

**SIXTH FIVE-YEAR REVIEW REPORT FOR
FOREST GLEN MOBILE HOME SUBDIVISION SUPERFUND SITE
NIAGARA FALLS, NEW YORK**



Prepared by

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

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LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
ATSDR	Agency for Toxic Substances and Disease Registry
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
FS	Feasibility Study
FYR	Five-Year Review
GPM	Gallon Per Minute
ICs	Institutional Controls
IRIS	Integrated Risk Information System
LDPE	Low-Density Polyethylene
MCL	Maximum Contaminant Level
MNA	Monitored Natural Attenuation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OBG	O'Brien and Gere, Inc.
O&M	Operation and Maintenance
OU	Operable Unit
PAH	Polyaromatic Hydrocarbon
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SVOC	Semi-Volatile Organic Compound
TBC	To be considered
VC	Vinyl Chloride
VOC	Volatile Organic Compound

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 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.

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 sixth FYR for the Forest Glen Mobile Home Subdivision Superfund Site (Site). The triggering action for this statutory review is the completion of the fifth FYR, September 27, 2017. 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).

The Site consists of multiple Operable Units (OUs): OU1 is the relocation of the residents of the former Forest Glen Subdivision, OU2 is the contaminated soil and sediment, and OU3 is the contaminated groundwater. OU2 and OU3 will be addressed in this FYR.

The Forest Glen Mobile Home Subdivision Superfund Site FYR was led by Maeve Wurtz, EPA Remedial Project Manager. Participants included John Mason (Hydrogeologist), Nick Mazziotta (Human Health and Ecological Risk Assessor), Michael J. Basile (Community Involvement Coordinator), and Pietro Mannino (Western New York Remediation Section Chief). The potentially responsible party (PRP) was notified of the initiation of the five-year review. The review began on November 15, 2021.

Site Background

The 39-acre Site, located in both the Town of Niagara and the City of Niagara Falls, Niagara County, New York. During the 1970s, illegal dumping of chemical wastes occurred at the Site. Developers had inadequately addressed an 11-acre area of the Site formerly used for dumping. From the mid-1970s to 1980s, a mobile home park occupied this area. In 1987, an EPA site assessment found soil and groundwater contamination at the Site. EPA added the Site to the Superfund program's National Priorities List (NPL) in 1989. The Site is bounded by Service Road, I-190, Expressway Village mobile home subdivision, and the Conrail-Foote Railroad Yard. The Site is bisected by East Gill Creek, a narrow, low-flowing creek. The former 15-acre Forest Glen Subdivision, which once consisted of 51 mobile and two permanent residences, was located south of the creek. There are approximately 6 acres of undeveloped land south of the creek and an 18-acre parcel of undeveloped land north of the creek, including a 1.5-acre wooded wetland. The Site is located in an area zoned for mixed residential, commercial and industrial use. The zoning of the Site property is commercial/industrial. A municipal water system serves the City of Niagara Falls and the Town of Niagara.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Forest Glen Mobile Home Subdivision Superfund Site		
EPA ID: NYD981560923		
Region: 2	State: NY	City/County: Niagara
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	Has the site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: EPA <i>[If "Other Federal Agency", enter Agency name]:</i>		
Author name (Federal or State Project Manager): Maeve Wurtz		
Author affiliation: EPA		
Review period: 11/15/2021 - 7/19/2022		
Date of site inspection: 7/12/2022		
Type of review: Statutory		
Review number: 6		
Triggering action date: 9/27/2017		
Due date (five years after triggering action date): 9/27/2022		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

In 1980, the Niagara County Health Department detected phenolic resins, polyvinyl chloride resins, rubber by-products, and ash in soil. Concrete refuse and industrial machinery were scattered throughout the 21 acres, with concentrated areas in the Carrie Drive and Lisa Lane cul-de-sac. This discovery eventually led to the placement of the Site on the NPL in 1989.

After the relocation of residents was completed in 1992, EPA conducted a Remedial Investigation and Feasibility Study (RI/FS) at the Site from 1994 to 1997. Environmental sampling of soil, sediment and groundwater was performed. The analysis of these samples detected volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals. The contaminants of concern (COC) were benzo(a)pyrene, vinyl chloride (VC), aniline, phenyl isothiocyanate, diphenylamine, 2-mercaptobenzothiazole, 2-anilinobenzothiazole, perylene, n,n-diphenyl-1,4-benzenediamine, phenothiazine, and benzothiazole.

