9-10 ft bgs exceeded the unrestricted SCG for PCE. Samples were collected below the floor of the drycleaner in the eastern end of the building at depths of 0.3-1 ft and 4-5 ft bgs and did not exceed SCGs. Samples were collected from two locations with two depths each near the cesspool area. The sample results from the cesspool were well below the SCG for PCE and were non-detect or only slightly above the detection limit.

There were no surficial soils to collect from the site as it is completely covered by the building and the parking lot.

Table 2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Protection of GW SCG[c] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Tetrachloroethene	ND – 64.000	1.3	2/13	1.3	2/13
Trichloroethene	ND – 0.002 J	0.47	0/13	0.47	0/13
Cis-1,2,-dichloroethene	ND – 0.00083 J	0.25	0/13	0.25	0/13
Acetone	ND – 0.0079 JB	0.05	0/13	0.05	0/13

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Protection of GW SCG[c] (ppm)	Frequency Exceeding Restricted SCG
Methylene Chloride	ND – 0.010 JB	0.050	0/13	0.05	0/13
Toluene	ND – 0.00028 J	0.700	0/13	0.700	0/13

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 because groundwater contamination above the standard was detected.

The primary soil contaminants are cVOCs associated with operation of the dry-cleaners.

Acetone, and methylene chloride were also detected in the quality assurance samples (laboratory blanks) and are not considered site specific contaminants of concern. There is no information that toluene was used in the dry cleaning operation and given the low level (detected but below a level which it can be definitively quantified), it is not considered a site specific contaminant of concern. TCE and DCE were found at levels below the SCGs and therefore are not considered site specific contaminants of concern in soil.

Based on the findings of the Remedial Investigation, the past disposal of hazardous waste in the dry wells has resulted in the contamination of soil. The site contaminant identified in soil which is considered to be the primary contaminant of concern, to be addressed by the remedy selection process is PCE.

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 a full suite of samples were collected to evaluate whether soil vapor intrusion was occurring.

Sub-slab vapor and indoor air samples were collected from the two tenant units immediately to the south of the dry cleaners (Site). The results of the sampling indicated that mitigation is recommended for the two units due to elevated levels of PCE and TCE. Figure 4 shows the results of soil vapor, sub-slab, and indoor air sampling.

Sub-slab vapors were collected in almost all the tenant units throughout the building to evaluate the potential for soil vapor intrusion. Sample results from tenant units located due south of the site all had sub-slab results greater than 1000 ug/m^3 of PCE, indicating there is a high potential for soil vapor intrusion. Tenant units to the southeast exhibited PCE results that were generally less than 1000 ug/m^3 but greater than 100 ug/m^3 except for one sample point. These results indicate that further testing is needed to make a determination as to the need for mitigation. TCE was found exceeding 250 ug/m3 in the 3rd and 4th tenant units south of the site and one tenant unit southeast of the site indicating the high potential for soil vapor intrusion. DCE was found in low levels at multiple tenant units and vinyl chloride was not detected.

Soil vapor samples were collected on the west perimeter of the property near the site. These sample results exhibited somewhat higher levels of PCE, which indicate the greater potential for impacting sub-slab vapor and

indoor air beyond the northwest edge of the property. The property to the west did not grant access for sub-slab and indoor air sampling.

The soil vapor sample collected on the southern perimeter of the property, downgradient of the site, showed very low levels of PCE indicating little potential for sub-slab and indoor air to be impacted beyond the edge of the property.

Based on the concentration detected, and in comparison with the NYSDOH Soil Vapor Intrusion Guidance, the primary soil vapor contaminants are PCE and TCE which are associated with the dry-cleaning operations at the American Drive-In Cleaners. The primary soil vapor contamination is found downgradient of the site, to the south. Mitigation is recommended for the two tenant units south of the site due to the high sub-slab soil vapor results. Further testing is recommended for the rest of the building due to the need for indoor air sampling in conjunction with sub-slab vapor sampling.

