FIFTH FIVE-YEAR REVIEW REPORT FOR ROSEN BROTHERS SCRAP YARD SUPERFUND SITE COURTLAND COUNTY, NEW YORK

Prepared by

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

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LIST OF ABBREVIATIONS & ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DCA	Dichloroethane
EPA	U.S. Environmental Protection Agency
FS	Feasibility Study
FYR	Five-Year Review
ICs	Institutional Controls
MCL	Maximum Contaminant Level
µg/L	Microgram per Liter
$\mu g/m^3$	Microgram per cubic meter
mg/kg	Milligram per Kilogram
ng/L	Nanogram per Liter
MNA	Monitored Natural Attenuation
ND	Non-detect
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
PPA	Prospective Purchaser Agreement
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SSDS	Subslab Depressurization System
SVI	Soil Vapor Intrusion
SVOCs	Semivolatile Organic Compounds
TAGM	Technical and Administrative Guidance Memorandum
TCA	Trichloroethane
TCE	Trichloroethene
TSCA	Toxic Substances Control Act
UAO	Unilateral Administrative Order
UU/UE	Unlimited Use and Unrestricted Exposure
VOCs	Volatile Organic Compounds

I. INTRODUCTION

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

This is the fifth FYR for the Rosen Brothers Scrap Yard site. The triggering action for this statutory FYR is the signature date of the last review, September 5, 2018. The FYR has been prepared because hazardous substances, pollutants or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300 (40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

The site consists of one operable unit (OU) which will be addressed in this FYR. OU1 is related to the contaminated soils and groundwater.

The site's FYR team was led by Mark Granger, the EPA Remedial Project Manager (RPM). Participants included John Mason (EPA hydrogeologist), Ula Kinahan (EPA human-health risk assessor), Julie McPherson (EPA ecological risk assessor), and Larisa Romanowski (EPA community involvement coordinator). The City of Cortland (the current owner of the property) and the potentially responsible parties (PRPs) were notified of the initiation of the FYR. The FYR began on November 10, 2022.

Site Background

The Rosen Brothers site, an abandoned scrap-metal processing facility, occupies approximately twenty acres on the southern side of the City of Cortland, New York. Access to the site is restricted by a seven-foot-high fence with two locked gates. To the east of the site are the building and parking lot of the former Kirby Company, Pendleton Street, a vacant lot and a small residential area consisting of approximately 13 apartment buildings. To the north is Perplexity Creek (an eastward-flowing, seasonally-intermittent stream), railroad tracks associated with the New York, Susquehanna & Western Railroad, several industries, Huntington Street, a small residential area consisting of approximately 20 houses, and a school. To the west are a vacant lot, several industries, and South Main Street. To the south is Perplexity Creek Tributary (a northeastward-flowing, seasonally-intermittent stream), Valley View Drive and the Cortland City Junior and Senior High Schools. Please see **Appendix A, Figure 1,** for a site layout.

Rosen Brothers began its scrap-metal operations at the site property in the early 1970s. Operations included scrap-metal processing and automobile crushing. The property was used to stage large quantities of abandoned vehicles, household appliances, steel tanks, drums, truck bodies, and other scrap materials. Municipal waste, industrial waste, and construction waste were allegedly

intermittently disposed of in or on the former cooling pond. Drums were routinely crushed on-site, the contents spilling onto the ground surface. The Rosen Brothers were cited for various violations throughout this period, including illegally dumping into Perplexity Creek Tributary, improperly disposing of waste materials, and operating a refuse disposal area without a permit. Operations on the site ceased in 1985 and the property was abandoned.

Appendix B, attached, summarizes the documents utilized to prepare this FYR. **Appendix C**, attached, includes an assessment of climate change at the site. For more details related to site background, physical characteristics, geology/hydrogeology, land/resource use, and history related to the site, please refer to: www.epa.gov/superfund/rosen-brothers.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Rosen Brothers Scrap Yard Superfund Site		
EPA ID: NYD982272734		
Region: 2	**State:** NY	**City/County:** Cortland, New York
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Mark Granger		
Author affiliation: EPA		
Review period: 9/6/2018 - 5/23/2023		
Date of site inspection: 4/24/2023		
Type of review: Statutory		
Review number: 5		
Triggering action date: 9/5/2018		
Due date *(five years after triggering action date)*: 9/5/2023		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The results of a 1986 New York State Department of Environmental Conservation (NYSDEC)-performed Phase II investigation and remedial investigation (RI) indicated the presence of elevated levels of polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and inorganics in on-site soils and VOCs in the groundwater. A risk assessment concluded that the contaminated surface soils and groundwater at the site posed an unacceptable risk to human health due, primarily, to the presence of VOCs, SVOCs, PCBs, and metals. An ecological risk assessment concluded that metals and PCBs were associated with elevated risk for raccoons and deer mice. The primary route of exposure was bioaccumulation of contaminants through the food chain.

Response Actions

The Phase II investigation noted above included a site inspection, geophysical studies, installation of soil borings and monitoring wells, and sampling and analysis of groundwater, soils, sediments, and waste materials. The site inspection concluded that hazardous materials were present on the site, including several hundred full and/or leaking drums, transformers filled with PCBs, and pressurized cylinders of unknown content. Sampling indicated the presence of elevated levels of 1,1,1-trichloroethane (TCA), PCBs, anthracene, pyrene, lead, and chromium in site-related soil, sediment, and groundwater.

EPA performed a removal action at the site in 1987 to address immediate threats to public health and the environment. The removal action included fencing the site, sampling, excavating visibly-contaminated soil, and securing and temporarily staging drums, tanks, cylinders, transformers, and the excavated soil.

Based on materials observed on the site and other evidence, EPA issued Administrative Orders to six PRPs in 1988 and 1989, requiring them to remove the materials previously staged during the EPA removal action. This work was completed in 1990.

On March 30, 1989, the site was added to the Superfund National Priorities List. Three PRPs, Overhead Door, Monarch, and Niagara Mohawk, agreed to conduct a RI and feasibility study (RI/FS) in accordance with a 1990 Administrative Order on Consent (Index Number II CERCLA-00204) with EPA. Keystone, Cooper Industries, Inc., and Potter Paint Co., Inc. assisted in the performance or funding of the RI/FS pursuant to the terms of a Unilateral Administrative Order (UAO) (Index Number II CERCLA-00205) issued in 1990. The companies completed the RI/FS in 1997.

The noted companies voluntarily undertook the demolition and removal of structurally unsound buildings and a 150-foot-high smokestack in 1992. They also removed and recycled 200 tons of scrap materials in 1993. In 1994, the companies emptied and disposed of the contents of an abandoned underground storage tank and removed a small concrete oil pit. In 1997, EPA removed and recycled more than 500 tons of scrap metal and more than 20 tons of tires from the site.

Based upon the results of the RI/FS, in March 1998, EPA signed a Record of Decision (ROD) selecting a remedy for the site. The following remedial action objectives (RAOs) were selected:

- Prevent human contact with contaminated soils, sediments, and groundwater;
- Prevent ecological contact with contaminated soils and sediments;
- Mitigate the migration of contaminants from soils/fill to groundwater;
- Mitigate the off-site migration of contaminated groundwater;
- Restore groundwater quality to levels which meet federal and state drinking-water standards; and
- Control surface water runoff and erosion.

