FOURTH FIVE-YEAR REVIEW REPORT FOR MONTGOMERY TOWNSHIP HOUSING DEVELOPMENT AND ROCKY HILL MUNICIPAL WELL SUPERFUND SITES

Somerset County, New Jersey

Prepared by

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May 30, 2025

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LIST OF ABBREVIATIONS & ACRONYMS

CEA	Classification Exemption Area
CFR	Code of Federal Regulations
1,1-DCE	1,1-dichloroethane
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FS	Feasibility Study
FYR	Five-Year Review
MCL	Maximum Contaminant Level
MW	Monitoring Wells
NJDEP	New Jersey Department of Environmental Protection
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
RAO	Remedial Action Objectives
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SVOCs	Semi-volatile organic compounds
TAL	Target Analyte List
TBC	To be considered
TCL	Target Compound List
UU/EE	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 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 pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act Section 121, consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Section 300.430(f)(4)(ii)) and considering EPA policy.

This is the fourth FYR for the Montgomery Township Housing Development (MTHD) and Rocky Hill Municipal Well (RHMW) Superfund Sites (Sites). The triggering action for this policy review is the July 29, 2020, completion date of the previous FYR for the Sites. This FYR has been prepared due to the fact that remedial action will not leave hazardous substances, pollutants, or contaminants on site above levels that allow for unlimited use and unrestricted exposure (UU/UE), but requires five or more years to complete.

MTHD has two operable units (OUs) and RHMW has one OU. MTHD OU1 addressed potential exposure to groundwater contaminants and provided alternative water supply to impacted residences. MTHD OU1 is complete. Contaminated groundwater associated with the MTHD and RHMW Sites is addressed by a single remedy, designated as MTHD OU2 and RHMW OU2. These OUs are the subject of this FYR.

The Site's fourth FYR team included Michelle Granger, EPA (remedial project manager); Paul Zarella, EPA (hydrogeologist); Urszula Filipowicz, EPA (human health risk assessor); Detbra Rosales, EPA (ecological risk assessor); and Shereen Kandil, EPA (community involvement coordinator). The local government officials were notified of the initiation of the FYR. The review began on 10/2/2024.

Site Background

The RHMW/MTHD Superfund Sites (Figure 1) are located adjacent to one another in the Borough of Rocky Hill and in Montgomery Township, respectively, west of the Millstone River in the southern part of Somerset County, New Jersey. The RHMW site is located on approximately two acres of land situated east of New Jersey State Route 206 and directly south of Route 518. The MTHD site includes 71 one-acre residential lots located in Montgomery Township and six additional residences nearby. The area surrounding the Sites consists of wooded areas and residential and commercial development.

RHMW wells numbered 1 and 2 were constructed in 1936. These two wells provided a source of potable water to the Borough of Rocky Hill. Well number 1 was abandoned and sealed between 1976 and 1978. Due to the elevated levels of trichloroethylene (TCE) in groundwater, well number 2 was closed in November 1979. Levels of TCE in the well water eventually declined, and the well

was subsequently reopened. Levels of TCE, however, increased, and the well was closed for a second time in January 1982. After the installation of two air stripping units by the Borough for well number 2, the well reopened as a potable source of water in July 1983, and has been operating ever since.

Groundwater at the Sites is contaminated with volatile organic compounds (VOCs) particularly TCE. Although the RHMW and MTHD Sites were listed separately on the National Priority List (NPL) in 1983, they are being addressed jointly due to similarity of contaminants and their close proximity to each other.

For more details related to the Sites' background, physical characteristics, geology/hydrogeology, and land/resource please see the documents found in the Sites repositories or at https://www.epa.gov/superfund/montgomery-township or https://www.epa.gov/superfund/rocky-hill-well (see section on webpage titled Site Documents and Data).

