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AECOM

Three Year Periodic Review Report
September 2020 – April 2024

Walgreen Company Store 02077
Kingston, Ulster County, New York
BCP Site No. C356032
Project number: 60692859

July 2024

Delivering a better world

Quality Information

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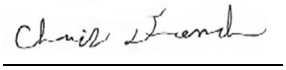	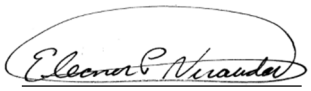		
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Revision History

Revision	Revision date	Details	Authorized	Name	Position
0	7/17/2024	Original	Yes	Kristine Garbarino	Project Manager

Distribution List

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Three-Year Periodic Review Report
September 2020 – April 2024
Walgreen Company Store 02077
BCP Site No. C356032

Engineering Certification

For each institutional or engineering control identified for the site, I, Eleanor Vivaudou, certify that all of the following statements are true:

(a) the institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by DER;

(b) nothing has occurred that would impair the ability of such control to protect public health and the environment;

(c) nothing has occurred that would constitute a violation or failure to comply with any Site Management Plan for this control;

(d) access to the site will continue to be provided to DER to evaluate the remedy, including access to evaluate the continued maintenance of this control.

Respectfully submitted,

AECOM USA, Inc.

Eleanor Vivaudou, PE

7/17/24

Date

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List of Acronyms

AECOM	AECOM USA, Inc.
AWQS/GV	ambient water quality standards/guidance values
BCP	Brownfield Cleanup Program
bgs	below ground surface
CMWP	corrective measure work plan
DCE	dichloroethene
DER	Division of Environmental Remediation
DO	dissolved oxygen
FER	final engineering report
ft bgs	feet below ground surface
IC/EC	Institutional Control and Engineering Control
ISCO	in-situ chemical oxidation
ISCR	in-situ chemical reduction
Lbs	pounds
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ORP	oxidation-reduction potential
PCE	tetrachloroethene
PID	photoionization detector
PRR	periodic review report
RAP	remedial action plan
RD	remedial design
RI	remedial investigation
RIR	remedial investigation report
SMP	Site Management Plan
SWRNA	S&W Redevelopment of North America
TCE	trichloroethene
TCL	Target Compound List
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
UIC	underground injection control
URS	URS Corporation
USEPA	Environmental Protection Agency
UST	underground storage tanks
VOC	volatile organic compound
ZVI	zero valent iron

Executive Summary

The Walgreen Company Store 0277 (Site) is located at 10 East Chester Street in the City of Kingston, Ulster County, New York (**Figure 1-1**). The Site (Site No.C356032) is approximately one (1) acre in size and is an active retail location. The site layout including monitoring well locations can be seen in **Figure 1-2**.

This Periodic Review Report (PRR) covers the period of September 30, 2020, through April 1, 2024 (review period) and has been prepared to evaluate the continuing effectiveness of the remedies selected, and their implementation at the Site. AECOM USA, Inc. (AECOM) provides engineering services for the Site on behalf of the Walgreen Company (Walgreens).

The Site was added to the New York State Brownfield Cleanup Program (BCP) Registry voluntarily by 10 East Chester Street, LLC, the previous site owner. A Remedial Action Plan (RAP) (SWRNA, 2005) and Remedial Design (RD) (SWRNA, 2005) was approved by the New York State Department of Environmental Conservation (NYSDEC) in March 2006.

The RAP indicated the remedial goals for the site are to:

- Eliminate, or reduce to the extent practicable, potential on-site sources of petroleum and chlorinated hydrocarbon impacts to shallow groundwater;
- Eliminate, or reduce to the extent practicable, human exposure to site groundwater through ingestion;
- Eliminate, or reduce to the extent practicable, petroleum and chlorinated VOC contamination in shallow groundwater to mitigate potential human exposure to volatile organic vapors that may migrate into future site structures;
- Eliminate, or reduce to the extent practicable, direct human contact with petroleum impacted soils on-site; and
- Eliminate, or reduce to the extent practicable, adverse effects of the site to fish and wildlife resources.

Due to the groundwater aquifer with volatile organic compounds (VOCs), the selected remedy consisted of: (1) Source removal consisting of removing hydraulic lift, floor drains and underground storage tanks (USTs), additionally impacted soil encountered during the removal of the aforementioned structures was also removed; (2) In Situ groundwater treatment to reduce the mass of VOC contamination in the shallow groundwater; (3) engineering controls consisting of a soil barrier (six inches of asphalt pavement or six inches concrete slab or one foot of soil). Additionally occupied buildings will require a sub slab vapor depressurization system; and (4) implementation of institutional controls, including an environmental easement.

The site has remained in compliance with the SMP (SWRNA, 2006b) with the exception of the 2021 annual groundwater sampling event which was not performed due to safety considerations associated with the COVID-19 pandemic.

AECOM has no recommendations to modify the SMP except that the IC/EC listed in **Appendix A** should be followed and sampling frequency should be evaluated based on results.

1 Site Overview

This Periodic Review Report (PRR) covers the period of September 30, 2020, through April 1, 2024 (review period) and has been prepared to evaluate the continuing effectiveness of the remedies selected, and their implementation at the Site. AECOM USA, Inc. (AECOM) provides engineering services for the Site on behalf of the Walgreen Company (Walgreens).

The Kingston Walgreens Site is located at a pharmacy and retail facility at 10 East Chester Street, County of Ulster, Kingston, New York (refer to **Figure 1-1**). The Site consists of approximately one (1) acre and is located in a mixed residential and commercial area (**Figure 1-2**). The property is currently owned by the Walgreens Company.

The Site is located in the Hudson/Mohawk lowlands of New York State. Erosion of weaker lithologies along outcrop belts is responsible for much of the current regional topography. Bedrock is composed of Onondaga limestone which has localized outcrops near the site where overburden thins along valley walls and hilltops. The Catskill mountains are west of the site and the Taconic mountains are located to the east creating regionally high relief, however the topography of the site and its immediate surroundings are generally flat.

Surficial geology at the site is primarily a stratified glacial outwash overlaying lacustrine varved silt and clay deposits. The lacustrine deposits were formed when the location the site now occupies was covered by glacial lake Albany. Currently the site stratigraphy consists of eight to 12 feet of sandy fill underlain by a layer of native sand that varies in thickness from one foot to five feet in thickness. Beneath the native sand layer is the aforementioned alternating silt and clay lacustrine deposit. A more thorough presentation of the site's geology can be found in the Remedial Investigation Report (RIR) (SWRNA, 2005).

Groundwater flow at the Site occurs under unconfined conditions above the native sand and lacustrine silt/clay interface. The depth to groundwater varies from eight to ten feet below ground surface (ft bgs). The water table at the site has a low gradient and flows generally from west northwest to the east southeast as shown in **Figure 1-3**.

1.1 Remedial History

The previous owner of the site, 10 East Chester Street LLC, entered into the New York State Brownfield Cleanup Program (BCP Site Number C356032) and completed an investigation and remediation in accordance with the requirements of the BCP. Based on the results of the Brownfield Cleanup Program Remedial Investigation Report/Remedial Action Plan prepared by S&W Redevelopment of North America, LLC (SWRNA), dated August 2005, the constituents of potential concern at the site included VOCs associated with chlorinated solvents, (i.e., trichloroethene [TCE] and tetrachloroethene [PCE]) and petroleum products.

Site remedial activities included the removal of seven underground storage tanks (USTs) that contained petroleum products, excavation of impacted soil in the vicinity of the tanks, excavation of soil near floor drains in the former dry-cleaning building, and in-situ chemical oxidation using potassium permanganate to remediate the groundwater. The remedial activities were conducted in accordance with the NYSDEC approved Remedial Action Plan prepared by SWRNA, dated August 2005 (SWRNA, 2005a) and the Remedial Design In-Situ Chemical Oxidation prepared by SWRNA, dated October 2005 (SWRNA, 2005b).

SWRNA submitted a Final Engineering Report (FER) (SWRNA, 2006a) to the NYSDEC in November 2006. A Certificate of Completion was issued by the NYSDEC on December 14, 2006. This certificate stated "…that the remediation requirements set forth in ECL Article 27, Title 14, have been or will be achieved in accordance with the time frames, if any, established in the remedial work plan."

The certificate also noted that the site is restricted to a “commercial” use and that the site remediation is also predicated on the use of institutional or engineering controls. The use of groundwater underlying the site is prohibited without prior approval from the NYSDEC.

1.1.1 UST Removal

In March and April of 2006 seven USTs, six of which were known to exist and one that was found during monitoring well installation, were decommissioned, excavated, and removed from the site by Abscope Environmental, Inc. During the UST removal process Abscope removed 1,340 gallons of liquid (UST contents as well as wash liquids) and 15.52 tons of soil from the site for disposal. Emptied and cleaned tanks were cut into pieces and disposed of as scrap metal.

End-point soil samples were taken from the floor and sidewalls of each UST excavation in accordance with the NYSDEC Technical Guidance for Site Investigation and Remediation (DER-10). After sample collection the excavations were backfilled with on-site soil that had been deemed free of petroleum related impacts (i.e. odors, staining and Photoionization Detector [PID] readings). Clean fill from off-site was used to fill in the remainder of the excavations as well as provide a minimum of one foot of clean fill at the surface. A complete discussion of the UST removal can be found in the FER (SWRNA, 2006a).

1.1.2 ISCO Treatment

Two In-Situ Chemical Oxidation (ISCO) injection events were completed at the site in 2006 by Carus Chemical and SWRNA, one in April and the other in September. The ISCO soil amendment was mixed for injections in a ratio of 66 to 82 pounds (lbs) of permanganate to 260 gallons of water. Injections were controlled in such a way as to inject a minimum of 330 lbs of potassium permanganate in each well. 5,622 lbs of REMOX-S® potassium permanganate was injected into nineteen injection wells over five injections during the April event and 8,269 lbs were injected into 22 injection wells over six injections during the September event. During the injection process monitoring wells within the injection area were monitored for breakthrough (the presence of permanganate indicated by pink discoloration at low concentrations and purple at high concentrations) and all wells, with the exception of MW-1S, were observed to have breakthrough within several hours to several weeks following the injection events. A complete discussion of the ISCO injections can be found in the FER (SWRNA, 2006a).

1.1.3 Site Management Plan and Groundwater Monitoring

Groundwater monitoring on the site occurs annually as stipulated in the SMP. A Site Management Plan (SMP) was prepared by SWRNA, on behalf of 10 East Chester Street LLC, in December 2006 (SWRNA, 2006b). The SMP provides a detailed description of procedures required to manage remaining contamination at the site after completion of the Remedial Action. The SMP requires that all buildings constructed on site have a NYSDEC and New York State Department of Health (NYSDOH) approved active sub-slab depressurization system, the maintenance of six inches of concrete or asphalt pavement across the site, and performance of annual groundwater monitoring. Additionally, the SMP stipulates that any future excavation of soils at the site must be done in accordance with the SMP. The SMP further requires an annual certification that the engineering and institutional controls employed at the site are unchanged from the previous certification and that nothing has occurred that would impair the ability of such controls to protect the public health and environment.

During redevelopment activities in May and June 2008, monitoring wells MW-1S, MW-2S, and MW-3S were abandoned with approval from the NYSDEC. Replacement monitoring wells MW-1, MW-2 and MW-3 were installed by Bureau Veritas in February 2010. The locations of these wells are shown in **Figure 1-2**. Groundwater samples were collected from these three wells in March and May 2010. The monitoring well installation and groundwater sampling results for 2010 are summarized in the Annual Groundwater Sampling Report prepared by Bureau Veritas, dated September 29, 2010 (Bureau Veritas, 2010).

URS Corporation (URS became part of AECOM in 2014), on behalf of Walgreens, submitted Annual Groundwater Sampling, Site Management Plan Review, and Institutional Control and Engineering Control (IC/EC) Certifications to the NYSDEC in April 2011 (URS, 2011) and April 2012 (URS, 2012). URS collected a supplemental round of groundwater samples in August 2012 to confirm previously collected data and to gather additional data to evaluate groundwater geochemistry.

URS recommended the continuation of annual groundwater sampling events using low flow sampling methodology. The NYSDEC approved of this approach in January 2013. The NYSDEC accepted the PRR and IC/EC Certification for February 1, 2011 to March 31, 2011 and March 31, 2011 to October 26, 2012. URS submitted a PRR: Annual Groundwater Sampling, Site Management Plan Review, and IC/EC Certification to the NYSDEC in December 2013 (URS, 2013). The NYSDEC did not approve the PRR dated December 2013 and IC/EC Certification and requested that a Corrective Measures Work Plan (CMWP) be submitted to address elevated concentrations of PCE in MW-3. Subsequent PRR and IC/EC Certifications that were submitted were not fully approved by NYSDEC due to continued presence of PCE at the site. The most recent PRR was submitted to the NYSDEC in July 2021 (AECOM, 2021b). In April 2024 the NYSDEC modified the SMP changing the sampling frequency of the site from annually to every fifth quarter. This was done to capture any seasonal variation in the groundwater. Additionally, the NYSDEC added monitoring wells MW-4, MW-5, MW-7, MW-11 and MW-12 to the groundwater sampling program. These modifications were made in NYSDECs Construction Completion Report Approval Letter dated April 3, 2024. The letter can be found in **Appendix B**.

1.1.4 2014 Soil and Groundwater Investigation

URS conducted a review of previous investigative work at the site and identified some data gaps. In October 2014, URS performed an investigation to delineate shallow soil impacts above the water table along the former sewer line that connected the floor drains within the former dry-cleaning facility to the sanitary sewer located in Broadway; in the area of the former 550-gallon waste oil UST; and along the western property boundary (along East Chester Street). As shown in **Figure 1-2**, ten soil borings (SB-1 through SB-10) were advanced. Based on the investigation findings, URS concluded that there was not an on-going source of PCE in the shallow soil that was contributing to the groundwater concentrations in the areas investigated. The highest concentrations of PCE in the groundwater grab samples collected from the soil borings was detected on the upgradient (western) side of the site along the East Chester Street property boundary at concentrations of up to 9,100 micrograms per liter (µg/L) at SB-2. The highest concentrations of PCE in the soil were also found on this side of the site at concentrations up to 1,700 micrograms per kilogram (µg/kg) in SB-5. PCE concentrations in the groundwater were found to decrease southeast across the site in the direction of historical groundwater flow.

1.1.5 2016 Soil and Groundwater Investigation

Walgreens received a letter from the NYSDEC on April 9, 2015 requesting that a CMWP be submitted to address PCE contamination in on-site groundwater. URS and Walgreens held a teleconference with the NYSDEC on May 15, 2015 to discuss a mutually agreed upon path to move forward. NYSDEC, Walgreens, and AECOM agreed that additional delineation and data collection, particularly on the upgradient side of the site, was needed prior to submitting a CMWP.

AECOM submitted a work plan to further delineate soil and groundwater impacts and collect data for potential remedial design in June 2015. The scope of work included a task to evaluate the potential for an upgradient source of PCE as the 1950 and 1957 Sanborn maps showed a historical dry-cleaning operation approximately 300 feet west (upgradient) of the Walgreens site (see **Figure 1-2**). The NYSDEC and the NYSDOH approved the work plan in August 2015. The NYSDEC had suggested that source material might be bound in the silt and clay at the site and that PCE might be being released to the groundwater slowly over time. The approved work plan included sampling methodology to vertically delineate potential impacts in the soil and evaluate this potential conceptual site model.

As part of the approved work plan, three soil borings were to be advanced on the west side of East Chester Street in the sidewalk that borders 322 Broadway.

However, drilling could not be conducted in the sidewalk due to the presence of underground utilities. Therefore, AECOM submitted a work plan addendum, dated April 2016, which requested that the off-site soil borings be advanced on the 322 Broadway property. AECOM and Walgreens began discussions with the property owner for 322 Broadway to gain access to the property.

To move the project forward, three soil borings (SB-11, SB-12, and SB-13) were advanced on-site in April 2016 in the area of boring SB-2 (**Figure 1-2**), where the highest groundwater impacts were found during the October 2014 investigation. In addition, monitoring wells MW-4 and MW-5 were installed and surveyed but were not developed or sampled at the time of installation.

The off-site investigation activities at 322 Broadway could not be conducted in April 2016 as access with the adjacent property owner had not been secured. The April 2016 investigation concluded that the concentrations of PCE detected in the on-site soil are not indicative of source material on the Walgreens property and that the concentrations of PCE detected in the on-site soil are likely due to the equilibrium partitioning of PCE in groundwater to the soil matrix rather than the partitioning of PCE from soil to groundwater. AECOM and Walgreens requested an extension from the NYSDEC to defer the development of the CMWP until the off-site investigation activities could be completed. The NYSDEC granted the extension request.

AECOM obtained access to conduct investigation activities at 322 Broadway in September 2016. The scope of work for the off-site investigation was governed by the Final Executed Limited Access Agreement between AECOM, 322 Broadway, LLC (property owner), and Carrols LLC (tenant). As shown in **Figure 1-2**, five soil borings (SB-14 thru SB-18) were advanced along the upgradient side (westerly) of 322 Broadway to determine if there is a source of PCE upgradient of 322 Broadway. The off-site investigation confirmed that PCE was present in the groundwater upgradient of the Walgreens site and likely upgradient of 322 Broadway. Walgreens requested that the NYSDEC notify the appropriate property owner(s) upgradient of 322 Broadway of the information and requested that the property owner(s) conduct a site investigation to evaluate whether a source of PCE is present upgradient of 322 Broadway.