The key components of the selected remedy include:

- Excavation of all 1,1,1-TCA-contaminated soils above NYSDEC's soil cleanup objective of 1 milligram per kilogram (mg/kg) identified in the Technical and Administrative Guidance Memorandum (TAGM) in two VOC hot-spot areas and PCB-contaminated soils above the TAGM objective of 10 mg/kg in two hot-spot areas. Clean or treated material would be used as backfill in the excavated areas.
- Consolidation of all excavated soils with PCB concentrations less than 50 mg/kg onto the former cooling pond. Those soils with PCB concentrations above 50 mg/kg would be sent off-site for treatment/disposal at a Toxic Substances Control Act (TSCA)-compliant facility. All excavated 1,1,1-TCA-contaminated soils would either be sent off-site for treatment/disposal or treated on-site to 1 mg/kg for 1,1,1-TCA and used as backfill in the excavations.
- Removal and consolidation onto the former cooling pond of nonhazardous debris located on surface areas where the site-wide surface cover will be installed and/or is commingled with the excavated soil.
- Placement of a cap meeting the requirements of New York State 6 NYCRR Part 360 (Part 360) regulations over the three-acre former cooling pond. Prior to the construction of the cap, the consolidated soils, nonhazardous debris, and existing fill materials would be regraded and compacted to provide a stable foundation and to promote runoff.
- Construction of a chain-link fence around the former cooling pond after it is capped.
- Placement of a surface cover over the remaining areas of the site (approximately 17 acres) to prevent direct contact with residual levels of contaminants in site soils. The nature of the surface cover would be determined during the remedial design (RD) phase.
- Monitored natural attenuation (MNA) to address the residual VOC groundwater contamination in downgradient areas. As part of a long-term groundwater monitoring program, sampling would be conducted to verify that the level and extent of groundwater contaminants are declining from baseline conditions and that conditions are protective of human health and the environment.
- Implementation of regrading and storm-water management improvements to protect the integrity of the cap/site-wide surface cover.
- Long-term monitoring to evaluate the remedy's effectiveness.
- Institutional controls (ICs) in the form of deed restrictions and contractual agreements, as well as local ordinances, laws, or other government action, for the purpose of restricting the installation and use of groundwater wells at and downgradient of the site, restricting excavation

or other activities which could affect the integrity of the cap/site-wide surface cover, and restricting residential use of the property in order to reduce potential exposure to site-related contaminants.

Response Action Implementation

In 1998, in anticipation of planned on-site redevelopment activities, EPA issued a UAO to the six PRPs noted above and nine additional PRPs to expedite the implementation of a portion of the selected remedy (specifically the excavation of approximately 1,000 cubic yards of PCB-contaminated soils from the two PCB-contaminated soil hot-spot areas, backfilling of the excavations with clean fill, and the installation of a surface cover on a five-acre portion of the site). Eight hundred fifty cubic yards of the excavated soils with PCB concentrations less than 50 mg/kg were consolidated onto the former cooling pond and 150 cubic yards of the excavated soils (greater than 50 mg/kg PCBs) were shipped off-site for disposal. This work was performed in 1998.

In 1999, EPA entered into a Consent Decree with fifteen PRPs to design and implement the remaining portions of the remedy selected in the ROD (*i.e.*, excavation of 1,1,1-TCA-contaminated soils, construction of the cooling pond cap and site-wide surface cover, and implementation of MNA of the groundwater). The RD for this effort was initiated in 2001; it was approved by EPA in 2002.

From 2002 to 2003, approximately 900 cubic yards of 1,1,1-TCA- and PCB-contaminated soils above the TAGM soil cleanup objective of 1 mg/kg and 10 mg/kg, respectively, were excavated from the two hot spots. PCB-contaminated soils with concentrations above 50 mg/kg were sent off-site to a TSCA-compliant facility for treatment/disposal, whereas PCB-contaminated soils with concentrations less than 50 mg/kg were consolidated over the former cooling pond area and were subsequently graded and capped. Excavated 1,1,1-TCA-contaminated soils above 1 mg/kg were sent off-site. Post-excavation sampling confirmed that the remaining soils met the soil cleanup objectives. The excavations were backfilled with clean fill, and the excavated soils were shipped off-site for disposal.

An 11.5-acre site-wide cover, consisting of a permeable geotextile overlain by a one-foot protection/topsoil layer, was installed and a 3.5-acre cap meeting the requirements of New York State 6 NYCRR Part 360 was installed over the cooling pond. Prior to the installation of the cap, consolidated soils, nonhazardous debris (that were removed from the site's remaining surface area) and existing fill material were regraded and compacted on the area to be capped. A chain-link fence was constructed around the area after capping. A surface cover was also placed over the remaining portion of the site to prevent direct contact with residual levels of contaminants in on-site soils. ICs in the form of deed restrictions were put into effect on the property to prevent the disturbance of the cap/cover and the use of groundwater.

In 1998, EPA entered into a Prospective Purchaser Agreement (PPA) with the City of Cortland for the purchase, leasing, and redevelopment of the site. The PPA administratively cleared the way for the City of Cortland to take title to the property to effect redevelopment. The City of Cortland took title to the property in 2003.

Institutional Controls

The ROD called for ICs to restrict the installation and use of groundwater wells at and downgradient of the site, restrict excavation or other activities which could affect the integrity of the cap/site-wide surface cover, and restrict residential use of the property to reduce potential exposure to site-related contaminants. Through the PPA, deed restrictions which prevent disturbing the cap over the former cooling pond, prevent disturbing or digging beneath the site-wide geotextile layer without EPA's prior authorization, prevent the installation of groundwater wells without the EPA's prior authorization, and prohibit residential use of the property were recorded on the deed for the property when the City of Cortland took title to the site on March 21, 2003.

Additionally, the Cortland County Sanitary Code (Article XII, §§ 1 and 2) restricts the installation of groundwater wells without a permit. Since the County is aware of the presence of groundwater contamination at and downgradient of the site, it is unlikely that a permit to install a well would be approved.

Table 1 summarizes the status of the ICs.

Table 1: **Summary of Implemented Institutional Controls**

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)
On-site Groundwater	Yes	Yes	Site property	Restrict groundwater use on the site property.	Deed Restriction, March 2006
Downgradient Groundwater	Yes	Yes	Areas down-gradient of site property	Restrict groundwater use in areas down-gradient of the site property.	Cortland County Sanitary Code Article XII, §§ 1 and 2

Systems Operation/Operation & Maintenance

The operation and maintenance manual for the site contains the procedures for inspecting and evaluating the cap and site-wide surface cover, maintaining the groundwater monitoring-well network, and long-term monitoring of groundwater. Repairs are to be made to the cap, drainage systems, and monitoring network, as necessary, to control the effects of settling, subsidence, erosion, vectors, or other events that might interfere with the performance of the remedy. Groundwater monitoring is being used to monitor the effectiveness of the MNA.

The site is inspected annually as follows:

- the Part 360 landfill cap is inspected for signs of erosion, excessive settlement, surface water ponding, seedling growth, and stressed vegetation;
- the surface water drainage system is inspected for signs of erosion and/or siltation, seedling growth, *etc*., in the swales and ditches;
- the landfill-gas venting system is inspected for any damage to the vents;
- the site is inspected for vectors;
- groundwater monitoring wells are inspected for ease of locating, operation of locks, damage/vandalism, and the condition of the surface seals;
- the site access gates and fence are inspected for operational locks, vandalism, and damage;
- the access roads are inspected for ruts, puddles, and drivability; and
- the site is inspected for debris, litter, and/or waste.

The groundwater remedy called for in the ROD required the reduction of VOC concentrations in the groundwater-to-groundwater standards by source removal in combination with MNA. Quarterly groundwater sampling was initiated in 2003 as part of the assessment of MNA. After four quarters, sampling continued at a frequency of twice per year for one year and was conducted annually until 2014. Thereafter, VOC sampling has been conducted biennially. Eleven monitoring wells are included in the long-term monitoring program.

