

# RECORD OF DECISION

---

3901 Route 104  
State Superfund Project  
Williamson, Wayne County  
Site No. 859032  
April 2026



**Department of  
Environmental  
Conservation**

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

# DECLARATION STATEMENT - RECORD OF DECISION

---

3901 Route 104  
State Superfund Project  
Williamson, Wayne County  
Site No. 859032  
April 2026

## **Statement of Purpose and Basis**

This document presents the remedy for the 3901 Route 104 site a Class 2 inactive hazardous waste disposal 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, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the 3901 Route 104 site and the public's input to the proposed remedy presented by NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the Record of Decision (ROD).

## **Description of Selected Remedy**

The elements of the selected 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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
  - Integrating best management practices to support disadvantaged communities under the Climate Leadership and Community Protection Act (CLCPA).

Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the Feasibility Study, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis was completed. The environmental footprint analysis was completed using the SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA). This analysis will be continuously evaluated during the remedial design to identify and quantify environmental impacts as well as to identify best management practices (BMPs) which could reduce those impacts. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the selected remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

## 2. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in soil and groundwater. A chemical oxidant will be injected into the subsurface to destroy the contaminants (in an approximately 3,700 square foot area located northwest and west of the former building site), targeting the groundwater CVOC dissolved phase plume. The method and depth of injection will be determined during the remedial design. A bench scale test completed during the RI demonstrated that ISCO was feasible and curated initial design parameters. It is estimated that 32 temporary injection wells will be installed, and that a chemical oxidant will be applied in a one-time injection event. However, the number and placement of the injection wells will be determined during the remedial design. Monitoring of groundwater will be conducted for contaminants of concern up-gradient, downgradient, and within the treatment zone. The field and

laboratory parameters to be monitored for will be determined during the remedial design. Long-term groundwater monitoring will also inform the need for future injections.

### 3. Institutional Control

Imposition of an institutional control in the form of an environmental easement 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 County DOH; and
- require compliance with the Department approved Site Management Plan.

### 4. Site Management Plan (SMP)

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 3 above.

Engineering Controls:

The SMP includes, but may not be limited to:

- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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; and
- monitoring for vapor intrusion for any buildings on the site, 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

**New York State Department of Health Acceptance**

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

**Declaration**

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

April 12, 2026

Date

*Andrew Guglielmi*

Andrew O. Guglielmi, Director  
Division of Environmental Remediation

# RECORD OF DECISION

3901 Route 104  
Williamson, Wayne County  
Site No. 859032  
April 2026

---

## **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 hazardous wastes 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 hazardous wastes at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste.

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 remedies. A public comment period was held during which the public was encouraged to submit comments on the proposed remedy. All comments on the remedy received during the comment period were considered by NYSDEC in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository.

DECInfo Locator – Web Application

<https://gisservice.dec.ny.gov/gis/dil/index.html?rs=859032>

A public meeting was also conducted. 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 questions-and-answer period was held, during which verbal or

comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

### **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 3901 Route 104 site is a 0.43-acre site located at 3901 Route 104, Williamson, Wayne County, New York. The site is approximately 0.3 miles east of the intersection of State Route 104 and County Route 116. The site is currently unoccupied and historically included a 1,400 square foot former dry-cleaning structure and a gravel driveway. The site is zoned for commercial use and is primarily surrounded by commercial properties. A site location map is attached as Figure 1.

Site Features: The site is relatively flat and includes a 975 square foot area of filled rock and gravel from a demolished commercial structure. This foundation is surrounded by a gravel parking area on three sides. A small northern portion of the site is undeveloped. A tributary of Salmon Creek runs along the western edge of the site approximately 100 feet from the foundation.

Current Zoning and Land Use: This site is inactive and is zoned for commercial use. The surrounding parcels are currently used for a mix of residential, commercial, and agricultural uses. The nearest residential property is approximately 300 feet to the northeast. There are no census tracts within a half-mile vicinity of the site that meet the criteria of disadvantaged communities (DACs) under the Climate Leadership and Community Protection Act (CLCPA).

Past Use of the Site: The site historically (i.e., 1980s) included a small building west of the foundation and was utilized as a dry-cleaning business which appears to have caused the site contamination.

Site Geology and Hydrogeology: Groundwater levels were observed to be 5 to 6 feet below the ground surface (bgs). Groundwater flow is to the west and northwest. Soil observed during the RI generally consisted of approximately two feet of fill overlying 15-18 feet of silt and sand.

Bedrock was encountered at depths ranging from 17 to 22 feet below grade.

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 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 presented in Exhibit A for the environmental media evaluated.

#### **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:

Frank P. Pitts

Pitts Ford, Inc.

Valerie Mastrodonato

#### **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
- surface water

### **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 contaminants of concern identified at this site are:

- tetrachloroethene (PCE)
- cis-1,2-dichloroethene (cis-1,2-DCE)
- trichloroethene (TCE)
- vinyl chloride

As illustrated in Exhibit A, the contaminants of concern exceed the applicable SCGs for:

- groundwater

- soil

## **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.

To achieve the Remedial Action Objectives and to fully investigate the contamination on site, it was determined that the on-site building needed to be demolished. A 2021 pre-demolition asbestos survey determined that asbestos was positively identified. Asbestos abatement of non-friable asbestos-containing materials (ACM), universal waste removal, equipment removal, transportation of construction and demolition (C&D) debris from the Site to a licensed disposal facility, and Site restoration activities were also completed. The IRM demolished the building providing full access to the property to conduct the Remedial Investigation (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.

### Nature and Extent of Contamination:

Groundwater and soil were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), herbicides/pesticides, and per- and polyfluoroalkyl substances (PFAS). Surface water and soil vapor were analyzed for VOCs. Based upon the investigation conducted to date, the primary contaminant of concern is the chlorinated solvent tetrachloroethene (PCE) along with associated breakdown compounds such as trichloroethene (TCE) cis-1,2-dichloroethene, and vinyl chloride. These contaminants have impacted the environmental media of soil and groundwater. See Exhibit A for details.

Soil - The extent of PCE contamination in soil is well delineated across the Site. Based on the results of soil investigations, there are approximately 800 cubic yards of soil containing concentrations of PCE greater than the applicable 6 NYCRR Part 375 Protection of Groundwater soil cleanup objective (PGW SCO). PCE and Acetone were the only VOCs that were detected at concentrations exceeding PGW SCOs and Unrestricted Use Soil Cleanup Objectives (UU SCOs). Acetone, a common laboratory solvent, is not considered to be a contaminant of concern at this Site. The largest concentration of PCE was found in SB-10, located northwest of the northwestern corner of the former dry-cleaning building, with a concentration of 12 parts per million (ppm). This sample was collected approximately 10-12 feet below grade surface (bgs)

and is above the PGW SCO of 1.3 ppm. The highest off-site concentration of PCE was detected south of the southern property border of 0.34 ppm which is below the 1.3 ppm PGW SCO.

No metals were detected at concentrations above UU SCOs during the RI. Pesticides were detected above UU SCO with the highest concentration of 0.16 ppm for 4,4'-DDE (as compared to the UU SCO of 0.0033 ppm. Pesticides were not detected above PGW SCOs. Site soil was analyzed for PFAS substances and perfluorooctanesulfonic acid (PFOS) was found to be on site; however, PFOS was detected at 0.00016 ppm, which does not exceed the UU SCO of 0.0088 ppm. Contamination is not known to be extending off site.

Groundwater - Analytical results indicate that the on-site overburden aquifer is impacted by chlorinated solvents, primarily PCE, at concentrations exceeding NYSDEC Ambient Water Quality Standards (Class GA Criteria). PCE was detected at concentrations of up to 43,000 parts per billion (ppb) from HRP-MW-10, a deep overburden well screened from 13.68-18.68 feet below grade. PCE concentrations were generally higher immediately north/northwest of the source area in comparison to the adjacent shallow overburden wells. These higher concentrations of PCE indicate the likely presence of dense non-aqueous phase liquid (DNAPL) in the subsurface area in and around the footprint of the former Site building. The suspected DNAPL is the likely source of the groundwater plume. The plume extends to the north from the source area with concentrations of chlorinated solvents reaching levels well below NYSDEC Class GA Criteria in HRP-MW-6, HRP\_MW-15, and HRP-MW-1. Samples that were collected outside of the site boundary did not have exceedances above NYSDEC Class GA criteria. The largest off-site detection of PCE was 0.41 ppb, significantly below criteria.

TCE concentrations above NYSDEC Class GA Criteria were highest to the east (160 ppb) and northwest (230 ppb) of the source area. Concentrations of cis-1,2-DCE above NYSDEC Class GA Criteria were highest to the west (40 ppb) and northwest (280ppb) of the source area. Vinyl Chloride was detected at concentrations of well above NYSDEC Class GA Criteria of 2 ppb. These detections flank the source area on the east (10 ppb) and west (10 ppb).

Metals were detected in the groundwater of three wells, HRP-MW-3, HRP-MW-7, and HRP-MW-9. Class GA exceedances occurred in HRP-MW-3 and HRP-MW-7 had NYSDEC with 980 ppb of iron and 91,000 ppb of sodium for HRP-MW-3 and 320 ppb of manganese, and 92,000 ppb of sodium in HRP-MW-7. Herbicides and pesticides were not found to exceed NYSDEC Class GA Criteria. PFOS and PFOA had exceedances in HRP-MW-7 and HRP-MW-9 with levels of PFOS of 11 parts per trillion (ppt) and 39 ppt and PFOA of 18 ppt and 17 ppt respectfully. See Table 6 of the RIR for concentrations. PFOS and PFOA concentrations in groundwater are relatively consistent from upgradient to downgradient and are not considered COC at the site.

Surface Water- One surface water sample was collected from a drainage ditch located along the western boundary of the Site. The sample was analyzed for VOCs. No VOCs were detected above laboratory reporting limits for the laboratory.

Soil Vapor- Two soil vapor samples and one outdoor air sample was collected on-site. VOCs were detected at concentrations exceeding laboratory method detection limits in each of the soil

vapor samples and outdoor ambient air samples collected. Chlorinated volatile organic compounds (CVOCs), TCE, cis-1,2-DCE, and vinyl chloride were not detected at concentrations exceeding method detection limits in any of the vapor samples. PCE was detected in both soil vapor samples with the highest concentration of 4.7 micrograms per cubic meter.

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

Access to the site is unrestricted. However, contact with contaminated soil or groundwater is unlikely unless people dig below the ground surface. People are not drinking contaminated groundwater because the area is served by a public water supply that is not affected by site contamination. 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. Soil vapor intrusion is not a current concern on-site because the site is vacant; however, the potential exists for inhalation exposure from soil vapor intrusion in any future on-site building construction. Environmental sampling indicates soil vapor intrusion is not a concern off-site.

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

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

#### **Soil**

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

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation exposure to contaminants volatilizing from soil.

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

- Prevent migration of contaminants that may result in groundwater contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

#### **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 groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of groundwater 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 SELECTED 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 Feasibility Study and Remedial Alternatives Analysis 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 NYSDEC's remedy is set forth at Exhibit D.

The selected remedy is referred to as In-Situ Chemical Oxidation Treatment remedy.

The estimated present worth cost to implement the remedy is \$405,459. The cost to construct the remedy is estimated to be \$425,500 and the estimated average annual cost is \$5,404.

The elements of the selected 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;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Integrating best management practices to support disadvantaged communities under the Climate Leadership and Community Protection Act (CLCPA).

Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the Feasibility Study, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis was completed. The environmental footprint analysis was completed using the SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA). This analysis will be continuously evaluated during the remedial design to identify and quantify environmental impacts as well as to identify best management practices (BMPs) which could reduce those impacts. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the selected remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

## 2. In-Situ Chemical Oxidation

In-situ chemical oxidation (ISCO) will be implemented to treat contaminants in soil and groundwater. A chemical oxidant will be injected into the subsurface to destroy the contaminants (in an approximately 3,700 square foot area located northwest and west of the former building site), targeting the groundwater CVOC dissolved phase plume. The method and depth of injection will be determined during the remedial design. A bench scale test completed during the RI demonstrated that ISCO was feasible and curated initial design parameters. It is estimated that

32 temporary injection wells will be installed, and that a chemical oxidant will be applied in a one-time injection event. However, the number and placement of the injection wells will be determined during the remedial design. Monitoring of groundwater will be conducted for contaminants of concern up-gradient, downgradient, and within the treatment zone. The field and laboratory parameters to be monitored for will be determined during the remedial design. Long-term groundwater monitoring will also inform the need for future injections.

### 3. Institutional Control

Imposition of an institutional control in the form of an environmental easement 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 County DOH; and
- require compliance with the Department approved Site Management Plan.

### 4. Site Management Plan (SMP)

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 3 above.

Engineering Controls:

The SMP includes, but may not be limited to:

- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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; and
- monitoring for vapor intrusion for any buildings on the site, 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

## **Exhibit A**

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

This section describes the findings of the Remedial Investigation (RI) 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 two categories: VOCs and CVOCs. 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 and soil.

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

The source area is located beneath the western edge of the former dry-cleaning building. The primary contaminants of concern at the site are PCE with minor amounts of breakdown products including TCE, cis-1,2-DCE and vinyl chloride. These contaminants are present in the source area. Their presence appears to be a result of dry-cleaning activities which occurred on site, where dry cleaning chemicals leaked or were dumped to the ground surface and subsequently leaked into the site soil. These compounds present a risk to human health and the environment. Certain waste/source areas identified at the site were addressed by the IRM(s) described in Section 6.2. The remaining waste/source area(s) identified during the RI will be addressed in the remedy selection process.

See Figure 10 and 11 for Soil Source Area and Groundwater Plumes, and below for a summary of soil and groundwater contamination.

### **Groundwater**

Groundwater samples were collected from the entire saturated thickness of the overburden aquifer (24.8 feet) and the top 5 feet of the bedrock aquifer. The samples were collected to assess groundwater conditions on-site. The results indicate that the contamination in groundwater at the site exceeds the SCGs for VOCs and CVOCs.

**Table 1 - Groundwater**

Detected Constituents	Concentration Range Detected (ppb) <sup>a</sup>	SCG <sup>b</sup> (ppb)	Frequency Exceeding SCG
<b>VOCs</b>			
1,1-Dichloroethene (1,1-DCE)	0.140-500	5	11/34
2-Butanone (MEK)	1.60-10,000	50	12/34
Cis-1,2-Dichloroethene (cis-1,2-DCE)	0.150-1,400	5	19/34
Tetrachloroethene (PCE)	0.190-59,000	5	23/34
Trichloroethene (TCE)	0.190-2,000	5	18/34
Vinyl Chloride	0.210-1,000	2	20/34

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).

The primary groundwater contaminants are PCE and breakdown products including TCE, cis-1,2-DCE and vinyl chloride. As noted in Figure 10, the primary groundwater contamination occurs mainly in one location on the site, on the western portion of the former dry-cleaning building.

