THIRD FIVE-YEAR REVIEW REPORT
STANTON CLEANERS AREA GROUNDWATER CONTAMINATION SITE
TOWN OF NORTH HEMPSTEAD, VILLAGE OF GREAT NECK
NASSAU COUNTY, NEW YORK

Prepared by

U.S. Environmental Protection Agency
Region 2
New York, New York

Approved by:

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9/16/19

Date

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LIST OF ABBREVIATIONS AND ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	(United States) Environmental Protection Agency
FYR	Five-Year Review
ICs	Institutional Controls
MCL	Maximum Contaminant Level
NCDOH	Nassau County Department of Health
NPL	National Priorities List
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation and Maintenance
OU	Operable Unit
P&T	Pump and Treat, aka, Groundwater Extraction and Treatment
PCE	Tetrachloroethane
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
ROD	Record of Decision
TCE	Trichloroethene
TCRA	Time-Critical Removal Action
VI	Vapor Intrusion
VOC	Volatile Organic Compound
WAGNN	Water Authority of Great Neck North

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of these reviews are documented in FYR reports, such as this one. In addition, FYR reports identify issues found during this review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR review, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 CFR Section 300.430(f)(4)(ii)) and considering EPA policy.

This is the third FYR for the Stanton Cleaners Area Groundwater Contamination site (Site), located in the Village of Great Neck, Town of North Hempstead, Nassau County, New York. The triggering action of this policy review is the completion date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

Previous FYRs for this Site have defined Operable Unit One (OU1) as the sitewide OU for the Site so this FYR addresses OU1.

The Site FYR team was led by Damian Duda, remedial project manager (RPM). EPA participants included Mike Scorca and John Mason (Site hydrogeologists), Chuck Nace (Site risk assessor), Argie Cirillo (Site attorney) and Pam Tames (Acting Section Chief). The FYR process began on October 18, 2018.

Site Background

The Site includes a dry-cleaning business, Stanton Cleaners, which is located at 110 Cutter Mill Road in the Village of Great Neck, Nassau County, New York (**Figure 1**). The Stanton Cleaners Property (SCP) is approximately 0.25 acres and includes a one-story building in which the dry-cleaning business operated and an adjacent one-story boiler/storage building. The dry-cleaning operations have ceased. Most of the SCP has been paved with asphalt except for a narrow strip at the rear of the property. Adjoining properties include: a vacant property [a former indoor tennis facility]; a synagogue and Hebrew school facility; a condominium; a service station; and, across the street from the Site, another Hebrew academy (see **Figure 2**). **Figure 3** shows an area wide overview of the Site, as well as the off-SCP monitoring well locations.

According to property ownership records, as early as 1958, a dry cleaner operated on the SCP. Over the course of years, the property changed ownership; Mr. Samuel Habibian currently holds a Nassau County tax certificate on the property, upon whom full title to the property would vest by payment Nassau County taxes owed by Weisner Estate; Liliana Weisner, the deceased owner acquired the property in November 1967. Records from the Nassau County Department of Health (NCDOH) indicate that, in the late 1970's and early 1980's, the Citizen's Water Supply Company, the previous owner of the water supply wells, noted low levels of tetrachloroethene or PCE in these wells.

In 1983, the Water Authority of Great Neck North (WAGNN) solicited assistance from the NCDOH to assist them in identifying potential sources of PCE. As a result, the Site was inspected in 1983 by NCDOH. At that time, NCDOH noted that a discharge pipe led directly from the dry-cleaning fluid separator to the grassy sloped area at the rear of the building. Shortly afterward, the discharge ceased. **Table 1** details a chronology of Site events, including those activities which occurred before EPA became involved.

The Upper Glacial Aquifer is the shallowest aquifer beneath the Site and is the most affected by the PCE contamination. The Site monitoring wells are set in the shallow, intermediate and deep portions of this aquifer which is considered hydraulically unconfined throughout its thickness. The depth to groundwater across the Site ranges from approximately 60 to 70 feet below ground surface (bgs). The direction of groundwater flow from the SCP is to the south and west in the direction of the WAGNN wellfield.

The surrounding community is zoned commercial/residential and is serviced by public water supply and sewerage. Public drinking water is supplied by WAGNN's three public water supply wells which are located approximately 1000 feet south of the SCP and treated to meet drinking water standards.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Stanton Cleaners Area Groundwater Contamination		
EPA ID: NYD047650197		
Region: 2	**State:** NY	**City/County:** Village of Great Neck/Nassau
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA **If "Other Federal Agency" was selected above, enter Agency name:** N/A		
Author name (Federal or State Project Manager): Damian J. Duda		
Author affiliation: EPA		
Review period: 08/29/2014 – 06/01/2019		

Date of site inspection: 05/23/2019
Type of review: Policy
Review number: 3
Triggering action date: 08/29/2014
Due date *(five years after triggering action date)*: 08/29/2019

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

In 1983, following the discovery of elevated levels of PCE contamination in soils (up to 8000 micrograms per kilogram (µg/kg)) by NCDOH at the rear of the SCP, approximately 20 cubic yards of soil was removed by a potentially responsible party (PRP) to an off-site disposal facility. In January 1984, NCDOH referred the Site to the New York State Department of Environmental Conservation (NYSDEC). At that time, the PRP's consultant installed seven groundwater monitoring wells: MW-1, MW-5, MW-6, MW-7, MW-8, MW-9 and MW-10. An additional well (MW-2) was installed, in 1985, by the Nassau County Department of Public Works. Total VOCs (primarily PCE) were found at levels up to 11,700 micrograms per liter (µg/L). At this time, the most highly contaminated wells were MW-1, MW-2, MW-5 and MW-6. The highest levels were found in MW-6, located 100 feet south of the SCP.

The Site was proposed for inclusion on the National Priorities List (NPL) in January 1999 and was listed final on the NPL in May 1999. A qualitative risk assessment was performed during the RI work for the Site and indicated that potential exposure to the groundwater posed an unacceptable risk. The PCE data obtained from groundwater monitoring wells consistently and significantly exceeded the federal and state standard of 5 µg/L.

Inhalation of volatilized PCE in indoor locations was also a significant exposure pathway, especially at the former tennis court location adjacent to the SCP. In addition to presenting an unacceptable risk to public health by virtue of the release of vapors into indoor air environments, the VOC contamination in the soil at the SCP also presented an unacceptable risk by serving as a continuing source of contamination to the groundwater.

Potential exposure routes of Site contamination to terrestrial wildlife were also considered. Much of the Site is paved or covered by structures and there is little, if any, potential for wildlife to be exposed to contaminated Site subsurface soils. The only potential route of exposure to wildlife in the Site vicinity is if contaminants were transported through groundwater and discharged via groundwater into surface waters, such as Little Neck Bay, located approximately one mile southwest of the Site. Thus, the conclusion of the RI was that the Site poses no unacceptable risk to ecological receptors.

Response Actions

Groundwater

From September 1997 through January 1999, NYSDEC conducted a remedial investigation and feasibility study (RI/FS). In March 1998, NYSDEC installed a new air stripper at the WAGNN location to treat the high VOC-contaminant concentrations in two of the WAGNN wells. The new air stripper was put on-line in Summer 1998.

Soils and Indoor Air

In September 1998, during the RI/FS process, EPA, under its removal authority, authorized a Time-Critical Removal Action (TCRA) to reduce threats to public health and the environment by reducing indoor air contamination in adjacent affected structures, especially an indoor tennis facility. This action included a sub-slab depressurization system. By November 1998, indoor air VOC levels had been reduced by 78 percent.

Underground Storage Tanks

In August 2001, EPA initiated a removal action to delineate, excavate and remove buried underground storage tanks and the contents therein that were located on the SCP. In January 2002, field operations began for the removal of two 250-gallon PCE tanks, one 500-gallon heating oil tank and residual sludges which were disposed of at off-site disposal facilities. Subsequently, in order to target any potential residual VOC vapors that may have been in the soils surrounding the buried tanks, a soil vapor extraction (SVE) manifold system was installed at the buried tank location and connected to the existing on-site SVE system.

In February 1999, as part of the TCRA, EPA began SVE operations at the Site.

Record of Decision (OU1) – March 1999

The remedial activities selected in the OU1 ROD were necessary in order to reach the remedial action objectives (RAOs):

- to reduce, control or eliminate contaminants in soil and groundwater to the maximum extent practicable;
- to restore the aquifer to its best beneficial use, *i.e.*, a source of drinking water; and,
- to eliminate the potential for human exposure to contaminated Site groundwater, soil and indoor air.

The selected remedy for the Site included the following components:

- Enhanced groundwater plume capture via pumping of contaminated groundwater from extraction wells and treatment through the use of air stripping of VOCs;
- Continued operation of the SVE system, including treatment of contaminated vapors using a vapor phase granular activated carbon treatment system;

- Treatment of off-gasses for both the air stripper and the SVE system with granular activated carbon;
- Indoor air monitoring of affected buildings near the SCP, with interventions, if necessary;
- Long-term groundwater monitoring; and
- Groundwater use restrictions.

Explanation of Significant Differences – September 2003 for Operable Unit Two - Additional Potential Sources of Groundwater Contamination

The March 1999 ROD indicated that EPA would address additional potential sources of groundwater contamination in the area around the SCP under OU2. During the OU2 off-site groundwater investigation, EPA conducted an evaluation of potential off-site sources which could impact the WAGNN supply wells. Five sites were identified: 1) the former Fenley Amoco Gas Station site (inactive); 2) the Citizen's Development Company (CDC) site (inactive); 3) the Mayflower Cleaners site (active); 4) the Amoco B Gas Station site (active); and, 5) Jonathan's Auto Repair Shop site (active). As a result of EPA's investigation, further federal remedial measures were determined not to be necessary. EPA concluded that these off-site sources were currently being addressed or had been addressed under either NYSDEC or private-party programs.

Status of Implementation

In September 1999, EPA initiated the remedial design of the groundwater extraction and treatment system (P&T – Pump and Treat), including installation of extraction wells. The P&T system consisted of an air stripper, blowers and carbon tanks. In April 2001, the construction of the treatment building was completed. The building currently houses the P&T and SVE systems. The P&T system was placed on line in September 2001. An air sparging component had been installed on the extraction system. In 2010, a C-Sparge air sparging system was installed on the P&T system to enhance the removal of PCE and was found to be a successful component to the remedy.

Currently, NYSDEC manages the O&M and groundwater monitoring of the Site. The P&T system remains in operation. The air stripper part of the treatment train had previously been removed when EPA determined that it was necessary to achieve discharge requirements. As a result, the current treatment configuration of the P&T system is carbon treatment only. The effluent levels are approaching maximum contaminant levels (MCLs). The SVE system is currently off-line but will resume sometime in 2020.