A teleconference was held between Walgreens, AECOM, and the NYSDEC in December 2016 to discuss the results of AECOM's investigation. The NYSDEC requested that Walgreens install a permanent monitoring well at 322 Broadway and have it surveyed to determine the groundwater flow direction, better define the topographic clay layer across the properties, and to confirm the PCE concentrations observed in the grab groundwater samples. The NYSDEC requested that all monitoring wells (MW-1 through MW-5) on-site and any wells installed off-site at 322 Broadway be sampled at the same time.

1.1.6 2018 Site Investigation

AECOM worked with Walgreens, 322 Broadway, LLC, and Carrols LLC to develop the scope of work to address NYSDEC's requests. The final access agreement was signed in January 2018. The scope of work completed in 2018 included the installation of monitoring well MW-6 at 322 Broadway, monitoring well development, and survey of MW-6 and soil boring locations at 322 Broadway. Groundwater level measurements were collected from the available monitoring wells (MW-1 through MW-6).

Groundwater samples were collected from all wells (MW-1 through MW-6) following United States Environmental Protection Agency's (USEPA's) low-flow sampling protocol. During purging, AECOM measured temperature, pH, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity using a multi-parameter meter connected to an in-line flow-through cell. The groundwater samples collected from MW-1 through MW-5 were analyzed for Target Compound List (TCL) VOCs by USEPA Method 8260. Per the access agreement, the groundwater sample collected from MW-6 was only analyzed for PCE, TCE, and cis-1,2-dichloroethene (DCE) by USEPA Method 8260.

PCE was detected in the groundwater samples from MW-3, MW-4, and MW-6 at concentrations that exceed the NYSDEC groundwater standard of 5 µg/L. These concentrations ranged from 110 µg/L to 630 µg/L. PCE was not detected in the groundwater samples from MW-1, MW-2, or MW-5.

TCE was detected in the groundwater sample collected from MW-3 at a concentration that exceeded the groundwater standard of 5 µg/L (19 µg/L). TCE was detected in the groundwater sample collected from MW-6 at a concentration below the groundwater standard. TCE was not detected in the groundwater samples collected from MW-1, MW-2, MW-4, or MW-5.

Since slight increases of degradation products of PCE (e.g., TCE [7.7 µg/L to 19 µg/L] and cis-1,2-DCE [1 µg/L to 37 µg/L]) were observed at MW-3 over time, AECOM concluded that anaerobic biodegradation (reductive dechlorination) of PCE was likely occurring naturally at the site.

1.1.7 2020 Groundwater Monitoring

On March 12, 2020, AECOM collected groundwater samples from monitoring wells MW-1 through MW-5 and performed a site inspection.

The results of the groundwater sampling were documented in the Groundwater Analytical Results Summary Report March 2020 (AECOM, 2020), submitted to NYSDEC on August 12, 2020.

This sampling event found that the concentration of PCE (3,700 µg/L) in MW-4 was higher than previously detected, while the concentration of PCE (110 µg/L) in MW-3 was generally consistent with the 2018 sampling event. The groundwater elevation at MW-5 in 2020 was low and not consistent with the historical groundwater flow maps. During the review of the 2018 groundwater level data, AECOM assumed that the low groundwater level observed at MW-5 was an anomaly; however, the 2020 data suggested that groundwater flow beneath the site is more complex than previously understood. Groundwater flow at the site is predominately from northwest to southeast across the site with some flow from the north, particularly along the eastern side of the site.

In April 2024 the NYSDEC revised the sampling frequency from annually to every fifth quarter. This was done to account for seasonal variability in groundwater conditions. Approval for this revision was given in the Corrective Measure Construction Completion Report approval letter dated April 3, 2024.

1.1.8 Corrective Measure Injections

On November 8, 2018 the NYSDEC issued a letter to Walgreens indicating that a CMWP was required to address PCE-impacted groundwater migrating from the site. AECOM developed and then submitted the CWMP (AECOM, 2019) to the NYSDEC in February 2019 with the objective to reduce the concentrations of chlorinated VOCs, specifically PCE, in the groundwater leaving the site along the eastern property boundary. AECOM identified an in-situ remedial approach as the corrective measure for the site. The CMWP proposed that a combination of amendments (PlumeStop® Liquid Activated CarbonTM, AquaZVITM, HRC®, and BDI PLUS®) be injected into the subsurface in the saturated zone to reduce the concentrations of PCE in the groundwater. After addressing NYSDEC's comments, the CMWP and addendum (AECOM, 2021a) (AECOM, 2022) were both approved by NYSDEC in April 2022. An in-situ remedial approach was chosen as the corrective measure for the site. A combination of amendments would be injected into the subsurface in the saturated zone to reduce the concentrations of PCE in the groundwater. Because no specific source of the PCE had yet been identified, the injection points would be placed as a treatment wall near the eastern property boundary to treat groundwater before it left the property. The selected amendments would use adsorption as the primary remediation technique along with in-situ chemical reduction (ISCR). These amendments would also enhance the in-situ anaerobic bioremediation of the chlorinated compounds that was likely already occurring.

Prior to commencing injections monitoring wells MW-11 and MW-12 were installed on the southern site boundary for the purpose of monitoring the dispersion and effectiveness of the injection amendments. Following the installation and development of these new wells, monitoring wells MW-1 through MW-5, MW-7, MW-11 and MW-12 were sampled one month prior to the injection event for VOCs. MW-3 was also sampled for natural attenuation parameters (i.e., methane, total and ferrous iron, alkalinity, hardness, nitrogen-nitrate, nitrogen-nitrite, sulfate, and total organic carbon).

AECOM subcontracted Regenesis to perform the injection program. Injections began on November 28, 2022, and were completed over the course of five days. The EPA UIC permit can be found in **Appendix C**. At the East Barrier of the property (a span of 75 feet), Regenesis applied a mixture of PlumeStop and S-MicroZVI over 14 injection points. A total volume of 6,038 gallons of this mixture was applied through these 14 injection points. Included in these 6,038 gallons were approximately 2,800 lbs of PlumeStop and 1,969 lbs of S-MicroZVI. Specific details related to amendment quantities can be found in the 2023 Post Injection Summary Report (AECOM, 2023).

At the West area of the property, Regenesis applied a mixture of 3DME and S-MicroZVI over 5 injection points. A total volume of 2,000 gallons of this mixture was applied through these 5 injection points.

The locations of the west area and east barrier injection points can be found in **Figure 1-4**. Included in these 2,000 gallons were 802 lbs of 3DME and 1,002 lbs of S-MicroZVI.

Additionally, 18 Liters of BDI Plus were applied by the slipstream method during these injections. More specific details on these amendment quantities can be found in the 2023 Post Injection Summary Report (AECOM, 2023) and the Construction Completion Report (AECOM, 2024).

Post Injection sampling was conducted four months after the completion of the injection event on March 9, 2023. Groundwater samples were collected from MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-11 and MW-12. MW-3 was sampled via a passive diffusion bag deployed after the completion of the pre-injection sampling event; all others were sampled via USEPA low flow methodology. As in the pre-injection sampling MW-3 was sampled for natural attenuation parameters in addition to VOCs. The first post-injection groundwater sampling event served as the beginning of routine quarterly groundwater sampling at the site that was conducted for one year with the final post-injection groundwater sampling occurring on November 28, 2023.

Post-injection lab-test results for ground water samples showed decreasing trends in concentrations of PCE. Except for MW-4, over the course of post-injection sampling events results showed that all wells reported PCE values below NYSDEC groundwater standards guidance values. MW-4 showed decreasing trends in concentration of PCE, which is an indication of degradation. However, MW-4 still highlighted levels above NYSDEC groundwater standards guidance values. Some wells (most notably MW-4 and MW-11) saw increases in concentration of PCE daughter products trichloroethene and cis-1,2-dichloroethene. This is an indication that degradation is occurring and is expected. A graphical representation of select VOC groundwater concentrations can be found in **Figure 1-5**. Based on the lab results and in concurrence with the findings in the Corrective Measures Construction Completion Report (AECOM, 2024) the injections appear to be functioning as intended.

2 Evaluate Remedy Performance, Effectiveness and Protectiveness

As discussed above, site remedial activities completed by the previous property owner have included the removal of seven USTs that contained petroleum products, the excavation of impacted soil, and performing in-situ chemical oxidation using potassium permanganate to remediate the groundwater. The remedial activities were conducted in accordance with the NYSDEC approved Remedial Action Plan prepared by SWRNA, dated August 2005 and the Remedial Design In-Situ Chemical Oxidation prepared by Sterns and Wheeler, LLC, dated October 2005. SWRNA submitted a FER to the NYSDEC in November 2006. A Certificate of Completion was issued by the NYSDEC on December 14, 2006.

Routine groundwater monitoring has been conducted in accordance with the SMP at MW-1, MW-2, and MW-3 since 2010. Groundwater samples were collected from MW-5 and MW-6 in March 2018 and March 2020. The historical groundwater data is shown in **Table 2-1**. As shown, PCE concentrations have been variable in site groundwater. Additionally, Walgreens executed injections in accordance with the Corrective Measure Work Plan to address potential migration of contamination off the site. The work was carried out by AECOM and its subcontractor Regenesis in November and December 2022 over the course of five days. Injection quantities can be found **Table 2-2**.

The engineering controls (cover system and sub-slab depressurization system) and institutional controls (groundwater use restriction, land-use restriction, site management plan, and soil management plan) are in place and functioning and are discussed below.

Water levels were measured at eight monitoring wells in March 2023 (**Table 2-3**). Depth-to-groundwater measurements were converted to water table elevations and contoured as shown on **Figure 1-3**. The figure depicts the groundwater elevations beneath the Site. In March 2023, the overall direction of groundwater flow beneath the Site was to the east-southeast which is consistent with the site's historic groundwater flow direction.

The following sections provide more detail on the monitoring requirements and results for the Site.

2.1 IC/EC Plan Compliance Report

The current engineering controls (ECs) at the Site include:

- A SSDS at the Walgreens retail location; and
- Ground surface cover system consisting of a minimum of six inches of asphalt or six inches of concrete or one foot of clean fill.

The current institutional controls (ICs) at the site include:

- Groundwater use restriction;
- Land use restriction; and
- Soil management plan.

The ECs employed at the Site have been substantially unchanged since the controls were implemented or approved by the NYSDEC with the exception of injections performed to address possible migration of contamination off site. The ability of the controls to protect public health and the environment has not been impaired.

The SMP requires a periodic certification that the engineering and institutional controls employed at the site remain unchanged from the previous certification and that nothing has occurred that would impair the

ability of such controls to protect the public health and environment. The NYSDEC did not approve the IC/EC Certification submitted in December 2013 for the reporting period October 26, 2012, to October 26, 2013 and requested that a CMWP be submitted to address recalcitrant levels of PCE in MW-3. Walgreens has been conducting ongoing investigation work on-site and off-site to determine if there is an on-site or off-site source of PCE in the groundwater and to gather additional information for a remedy. The last fully accepted PRR and IC/EC Certification was for the reporting period of March 31, 2011, to October 26, 2012.

The following institutional controls have been identified in the SMP for the site: groundwater use restriction; land-use restriction; site management plan; and soil management plan. These controls continue to be applicable and are in-use. Furthermore, the above limits on site use have been memorialized in the Environmental Easement as well as being listed in the SMP, which are themselves part of the Institutional Controls. The site is a commercial property and is an operating Walgreens store. The site does not use groundwater for any purpose. There is an approved SMP for the site. There have been no soil excavations at the site since the property has been redeveloped as a Walgreens store. The institutional controls employed at the site are unchanged from the previous certification submitted in July 2021 for the reporting period of October 26, 2012, to April 1, 2021.

The following engineering controls have been identified in the SMP for the site: cover system and vapor mitigation system. The cover system consists of six inches of concrete. A site walk was performed on June 7, 2024, and the cover was observed to be in place and in good condition with no evidence of disruptions. There have been no soil excavations at the site since the property has been redeveloped as a Walgreens store. The Walgreens store has an operating passive sub-slab depressurization system. This system was inspected during the June 2024 site walk and was operating properly at the time of the inspection. A photographic log of the site walk can be found in **Appendix D**. The engineering controls employed at the site are unchanged, with the exception of the completion of the corrective measure, from the previous certification submitted in July 2021 for the reporting period of October 26, 2012, to April 1, 2021.

The SMP requires annual groundwater sampling and evaluation of groundwater trends. The SMP indicates that additional remedial action may be required by the NYSDEC if concentrations of the target compounds are increasing or do not show a decreasing trend. Groundwater sampling was conducted once in 2022 and on a quarterly basis in 2023 during the reporting period of this PRR. The historical groundwater data is shown in **Table 2-1** and the groundwater data from this period can be found in **Table 2-4**. As shown, PCE concentrations have been variable in site groundwater. Recent groundwater flow maps have shown that site groundwater flows from the west northwest to the east southeast across the site.

2.1.1 EC Requirements and Compliance

While the site does not have an OM&M plan a corrective measure work plan was executed to address comments in the 2021 IC/EC certification. A more comprehensive discussion of the corrective measure injections can be found in section 1.1.2.

Performance of ECs is evaluated the site as follows:

- SSDS at the Walgreens retail location: This system was designed and implemented as a passive system that is monitored by Walgreens employees. During AECOMs site walk the wall mounted manometer was inspected and found to be operational. Additionally, The SSDS was checked with a digital manometer which confirmed the reading observed on the wall mounted manometer.
- Site visit to confirm no development has occurred and the ground surface cover is still intact.
- Post-injection sampling performed beginning 4 months after the completion of injections and was performed quarterly for one year.

During this reporting period each EC for the Site was fully in place and effective as intended or installed during the period. There are no recommendations for changes currently.

2.1.2 IC/EC Certification

The Institutional and Engineering Controls Certification form for the Site is provided in **Appendix A**.

2.2 Monitoring Plan Compliance Report

The FER indicates the remedial goals for groundwater are to:

- Eliminate, or reduce to the extent practicable, potential on-site sources of petroleum and chlorinated hydrocarbon impacts to shallow groundwater;
- Eliminate, or reduce to the extent practicable, human exposure to site groundwater through ingestion;
- Eliminate, or reduce to the extent practicable, petroleum and chlorinated VOC contamination in shallow groundwater to mitigate potential human exposure to volatile organic vapors that may migrate into future site structures;

The SMP requires annual sampling of site monitoring wells. During this reporting period the monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-11, and MW-12 were sampled in October 2022, March 2023, June 2023, September 2023, and November 2023 but not in 2021. The October 2022 event was performed as baseline sampling event for the injection event. The four following events in March, June, September, and November 2023 were conducted to monitor the performance of the injection amendments. Groundwater analytical results from October 2022 to November 2023 are presented in **Table 2-4**. Six wells during the pre-injection sampling (MW-2, MW-3, MW-4, MW-7, MW-11, and MW-12) exhibited VOC concentrations above the NYSDEC Ambient Water quality standards/Guidance Values (AWQS/GVs). Monitoring well MW-4 exhibits concentrations (especially PCE) well above any of the other sampled wells. Following the corrective measure injections five wells exhibited VOC concentrations exceeding the NYSDEC AWQS/GVs (MW-2, MW-4, MW-7, MW-11, and MW-12). Though these wells still had AWQS/GV exceedances, concentrations of PCE and TCE were reduced significantly. MW-4 had PCE concentrations drop 93% (5,300 µg/L to 360 µg/L). MW-3, MW-11 and MW-12 had PCE concentrations drop by 99% (220 µg/L to 0.79 µg/L, 420 µg/L to <0.5 µg/L and 500 µg/L to 3.0 µg/L respectively). MW-7 had PCE concentrations drop by 91% (42 µg/L to 3.8 µg/L). MW-2 did not have detections of PCE or TCE however it did have detections of cyclohexane, ethylbenzene, isopropyl benzene, methylcyclohexane and total xylenes which were not affected by the injections due to the well's cross gradient location relative to the injection points.

Water levels were measured at eight monitoring wells in March 2023 (**Table 2-3**). Depth-to-groundwater measurements were converted to water table elevations and contoured as shown on **Figure 1-3**. The figure depicts the groundwater elevations beneath the Site. In March 2023, the overall direction of groundwater flow beneath the Site was to the east-southeast.

3 Overall Conclusions and Recommendations

The periodic review process is used for determining if the selected remedy continues to be properly managed (as set forth in the SMP), and if the remedy continues to be protective of human health and the environment.

3.1 Conclusions

The engineering controls (cover system and sub-slab depressurization system) and institutional controls (groundwater use restriction, land-use restriction, site management plan, and soil management plan) are in place and functioning. A CMWP focusing on boundary treatment was submitted on May 4, 2021 and has been approved by the NYSDEC. The Corrective measure was completed in December 2022. The injections decreased contaminate concentrations as intended and continues to operate as expected, limiting or eliminating plume migration off-site.