The results of the RI/FS also indicated that the groundwater was contaminated with VOCs and inorganics, however, SVOCs were not detected in the groundwater. VOCs were consistently detected in the monitoring wells downgradient of the fill areas at concentrations exceeding federal drinking water standards. The VOCs detected in groundwater included vinyl chloride. The inorganic compounds included chromium, nickel and lead, which exceeded federal drinking water standards.

A risk assessment was performed as part of the RI/FS and several potential exposure pathways were evaluated. The risk assessment assumed a residential land-use scenario since the subdivision and other portions of the Site were zoned residential until 1998. The risk assessment concluded that potential future residents would be at risk from exposure to Site soil and from ingestion of Site groundwater. In addition, an ecological risk assessment was conducted which concluded that ecological receptors at the bottom of the food chain, such as the short-tail shrew, were at risk from exposure to Site media.

Response Actions

EPA initiated a removal action at the Site in April 1989 which included voluntary temporary relocation of residents, the placement of a temporary cover over portions of the Site, fence installation and the offsite disposal of drums.

On July 31, 1989, the Agency for Toxic Substances and Disease Registry (ATSDR) determined that there was a significant risk to human health for persons living at the Site and issued a health advisory recommending the immediate relocation of residents living at the Site. A removal action for the temporary relocation of residents from the Forest Glen Subdivision began immediately after the Public Health Advisory was issued and was completed in December 1989.

OU1 – Relocation

EPA issued a Record of Decision (ROD) for OU1 in December 1989 selecting permanent relocation of the residents of the Forest Glen Subdivision. EPA completed the permanent relocation of residents in 1992.

This OU will not be evaluated in this FYR.

OU2 – Contaminated Soil and Sediment

EPA issued a ROD for OU2 on March 31, 1998.

The Remedial Action Objectives (RAOs) for soil and sediment are:

- 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.

The components of the soil and sediment remedy included:

- Excavation of contaminated soils from the southern portion of the Site, and contaminated sediment from East Gill Creek, and consolidation of these materials in the northern portion of the site followed by grading in preparation for placement of the cap.
- Confirmatory sampling of the bottom and sidewalls of the excavation to ensure that cleanup goals have been met followed by backfilling with clean fill overlain with a six-inch layer of clean topsoil and grass cover.
- Construction of an 8.5-acre cap over the consolidated soils in the northern portion of the Site in conformance with the major elements described in 6 New York Code of Rules and Regulations Part 360 for solid waste landfill caps. Conceptually, the cap will be comprised of: 18 inches of clay or a suitable

material to ensure a permeability of 10⁻⁷ cm/sec, six inches of porous material serving as a drainage layer, 18 inches of backfill, and 6 inches of topsoil and grass cover.

- Implementation of a long-term inspection and maintenance program to ensure cap integrity.
- Removal and off-site disposal of the vacant trailers and two permanent homes to facilitate the excavation of soils.
- Capping the Wooded Wetland with six inches of clean sediment. If further studies conclude that the addition of six inches of clean sediment would have an adverse impact on the wetland, contamination in the Wooded Wetland would be excavated and the Wooded Wetland would be appropriately restored.
- Performance of a wetlands assessment and mitigation plan during the remedial design phase in order to minimize potential adverse impacts to the wetland and to replace any wetlands lost due to the remediation.
- Compliance with all ARARs, including the location-specific ARARs identified in the ROD. This will include the performance of a Stage IB cultural resources survey and a floodplain assessment.
- Taking measures to secure institutional controls to limit future activities in the Northern Aspect and fencing to limit future access to the capped area.

In September 1999, EPA amended the OU2 ROD for contaminated soils and sediments due to the rezoning the Site property from residential to commercial/light industrial use.