The subslab and indoor air are regularly sampled at the adjacent Hebrew Academy property. As a result of the SVE system operations, ongoing indoor air sampling at affected adjacent structures shows that PCE concentrations have been reduced to below New York State Department of Health (NYSDOH) guidelines and EPA's health-based levels.

IC Summary Table

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater	Yes	Yes	Site	Restrict Groundwater Use and Prohibit Well installation	Village of Great Neck Municipal Code, Division 2, Chapter 549-2 and New York State Department of Environmental Conservation under §15-1527 of the Environmental Conservation Law and The Village of Great Neck Plaza Municipal Code, Part 2, Chapter 5217-8 (Current to date)

Site access agreements are in place. A Consent Decree is in place with both the SCP owner (Wiesner Estate) and long-term lessee of the SCP (John Maffei) and grants New York State (NYS) and EPA Site access to continue to implement the remedy and to ensure that nothing impacts the continuation of the remedy. EPA also currently has a lien on the SCP.

As recommended by the WAGNN, each of the nine villages within the Town of Great Neck adopted its own ordinance which prohibits the construction of and/or use of private drinking water wells.

No additional ICs are necessary to safeguard public health with respect to the Site.

Operation and Maintenance and Groundwater Monitoring

Ongoing activities at the Site include 1) O&M of the P&T and SVE systems, 2) semi-annual groundwater monitoring, 3) semi-annual indoor air monitoring and 4) periodic adjustments and/or modifications to the overall P&T remedy in order to maintain optimum performance. These activities are outlined in the O&M Plan (see **Table 2**).

Currently, the programmable logic controller (PLC) system automatically measures and records the treatment system's pumping rates, the volume of groundwater pumped from the extraction wells and the general on-site system operations. All PLC records are maintained at the Site and are reported in the periodic reports.

EPA operated the treatment systems from September 2002 until September 2012 when the Agency successfully transferred the overall Site operations, as well as ongoing groundwater monitoring and indoor air monitoring, to NYSDEC.

NYSDEC and its contractor HDR currently operate and maintain the P&T and SVE systems. During operation, the P&T influent and effluent are sampled monthly. The SVE system influent

and effluent are sampled quarterly, and the SVE influent is monitored monthly with a photoionization detector.

Groundwater levels are measured monthly at 16 monitoring wells, both on and off the SCP. Samples of groundwater are collected semi-annually at 15 selected monitoring wells. The P&T system effluent discharge point that is connected to Great Neck's storm sewer system is sampled annually and tested for compliance with the NYS pollution discharge elimination system permit equivalency parameters.

During January 2018, as part of a NYSDEC screening program, 10 Site monitoring and extraction wells were sampled for emerging contaminants. Eight of the sampled wells contained detectable amounts of PFAS, including PFOS and PFOA, while four of the sampled wells contained detectable amounts of 1,4-dioxane. The most elevated detected levels of PFOS (64.2 ng/L) and 1,4-dioxane (2.5 µg/L) were present at well MW-26, which is upgradient of the SCP. The maximum PFOA concentration (25.4 ng/L) was observed at well MW-19. Given the nature of past activity on the Site and the upgradient location of two of these elevated detections in well MW-26, it is unlikely that these contaminants are site-related.

The P&T system continues to operate. In November 2018, the SVE system was taken off-line for equipment replacement and in order for two new horizontal SVE wells to be connected. The horizontal wells will address pockets of elevated soil gas concentrations that were recently found beneath the vacant Stanton Cleaners building and the adjacent garage. The SVE system will resume operations sometime early next year once the wells are in place.

Potential Site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk from the expected effects of climate change in the region and near the Site.

III. PROGRESS SINCE LAST FIVE-YEAR REVIEW

The second FYR was completed in September 2014. The FYR concluded the implemented remedies for the Site are protective of human health and the environment. Since the last FYR, there has been no significant change in chemical and hydrogeological conditions at the Site.

While there were no specific recommendations included in the last FYR, there have been a number of events that have occurred since then. The SVE system was temporarily shut down in January 2016 as a result of mechanical problems and resumed in September 2016. In November 2018, the SVE system was subsequently taken off-line for equipment replacement and in order for the new horizontal wells to be connected. The SVE system is expected to resume operations sometime in early 2020.

In November 2016, the former dry-cleaning building was fully vacated. Also, the air sparging component of the P&T system was permanently shut down as a result of an oil leak in the compressor. Also, in November 2016, NYSDEC performed a remedial system optimization (RSO). The RSO activities included an SCP and off-SCP subsurface soil investigation, groundwater investigation off-SCP, off-SCP soil-gas investigation, SCP soil vapor investigation and an aquifer test of EPA-EXT-02. The RSO report was released in August 2017.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement and Site Interviews

On October 1, 2018, the EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at 42 Superfund sites in New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands, including the Stanton Cleaners Area Groundwater Contamination site. The announcement can be found at the following web address: https://www.epa.gov/sites/production/files/2018-10/documents/five_year_reviews_fy2019_for_web_posting.pdf.

In addition to this notification, a public notice was made available on EPA's Stanton Cleaners website: https://www.epa.gov/superfund/stanton-cleaners. The website also offers access to various Site documents referenced for this FYR.

The purpose of the public notice is to inform the community about the FYR and to list where the final report will be posted. Once the FYR is completed, the results will be made available on EPA's webpage and at the Site repositories located at EPA, 290 Broadway, 18th Floor, New York, New York and at the Great Neck Library, 159 Bayview Avenue,

Great Neck, New York 11023. While community interest in the Site had been quite high during the early phases of this project, since the implementation of the remedies, community interest has been low. EPA believes that the local community is informed of the current status of the Site.

The Site owner is aware of the EPA and NYSDEC's activities. WAGNN has been notified that this FYR is being conducted and has provided its production well data for this review.

Documents identified in **Appendix C** were reviewed in the preparation of this report.

Data Review

Groundwater

During May and November 2018, groundwater sampling was conducted from 15 selected monitoring wells, both on-and off-SCP. These wells were selected based on historic trends of VOC contamination. The monitoring well network includes both EPA-installed and NYS-installed wells. Seven shallow upper glacial wells were sampled: ST-MW-12; ST-MW-13; STMW-15; ST-MW-16; ST-MW-19; EPA-MW-23; and EPA-MW-26. Four intermediate upper glacial wells were sampled: CL-4S; EPA-MW-11D; ST-MW-17; and EPA-MW-27. Four deep upper glacial wells were sampled: EPA-CL-4D; ST-MW-14; ST-MW-18; and ST-MW-20. PCE data trends from 2013–2018 for some of the selected monitoring wells are shown on **Figure 4**.

The P&T system currently operates one extraction well (EPA-EXT-02) at the corner of Cutter Mill Road and Ascot Ridge Road. Between June 2018 and March 2019, the treatment system

was offline as a result of equipment issues. The average flow rate of the system during its operational period in 2018 was approximately 59 gallons per minute (gpm). The P&T system has treated over 410 million gallons of contaminated water from November 2001 through June 2018.

Since the start-up of the treatment systems in 2001, PCE concentrations in groundwater at almost all of the monitoring wells in the sampling network initially showed sharply declining trends and have generally remained fairly stable at lowered levels during more recent years. Of the samples collected from 15 monitoring wells during November 2018, PCE was detected in eight wells, but only exceeded the MCL value of 5 µg/L in three wells (ST-MW-15, ST-MW-18, and ST-MW-19), all of which are southwest of the SCP.

Monitoring well ST-MW-19 (89 feet bgs) is screened in the shallow part of the Upper Glacial Aquifer and located southwest of the SCP, near the current operating extraction well EPA-EXT-02. The PCE concentrations have varied during the last five years, ranging between 11 and 80 µg/L, which is far below the 26,000 µg/L observed at this well in 1999, prior to the start of the remedy operations.

Monitoring well ST-MW-15 is screened in the shallow part of the Upper Glacial Aquifer and is located west-southwest of the SCP. PCE concentrations have decreased during the last five years, with PCE concentrations dropping from 62 µg/L in 2014 to less than 1 µg/L in 2017 and rising slightly to 20 µg/L in November 2018.

Monitoring well ST-MW-18 (223 feet bgs) is screened in the deep part of the Upper Glacial Aquifer and located southwest of the SCP. In May 2015, PCE concentrations spiked to 8.4 µg/L; however, since this time concentrations have not exceeded the MCL. Most recently, PCE was detected at a concentration of 4 µg/L.

A three-well cluster screened through the Upper Glacial Aquifer is located about 450 feet southwest of the SCP. PCE concentrations in the shallow well (ST-MW-12 at 86 feet bgs) and intermediate well (ST-MW-17 at 140 feet bgs) declined quickly from their highs following the startup of the Site treatment systems and then continued to trend lower. Both wells showed a minor uptick in PCE during the November 2018 sampling round (ST-MW-12 3.4 µg/L; ST-MW-17 3.6 µg/L), but still remains below the MCL. The PCE concentration within the deepest well (STMW-20 at 215 feet bgs) has remained less than 3 µg/L, and most recently returned to less than1 µg/L concentrations in May 2018.

Well ST-MW-14 (at 200 feet bgs) is a deep upper glacial well located on the SCP just south of the cleaners building. Since 2014, the PCE concentration at this well has remained consistently below or equal to 1.1 µg/L.

PCE concentrations in untreated groundwater sampled from the public supply wells in the WAGNN wellfield have decreased significantly from their highs prior to the startup of the Site treatment systems in 2001. Data during the last five years show that the concentrations at Well #2A have been somewhat variable and have increased slightly to values often in exceedance of the federal and state drinking water standard value of 5 µg/L. Concentrations generally range from <1 to 12.5 µg/L since 2014. PCE concentrations at Well #9 have declined from 19 µg/L in 2005 to below 5 µg/L since 2007. In 2015, Well #11 was taken out of service and replaced by the

newly-installed Well #11A, which became operational in 2017. The water treatment systems at the WAGNN facility reduce PCE concentrations in the public water supply to a non-detectable level. **Figure 5** shows the PCE and TCE data trends for the three WAGNN production wells.

The latest data for the on-site P&T operations show that influent PCE concentrations have reduced substantially since the onset of Site operations (see **Figure 6**). Data from the sampling event in May 2018 show that PCE concentrations within untreated influent to the P&T system, at just above 6 µg/L, are down from a short-term spike (14 µg/L) that occurred in May 2017. Overall, the concentration trend is decreasing asymptotically to lower levels over the long-term, with minor increases observed after short-term periods of shutdown that were due to operational issues during the last reporting period. During the last five years, PCE concentrations in influent samples ranged from 1 to 14 µg/L, with most values slightly above the 5 µg/L MCL.

