DECISION DOCUMENT

Hartsdale Village Square, Aristocrat Cleaners
Brownfield Cleanup Program
Hartsdale, Westchester County
Site No. C360111
November 2014

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

DECLARATION STATEMENT - DECISION DOCUMENT

Hartsdale Village Square, Aristocrat Cleaners
Brownfield Cleanup Program
Hartsdale, Westchester County
Site No. C360111
November 2014

Statement of Purpose and Basis

This document presents the remedy for the Hartsdale Village Square, Aristocrat Cleaners site, a brownfield cleanup site. The remedial program was chosen in accordance with the 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 decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Hartsdale Village Square, Aristocrat Cleaners site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

Based on the results of the investigations at the site and the IRM that has been performed, the Department has selected No Further Action as the remedy for the site. This No Further Action remedy includes continued groundwater monitoring, provision for additional groundwater treatment, and a cover system as the selected remedy for the site. 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 required engineering controls and institutional controls are listed below:

1. 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).

2. 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;
•requires compliance with the Department approved Site Management Plan.

3. 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 section 2 above.

Engineering Controls: The cover system discussed in section 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 the reevaluation of soil vapor intrusion in the existing on-site buildings and evaluations for any new buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
•descriptions of the provisions of the environmental easement including any land use, and groundwater restrictions;
•provisions for the management and inspection of the identified engineering controls;
•provisions for additional applications of the ISCR amendment to address a rise or plateauing of contaminant concentrations or to ensure complete degradation of breakdown products;
•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 to assess the performance and effectiveness of the remedy;
•monitoring for vapor intrusion as may be required by the Institutional and Engineering Control Plan discussed above; and
•a schedule of monitoring and frequency of submittals to the Department.

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 treatment systems 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.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

November 21, 2014
Date

George Heitzman, Director
Remedial Bureau C

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Hartsdale, Westchester County
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SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Greenburgh Library
Attn: Ms Marilyn Greiner
300 Tarrytown Road
Elmsford, NY 10523
Phone: 914-721-8220

NYSDEC Region 3 Office
Attn: Please call for an appointment
21 South Putt Corners Road
New Paltz, NY 12561

Phone: (845) 256-3154

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 Hartsdale Village Square, Aristocrat Cleaners Site is located in an urban portion of Westchester County, NY. The site is located in the middle portion of a strip mall, adjacent to a train station, at 212-218 East Hartsdale Avenue.

Site Features: This 0.154 acre site includes two row house type buildings which make up 80% of the tax parcel and a small paved lot at the rear of the buildings. The northernmost building is a one story building with a basement that houses a dry cleaner. The southernmost building is a two story building with a basement that houses a liquor store.

Current Zoning and Land Use: The site is currently being used as a dry cleaner and a liquor store. The use of PCE on-site ceased in March of 2014. The site is zoned as a commercial property.

Past Use of the Site: The use of the site as a dry cleaner since the 1970s appears to have led to site contamination. A flood event that caused a solvent storage tank to overflow may have also contributed to the contamination.

Site Geology and Hydrogeology: Surface soils on site consist of fill material, course sand and gravel to about ten feet below grade surface. An organic layer is present at a depth of 2.0-2.5 feet below grade. Bedrock on-site consists of shale and schist. Outcrops of schist can be seen around the site. Overburden groundwater flows to the south/southeast toward the Bronx River. Depth to groundwater varies greatly depending on season and runoff events. Groundwater is generally found between 8 to 9 feet below ground surface or 6 inches to 1 foot below the basement slabs.

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) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant(s) under the Brownfield Cleanup Agreement is a/are Volunteer(s). The Volunteer(s) does/do not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- air
- groundwater
- soil
- 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. 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 contaminant 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 below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

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

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil vapor intrusion

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 Decision Document.

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

Groundwater IRM

In-situ chemical reduction (ISCR) through injection to the subsurface was implemented in October 2013 to treat contaminants in groundwater and shallow soils. A chemical reducing agent known as zero valent iron was injected into the subsurface to destroy the contaminants. An approximately 150-square foot area located in the basement of the dry cleaner building was targeted for remediation. The IRM included the introduction of 300 lbs of zero valent iron (mixed with potable water onsite to create an injectable slurry) beneath the basement of the dry cleaner within the suspected source area to stimulate the degradation of chemicals. Following the

injections, two rounds of groundwater monitoring were conducted to assess performance. Results have shown that significant declines in PCE and TCE have occurred and that geochemical conditions for the continued reduction of contaminants and the byproducts of reduction have been stimulated.

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. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination: Based upon investigations conducted to date, the primary contaminants of concern at the site include tetrachloroethene (PCE), and the breakdown products of PCE: trichloroethene (TCE), cis-1,2-dichloroethene (DCE), and vinyl chloride.