Based on the findings of the RI, the disposal of hazardous waste resulted in the contamination of groundwater. The site contaminants considered to be the primary contaminations of concern which will drive the remediation of groundwater to be addressed by the remedy selection process are: PCE, TCE, vinyl chloride and cis-1,2-DCE.

**Table 2 – Soil**

Detected Constituents	Concentration Range Detected (ppm) <sup>a</sup>	Unrestricted SCG <sup>b</sup> (ppm)	Frequency Exceeding Unrestricted SCG	Protection of Groundwater (PGW) SCG <sup>c</sup> (ppm)	Frequency Exceeding PGW SCG	Restricted Use SCG <sup>d</sup> (ppm)	Frequency Exceeding Restricted SCG
<b>VOCs</b>							
2-Butanone (MEK)	0.00590-0.0540	0.10	0/136	0.10	0/136	500	0/136
Cis-1,2-Dichloroethene (cis-1,2-DCE)	0.000580-0.00350	0.19	0/136	0.19	0/136	500	0/136
Tetrachloroethene (PCE)	0.000700-12.0	1.3	20/136	1.3	20/136	150	0/136
Trichloroethene (TCE)	0.000680-0.0780	0.47	0/136	0.47	0/136	200	0/136

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 Public Health for Commercial Use.

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

During the SC, soil samples were collected from a depth of 0-10 feet bgs and analyzed for volatile halogens. For the RI, soil samples were collected between 1 and 24 feet bgs and analyzed for Total Compound List (TCL) VOCs with some four samples (SB-4, SB-20, SB-10, and SB-19) being selected for additional testing of TCL SVOCs, Target Analyte List (TAL) Metals, TCL chlorinated herbicides and pesticides, and PFAS. All samples were collected using direct-push methods.

Soil and groundwater have been analyzed for the full suite of analytes that include VOCs, SVOCs, metals, polychlorinated biphenyls (PCBs), herbicides, pesticides, and PFAS.

The soil sampling results were compared to the applicable Soil Cleanup Objectives (SCOs) for unrestricted use, protection of groundwater (PGW), and commercial use, as discussed in Section 3. The results indicate that the primary contaminants of concern on-site are CVOCs occurring in high enough concentrations to migrate to site groundwater. The CVOC contamination exceeding the unrestricted use and PGW SCOs was determined to emanate from the source area on the western corner of the former dry-cleaning building.

The results indicate that on-site soils exceed the 6 NYCRR Part 375 unrestricted use and PGW SCOs for some VOCs; however, results were below commercial and industrial use SCOs for all compounds.

PCE, a CVOC, was detected at concentrations exceeding unrestricted use and PGW SCOs in soil samples. PCE exceedances were detected in samples near the northwest corner of the former dry-cleaning building, with sample depths ranging from 7.5-13 feet bgs. The highest concentration of PCE (12 mg/kg) was detected just north of the western edge of the former dry-cleaning building at a depth of 10-12 feet bgs. No soil sample detected CVOC concentrations exceeding commercial use SCOs.

### **Soil Vapor**

The SC and RI both included investigations to determine whether actions are needed to address exposure related to the potential for soil vapor intrusion resulting from the presence of site-related soil or groundwater contamination. As part of the RI, two soil vapor samples and one outdoor air sample were collected on-site. Based on the concentration detected and in comparison, with the *Soil Vapor/Indoor Air Matrix 2* of the *NYSDOH Soil Vapor Intrusion Guidance (2006)*, no site-related soil vapor contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for soil vapor.

### **Surface Water**

The Remedial Investigation (RI) included investigations to determine whether actions needed to address exposure related to the potential for surface water contamination resulting from the site-related soil or groundwater contamination. One sample was taken from the tributary to Salmon Creek. Based on the concentration detected, and in comparison, to NYSDEC Class C Surface Water criteria, no site-related surface water contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for surface water.

**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 Further Action**

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment. The No Action alternative would not involve any surface soil, subsurface soil, groundwater, or soil vapor remedial activity.

Capital Cost:.....	\$10,000
Annual Costs:.....	\$0
Total Present Worth:.....	\$10,000

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

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2 and Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of the IRM. This alternative would prevent current or future exposures through the imposition of an Engineering Control (EC) and Institutional Control (ICs). This alternative will not treat the on-site soil source area or the impacted groundwater beneath the site. The soil source area is currently on the western portion of the former dry-cleaning building.

Institutional controls (ICs) would be required to prevent future exposure pathways from developing by controlling exposure during potential future construction and limiting the use of groundwater. An environmental Easement would be recorded to provide an enforceable legal instrument to ensure ICs are met. A Site Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the site. ICs are the same for each alternative below where ICs are indicated.

Capital Cost:.....	\$30,000
Annual Costs:.....	\$568
Total Present Worth:.....	.\$262,240

**Alternative 3: Enhanced Reductive Dechlorination of Groundwater with Engineering and Institutional Controls under a Site Management Plan**

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include:

all of Alternative 2, including ICs and ECs, as well as enhanced reductive dichlorination (ERD), which includes biostimulation and bioaugmentation. This process introduces an electron donor to the subsurface, which serves as a carbon source for the existing microbes on site through a process called biostimulation. These microbes deplete the aquifer under the site of electron acceptors by fermentation reactions. With a reduction in electron acceptors, the oxidation reduction potential (ORP) is reduced and creates an environment to facilitate reductive dichlorination. Bioaugmentation would include the introduction of microbes to the subsurface along the carbon substrate. This increase in microbial population will allow for the reduction of contamination on site. A Site Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the site.

Institutional controls (ICs) would be required to prevent future exposure pathways from developing by controlling exposure during potential future construction and limiting the use of groundwater. An environmental Easement would be recorded to provide an enforceable legal instrument to ensure ICs are met. A Site Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the site. ICs are the same for each alternative below where ICs are indicated.

Capital Cost:.....	\$314,400
Annual Costs:.....	\$2,068
Total Present Worth:.....	\$474,104

**Alternative 4: In-Situ Chemical Oxidation (ISCO), Engineering and Institutional Controls, Site Management Plan**

This alternative would include all of Alternative 2, including ICs and ECs with the addition of in-situ chemical oxidation to reduce CVOCs within the groundwater plume under the site. A chemical oxidant will be injected into the deep overburden groundwater plume beneath and to the northwest of the former building and the shallow groundwater plume beneath and to the west of the former building under the site. This process includes pumping a chemical oxidant into the subsurface, which introduces a chemical oxidant to oxidize the contaminants. The oxidizing agent gains electrons from the contaminant. Without these electrons, the contamination is chemically altered, turning the contaminants into innocuous byproducts, such as carbon and hydrogen. A Site Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the site.

Institutional controls (ICs) would be required to prevent future exposure pathways from developing by controlling exposure during potential future construction and limiting the use of groundwater. An environmental Easement would be recorded to provide an enforceable legal instrument to ensure ICs are met. A Site Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the site. ICs are the same for each alternative below where ICs are indicated.

Capital Cost:.....	\$290,400
Annual Costs:.....	\$5,404

Total Present Worth:..... \$405,459

**Alternative 5: In-Situ Thermal Remediation, Engineering and Institutional Controls, Site Management Plan**

This alternative would include all of Alternative 2, including ICs and ECs with the addition of in-situ thermal remediation using electrical resistance heating (ERH). Thermal remediation would enhance volatilization of CVOCs, using installing electrodes in a triangular grid pattern in the treatment area. A Site Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the site.

Institutional controls (ICs) would be required to prevent future exposure pathways from developing by controlling exposure during potential future construction and limiting the use of groundwater. An environmental Easement would be recorded to provide an enforceable legal instrument to ensure ICs are met. A Site Management Plan (SMP) would be required to specify the methods necessary to ensure compliance with all ECs and ICs placed on the site. ICs are the same for each alternative below where ICs are indicated.

Capital Cost:.....\$1,899,200  
Annual Costs: ..... \$29,727  
Total Present Worth:..... \$2,145,724

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

<b>Remedial Alternatives</b>	<b>Capital Cost (\$)</b>	<b>Annual Costs (\$)</b>	<b>Total Present Worth (\$)</b>
Alternative 1— No Action	10,000	0	10,000
Alternative 2— Monitored Natural Attenuation of Groundwater with ICs and ECs under a SMP	30,000	568	262,240
Alternative 3— Enhanced Reductive Dichlorination of Groundwater with ICs and ECs under a SMP	314,400	2,068	474,104
Alternative 4— In-Situ Chemical Oxidation Treatment of Groundwater with ICs and ECs under a SMP	290,400	5,404	405,459
Alternative 5— In-Situ Thermal Remediation of Groundwater with ICs and ECs under a SMP	1,899,200	29,772	2,145,724

## **Exhibit D**

### **SUMMARY OF THE SELECTED REMEDY**

The Department has selected Alternative 4, In-Situ Chemical Oxidation of Groundwater, Engineering Controls and Institutional Controls and a Site Management Plan as the remedy for this site. Alternative 4 would achieve the remediation goals for the site by reducing CVOC concentrations in the deep overburden groundwater plume beneath and to the northwest of the former building and the shallow groundwater plume beneath and to the west of the former building under the site via ISCO injections. This alternative will reduce CVOCs in soils and groundwater, thereby reducing potential transport of contaminants to the dissolved and vapor phases. Alternative 4 is estimated to achieve compliance with chemical specific SCGs are site-specific cleanup levels in soil and groundwater. The elements of this remedy are described in Section 7. The elements of this remedy are depicted in Figure 13.

The SMP will detail Institutional Controls (ICs) and Engineering Controls (ECs) required for the site. Anticipated ICs and ECs are:

An environmental easement 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 County DOH;
- require compliance with the Department approved Site Management Plan.

The SMP will include monitoring and inspection requirements to assess the performance and effectiveness of the remedy. The plan will include groundwater monitoring requirements and frequency, inspection frequency and period reporting requirements.

### **Basis for Selection**

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 selected remedy, Alternative 4, satisfies this criterion by destroying dissolved-phase CVOCs in groundwater resulting in inert by products of carbon dioxide and water. Alternative 1 (No Action) does not address site contamination and does not provide any protection to human health and the environment therefore will not be further evaluated. Alternative 2 (Monitored

Natural Attenuation of Groundwater with Engineering and Institutional Controls under a Site Management Plan) would help reduce human exposures but would not address the contamination on site, this alternative is protective of human health but not of the environment. Alternative 3 (Enhanced Reductive Dichlorination of Groundwater with Engineering Controls and Institutional Controls under a Site Management Plan) Alternative 4 (In-Situ Chemical Oxidation Treatment of Groundwater with Engineering and Institutional Controls under a Site Management Plan) as well as Alternative 5 (In-Situ Thermal Remediation of Groundwater with Engineering and Institutional Controls under a Site Management Plan) would all be protective of human health and the environment. Alternative 3 would reduce PCE levels by bioaugmentation in the soil and groundwater, however this option would take over 10 years as bioaugmentation is a time-consuming process. Alternative 4 and Alternative 5 would remove or destroy dissolve-phase CVOCs in groundwater.

For Alternatives 4 and 5, exposure routes would remain for on-site workers that excavate impacted soil by inhalation of impacted soil or direct contact with subsurface impacted soil during ground disturbance activities. This potential for short-term exposure is mitigated by use of personal protective equipment (PPE) and adherence to a Health and Safety Plan (HASP).

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.

The selected remedy, Alternative 4, would comply with SCGs as chemical oxidation treatment would continue to reduce CVOCs in groundwater over time and meet SCGs. Alternatives 3 and 5 would also comply with SCGs, however, Alternative 3 would contribute to a prolonged period of non-compliance with SCGs despite reduction of sorbed mass in soils and groundwater. Alternative 2 does not allow chemical specific SCGs and site-specific cleanup levels to be achieved for soil or groundwater and is therefore not evaluated further. Alternatives 3 through 5 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

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

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

Long-term effectiveness is best accomplished by those alternatives that involve in-situ treatment of contaminated groundwater and soil. For this reason, Alternative 5 would be considered slightly more effective than Alternatives 3 and 4 in the long-term since this would destroy source material contamination and eliminate continued leaching of contaminants. Alternative 5 would also reduce the need for engineering and institutional controls since this remedy would return the

site to near pre-release conditions.

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.

Alternatives 3 through 5 would all reduce contaminant toxicity, and volume, and mobility. The reduction in volume and then toxicity is best achieved through full removal, as incorporated in Alternative 5, which had the highest score. Alternative 4 would be given preference over Alternative 3 with respect to improving groundwater quality (toxicity) through direct treatment of concentrations in groundwater via in-situ chemical oxidation remediation., as opposed to waiting for the less direct positive effect of bioaugmentation would have on groundwater quality.

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

Alternatives 3 through 5 have the potential to create human exposure to contaminants for remediation workers and nuisance conditions (noise or dust during construction). These impacts can be easily mitigated with ECs during construction. Duration of construction for each of the remaining alternatives is estimated to have a similar duration and will include virtually identical controls (e.g., CAMP, limitations on working hours). Alternative 5 is expected to return the Site to pre-release conditions in less than one year and therefore received the highest score. Alternative 3 is expected to take longer to achieve SCGs than Alternative 4 and thus Alternative 4 ranked higher than Alternative 3.

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.

All alternatives are feasible given the current site layout. Alternatives 3 through 5 are feasible since there is no longer an on-site building after it was removed by the IRM implementation. Alternative 3 would require the least amount of infrastructure since nothing needs to be constructed for this remedy. Alternative 4's in-situ chemical oxidation treatment would be applied to the subsurface via temporary injection wells and would not require additional infrastructure at the site. Alternative 5 would require additional infrastructure to support the thermal injection method.

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.

Capital and long-term (30-year) costs were evaluated for each alternative, as capital (short-term) savings may be negated by long-term costs. Alternative 5 was found to be the least cost-effective approach with higher capital cost than the other alternatives and thus scored the lowest. Alternative 4 scored the highest and cost around 19% and 80% less than alternative 3 and 5, respectively.

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.