Overall, for the years 2014-2019, the groundwater remedy continues to remain effective. Various maintenance, repair and replacement corrective actions have been conducted during that period. The influent data from the P&T and the sampling data from the various monitoring wells show that the groundwater concentrations are nearing MCLs. The continued operation of the SVE system will further reduce the contamination from the vadose zone. Once the additional SVE wells are installed and connected to the SVE system, there should be even further reduction of the soil gas below the SCP property and, thus, eliminate any additional contaminant contact with the underlying groundwater.

Soils

Data indicate that soil cleanup objectives (SCOs) have been met. An RSO conducted by NYSDEC in 2016-2017 sampled soil at five depths up-to-40 feet bgs. TCE was not detected in any soil samples. PCE was detected in soils on-site at concentrations no greater than .0073 mg/kg, well below the SCO of 1.4 mg/kg.

In 2016, the SVE system experienced some extended downtime as a result of mechanical problems. Since November 2018, the system has been off-line as a result of equipment failure. The system, however, is currently undergoing equipment replacement, as well as the installation of two horizontal SVE wells to augment the current SVE capabilities related to the elevated levels of soil gas found under the garage and former dry cleaners building.

During the SVE system's period of operation between January-November 2018, 79.25 lbs of VOC were removed from the soils. Since 2003, 2,130 pounds of total VOCs have been removed from the soils. During operations, the SVE system's rate of mass removal has remained relatively consistent since the previous FYR at approximately 0.2 lbs/day (see **Figure 7**).

Indoor Air

Soil gas vapor intrusion (VI) is evaluated when soils and/or groundwater are known or suspected to contain VOCs. With respect to indoor air, EPA responds to VI issues, especially related to VOCs, according to EPA Region 2 health-based VI guidelines.

In the past, indoor air sampling has been conducted in the Long Island Hebrew Academy (LIHA), the Silverstein Hebrew Academy (no longer sampled) and the P&T building; ambient

air has also been sampled. Recent VI sampling from 2018 to 2019 included routine semi-annual and expanded indoor air sampling at the LIHA. In March 2019, in order to prevent further migration of vapors into the LIHA, HDR installed an additional subslab vapor point within the vacant boiler room building and completed air sampling activities. During 2018 and 2019, the data from eight samples collected at the LIHA showed a range of PCE concentrations of 0.81 $\mu g/m^3$ to 3.93 $\mu g/m^3$. No TCE was detected.

Site Inspection

A Site visit and inspection was conducted on May 23, 2019. Participants included Damian Duda (RPM) and Chuck Nace (risk assessor) from EPA; Payson Long (project manager) from NYSDEC; Michael Lehtinen and Justin King from HDR; Daniel Prisco-Buxbaum from Preferred Environmental Services; John Lovejoy from NCDOH and Eamonn O'Neil from NYSDOH. Mr. Brian Sadighpour, the property manager for the SCP, was at the Site performing general duties as part of his responsibilities for the property owner and was not part of the FYR team. He provided NYSDEC access to the vacant dry cleaners building.

Subsequently, the participants performed a walk-through inspection of the Site area, including an inspection of the P&T and SVE systems. The team also inspected the extraction wells and the SVE wells and the associated piping system. Some of the monitoring wells were identified and inspected. The team also visited the WAGNN offices on Watermill Lane and met with Greg Graziano, superintendent, and Robert Graziano, former superintendent and member of the WAGNN Board of Directors. They discussed their current operations, including the replacement of supply well PW-11 with PW-11A which began operating in April 2017. They indicated that there were no issues associated with the Site's operations. Operations of the WAGNN water supply wells have remained fairly stable over the last five years. The WAGNN wells extract up to 1.4 million gallons per day for the public water supply usage for the Great Neck community. No other issues with respect to the Stanton Cleaners operations were noticed. No issues were specifically documented during the Site inspection.

IV. TECHNICAL ASSESSMENT

Question A: Is the remedy functioning as intended by the decision documents?

The remedy identified in the 1999 ROD included installation of a P&T system and an extraction well to capture the groundwater plume, continued operation of the SVE system, indoor air monitoring with intervention, as needed, long term groundwater monitoring and groundwater use restrictions.

Based on the Site inspection and upon the review of the groundwater, soils and indoor air monitoring data over the last five years, the exposure pathways associated with human health and ecological exposures have been eliminated; therefore, the remedy is functioning as intended.

While the soil cleanup levels have been met, the SVE system continues to operate in conjunction with the P&T system because it remains effective by continuing to remove PCE-contamination from the vadose zone as the P&T system draws down the groundwater.

The SVE system is expected to continue operation as long as it remains cost effective. NYSDEC will evaluate the apparent influence on the soil vapor concentrations in conjunction with the P&T operation during its future efforts to implement the RSO recommendations. While the P&T system is operating, there is an apparent hydraulic isolation of certain portions of the aquifer where residual contamination is still present and then captured by the SVE system.

The indoor air in adjacent buildings has been routinely monitored over the years, and the concentrations of PCE have decreased. NYSDEC will continue monitoring the LIHA to ensure that indoor air levels remain below EPA's health-based guidelines. ICs continue to remain in place and effective.

A review of groundwater quality data indicates that the plume of groundwater contamination has decreased significantly in size and in magnitude in the Upper Glacial Aquifer since the implementation of the remedy. This indicates that the ongoing P&T and SVE remedies are working. There is no indication that the SVE system being currently off-line has affected the long-term performance of the selected remedy.

Question B: Are the exposure assumptions, toxicity data, cleanup levels and RAOs used at the time of the remedy still valid?

Human Health

The previous FYR determined that the exposure assumptions and toxicity data that were used to estimate the potentail risk and hazards to human health remained valid. The expsoure and toxicity information was reviewed for this FYR, and the process that was followed is still valid. In addition, the cleanup goals and RAOs are still valid.

Soil gas VI is evaluated when soils and/or groundwater are known or suspected to contain VOCs. With respect to indoor air, EPA responds to VOC soil VI issues according to health-based VI guidelines.

VI continues to be monitored in the area impacted by the plume and all of the installed systems are operating as designed. The indoor air sampling that has been conducted at the LIHA shows that indoor air concentrations are below EPA's health-based guidelines. The indoor air sampling will continue at this location in order to ensure that levels remain below EPA's health-based guidelines.

Recent subslab soil gas data was collected from under the vacant Stanton Cleaners building and the adjacent garage showed pockets of elevated concentrations of VOCs detected under both structures. The SVE system is not currently drawing from these locations. Currently, two horizontal SVE wells are being installed at these locations and will be connected to the SVE system in order to address these elevated concentrations. Given that the buildings are vacant and not in use, there is no exposure, and a remedy is being implemented to address the VOCs present. This pathway will need to be evaluated in the future should the buildings become reoccupied.

The actions that have been taken at the Site have eliminated the exposure pathways since the community is on public water from the WAGNN; the subslab depressurizations systems are installed; and the connection to the SVE system for the Stanton Cleaner builidng and garage will result in the vapor intrusion pathway being eliminated.

Ecological

The previous FYR indicated that there were no current exposures to ecological receptors because the groundwater was not discharging into Little Neck Bay. A review of the most recent monitoring data shows that there is still no discharge to Little Neck Bay; therefore, the conclusion that there are no current exposures to ecological receptors remains valid.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No other information has come to light that could call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

The Site remedies have been implemented and are functioning as intended by the Site decision documents. There are no additional actions required. As expected by the decision documents, the O&M activities are subject to routine modifications and/or adjustments.

OTHER FINDINGS

As stated above, NYSDEC and HDR will install two horizontal SVE wells under the garage and the vacant former dry cleaners building and to connect it to the SVE system in order to alleviate the elevated VOC concentrations discovered in the soil gas at those locations..

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)		
Operable Unit: 01	*Protectiveness Determination:* Protective	*Addendum Due Date (if applicable):* N/A
Protectiveness Statement: The implemented remedies for the Stanton Cleaners site are protective of human health and the environment.		
Sitewide Protectiveness Statement (if applicable)		
For sites that have achieved construction completion, enter a sitewide protectiveness determination and statement.		
Protectiveness Determination: Protective		*Addendum Due Date (if applicable): N/A*
Protectiveness Statement: The implemented remedies for the Stanton Cleaners site are protective of human health and the environment.		

VIII. NEXT FIVE-YEAR REVIEW

The next FYR report for the Stanton Cleaners Area Groundwater Contamination Superfund site is required five years from the completion date of this review.

APPENDIX A

TABLES

TABLE 1

CHRONOLOGY OF SITE EVENTS

Chronology of Site Events	
Event	**Date**
New York State Department of Environmental Conservation (NYSDEC) requests EPA to address volatile organic compounds (VOCs) in soils and indoor air.	March 1998
EPA authorized Time-Critical Removal Action	September 1998
EPA installed sub-slab ventilation system on Tennis Center	September 1998
NYSDEC issues Remedial Investigation/Feasibility Study	November 1998
Proposed for National Priorities List (NPL)	January 19, 1999
NYSDEC issues Draft Focused Feasibility Study and Interim Remedial Measure/Presumptive Remedy Selection	January 1999
Interim soil vapor extraction system installed	February 1999
Final listing on the NPL	May 6, 1999
Record of Decision (ROD) for Operable Unit One (OU1)	March 31, 1999
OU-1 Remedial Design completed	November 2000
Indoor Air Quality Summary Report	July 2002
Final Inspection of completed pump and treatment and soil vapor extraction operations	August 13, 2002
Pump and Treatment System deemed operational and functional	August 2002
Interim Remedial Action Report for Groundwater	September 2002
Operation and Maintenance (O&M) Manual	March 2003
Hydrogeological Investigation Report – OU1 (Revised April 2004)	June 2003
Operable Unit Two (OU2) - Investigation Summary Report (Revised April 2004)	September 2003
Explanation of Significant Differences – OU2	September 2003
Preliminary Close-Out Report	December 2003
Capture Zone Analysis Report	April 2004
EPA Transfers O&M to NYSDEC	September 2012
Operations, Maintenance and Monitoring	Ongoing