Based on the findings of the Remedial Investigation, the disposal of hazardous waste has resulted in the contamination of soil vapor. The site contaminants that are considered to be the primary contaminants of concern which will drive the remediation of soil vapor to be addressed by the remedy selection process are PCE and TCE.

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: Soil Vapor Extraction, Soil Vapor Intrusion Mitigation, and Site Management Plan

This alternative would include installation and operation of a soil vapor extraction (SVE) system to address the soil source area contamination from the dry wells and to remove soil vapor from beneath the slab in the area that warrants soil vapor mitigation, implementation of a Building Slab Maintenance program to reduce the potential for soil vapor intrusion, a Site Cover to prevent exposure of contaminated soils, and implementation of Engineering Controls and Institutional Controls in the form of an Environmental Easement and a Site Management Plan which includes groundwater monitoring and soil vapor intrusion monitoring throughout the building and SVI testing of the properties to the west if desired.

Present Worth: *$609,000*
Capital Cost: *$129,000*
Annual Costs: *$77,000*

Alternative 3: Excavation, Air Sparge/ Soil Vapor Extraction with Monitoring, Sub-slab Depressurization, and EC/ICs (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 cleanup objectives listed in Part 375-6.8 (a). This alternative would include: Excavation of the source area soil from around the dry wells, installation and operation of an air sparge/soil vapor extraction (AS/SVE) system to remove contamination from the groundwater, installation and operation of a sub-slab depressurization system with horizontal piping to mitigate the entire building of soil vapor intrusion, and implementation of Engineering Controls and Institutional Controls such as the Site Management Plan and the Environmental Easement.

Present Worth: *$1,400,000*
Capital Cost: *$1,342,000*
Annual Costs: *$116,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
Alternative 1: No Action	$0	$0	$0
Alternative 2: Soil Vapor Extraction,Building Slab Maintenance, Site Management Plan, and EC/ICs	$129,000	$77,000	$609,000
Alternative 3: Excavation, Air Sparge/ Soil Vapor Extraction with Monitoring, Sub-slab Depressurization, and EC/ICs (Restoration to Pre-Disposal or Unrestricted Conditions)	$1,342,000	$116,000	$1,400,000

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 2, Soil Vapor Extraction, Soil Vapor Intrusion Mitigation, and Site Management Plan as the remedy for this site. The Site Management Plan includes Building Slab Maintenance, Soil Vapor Intrusion Monitoring, and Groundwater Monitoring. Alternative 2 would achieve the remediation goals for the site by extracting the soil gas through the newly installed SVE wells, which would be optimally placed to extract soil gas from the locations on the site that are most contaminated with PCE. The building slab will undergo periodic inspection and maintenance to ensure it is acting as mitigation measure for soil vapor intrusion. In addition, groundwater monitoring, soil vapor intrusion monitoring, and a site management plan will be implemented.

The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figures 5 and 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 2 would satisfy this criterion by removing contaminants in unsaturated soil and soil vapor that could create human exposures, by restricting groundwater use, and by relying on natural attenuation processes to reduce contaminant levels in groundwater. Alternative 3, by removing all soil contaminated above the unrestricted soil cleanup objective in soil, meets the threshold criteria. Alternatives 2 and 3, by addressing the soils, address the source of the groundwater contamination. Alternative 2 relies on a restriction of groundwater use and soil vapor intrusion monitoring at the site to protect human health. Alternative 3 may require a short-term restriction on groundwater use; however, it is expected the restriction will be able to be removed in approximately four years following shutdown of the AS/SVE system. The potential for soil vapor intrusion will be significantly reduced by Alternative 3 and, to a somewhat lesser extent, Alternative 2. Alternative 1 (No Action) does not provide any additional protection to public health and the environment and will not be evaluated further.

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.

Alternative 2 and 3 comply with the SCGs to the extent practicable. They both address the source area of contamination, although Alternative 2 will take more time. Alternative 3 will actively reduce the contamination in the groundwater while Alternative 2 will require Institutional and Engineering Controls and monitoring over several years until COC concentrations attenuate to SCGs. Alternative 2 and 3 will address SVI through monitoring and mitigation, although alternative 2 only provides a means to assess SVI compliance with SCGs outside the SVE radius of influence.