A Revised QHHEA has been prepared and will consider the off-site investigation data, as appropriate, and is included in **Appendix E**.

3.2 Recommendations

AECOM has no recommendations for changes to be made at this time. The NYSDEC amended the sampling frequency for the site from annually to every fifth quarter. This was done to capture any seasonal variability present in the groundwater. Additionally, the NYSDEC added monitoring well MW-4, MW-5, MW-7, MW-11 and MW-12 to the periodic groundwater sampling and analysis program. These modifications were made in their Construction Completion Report Approval Letter dated April 3, 2024 (**Appendix B**).

4 References

AECOM. 2019. Corrective Measures Workplan Walgreens Store no 02077 10 East Chester Street, Kinsgston NY BCP Site C356032. February 2019

AECOM. 2020. Groundwater Analytical Results Summary Report, Walgreen Company Store 02077, Kingston, New York. BCP Site No. C356032. March 2020.

AECOM. 2021a. Revised Corrective Measure Workplan Walgreens Store no 0207710 East Chester Street, Kingston NY BCP Site C356032, 2021.

AECOM. 2021b. Revised Periodic Review Report and Institutional and Engineering Control certification Walgreens Store No. 02077 10 East Chester Street, Kingston NY BCP Site C356032, July 2021.

AECOM Addendum to Revised Corrective Measure Workplan Walgreens Store no 02077 10 East Chester Street, Kinsgston NY BCP Site C356032, 2022.

AECOM. 2023. 2023 Post-Injection Summary Report. Walgreen Company Store 02077, Kingston, New York. BCP Site No. C356032. June 2023

AECOM. 2024. Construction Completion Report. Walgreen Company Store 02077, Kingston, New York. BCP Site No. C356032. February 2024

Bureau Veritas. 2010. Annual Groundwater Sampling report, BCP Site No. C356032. September 2010

SWRNA. 2005a. Brownfield Cleanup Program Remedial Investigation Report/Remedial Action Plan. BCP Site No. C356032. August 2005

SWRNA. 2005b. Remedial Design In-Situ Chemical Oxidation. BCP Site No. C356032. October 2005

SWRNA. 2006a. Final Engineering Report. Walgreen Company Store 02077, Kingston, New York. BCP Site No. C356032. November 2006

SWRNA. 2006b. Site Management Plan 10 East Chester Street, Kingston, New York. Walgreen Company Store 02077, Kingston, New York. BCP Site No. C356032. November 2006

URS. 2011. Annual Groundwater Sampling, Site Management Plan Review, and Institutional Control and Engineering Control (IC/EC) Certifications, April 2011.

URS. 2012. Annual Groundwater Sampling, Site Management Plan Review, and Institutional Control and Engineering Control (IC/EC) Certifications, April 2012.

URS. 2013. PRR: Annual Groundwater Sampling, Site Management Plan Review, and IC/EC Certification, December 2013.

Figures

BASEMAP SOURCES:

USGS 7.5-minute Series Topographic Map 2023
Kingston East, NY Quadrangle, Ulster Co. New York

Title:	SITE LOCATION MAP
Location:	10 EAST CHESTER STREET KINGSTON, NEW YORK 12401
Client:	WALGREENS STORE 02077

AECOM
40 British American Boulevard
Latham, New York 12110

Drafter: CLS	Date: June 2024
Drg. Size: 8.5 x 11	Job No.: 60692859

FIGURE 1-1

NORTH

JENSEN AVENUE

SIDEWALK

Private Residence

SB-18

SB-17

SB-16

MW-6

SB-15

SB-14

Auto Repair Shop

322 Broadway

Former Dry Cleaner 1950's

SIDEWALK

OE

MW-5

SB-3

MW-8S

MW-8D

FORMER TROLLY BARN

WALGREENS STORE #02077

MW-5S

MW-5D

MW-11

MW-1D

MW-1

MW-1S

SIDEWALK

EAST CHESTER STREET

SB-13

SB-2

SB-12

MW-7S

MW-10

MW-2S

MW-2

SB-6

SB-11

MW-7D

FORMER GAS STATION

MW-9-S

MW-2D

SB-9

FORMER DRY CLEANER

SB-7

FORMER 550 GALLON WASTE OIL UST

APPROXIMATE LOCATION OF FORMER USTs

MW-3

SB-5

MW-4

FORMER PUMP ISLAND

MW-7

SB-8

SB-10

MW-6D

MW-3S

SB-1

MW-11

MW-3D

MW-4D

SB-4

MW-12

SIDEWALK

OE

300 Broadway Roundout Bank

BROADWAY

SIDEWALK

WEST CHESTER STREET

MW-10

MW-9

SIDEWALK

ORCHARD STREET

MW-8

317 Broadway Residential

301 Broadway Speedway

LEGEND:

- CURB
- ABANDONED MONITORING WELL LOCATION
- EXISTING MONITORING WELL LOCATION
- STREET LIGHT
- OE — OVERHEAD ELECTRIC
- W — W — WATER LINE
- SA — FORMER SEWER LINE
- FORMER FLOOR DRAIN
- W/O — FORMER 550 GALLON WASTE OIL UST
- SB-1 THRU SB-10, OCTOBER 2014
- SB-11 THRU SB-13, APRIL 2016
- SB-14 THRU SB-18, SEPTEMBER 2016

NOTE: Locations are approximate

0 45 90

SCALE IN FEET

Title:	SITE MAP AND WELL LOCATIONS
Location:	10 EAST CHESTER STREET KINGSTON, NEW YORK 12401
Client:	WALGREENS STORE 02077

AECOM
40 British American Boulevard
Latham, New York 12110

Drafter: CLS	Date: July 2024
Drg. Size: 11 x 17	Job No.: 60692859

FIGURE 1-2

NORTH

JENSEN AVENUE

EAST CHESTER STREET

WEST CHESTER STREET

BROADWAY

ORCHARD STREET

SIDEWALK

WALGREENS STORE #02077

FORMER TROLLY BARN

FORMER GAS STATION

FORMER 550 GALLON WASTE OIL UST

FORMER DRY CLEANER

FORMER PUMP ISLAND

APPROXIMATE LOCATION OF FORMER USTs

Private Residence

Auto Repair Shop

322 Broadway

Former Dry Cleaner 1950's

300 Broadway Roundout Bank

317 Broadway Residential

301 Broadway Speedway

MW-1 179.9
MW-2 179.56
MW-3 179.42
MW-4 180.38
MW-5 180.2
MW-6
MW-7 179.12
MW-8
MW-9
MW-10
MW-11 179.84
MW-12 179.15
MW-1D
MW-1S
MW-2D
MW-2S
MW-3D
MW-3S
MW-4D
MW-5D
MW-5S
MW-6D
MW-7D
MW-7S
MW-8D
MW-8S
MW-9-S
MW-10
MW-11
SB-11
SB-12
SB-13

180'
179.5'
179'

LEGEND:

- CURB
- ABANDONED MONITORING WELL LOCATION
- EXISTING MONITORING WELL LOCATION
- PROPOSED SOIL BORING LOCATION
- STREET LIGHT
- OE — OVERHEAD ELECTRIC
- W — W — WATER LINE
- SA — FORMER SEWER LINE
- FORMER FLOOR DRAIN
- W/O — FORMER 550 GALLON WASTE OIL UST
- INFERRED GROUNDWATER FLOW DIRECTION
- 179' — GROUNDWATER CONTOUR
- 179.84 — GROUNDWATER ELEVATION (3/9/2023)
- A — PROPOSED UPGRADIENT TREATMENT POINT

NOTE: Locations are approximate

0 45 90

SCALE IN FEET

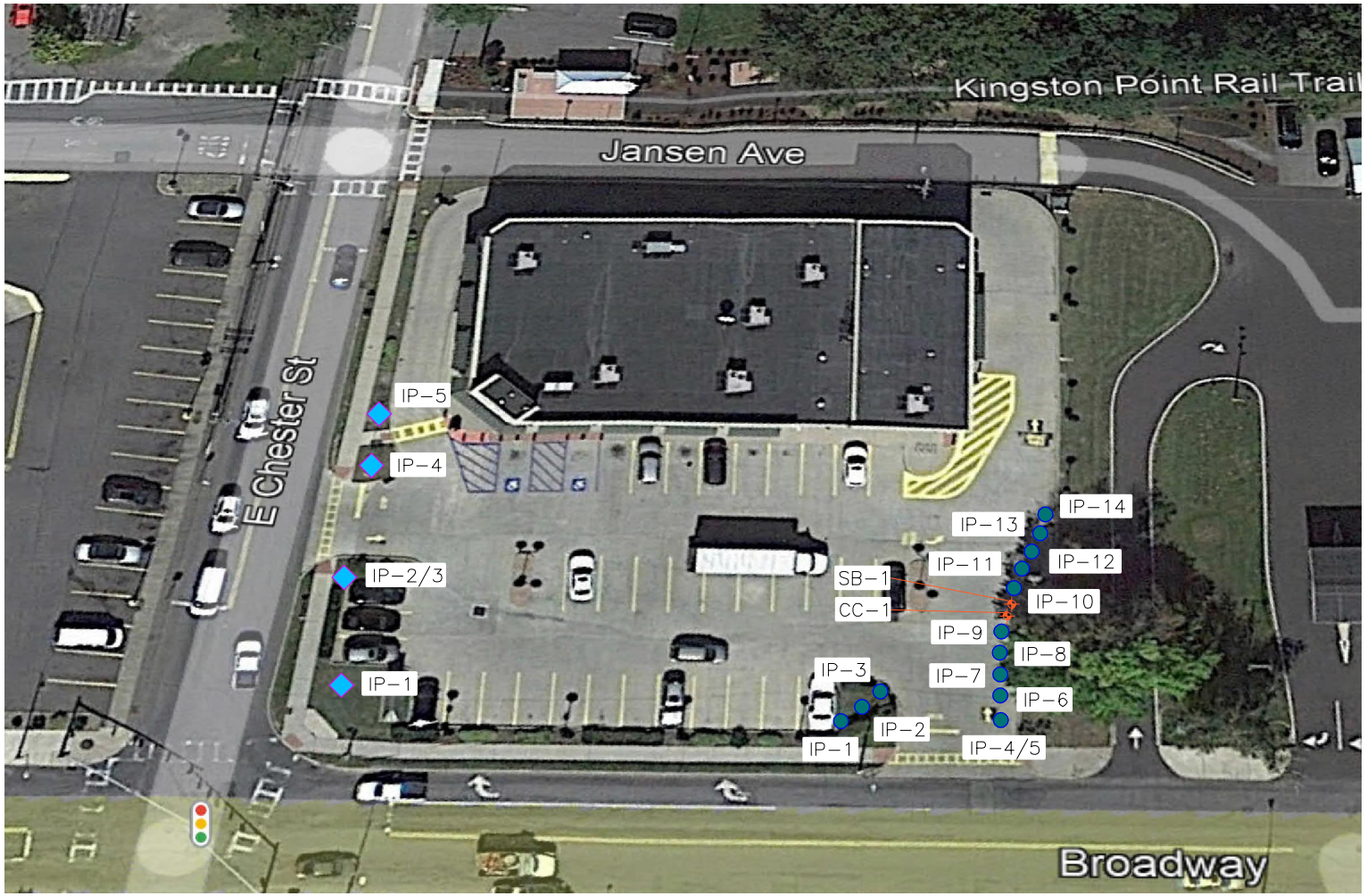
Title:	MARCH 2023 GROUNDWATER CONTOUR MAP
Location:	10 EAST CHESTER STREET KINGSTON, NEW YORK 12401
Client:	WALGREENS STORE 02077

AECOM
40 British American Boulevard
Latham, New York 12110

Drafter: CLS	Date: July 2024
Drg. Size: 11 x 17	Job No.: 60692859

FIGURE 1-3

PLOTTED: July 5, 2024 BY: Szczepanski, Carrie CTB:USED-04-6_black.ctb PAPER SPACE TAB: Fig 3 GW Contours (2) DWG PATH: D:\Kingston Walgreens\Buffalo Server\910_CAD\site_data_2024.dwg



NORTH

LEGEND:

- 3DME Injection Point
- PlumeStop Injection Point
- Soil Boring

NOTES:

Drawing not to scale.
All locations are approximate.
Map Referenced from Regenesis Remediation Services, December 2022 Report

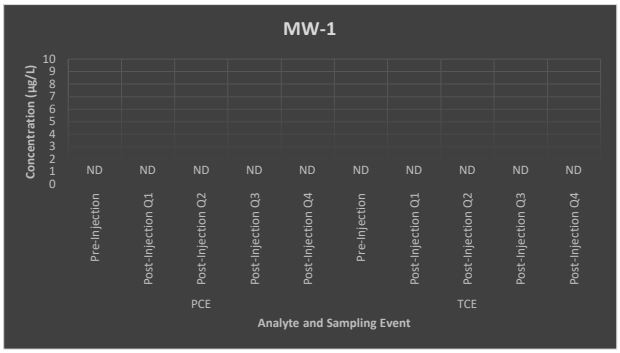
Title:	INJECTION LOCATIONS
Location:	10 EAST CHESTER STREET KINGSTON, NEW YORK 12401
Client:	WALGREENS STORE 02077

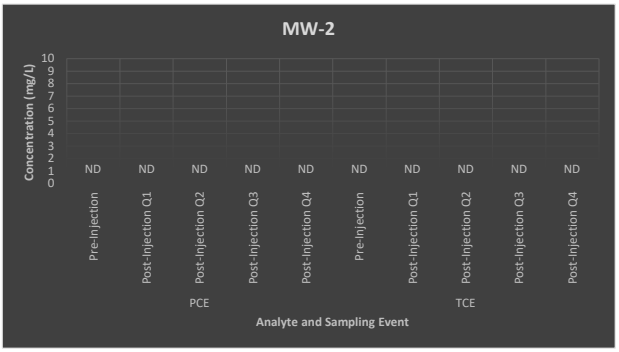
AECOM
40 British American Drive
Latham, NY 12110

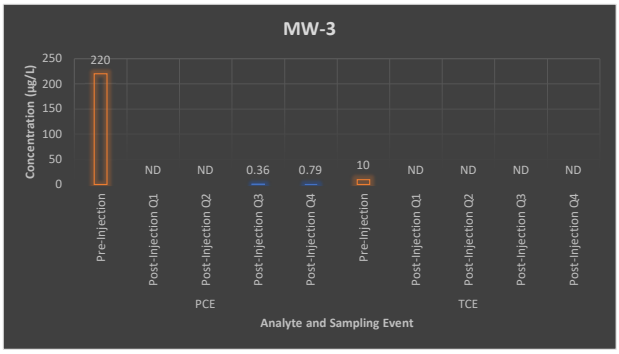
Drafter: CLS	Date: June 2024
Drg. Size: 8.5 X11	Job No.: 60692859

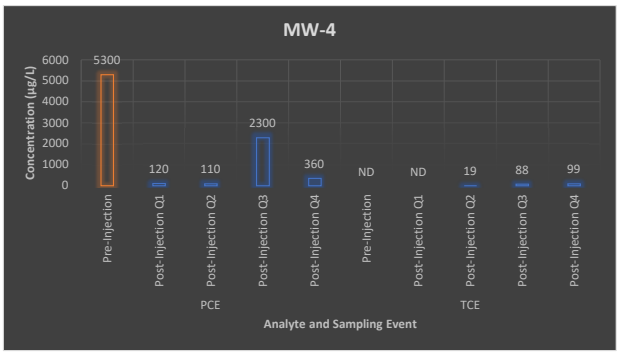
FIGURE 1-4

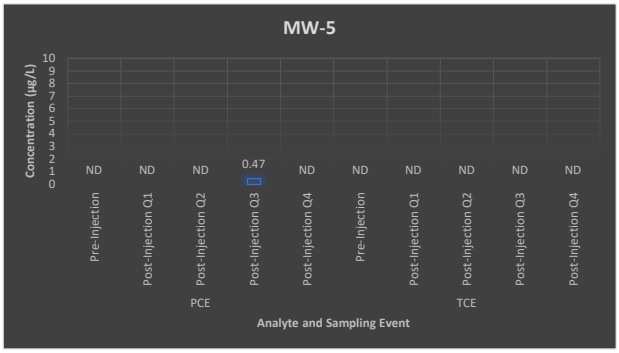
Figure 1-5
Pre-Injection and Post-Injection PCE and TCE Results
Walgreens Store No. 02077 Site

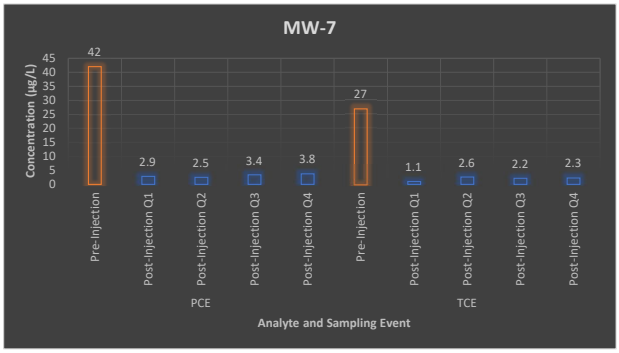


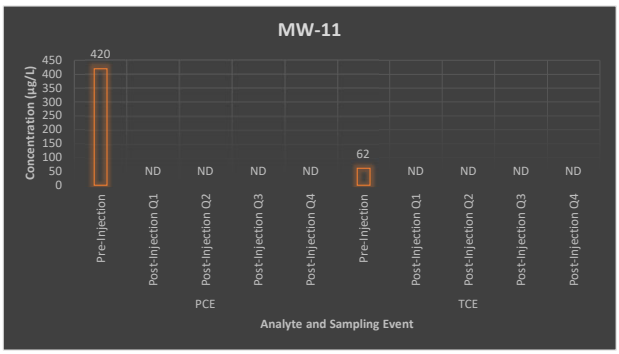


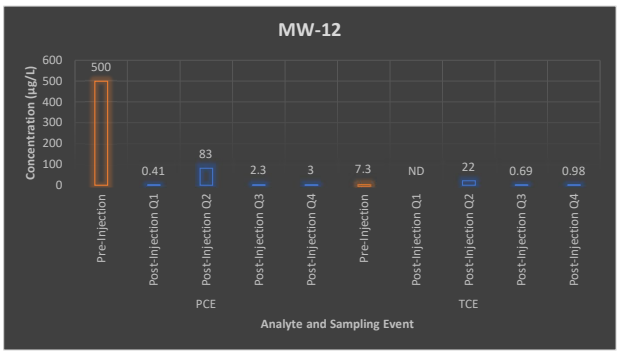












Orange indicates pre injection. Blue indicates post injection.