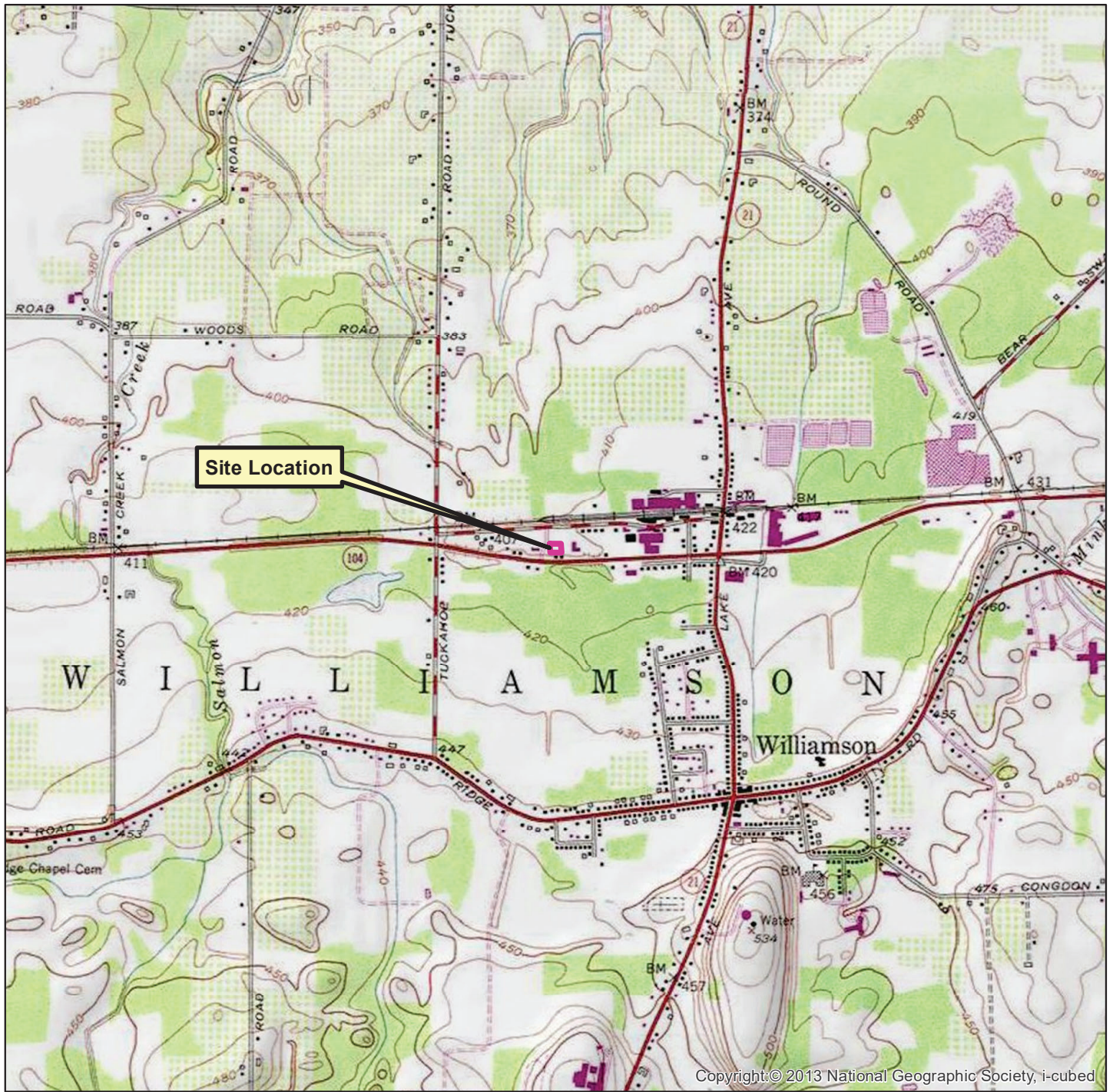
Alternatives 3, 4, and 5 do not change the current land use in any significant way. Alternative 5 would return the Site to near pre-release conditions and may allow the Site to be reclassified as a restricted residential property. Therefore, Alternative 5 scored higher than Alternative 3 and Alternative 4 which scored equal.

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

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP were evaluated. A responsiveness summary was prepared describing public comments received and the manner in which the Department addresses the concerns raised.

10. Green and Sustainable Remediation: Potential Indirect Environmental Impact of the Remedy.

Alternative 5 will have the highest potential indirect environmental impact through energy use, CO<sub>2</sub>e emissions, NO<sub>X</sub> emissions, SO<sub>X</sub> emissions, and HAP emissions. Alternative 5 thereby scored the lowest with regard to GSR. Alternative 3 follows Alternative 5 in potential indirect impacts with Alternative 3 exceeding Alternative 4 by 40% for energy use, 35% for CO<sub>2</sub>e emissions, 13% for NO<sub>X</sub> emissions, 52% for SO<sub>X</sub> emissions, 35% for PM emissions, and 22% for HAP emissions. Alternative 4 remains the recommended alternative as, of the alternatives expected to achieve SCGs, Alternative 4 has the lowest potential indirect environmental impacts. Furthermore, Alternative 4 represents the most feasible alternative for protection of human health and the environment since it is expected to achieve SCGs and reduce toxicity, mobility, and volume more quickly than Alternative 3. Alternative 4 is also expected to be less expensive than Alternative 3. See the balancing criteria above for more in-depth descriptions of the alternative scoring.



Copyright © 2013 National Geographic Society, i-cubed



1 inch = 2,000 feet



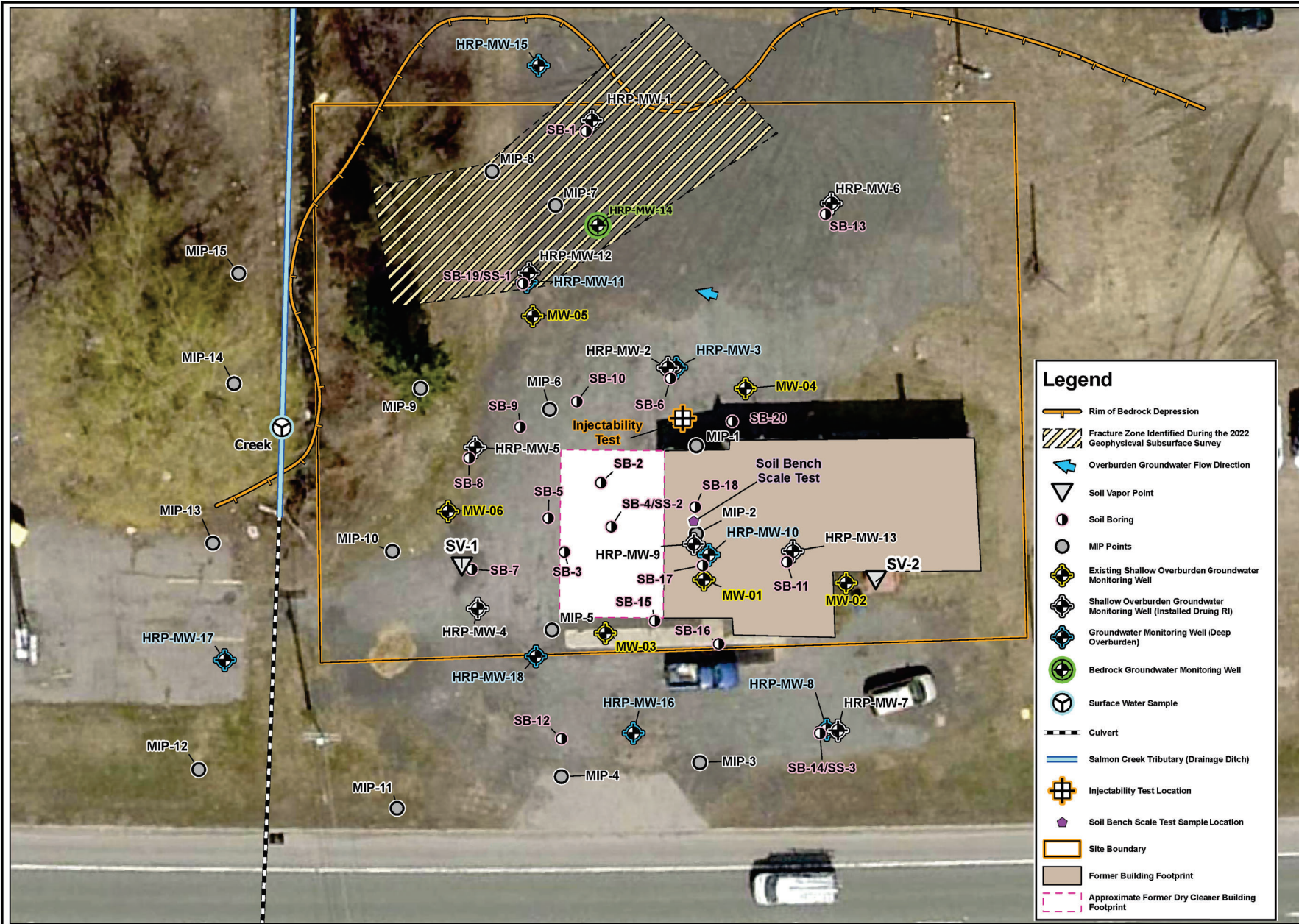
**Figure 1**  
**Site Location**  
**3901 Route 104**  
**Williamson, New York**  
**NYSDEC Site No. 859032**  
**HRP # DEC1023.P3**  
**Scale 1" = 2,000'**

USGS Quadrangle Information  
Quad ID: 43077-B2  
Name: Williamson, New York  
Date Rev: 1976  
Date Pub: 1979



ONE FAIRCHILD SQUARE  
SUITE 110  
CLIFTON PARK, NY 12065  
(518) 877-7101  
HRPASSOCIATES.COM

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901\_ROUTE\_104\_WILLIAMSON, NY\_14589\DEC1023P3\GIS\williamson\_final.aprx



### Legend

- Rim of Bedrock Depression
- Fracture Zone Identified During the 2022 Geophysical Subsurface Survey
- Overburden Groundwater Flow Direction
- Soil Vapor Point
- Soil Boring
- MIP Points
- Existing Shallow Overburden Groundwater Monitoring Well
- Shallow Overburden Groundwater Monitoring Well (Installed During RI)
- Groundwater Monitoring Well (Deep Overburden)
- Bedrock Groundwater Monitoring Well
- Surface Water Sample
- Culvert
- Salmon Creek Tributary (Drainage Ditch)
- Injectability Test Location
- Soil Bench Scale Test Sample Location
- Site Boundary
- Former Building Footprint
- Approximate Former Dry Cleaner Building Footprint

Revisions	No.	Date

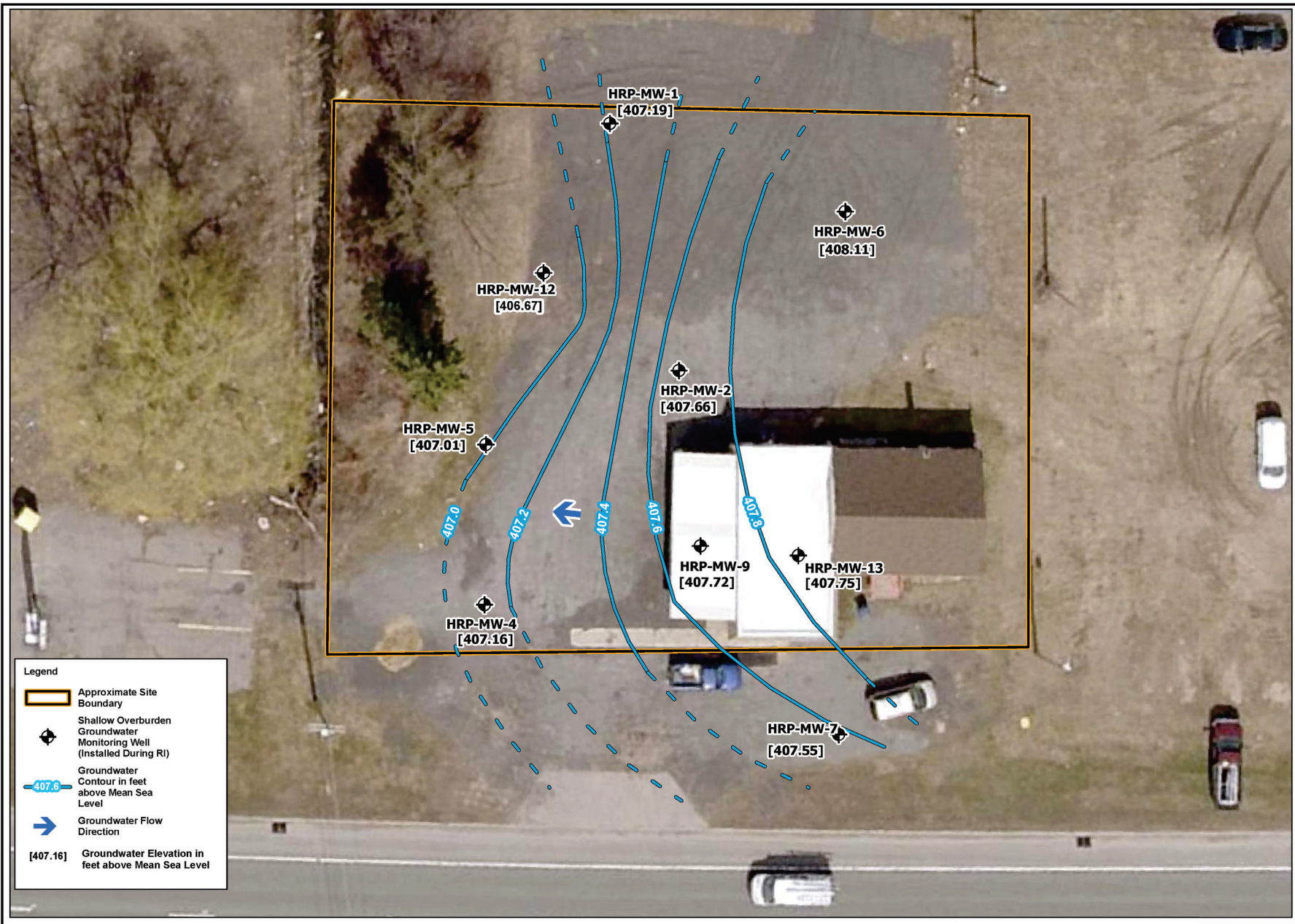
Designed By:	CMS	Drawn By:	CMS	Reviewed By:	DCS
--------------	-----	-----------	-----	--------------	-----

Issue Date:	9/30/2024	Project No.:	DEC1023.P3	Sheet Size:	11x17
-------------	-----------	--------------	------------	-------------	-------

# Site Plan

3901 Route 104  
Williamson, New York  
NYSDEC Site No. 859032

Path: S:\Data\NYSDEC - NYSDEC\WILLIAMSON\3901\_ROUTE\_104\_WILLIAMSON, NY\_14589\DEC1023P3\GIS\GIS.aprx



**Legend**

- Approximate Site Boundary
- Shallow Overburden Groundwater Monitoring Well (Installed During RI)
- Groundwater Contour in feet above Mean Sea Level
- Groundwater Flow Direction
- Groundwater Elevation in feet above Mean Sea Level