TABLE 2

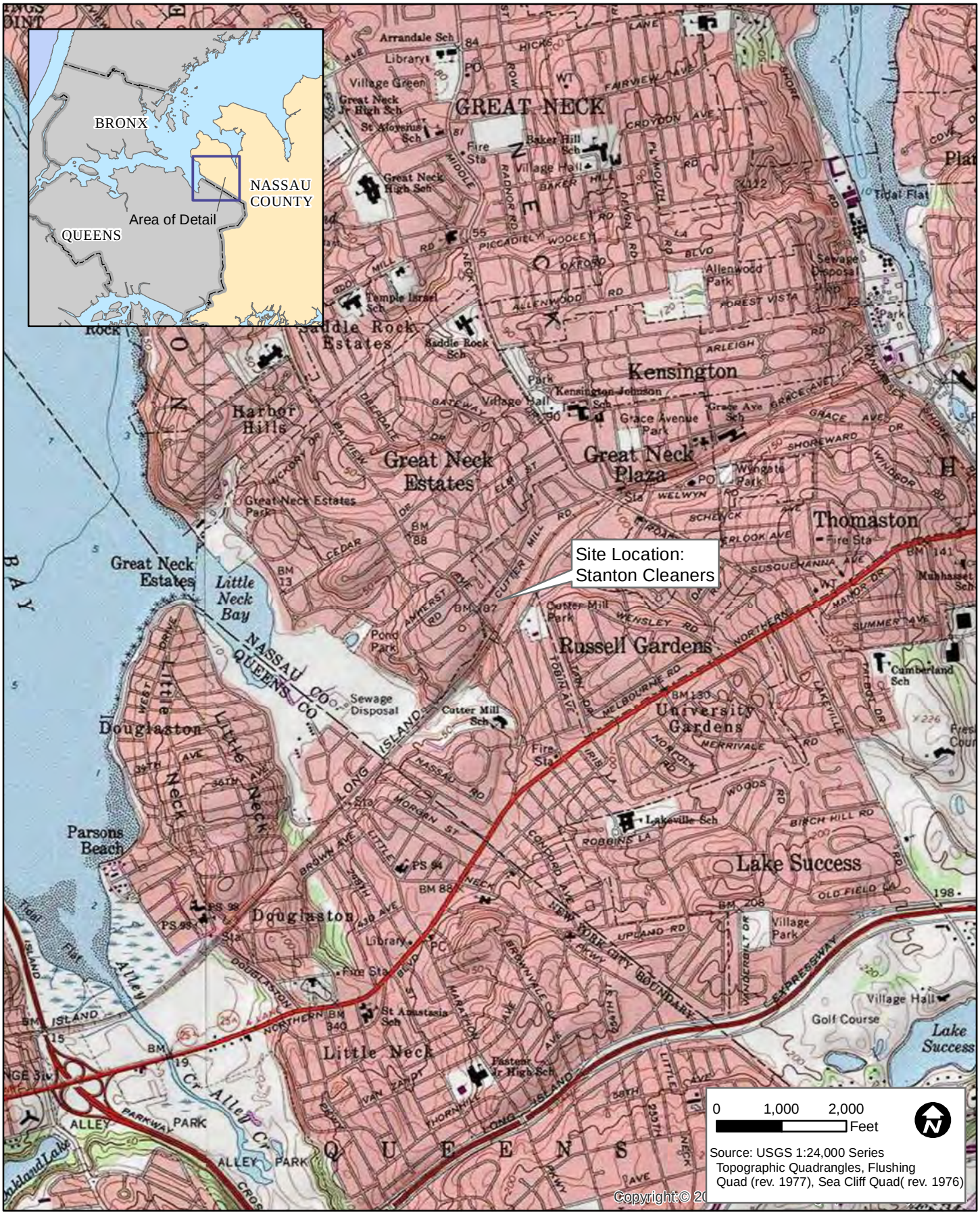
MONITORING PLAN

STANTON CLEANERS AREA GROUNDWATER CONTAMINATION SITE

Monitoring Plan		
Frequency	**Groundwater**	**Soil Vapor**
Monthly	GWE&TS influent and effluent is sampled and tested for VOCs A network of 16 wells are monitored for water level	SVE influent is monitored using a PID at multiple SVE monitoring ports located on the system
Quarterly	None – see monthly monitoring	SVE influent and effluent are sampled and tested for VOCs
Semi-Annually	Fifteen wells in the monitoring well network are sampled and tested for VOCs	Neighboring property Long Island Hebrew Academy (LIHA) is sampled and tested, as directed, for contaminants in indoor air via Compendium Method TO-15
Annually	The system discharge point into the city sewer is sampled and tested for compliance with SPDES Equivalency Parameters	None

APPENDIX B

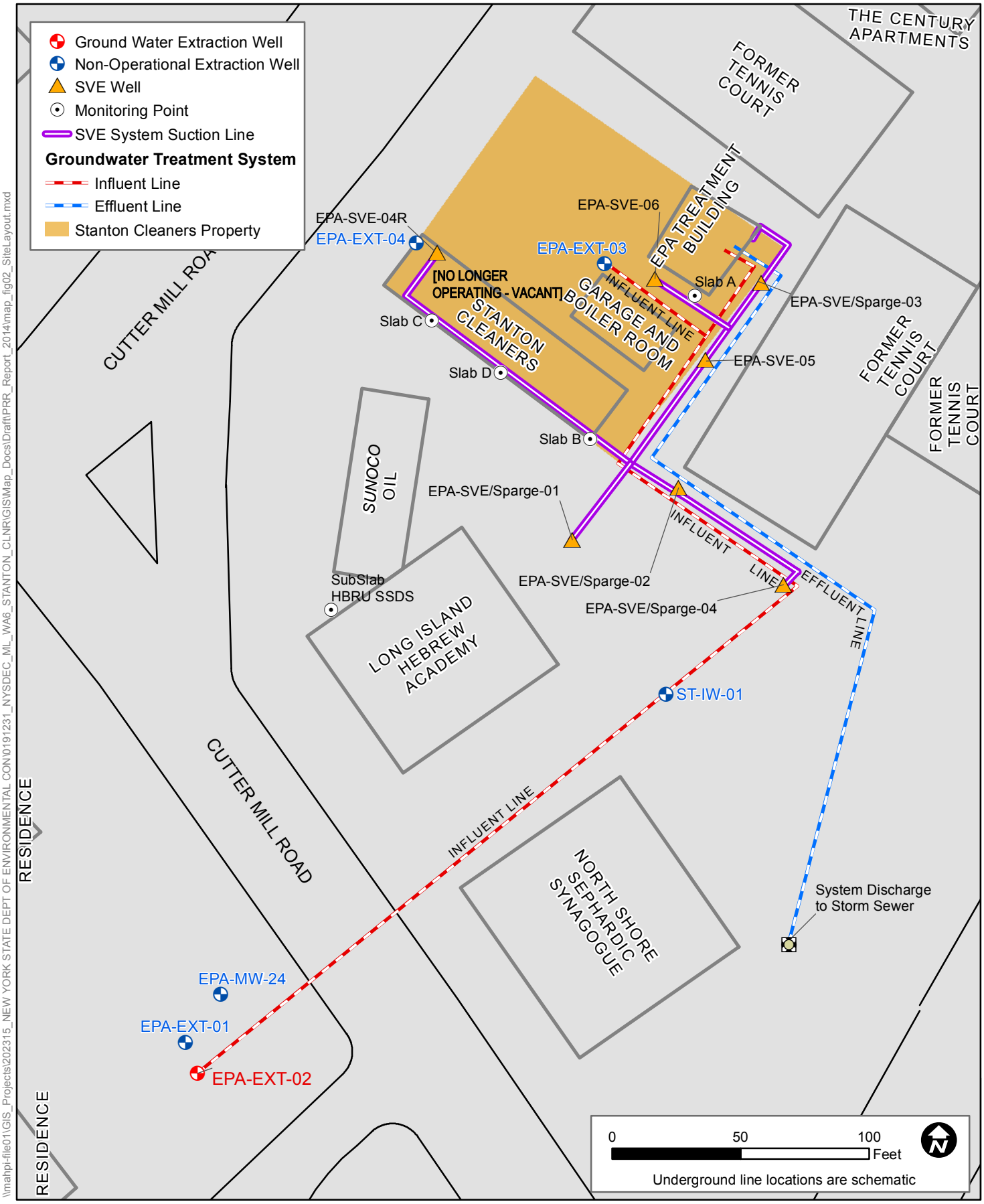
FIGURES



SITE LOCATION

STANTON CLEANERS (NYSDEC SITE # 130072)