Tables

TABLE 2-1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
WALGREENS STORE 02077
BCP SITE NUMBER C356032
KINGSTON, NEW YORK

Well	Sample Date	Depth to Water (feet bgs)	Volatile Organic Compound Concentration (µg/L)*									Sample Turbidity (NTU)
			Benzene	Ethylbenzene	Isopropylbenzene	Toluene	Total Xylenes	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	
MW-1	3/13/2010[A]	NA	ND	ND	ND	ND	53.5	3.6	0.79	ND	ND	4.9**
	5/4/2010[A]	NA	1.7	130	20	1.7	126.4	3.0	ND	ND	ND	374**
	3/9/2011[B]	8.14	0.59	43	8.4	0.64	18.4	ND	ND	ND	ND	206
	2/16/2012[B]	9.74	0.23	10.5	12.2	ND	ND	ND	ND	ND	ND	>800
	8/8/2012[C]	9.26	ND	9.0	13	ND	2.8	ND	ND	ND	ND	8
	11/8/2013[C]	9.77	ND	1.1	4.7	ND	ND	0.48	ND	ND	ND	4.56
	10/13/2014[C]	9.66	1.5	18	2.6	13	62	0.65	2.9	ND	ND	11.7
	11/4/2015[C]	9.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	21.7
	3/5/2018[C]	8.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.37
	3/12/2020[C]	9.57	ND	ND	ND	ND	ND	ND	ND	ND	ND	88
MW-2	3/13/2010[A]	NA	ND	0.97	86	ND	63.5	ND	3.5	5.3	16	2.93**
	5/4/2010[A]	NA	ND	1.1	45	ND	29.5	ND	2.8	10	17	10**
	3/9/2011[B]	8.18	ND	4	19	ND	11.6	ND	6.4	0.6	14	800
	2/16/2012[B]	9.64	0.28	10.3	27.6	ND	38.5	ND	3.6	0.34	1.0	>800
	8/8/2012[C]	9.17	ND	1.9	6.1	ND	5.5	ND	3.1	ND	0.47	1.1
	11/8/2013[C]	9.63	0.43	5.3	16	ND	11	ND	5.2	ND	ND	0.46
	10/13/2014[C]	9.63	ND	4.1	16	ND	5.6	0.29	4.2	ND	ND	0.0
	11/4/2015[C]	9.27	ND	2.0	24	ND	3.6	0.27	4.0	ND	ND	0.0
	3/5/2018[C]	8.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	19.7
	3/12/2020[C]	9.51	ND	ND	27	ND	1.6 J	ND	ND	ND	ND	2.43
MW-3	3/13/2010[A]	NA	ND	ND	ND	ND	ND	ND	1	1,000	7.7	7.41**
	5/4/2010[A]	NA	ND	ND	ND	ND	ND	ND	ND	2,200	5	10**
	3/9/2011[B]	8.37	ND	ND	ND	ND	ND	ND	1.5	840	11	>800
	2/16/2012[B]	9.56	ND	ND	ND	ND	ND	ND	2.6	1,040	11.2	>800
	8/8/2012[C]	9.11	ND	ND	ND	ND	ND	ND	ND	200	9.5	1.0
	11/8/2013[C]	9.50	ND	ND	ND	ND	ND	ND	3.0	2,000	7.0	0.3
	10/13/2014[C]	9.58	ND	ND	ND	ND	ND	ND	ND	1,200	ND	0.1
	11/4/2015[C]	9.25	ND	ND	ND	ND	ND	ND	20	1,800	39	0.0
	3/5/2018[C]	8.48	ND	ND	ND	ND	ND	ND	37	110	19	5.18
	3/12/2020[C]	9.42	ND	ND	ND	ND	ND	ND	45	120	8.5	1.51
MW-4	3/5/2018[C]	7.53	ND	ND	ND	ND	ND	ND	ND	630	ND	106.3
	3/12/2020[C]	8.11	ND	ND	ND	ND	ND	ND	ND	4,000	12	32.1
MW-5	3/5/2018[C]	7.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	130.7
	3/12/2020[C]	7.87	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.99

Notes:
*The maximum of the reported values (i.e., normal sample, duplicates, and dilutions) is listed.
**Turbidity value recorded during submersible pump purging; the sample was subsequently collected with a bailer.
>: Greater than.
A: At least three well volumes purged with a submersible pump, sample collected with a bailer.
B: Three well volumes purged with a bailer and sample collected with a bailer.
C: Low-flow purging and sampling.
bgs: below ground surface
J: The values is an estimate
NA: Not Available
ND: Not Detected
NTU: nephelometric turbdity unit
µg/L: micrograms per liter
MW-4 and MW-5 were sampled for the first time in March 2018, so there is limited historical data for comparison.

Table 2-2
Regenesis Injection Data
Walgreens Store No. 02077 Site
November 28 - December 2, 2022

Date	Area	Injection Point	Water (gal)	PlumeStop (lbs)	ZVI (lbs)	3DME (lbs)	BDI (L)	Daily Total Water (gal)	Daily Total PlumeStop (lbs)	Daily Total ZVI (lbs)	Daily Total 3DME (lbs)	Daily Total BDI (L)
11/29/2022	East	IP-4&5 **	903	405	290	--	--	--	--	--	--	--
		IP-6	450	202	144	--	--	--	--	--	--	--
		IP-7	445	200	142	--	--	--	--	--	--	--
		IP-9	464	208	148	--	--	--	--	--	--	--
		IP-10	449	201	143	--	--	2711	1216	867	NA	NA
11/30/2022	East	IP-1	490	219	157	--	--	--	--	--	--	--
		IP-2	495	222	168	--	--	--	--	--	--	--
		IP-3*	250	112	80	--	--	--	--	--	--	--
		IP-8	446	200	143	--	--	--	--	--	--	--
		IP-12	414	185	132	--	--	--	--	--	--	--
		IP-14	447	200	143	--	--	2542	1138	823	NA	NA
12/1/2022	East	IP-11	385	212	151	--	--	--	--	--	--	--
		IP-13	400	213.7	128	--	--	785	425.7	279	NA	NA
	West	IP-E	460	--	231	185	3.6	--	--	--	--	--
		IP-C&D***	740	--	371	297	7.2	1200	NA	602	482	10.8
12/2/2022	West	IP-A	400	--	200	160	3.6	--	--	--	--	--
		IP-B	400	--	200	160	3.6	800	NA	400	320	7.2
Total:			**8038**	**2779.7**	**2971**	**802**	**18**	--	--	--	--	--

Utility mark out survey and borehole clearing performed on Monday, November 28, 2022.

* - IP-3 moved from proposed location due to utility restrictions.

** - IP-4 & 5 combinded at points between 4 & 5 due to utility restrictions.

*** - IP-C&D combined at IP-C due to shallow refusal and utilities at proposed IP-D location (IP-C&D is near MW-4). Moved IP-E south due to utilities.

--: not injected

gal: gallons

L: liters

lbs: pounds

Table 2-3 Summary of Groundwater Elevation and Gauging Data			
Well Identification	**TOC Elevation**	**Depth-to-Groundwater (feet)**	**Groundwater Elevation (feet)**
		3/9/2023	
MW-1	188.72	8.82	179.90
MW-2	188.41	8.85	179.56
MW-3	188.29	8.87	179.42
MW-4	188.06	7.68	180.38
MW-5	187.62	7.42	180.20
MW-6	187.60	--	--
MW-7	187.72	8.60	179.12
MW-8	188.14	--	--
MW-9	188.62	--	--
MW-10	188.64	--	--
MW-11	188.36	8.52	179.84
MW-12	188.28	9.13	179.15

Notes:

- MW-1 thru MW-10: Elevations NAVD 88 Datum - Brinner & Larios PC, Survey conducted 11-3-2020, via LaBella/Aztech
- MW-11: Unoffical survey conducted by AECOM on 09-10-2021 tied to Aztech TOCs
- MW-12 & MW-7 reset: Unoffical survey conducted by AECOM on 9-30-2022

Table 2-4
Pre-Injection and Post-Injection Sampling Results
Walgreens Store No. 02077 Site

	Reporting Limit (RL) (µg/L)	NYSDEC TOGS GW STANDARDS Guidance Value (Class GA)* (µg/L)	MW-1					MW-2								MW-3						
			Pre-Inj	Post-Inj	Post-Inj	Post-Inj	Post-Inj	Pre-Inj	Post-Inj	DUP	Post-Inj	DUP	Post-Inj	Post-Inj	DUP	Pre-Inj	DUP	Post-Inj	Post-Inj	Post-Inj	DUP	Post-Inj
Sample Collection Date:			10/28/2022	3/9/2023	6/13/2023	9/5/2023	11/28/2023	10/28/2022	3/9/2023	3/9/2023	6/13/2023	6/13/2023	9/5/2023	11/28/2023	11/28/2023	10/28/2022	10/28/2022	3/9/2023	6/14/2023	9/5/2023	9/5/2023	11/28/2023
Matrix:			Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Volatile Organic Compounds (VOCs) by Method 8260 in µg/L																						
1,1,1-Trichloroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1.0	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1.0	[0.7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (Ethylene dibromide)	1.0	0.0006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1.0	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	5.0	[50]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	10	[50]	ND	ND	ND	ND	ND	ND	ND	ND	4.5 J	ND	ND	ND	ND	ND	ND	**33**	**58**	10	ND	**22**
Benzene	1.0	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	1.0	[50]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	1.0	[50]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	1.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**30**	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	1.0	NS	ND	ND	ND	ND	ND	**47**	**100 J**	**100 J**	**95 J**	**ND**	**110**	**110**	**100**	ND	ND	ND	ND	ND	**120**	ND
Dibromochloromethane	1.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1.0	5	ND	ND	ND	ND	ND	**2.1**	**6.2 J**	**6.2 J**	**1.8**	ND	**7.5**	**15**	**13**	ND	ND	ND	ND	ND	**7.6**	ND
Isopropylbenzene (Cumene)	1.0	5	ND	ND	ND	ND	ND	**22**	**45 J**	**44 J**	**17 J**	**16 J**	**33**	**46**	**44**	ND	ND	ND	ND	ND	**34**	ND
Methyl acetate	2.5	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	10	[50]	ND	ND	ND	ND	ND	**4.5 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**46 J**	ND	9.8 J	ND	ND
Methylcyclohexane	1.0	NS	ND	ND	ND	ND	ND	**27**	**81 J**	**80 J**	**78 J**	**83 J**	**110**	**99**	**110**	ND	ND	ND	ND	0.64 J	**110**	ND
Methylene chloride	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	1.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**220**	ND	ND	0.36 J	ND	0.79 J
Toluene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**16**	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**11**	ND	ND	ND	ND	ND
Trichlorofluoromethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	1.0	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	2.0	5	ND	ND	ND	ND	ND	**6.2**	**24 J**	**24 J**	**5.4**	ND	**28**	**61**	**51**	ND	ND	ND	ND	ND	**26**	ND
Other Analytes Tested By Various Methods in µg/L																						
Alkalinity, Total (as CaCO3)	5000	NS	NA	NA	NA	NA	NA	NA	**64100**	**66300**	**123000**	**122000**	**99500**	**101000**	**103000**	**212000**	**210000**	**286000**	**305000**	**338000**	**100000**	**231000**
Ferrous Iron	100	NS	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hardness	4000	NS	NA	NA	NA	NA	NA	NA	**192000 J**	**88000 J**	**44000**	**48000**	**100000**	**20000**	**60000**	**244000**	**264000**	**428000**	**116000**	**140000**	**50000**	**140000**
Iron	50	NS	NA	NA	NA	NA	NA	NA	**1900**	**1600**	**290**	**300**	**1800**	**140**	**170**	23 J	28 J	**211000**	**10800**	**9300**	**1300**	**69000**
Methane	88	NS	NA	NA	NA	NA	NA	NA	**390**	**380**	**440**	**490**	**1200**	**1400**	**1200**	**280 J**	**350 J**	**270**	**5700**	**5100**	**1000**	**14000**
Nitrate-Nitrogen	50	NS	NA	NA	NA	NA	NA	NA	**75**	**79**	**120 J**	**120 J**	**110**	**430**	**63**	**2200**	**2400**	**85**	ND	**1600**	**170**	ND
Nitrite-Nitrogen	50	NS	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	**20 J**	**22 J**	**22 J**	ND	ND	ND	ND	**21 J**	**22 J**	ND
Sulfate (as SO4)	10000	NS	NA	NA	NA	NA	NA	NA	ND	ND	**11000.0**	9800 J	2600	4800	3800	**55900**	**55100**	3500 J	1800 J	1900 J	2800	2900 J
Total Organic Carbon (TOC)	1000	NS	NA	NA	NA	NA	NA	NA	910 J	**1000**	**1300**	**1200**	**1200**	ND	ND	**1700**	**1700**	**2400**	**660 J**	**840 J**	**1300**	**6000**

Notes:
Bold text used to note concentration above the RL.

Shaded text denotes exceedence of standard/guidance.

* New York State Department of Environmental Conservation (NYSDEC), Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), Ambient Water Quality (AWQ) Standards and Guidance Values, June 1998, Class GA.

[#] Denotes guidance value.
D - The sample results are reported from a secondary dilution.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

NA - Not Analyzed.
ND - Not Detected Above the RL.
NS - No Standard.

Table 2-4
Pre-Injection and Post-Injection Sampling Results
Walgreens Store No. 02077 Site

Sample Collection Date:	Reporting Limit (RL) (µg/L)	NYSDEC TOGS GW STANDARDS Guidance Value (Class GA)* (µg/L)	MW-4					MW-5					MW-7					MW-11					MW-12					TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK
			Pre-Inj	Post-Inj	Post-Inj	Post-Inj	Post-Inj	Pre-Inj	Post-Inj	Post-Inj	Post-Inj	Post-Inj	Pre-Inj	Post-Inj	Post-Inj	Post-Inj	Post-Inj	Pre-Inj	Post-Inj	Post-Inj	Post-Inj	Post-Inj	Pre-Inj	Post-Inj	Post-Inj	Post-Inj	Post-Inj	Pre-Inj	Post-Inj	Post-Inj	Post-Inj
Matrix:			10/28/2022	3/9/2023	6/13/2023	9/5/2023	11/28/2023	10/28/2022	3/9/2023	6/13/2023	9/5/2023	11/28/2023	10/28/2022	3/9/2023	6/13/2023	9/5/2023	11/28/2023	10/28/2022	3/9/2023	6/13/2023	9/5/2023	11/28/2023	10/28/2022	3/9/2023	6/13/2023	9/5/2023	11/28/2023	10/28/2022	6/13/2023	9/5/2023	11/28/2023
			Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Volatile Organic Compounds (VOCs) by Method 8260 in µg/L																															
1,1,1-Trichloroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1.0	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1.0	[0.7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (Ethylene dibromide)	1.0	0.0006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	1.0	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	1.0	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	1.0	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	5.0	[50]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	5.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	10	[50]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.5 J	ND	ND	ND	3.3 J	32 J	ND	ND	ND	ND	8.7 J	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1.0	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	1.0	[50]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	1.0	[50]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	1.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	1.0	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.43 J**	ND	ND	ND
Chloromethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	1.0	5	ND	**430**	**730 J**	**530**	**1100**	ND	ND	ND	ND	ND	**18**	**13**	**160 D**	**29**	**20**	**100 D**	**30**	**2800 D**	**670**	**350**	**16**	**4.9**	**91 D**	**5.7**	**17**	ND	ND	ND	ND
cis-1,3-Dichloropropene	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	1.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	1.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene (Cumene)	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3.6**	**3.5**	**4.3**	1.0	**1.6**	ND	ND	ND	ND
Methyl acetate	2.5	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	10	[50]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	1.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.0**	ND	ND	ND	**1.4**	ND	ND	ND	ND	ND	ND	**4.5**	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	1.0	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.0	5	**5300**	**120 J**	**110**	**2300 D**	**360**	ND	ND	ND	**0.47J**	ND	**42**	**2.9 J**	**2.5**	**3.4**	**3.8**	**420 D**	ND	ND	ND	ND	**500 D**	0.41 J	**83**	**2.3**	**3**	ND	ND	ND	ND
Toluene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.9**	ND	**1.9**	**2.0**	**1.3**	**2.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	1.0	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	5	ND	ND	**19 J**	**88**	**99**	ND	ND	ND	ND	ND	**27**	**1.1**	**2.6**	**2.2**	**2.3**	**62**	ND	ND	ND	ND	**7.3**	ND	**22**	0.69 J	0.98 J	ND	ND	ND	ND
Trichlorofluoromethane	1.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	1.0	2	ND	ND	ND	**62**	**170**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.4**	**31**	**85**	**83**	**110**	**5.3**	ND	**22**	**1.1**	**2.9**	ND	ND	ND	ND
Xylene (total)	2.0	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Other Analytes Tested By Various Methods in µg/L																															
Alkalinity, Total (as CaCO3)	5000	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ferrous Iron	100	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness	4000	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	50	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methane	88	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate-Nitrogen	50	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite-Nitrogen	50	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (as SO4)	10000	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (TOC)	1000	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
Bold text used to note concentration above the RL.
Shaded text denotes exceedence of standard/guidance.
* New York State Department of Environmental Conservation (NYSDEC), Division of Water Technical and Operational Guidance Series (TOGS 1.1.1), Ambient Water Quality (AWQ) Standards and Guidance Values, June 1998, Class GA.
[#] Denotes guidance value.
D - The sample results are reported from a secondary dilution.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

NA - Not Analyzed.
ND - Not Detected Above the RL.
NS - No Standard.