Soil - The maximum concentration of PCE found in soil was 4,960 ppm in a sample collected from 15 inches below the basement floor in the location of a former spill. The soil cleanup objective (SCO) for PCE for unrestricted use is 1.3 ppm. TCE was also detected in the same sample at 46.5, ppm which exceeds the unrestricted SCO of 5.5 ppm. However, subsequent sampling in the same location failed to replicate the previous sampling results. During follow up sampling, PCE was detected at 1.3 ppm, which meets the unrestricted SCO, and TCE was not detected. Observations made by on-site geologists during the investigation noted an organic layer found at a depth of 2.0-2.5 feet. This organic layer appears to limit the downward migration of the VOCs. No SVOCs, metals, pesticides, or PCBs were detected above the unrestricted SCO at the site. Based on the sampling conducted to date, PCE and TCE soil contamination appears limited to the two feet of soil directly below the basement slab.

Groundwater - PCE and its associated degradation products are found in groundwater at the north end of the site. PCE was detected up to 730 ppb at the source area, the SCG is 5 ppb. TCE was detected up to 250 ppb, the SCG is 5 ppb. Cis-1,2,-DCE was detected up to 40,000 ppb, the SCG is 5 ppb. Vinyl Chloride was detected up to 1,400 ppb, the SCG is 2 ppb. PCE from the northern portion of the site has migrated 50 feet down-gradient to the southern portion of the site. Groundwater results at the site boundary indicate that groundwater contamination extends off-site. No SVOCs, metals, pesticides, or PCBs were detected in groundwater above SCGs.

Sub-Slab Vapor –Two rounds of sub-slab air at were collected from the dry cleaner source area. The sub-slab concentrations of PCE were 115,000 ug/m3 and 140,000 ug/m3 and the TCE concentrations were 591 ug/m3 and 4,700 ug/m3 respectively. One round of sub-slab air was collected from the downgradient liquor store. The concentration of PCE was 11 ug/m3 and TCE was 4.1 ug/m3.

Indoor Air - Indoor air sampling at the dry cleaner indicated PCE was present at 77 ug/m3 and TCE was present at 61 ug/m3. Results for indoor air samples collected from the downgradient liquor store were determined not to be valid.

Outdoor Air – PCE and TCE levels in outdoor air were compared to air guideline values presented in Table 3.1 of the Guidance for Evaluating Soil Vapor Intrusion in the State of New York. PCE was detected at concentrations of 730 ug/m3 and 480 ug/m3 which is above the PCE guideline of 100 ug/m3. TCE was detected at concentrations of 10 ug/m3 and 10 ug/m3 which is above the TCE guideline of 5 ug/m3. Both samples were collected from the rear parking lot behind the dry cleaner building.

All soil vapor intrusion sampling was conducted during the period when the dry cleaning operator was using PCE, and before the groundwater treatment IRM was implemented. Use of PCE at the cleaner ceased in or around March 2014.

Significant Threat: The site was found to pose a significant threat to public health and the environment due to the high concentrations of chlorinated volatile organic compounds (VOCs) in on-site soil, groundwater, and soil vapor; and due to the potential off-site migration of contaminants via groundwater. An off-site investigation will be conducted.

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.*

Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the groundwater 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. Soil vapor intrusion sampling in the on-site building identified impacts to indoor air quality. The potential exists for off-site migration of site-related contaminants in indoor air.

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: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the No Further Action with Site Management remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

Based on the results of the investigations at the site and the IRM that has been performed, the Department has selected No Further Action as the remedy for the site. This No Further Action remedy includes continued groundwater monitoring, provision for additional groundwater treatment, and a cover system as the selected remedy for the site. 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 required engineering controls and institutional controls are listed below:

1. 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).

2. 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;
•requires compliance with the Department approved Site Management Plan.

3. 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 section 2 above.

Engineering Controls: The cover system discussed in section 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 the reevaluation of soil vapor intrusion in the existing on-site buildings and evaluations for any new buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
•descriptions of the provisions of the environmental easement including any land use, and groundwater restrictions;
•provisions for the management and inspection of the identified engineering controls;
•provisions for additional applications of the ISCR amendment to address a rise or plateauing of contaminant concentrations or to ensure complete degradation of breakdown products;

•maintaining site access controls and Department notification; and
•the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