ONE FAIRCHILD SQUARE  
SUITE 110  
CLIFTON PARK, NY 12065  
(518) 877-7101  
HRPASSOCIATES.COM

↑ North

Revisions	No.	Date

Designed By:	Drawn By:	Reviewed By:
PM	BOB	MEW

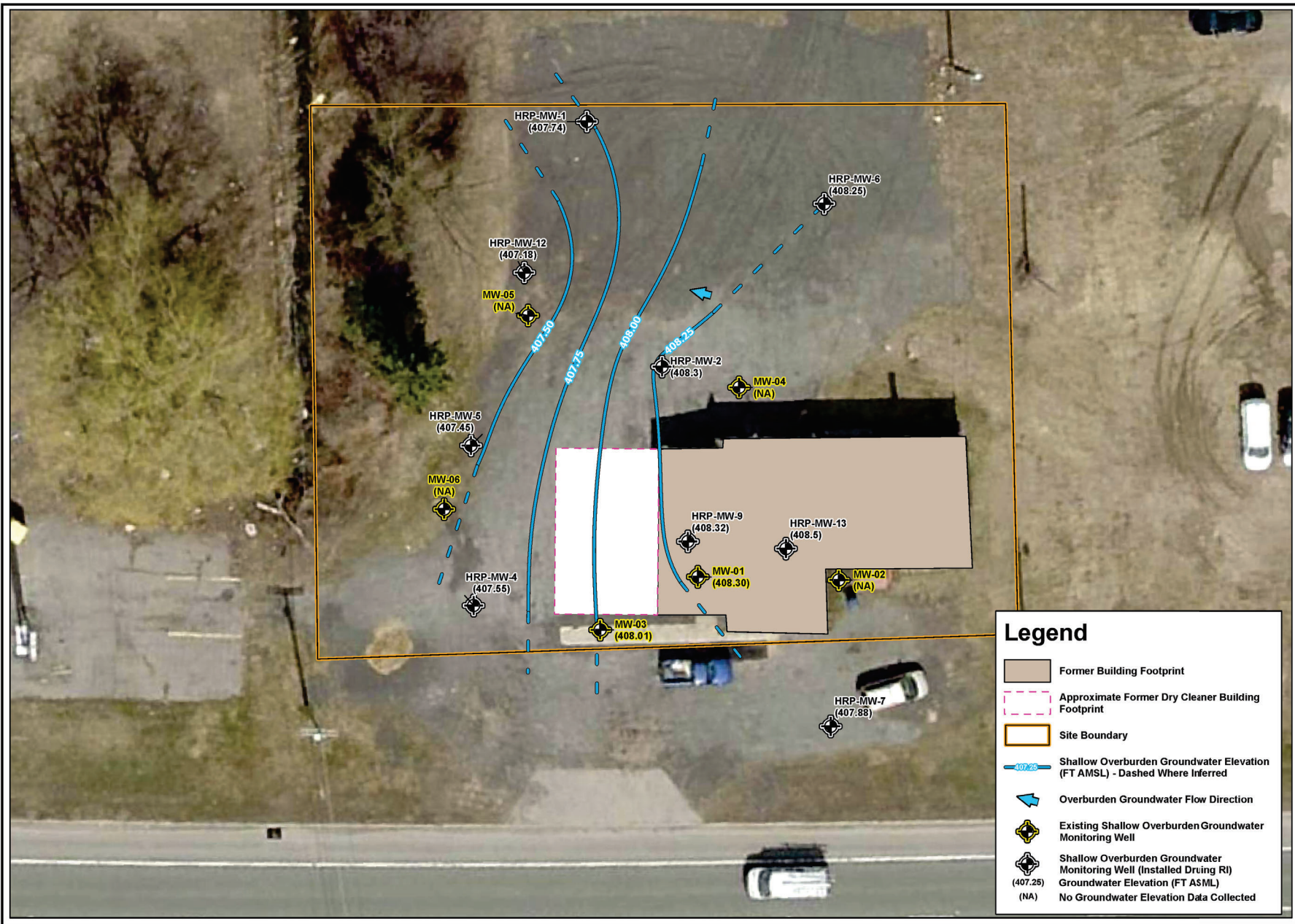
Issue Date:	Project No.:	Sheet Size:
06/06/2022	DEC1023.P3	11x17

**Overburden  
Groundwater Elevations  
(April 2022)**

3901 Route 104  
Williamson, New York  
NYSDEC Site No. 859032

Figure No.  
**3A**

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901\_ROUTE\_104\_WILLIAMSON\_NY\_14589\DEC1023P3\GIS\williamson\_final\williamson\_final.aprx



### Legend

- Former Building Footprint
- Approximate Former Dry Cleaner Building Footprint
- Site Boundary
- 407.25  
Shallow Overburden Groundwater Elevation (FT AMSL) - Dashed Where Inferred
- 407.25  
Overburden Groundwater Flow Direction
- Existing Shallow Overburden Groundwater Monitoring Well
- Shallow Overburden Groundwater Monitoring Well (Installed During RI)
- (407.25)  
Groundwater Elevation (FT ASML)
- (NA)  
No Groundwater Elevation Data Collected

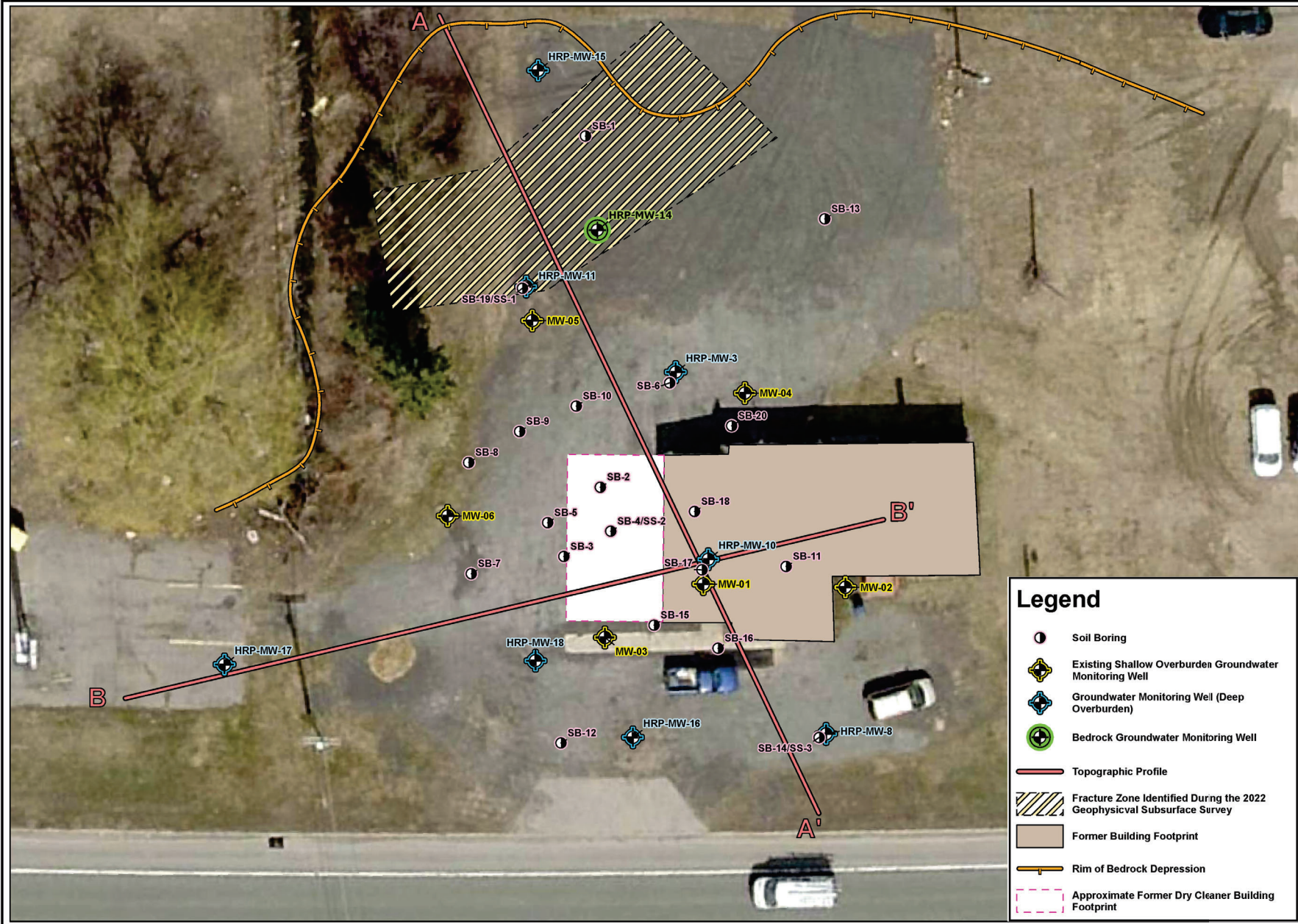
Issue Date:	Project No.:	Sheet Size:	Revisions	
			No.	Date
9/30/2024	DEC1023.P3	11x17		
Designed By: CMS	Drawn By: CMS	Reviewed By: DCS		

**Overburden  
Groundwater Elevation  
(January 2023)**

3901 Route 104  
Williamson, New York  
NYSDEC Site No. 859032

**Figure No.  
3B**

Path: S:\Data\NYSDEC - NYSDEC\WILLIAMSON\3901\_ROUTE\_104\_WILLIAMSON, NY 14589\DEC1023P3\FieldData\Modeling\willy\_cross\_sections\willy\_cross\_sections.aprx



### Legend

- Soil Boring
- Existing Shallow Overburden Groundwater Monitoring Well
- Groundwater Monitoring Well (Deep Overburden)
- Bedrock Groundwater Monitoring Well
- Topographic Profile
- Fracture Zone Identified During the 2022 Geophysical Subsurface Survey
- Former Building Footprint
- Rim of Bedrock Depression
- Approximate Former Dry Cleaner Building Footprint

**HRP**  
 MOVE YOUR ENVIRONMENT FORWARD  
 ONE FAIRCHILD SQUARE  
 SUITE 110  
 CLIFTON PARK, NY 12065  
 (518) 877-7101  
 HRPASSOCIATES.COM

↑ North

0 10 20  
 Feet

Revisions	No.	Date

Designed By:	Drawn By:	Reviewed By:
CMS	CMS	DCS

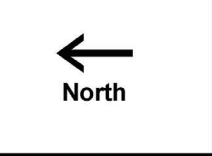
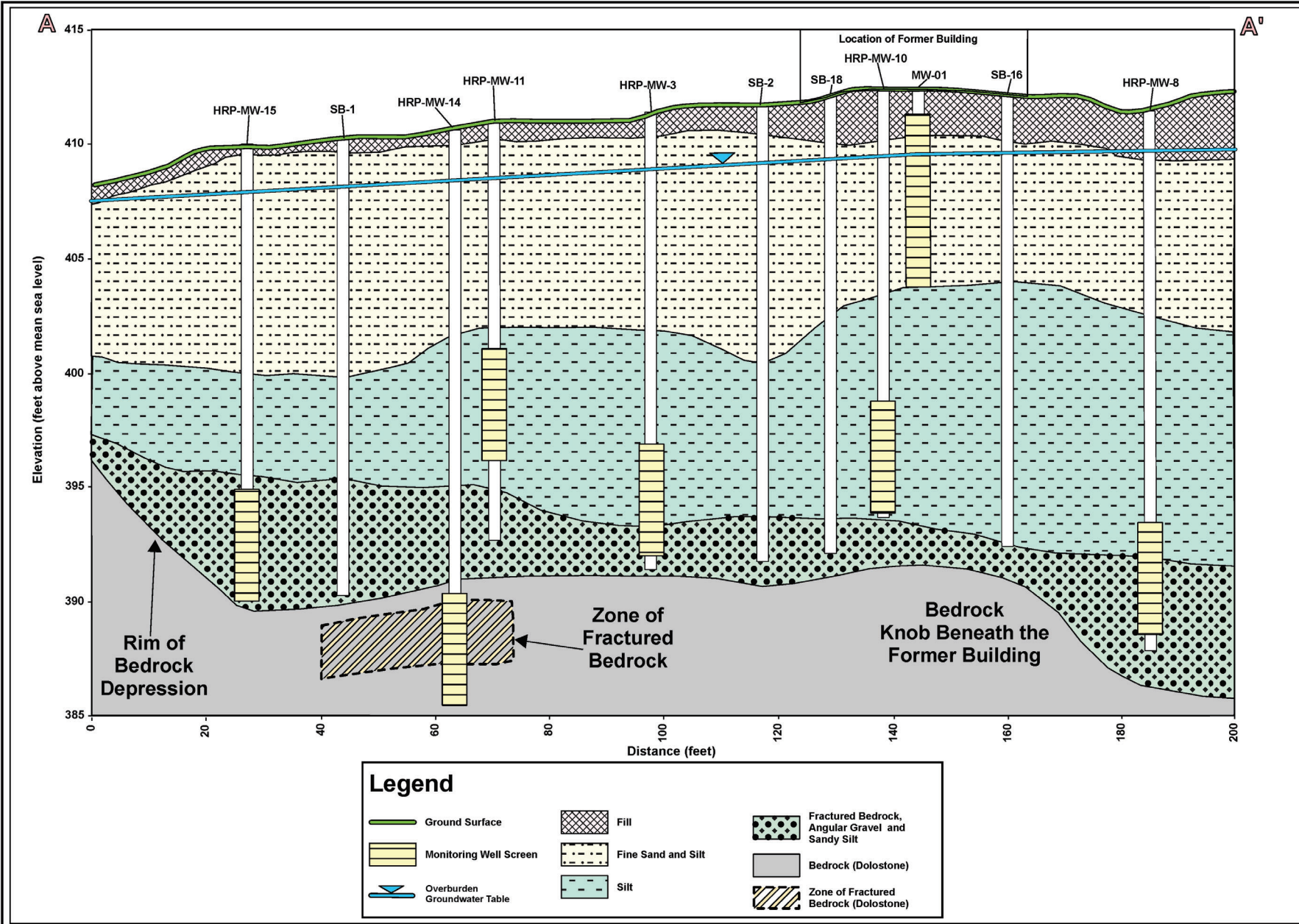
Issue Date:	Project No.:	Sheet Size:
1/29/2024	DEC1023.P3	11x17

## Topographic Profiles A-A' and B-B'

3901 Route 104  
 Williamson, New York  
 NYSDEC Site No. 859032

Figure No.  
**4A**

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901\_ROUTE\_104\_WILLIAMSON, NY 14589\DEC1023\3\FieldData\Modeling\willy\_cross\_sections\willy\_cross\_sections.aprx