Appendix A

Institutional and Engineering Controls Certification Form

Enclosure 1

Certification Instructions

I. Verification of Site Details (Box 1 and Box 2):

Answer the three questions in the Verification of Site Details Section. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

II. Certification of Institutional Controls/ Engineering Controls (IC/ECs)(Boxes 3, 4, and 5)

1. Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are applicable. If there is a control that is no longer applicable the Owner / Remedial Party should petition the Department separately to request approval to remove the control.

2. In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

3. If you cannot certify "YES" for each Control listed in Box 3 & Box 4, sign and date the form in Box 5. Attach supporting documentation that explains why the **Certification** cannot be rendered, as well as a plan of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this **Certification** form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) must be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the PRR and/or completion of the IC/EC Certification, the Project Manager will contact you.

III. IC/EC Certification by Signature (Box 6 and Box 7**):**

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page as follows:

- For the Institutional Controls on the use of the property, the certification statement in Box 6 shall be completed and may be made by the property owner or designated representative.

- For the Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or Qualified Environmental Professional, as noted on the form.

Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. C356032

Site Name 10 East Chester Street

Site Address: 306-318 Broadway Zip Code: 12401
City/Town: Kingston
County: Ulster
Site Acreage: 0.866

Reporting Period: September 30, 2020 to April 01, 2024

	YES	NO
1. Is the information above correct?	☒	☐
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	☐	☒
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☒	☐
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	☐	☒

Box 2

	YES	NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	☒	☐
7. Are all ICs in place and functioning as designed?	☒	☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____
Signature of Owner, Remedial Party or Designated Representative Date

	YES	NO
8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	❑	☒

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)	❑	☒

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C356032

Description of Institutional Controls

Parcel	Owner	Institutional Control
56.26-11-43.1	Jeff Groncki, Walgreens Co.	Ground Water Use Restriction Soil Management Plan Landuse Restriction Site Management Plan Monitoring Plan

The Controlled Property may be used for restricted commercial or industrial use as long as the following long-term engineering controls are employed:

1. A barrier layer must be maintained on the Controlled Property of either one foot of clean fill or an alternative barrier layer approved by the NYSDEC, such as concrete, asphalt, or structure;
2. Any proposed soil excavation on the Controlled Property below the barrier layer requires prior notification and approval by NYSDEC in accordance with the Site Management Plan. The excavated soil must be managed, characterized, and properly disposed of in accordance with NYSDEC regulations and directives;
3. Any area of soil excavation below the barrier layer that is to be returned to vegetated soil (i.e.: not concrete, asphalt or structures) must be backfilled with a minimum one (1) foot layer of clean fill underlain by a demarcation layer;
4. Any future structures shall be constructed with a sub-slab depressurization system approved by the NYSDEC; and
5. The use of groundwater underlying the Controlled Property is prohibited without prior approval from NYSDEC for treatment rendering it safe for use for drinking or industrial purposes.
6. Perform annual groundwater sampling to access the trend and need for the additional remedial action.

Description of Engineering Controls

Parcel	Engineering Control
56.26-11-43.1	Vapor Mitigation Cover System

A soil barrier consisting of 1- foot of clean fill, or 6 inches of asphalt paving, or 6 inches of concrete slab to mitigate potential for direct contact with groundwater or soil.

SSDS installed in the on-site building is operated and maintained to effectively mitigate the potential for soil vapor exposure to building occupants

Future buildings will require a sub slab depressurization system as approved by NYSDEC to mitigate the potential for soil vapors to enter future building structures.

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted e

YES	NO
☒	❑

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

(a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	❑

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

_____ _____

Signature of Owner, Remedial Party or Designated Representative Date

IC CERTIFICATIONS
SITE NO. C356032

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1,2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as _____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

_____ _____
Signature of Owner, Remedial Party, or Designated Representative Date
Rendering Certification

EC CERTIFICATIONS

Box 7

Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as a Professional Engineer for the _____
(Owner or Remedial Party)

_____ _____ _____

Signature of Professional Engineer, for the Owner or Remedial Party, Rendering Certification

Stamp (Required for PE)

Date

Enclosure 3
Periodic Review Report (PRR) General Guidance

I. Executive Summary: (1/2-page or less)
   A. Provide a brief summary of site, nature and extent of contamination, and remedial history.
   B. Effectiveness of the Remedial Program - Provide overall conclusions regarding;
      1. progress made during the reporting period toward meeting the remedial objectives for the site
      2. the ultimate ability of the remedial program to achieve the remedial objectives for the site.
   C. Compliance
      1. Identify any areas of non-compliance regarding the major elements of the Site Management Plan (SMP, i.e., the Institutional/Engineering Control (IC/EC) Plan, the Monitoring Plan, and the Operation & Maintenance (O&M) Plan).
      2. Propose steps to be taken and a schedule to correct any areas of non-compliance.
   D. Recommendations
      1. recommend whether any changes to the SMP are needed
      2. recommend any changes to the frequency for submittal of PRRs (increase, decrease)
      3. recommend whether the requirements for discontinuing site management have been met.

II. Site Overview (one page or less)
   A. Describe the site location, boundaries (figure), significant features, surrounding area, and the nature and extent of contamination prior to site remediation.
   B. Describe the chronology of the main features of the remedial program for the site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection.

III. Evaluate Remedy Performance, Effectiveness, and Protectiveness
   Using tables, graphs, charts and bulleted text to the extent practicable, describe the effectiveness of the remedy in achieving the remedial goals for the site. Base findings, recommendations, and conclusions on objective data. Evaluations and should be presented simply and concisely.

IV. IC/EC Plan Compliance Report (if applicable)
   A. IC/EC Requirements and Compliance
      1. Describe each control, its objective, and how performance of the control is evaluated.
      2. Summarize the status of each goal (whether it is fully in place and its effectiveness).
      3. Corrective Measures: describe steps proposed to address any deficiencies in ICECs.
      4. Conclusions and recommendations for changes.
   B. IC/EC Certification
      1. The certification must be complete (even if there are IC/EC deficiencies), and certified by the appropriate party as set forth in a Department-approved certification form(s).

V. Monitoring Plan Compliance Report (if applicable)
   A. Components of the Monitoring Plan (tabular presentations preferred) - Describe the requirements of the monitoring plan by media (i.e., soil, groundwater, sediment, etc.) and by any remedial technologies being used at the site.
   B. Summary of Monitoring Completed During Reporting Period - Describe the monitoring tasks actually completed during this PRR reporting period. Tables and/or figures should be used to show all data.
   C. Comparisons with Remedial Objectives - Compare the results of all monitoring with the remedial objectives for the site. Include trend analyses where possible.
   D. Monitoring Deficiencies - Describe any ways in which monitoring did not fully comply with the monitoring plan.
   E. Conclusions and Recommendations for Changes - Provide overall conclusions regarding the monitoring completed and the resulting evaluations regarding remedial effectiveness.

VI. Operation & Maintenance (O&M) Plan Compliance Report (if applicable)
   A. Components of O&M Plan - Describe the requirements of the O&M plan including required activities, frequencies, recordkeeping, etc.
   B. Summary of O&M Completed During Reporting Period - Describe the O&M tasks actually completed during this PRR reporting period.
   C. Evaluation of Remedial Systems - Based upon the results of the O&M activities completed, evaluated

the ability of each component of the remedy subject to O&M requirements to perform as designed/expected.

D. O&M Deficiencies - Identify any deficiencies in complying with the O&M plan during this PRR reporting period.

E. Conclusions and Recommendations for Improvements - Provide an overall conclusion regarding O&M for the site and identify any suggested improvements requiring changes in the O&M Plan.

VII. Overall PRR Conclusions and Recommendations

A. Compliance with SMP - For each component of the SMP (i.e., IC/EC, monitoring, O&M), summarize;

1. whether all requirements of each plan were met during the reporting period
2. any requirements not met
3. proposed plans and a schedule for coming into full compliance.

B. Performance and Effectiveness of the Remedy - Based upon your evaluation of the components of the SMP, form conclusions about the performance of each component and the ability of the remedy to achieve the remedial objectives for the site.

C. Future PRR Submittals

1. Recommend, with supporting justification, whether the frequency of the submittal of PRRs should be changed (either increased or decreased).
2. If the requirements for site closure have been achieved, contact the Departments Project Manager for the site to determine what, if any, additional documentation is needed to support a decision to discontinue site management.

VIII. Additional Guidance

Additional guidance regarding the preparation and submittal of an acceptable PRR can be obtained from the Departments Project Manager for the site.

Appendix B

NYSDEC Construction Completion Report Approval Letter

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau C
625 Broadway, 12th Floor, Albany, NY 12233-7014
P: (518) 402-9543 | F: (518) 402-9722
www.dec.ny.gov

Transmitted Via Email Only

April 3, 2024

Jeff Groncki Sr. Manager, Engineering
Store Planning and Design Development
Walgreen Co.
106 Wilmot Road, MS#1620
Deerfield, IL 60015
jeff.groncki@walgreens.com

RE: 10 East Chester Street
Kingston, Ulster County
Site No.C356032
Sub: Draft Corrective Measures
Construction Completion Report (CM CCR) February 2024

Dear Mr. Groncki,

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (DOH), has received and reviewed the Draft Corrective Measures Construction Completion Report (CM CCR) dated February 2024, prepared by AECOM for the above referenced site. The CM CCR is hereby approved. However, please note that based on the continuing assessment of the effectiveness of the corrective measures as a part of the periodic review process, the Department may require additional corrective measures.

Please finalize and submit the CM CCR with signed and stamped certification as required by DER-10 and Periodic Review Report including enclosed Institutional Control/Engineering Controls (IC/EC) certification within 30 days from the date of this letter.

The Department, through this letter, also modifies Section 6 (Groundwater Monitoring) of the Department approved Site Management Plan (SMP) dated November 2006 as follows:

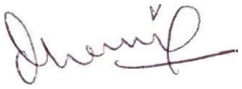
1. In addition to the groundwater (GW) monitoring wells MW-1, MW-2 and MW-3, newly installed wells MW-4, MW-5, MW-7, MW-11 and MW-12 are included to the periodic GW sampling & analysis program.

2. The GW sampling & analysis frequency is revised from annual (twelve months) to fifteen (15) months to account for the seasonal variability. The next GW sampling & analysis must be performed within 15 months of the last post CM sampling.

Also, note the Department evaluating its options on action to be initiated against the volunteer in the connection with the mismanagement of the four drums of investigation derived waste (IDW).

Please place the approved CM CCR and this letter in the document repository established for the site. If you have any questions, please contact me at 518-402-9648 or email me at parag.amin@dec.ny.gov.

Sincerely,



Parag Amin P.E.
Project Manager
Remedial Bureau C
Division of Environmental Remediation

Encl:

ec: K. Garbarino, AECOM (kristine.garbarino@aecom.com)
B. Ditzler, Walgreens Co. (brian.ditzler@walgreens.com)
A. Wojcik, Walgreens Co. (andrew.wojcik@walgreens.com)
K. Kulow, NYSDOH (kristin.kulow@health.ny.gov)
M. Doroski, NYSDOH (melissa.doroski@health.ny.gov)
S. McCague, DEC R3, (steven.mccague@dec.ny.gov)
K. Maloney, DEC, CO (kerry.maloney@dec.ny.gov)
DecDocs

Appendix C

EPA UIC Permit

From: region2_uic@epa.gov <region2_uic@epa.gov>
Sent: Tuesday, November 22, 2022 9:42 AM
To: Connare, Kevin <kevin.connare@aecom.com>
Cc: schlotter.nancy@epa.gov
Subject: USEPA UIC notification regarding: 23NY11103774: Walgreens Store No. 02077, Kingston, NY, 12401

Total Wells: 19
19 - Under Construction - 5B6 Beneficial Use- Subsurface environmental remediation - as of 10/11/2022

Hello,

The U.S. Environmental Protection Agency (EPA) Region 2 Drinking Water and Ground Water Protection Section is in receipt of Underground Injection Control (UIC) inventory information addressing the above UIC Class V wells.

Your Class V injection activity is “authorized by rule,” meaning you must comply with all the Class V requirements of the UIC program. Pursuant to 40 CFR §144.12 and §144.82(a), your injection activity cannot allow the movement of fluid containing any contaminant into underground sources of drinking water (USDWs) if the presence of that contaminant may cause a violation of the primary drinking water standards under 40 CFR §141 or other health based standards, or may otherwise adversely affect the health of persons. This prohibition applies to owner/operator well construction, operation, maintenance, conversion, plugging, closure, or any other injection activity.

Should any conditions change in the operation of any of the wells inventoried (e.g., closure of the well), UIC program requirements must be met, and inventory information must be updated via e-mail to Region2_UIC@epa.gov. For work being conducted under a work plan approved by the New York State Department of Environmental Conservation (NYSDEC), it is not necessary to submit inventory with each subsequent injection. Please inform EPA when all injections are complete for this Facility, and include the UIC ID number referenced above on all correspondence regarding injection activity at this facility. UIC inventory information can be found at https://urldefense.com/v3/__https://www.epa.gov/uic/underground-injection-control-epa-region-2-nj-ny-pr-and-vi__;!!ETWISUBM!yS98M-BX-7jRCa1wB4iV-IstyXELIqN4dHaLsiozAdsUtC8ZRSeM0XeFX8B5SDIkVeQhZpLST3mCSQXIdBm0YO-P$.

Please note that all information submitted by you may be used in an administrative, civil judicial, or criminal action. Making a knowing submission of materially false information to the U.S. Government may be a criminal offense. Please also be advised that you should contact state and local authorities to ensure you have complied with all applicable regulations that may be more stringent than the UIC program.

If you have any questions, please contact Nancy Schlotter at 212 637-3947 or shclotter.nancy@epa.gov.

Appendix D

Photographic Log

AECOM

PHOTOGRAPHIC LOG
Representative Site Photos

Facility Name:	Site Location:	Project No.
Walgreens	10 E Chester Street, Kingston, NY 12401	60692859

Photo No.	Date:
1	6/7/2024

Description:
Facing east along southern property boundary.

Photo No.	Date:
2	6/7/2024

Description:
Facing north along western property boundary.

AECOM

PHOTOGRAPHIC LOG
Representative Site Photos

Facility Name:	Site Location:	Project No.
Walgreens	10 E Chester Street, Kingston, NY 12401	60692859

Photo No.	Date:
3	6/7/2024

Description:
Facing north along western property boundary.

Photo No.	Date:
4	6/7/2024

Description:
Facing west along northern property boundary.

AECOM

PHOTOGRAPHIC LOG
Representative Site Photos

Facility Name:	Site Location:	Project No.
Walgreens	10 E Chester Street, Kingston, NY 12401	60692859

Photo No.	Date:
5	6/7/2024

Description:
Facing south along eastern property boundary.

Photo No.	Date:
6	6/7/2024

Description:
Wall mounted manometer connected to the SSDS.