Soil vapor intrusion (SVI) sampling is performed periodically by EPA personnel. There are 19 nearby residential properties that have been sampled for potential SVI. Based on the evaluation of residential SVI data, a sub-slab depressurization system (SSDS) was installed at one residential property in 2015. It was confirmed to be working effectively since that time during periodic inspections, most recently during the 2023 winter heating season. No additional SSDSs were installed during this FYR period.

Periodic sampling of sub-slab, crawl space, and indoor air at a nearby school has been ongoing since 2010. With one exception, levels of trichloroethylene (TCE) throughout the school are below levels of concern. In 2017, a storage closet containing utility runs was sealed as a preventative measure to reduce the potential of these utility runs to serve as a conduit for vapor transport from a crawlspace to indoor air. After the successful sealing, a 6-inch floor drain was observed in the storage closet and was sealed in 2019. The results of SVI sampling at the school in 2019, 2020, and 2023 show that these sealing efforts were successful at reducing indoor-air concentrations of TCE in the area of the storage closet. SVI sampling was not performed during the 2021 and 2022 heating seasons due to concerns related to COVID-19.

Potential site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the site (see **Appendix C**).

Status of Site Reuse/Redevelopment

In 2015, the City of Cortland (the current owner of the property) completed its plans of redeveloping the northern five acres of the site into a trans-modal rail spur. The trans-modal rail spur continues to operate and provide economic benefit to the City and surrounding neighborhood. Along with the spur, new fencing, new lighting, an office building (housed in a raised trailer), and a drive-on truck scale have been constructed on-site.

In addition, plans are unfolding to redevelop the remaining fifteen acres of the Site for a fixed-tilt solar array. It is anticipated that 3.3 megawatts of electric power will be generated by this facility when completed in 2024.

The current development of the northern five acres of the property, along with the fifteen-acre area available for development to the south, is illustrated on **Appendix A, Figure 2**.

III. PROGRESS SINCE THE LAST REVIEW

The protectiveness determinations from the 2018 FYR are summarized in **Table 2**, below. There were no recommendations included in the 2018 FYR.

Table 2: **Protectiveness Determinations/Statements from the 2018 FYR**

OU	Protectiveness Determination	Protectiveness Statement
01 and Sitewide	Protective	The remedy for OU1 is protective of human health and the environment.

Table 3, below, summarizes the status of a suggestion that was made in the 2018 FYR.

Table 3: Suggestions from the 2018 FYR

Suggestion	Update
The ongoing SVI investigation in nearby residential, school, and commercial structures should continue and, if necessary, actions to mitigate or lessen the potential exposure to site-related contamination would be performed.	The SVI investigation has continued.

IV. FIVE-YEAR REVIEW PROCESS

<u>Community Notification, Involvement & Site Interviews</u>

On August 15, 2022, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at Superfund sites in New York, New Jersey and Puerto

Rico, including the Rosen Brothers Scrap Yard site. The announcement can be found at the following web address: https://www.epa.gov/superfund/R2-fiveyearreviews

In addition to this notification, a notice of the commencement of the FYR was sent to local public officials. The notice was provided to the City of Cortland by email on May 2, 2023, with a request that the notice be posted in the respective municipal offices and on the City's webpage. The purpose of the public notice was to inform the community that EPA would be conducting a FYR to ensure that the remedy implemented at the site remains protective of public health and is functioning as designed. In addition, the notice included contact information, including addresses and telephone numbers, for questions related to the FYR process or the site.

Once the FYR is completed, the FYR report will be made available online at www.epa.gov/superfund/rosen-brothers and at the site information repositories. The information repositories are maintained at the Cortland Free Library, 32 Church Street, Cortland, New York and the EPA Region 2 Superfund Records Center, 290 Broadway, 18th Floor, New York, New York.

Data Review

Groundwater

In contrast with the elevated contaminant concentrations detected in the RI-related samples (data collected from 1991 to 1996 had a maximum total VOC concentration of 5,400 micrograms per liter [µg/L]), the more-recent data consistently indicate the presence of low levels of residual groundwater contamination. During the review period, groundwater monitoring of the eleven monitoring wells (see **Appendix A, Figure 1** for the location of the monitoring wells) occurred in 2018, 2020, and 2022. Total VOC concentrations from the latest sampling event (August 2022) (*i.e.,* the sum of site-related VOCs including 1,1,1-TCA, TCE, and related degradation products) ranged from non-detect (ND) to 14 µg/L for all of the eleven monitoring wells included in the long-term monitoring program. Furthermore, the concentrations of VOCs in the most recent round of sampling were either below or slightly above their Maximum Contaminant Levels (MCLs). Notably, low concentrations (all below their respective MCLs) continue to be reported for monitoring wells W-03 and W-12 on the downgradient edge of the site property along the northern boundary adjacent to Perplexity Creek. In monitoring well W-11, concentrations of 1,1,1-TCA and 1,1-dichloroethane (DCA) have decreased from their maximum levels reported in 2003 and 2004 (15 µg/L and 18 µg/L, respectively) to concentrations just above the 5 µg/L New York State GA standards for these compounds. During the most recent sampling event, 5.8 µg/L 1,1,1-TCA and 6.4 µg/L 1,1-DCA were observed. In monitoring well W-12, concentrations of TCE decreased from a maximum concentration of 10 µg/L in the previous review period to a concentration of 3.6 µg/L (2022), which is below the 5 µg/L federal MCL and state GA standard. Concentrations of 1,1,1-TCA in this monitoring well were consistently between 2 µg/L and 3 µg/L during the review period. The monitoring wells located along Huntington Street (monitoring wells W-16, W-18, and W-19) show slight decreasing trends in concentrations over time. Of the three wells, monitoring well W-19 has exhibited the greatest decreases. 1,1,1-TCA concentrations in this well have decreased from a maximum of 20 µg/l in 2003 to 8 µg/L in 2022, with concentrations lower than those observed during the previous review period. TCE concentrations in this well were

consistently below the federal and state regulatory standards. Concentrations were lower than in the previous review period in monitoring well W-18, with a maximum observed concentration of 5.2 µg/L (2018).

Appendix A, Figures 3 and 4, graphically illustrate the above-noted sample results.

Seep sampling was performed during the review period along the southern site property boundary. The results from 2018 showed no VOCs in the seep water. No seeps were observed in the subsequent sampling events in 2020 and 2022.

As part of a State-led sampling program, monitoring wells W-4, W-6, and W-10 were sampled for per- and poly-fluoroalkyl substances and 1,4-dioxane in July 2019. In 2020, New York State adopted new drinking water standards which set MCLs of 10 nanograms per liter (ng/L) for perfluorooctanoic acid (PFOA), 10 ng/L for perfluorooctanesulfonic acid (PFOS), and 1 µg/L for 1,4-dioxane. PFOA was observed at concentrations below the 10 ng/L MCL in each of the sampled wells, ranging from 0.81 ng/L to 2 ng/L. PFOS was also present below its 10 ng/L MCL in each sampled well, with concentrations ranging from 0.62 ng/L to 3.2 ng/L. 1,4-dioxane was not detected in any of the sampled wells.

Soil Vapor Intrusion

SVI sampling in the nearby school, a warehouse, a commercial facility, and downgradient residences continued during the review period.

The TCE results of indoor-air SVI sampling conducted at downgradient residential properties in 2019, 2020, and 2023 ranged from ND to 1.3 micrograms per cubic meter (µg/m^3).