Revisions	No.	Date

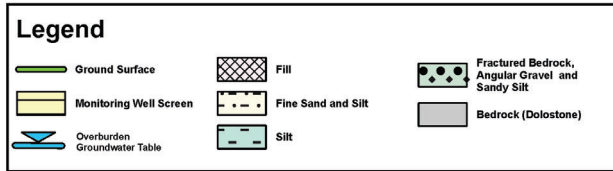
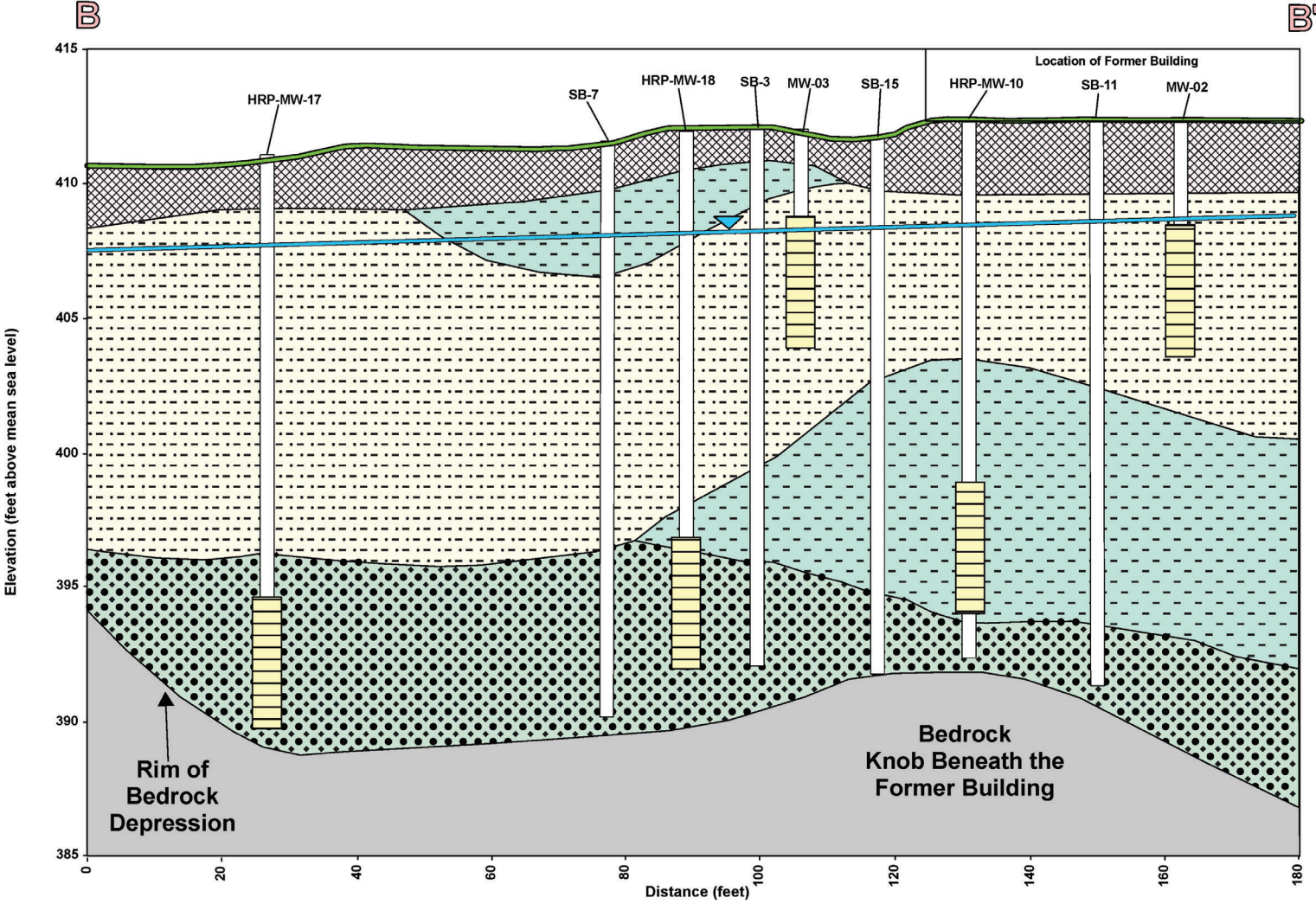
Designed By:	CMS	Drawn By:	CMS	Reviewed By:	DCS
Issue Date:	02/26/2024	Project No.:	DEC1023.P3	Sheet Size:	11x17

**Cross Section (A-A')**

3901 Route 104  
 Williamson, New York  
 NYSDEC Site No. 859032

**Figure No. 4B**

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901 ROUTE 104 WILLIAMSON, NY 14589\DEC1023P3\FieldData\Modeling\willy\_cross\_sections\willy\_cross\_sections.aprx



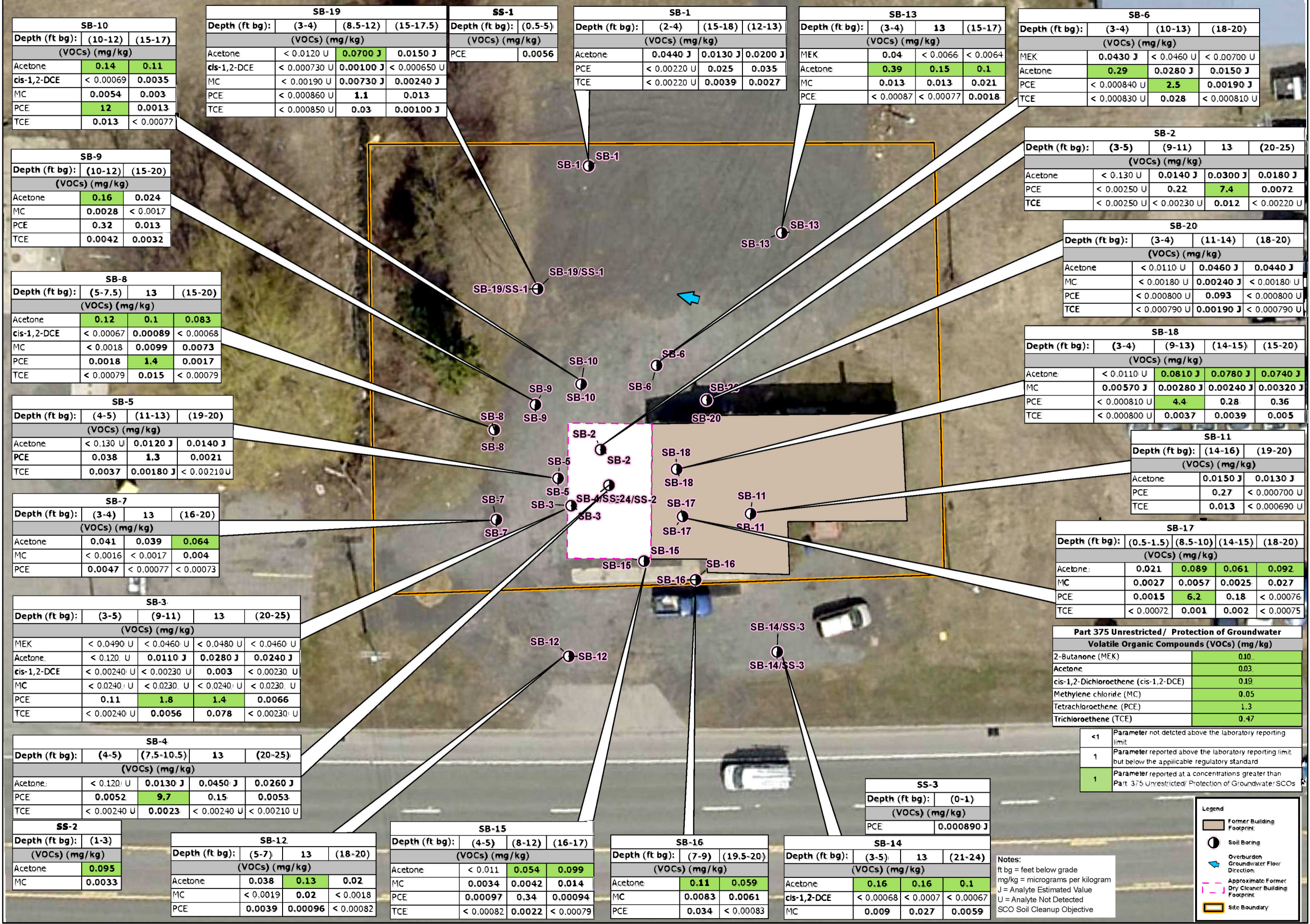
Revisions	No.	Date			
Designed By:	CMS	Drawn By:	CMS	Reviewed By:	DCS
Issue Date:	02/26/2024	Project No.:	DEC1023.P3	Sheet Size:	11x17

**Cross Section (B-B')**

3901 Route 104  
Williamson, New York  
NYSDEC Site No. 859032

**Figure No. 4C**

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901 ROUTE 104, WILLIAMSON, NY 14589\DEC1023P3\GIS\williamson\_final\williamson\_final.aprx



Revisions	
No.	Date

Designed BY:	CMS	Drawn BY:	CMS	Reviewed BY:	DCS
--------------	-----	-----------	-----	--------------	-----

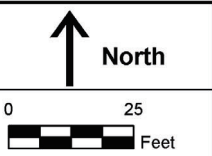
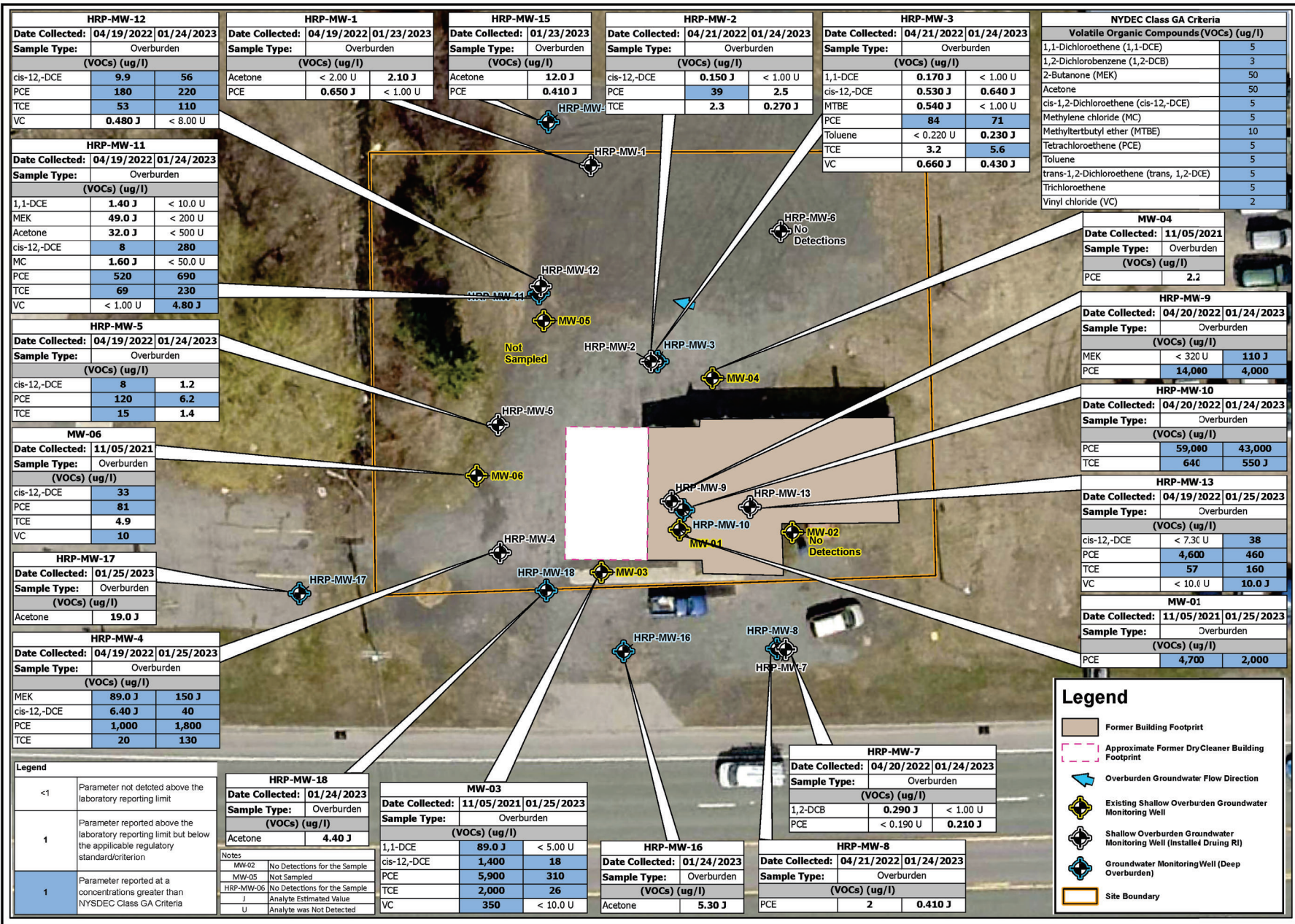
Issue Date:	9/30/2024	Project No.:	DEC1023.P3	Sheet Size:	11X17
-------------	-----------	--------------	------------	-------------	-------

**Surface and Subsurface  
Soil VOC Results**

3901 Route 104  
Williamson, New York  
NYSDEC Site No. 859032

**Figure No.**  
**5**

Path: S:\Data\NYDEC - NYSDCE\WILLIAMSON\3901\_ROUTE\_104\_WILLIAMSON, NY\_14589\DEC1023P3\GIS\williamson\_final.aprx



Revisions	No.	Date			
Designed By:	CMS	Drawn By:	CMS	Reviewed By:	DCS

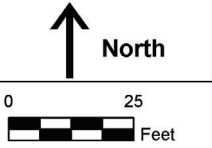
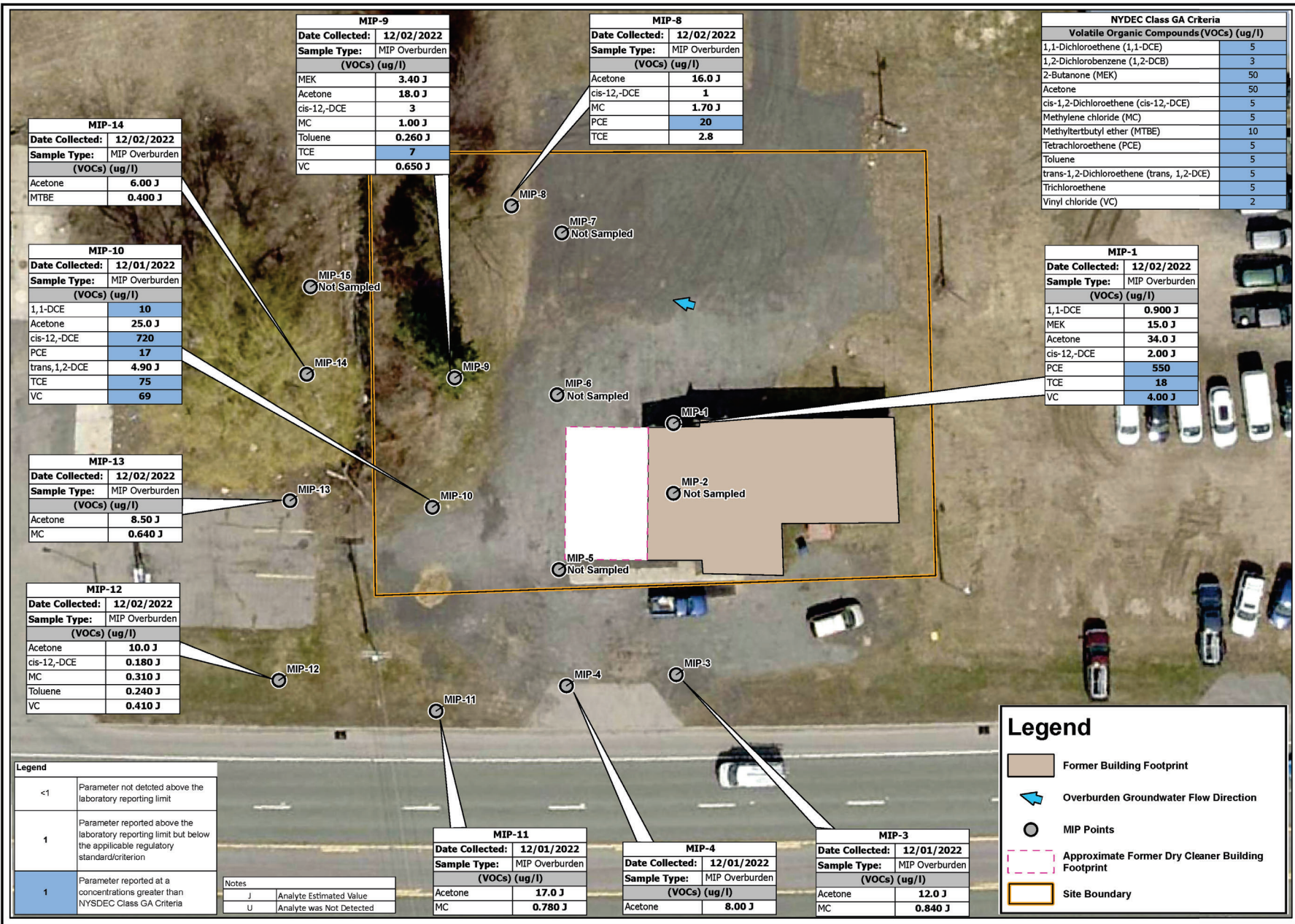
Issue Date:	9/30/2024	Project No.:	DEC1023.P3	Sheet Size:	11x17
-------------	-----------	--------------	------------	-------------	-------