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 equally accomplished by Alternative 2 and 3. Both, SVE and excavation are considered reliable technologies and capable of achieving the RAOs in the long-term. Both would achieve the removal of the source area contamination and IC/ECs would be implemented for both remedies. Both reduce the potential for soil vapor intrusion through the implementation of mitigation methods, although Alternative 2 would require long-term SVI monitoring.

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 reduce the volume of contamination in unsaturated soil, but would not reduce the toxicity, mobility or volume of groundwater contaminants. Alternative 3 treats the contaminated groundwater with Air Sparge, thereby reducing the toxicity, mobility, and volume of contamination in the treatment area. Both

Alternatives remove the contaminants in the soil, although Alternative 3 removes to a somewhat greater degree by excavating the soil.

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.

Alternative 2 does not have significant short-term impacts. However the soil removal required by Alternative 3 would have more short term impacts than Alternative 2 due to the excavation within the building. The excavation activities for Alternative 3 present a much greater potential for short-term risks to onsite workers and the community during implementation. Under Alternative 3, appropriate measures would be implemented to mitigate these risks including, but not limited to, implementing a HASP and includes air monitoring program, using PPE, and instituting engineering controls to suppress dust. The time needed to achieve the RAOs is the shortest for Alternative 3 and longer for Alternative 2.

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.

Alternative 2 is the most favorable relative to implementability. Alternative 3 is implementable, however the removal of soils within the building and the installation of the SSDS within a building of this size and configuration make it much more difficult to implement.

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. The projected cost of Alternative 2 is lower than Alternative 3. With the costs of excavation and soil disposal, installation of Air Sparge system, and SSD System, Alternative 3 has a much higher capital cost. The installation of the SVE, maintenance of the building slab, implementation of groundwater monitoring, and IC/ECs provide protection to the groundwater, soil and from SVI in the long-term, however the annual costs are still lower for Alternative 2 than for Alternative 3.

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.

The current and in the foreseeable future land use of the site is commercial. The site and surrounding property are covered by building or parking lot. Alternative 3 would remove the contaminated soil and Alternative 2 would treat the contaminated soil. Any remaining contamination with Alternative 2 and 3 would be compatible with commercial land use through the implementation of a Site Management Plan.

Alternatives 2 and 3 both require on-site groundwater use restrictions. Therefore all the Alternatives under consideration would have similar impact on the land use as the groundwater use restriction would be required to

stay in place for at least the next four years.

The potential for SVI into the commercial buildings overlying any remaining contamination would be addressed by both Alternatives.

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

FPM GROUP		
FIGURE 1 SITE AREA MAP AMERICAN DRIVE-IN CLEANERS SITE 418 SOUTH OYSTER BAY ROAD, HICKSVILLE, NEW YORK		
Drawn by: TAC	Checked By: SOD	Date: 12/12/08

Well Number	MW-5	
Screen Interval	85-100 ft bg	
Sample Date	7/23/08	7/22/10
cis-1,2-Dichloroethene	82.0	85
Tetrachloroethene	99.0	74
Trichloroethene	17.0	23
trans-1,2-Dichloroethene	ND	7.3

Well Number	MW-5D
Screen Interval	98-100 ft bg
Sample Date	7/22/10
cis-1,2-Dichloroethene	25
Tetrachloroethene	42
Trichloroethene	12

Well Number	MW-2D
Screen Interval	95-100 ft bg
Sample Date	7/21/10
Tetrachloroethene	ND

Well Number	MW-2
Screen Interval	85-100 ft bg
Sample Date	7/23/08 and 7/22/10
Tetrachloroethene	ND

Well Number	PZ-4
Screen Interval	85-95 ft bg
Sample Date	8/2/10
cis-1,2-Dichloroethene	28
Tetrachloroethene	32
Trichloroethene	11