AECOM

PHOTOGRAPHIC LOG
Representative Site Photos

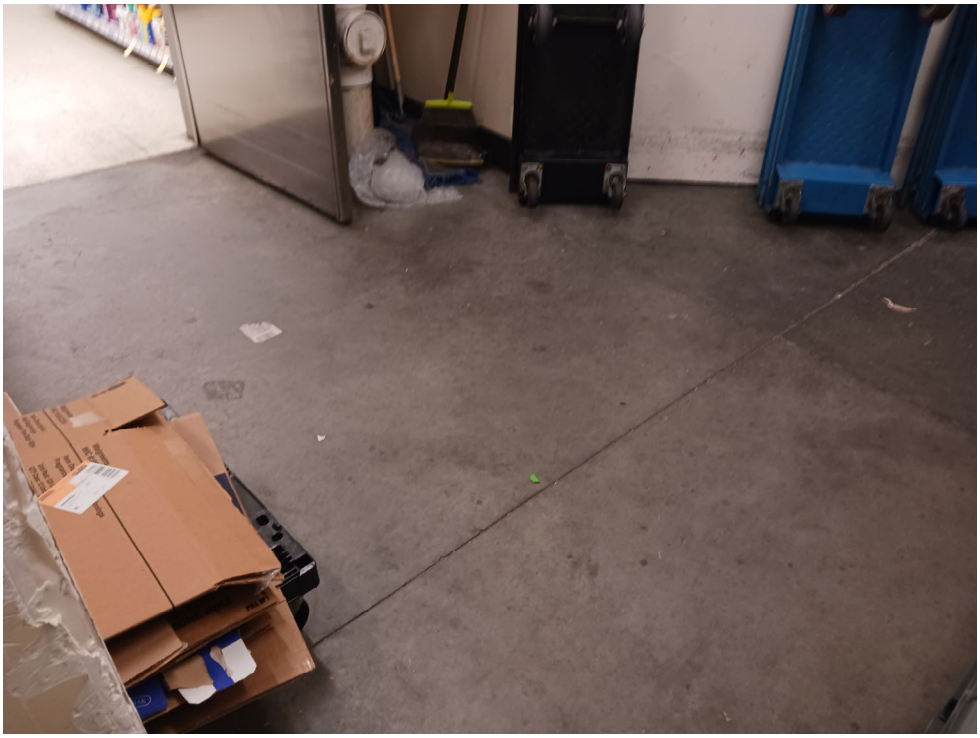
Facility Name:	Site Location:	Project No.
Walgreens	10 E Chester Street, Kingston, NY 12401	60692859

Photo No.	Date:
7	6/7/2024

Description:
Digital manometer reading.

Photo No.	Date:
8	6/7/2024

Description:
General condition of the store interior.



AECOM

PHOTOGRAPHIC LOG
Representative Site Photos

Facility Name:	Site Location:	Project No.
Walgreens	10 E Chester Street, Kingston, NY 12401	60692859

Photo No.	Date:
9	6/7/2024

Description:
General condition of the store interior.

Photo No.	Date:
10	6/7/2024

Description:
General condition of the store interior.

AECOM

PHOTOGRAPHIC LOG
Representative Site Photos

Facility Name:	Site Location:	Project No.
Walgreens	10 E Chester Street, Kingston, NY 12401	60692859

Photo No.	Date:
11	6/7/2024

Description:
General condition of the storage drums

Photo No.	Date:
12	6/17/2024

Description:
General condition of the SSDS Vent pipe.

AECOM

PHOTOGRAPHIC LOG
Representative Site Photos

Facility Name:	Site Location:	Project No.
Walgreens	10 E Chester Street, Kingston, NY 12401	60692859

Photo No.	Date:
13	6/7/2024

Description:
General condition of the interior SDSS vent pipe.

Photo No.	Date:
14	6/17/2024

Description:
General condition of the SSDS Vent pipe (Roof).

Appendix E

Revised QHHEA

DRAFT

AECOM

Qualitative Human Health Exposure Assessment Update

Walgreens Store No. 02077, 10 East Chester Street, Kingston, NY
(BCP Site No. C356032)

Walgreens Company

Project number: 60692859

June 20, 2024

Delivering a better world

Quality information

Prepared by	Verified by	Approved by
Edyta Chorostkowska Project Manager	Dan Kim Risk Assessor	Kristine Garbarino Project Manager

Revision History

Revision	Revision date	Details	Authorized	Name	Position

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Prepared for:

Walgreens Company

Prepared by:

Edyta Chorostkowska
Project Manager
T: 845-248-4099
E: edyta.chorostkowska@aecom.com

AECOM
50 Lakefront Boulevard, Suite 111
Buffalo, NY 14202
aecom.com

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1. Introduction

AECOM USA, Inc. (AECOM), on behalf of the Walgreen Company (Walgreens), is submitting this Qualitative Human Health Exposure Assessment (HHEA) to the New York State Department of Environmental Conservation (NYSDEC) for the Site located at 10 East Chester Street in Kingston, Ulster County, New York (**Figure 1**). The QHHEA uses data and information collected during the AECOM (2024) Construction Completion Report (CCR), to assess human health exposure in the immediate and surrounding areas. The qualitative HHEA provides an evaluation of potential adverse health effects under current and potential future Site conditions that may result from exposure to contaminants attributable to former activities at the Site.

1.1 Site Description

The subject property (Site) is located at 10 East Chester Street in Kingston, New York (**Figure 1**). The Site consists of approximately 1.0 acre of land and is currently occupied by Walgreens Store No. 02077 (**Figure 2**). The construction of the store was completed in 2010. The Site is commercially zoned and surrounding properties include a mix of commercial businesses and residential lots.

The Site topography is flat, with a ground elevation of approximately 186 to 187 feet above mean sea level (amsl). The Site geology consists primarily of a stratified glacial outwash sequence overlying lacustrine varved silt and clay deposits. Depth to groundwater ranges from approximately 8 to 10 feet below ground surface (bgs). The prevailing groundwater flow direction in both the shallow and deep zones is towards the southeast (**Figure 3**).

1.2 Site Background

According to available information, portions of the Site have historically been occupied by a dry-cleaning facility, a vehicle fueling/service station, and a trolley barn that became a school bus maintenance garage. The portions of the Site used for these operations are shown in **Figure 2**.

Previous investigations conducted at the Site since 2005 identified the presence of tetrachloroethene (PCE), a solvent associated in the dry cleaners, and petroleum related contamination. Refer to the References Section for a list of previous reports.

The previous Site owner, 10 East Chester Street LLC, entered the Site into the New York State Brownfield Cleanup Program (BCP Site Number C356032) and an Environmental Easement (EE) was finalized on November 21, 2006. The EE indicated that the Site may be used for restricted commercial or industrial use as long as the following long-term institutional and engineering controls are employed:

- Maintenance of a soil barrier layer of either 1 foot of clean fill or an alternative barrier layer approved by the NYSDEC, such as 6 inches of concrete, asphalt, or structure;
- Notification and prior approval by NYSDEC of a proposed soil excavation below the barrier layer, in accordance with the Site Management Plan (SMP), and proper management, characterization and disposal of the excavated soil in accordance with NYSDEC regulations and directives;
- Any area of soil excavation below the barrier layer that is to be returned or vegetated soil must be backfilled with a minimum 1 foot of clean fill underlain by a demarcation layer;
- Operation and maintenance of the sub-slab depressurization system (SSDS) in the existing on-Site building to effectively mitigate the potential for soil vapor exposure to building occupants;
- Construction of any future structure shall be with an SSDS approved by the NYSDEC;
- Prohibition of the use of groundwater at the Site without prior approval from the NYSDEC for treatment rendering it safe for use for drinking or industrial purposes; and,

- Performance of annual groundwater sampling to assess the trend and need for additional remedial action.

Soils contaminated with volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) have been excavated and disposed of off-Site. Two injections of potassium permanganate have been conducted to address the presence of VOCs and SVOCs in on-Site groundwater, with continued destruction of contaminant mass expected. The SMP calls for monitoring of groundwater conditions and additional injection events if necessary. Periodic groundwater monitoring performed indicated that recalcitrant levels of PCE were still present in the Site groundwater, which continued to migrate off-Site. The most recent groundwater sampling performed in 2020 and 2021 observed maximum PCE concentrations of 3,700 µg/L in vicinity of the former dry cleaner building footprint, and 340 µg/L in a downgradient well.

A Corrective Measures Work Plan (CMWP) was prepared by AECOM in February 2019 for the Site to address the potential off-Site migration of groundwater with elevated concentrations of PCE from the Site. The overall remedial approach included the injection of a combination of amendments into the subsurface (PlumeStop® Liquid Activated Carbon™, Aqua Zero Valent Iron (ZVI)™, HRC®, and Bio-Dechlor Inoculum (BDI) PLUS®) to address elevated concentrations of PCE along both the eastern and western property boundaries. The corrective measure also included the installation of two groundwater monitoring wells along Broadway to ascertain whether groundwater along the southern property boundary contained elevated concentrations of PCE. An addendum to the CMWP was prepared by AECOM in 2022. The CMWP and addendum were both approved by NYSDEC in April 2022.

In accordance with the approved CMWP and addendum, AECOM completed the corrective measures between September 2021 and November 2023, as documented in the 2024 CCR. Pre-injection groundwater sampling completed in October 2022 highlighted considerably elevated levels of PCE in the groundwater samples from monitoring wells MW-4, MW-7, MW-11, and MW-12 at concentrations that exceeded the NYSDEC groundwater standard of 5 µg/L. Degradation products trichloroethene (TCE) and/or cis-1,2- dichloroethane (cis-1,2-DCE) were also present at concentrations above groundwater standards in these monitoring wells. Post-injection groundwater sampling completed between December 2022 and November 2023 showed decreasing trends in concentrations of PCE and TCE, and varying concentrations of cis-1,2-DCE but in line with degradation of PCE and subsequently TCE. All monitoring wells reported PCE, TCE and cis-1,2-DCE values below the NYSDEC groundwater standards over time, except for monitoring well MW-4, which although showed decreasing trends over time, there was a rebound of PCE in mid-2023 and increasing concentrations of TCE and cis-1,2-DCE during degradation, above the groundwater standards. Refer to **Figure 4** for the pre- and post-injection PCE and TCE concentrations in graphical form. Refer to **Figure 5** for the location of the injection points on-Site.

This QHHEA was prepared in accordance with NYSDEC approved CMWP for the Site, and incorporating the data and information obtained in the 2024 CCR.

2. Qualitative Human Health Exposure Assessment

This QHHEA follows the general format and procedures set forth in NYSDEC DER-10. This QHHEA uses data and information collected during the 2024 CCR to assess human health exposure in the immediate and surrounding areas. The QHHEA provides an evaluation of potential adverse health effects under current and potential future site conditions that may result from exposure to contaminants attributable to former activities at the Site. The QHHEA includes five components which are presented in this report:

1. Description of contaminant source(s) (if known) and contaminated environmental medium.
2. Explanation of the contaminant release and transport mechanisms to the exposed population.
3. Identification of exposure points where actual or potential human contact with a contaminated medium could occur.
4. Description of the routes of exposure to potential human receptors (i.e., ingestion, inhalation, dermal absorption).
5. Characterization of the receptor populations who may be exposed to contaminants at a point of exposure (e.g., construction worker, onsite employee, public).

2.1 Source(s) of Contamination

The Site was historically occupied by a dry-cleaning facility, a vehicle fueling/service station, and a trolley barn that became a school bus maintenance garage.

The source of the PCE contamination at the Site is from the former dry cleaners, which utilized PCE as a dry-cleaning solvent. TCE and cis-1,2-DCE contaminants are associated with the degradation of PCE in the subsurface.

The limited petroleum-related contamination is sourced from the former vehicle fueling/service station and bus maintenance garage.

2.2 Explanation of Contaminant Release and Transport Mechanisms

The contaminants identified on-Site were likely previously released into the environment during historical handling of chemicals and discharge through drains or directly onto the ground. Contaminant transport in the subsurface likely occurred as leachate into the saturated zone, movement of dissolved contaminants in groundwater, and migration of volatilized contaminants in soil vapor.

The contaminant mass previously sorbed onto the soil matrix is essentially immobile. The exception is the mass in the topmost soil layer near the ground surface, which can be transported by processes capable of moving soil particles (wind or surface water runoff). Soils contaminants have been excavated and disposed of off-Site, and there are no surface soil impacts on-Site.

Transport of contaminants dissolved in the soil moisture in the unsaturated zone is generally limited as a result of very low flow rates in the absence of full saturation. The only significant mechanisms may be driven by water level fluctuations and gravity-driven downward flow during wet-weather periods, or possibly sewer lines and manholes/catch basins which may be leaking and/or act as preferential pathways. Such vertical transport of contaminants acts as a source for the saturated zone below.

The contaminant mass, especially VOCs, contained within the soil vapor in the unsaturated zone and within groundwater in the saturated zone is more mobile. Soil vapor can migrate in both vertical and horizontal directions in response to pressure gradients. Soil vapor migration can create a discharge of contaminants into the atmosphere or act as a source of contamination for groundwater in the saturated zone. Migrating soil vapor may transfer mass into the soil matrix and soil moisture in previously uncontaminated areas, thus increasing the areal extent of soil contamination in the unsaturated zone.

The primary transport mechanisms for contaminants dissolved in groundwater are advection and dispersion. Advection is the movement of the dissolved contaminants carried by the flow of groundwater.

Dispersion refers to dissolved contaminants spreading due to the presence of non-uniformities of the groundwater flow field. Dispersion results in a general widening of a plume, as well in smearing of the plume boundaries. In general, VOCs readily volatilize into the atmosphere or soil vapor. At the surface, these compounds may decay and/or volatilize upon exposure to sunlight and to the atmosphere. VOCs are soluble in water and their dissolved contaminants are transported by advection and dispersion in groundwater. The same processes of advection and dispersion are responsible for the migration of these compounds in the atmosphere or the soil.

There are known groundwater VOC contaminants present on-Site, but at concentrations which have been reduced over time due to corrective measures employed since September 2021.

2.3 Identification of Chemicals of Potential Concern

The chemicals listed in **Table 1** include all chemicals, organized by media of concern, for which there was at least one sample in at least one location where applicable standards, criteria or guidance values (SCGs) were exceeded. A “medium of concern” is identified as a physical medium (e.g., soil, groundwater) in which one or more contaminants were detected at concentrations exceeding their SCGs.

Media of concern at the site include groundwater and may also include subsurface soil and soil vapor.

The primary contaminants of concern on the Site are chlorinated VOCs, including PCE, TCE, cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), methylene chloride (MC), and vinyl chloride (VC). Other contaminants of concern include petroleum-based chemicals, including ethylbenzene, isopropylbenzene and xylenes (total). Acetone is a contaminant of concern, but which may be associated with a laboratory interference rather than an on-Site contaminant.

To determine which chemicals need to be retained for full quantitative risk analysis, if required, chemicals of potential concern (CPCs) would be selected from the contaminant list based on the frequency of detection, range of concentrations, and potential for migration, as well as whether the detected analytes exceeded applicable standards, criteria, or guidance values for the media. A full quantitative risk analysis was not completed as part of this assessment as is it not a requirement under DER-10.

2.4 Receptors and Exposure Pathways

An exposure pathway is the manner by which an individual (a receptor) may come in contact with a contaminant. The exposure pathway is complete when all five components associated with exposure pathways (as listed in Section 2) are documented. A potential exposure pathway exists when any one or more of the five elements is not known. If any of the five elements comprising an exposure pathway has never existed in the past, does not exist in the present, and is likely to not exist in the future, then an exposure pathway can be eliminated.

The Site is currently zoned commercial. There is one (1) building currently on-Site, used as a retail store, and includes an operating sub-slab depressurization system (SSDS). The remainder of the property consists of asphalt parking and access ways, concrete sidewalks, and landscaped areas at the Site boundaries. The anticipated future use of the Site is to remain restricted commercial or industrial. Adjacent properties are primarily commercial, and also include residential.

Under the current and continued commercial use of the Site, the relevant human receptors include long-term workers who regularly work on-Site; visitors / shoppers who would regularly or occasionally access the Site to shop; short-term construction workers who may be involved in construction and/or repair work to existing Site infrastructure or remediation activities; and neighboring workers or residents on adjacent commercial or residential properties, respectively.

The potentially complete exposure pathways include direct contact with subsurface soils and groundwater by short-term construction workers; dust inhalation with subsurface soils by all relevant human receptors; inhalation of indoor air via vapor intrusion by long-term workers, visitors and neighboring receptors; and, inhalation of air within a trench by construction workers.

Incomplete exposure pathways include direct contact and dust inhalation of surface soils since there is a barrier across the entire Site; direct contact with sediment and surface water since the nearest surface water body is sufficiently distant; ingestion of potable groundwater since the Site and surrounding properties are serviced by the municipal water supply; inhalation of outdoor air since contaminants released into the environment would be quickly dispersed and diluted; and the consumption of vegetation, fish and wildlife since the Site and surrounding properties are zoned commercial and residential whereby these activities are not anticipated.

Table 2 summarizes the rationale for identifying complete exposure pathways. The following subsections present the exposure pathways assessed for the Site under the current and continued restricted commercial or industrial land use scenario.

2.4.1 Surface Soil

There are no surface soil (noted to be between 0 to 0.2 feet bgs) impacts at the Site. The entire surface of the Site is covered by the building, sidewalks, and/or a 6-inch-thick layer of concrete. The limited soil present around trees planted in the landscaped areas around the Site is clean, imported topsoil material. The Site is under an EE which requires maintenance of a soil barrier layer of either 1 foot of clean fill or 6 inches of concrete, asphalt, or structure. As such, there are no complete exposure pathways for this medium.