Overburden Groundwater Monitoring Well VOC Sample Results

3901 Route 104  
Williamson, New York  
NYSDCE Site No. 859032

Figure No. **6**

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901 ROUTE 104 WILLIAMSON, NY 14589\DEC1023\GIS\williamson\_final.aprx



Revisions	No.	Date

Designed By:	CMS	Drawn By:	CMS	Reviewed By:	DCS
--------------	-----	-----------	-----	--------------	-----

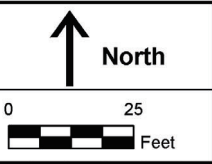
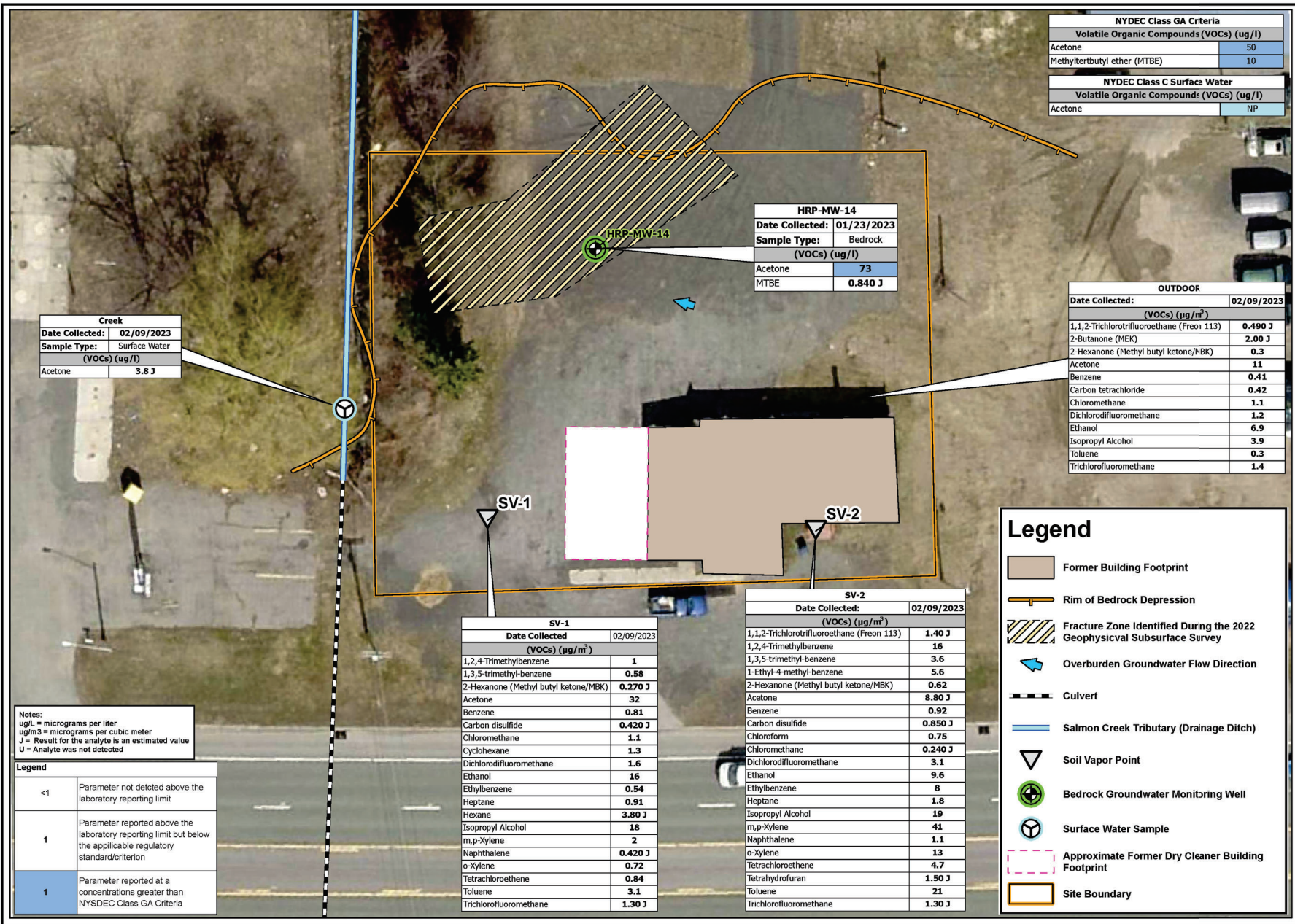
Issue Date:	9/30/2024	Project No.:	DEC1023.P3	Sheet Size:	11x17
-------------	-----------	--------------	------------	-------------	-------

**Overburden  
Groundwater MIP VOC  
Sample Results**

3901 Route 104  
Williamson, New York  
NYSDEC Site No. 859032

Figure No.  
**7**

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901\_ROUTE 104\_WILLIAMSON, NY\_14589\DEC1023P3\GIS\williamson\_final.aprx



Revisions	
No.	Date

Designed By:	CMS
Drawn By:	CMS
Reviewed By:	DCS

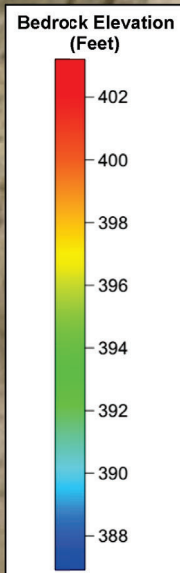
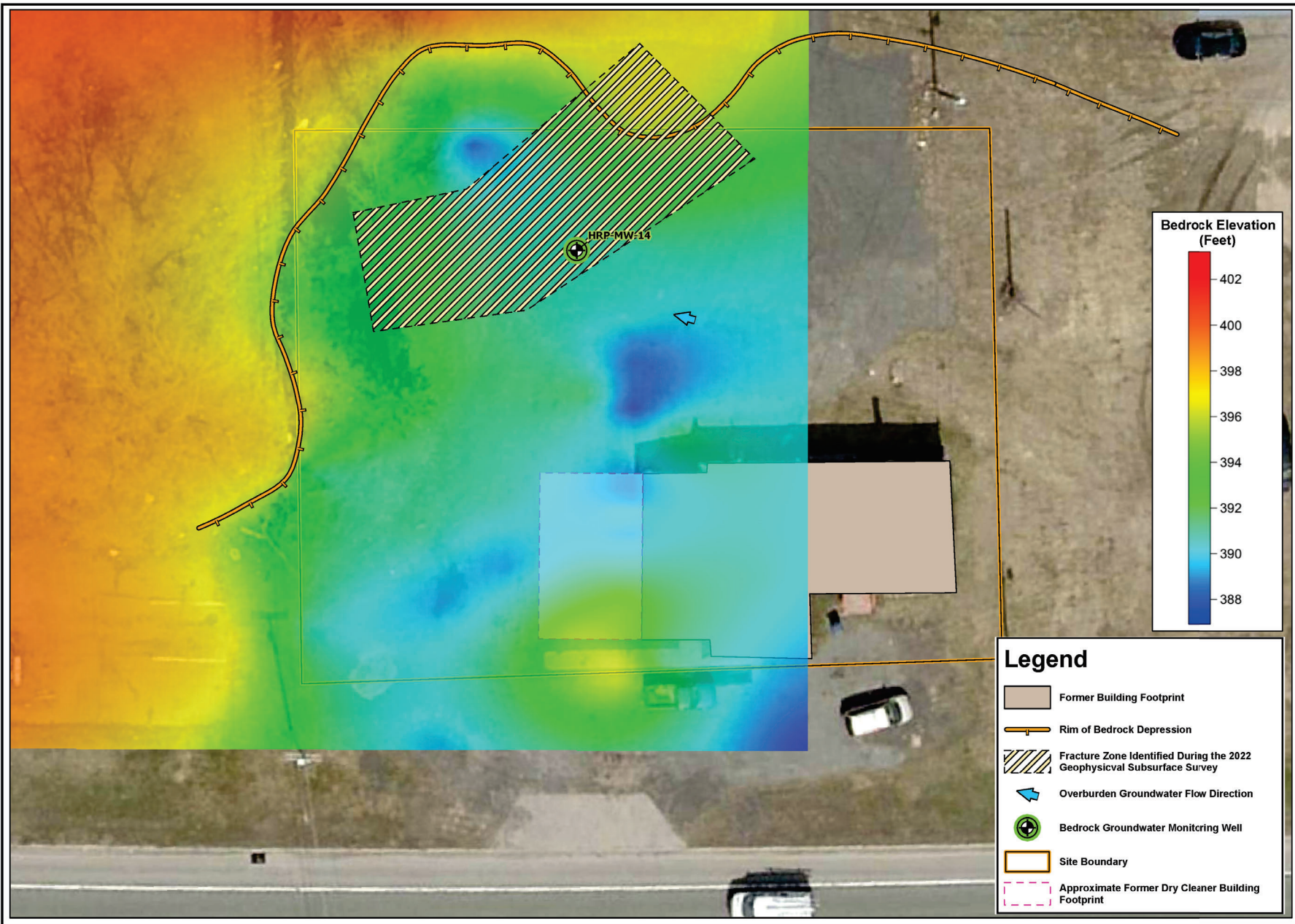
Issue Date:	9/30/2024
Project No.:	DEC1023.P3
Sheet Size:	11X17

Bedrock Groundwater, Surface Water, and Soil Vapor VOC Sample Results

3901 Route 104  
 Williamson, New York  
 NYSDCE Site No. 859032

Figure No. **8**

Path: S:\Data\NYSDEC - NYSDEC\WILLIAMSON\3901 ROUTE 104 WILLIAMSON, NY 14589\DEC1023P3\GIS\williamson\_final.aprx



**Legend**

- Former Building Footprint
- Rim of Bedrock Depression
- Fracture Zone Identified During the 2022 Geophysical Subsurface Survey
- Overburden Groundwater Flow Direction
- Bedrock Groundwater Monitoring Well
- Site Boundary
- Approximate Former Dry Cleaner Building Footprint

**HRP**  
 MOVE YOUR ENVIRONMENT FORWARD  
 ONE FAIRCHILD SQUARE  
 SUITE 110  
 CLIFTON PARK, NY 12065  
 (518) 877-7101  
 HRPASSOCIATES.COM

North ↑  
 0 10 20 Feet

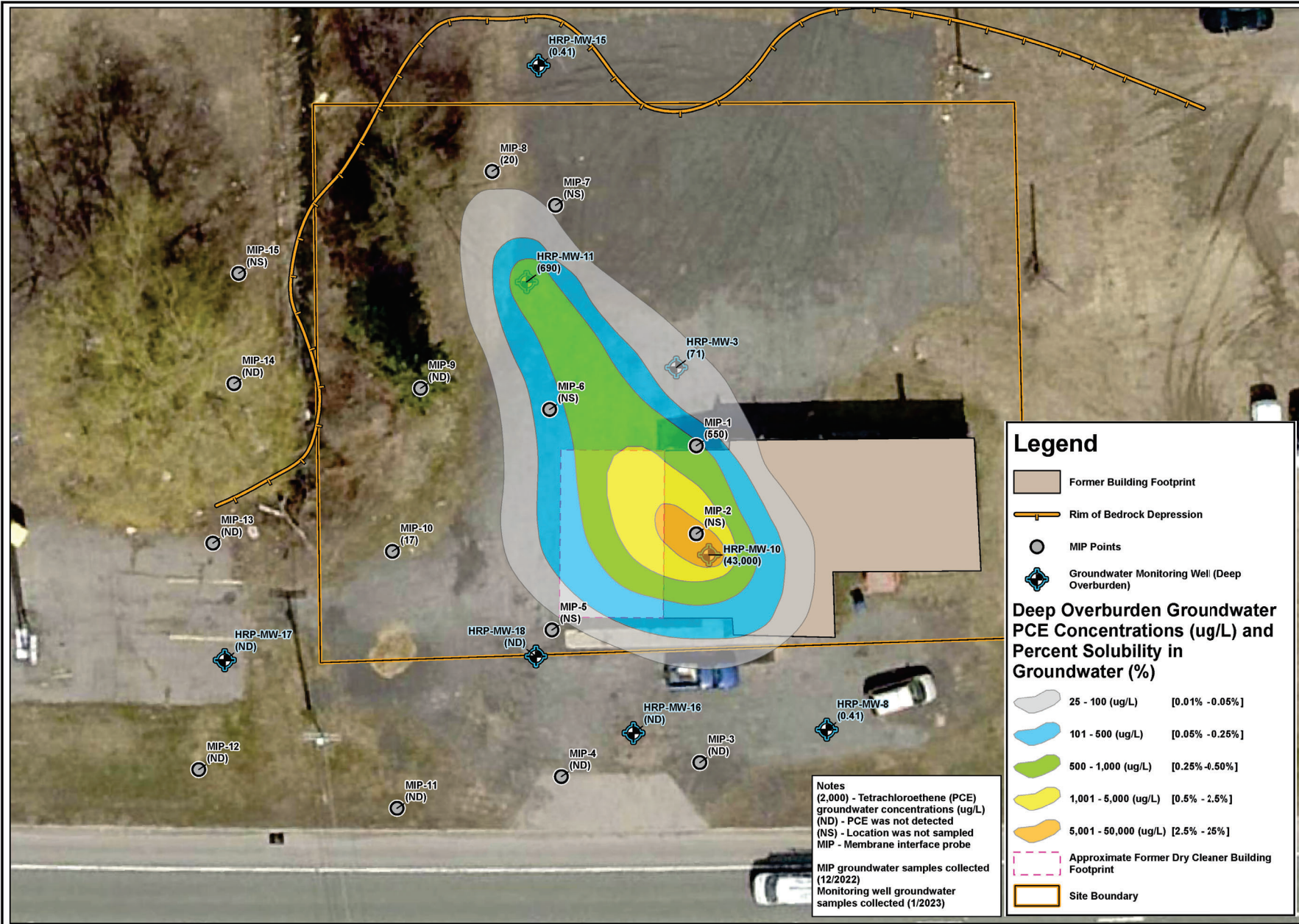
Revisions	No.	Date			
Designed By:	CMS	Drawn By:	CMS	Reviewed By:	DCS
Issue Date:	9/30/2024	Project No.:	DEC1023.P3	Sheet Size:	11x17