FIVE-YEAR REVIEW SUMMARY FORM

Site Name: Montgomery Township Housing Development Rocky Hill Municipal Well		
EPA ID: MTHD NJD980654164 RHMW NJD980654156		
Region: 2	**State:** NJ	**City/County:** Somerset County
NPL Status: Final		
Multiple OUs? Yes	**Have the Sites achieved construction completion?** Yes	
Lead agency: State		
Author name (Federal or State Project Manager): Michelle Granger		
Author affiliation: United States Environmental Protection Agency		
Review period: 10/2/2024 – 4/2/2024		
Date of site inspection: 1/14/2025		
Type of review: Policy		
Review number: 4		
Triggering action date: 7/29/2020		
Due date *(five years after triggering action date)*: 7/29/2025		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Since the Site characterization determined that soils and surface waters are not currently being impacted by Site related contamination, exposure to soils and surface waters was not included in the risk assessment of the Sites. Thus, the risk assessment only considered exposure to contaminated groundwater through potable uses.

The human health risk assessments for the Sites indicated that exposure to contaminated site groundwater via potable uses would result in lifetime cancer risk and noncancer hazard estimates that exceeded EPA's threshold criteria. The risk assessments also concluded that the Site-related contaminants of concern are TCE and tetrachloroethene (PCE).

Response Actions

In 1984, the New Jersey Department of Environmental Protection (NJDEP) entered into a Cooperative Agreement with EPA under which NJDEP performed the remedial investigation and feasibility study (RI/FS) for the RHMW and MTHD Sites.

In 1985, NJDEP began conducting the RI/FS for the Sites. The RI included groundwater, surface water and stream sediment, septic tank, soil, and air sampling. In January 1986, the NJDEP Division of Water Resources placed a restriction on future well drilling for water supply in the area.

In April 1988, NJDEP issued an RI report which identified the nature and extent of the groundwater contamination and concluded that the source of groundwater contamination to the RHMW and MTHD Sites was at or in the vicinity of the Princeton Gamma-Tech, Inc. (PGT) facility located on Route 518 in Montgomery Township. In the 1970's, PGT used a septic system to dispose of sanitary and lab sink waste. Septic tank samples collected by NJDEP identified the presence of TCE at levels as high as 5,000 parts per billion (ppb). NJDEP removed the tank following a spill in 1980. The RI/FS reported results for 28 soil samples taken at the PGT property, none of which showed TCE contamination.

Concentrations of TCE found in the PGT property well (PGTMW-1) had decreased from 5,000 ppb in the 1980s to 1,800 ppb by 1992. The maximum concentration of TCE in the well continued to decline over the next six years to 320 ppb. The above information indicates that the past septic tank discharge was the source of the contamination found in the shallow groundwater. The sediment and surface water samples collected from Beden Brook and the Millstone River did not contain site contamination.

In 1995, EPA conducted an investigation of the former Fifth Dimension (FFD) facility, which is located in the southern portion of the Sites' secondary plume. The results of the investigation showed that the FFD was a source of TCE groundwater contamination.

Remedy Selection

MTHD - OU1 Remedy Selection

Following completion of the RI/FS, a Record of Decision (ROD) was issued by EPA in September 1987 that called for an alternate water supply to be provided for residents of the MTHD by installing waterline extensions and connections and sealing of abandoned private wells. The remedy for MTHD OU1 is complete. This OU is not part of this FYR.

MTHD OU2 and RHMW OU2 Remedy Selection

In June 1988 EPA selected one remedy for both MTHD OU2 and RHMW OU2 that addresses the entire groundwater contaminant plume associated with the Sites. The remedial action objective in the RODs is to reduce groundwater contaminants to levels that are protective of human health. To achieve that objective, the ROD set goals to reduce the groundwater concentration of TCE and PCE to 1 ppb and 1,1-dichloroethene (1,1 DCE) to below 2 ppb, respectively.

The remedies called for:

- The extraction of contaminated groundwater from the primary source areas, (where TCE is approximately greater than 100 ppb) within the contaminant plume, followed by on-site treatment and reinjection of the treated water back into the underlying aquifer;
- connection of any remaining affected residences to the public water supply;
- sealing of private water supplies within the contaminant plume; and
- implementation of a groundwater sampling program to monitor the effectiveness of the cleanup.

The less contaminated groundwater in a secondary area (where TCE concentrations are less than 100 ppb) will attenuate through natural means. VOC concentrations and natural attenuation parameters are monitored in the secondary plume on a regular basis as part of the long-term groundwater sampling program.

Status of Implementation

MTHD OU2 and RHMW OU2

Following completion of remedial design activities in August 2003, the USACE awarded a contract for the construction and operation of two groundwater treatment systems to Cape Environmental.