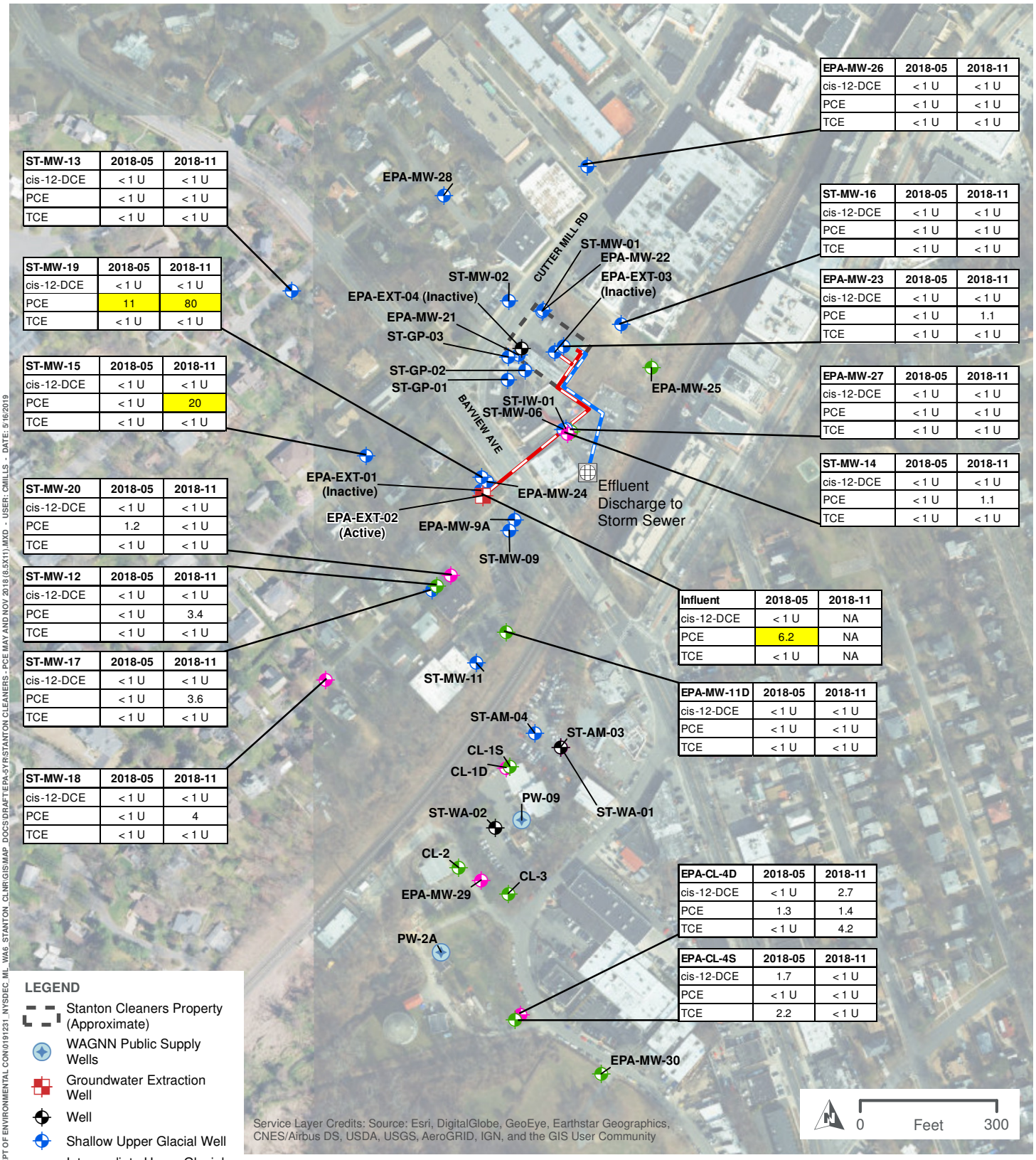
FIGURE 1



\\mahpi-file01\GIS_Projects\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\0191231_NYSDEC_ML_WA6_STANTON_CLNR\GIS\Map_Docs\Draft\PRR_Report_2014\map_fig02_SiteLayout.mxd

SVE and GWET System - Layout
Stanton Cleaners Area Groundwater Contamination Site
Great Neck, New York

Figure 2



ST-MW-13	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	< 1 U
TCE	< 1 U	< 1 U

ST-MW-19	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	11	80
TCE	< 1 U	< 1 U

ST-MW-15	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	20
TCE	< 1 U	< 1 U

ST-MW-20	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	1.2	< 1 U
TCE	< 1 U	< 1 U

ST-MW-12	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	3.4
TCE	< 1 U	< 1 U

ST-MW-17	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	3.6
TCE	< 1 U	< 1 U

ST-MW-18	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	4
TCE	< 1 U	< 1 U

EPA-MW-26	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	< 1 U
TCE	< 1 U	< 1 U

ST-MW-16	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	< 1 U
TCE	< 1 U	< 1 U

EPA-MW-23	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	1.1
TCE	< 1 U	< 1 U

EPA-MW-27	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	< 1 U
TCE	< 1 U	< 1 U

ST-MW-14	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	1.1
TCE	< 1 U	< 1 U

Influent	2018-05	2018-11
cis-12-DCE	< 1 U	NA
PCE	6.2	NA
TCE	< 1 U	NA

EPA-MW-11D	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	< 1 U
TCE	< 1 U	< 1 U

EPA-CL-4D	2018-05	2018-11
cis-12-DCE	< 1 U	2.7
PCE	1.3	1.4
TCE	< 1 U	4.2

EPA-CL-4S	2018-05	2018-11
cis-12-DCE	1.7	< 1 U
PCE	< 1 U	< 1 U
TCE	2.2	< 1 U

LEGEND

- Stanton Cleaners Property (Approximate)
- WAGNN Public Supply Wells
- Groundwater Extraction Well
- Well
- Shallow Upper Glacial Well
- Intermediate Upper Glacial Well
- Deep Upper Glacial Well
- Groundwater Treatment Influent Line
- Groundwater Treatment Effluent Line
- Treated Effluent Discharge

Data Box

ST-MW-15	2018-05	2018-11
cis-12-DCE	< 1 U	< 1 U
PCE	< 1 U	20
TCE	< 1 U	< 1 U

Well ID

Event date

Analyte

Exceedance of GWQS highlighted in yellow.

Data Box Notes:

NA = Not applicable. (EPA-EXT-02 was offline Novmber 2018)
U = Not detected above the reporting limit (value shown after less than symbol)
cis-12-DCE = cis-1,2-dichloroethylene (GWQS = 5 ug/L)
PCE = Tetrachloroethylene (GWQS = 5 ug/L)
TCE = Trichloroethylene (GWQS = 5 ug/L)
GWQS = Groundwater Quality Standard (6 NYCRR Part 703.5, Table 1, Class GA)
*Only detected constituents are shown.

Figure 3

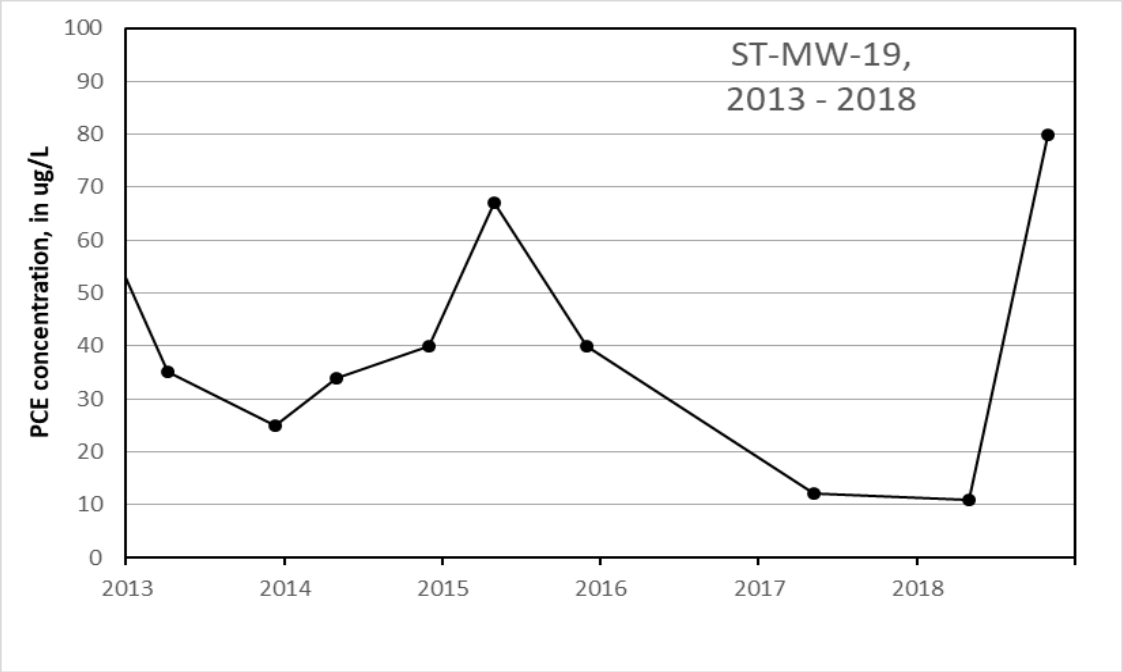
MAY AND NOVEMBER 2018 GROUNDWATER SAMPLE RESULTS DETECTED CONSTITUENTS

FORMER STANTON CLEANERS NYSDEC SITE #130072

PATH: \\MAHPIFILE01\GIS_PROJECTS\202315_NEW YORK STATE DEPT OF ENVIRONMENTAL CON\0191231_NYSDEC_ML_WA6_STANTON_CLNR\GIS\MAP_DOCS\DRAFT\EPA-5YR\STANTON CLEANERS - PCE MAY AND NOV 2018 (8.5X11).MXD - USER: CMILLS - DATE: 5/16/2019

Figure 4

PCE Trends
Stanton Cleaners Superfund Site
Select Monitoring Wells



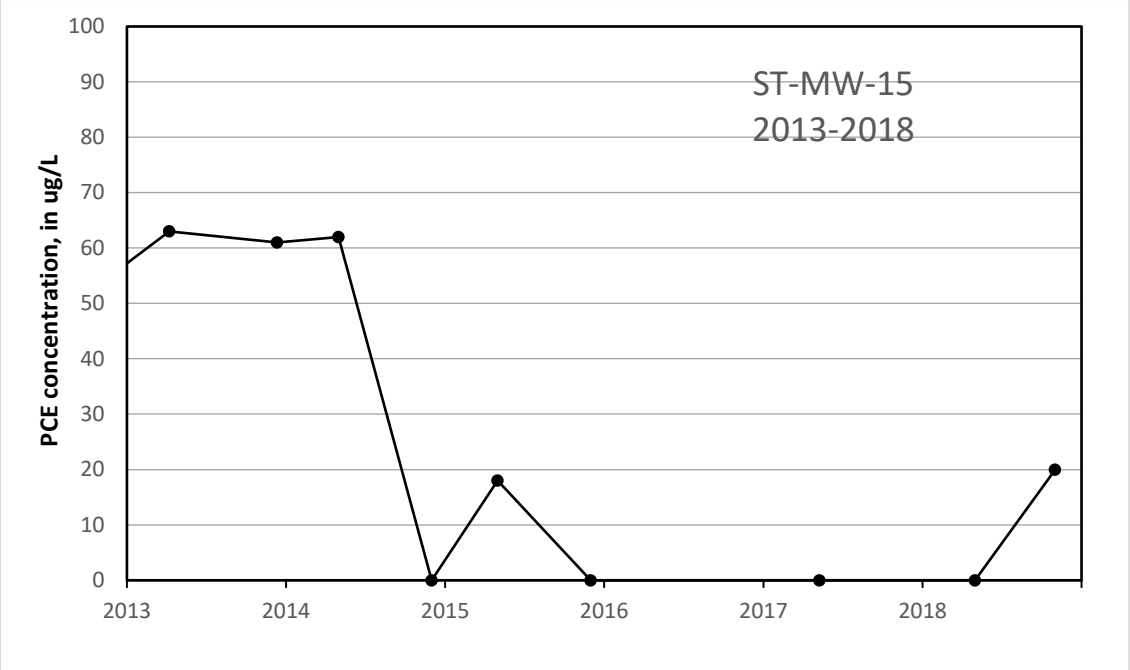
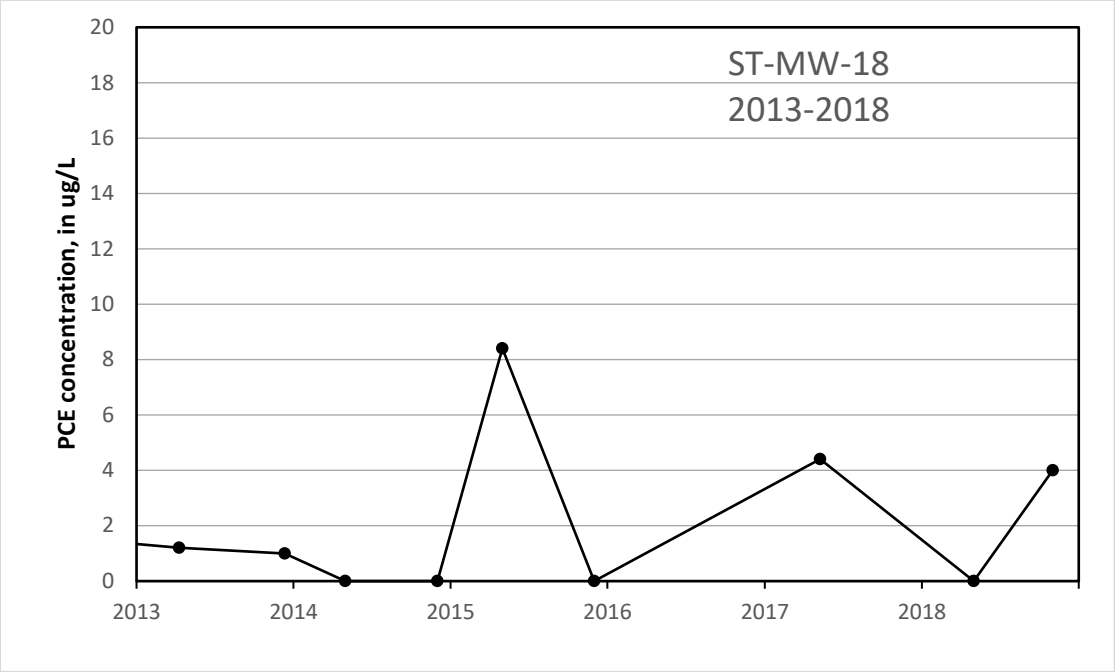