**Bedrock Elevation and Fracture Zone 2022 Geophysical Survey**

3901 Route 104  
 Williamson, New York  
 NYSDEC Site No. 859032

Figure No. **9**

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901\_ROUTE\_104\_WILLIAMSON, NY\_14589\DEC1023P3\GIS\williamson\_final.aprx



**Notes**  
 (2,000) - Tetrachloroethene (PCE) groundwater concentrations (ug/L)  
 (ND) - PCE was not detected  
 (NS) - Location was not sampled  
 MIP - Membrane interface probe

MIP groundwater samples collected (12/2022)  
 Monitoring well groundwater samples collected (1/2023)

### Legend

- Former Building Footprint
- Rim of Bedrock Depression
- MIP Points
- Groundwater Monitoring Well (Deep Overburden)

### Deep Overburden Groundwater PCE Concentrations (ug/L) and Percent Solubility in Groundwater (%)

	25 - 100 (ug/L)	[0.01% - 0.05%]
	101 - 500 (ug/L)	[0.05% - 0.25%]
	500 - 1,000 (ug/L)	[0.25% - 0.50%]
	1,001 - 5,000 (ug/L)	[0.5% - 2.5%]
	5,001 - 50,000 (ug/L)	[2.5% - 25%]

- Approximate Former Dry Cleaner Building Footprint
- Site Boundary

**HRP**  
 MOVE YOUR ENVIRONMENT FORWARD

ONE FAIRCHILD SQUARE  
 SUITE 110  
 CLIFTON PARK, NY 12065  
 (518) 877-7101  
 HRPASSOCIATES.COM

↑ North

0 10 20  
 Feet

Revisions	No.	Date

Designed By: CMS	Drawn By: CMS	Reviewed By: DCS
---------------------	------------------	---------------------

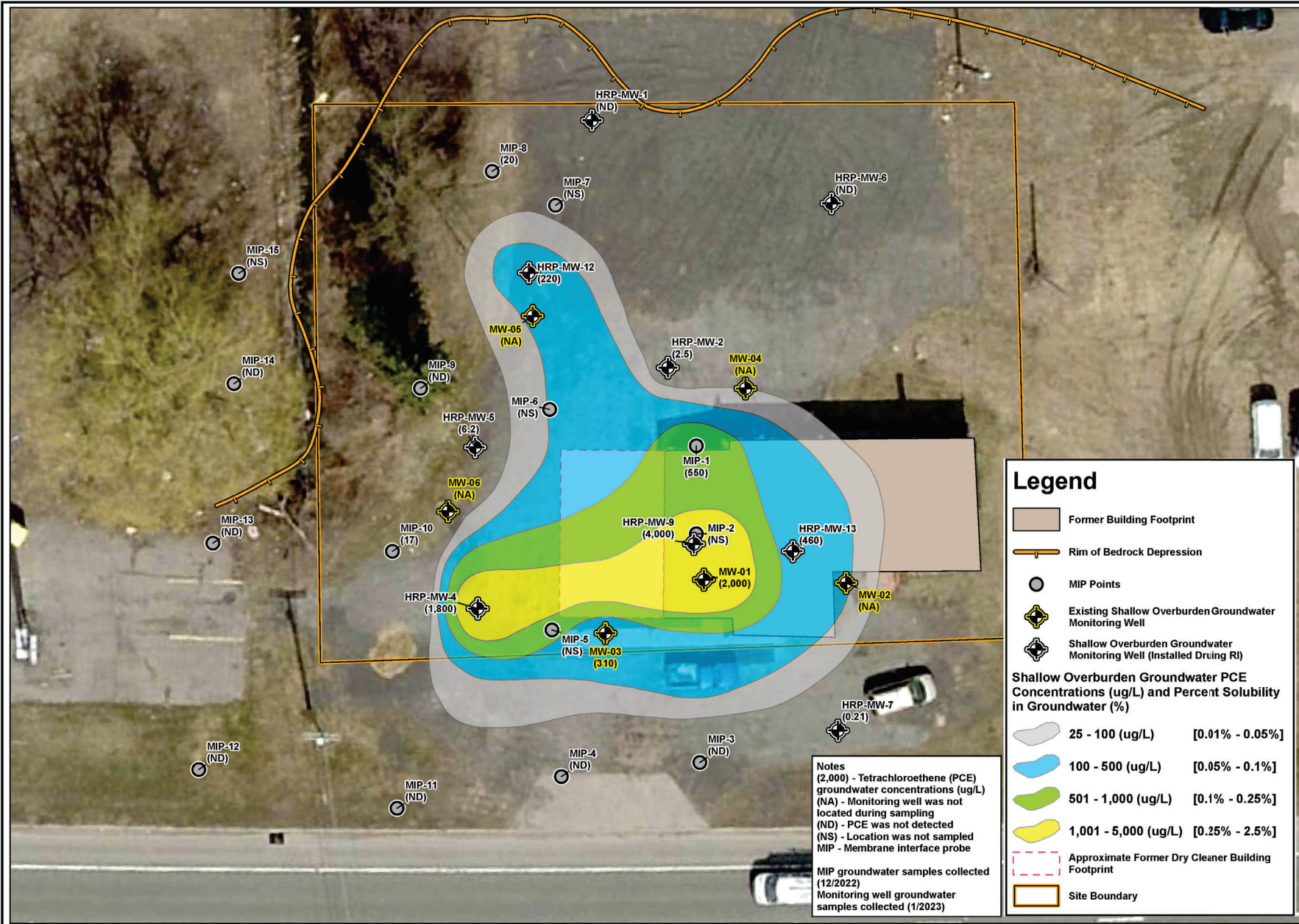
Issue Date: 9/30/2024	Project No: DEC1023.P3	Sheet Size: 11x17
--------------------------	---------------------------	----------------------

**PCE Concentrations and Percent Solubility in Deep Overburden Groundwater**

3901 Route 104  
 Williamson, New York  
 NYSDEC Site No. 859032

**Figure No.**  
10

Path: S:\Data\NYDEC - NYSDEC\WILLIAMSON\3901\_ROUTE\_104\_WILLIAMSON, NY\_14589\DEC1023P3\GIS\williamson\_final.aprx



Notes  
 (2,000) - Tetrachloroethene (PCE) groundwater concentrations (ug/L)  
 (NA) - Monitoring well was not located during sampling  
 (ND) - PCE was not detected  
 (NS) - Location was not sampled  
 MIP - Membrane interface probe

MIP groundwater samples collected (12/2022)  
 Monitoring well groundwater samples collected (1/2023)

### Legend

- Former Building Footprint
- Rim of Bedrock Depression
- MIP Points
- Existing Shallow Overburden Groundwater Monitoring Well
- Shallow Overburden Groundwater Monitoring Well (Installed During RI)

#### Shallow Overburden Groundwater PCE Concentrations (ug/L) and Percent Solubility in Groundwater (%)

	25 - 100 (ug/L)	[0.01% - 0.05%]
	100 - 500 (ug/L)	[0.05% - 0.1%]
	501 - 1,000 (ug/L)	[0.1% - 0.25%]
	1,001 - 5,000 (ug/L)	[0.25% - 2.5%]

- Approximate Former Dry Cleaner Building Footprint
- Site Boundary

Revisions	No.	Date

Designed By:	CMS	Drawn By:	CMS	Reviewed By:	DCS
--------------	-----	-----------	-----	--------------	-----

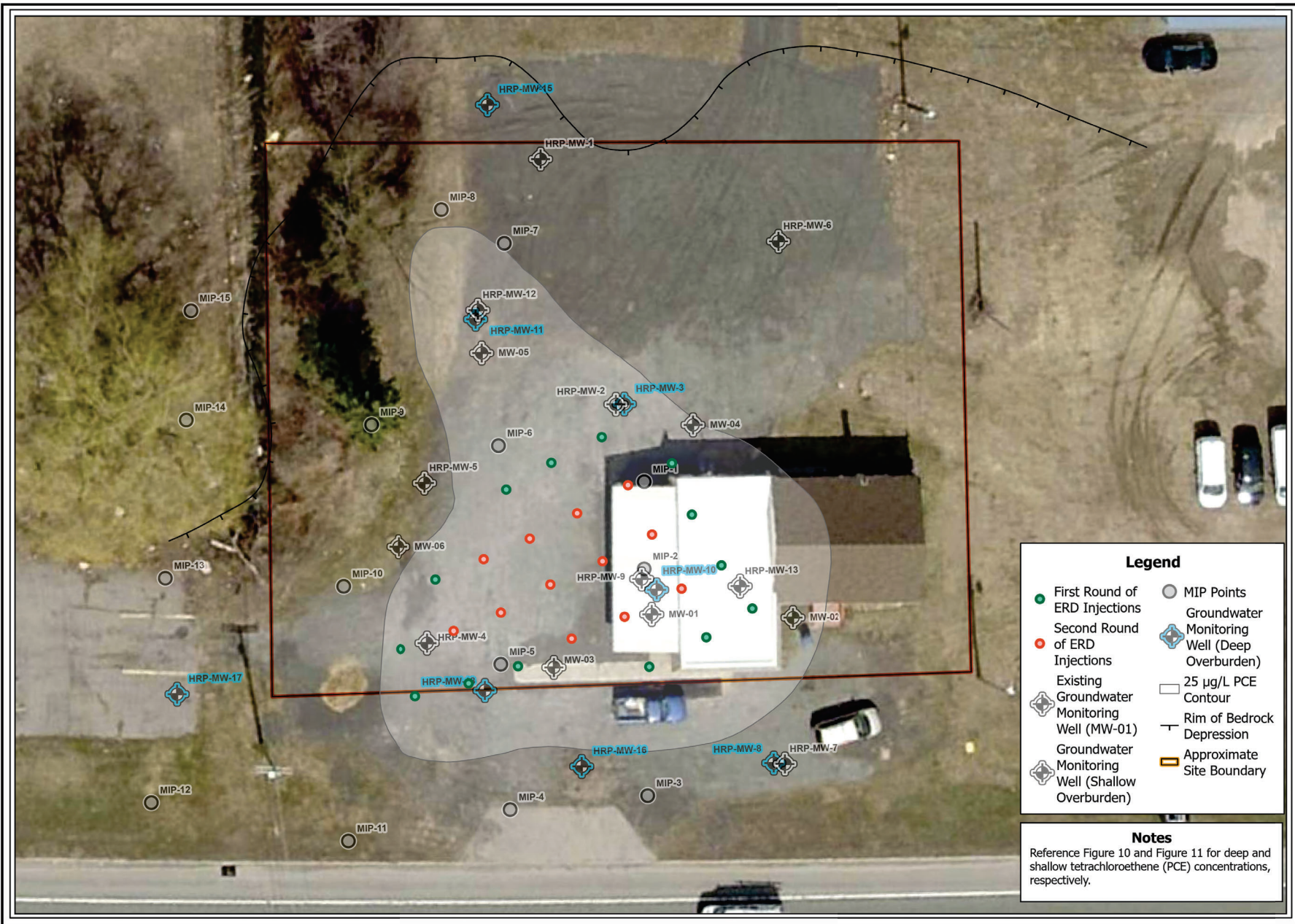
Issue Date:	9/30/2024	Project No.:	DEC1023.P3	Sheet Size:	11x17
-------------	-----------	--------------	------------	-------------	-------

PCE Concentrations and Percent Solubility in Shallow Overburden Groundwater

3901 Route 104  
 Williamson, New York  
 NYSDEC Site No. 859032

Figure No.  
**11**

Path: S:\Data\NYSDEC - NYSDEC\WILLIAMSON\3901 ROUTE 104, WILLIAMSON, NY 14589\DEC1023\GIS\WilliamsonFS\WilliamsonFS.aprx



**Legend**

- First Round of ERD Injections
- Second Round of ERD Injections
- ◇ Existing Groundwater Monitoring Well (MW-01)
- ◇ Groundwater Monitoring Well (Shallow Overburden)
- MIP Points
- Groundwater
- ◇ Monitoring Well (Deep Overburden)
- 25 µg/L PCE Contour
- └ Rim of Bedrock Depression
- ▭ Approximate Site Boundary

**Notes**  
 Reference Figure 10 and Figure 11 for deep and shallow tetrachloroethene (PCE) concentrations, respectively.