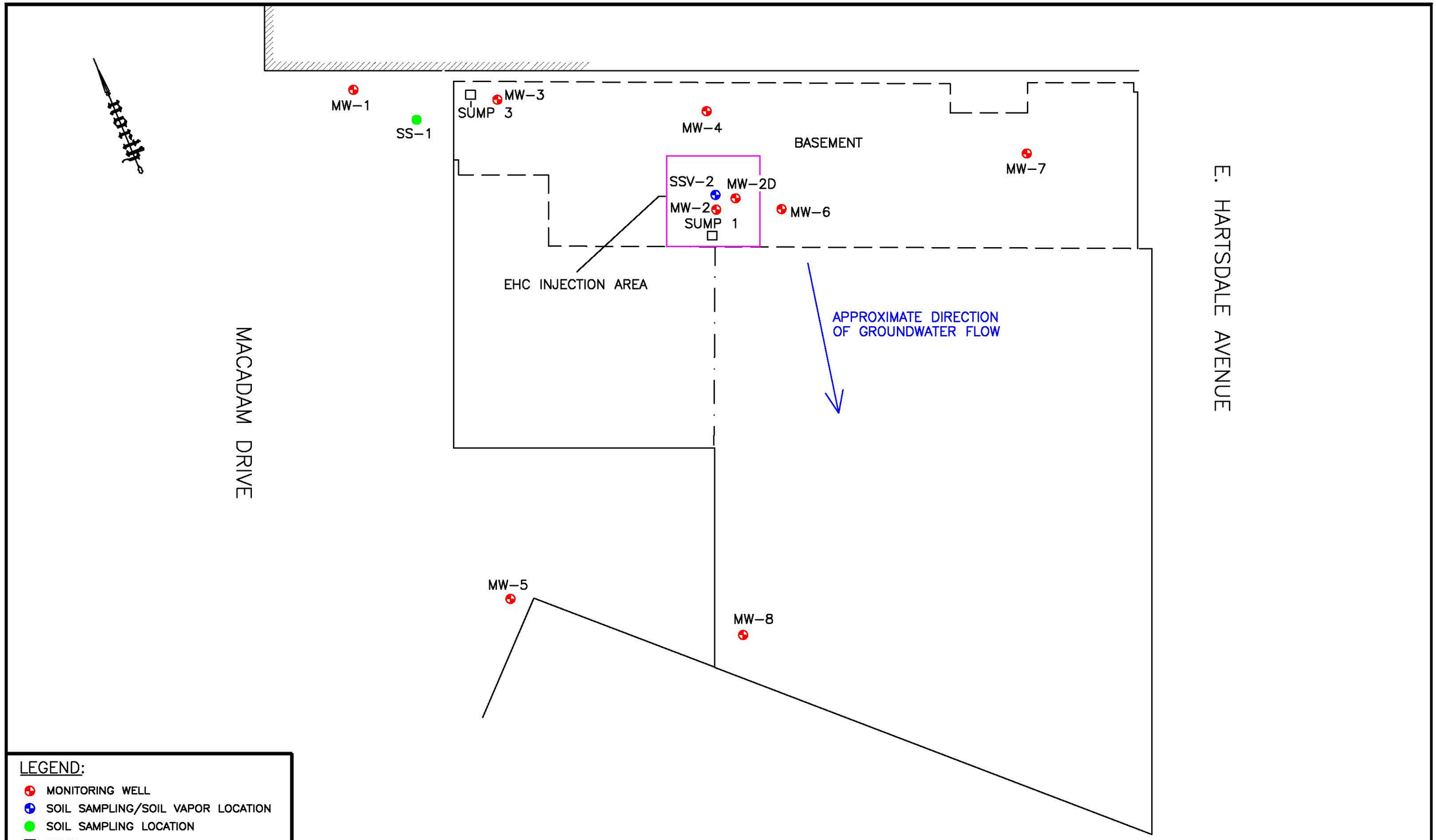
b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

•monitoring of groundwater to assess the performance and effectiveness of the remedy;
•monitoring for vapor intrusion as may be required by the Institutional and Engineering Control Plan discussed above; and
•a schedule of monitoring and frequency of submittals to the Department.

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 treatment systems 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.


Hartsdale Village Square, BCP Site # C360111
Fisher St
Aqueduct Rd
Greenacres Ave
Bronx River Pk
Site Boundary and Property Boundary
Dry Cleaner Building Boundary
Liquor Store
275 ft
© 2010 Google
©2010 Google™



LEGEND:

- MONITORING WELL
- SOIL SAMPLING/SOIL VAPOR LOCATION
- SOIL SAMPLING LOCATION
- SUMP

Base map taken from GABRIEL E. SENOR, P.C. map dated OCTOBER 11, 2011

EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

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REVISION DATE:	SCALE:	REVISED BY:
APRIL 17, 2014	1" = 10 FEET	TB

ARISTOCRAT CLEANERS
212 E. HARTSDALE AVENUE
HARTSDALE, NEW YORK

RI TESTING LOCATIONS AND EHC INJECTION AREA

FIGURE #
1-2