2.4.2 Subsurface Soil

There may be subsurface soil (noted to be greater than 0.2 feet bgs) impacts at the Site. Subsurface soil is not readily accessible to most human receptors, except for construction workers who could come into contact with contaminated subsurface soil during ground intrusive activities. However, the Site is under an EE which requires notification and prior approval by NYSDEC of a proposed soil excavation below the barrier layer, in accordance with the SMP and with NYSDEC regulations and directives. In addition, it is standard industry practice for construction workers to follow a health and safety plan (HASP) during ground intrusive work, including the use of personal protective equipment (PPE), such that the actual direct contact exposure to contaminated subsurface soil is expected to be minimal.

All human receptors may come into indirect contact with subsurface soils via dust inhalation during ground intrusive work. However, the Site is under an EE which requires controlling volatilization, erosion, and/or fugitive dust during construction activities, in accordance with the SMP and with NYSDEC regulations and directives, such that the actual indirect contact exposure to contaminated subsurface soil is expected to be minimal.

2.4.3 Sediment

There are no surface water bodies on or within vicinity of the Site. The nearest surface water body, Rondout Creek, is located more than 3500’ southeast of the Site, which is sufficiently distant such that on-site contaminants would be unlikely to discharge to the waterbody as sediment. As such, there are no complete exposure pathways for this medium.

2.4.4 Groundwater

There are known groundwater impacts at the Site. Groundwater is not accessible to most human receptors, except for construction workers who could come into contact with contaminated groundwater (noted to be at 8 to 10 feet bgs) during ground intrusive activities. However, the Site is under an EE which requires notification and prior approval by NYSDEC of a proposed soil excavation below the barrier layer whereby groundwater may be encountered, in accordance with the SMP and with NYSDEC regulations and directives. In addition, it is standard industry practice for construction workers to follow a HASP during ground intrusive work, including the use of PPE, such that the actual direct contact exposure to contaminated groundwater is expected to be minimal.

In addition, contaminated groundwater is not being used for drinking water. There are no known domestic water supply wells in the area. The Site and surrounding properties are serviced by the municipal water

supply which sources drinking water from the Mink Hollow Stream and the Cooper Lake Reservoir. Furthermore, the Site is under an EE which prohibits the use of groundwater at the Site without prior approval from the NYSDEC for treatment rendering it safe for use for drinking or industrial purposes. As such, exposure through ingestion (as drinking water) is not complete.

2.4.5 Surface Water

There are no surface water bodies on or within vicinity of the Site. The nearest surface water body, Rondout Creek, is located more than 3500' southeast of the Site, which is sufficiently distant such that on-site contaminants would be unlikely to discharge to the waterbody as surface water. As such, there are no complete exposure pathways for this medium.

2.4.6 Soil Vapor

There may be soil vapor impacts at the Site, sourced from known groundwater impacts. Building occupants may inhale contaminated indoor air sourced from the groundwater impacts and emitted via soil vapor intrusion. However, the Site is under an EE which requires the operation and maintenance of the SSDS in the existing on-Site building to effectively mitigate the potential for soil vapor intrusion and indoor air inhalation to on-site building occupants. The EE also requires the installation of an SSDS beneath any future structure constructed on-Site. As such, exposure through indoor air inhalation is not complete as it is currently being mitigated by engineering controls.

Building occupants at neighboring properties may also inhale contaminated indoor air sourced from the groundwater impacts and emitted via soil vapor intrusion. However, vapor concentrations generally decrease with increasing distance from a vapor source and may be insignificant at distances of approximately 90 feet (30 meters) from the edge of a subsurface vapor source (USEPA, 2015). The nearest off-Site buildings downgradient of the Site (to the south and east) are approximately 65 to 80 feet away, which are considered sufficiently distant such that the actual indoor air inhalation exposure to contaminated soil vapor is expected to be minimal. In addition, the remedial approach included the injection of a combination of amendments into the subsurface along both the eastern and western property boundaries, which would significantly reduce both the groundwater and soil vapor contaminants migrating off-Site.

Construction workers may also inhale contaminated air sourced from the groundwater impacts during trench work. However, the Site is under an EE which requires notification and prior approval by NYSDEC of a proposed soil excavation below the barrier layer whereby vapor impacts may be encountered, in accordance with the SMP and with NYSDEC regulations and directive. In addition, it is standard industry practice for construction workers to follow a HASP during ground intrusive work, including the use of PPE, such that the actual inhalation exposure to contaminated soil vapor is expected to be minimal.

Soil vapor contaminants released into the environment would be quickly dispersed and diluted, such that the outdoor air inhalation exposure pathway is considered to be incomplete.

2.5 Summary

Under the current and continued restricted commercial or industrial use of the Site, there are complete, albeit minimal, exposure pathways from subsurface soil, groundwater, and soil vapor for the long-term workers, short-term construction workers, visitors / trespassers, and/or neighboring workers or residents.

Any potentially complete exposure pathways are being managed by the engineering controls and institutional controls outlined in the Environmental Easement.

3. References

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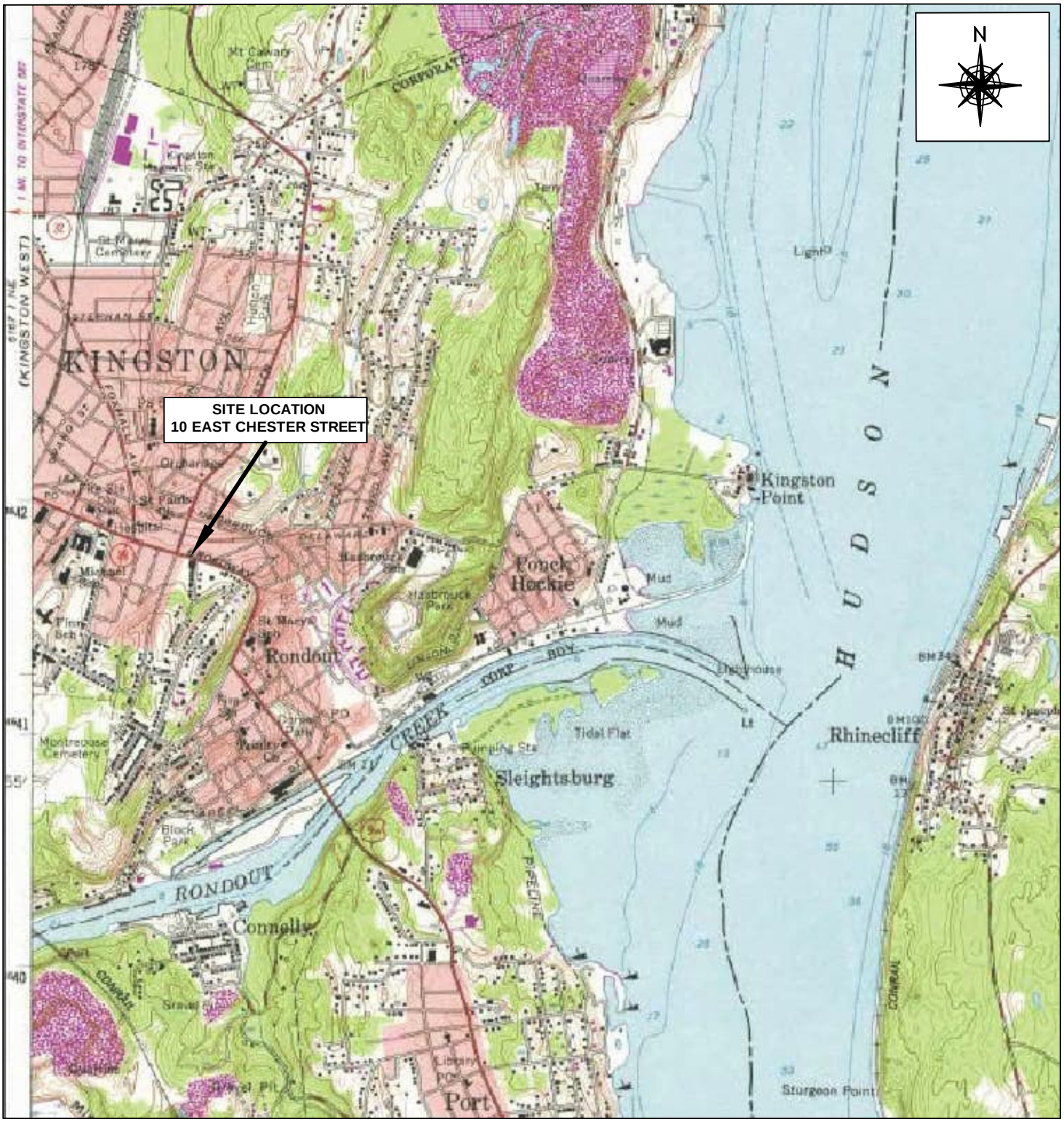
- United States Environmental Protection Agency (USEPA), 2015, OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air. United States Environmental Protection Agency, Office of Solid Waste and Emergency Response, June 2015.

Figures



TARGET QUAD
NAME: KINGSTON EAST
MAP YEAR: 1980
PHOTO REVISED FROM: 1963
SERIES: 7.5
SCALE: 1:24000

SITE NAME: 10 EAST CHESTER STREET
ADRESS: 10 EAST CHESTER STREET
KINGSTON , NEW YORK 12401
LAT/LONG: 41.926/-73.9918

Title: SITE LOCATION MAP

Location: 10 EAST CHESTER STREET
KINGSTON, NEW YORK 12401

Client: WALGREENS STORE #02077

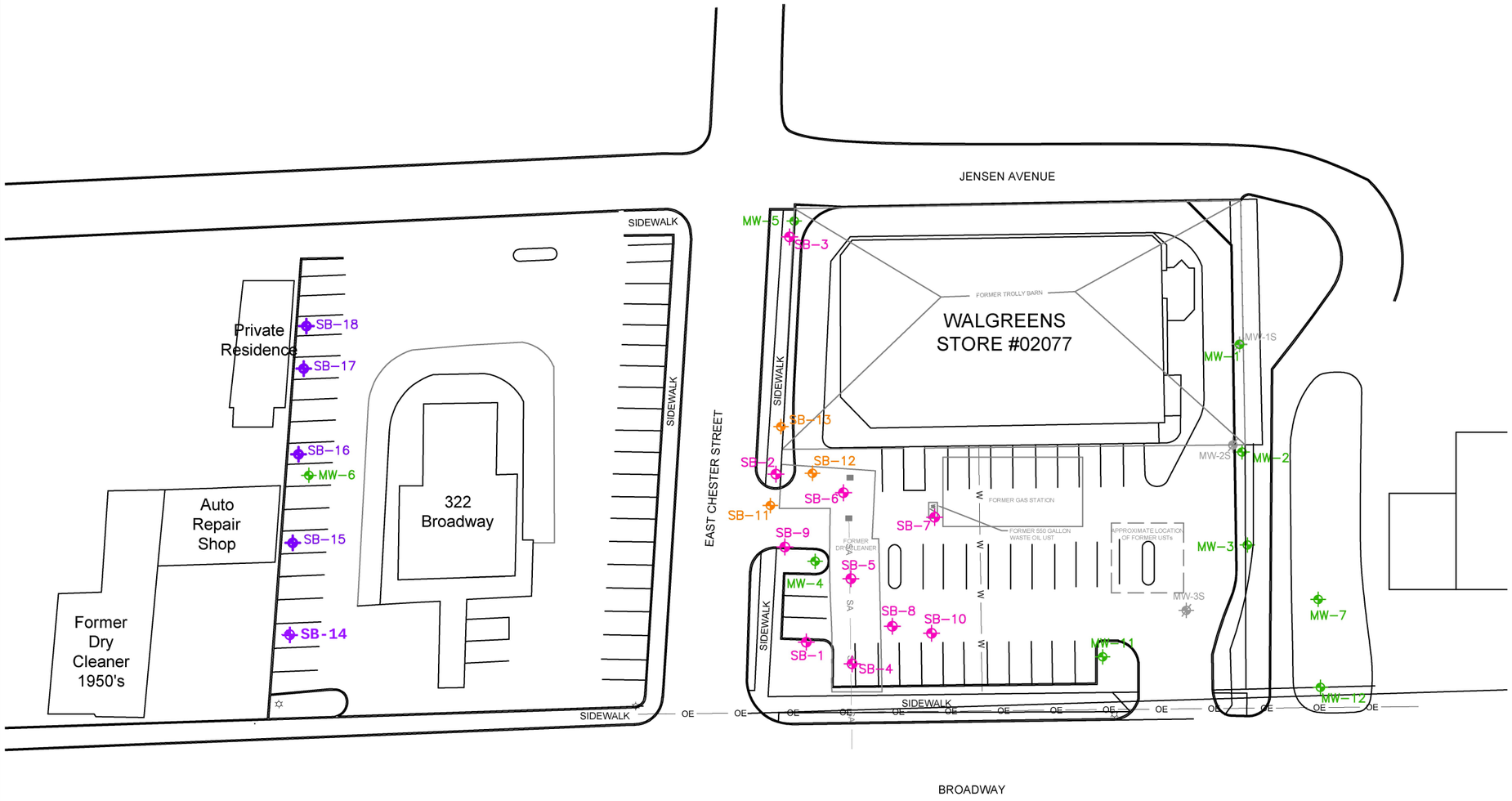
AECOM
40 British American Boulevard
Latham, New York 12110

Drafter: KP	Date: April 2021
Drg. Size: 8.5 x 11	Job No.: 60562248

FIGURE 1

C:\Users\karen.peppin\Desktop\backup work hd 2014-06-12\karen desktop 4\walgreens\2021 Rev CWP\Rev Figures\KINGSTON - Figure 1 Site Location Map May 2018.dwg User:karen.peppin Apr 21, 2021 - 10:19pm

NORTH



LEGEND:

- CURB
- ABANDONED MONITORING WELL LOCATION
- EXISTING MONITORING WELL LOCATION
- STREET LIGHT
- OE — OVERHEAD ELECTRIC
- W — WATER LINE
- SA — FORMER SEWER LINE
- FORMER FLOOR DRAIN
- W/O — FORMER 550 GALLON WASTE OIL UST
- SB–1 THRU SB–10, OCTOBER 2014
- SB–11 THRU SB–13, APRIL 2016
- SB–14 THRU SB–18, SEPTEMBER 2016

NOTE: Locations of known utilities are approximate

0 45 90

SCALE IN FEET

Title:	SITE MAP AND WELL LOCATIONS
Location:	10 EAST CHESTER STREET KINGSTON, NEW YORK 12401
Client:	WALGREENS STORE 02077

AECOM
40 British American Boulevard
Latham, New York 12110

Drafter: CLS	Date: April 2023
Drg. Size: 11 x 17	Job No.: 60562248

FIGURE 2

PLOTTED: April 19, 2023 BY: Szczepaniak, Carrie CTB USED: 0-6_black.ctb PAPER SPACE TAB: FIGURE 2 DWG PATH: D:\Kingston Walgreens\Buffalo Server\910_CAD\Site Map-w-Historic_2023.dwg

NORTH

LEGEND:

- CURB
- ABANDONED MONITORING WELL LOCATION
- EXISTING MONITORING WELL LOCATION
- STREET LIGHT
- OE — OVERHEAD ELECTRIC
- W — W — WATER LINE
- SA — FORMER SEWER LINE
- FORMER FLOOR DRAIN
- W/O — FORMER 550 GALLON WASTE OIL UST
- INFERRED GROUNDWATER FLOW DIRECTION
- 179' — GROUNDWATER CONTOUR
- 179.84 — GROUNDWATER ELEVATION (3/9/2023)

JENSEN AVENUE

SIDEWALK

Private Residence

Auto Repair Shop

322 Broadway

Former Dry Cleaner 1950's

MW-6

MW-5 180.2

WALGREENS STORE #02077

FORMER TROLLY BARN

MW-8S

MW-8D

MW-5S

MW-5D

MW-11

MW-1 179.9

MW-1S

MW-1D

MW-10

MW-2 179.56

MW-2S

MW-2D

MW-7S

MW-7D

FORMER GAS STATION

MW-9-S

FORMER 550 GALLON WASTE OIL UST

APPROXIMATE LOCATION OF FORMER USTs

FORMER DRY CLEANER

FORMER PUMP ISLAND

MW-9D

MW-3S

MW-3D

MW-3 179.42

MW-4D 180.38

MW-4S

MW-4D

MW-11 179.84

MW-17

MW-12

SB-13

SB-12

SB-11

EAST CHESTER STREET

SIDEWALK

SIDEWALK

SIDEWALK

SIDEWALK

OE

SA

W

180'

179.5'

179'

300 Broadway Roundout Bank

BROADWAY

WEST CHESTER STREET

SIDEWALK

SIDEWALK

MW-10

MW-9

317 Broadway Residential

301 Broadway Speedway

MW-8

ORCHARD STREET

NOTE: Locations are approximate

0 45 90

SCALE IN FEET

Title:	MARCH 2023 GROUNDWATER CONTOUR MAP
Location:	10 EAST CHESTER STREET KINGSTON, NEW YORK 12401
Client:	WALGREENS STORE 02077