SVI sampling was performed in 2019, 2020, and 2023 at the school after mitigation measures were implemented. Indoor TCE concentrations at the school ranging from ND to 0.6 µg/m^3 were found during the most recent sampling effort (2023).

Samples collected in 2018, 2019, and 2023 at the commercial facilities showed that although some sub-slab results were elevated, indoor air TCE concentrations remain low to ND. Results for TCE in indoor air ranged from ND to 0.8 µg/m^3. In 2019, most of the warehouse used for storage was demolished, but the remaining structure will continue to be included in the monitoring effort, as appropriate.

Although sampling results show TCE has accumulated below the slabs of the nearby residential, school, and commercial buildings, concentrations found in the indoor air continue to fall well below levels of concern. To ensure continued protectiveness, the ongoing SVI investigation in nearby residential, school, and commercial structures should continue and, if necessary, actions to mitigate or lessen the potential exposure to site-related contamination would be performed.

Site Inspection

On April 24, 2023, a FYR-related site inspection was conducted by EPA RPM Mark Granger, along with Ula Filipowicz, John Mason, and Julie McPherson of EPA, and Nick Dovi representing the City of Cortland. Observations made during the inspection indicated that the remedy-related infrastructure was in good repair.

V. TECHNICAL ASSESSMENT

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

The remedy for the site called for the excavation of contaminated soils from hotspots with off-site and on-site treatment/disposal, capping and fencing of the former cooling pond area, a surface cover for the remainder of the site, and MNA of groundwater via a well network installed as part of a long-term monitoring program. All components of the remedy have been successfully implemented and the remedy is functioning as intended by the decision documents.

The source removal has mitigated much of the potential impact to groundwater. Specifically, it is likely that the reductions in VOC concentrations are the result of effective source removal in combination with natural attenuation via dilution and dispersion. The ROD calls for MNA to address residual groundwater contamination in the downgradient areas of the site. Water quality data derived from groundwater samples collected since the initiation of the long-term monitoring program in 2003 show progressive decreases in levels of 1,1,1-TCA and DCA. Total VOC concentrations from the latest sampling event (August 2022) (*i.e.,* the sum of site-related VOCs including 1,1,1-TCA, TCE, and related degradation products) ranged from ND to 14 µg/l for all of the eleven monitoring wells included in the long-term monitoring program with very few exceedances of corresponding MCLs. Further, of the eleven monitoring wells included in the long-term monitoring program, ten wells from the 2022 sampling event have sustained or have reported decreases of concentrations of total VOCs in the previous (2020) round of sampling.

Based on the results of the SVI sampling conducted at the residential properties to date, one house required the installation of a SSDS. To ensure the newly installed SSDS system was functioning as intended, post-installation indoor air samples collected from the basement and first floor of the home were collected and demonstrated non-detectable levels of TCE. Based on prior SVI sampling results collected within the nearby school, mitigation measures were undertaken. Subsequent sampling of the indoor air showed TCE concentrations to be below levels of concern. SVI sampling in two adjacent commercial buildings continued during the FYR. Although sampling results show TCE has accumulated below the slabs of nearby residential, school, and commercial buildings, concentrations continue to fall and are well below levels of concern. To ensure continued protectiveness, the ongoing SVI investigation in nearby residential, school, and commercial structures should continue and, if necessary, actions to mitigate or lessen the potential exposure to site-related contamination would be performed.

In addition, all residences and businesses within the immediate vicinity of the site and in the downgradient area receive drinking water from the City of Cortland's municipal water supply well, which is located approximately two miles upgradient of the site.

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

The exposure assumptions and toxicity values used to estimate potential cancer risks and noncancer hazards followed the *Risk Assessment Guidance for Superfund* used by the Agency at the time the risk assessment was finalized. Although specific parameters may have changed since the assessment was finalized, the process used to conduct the assessment remains valid. Potential risks from exposure to contaminated media via ingestion, dermal contact, and inhalation were evaluated in the risk assessment for the Site. Receptors assessed included potential trespassers, future off-site residents, future excavation workers, and future industrial workers.

The results of the risk assessment indicated that ingestion, dermal contact and/or inhalation of vapors from surface soils and groundwater from beneath the site were associated with target cancer risk and noncancer hazard estimates that exceeded EPA's threshold criteria.

With respect to cleanup goals, the ROD called for the excavation of 1,1,1-TCA contaminated soils above 1 mg/kg and PCB-contaminated soils above 10 mg/kg in varying hot-spot areas of the site. The current NYSDEC Unrestricted Use Soil Cleanup Objectives for 1,1,1-TCA and PCBs are 0.68 and 0.1 mg/kg, respectively. Although the ROD-established cleanup values are higher than the currently promulgated New York State standards, they do not exceed EPA's risk-based screening levels (set at a target cancer risk of 1×10^{-5} or a noncancer HI of 1) for either 1,1,1-TCA or PCBs, and therefore remain valid and are protective of human health.

With respect to cleanup goals, the groundwater component of the ROD called for restoration to levels that meet federal and state drinking water standards. When compared to currently promulgated NYSDEC Groundwater Quality standards, the ROD established groundwater cleanup goals for these constituents remain unchanged, and hence, remain valid and are protective of human health.

Past remedial activities along with current restrictions on site and groundwater use ensure potential exposure to any residual contamination at the site remains an incomplete exposure pathway. Further, the groundwater underlying the site is not used as a drinking water source and the potential for subsurface vapor intrusion into indoor air is not of concern because the office is housed in a raised trailer. Based on these considerations, it is concluded that the current development and use of the site is protective of human health.

As noted above, the RAOs that were established for the site prevent human contact with contaminated soil, sediment, and groundwater; prevent ecological contact with contaminated soils and sediments; mitigate the migration of contaminants from soils/fill to groundwater; mitigate the off-site migration of contaminated groundwater; restore groundwater quality to levels which meet federal and state drinking standards; and control surface-water runoff and erosion. The RAOs for the site remain valid and protective of human health and the environment.

An exposure pathway not evaluated during the original human-health risk assessment was the potential for SVI into indoor air. As part of previous FYR recommendations, SVI investigations in nearby structures potentially affected by vapors emanating from the site were recommended. To date, 19 residences located near the site on Cedar, Randall, Huntington, and Pendleton Streets have been investigated. Additionally, eight rounds of data have been collected from a nearby school and seven rounds have been collected from two adjacent commercial buildings near the site. Although sampling results show TCE has accumulated below the slabs of these buildings, concentrations found in indoor air in residential, school, and commercial buildings continue to fall well below levels of concern. To ensure continued protectiveness, the ongoing SVI investigation in nearby residential, school, and commercial structures should continue and, if necessary, actions to mitigate or lessen the potential exposure to site-related contamination would be performed.

With respect to ecological risk, the primary ecological RAO is to "prevent ecological contact with contaminated soils and sediments." A potential route of ecological exposure is if the groundwater contaminants were transported to a surface water body. However, the twenty-acre cap/site-wide surface cover minimizes the exposure of ecological receptors to site-related contaminants and eliminates the migration of site-related contaminants to surface water and sediment in the intermittently-flowing Perplexity Creek and the Perplexity Creek Tributary. Although the ecological risk assessment screening values used to support the 1998 ROD may not necessarily reflect the current values, the exposure assumptions remain appropriate.

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 would call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Table 5, below, notes that there are no recommendations. There are no follow-up actions for this FYR, as well.