Well Number	MW-4	
Screen Interval	85-100 ft bg	
Sample Date	7/22/08	8/2/10
cis-1,2-Dichloroethene	18.0	7.6
Tetrachloroethene	160	130
Trichloroethene	12.0	8.8

Well Number	MW-4D
Screen Interval	98-100 ft bg
Sample Date	7/21/10
cis-1,2-Dichloroethene	6.0
Tetrachloroethene	52

Well Number	PZ-1
Screen Interval	90-100 ft bg
Sample Date	8/2/10
Tetrachloroethene	1.5 J

Well Number	MW-7
Screen Interval	80-90 ft bg
Sample Date	7/21/10
Tetrachloroethene	23

Well Number	MW-6
Screen Interval	85-100 ft bg
Sample Date	7/22/08 and 7/21/10
Tetrachloroethene	ND

Well Number	PZ-2
Screen Interval	85-95 ft bg
Sample Date	7/22/10
cis-1,2-Dichloroethene	6.6
Tetrachloroethene	7.3

Well Number	MW-1
Screen Interval	85-100 ft bg
Sample Date	7/23/08 and 7/22/10
Tetrachloroethene	ND

Well Number	MW-3	
Screen Interval	85-100 ft bg	
Sample Date	7/23/08	8/2/10
Methylene chloride	ND	13 JB
Tetrachloroethene	ND	ND
Toluene	ND	640

LEGEND:

PZ-01 PIEZOMETER LOCATION

MW-01 MONITORING WELL LOCATION

SITE

NOTE: VALUES SHOWN EXCEED NYSDEC CLASS GA AMBIENT WATER QUALITY STANDARDS.