Construction activities for the remedy began on March 15, 2004. Construction activities of the recovery wells, a number of additional monitoring wells, and Groundwater Treatment Facility (GWTF) #1 and #2 were completed on January 11, 2005. The ROD specified treatment by air stripping and reinjection of the treated water back into the underlying aquifer. The surface water

discharge via connection to the existing storm water sewers was chosen as the preferred option for effluent disposal. The change in the treatment and discharge components to the remedy have been documented in an Explanation of Significant Differences (ESD) issued by EPA in August 2005. NJDEP was consulted and approved the surface discharge of treated water.

One of the targeted remediation zones is the primary source area located on the property at 1377 Route 206. Groundwater Treatment Facility #1 (GWTF #1) and its three pairs of recovery wells were constructed at this location. The targeted remediation zone for this area of the plume extends vertically from 50 feet to 200 feet below ground surface and is enclosed horizontally by the 100 ppb TCE isoconcentration contour. The objective of the capture zone was to achieve capture of the targeted remediation zone. Two of the three pairs of wells generated adequate amounts of water that produced a flow rate of 56 gallons per minute into the treatment plant. The third pair, recovery well 3S and recovery well 3D, were not productive and were converted into monitoring wells in 2005.

A second smaller primary source area is located to the south underlying the PGT property near the intersection of Routes 206 and 514. Two recovery wells were installed on this property. These two wells were constructed to extract groundwater within the primary source area underlying this property that extends vertically between 25 to 100 feet below ground surface within the weathered bedrock and shallow bedrock aquifer. These two recovery wells pump a total six gallons per minute of extracted groundwater into a portable trailer-mounted treatment unit known as GWTF #2. This treatment unit, similar to GWTF #1, uses liquid granular activated carbon (LGAC) to treat extracted groundwater and discharges treated water to a surface water body via a storm sewer.

With respect to connection of remaining affected residences to the public water supply, there are no known remaining affected residences.

IC Summary Table

Table 1: Summary of 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	Yes	No	Groundwater Contamination Area	Restrict installation of groundwater wells and groundwater use.	Classification Exception Area (CEA) June 6, 2014

Systems Operations/Operation & Maintenance

A Final Operations and Maintenance Manual was approved in January 2006.

The two treatment plants have been operating to extract and treat groundwater from the two primary source areas since January 2005. GWTF #1 is currently pumping contaminated water from the aquifer at a flow rate of 26.7 gallons per minute (gpm). GWTF #2, located on the Princeton Gamma

Tech property, is currently pumping at a flow rate of 8.2 gpm. Approximately 508 million gallons of contaminated groundwater have been pumped from the primary source areas and have been treated and discharged to date.

During this review period, groundwater monitoring in the primary and secondary source plume areas has been conducted on an annual basis. The groundwater samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs). Natural attenuation parameters (methane/ethene/ethane, total organic carbon, chloride, ferrous iron, total alkalinity, sulfate, and nitrate/nitrite) are monitored in the secondary plume every five years as part of the long-term groundwater sampling program.

To ensure protectiveness, ongoing sampling and monitoring of both sub-slab and indoor VOCs is being conducted periodically for the commercial stores located within the shopping center.
Site inspections were conducted by the USACE and their contractor regularly to ensure that the fence is in good repair and to look for signs of trespass. Any deficiencies which may be noted, such as plant growth requiring clearing and grubbing or removal of debris and minor fence repair, were addressed by the USACE.

Due to a detection of polychlorinated biphenyls (PCBs) in the carbon of GWTF #1, GWTF #1 was temporarily shut down in January 2023. During this time, EPA ran analyses for PCBs in the plant discharge and coordinated with NJDEP for a Discharge to Surface Water permit equivalency modification. NJDEP issued the modification in February 2024 and the system was restarted shortly thereafter.

In March 2024, GWTF #1 was turned off for LGAC inspection and maintenance. Upon completion of the installation of two new liquid carbon vessels, GWTF #1 was restarted in June 2024.

In September 2024, EPA transferred the responsibility for operation of GWTF#1 and GWTF#2 to NJDEP. NJDEP's responsibilities include, but are not limited to, performing inspections at the Sites, conducting the groundwater sampling program, and continuing periodic vapor intrusion monitoring.