Table 5: Issues/Recommendations

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU1

Other Findings

The following suggestion was identified during the FYR and may improve performance of the remedy, but does not affect current and/or future protectiveness:

The ongoing SVI investigation in nearby residential, school, and commercial structures should continue and, if necessary, actions to mitigate or lessen the potential exposure to site-related contamination would be performed.

VII. PROTECTIVENESS STATEMENT

Table 6, below, presents the OU and sitewide protectiveness statements.

Table 6: Protectiveness Statements

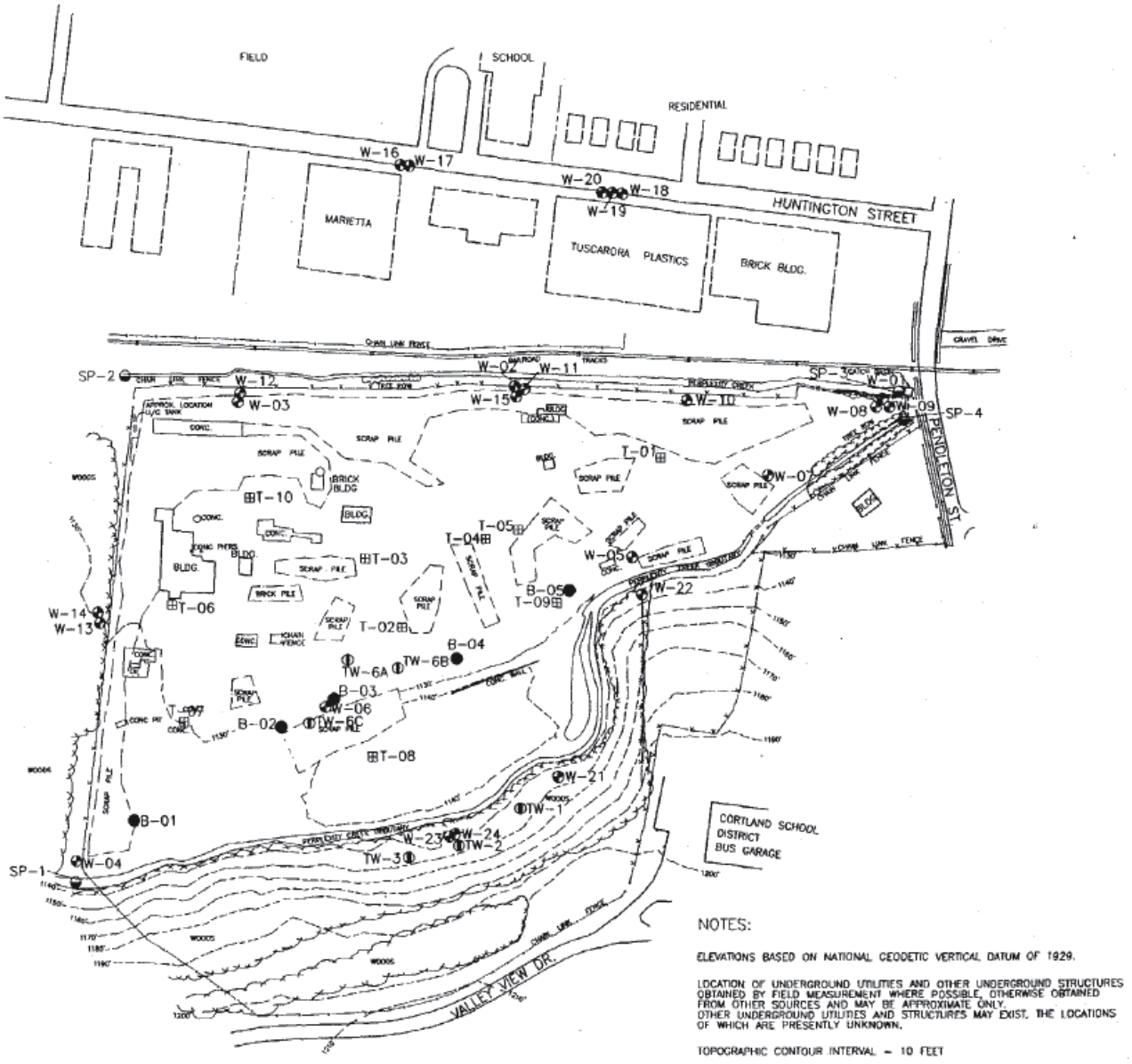
Protectiveness Statement(s)
Operable Unit: OU1 (Bedrock Groundwater) *Protectiveness Determination:* **Protective**
Protectiveness Statement: The remedy for OU1 is protective of human health and the environment.
Sitewide Protectiveness Statement
Protectiveness Determination: **Protective**
Protectiveness Statement: The sitewide remedy is protective of human health and the environment.

VIII. NEXT REVIEW

The next FYR report for the Rosen Brothers Scrap Yard Superfund site is required five years from the completion date of this review.

APPENDIX A: FIGURES

Figure 1: Site Layout



NOTES:

ELEVATIONS BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.

LOCATION OF UNDERGROUND UTILITIES AND OTHER UNDERGROUND STRUCTURES OBTAINED BY FIELD MEASUREMENT WHERE POSSIBLE, OTHERWISE OBTAINED FROM OTHER SOURCES AND MAY BE APPROXIMATE ONLY. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATIONS OF WHICH ARE PRESENTLY UNKNOWN.

TOPOGRAPHIC CONTOUR INTERVAL = 10 FEET

Figure 2: Development of the Northern Five Acres of the Rosen Property and the Fifteen-Acre Area Available for Development to the South