The components of the amended soil and sediment remedy include:

- Construction of an engineered cover system (landfill cap) over the contaminated soils/sediment at the Site in conformance with the major elements described in 6 New York Code of Rules and Regulations Part 360 for landfill caps. Conceptually, the standard Part 360 cap includes 18 inches of low-permeability soil cover barrier or geomembrane to ensure a permeability of 10⁻⁷ centimeters/second, six inches of porous material serving as a drainage layer, 24 inches of soil as a barrier protection layer and six inches of topsoil and grass cover. The areas of the Site to be capped include the berm and the portions of contaminated soil (above Technical Administrative Guidance Memoranda (TAGMs)) in the former Subdivision and Edgewood Drive Wooded Lots. Areas of contaminated soil (above TAGMs) located in the Northern Aspect will be excavated and consolidated under the cap, as well as contaminated sediments excavated along East Gill Creek;
- Implementation of a long-term inspection and maintenance program to ensure cap integrity;
- Removal and off-site disposal of the vacant trailers and two permanent homes to prepare the Site for excavation and capping;
- Taking measures to secure institutional controls in the form of deed restrictions to limit future Site activities, as appropriate, and fencing to limit future access to the capped area;
- Capping the Wooded Wetland with six inches of clean sediment. If the Wetlands Assessment and Mitigation Plan conclude that the addition of six inches of clean sediment would have an adverse impact on the wetland, contamination in the Wooded Wetland would be excavated and the area would be appropriately restored; and,
- Performance of an investigation in East Gill Creek during Remedial Design to determine if there are upstream sources of contamination that may impact the Site.

OU3 – Contaminated Groundwater

On September 30, 1999, EPA issued a ROD selecting groundwater extraction and off-site treatment as the remedy for the contaminated groundwater.

The RAOs for groundwater are:

- Reduce or eliminate the threat to human health and the environment posed by groundwater contamination by remediating groundwater to MCLs, thereby restoring the aquifer to beneficial uses; and,
- Reduce or eliminate the potential for migration of contaminants to potential receptors.

The major components of the groundwater remedy include:

- Extraction of contaminated groundwater from the on property plume;
- Transportation of the extracted groundwater via sanitary sewer to the City of Niagara Falls Wastewater Treatment Plant;
- Construction of an on-site, 12-hour holding tank, as required by the City of Niagara Falls Wastewater Treatment Plant;
- Sampling of the storage tank effluent as required by the City of Niagara Falls Wastewater Treatment Plant;
- Implementation of a Long-Term Groundwater Monitoring Program to assess whether the remedy is functioning as designed; and,
- Performance of a Monitored Natural Attenuation Study, including a baseline investigation and groundwater modeling, to evaluate intrinsic biodegradation and other natural attenuation processes. If monitoring indicates that natural attenuation is not effective in remediating the off-property groundwater contamination, active remedial measures will be considered.

Status of Implementation

Soil Remediation

The Goodyear Tire & Rubber Company, Inc., (Goodyear) entered into a Consent Decree with EPA in 2001 to perform the remedial design and remedial action for both soil and groundwater at the Site. EPA approved the remedial design for soil in July 2002.

In September 2002, approximately 43 tons of asbestos-containing materials were removed from the Site and disposed of at the BFI special waste landfill in Kenmore, New York. Subsequent to the removal of the asbestos, the trailers and two permanent homes were demolished. Approximately one ton of demolition debris, excluding the metal trailer frames which were recycled, was disposed of at the BFI Pine Avenue Landfill in Niagara Falls.

Goodyear excavated approximately 43,000 cubic yards of contaminated soil and sediment and consolidated this material in the northern half of the former subdivision. Approximately 4.5 tons of waste containing polyaromatic hydrocarbons (PAHs) were removed and disposed off-Site. Verification sampling indicated that the action levels set forth in the 1999 ROD had been achieved.

As required by the 1999 ROD, Goodyear excavated the Wooded Wetland to a depth of six inches in order to maintain the grade at the Site. Goodyear further excavated approximately 1,000 cubic yards of sediment and consolidated it in the area which was subsequently capped. Six inches of topsoil were imported to the Site and the wetland was restored according to the Wetlands Mitigation Plan. In addition, approximately 3.5 acres of wetland at the Site were restored and/or enhanced utilizing hydrophilic plant species.

The excavation of contaminated sediment along East Gill Creek varied between 6 and 12 inches. Approximately 1,000 cubic yards of sediment were excavated and consolidated in the area which was subsequently capped. Goodyear constructed a Part 360 cap that consisted of a polypropylene nonwoven geotextile filter fabric and a 40-mil linear low-density polyethylene (LDPE) liner.

The barrier protection layer encompasses an area of approximately nine acres and supports several distinct regions, including a vegetated area, a one-story commercial/light-industrial building, a heavy-duty asphalt area and a standard asphalt area.

Groundwater Remediation

Goodyear installed and developed the two groundwater extraction wells. The remedial design indicated that groundwater would be recovered from each extraction well at a flow rate of 10 gallons per minute (gpm) for a combined discharge rate of 20 gpm, under normal pumping circumstances.