Remedy Resilience

Potential impacts from severe weather have been assessed (Appendix C), and the performance of the remedy is currently not at risk due to the expected effects.

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.

Protectiveness Determinations/Statements from the 2020 FYR

OU #	Protectiveness Determination	Protectiveness Statement
02 -MTHD 02-RHMW	Protective	The remedies at the MTHD and the RHMW Superfund sites are protective of human health and the environment.
Sitewide	Protective	The remedies at the MTHD and RHMW Sites are protective of human health and the environment.

There were no issues and recommendations in the last FYR.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 7, 2024, the 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 MTHD and RHMW Sites. The announcement can be found at the following web address: https://www.epa.gov/superfund/R2-fiveyearreviews.

In addition to this notification, the EPA Community Involvement Coordinator (CIC) for the Sites, Shereen Kandil, posted a public notice on the EPA webpages https://www.epa.gov/superfund/montgomery-township and https://www.epa.gov/superfund/rocky-hill-well, and provided the notice to the Montgomery and Rocky Hill Townships by email on April 23, 2025, with a request that the notice be posted in municipal offices and on the village/town webpages. This notice indicated that a FYR would be conducted at the MTHD and RHMW Sites to ensure that the cleanup at the Sites continues to be protective of people's health and the environment. Once the FYR is completed, the results will be made available at the following repositories: Montgomery Municipal Center, 100 Community Drive, Skillman, New Jersey 08558 and the EPA Region 2 offices, 290 Broadway- 18th floor, New York, New York 10007-1866. In addition, the final report will be posted on the above-named webpages. Efforts will be made to reach out to local public officials to inform them of the results.

Data Review

This FYR focuses on analyzing groundwater data collected from this review period (2020-2024). The groundwater samples were analyzed for volatile organic compounds (VOCs) in the primary and secondary source areas. Natural attenuation parameters are monitored every five years. During this review period natural attenuation monitoring was conducted in 2024.

GWTF #1 and GWTF #2 (Primary Plume Areas)

Eight monitoring wells within the GWTF #1 area capture zone (See Figure 2) and ten monitoring wells within the GWTF #2 area capture zone were sampled during the FYR period.

With few exceptions since 2010, groundwater sampling results in the primary plume continue to show a general decline in levels of TCE within the GWTF #l capture zone. In monitoring well MW-30D, TCE and PCE concentrations fluctuated during the review period, but in general the concentrations were stable or decreased (See Appendix A Table 1). The monitoring well is located immediately downgradient from the Montgomery Shopping Center complex building but is within the capture zone of GWTF #1. During the most recent sampling event in April 2024, the maximum TCE detection in groundwater was 10.2 ppb at MW-20S (above the ROD cleanup level of 1 ppb) and the maximum PCE detection was in groundwater 43.5 ppb at MW-04D (above the 1 ppb ROD level). For the previous sampling events in the review period, PCE in MD-04D ranged from 5.43 to 19 ppb. The increased PCE concentration from 2024 is likely associated with the extended down-time of GWTF #1. Groundwater sampling results within the capture zone for GWTF #2 indicate general decreasing trends in TCE and PCE as well (See Table 1). All TCE concentrations were below 100 ppb during the reporting period. MW-20S was the only well that had TCE concentrations above 20 ppb; at a maximum concentration of 57 ppb in the 2020 sampling event. Although this increase may also be attributed to GWTF #1 extended shutdowns in 2023 and 2024. EPA will continue to regularly monitor the concentrations of TCE and PCE in the area. This is a decrease in concentration from the previous reporting period.

During this reporting period, groundwater sampling results for 1,1-DCE were generally non-detect except for MW-15D which ranged up to 3.03 ppb in 2022 (above the ROD cleanup goal of 2 ppb). The cis-1,2-DCE detections fluctuated above 10 ppb during the reporting period for PGT-MW-01, ranging between 6.3 ppb in 2022 to 18 ppb in 2020. 2020 and were stable between 2023 (10.1 ppb) and 2024 (18 ppb). The concentrations of cis-1,2- DCE, and other daughter products of PCE and TCE dechlorination are not showing increases in correlation with decreased PCE and TCE concentrations at the wells, indicating that the level of the daughter product concentrations are not the result of anaerobic reductive dechlorination (ARD).