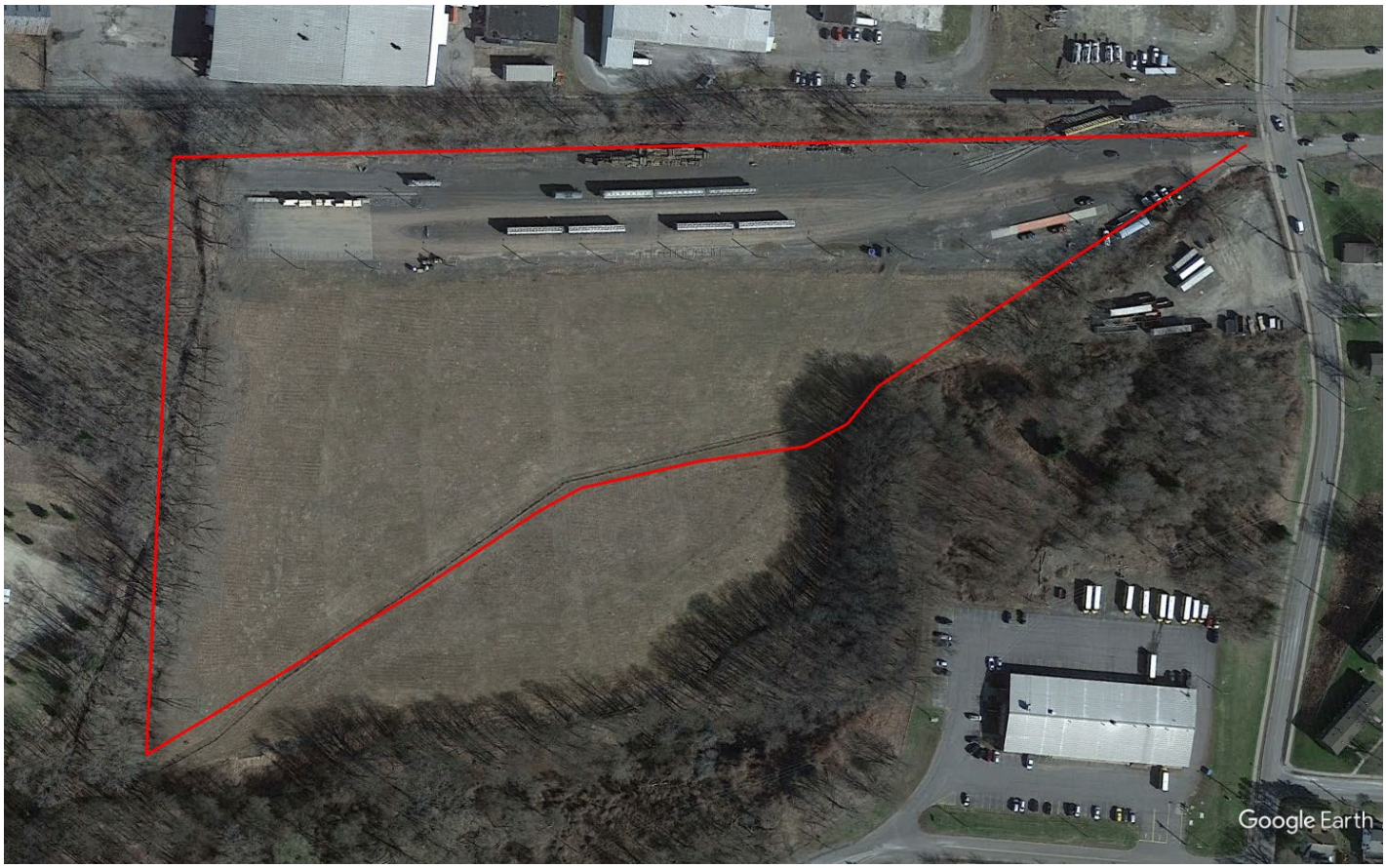
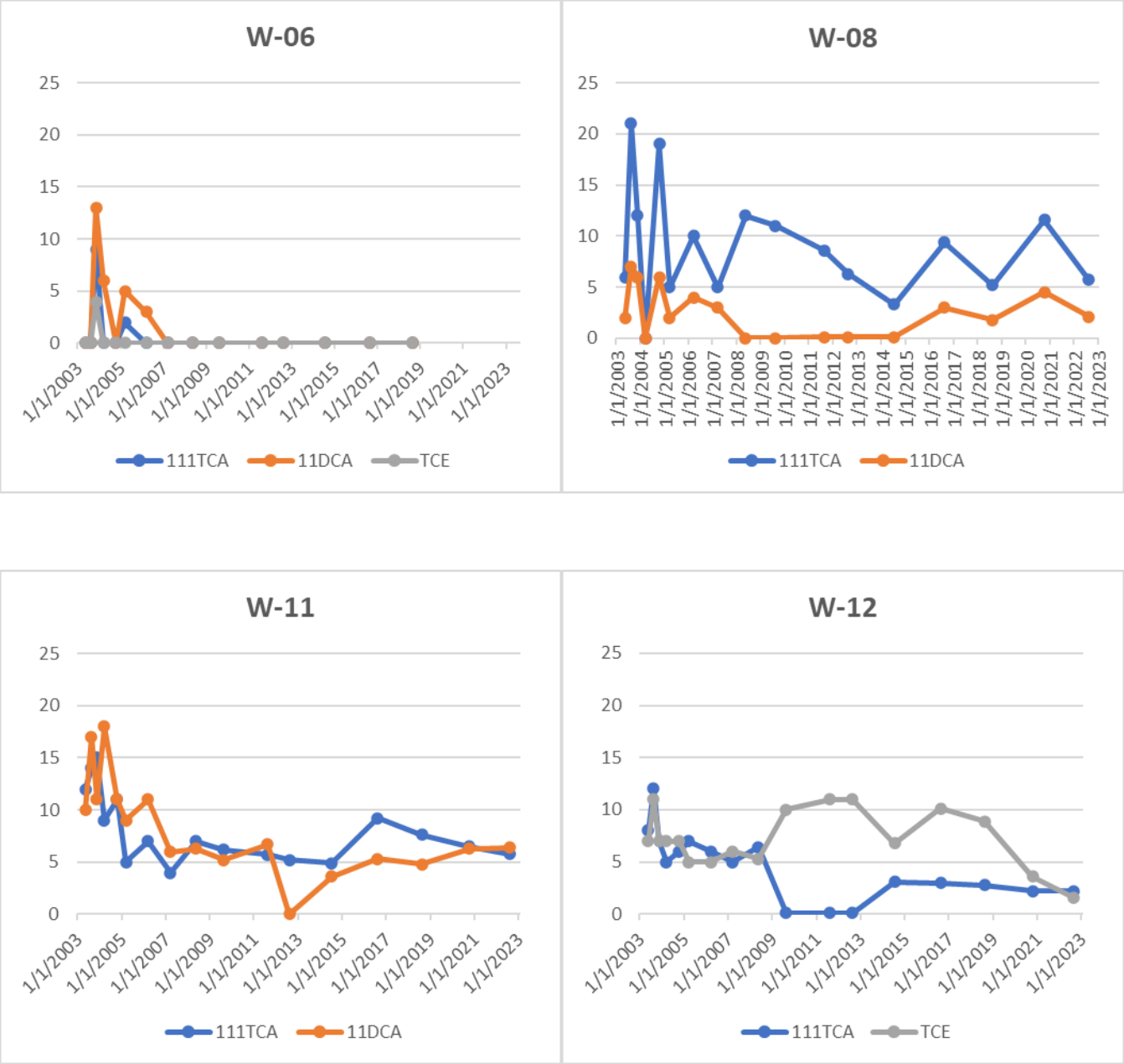
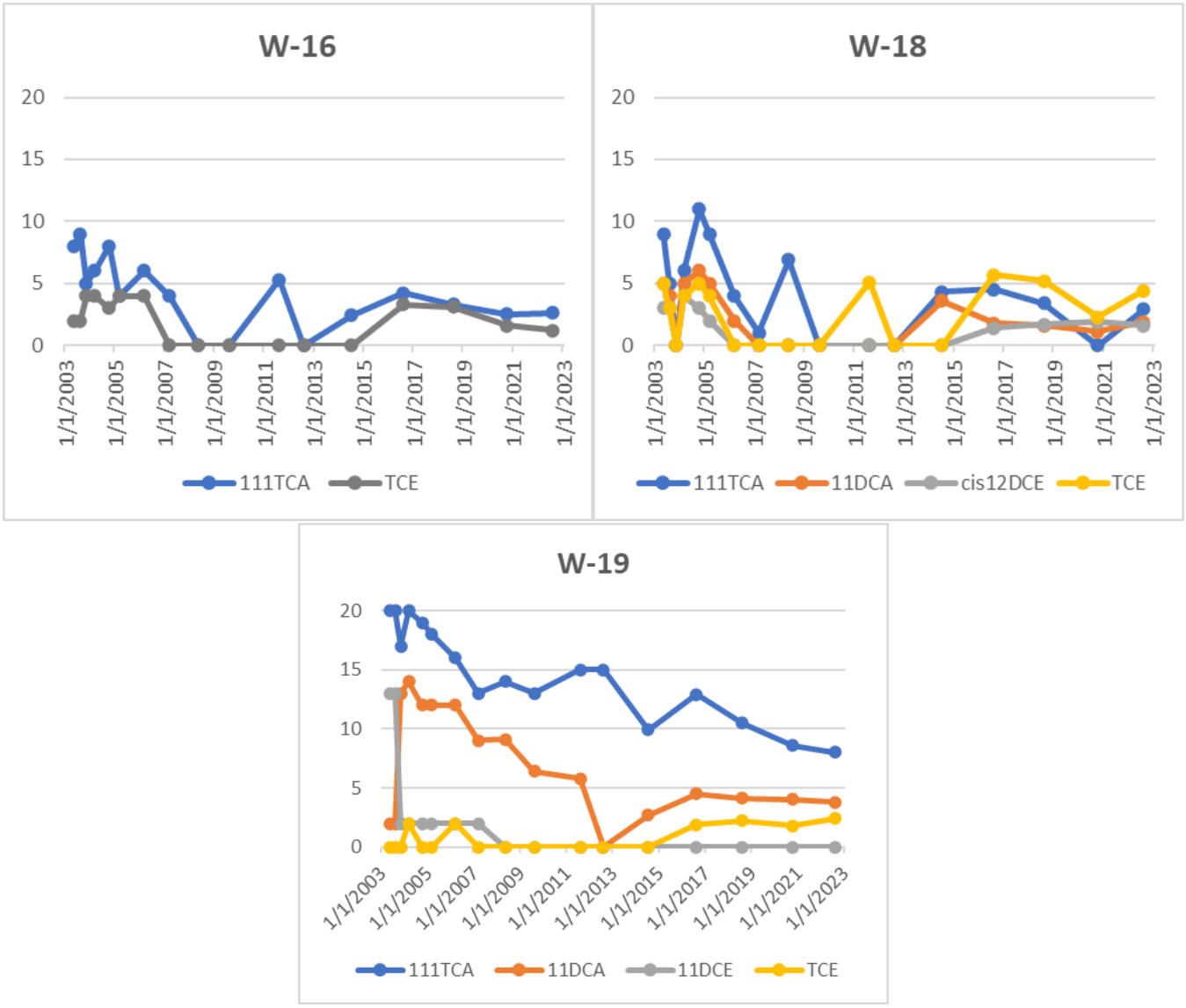