↑ North

0 5 10 20  
 Feet

Revisions	No.	Date

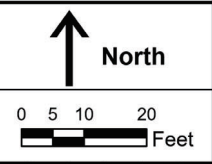
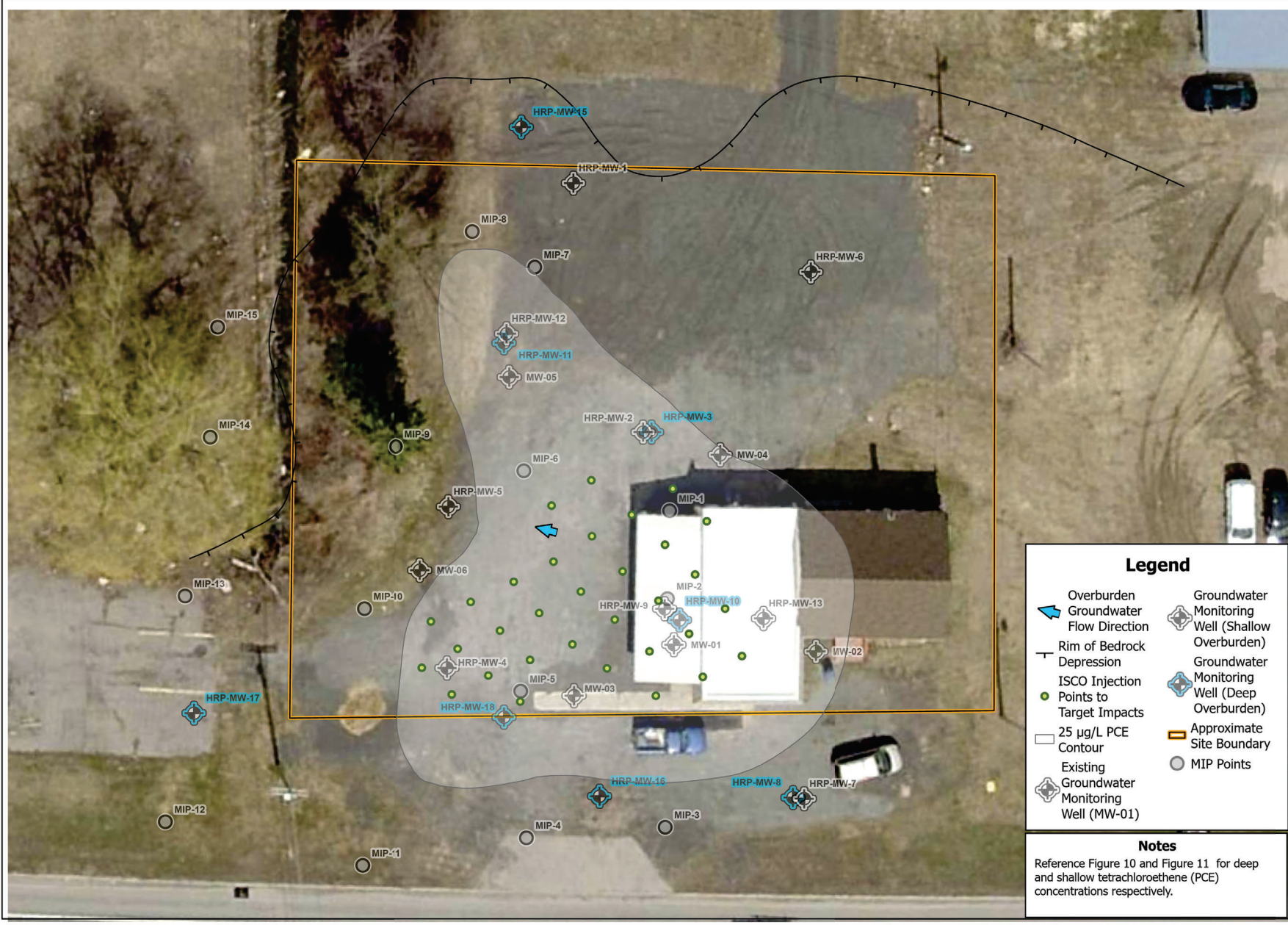
Designed By:	Drawn By:	Reviewed By:
MR	LLT	MW

Issue Date:	Project No:	Sheet Size:
5/24/2024	DEC1023.P3	11x17

**Alternative 3:  
 Proposed ERD  
 Injection Locations**  
 3901 Route 104  
 Williamson NY  
 NYSDEC Site No. 859032

**Figure No.**  
**12**

Path: S:\Data\NYSDEC - NYSDEC\WILLIAMSON\3901 ROUTE 104 WILLIAMSON, NY 14589\DEC1023\GIS\WilliamsonFS\WilliamsonFS.aprx



Revisions	No.	Date

Designed By:	Drawn By:	Reviewed By:
MR	LLT	MW

Issue Date:	Project No:	Sheet Size:
5/24/2024	DEC1023.P3	11x17

**Alternative 4:  
 Proposed ISCO  
 Injection Locations**  
 3901 Route 104  
 Williamson NY  
 NYSDEC Site No. 859032

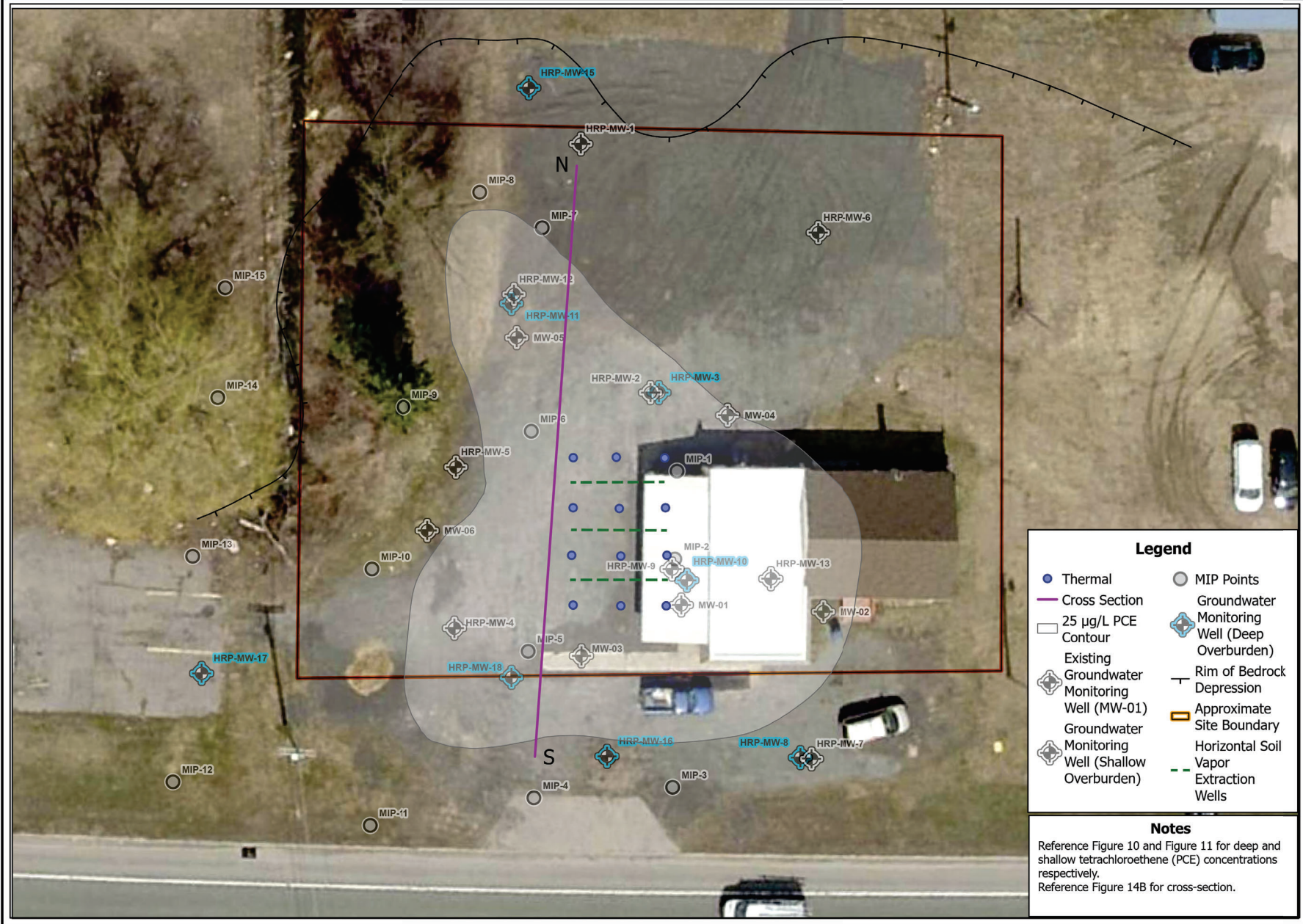
**Figure No.**  
**13**

**Legend**

- Overburden Groundwater Flow Direction
- Groundwater Monitoring Well (Shallow Overburden)
- Rim of Bedrock Depression
- Groundwater Monitoring Well (Deep Overburden)
- ISCO Injection Points to Target Impacts
- 25 µg/L PCE Contour
- Approximate Site Boundary
- Existing Groundwater Monitoring Well (MW-01)
- MIP Points

**Notes**  
 Reference Figure 10 and Figure 11 for deep and shallow tetrachloroethene (PCE) concentrations respectively.

Path: S:\Data\NYSDEC - NYSDEC\WILLIAMSON\3901 ROUTE 104 WILLIAMSON, NY 14589\DEC1023\GIS\WilliamsonFS\WilliamsonFS.aprx

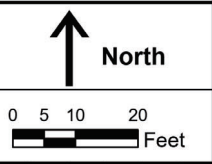


**Legend**

- Thermal
- Cross Section
- 25 µg/L PCE Contour
- ⊕ Existing Groundwater Monitoring Well (MW-01)
- ⊕ Groundwater Monitoring Well (Shallow Overburden)
- MIP Points
- ⊕ Groundwater Monitoring Well (Deep Overburden)
- ⊕ Rim of Bedrock Depression
- Approximate Site Boundary
- Horizontal Soil Vapor Extraction Wells

**Notes**

Reference Figure 10 and Figure 11 for deep and shallow tetrachloroethene (PCE) concentrations respectively.  
Reference Figure 14B for cross-section.



Revisions	No.	Date

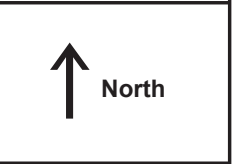
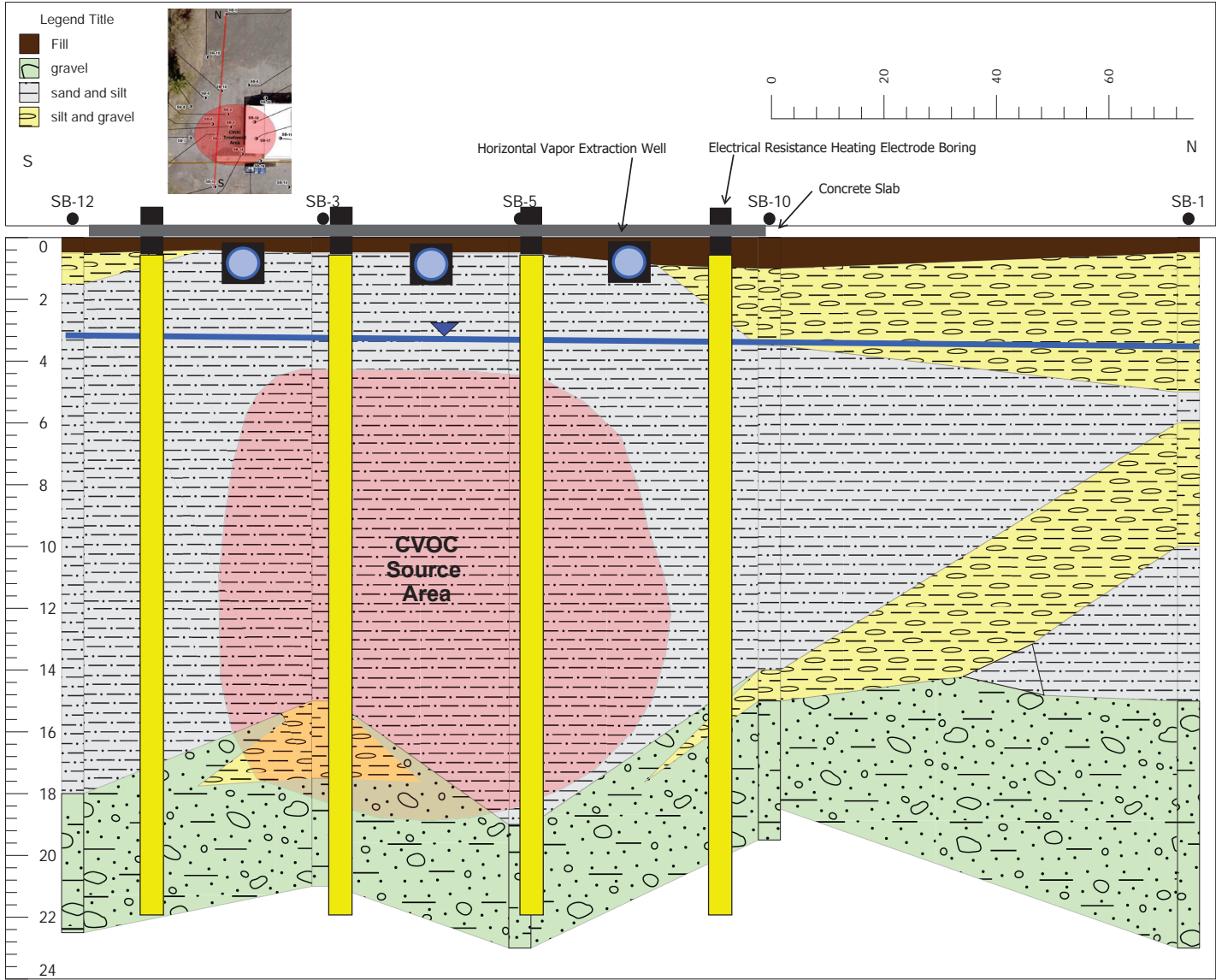
Designed By:	Drawn By:	Reviewed By:
MR	LLT	MW

Issue Date:	Project No.:	Sheet Size:
5/24/2024	DEC1023.P3	11x17

**Alternative 5:  
Proposed Thermal  
Remediation Locations**

3901 Route 104  
Williamson NY  
NYSDEC Site No. 859032

**Figure No.  
14A**



Revisions	No.	Date

Designed By:	Drawn By:	Reviewed By:
JG	BOB	MEW

Issue Date:	Project No:	Sheet Size:
05/24/2024	DEC1023.P3	11x17

**Alternative 5:**  
 Proposed Thermal  
 Remediation Locations  
 Cross Section (N-S)  
 3901 Route 104  
 Williamson, NY 14589

Figure No.  
**14B**

# **APPENDIX A**

## **RESPONSIVENESS SUMMARY**

# Responsiveness Summary

3901 Route 104  
State Superfund Project  
City of Williamson, Wyne County, New York  
Site No. 859032

The Proposed Remedial Action (PRAP) for the 3901 Route 104 site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories in February 2026. The PRAP outlined the remedial measure proposed for the contaminated soil and groundwater at the 3901 Route 104 site.

The release of the PRAP was announced by sending notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on February 26, 2026, which five members of the public attended. The public comment period for the PRAP ended on March 14, 2026.

This responsiveness summary responds to all questions and comments raised during the public comment period. For the 3901 Route 104 site, there were no questions raised during the public comment period, therefore no questions or Department responses are listed here.

# **APPENDIX B**

## **ADMINISTRATIVE RECORD**

# Administrative Record

3901 Route 104  
State Superfund Project  
City of Williamson, Wayne County, New York Site No. 859032

1. Proposed Remedial Action Plan for the 3901 Route 104 site, dated February 2026, prepared by the Department
2. Report on Remedial Investigation 3901 Route 104 site, dated September 2024, prepared by HRP Associate Inc. of New York
3. Report on Feasibility Study and Remedial Alternatives 3901 Route 104, dated March 2025, prepared by HRP Associates Inc. of New York.