Figure 4

PCE Trends
Stanton Cleaners Superfund Site
Select Monitoring Wells



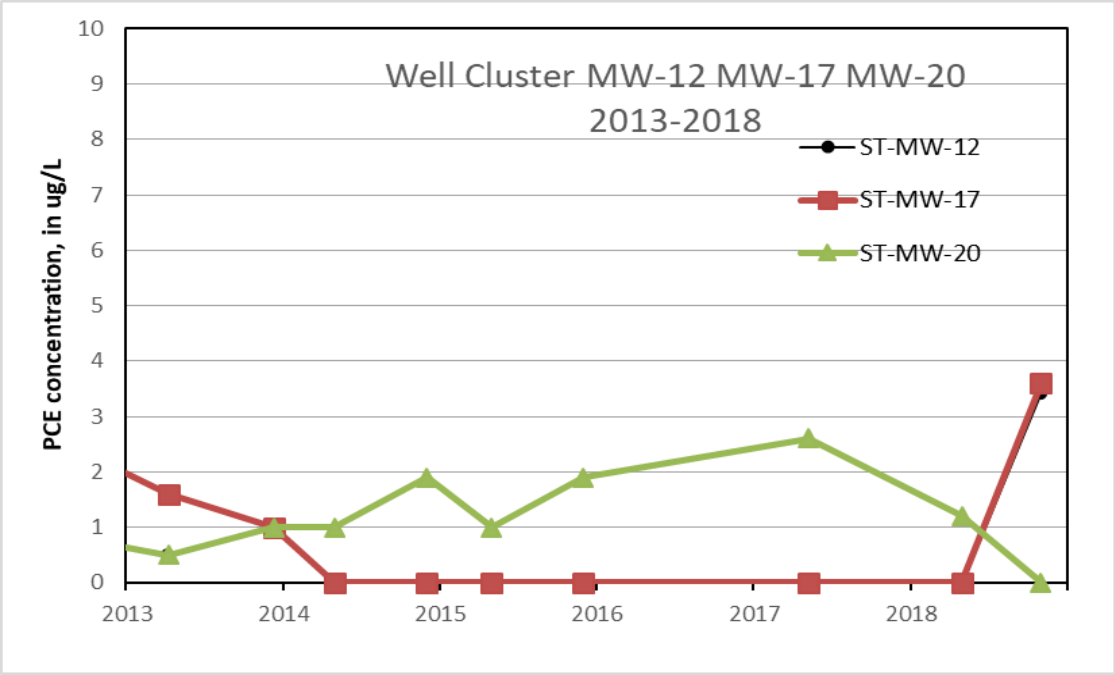


Figure 4

PCE Trends

Stanton Cleaners Superfund Site

Select Monitoring Wells

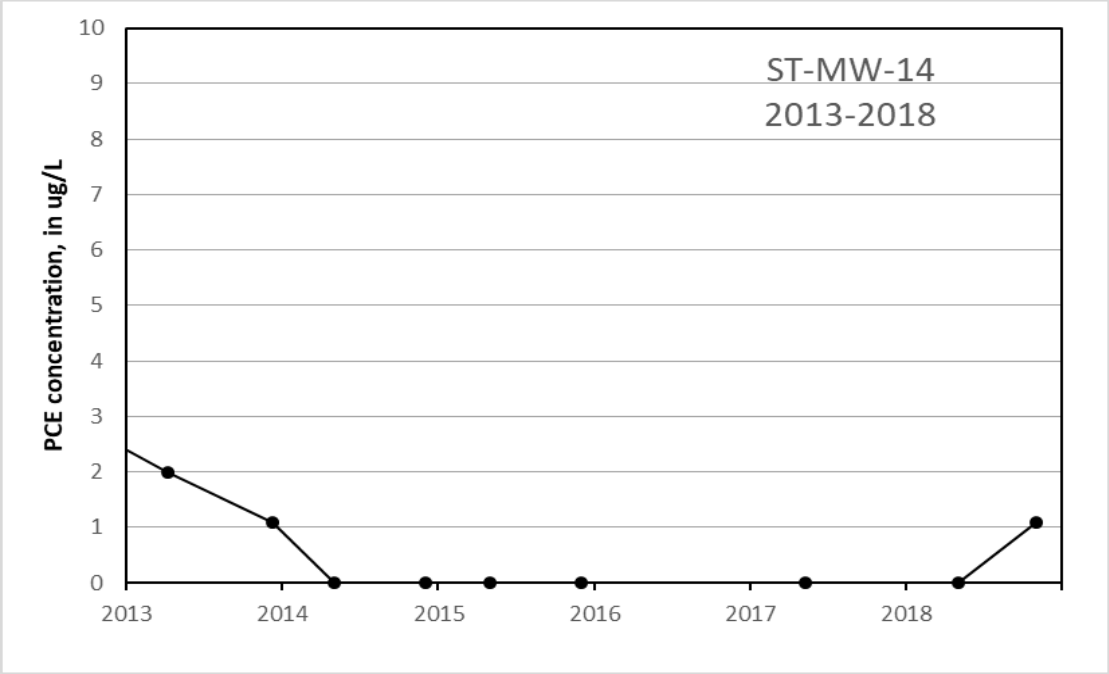
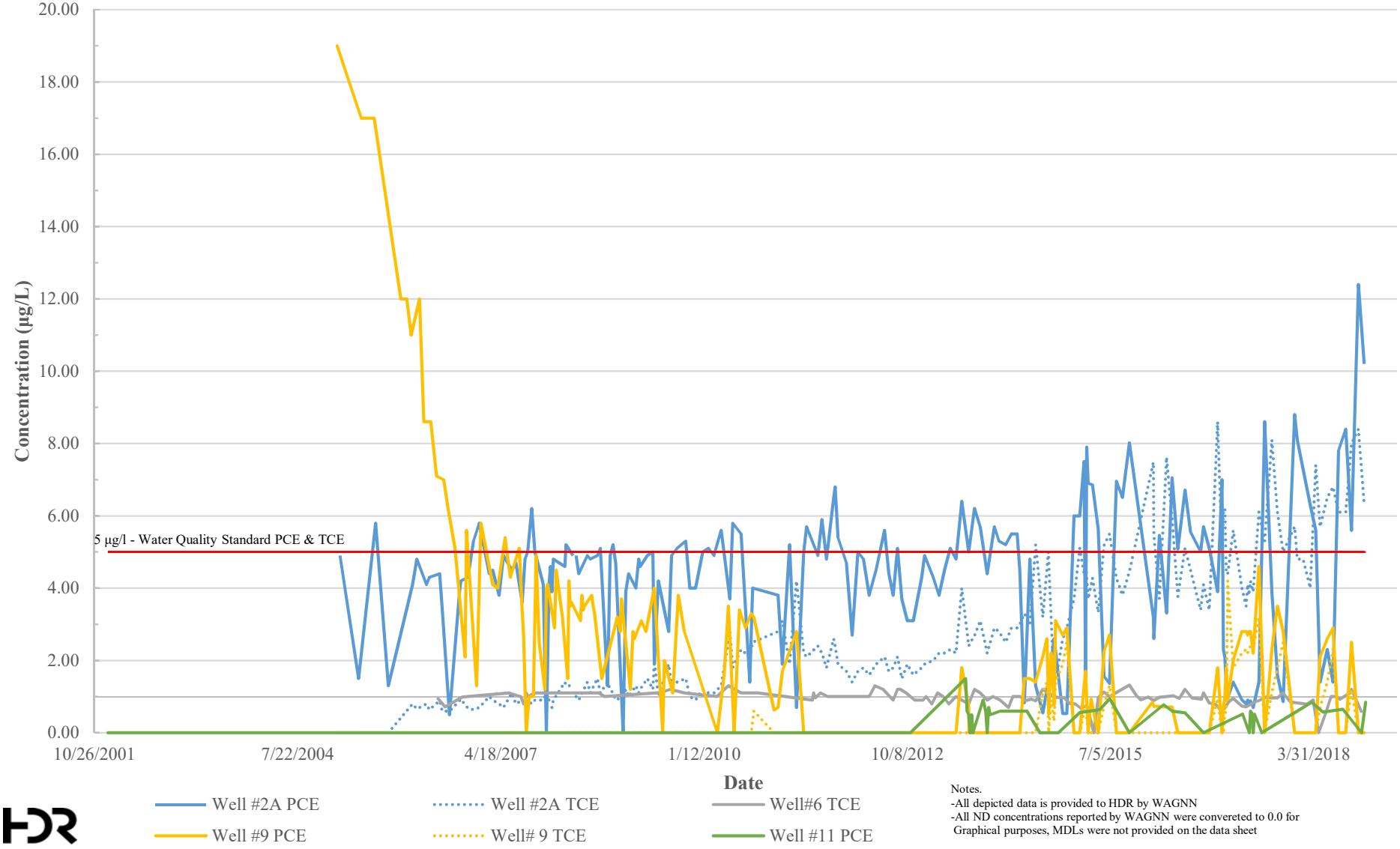
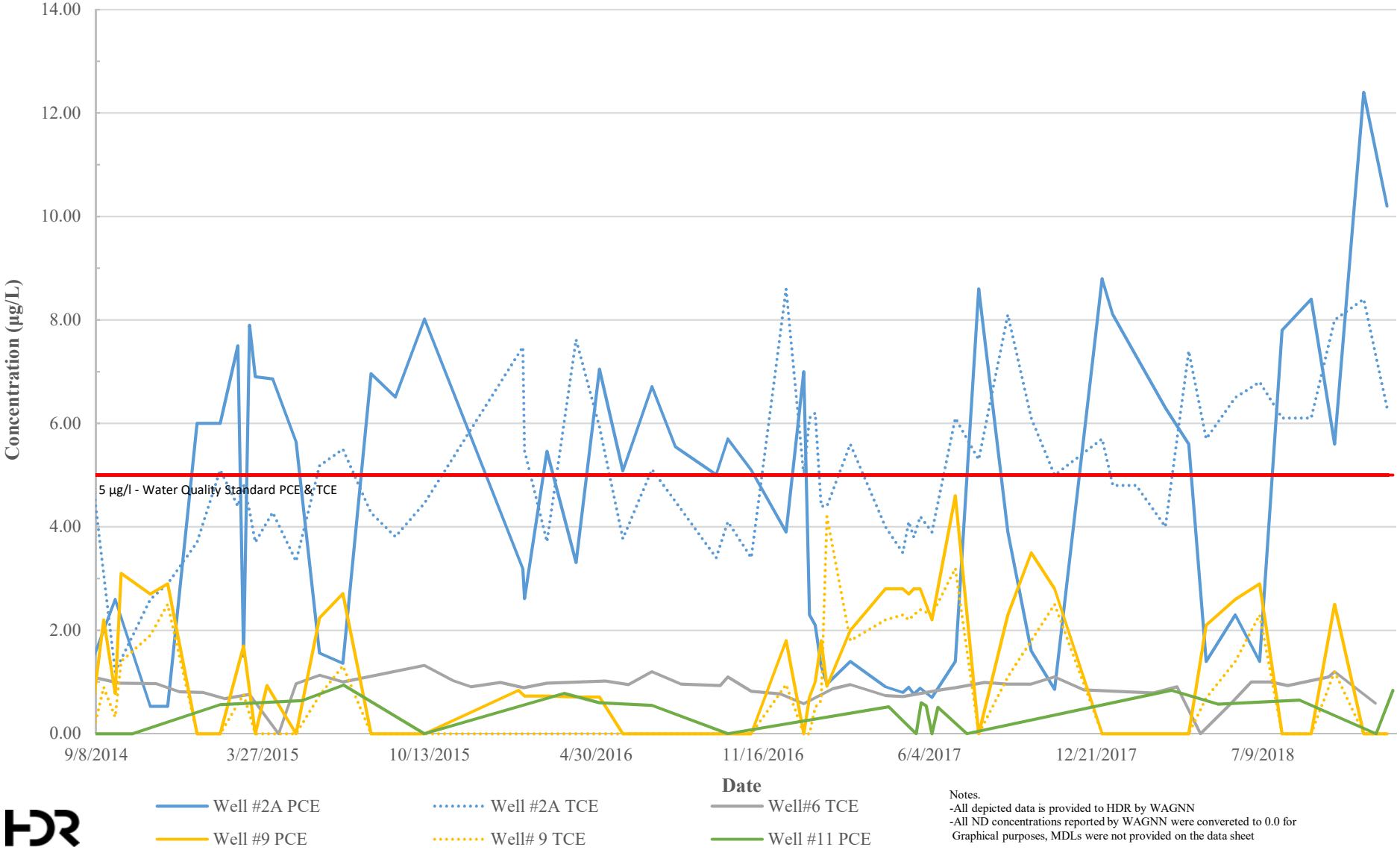