Figure 3: Groundwater Volatile Organic Compound Trends in Select On-Site Monitoring Wells



All concentrations are reported in micrograms per liter.
Monitoring well W-06 was dry during the 2020 and 2022 sampling events and could not be sampled.

Figure 4: Groundwater Volatile Organic Compound Trends in Select Off-Property Monitoring Wells



All concentrations are reported in micrograms per liter.

APPENDIX B: REFERENCES

Documents, Data and Information Reviewed in Completing the Five-Year Review	
Document Title (Author)	**Submittal Date**
Record of Decision, EPA	1998
Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, EPA	2002
Remedial Action Report, Barton & LoGiudice, P.C.	2003
Preliminary Close-Out Report, EPA	2003
Guidance for Incorporating Climate Change Considerations in Five Year Reviews, EPA Region 2	2022
Five-Year Review Report, EPA	2003
Five-Year Review Report, EPA	2008
Five-Year Review Report, EPA	2013
Five-Year Review Report, EPA	2018
Periodic Groundwater Data Reports	2018 - 2022
Annual Vapor-Intrusion Monitoring Reports, EPA	2018 - 2020
EPA guidance for conducting five-year reviews and other guidance and regulations to determine if any new Applicable or Relevant and Appropriate Requirements relating to the protectiveness of the remedy have been developed since the EPA issued the ROD	

APPENDIX C: CLIMATE CHANGE ASSESSMENT

According to the Region 2 *Guidance for Incorporating Climate Change Considerations in Five Year Reviews*, three climate change tools were utilized to assess the Rosen Brothers Scrap Yard/Dump Superfund Site. Screenshots from each of the tools assessed are included here.

The first tool utilized was The Climate Explorer. As can be seen from Figure C-1, there is a projected increase of days per year with maximum temperatures greater than 100°F in Cortland County. As can be seen on Figure C-2, there is a slight increase in potential drought conditions. A summary of the Top Climate Concerns from the tool can be seen in Figure C-3.

The second tool utilized is called Risk Factor. According to this assessment tool, there are over 1,781 properties in Cortland County that have greater than a 26% chance of being severely affected by flooding over the next 30 years. As can be seen from Figure C-4, the Rosen Brothers Scrap Yard/Dump site has a moderate risk of flooding over the next 30 years, which means flooding is likely to impact day-to-day life within the community. This is based on the level of risk the properties face rather than the proportion of properties with risk.

The final tool utilized is called NOAA Sea Level Rise Viewer. Because the site is located over 300 miles from the coast, coastal flooding impacts at the site is unlikely. Figure C-5 illustrates the Sea Level Rise Viewer for Cortland County.

Since contaminated soils have been excavated and removed from the site and the groundwater remedy includes MNA and long-term monitoring, the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the site (i.e., increases in temperature and flooding incidence).

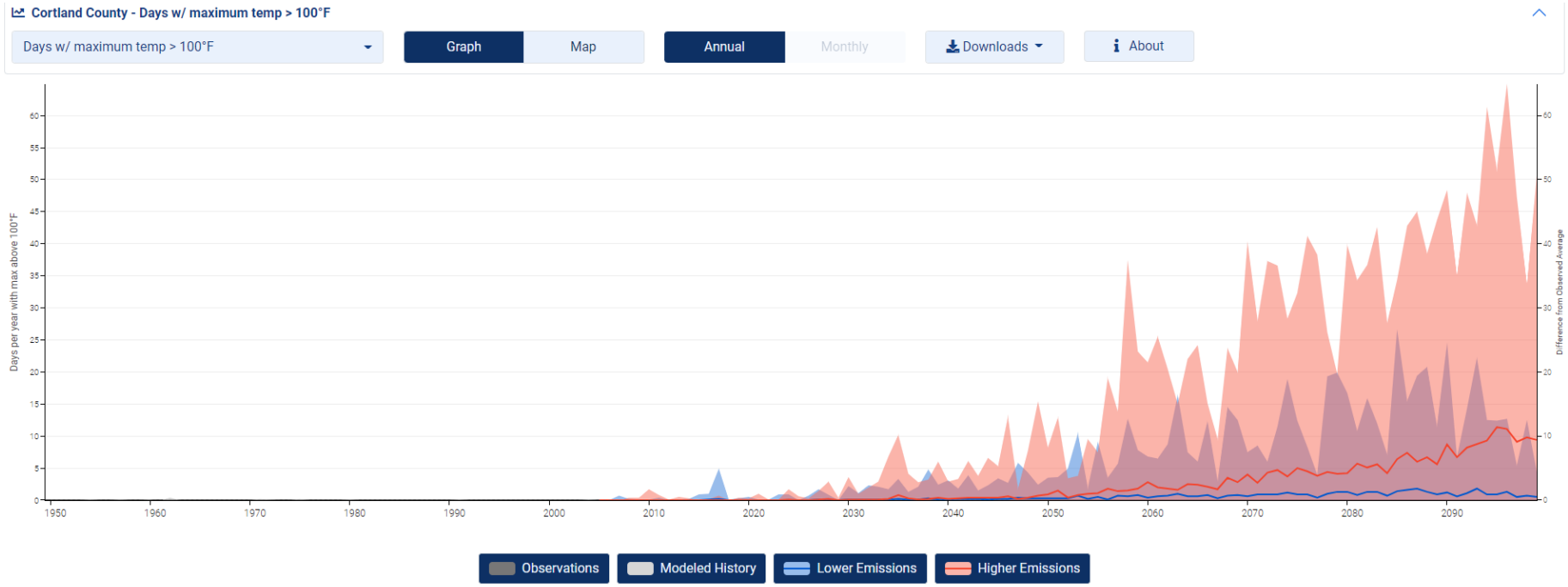


Figure C-1: Cortland County Days per Year With Maximum Temperatures Greater Than 100°F