Goodyear brought the groundwater remedial system on-line in September 2003. The two extraction wells are pumped at a combined rate of 20 gpm. Water-level mapping indicated that the area of capture of the groundwater remedial system is of sufficient size to capture the on-property groundwater plume.

An additional extraction well was added to the system in August 2014 in order to prevent any migration of contaminants by providing additional hydraulic capture. Goodyear underwent an evaluation to optimize the pumping rates for the extraction wells, with the rates changing to approximately 10 gpm each at RW-1 and RW-2, and 5 gpm at RW-3, for a combined pumping rate of 25 gpm. These rates have been shown to be effective in creating an inward hydraulic gradient towards the recovery wells.

EPA approved a monitored natural attenuation (MNA) study in 2001 which was completed in 2014. The study determined that the conditions in the aquifer are such that the contaminants in the off-property plume are naturally attenuating.

Site Redevelopment

As part of the soil remediation, Goodyear constructed a 40,000-square-foot slab-on-grade building on the Part 360 cap. The Cherokee Development Corporation leases the building long term to the KP Corporation which maintains a warehouse at this location.

IC Summary Table

Table 1: Summary of Planned and/or Implemented ICs

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, soils, sediments	Yes	Yes	On-property Areas	Use restriction on site activities to preserve integrity of the remedy (e.g., no digging, no well installation)	<i>Environmental Protection Easement and Declaration of Restrictive Covenants, June 2002</i>

Systems Operations/Operation & Maintenance (O&M)

Soil O&M

Quarterly inspections of the engineered cap are performed on behalf of the Cherokee Development Corporation by Great Lakes Environmental. Inspection reports are submitted to EPA. The inspection reports to date indicate that the soil remedy is being maintained properly. The condition of the cap is excellent. The condition of the remainder of the Site is also excellent.

Groundwater Operation & Maintenance (O&M)

The groundwater extraction system at the Site is comprised of three pumping wells, RW-1, RW-2 and RW-3. RW-1 and RW-2 are the two original pumping wells, installed and operated since 2003. The recovery system was shut down from October 2010 through April 2013 in order to assess if COC concentrations in the groundwater would rebound to historical concentrations.

RW-3 was added to the extraction system in December 2014 in an attempt to further control groundwater

migration downgradient of the sentinel well MW-10 series. Pumping rates varied between 3 gpm and 12 gpm at individual wells during the review period and were higher following well rehabilitation events and conveyance line maintenance procedures, which were performed periodically as necessary. In October 2021, pumping rates in RW-1, RW-2, and RW-3 were 10.8 gpm, 9.9 gpm, and 4.9 gpm, respectively.

Groundwater monitoring for both the on-property and off-property plume includes groundwater level measurements and contaminant concentrations in all monitoring wells. MNA parameters are also collected. Goodyear conducts groundwater sampling on a quarterly basis. Reports are submitted to EPA annually. The most recent annual report was submitted to EPA in March 2022. Goodyear also inspects Regulator No. 8, which relays a potential overflow condition to the Site and shuts off the pumps.

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.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last FYR and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2017 FYR

OU #	Protectiveness Determination	Protectiveness Statement
2	Protective	The implemented remedy for the soils and sediments at the Forest Glen Mobile Home Subdivision Superfund Site protects human health and the environment.
3	Protective	The implemented groundwater remedy at the Forest Glen Mobile Home Subdivision Site protects human health and the environment.
Sitewide	Protective	The implemented remedy at the Forest Glen Mobile Home Subdivision Site protects human health and the environment.

There were no issues and recommendations identified in the last FYR.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 6, 2021, 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, Puerto Rico and the U.S. Virgin Islands, including the Forest Glen Superfund site. The announcement can be found at the following web address: <https://www.epa.gov/superfund/R2-fiveyearreviews>.

In addition to this notification, EPA has notified the local community that it will be conducting a FYR of the site. Once the FYR is completed, the results will be posted electronically online at <http://www.niagarafallsusa.org>, as well as the EPA site website, <https://www.epa.gov/superfund/forest-glen>, and will also be made available for public viewing at the US EPA Region 2 Western New York Public Information Office, 186 Exchange Place, Buffalo, New York. The telephone number of the local site repository is 716.551.4410.

No interviews were conducted for this review.