Figure 5
WAGNN Wells - Raw Water PCE and TCE Concentrations 2002-2018
Stanton Cleaners, NYSDEC Site # 130072
110 Cuttermill Road, Great Neck, NY



Notes.
-All depicted data is provided to HDR by WAGNN
-All ND concentrations reported by WAGNN were convereted to 0.0 for Graphical purposes, MDLs were not provided on the data sheet

Figure 5 (cont'd)
WAGNN Wells - Raw Water PCE and TCE Concentrations 2014-2018
Stanton Cleaners, NYSDEC Site # 130072
110 Cuttermill Road, Great Neck, NY



Notes.
-All depicted data is provided to HDR by WAGNN
-All ND concentrations reported by WAGNN were convereted to 0.0 for Graphical purposes, MDLs were not provided on the data sheet

Figure 6
GWE&T System Influent PCE Concentrations - 2003-2018
Stanton Cleaners, NYSDEC Site # 130072
110 Cuttermill Road, Great Neck, NY

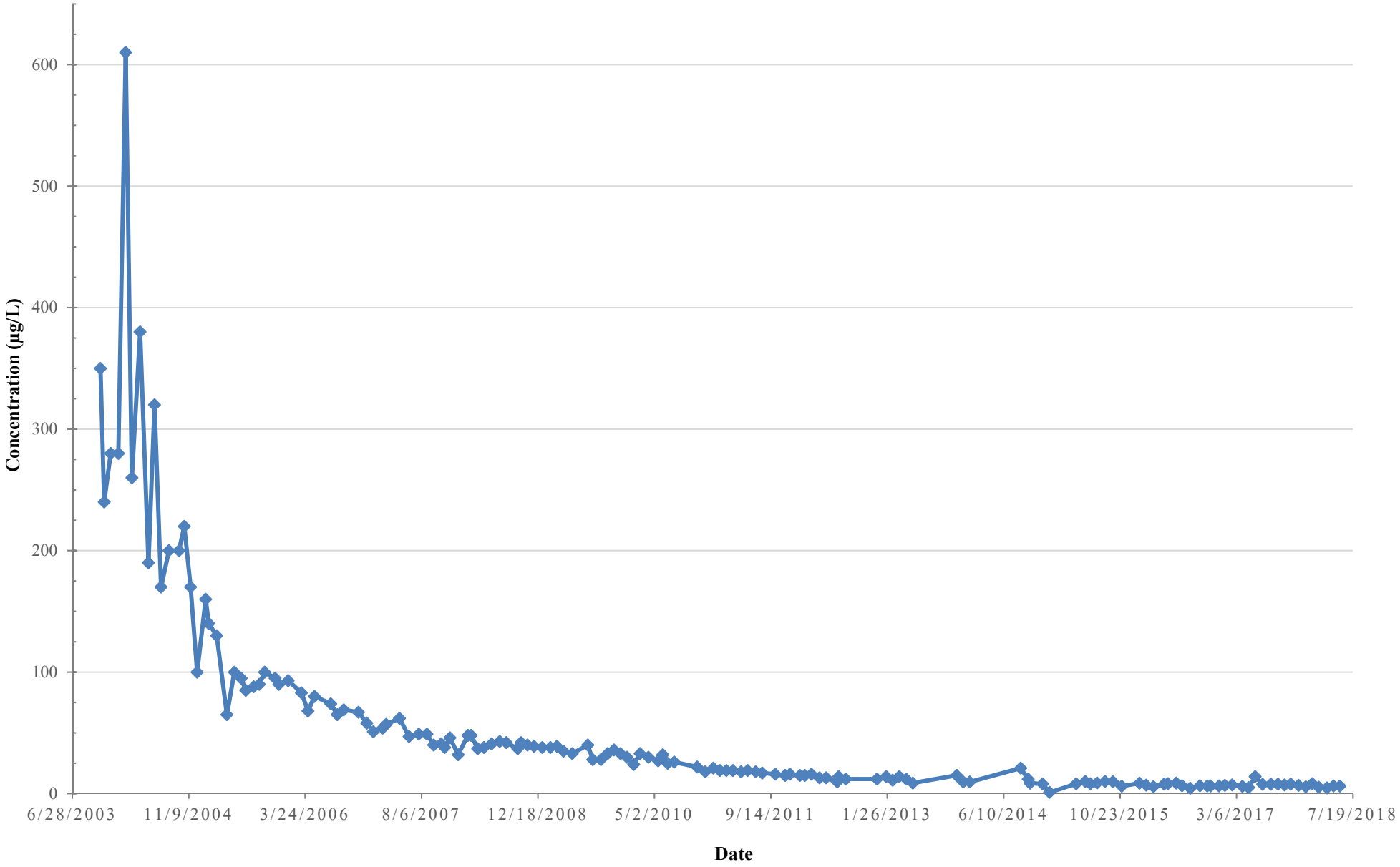


Figure 6 (cont'd)
GWE&T System Influent PCE Concentrations - 2014-2018
Stanton Cleaners, NYSDEC Site # 130072
110 Cuttermill Road, Great Neck, NY