Figure C-2: Cortland County Drought Conditions

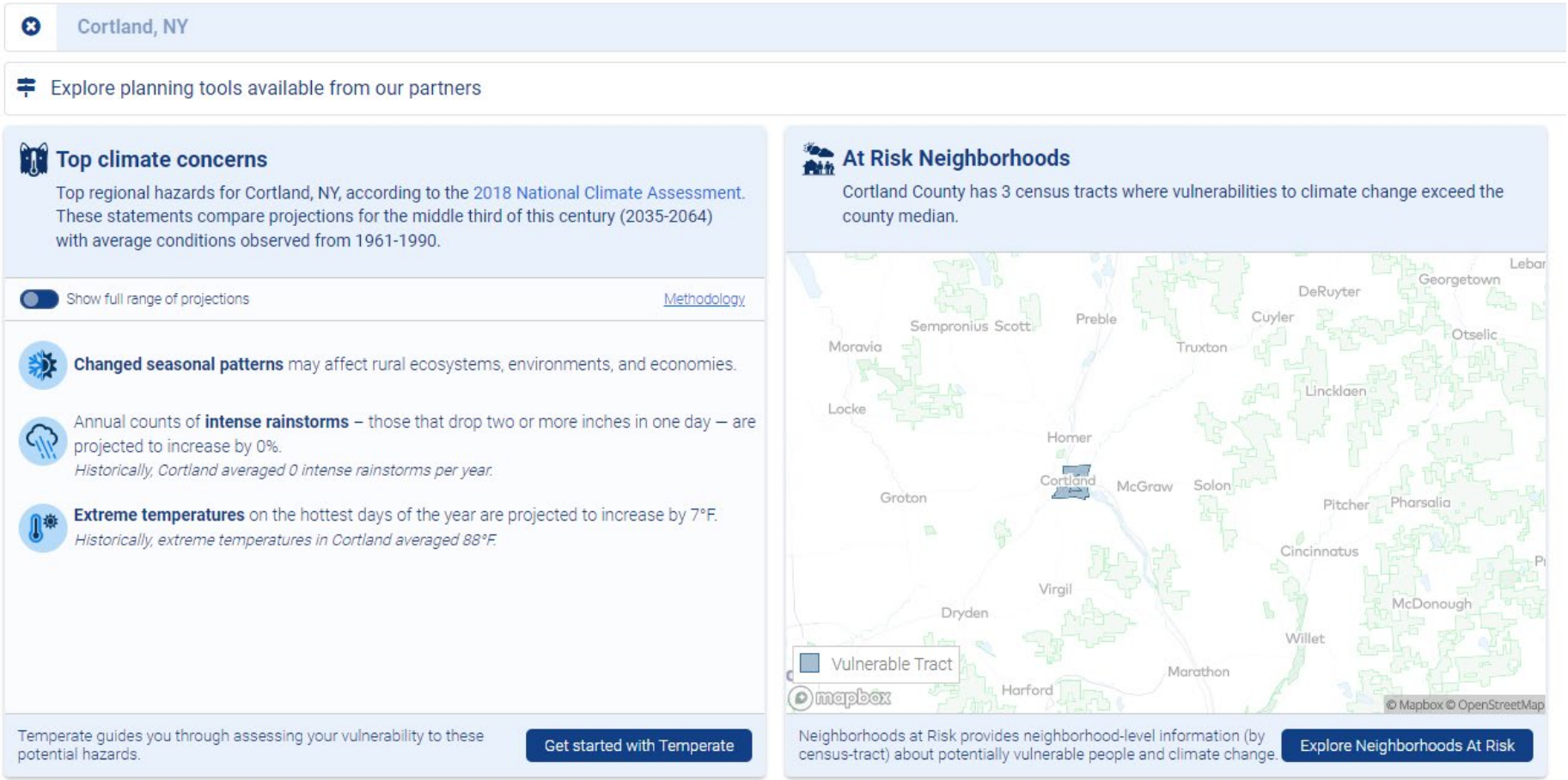


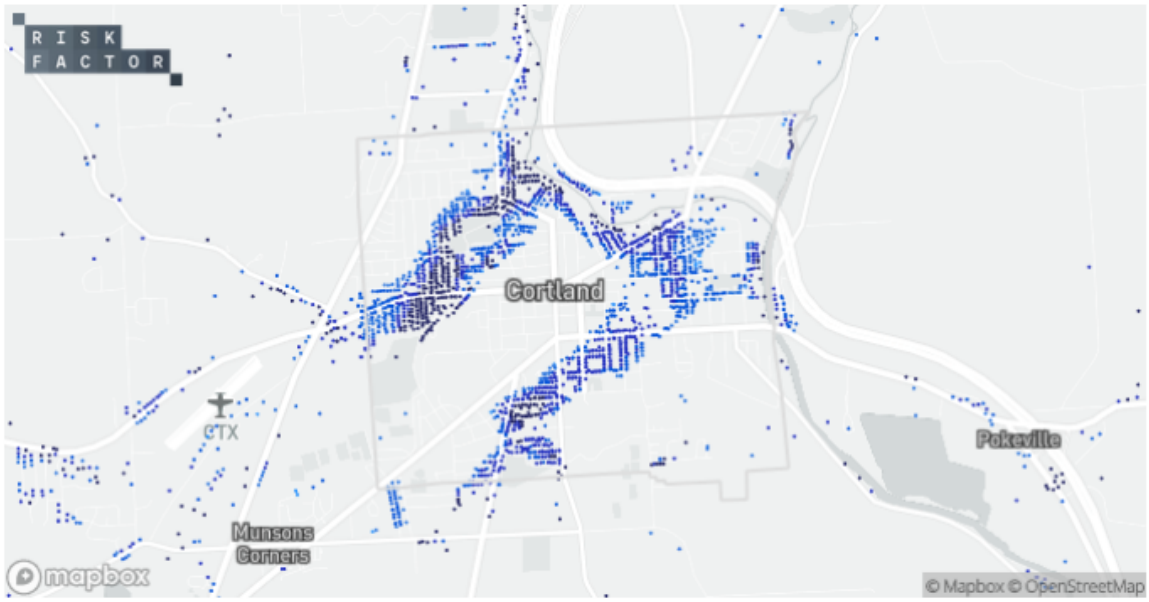
Figure C-3: Summary of Top Climate Concerns for Cortland County, NY

Moderate

FLOOD FACTOR™

There are **1,781** properties in **Cortland** that have greater than a **26%** chance of being severely affected by flooding over the next 30 years. This represents **43%** of all properties in Cortland.

In addition to damage on properties, flooding can also cut off access to utilities, emergency services, transportation, and may impact the overall economic well-being of an area. Overall, **Cortland** has a **moderate risk of flooding** over the next 30 years, which means flooding is likely to impact day-to-day life within the community. This is based on the level of risk the properties face rather than the proportion of properties with risk.



Cortland Flood Risk

Residential **Major Risk**
1,849 out of **4,162** homes

Road **Minor Risk**
31 out of **72** miles of roads

Commercial **Moderate Risk**
152 out of **435** commercial properties

Critical Infrastructure **Minor Risk**
1 out of **8** infrastructure facilities

Social Facilities **Moderate Risk**
6 out of **27** social facilities

Minor Moderate Major Severe Extreme

Figure C-4: Risk Factor for Flood Risk

Figure C-5: NOAA Sea Level Rise Viewer