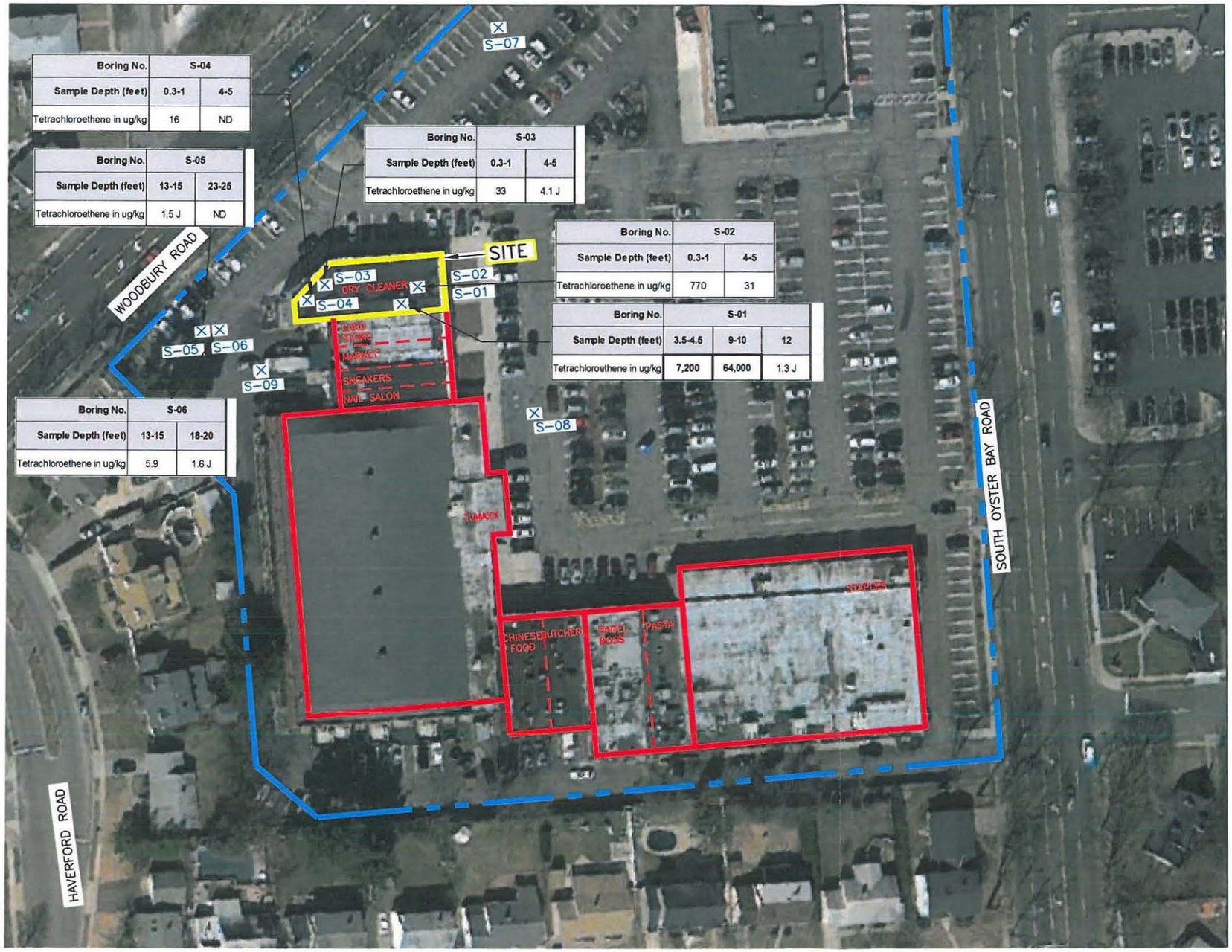
ALL VALUES SHOWN FOR TETRACHLOROETHENE

FPM GROUP

FIGURE 2
GROUNDWATER SAMPLE LOCATIONS AND RESULTS
AMERICAN DRIVE-IN CLEANERS
HICKSVILLE, NEW YORK

Drawn By:H.C. | Checked By:S.D. | Date:3/19/14

H:\JOSAM\RI 878-09-09-02\GW SAMPLE LOC AND RESULTS.dwg, 8/12/2014 9:51:01 AM, 8 1/2x11



Boring No.	S-04	
Sample Depth (feet)	0.3-1	4-5
Tetrachloroethene in ug/kg	16	ND

Boring No.	S-05	
Sample Depth (feet)	13-15	23-25
Tetrachloroethene in ug/kg	1.5 J	ND

Boring No.	S-03	
Sample Depth (feet)	0.3-1	4-5
Tetrachloroethene in ug/kg	33	4.1 J

Boring No.	S-02	
Sample Depth (feet)	0.3-1	4-5
Tetrachloroethene in ug/kg	770	31

Boring No.	S-01		
Sample Depth (feet)	3.5-4.5	9-10	12
Tetrachloroethene in ug/kg	7,200	64,000	1.3 J

Boring No.	S-06	
Sample Depth (feet)	13-15	18-20
Tetrachloroethene in ug/kg	5.9	1.6 J

N

LEGEND:

- S-2 — SOIL SAMPLING LOCATION
- PROPERTY BOUNDARY
- FOUNDATION
- PARTITION WALL
- SITE

NOTE: SOIL RESULTS SHOWN EXCEED NYSDEC OBJECTIVES FOR UNRESTRICTED USE

ALL VALUES SHOWN FOR TETRACHLOROETHENE

APPROXIMATE SCALE: 0 25' 50' 100'

FPM GROUP

FIGURE 3
SOIL SAMPLING LOCATIONS AND RESULTS
418 SOUTH OYSTER BAY ROAD
HICKSVILLE, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 3/19/14

H:\JOSAM\RI 878-09-09-02\SOIL SAMP LOC AND RESULTS.dwg, 8/12/2014 9:50:04 AM, 11x17

Sample Location	Outdoors
Sample Type	Soil Gas
Sample Number	SV-04
Volatile Organic Compounds in micrograms per cubic meter	
Tetrachloroethylene	69

Sample Location	Outdoors
Sample Type	Soil Gas
Sample Number	SV-05
Volatile Organic Compounds in micrograms per cubic meter	
cis-1,2-Dichloroethene	3.5
Tetrachloroethylene	160
Trichloroethene	4.7