Data Review

Groundwater elevations are measured quarterly at monitoring wells MW-1S, MW-1D, MW-4S, MW-4D, MW-5S, MW-5D, MW-6S, MW-6D, MW-6DD, MW-7S, MW-7D, MW-7DD, MW-8S, MW-8D, MW-8DD, MW-10S and MW-10D (Figure 1). Groundwater samples are subsequently collected from these monitoring wells on a quarterly basis.

Groundwater Elevation Monitoring

The comparison of the baseline shallow and deep bedrock groundwater elevation contour maps, dated 2000, which represent pre-pumping conditions at the Site, to the 2020 shallow and deep bedrock groundwater elevation contour maps indicates that the groundwater recovery system creates an inward hydraulic gradient toward the extraction wells.

Based on the groundwater elevation measurements, the shallow and deep groundwater in the vicinity of RW-3 have been influenced since initiating operation of this pumping well. Recent data indicate that the groundwater extraction system is achieving sufficient hydraulic control of the on-property plume.

Groundwater Quality Monitoring

The most recent groundwater sampling data reviewed for this FYR was from the November 2021 sampling event. A review of the data and trends is discussed below for on-property and off-property monitoring wells. The location of monitoring wells for the on-site and off-property plume can be seen in Figure 1. On-property wells are identified as MW-4 series, MW-5 series, MW-6 series and the sentinel MW-10 series on the southern edge of the monitoring network. The off-property wells include the MW-7 series and MW-8 series.

On-property Wells

- Trichloroethylene (TCE) was only detected above the remediation goal of 5 micrograms per liter ($\mu\text{g/L}$) in on-property monitoring well MW-5S. MW-5S is located adjacent to recovery well RW-1, and with the exception of a concentration spike during the most recent measurement, the well exhibited a slight decline in concentrations across the review period. The maximum concentration of TCE in MW-5S during this FYR period was 57 $\mu\text{g/L}$ and occurred during the most recent measurement (09/2021). Concentrations at this location remain well below historical observations (350 $\mu\text{g/L}$; 07/1997).
- cis-1,2-Dichloroethene (cis-1,2-DCE) concentrations were detected above the 5 $\mu\text{g/L}$ remediation goal in MW-5S, MW-6S, MW-6DD, and MW-10S during this FYR period, as follows:
 - MW-5S has exhibited an unsteady but overall decreasing trend since the recovery system was re-started. The maximum observed cis-1,2-DCE concentration was 88 $\mu\text{g/L}$ (09/2017), and most recently, 50 $\mu\text{g/L}$ was detected (09/2021). Concentrations remain significantly below historical levels (e.g., 2,700 $\mu\text{g/L}$ in 12/2013).
 - MW-6S, located to the south of RW-2, exhibited relatively stable cis-1,2-DCE concentrations across the review period. The maximum observed concentration was 39 $\mu\text{g/L}$ (08/2018), and concentrations of 11 $\mu\text{g/L}$ were detected during the most recent sampling event (09/2021).
 - Concentrations of cis-1,2,DCE at MW-6DD were stable across the review period. The maximum concentration observed during the review period was 28 $\mu\text{g/L}$ (09/2020), and in 09/2021, a concentration of 19 $\mu\text{g/L}$ was detected.
 - Concentrations at MW-10S were highly variable and fluctuated between non-detectable levels and a maximum observed concentration of 44 $\mu\text{g/L}$ (12/2020). No statistically significant trend was observed across the review period, although the detected concentrations were generally higher than those observed during the previous review period, and prior to the installation of RW-3 roughly 150 ft to the north.

- VC concentrations were detected above the 2 µg/L remediation goal during this FYR period in MW-5S, MW-6S, MW-6DD, and MW-10S, as follows:
 - VC in MW-5S increased after the recovery system was shut down, but subsequently decreased when RW-3 was brought online in 2014. Concentrations remained stable across the current review period, and were typically less than 5 µg/L. Since the previous FYR, the maximum VC concentration detected was 11 µg/L in 2020.
 - Concentrations of VC at MW-6S varied significantly across the review period. No significant trend was observed, although a comparison with the past review period indicates that VC concentrations have increased at this location. Sampling during this review period revealed the highest concentration (68 µg/L; 03/2020). The elevated and variable VC concentrations at this location are likely reflective of the ongoing dechlorination of more chlorinated ‘parent’ compounds.
 - MW-6DD exhibited a significant decline in concentration since the recovery system was restarted and RW-3 was brought online in 2014. Since this time, concentrations have been relatively stable, oscillating about a mean slightly above the 2 µg/L remediation goal. The maximum concentration detected at this location was 6.7 µg/L (06/2019) during the review period.
 - Concentrations of VC at MW-10S range from non-detect to 6.6 µg/L (09/2017). During the most recent sampling event (09/2021), VC was not detected.