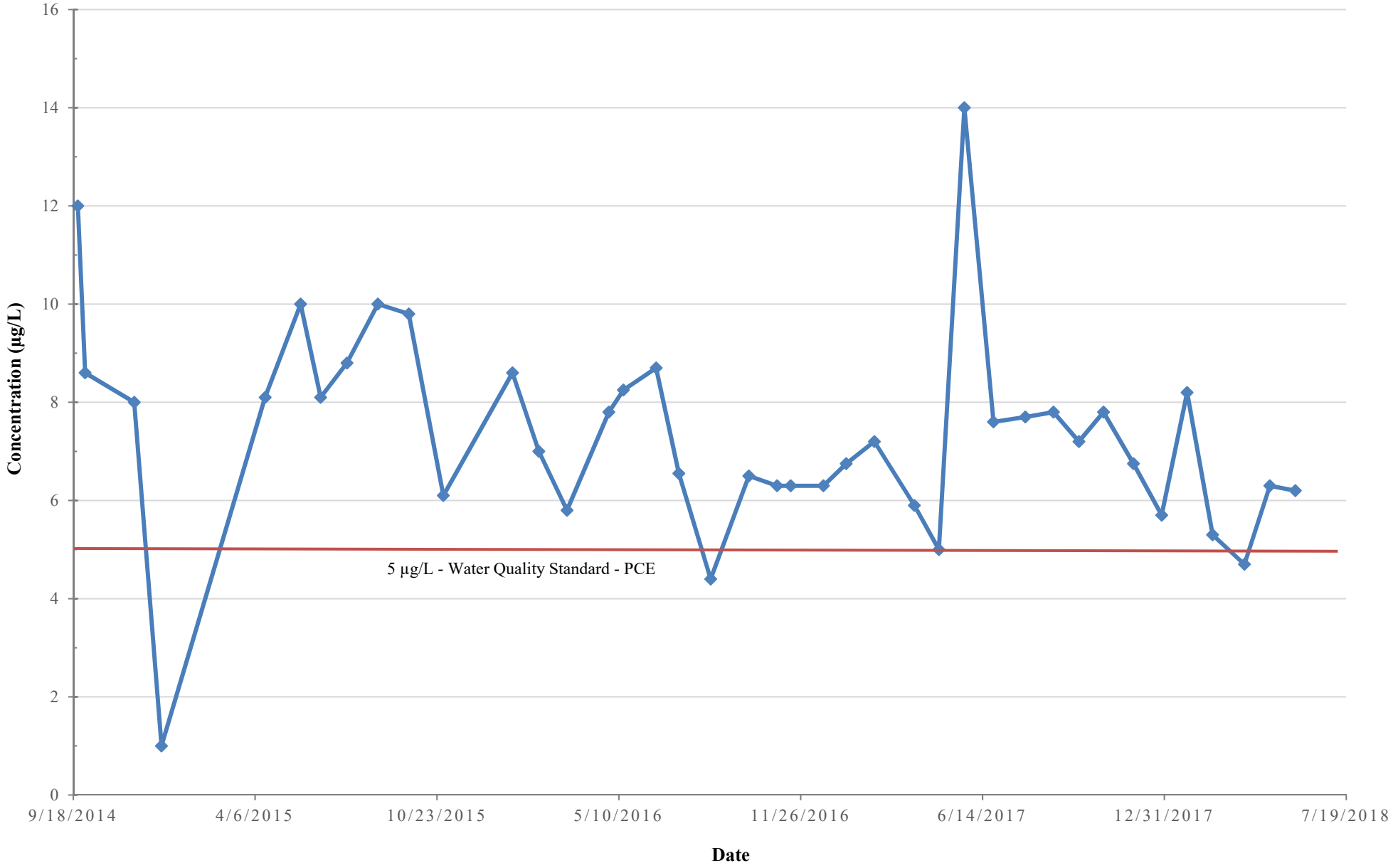


Figure 7

SVE System Mass Removal - 2003-2018

Stanton Cleaners, NYSDEC Site # 130072
110 Cuttermill Road, Great Neck, NY

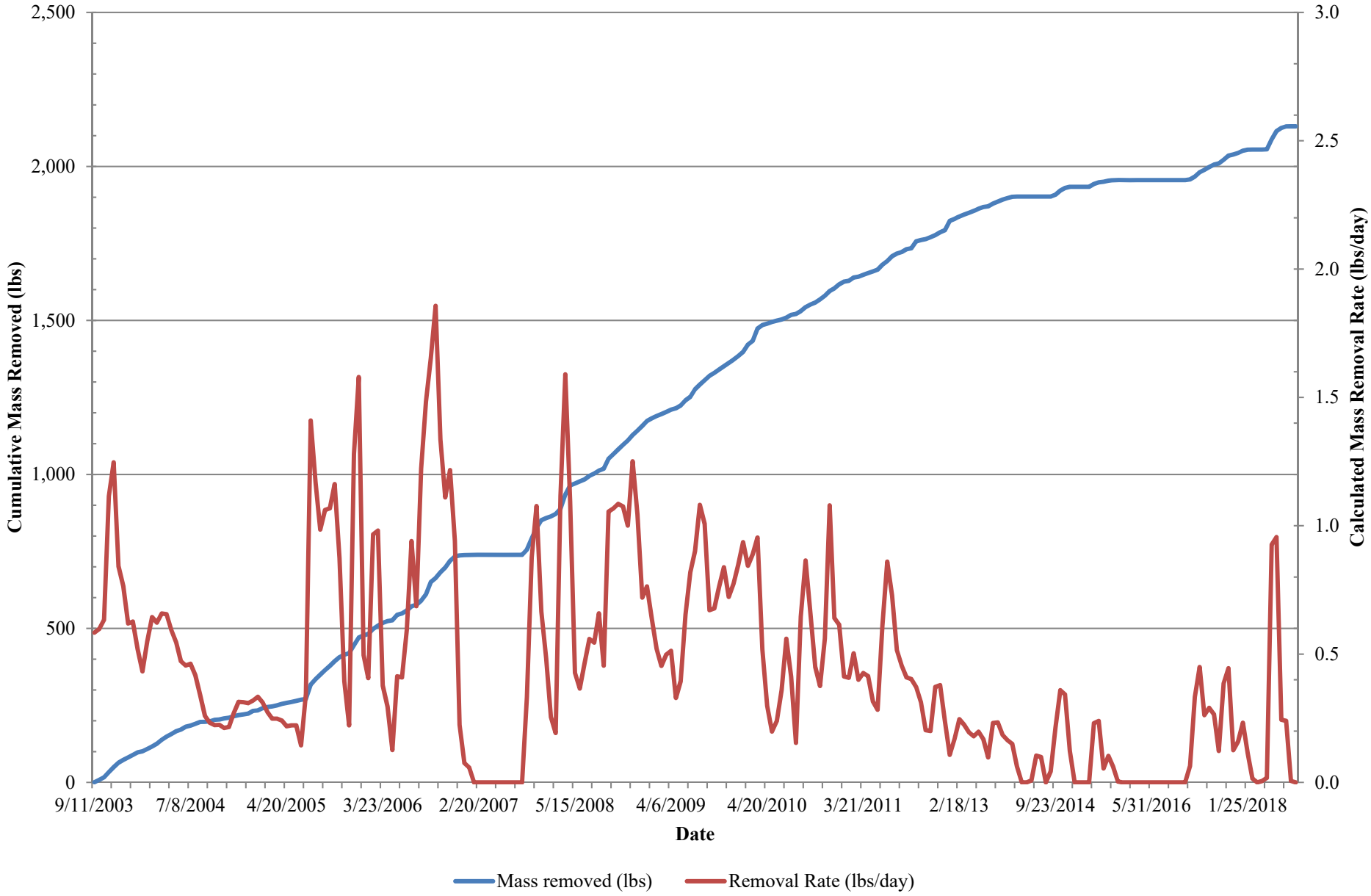
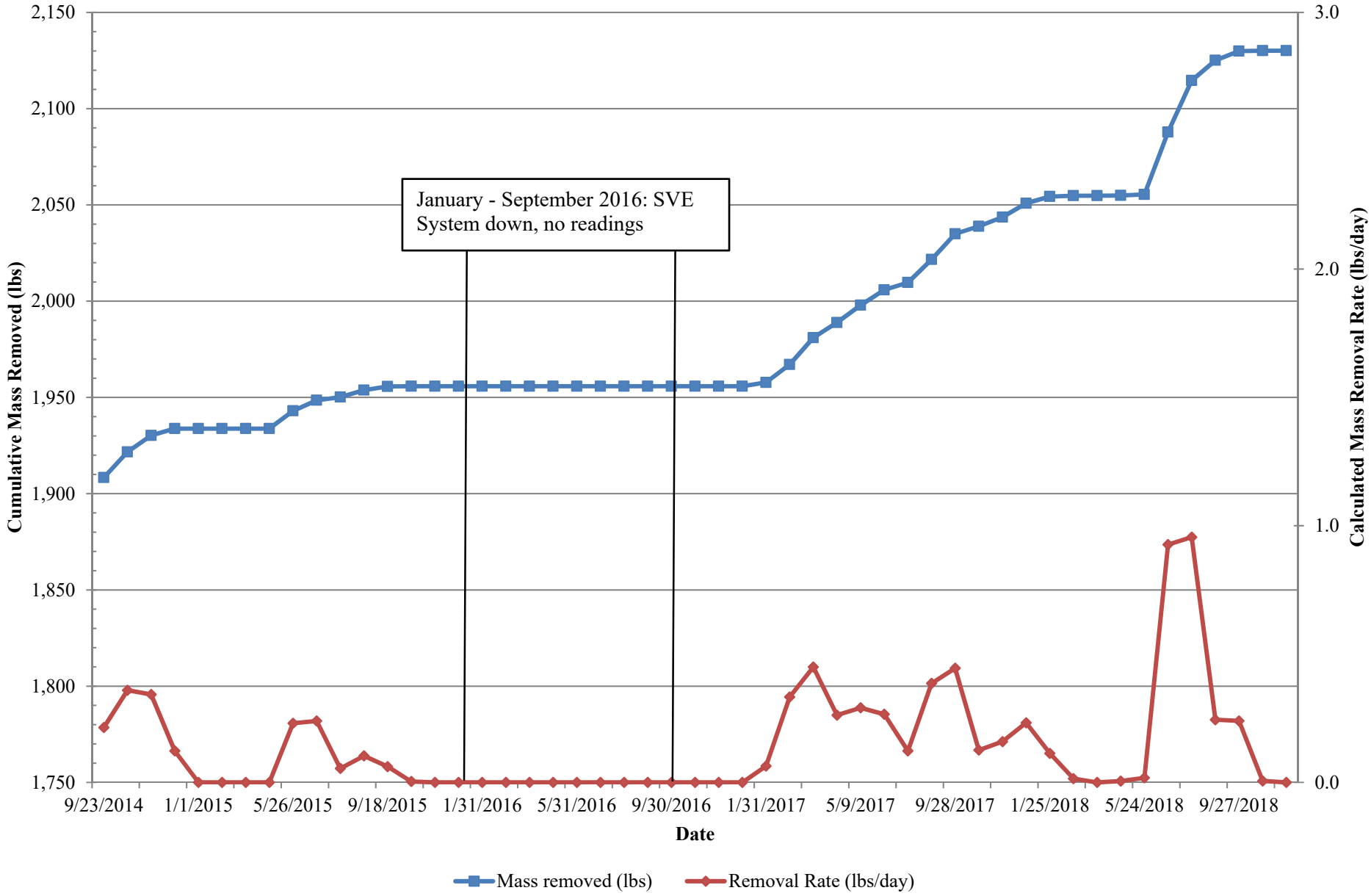


Figure 7 (cont'd)

SVE System Mass Removal - 2014-2018

Stanton Cleaners, NYSDEC Site # 130072
110 Cuttermill Road, Great Neck, NY



APPENDIX C

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Stanton Cleaners Area Groundwater Contamination Site

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