Sample Location	Outside
Sample Type	Soil Gas
Sample Number	SV-07
Volatile Organic Compounds in micrograms per cubic meter	
Carbon tetrachloride	0.45 J
cis-1,2-Dichloroethene	2.9
Tetrachloroethylene	280
trans-1,2-Dichloroethene	0.48 J
Trichloroethene	23

Sample Location	Outdoors
Sample Type	Soil Vapor
Sample Number	SV-08
Volatile Organic Compounds in micrograms per cubic meter	
Carbon tetrachloride	0.51 J
cis-1,2-Dichloroethene	0.48 J
Tetrachloroethylene	5.8

Sample Location	Outside		
Sample Type	Soil Vapor		
Sample Number	SV-09	SV-09 Dup.	
Volatile Organic Compounds in micrograms per cubic meter			
Carbon tetrachloride	0.51 J	0.45 J	
cis-1,2-Dichloroethene	17	22	
Tetrachloroethylene	420	480	
trans-1,2-Dichloroethene	1.2	1.3	
Trichloroethene	25	29	

Sample Location	Outdoors
Sample Type	Soil Gas
Sample Number	SV-06
Volatile Organic Compounds in micrograms per cubic meter	
Carbon tetrachloride	0.64 J
cis-1,2-Dichloroethene	2.0
Tetrachloroethylene	12
Trichloroethene	7.0

Sample Location	Outdoors
Sample Type	Soil Vapor
Sample Number	SV-10
Volatile Organic Compounds in micrograms per cubic meter	
Tetrachloroethylene	5.5

Sample Location	416 South Oyster Bay Road		
Sample Type	Sub-Slab	Indoor Air	
Sample Number	SS-02	IA-02	IA-02 Duplicate
Volatile Organic Compounds in micrograms per cubic meter			
1,1,1-Trichloroethane	2.4	ND	ND
1,1,2,2-Tetrachloroethane	0.51 J	ND	ND
1,1-Dichloroethene	0.44 J	ND	ND
cis-1,2-Dichloroethene	1,100	0.44 J	0.44 J
Tetrachloroethylene	130,000	14	5.1
trans-1,2-Dichloroethene	15	ND	ND
Trichloroethene	4,000	1.1	1.1

Sample Location	414 South Oyster Bay Road	
Sample Type	Sub-Slab	Indoor Air
Sample Number	SS-03	IA-03
Volatile Organic Compounds in micrograms per cubic meter		
1,1,1-Trichloroethane	34	0.61 J
cis-1,2-Dichloroethene	37	ND
Tetrachloroethylene	16,000	4.1
trans-1,2-Dichloroethene	4.9	ND
Trichloroethene	470	0.60

Sample Location	412 S. Oyster Bay Rd. (Sneakers)
Sample Type	Sub-Slab
Sample Number	SS-04
Volatile Organic Compounds in micrograms per cubic meter	
1,1,1-Trichloroethane	1.6
Carbon tetrachloride	0.32 J
cis-1,2-Dichloroethene	3.6
Tetrachloroethylene	28,000
trans-1,2-Dichloroethene	2.2
Trichloroethene	310

Sample Location	414A S. Oyster Bay Rd. (Nail Salon)
Sample Type	Sub-Slab
Sample Number	SS-05
Volatile Organic Compounds in micrograms per cubic meter	
1,1,1-Trichloroethane	1.5
Carbon tetrachloride	0.25 J
cis-1,2-Dichloroethene	2.0
Tetrachloroethylene	240,000
trans-1,2-Dichloroethene	3.9
Trichloroethene	590

Sample Location	410 South Oyster Bay Road (TJ Maxx)			
Sample Type	Sub-Slab	Sub-Slab	Sub-Slab	
Sample Number	SS-06	SS-07	SS-08	SS-08 Dup.
Sample Date	1/31/2012	1/31/2012	1/31/2012	1/31/2012
Volatile Organic Compounds in micrograms per cubic meter				
1,1,1-Trichloroethane	4.0	5.5	4.7	5.1
1,2-Dichloroethane	ND	1.4	ND	ND
Carbon tetrachloride	ND	1.0	ND	ND
cis-1,2-Dichloroethene	3.0	0.85	ND	ND
Tetrachloroethylene	12,000	3,200	2,000	2,500
trans-1,2-Dichloroethene	5.1	ND	ND	ND
Trichloroethene	120	17	1.1	ND