Monitored Natural Attenuation

The off-property portion of the plume (MW-7 and MW-8 series) is not captured by the recovery system. The ROD indicates that the off-property plume will be allowed to naturally attenuate. Natural attenuation allows naturally occurring environmental processes (i.e., dilution, dispersion, biodegradation, adsorption) to reduce contaminant mass. A 2014 report demonstrated through multiple lines of evidence that natural attenuation is occurring at the Site, and recent data support this conclusion.

Groundwater analytical results indicate that TCE, cis-1,2-DCE and VC have consistently remained below remediation goals in wells MW-7, MW-7D, and MW-7DD throughout the FYR period.

In the MW-8 series (MW-8S, MW-8D, MW-8DD), TCE, cis 1,2-DCE and VC were consistently below their remediation goals throughout the FYR period. In MW-8S, TCE concentrations exhibited a gradual decline, and most recently, a concentration of 2.5 µg/L was observed (09/2021) compared to the remediation goal of 5 µg/L.

Site Inspection

The inspection of the Site was conducted on 7/12/2022. In attendance were Maeve Wurtz, EPA RPM, Jeff Sussman, Goodyear, Jamie Cavotta and Paul Mazurkiewicz, Ramboll on behalf of Goodyear. The purpose of the inspection was to assess the protectiveness of the remedy.

During the site inspection, the landfill cap, monitoring wells, wooded wetland area, signage, fencing, pump shed, and warehouse interior were inspected. The recovery and monitoring wells at the Site are in good condition and are routinely inspected as part of the O&M program. The landfill cap, signage, and fencing at the Site are in good condition. It was noted that the pump shed had been upgraded in 2020, with a new foundation slab and curb, as well as a new heater, locks and supports. It was also noted that a new tenant had moved into the warehouse and had installed new storage racks. No issues were identified with respect to the ongoing O&M program.

V. TECHNICAL ASSESSMENT

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

The soil and sediment remedies identified in the 1999 ROD for OU2 included excavation, consolidation, and capping of soils, as well as capping sediments in the forested wetland. Based on a review of site data and inspection reports, the remedy is still functioning as intended.

The groundwater remedy consists of the extraction and off-site treatment of contaminated groundwater from the on-property plume and MNA of the off-property plume. The system consists of three on-property extraction wells, which were active throughout the review period. RW-3 was added to the extraction well network in 2014 to reduce concentrations of VOCs in the on-property wells and to prevent further migration of the groundwater plume. A review of groundwater elevation contour maps indicates that there is an inward gradient on the property that is controlling migration of the groundwater plume.

A review of the groundwater monitoring data indicates that VOC contamination still exists on the property, specifically in MW-5S, which is located near residual source material below the cap. Since the addition of RW-3 and the restart of the extraction system in the previous review period, VOC concentrations have declined to concentrations below remediation goals in the off-property monitoring wells.

Institutional controls continue to preclude any development activities that would impair the cap in place. Ongoing O&M ensures that the integrity of the cap is maintained.

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

Question B Summary:

There have been no changes in the physical conditions of the Site over the past five years that would change the protectiveness of the remedy. The human health risk assessment (HHRA) concluded that future residential exposure to contaminants in Site soil (via direct contact) and groundwater (via ingestion) would result in human health risk and hazard exceeding EPA threshold criteria. The COCs identified for the Site include VOCs, SVOCs (primarily PAHs) and metals. The land use assumptions, exposure assumptions and pathways, and clean up levels considered in the 1998 and 1999 RODs followed the Risk Assessment Guidance for Superfund used by the Agency and remain valid. Although specific parameters may have changed since the time the risk assessment was completed, the process that was used also remains valid.

The RAOs discussed under Section II remain valid as well. All impacted soils and sediments have been excavated and capped. Although concentrations of contaminants in on-property groundwater monitoring wells exceed remediation goals, all residences and businesses in the vicinity of the Site are connected to a public water supply. Thus, all potential exposure pathways have been interrupted. The ROD established the more stringent of federal MCLs and New York State Department of Environmental Conservation Class GA groundwater standards as the remediation goals for the COCs in groundwater, which remain protective of human health.