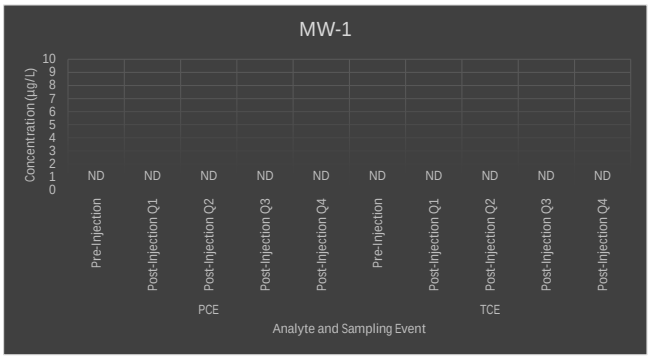
AECOM
AECOM
40 British American Boulevard
Latham, New York 12110

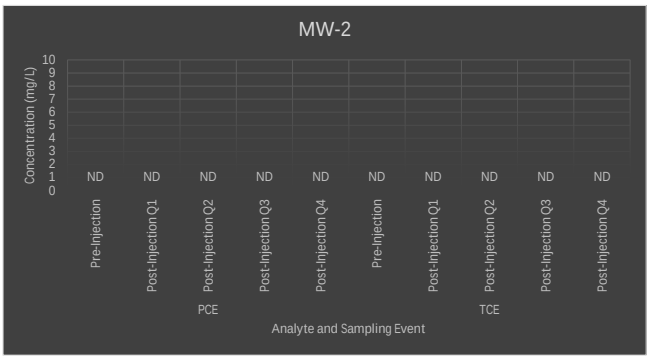
Drafter: CLS	Date: June 2023
Drg. Size: 11 x 17	Job No.: 60562248

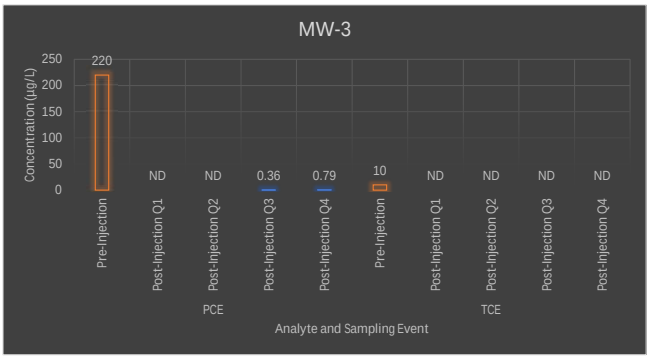
FIGURE 3

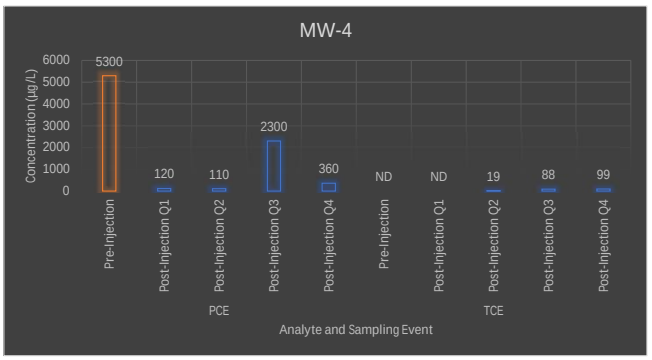
PLOTTED: June 5, 2023 BY: Szczepanski, Carrie C:\TB USED\ 0-6_black.ctb PAPER SPACE TAB: Fig 3_GW Contours DWG PATH: D:\Kingston Walgreens\Buffalo Server\910_CAD\site_data_2023_rev.dwg

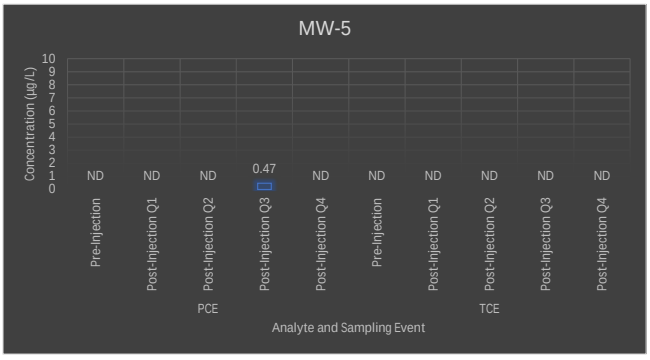
Figure 4
Pre-Injection and Post-Injection PCE and TCE Results
Walgreens Store No. 02077 Site

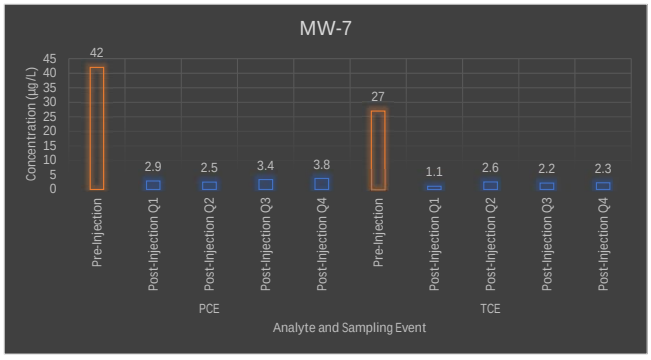


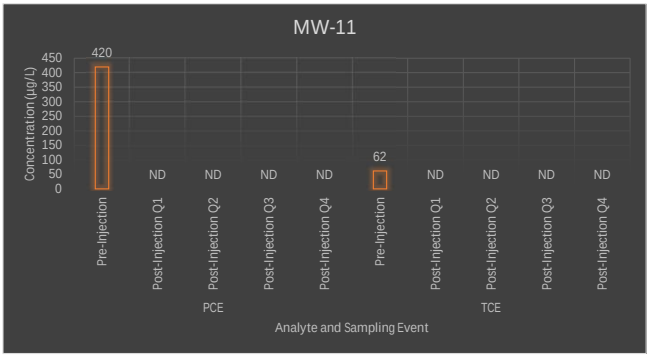


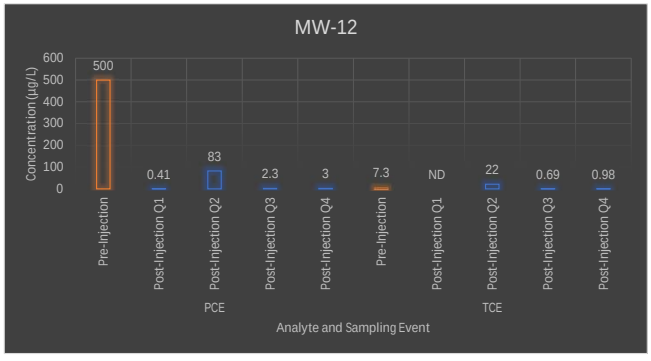


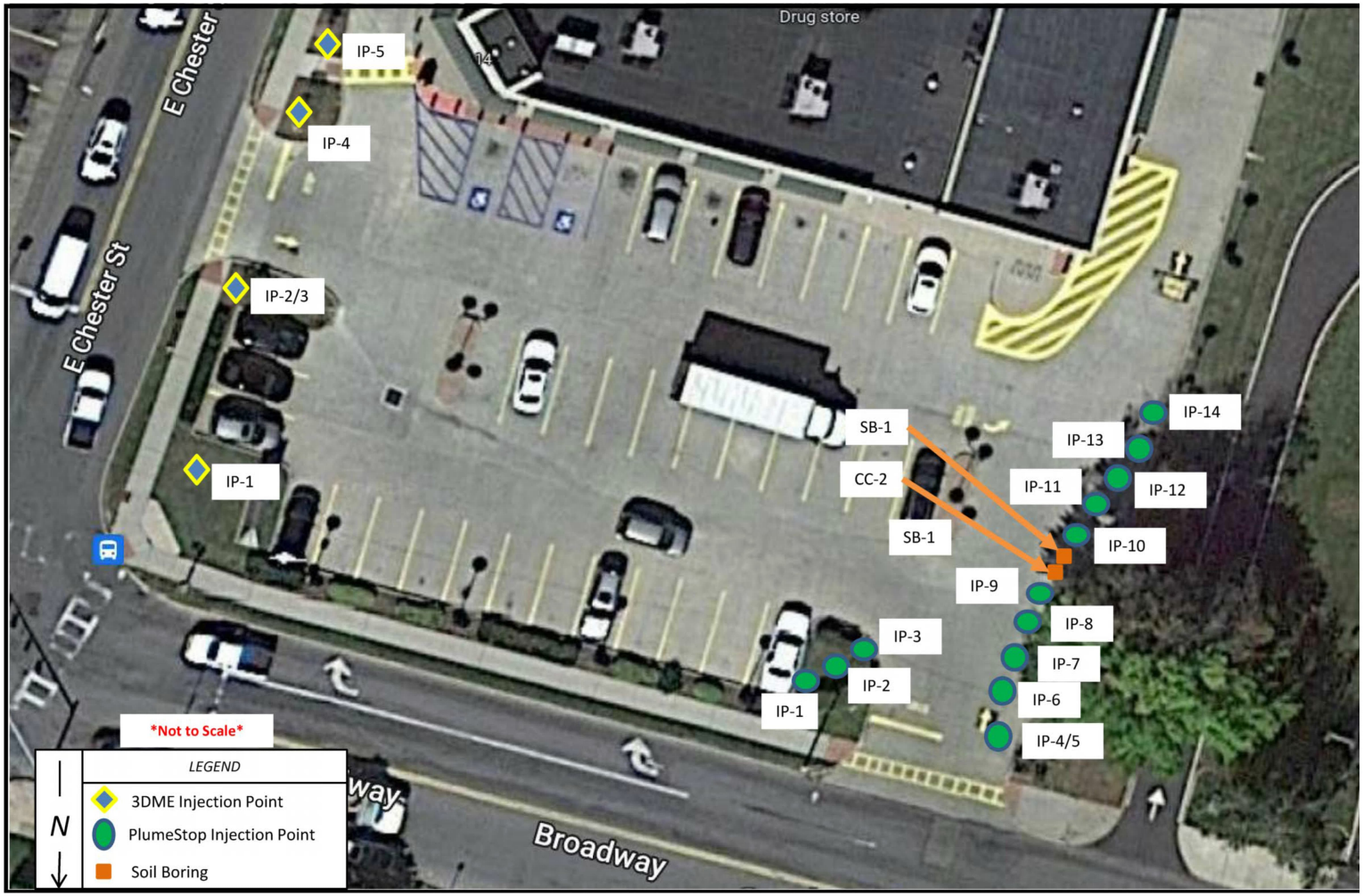












NOTES:

Drawing not to scale.
All locations are approximate.
Map Referenced from Regenesis Remediation Services, December 2022 Report

Title:	INJECTION LOCATIONS
Location:	10 EAST CHESTER STREET KINGSTON, NEW YORK 12401
Client:	WALGREENS STORE 02077

AECOM
AECOM
40 British American Drive
Latham, NY 12110

Drafter: CLS	Date: June 2023
Drg. Size: 8.5 X11	Job No.: 60562248

FIGURE 5

Tables

Table 1
Summary of Contaminants of Concern
Qualitative Human Health Exposure Assessment
Walgreens Store No.02077, Kingston, NY

	Media of Concern					
Contaminant of Concern	**Surface Soil (0-0.2')**	**Subsurface Soil (>0.2')**	**Sediment**	**Groundwater (8-10')**	**Surface Water**	**Soil Vapor**
Chlorinated VOCs						
cis-1,2-Dichloroethene (cis-1,2-DCE)		*		X		*
Methylene Chloride (MC)		*		X		*
Tetrachloroethene (PCE)		*		X		*
trans-1,2-Dichloroethene (trans-1,2-DCE)		*		X		*
Trichloroethene (TCE)		*		X		*
Vinyl chloride (VC)		*		X		*
Non-Chlorinated VOCs						
Acetone		*		X		*
Ethylbenzene		*		X		*
Isopropylbenzene		*		X		*
Xylenes (total)		*		X		*

Notes:

X - Known contaminant

* - Potential contaminant

Table 2
Human Health Exposure Assessment
Qualitative Human Health Exposure Assessment
Walgreens Store No.02077, Kingston, NY

		Human Receptors				
Media of Concern	**Exposure Pathway**	**Long-Term Worker**	**Visitor / Shopper**	**Short-Term Construction Worker**	**Neighboring Worker or Resident**	**Human Health Exposure Assessment**
Surface Soil (0-0.2')	Direct Contact (including Incidental Ingestion)					- There are no surface soil impacts at the Site. - The Site is under an Environmental Easement (EE) which requires maintenance of a soil barrier layer of either 1 foot of clean fill or an alternative barrier layer approved by the NYSDEC, such as concrete, asphalt, or structure.
	Dust Inhalation					
Subsurface Soil (>0.2')	Direct Contact (including Incidental Ingestion)			X		- There may be subsurface soil impacts at the Site. - Construction workers may come into direct contact with subsurface soils during ground intrusive work. However, the Site is under an EE which requires notification and prior approval by NYSDEC of a proposed soil excavation below the barrier layer, in accordance with the Site Management Plan (SMP) and with NYSDEC regulations and directives. In addition, it is standard industry practice for construction workers to follow a health and safety plan (HASP) during ground intrusive work, including the use of personal protective equipment (PPE).
	Dust Inhalation	X	X	X	X	- There may be subsurface soil impacts at the Site. - All human receptors may come into indirect contact with subsurface soils via dust inhalation during ground intrusive work. However, the Site is under an EE which requires controlling volatilization, erosion, and/or fugitive dust during construction activities, in accordance with the SMP and with NYSDEC regulations and directives.
Sediment	Direct Contact (including Incidental Ingestion)					- There are no surface water bodies on or within vicinity of the Site. - The nearest surface water body, Rondout Creek, is located more than 3500' southeast of the Site, which is sufficiently distant such that on-site contaminants would be unlikely to discharge to the waterbody.
Groundwater (8-10')	Direct Contact			X		- There are known groundwater impacts at the Site. - Construction workers may come into direct contact with groundwater during ground intrusive work. However, the Site is under an EE which requires notification and prior approval by NYSDEC of a proposed soil excavation below the barrier layer whereby groundwater may be encountered, in accordance with the SMP and with NYSDEC regulations and directive. In addition, it is standard industry practice for construction workers to follow a HASP during ground intrusive work, including the use of PPE.
	Ingestion (as drinking water)					- Contaminated groundwater is not being used for drinking water. The site and surrounding properties are serviced by the municipal water supply which sources drinking water from the Mink Hollow Stream and the Cooper Lake Reservoir. - There are no known domestic water supply wells in the area. In addition, the Site is under an Environmental Easement which prohibits the use of groundwater at the Site without prior approval from the NYSDEC for treatment rendering it safe for use for drinking or industrial purposes
Surface Water	Direct Contact (including Incidental Ingestion)					- There are no surface water bodies on or within vicinity of the Site. - The nearest surface water body, Rondout Creek, is located more than 3500' southeast of the Site, which is sufficiently distant such that on-site contaminants would be unlikely to discharge to the waterbody.

Table 2
Human Health Exposure Assessment
Qualitative Human Health Exposure Assessment
Walgreens Store No.02077, Kingston, NY

Media of Concern	Exposure Pathway	Long-Term Worker	Visitor / Shopper	Short-Term Construction Worker	Neighboring Worker or Resident	Human Health Exposure Assessment
Soil Vapor	Indoor Air Inhalation	X	X		X	- There may be soil vapor impacts at the Site, sourced from known groundwater impacts. - Building occupants (both on-site and at neighboring properties) may inhale contaminated indoor air sourced from the groundwater impacts and emitted via soil vapor intrusion. However, the Site is under an EE which requires the operation and maintenance of the sub-slab depressurization system (SSDS) in the existing on-Site building to effectively mitigate the potential for soil vapor intrusion and indoor air inhalation to on-site building occupants. The EE also requires the installation of an SSDS beneath any future structure constructed on-Site. The off-Site vapor intrusion pathway was addressed by remedial activities completed at the property boundaries.
	Trench Air Inhalation			X		- Construction workers may inhale contaminated air sourced from the groundwater impacts during ground intrusive work. However, the Site is under an EE which requires notification and prior approval by NYSDEC of a proposed soil excavation below the barrier layer whereby vapor impacts may be encountered, in accordance with the SMP and with NYSDEC regulations and directive. In addition, it is standard industry practice for construction workers to follow a HASP during ground intrusive work, including the use of PPE.
	Outdoor Air Inhalation					- Soil vapor contaminants released into the environment would be quickly dispersed and diluted.
Vegetation, Fish or Wildlife	Consumption					- The site and surrounding properties are zoned commercial and residential whereby foraging, fishing and hunting is not anticipated. - The nearest surface water body, Rondout Creek, is located more than 3500' southeast of the Site, which is sufficiently distant such that on-site contaminants would be unlikely to discharge to the waterbody and be consumed by people fishing.

Note:
Shaded - indicates a potentially complete exposure pathway for the relevant receptor