Sample Location	442 S. Oyster Bay Rd. (Staples)	
Sample Type	Sub-Slab	
Sample Number	SS-11	SS-12
Volatile Organic Compounds in micrograms per cubic meter		
1,1,1-Trichloroethane	ND	0.67 J
cis-1,2-Dichloroethene	0.77	ND
Tetrachloroethylene	2,900	92
Trichloroethene	360	2.9

Sample Location	424 S. Oyster Bay Rd. (Chinese Restaurant)
Sample Type	Sub-Slab
Sample Number	SS-09
Carbon tetrachloride	0.77 J
Tetrachloroethylene	400
Trichloroethene	2.0

Sample Location	432 S. Oyster Bay Rd (Bagel Shop)	
Sample Type	Sub-Slab	
Sample Number	SS-10	SS-10 Dup.
Volatile Organic Compounds in micrograms per cubic meter		
Tetrachloroethylene	580	580
Trichloroethene	1.6	1.5

APPROXIMATE SCALE: 0 25' 50' 100'

LEGEND:

- SV-06 — SOIL VAPOR POINT LOCATION
- SS-02 — SUB-SLAB VAPOR POINT LOCATION
- IA-02 — INDOOR AIR SAMPLE
- PROPERTY BOUNDARY
- FOUNDATION
- PARTITION WALL
- SITE
- UNDERLAIN BY BASEMENT

NOTE: RESULTS ARE SHOWN FOR CHLORINATED VOCs.

FPM GROUP

FIGURE 4
AIR/VAPOR SAMPLING LOCATIONS AND CHLORINATED VOC RESULTS
418 SOUTH OYSTER BAY ROAD
HICKSVILLE, NEW YORK

Drawn By: H.C. | Checked By: S.D. | Date: 3/19/14

H:\JOSAM\RI 878-09-09-02\AIR SAMP.dwg, 8/12/2014 9:51:57 AM, 11x17

APPROXIMATE SCALE: 0 25' 50' 100'

LEGEND:

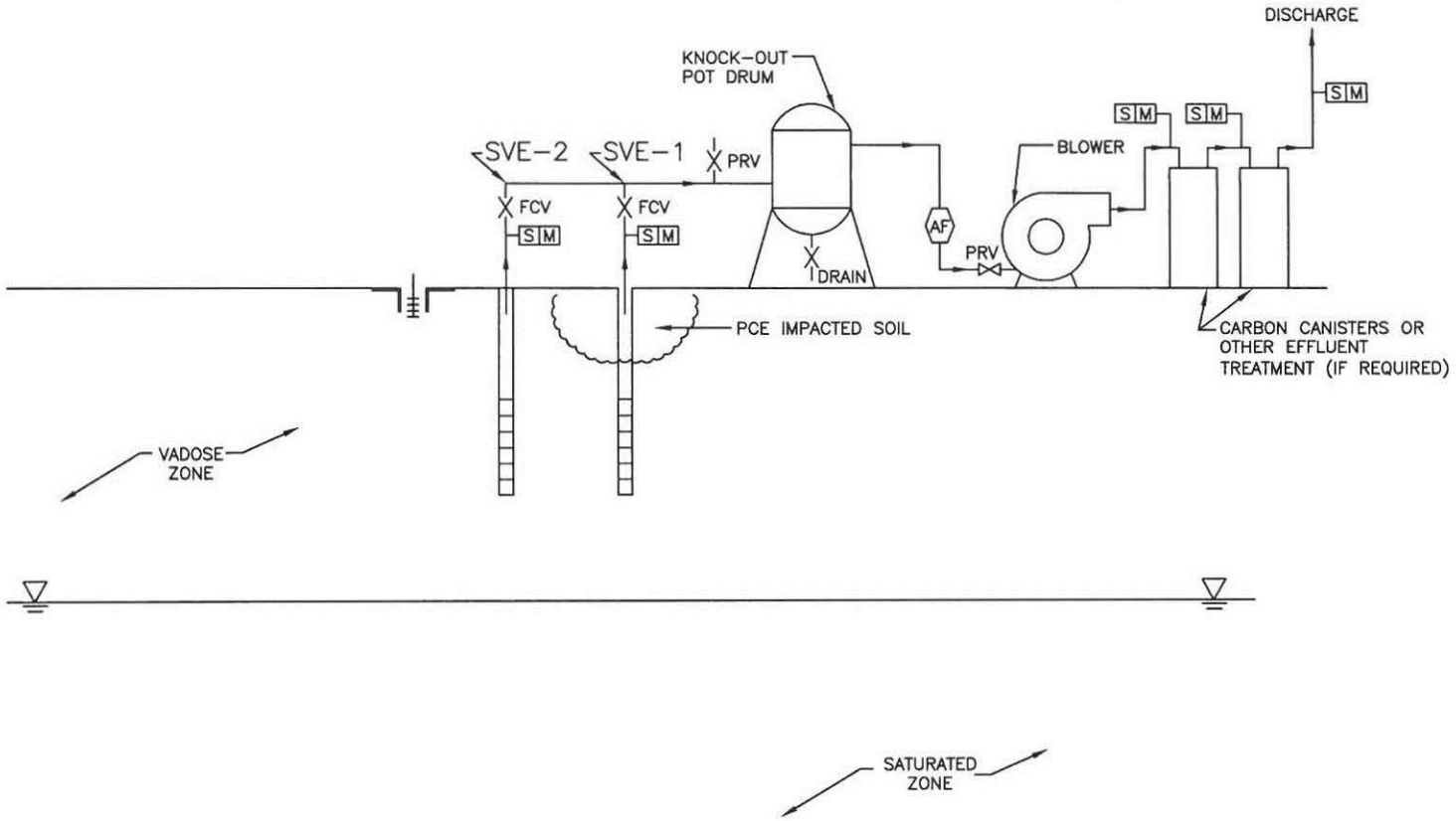
- SV–06 — SOIL VAPOR POINT LOCATION
- SS–02 — SUB–SLAB VAPOR POINT LOCATION
- S–2 — SOIL SAMPLING LOCATION
- IA–02 — INDOOR AIR SAMPLE
- PROPERTY BOUNDARY
- FOUNDATION
- PARTITION WALL
- POTENTIAL SVE PIPING
- SITE
- POTENTIAL SVE COMPOUND LOCATION
- POTENTIAL SVE WELL LOCATION SHOWING ANTICIPATED RADIUS OF INFLUENCE
- POTENTIAL MONITORING POINT LOCATION

FPM GROUP

FIGURE 5
SITE PLAN WITH POTENTIAL SVE SYSTEM LAYOUT
418 SOUTH OYSTER BAY ROAD
HICKSVILLE, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 04/29/14

H:\JOSAM\RI 878-09-09-02\POTENTIAL SVE SYSTEM.dwg, 8/26/2014 11:22:00 AM, 11x17



LEGEND:

- PROCESS LINE
- WATER SURFACE
- AF — INLINE AIR FILTER
- PRV — PRESSURE RELIEF VALVE
- FRV — FLOW CONTROL VALVE
- SM — SAMPLE/MONITOR POINT
- SUB-SLAB MONITORING POINT

FPM GROUP

FIGURE 6
SCHEMATIC OF SVE SYSTEM PROCESS FLOW

418 SOUTH OYSTER BAY RD.
HICKSVILLE, NEW YORK

Drawn By: H.C.	Checked By: S.D.	Date: 3/26/14

H:\JOSAM\RI 878-09-09-02\SCHEMATIC OF SVE SYSTEM.dwg, 8/18/2014 1:13:31 PM, 8 1/2x11