The ecological risk assessment for the Site indicated that chemicals in the soil were present at concentrations that could result in impairment to ecological receptors at the Site. Given that the contaminated soils were excavated, consolidated, and capped, and the wetland sediments were capped, the potential for exposure to ecological receptors has been eliminated.

Changes in Toxicity Characteristics

At the time of the risk assessment, the following contaminants in Site soil and sediment did not have toxicity values: phenyl isothiocyanate, 2-mercaptobenzothiazole, 2-anilinobenzothiazole, perylene, n,n-diphny-1,4-benzenediamine, phenothiazine, and benzothiazole. Toxicity values remain undeveloped for 2-anilinobenzothiazole, perylene and benzothiazole. Despite the absence of these chemical-specific toxicity values, the remedy remains protective because areas containing these contaminants were capped, excavated, or otherwise treated; and no exposure to soils, sediments or groundwater contaminated with these chemicals occur.

Soil Vapor Intrusion

EPA evaluated soil vapor intrusion at the Site based on groundwater concentrations. The only building overlying the area of groundwater contamination is the on-property commercial building. The building design included a vapor mitigation system; therefore, this pathway is adequately addressed. The soil vapor intrusion pathway should be further evaluated in the event that other portions of the property are developed with new buildings because elevated VOC levels remain in groundwater.

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

There is no new information that would call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

There are no issues or recommendations in this FYR.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement	
<i>Operable Unit</i> 02	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The implemented remedy for the soils and sediments at the Forest Glen Mobile Home Subdivision Superfund Site protects human health and the environment.	

Protectiveness Statement	
<i>Operable Unit</i> 03	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The implemented groundwater remedy at the Forest Glen Mobile Home Subdivision Superfund Site protects human health and the environment.	

Sitewide Protectiveness Statement

Protectiveness Determination:
Protective

Protectiveness Statement: The implemented remedy at the Forest Glen Mobile Home Subdivision Site protects human health and the environment.

VIII. NEXT REVIEW

The next FYR report for the Forest Glen Mobile Home Subdivision Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

DOCUMENTS REVIEWED FOR THE SIXTH FIVE-YEAR REVIEW
1999 Record of Decision for OU2 and OU3 (Soil & Groundwater)
Remedial Action Report
Operations and Maintenance Manual
Fifth Five-Year Review
2017-2021 Annual Groundwater Monitoring Reports
2018-2022 Quarterly Inspection Reports

APPENDIX B – CHRONOLOGY OF EVENTS

APPENDIX B: CHRONOLOGY OF EVENTS	
ACTIVITY	DATE
Niagara County Health Dept. soil sample analysis detected phenolic resins	1980
Site referred to EPA	1987
EPA sampling detects volatile and semi-volatile organics & metals	1987-1988
ATSDR Public Health Advisory issued	July 1989
Temporary Relocation begins	August 1989
Site listed on the National Priorities List	November 1989
Focused Feasibility Study and Proposed Plan	November 1989
Record of Decision for OU1 (Relocation)	December 1989
Permanent Relocation begins	June 1990
Final resident relocated from the Site	December 1992
EPA begins Remedial Investigation	June 1994
Feasibility Study for soil conducted	August 1997
First Five-Year Review Conducted	September 1997
Proposed Plan for OU2 (Soil) issued	October 1997
Record of Decision for OU2 (Soil) issued	March 1998
Supplemental Groundwater Feasibility Study conducted	June 1998
Zoning changed from residential to commercial/light industrial	January 1999
Proposed Plan for OU2 & OU3 (Soil & Groundwater) issued	April 1999
Record of Decision for OU2 & OU3 (Soil & Groundwater) issued	September 1999
Remedial Design for soil approved by EPA	July 2002
Remedial Action Work Plan approved by EPA	July 2002
Remedial Action begins	July 19, 2002
Second Five-Year Review conducted	September 2002
Remedial Design for groundwater approved by EPA	April 2003
Construction Completion	September 2003
Remedial Action for Soil completed	September 2004
Third Five-Year Review conducted	September 2007
Groundwater extraction well pumps turned off for study	November 2010
Fourth Five-Year Review conducted	September 2012
RW-3 extraction well added and pumps restarted	September 2012
Fifth Five-Year Review conducted	September 2017

APPENDIX C – FIGURES

Figure 1 – Site Overview