GWTF #1 and #2 operations have either reduced or eliminated the primary TCE plumes. TCE was not detected above 100 ppb in any of the monitoring wells around GWTF #1 and around GWTF #2. The primary TCE plume (i.e., TCE greater than 100 ppb) at GWTF #2 has been eliminated during this reporting period. See Figure 3 for further detail of the TCE plume. TCE and PCE will be treated to the selected site cleanup standard of 1 ppb.

Secondary Plume Areas

Secondary plume data show PCE concentrations generally remained at or below the ROD cleanup goal throughout the five-year period. One exception was the PCE concentrations at MW-27D; which ranged from non-detect in April 2022 to 18.0 ppb in April 2024, which is within the historical PCE concentration range for that well. TCE concentrations in the secondary plume are either stable or decreasing since the previous FYR reporting period.

The concentrations of cis-l,2-DCE, and other daughter products of PCE and TCE dechlorination are not showing increases in correlation with decreased PCE and TCE concentrations at the wells, indicating that the level of the daughter product concentrations are not the result of ARD. However, the data show that attenuation is occurring and is likely due to dispersion, dilution and/or sorption.

Rocky Hill Municipal Well No. 2 is within the secondary plume. A review of RHMW No. 2 influent data collected during this review period (2020 - 2024) indicate decreasing levels of TCE and stable low levels of PCE in the groundwater. The air stripping units that were installed in 1983 are still in operation.

Emerging Contaminants

Treatment plant process water samples for the analysis of per- and polyfluoroalkyl substances (PFAS) were collected in November 2023. Samples were collected from the influent and effluent of both GWTF #1 and #2. All samples were collected from the taps within each GWTF. Sample results for specific PFAS compounds: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), and perfluorononanoic acid (PFNA) compounds are presented in the table below. Despite effluent results being below eco screening levels, the GWTF #2 effluent sample exceeded the EPA PFOA MCL of 4 parts per trillion (ppt) with a detected concentration of 11.3 ppt. EPA will continue to work with the state to determine future sampling needs.

Parameter (ppt)	EPA MCL (ppt)	NJ MCL (ppt)	GWTF#1 Influent	GWTF#1 Effluent	GWTF#2 Influent	GWTF#2 Effluent
PFOA	4	14	**15.7**	3.42 U	**9.44**	**11.3**
PFOS	4	13	**23.9 L**	3.42 U	**11.6**	3.94 L
PFNA	10	13	3.39 U	3.42 U	3.41 U	3.29 U

L = Identification of the analyte is acceptable; the reported value may be biased low.
U = The analyte was not detected at or above the reporting limit listed.
Bold: analyte exceeds one or more MCL.

In January 2018, NJDEP adopted a groundwater quality standard (NJ GWQS) for 1,4-dioxane of 0.4 ppb. Sampling for 1,4-dioxane was initiated at the site monthly starting April 2016 until June 2017. The monthly sampling showed low level detections ranging from 0.21 to 0.62 ppb of 1,4-dioxane. Thereafter, EPA switched the sampling frequency to an annual basis. Data collected from GWTF #1 and #2 effluent indicate that 1,4-dioxane has been undetected during the most recent July 2020, April 2021, April 2022, April 2023 sampling rounds.

Vapor Intrusion

To date, five rounds of vapor intrusion (VI) sampling have been collected from the Sites. Most recently, in February 2023, concurrent indoor air and sub-slab samples were collected from 5 commercial locations within the Montgomery Township Shopping Plaza. The preceding round of VI data, collected in 2018, was discussed in Question B of the previous five-year review document.

To ensure protectiveness, detected concentrations of volatile constituents in indoor air and sub-slab samples were compared to their corresponding risk-based vapor intrusion screening levels (VISLs). The VISLs are chemical- and media-specific screening values developed by the Agency in accordance with the framework for evaluation and assessing VI investigations as specified in EPA's

2015 final vapor intrusion guidance document entitled, "*OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air.*"

Out of the five locations sampled, detectable concentrations of PCE found in the sub-slab ranged from 5.9 ug/m^3 to 140 ug/m^3, while the indoor air detected concentrations ranged from 0.33 ug/m^3 to 0.38 ug/m^3. Out of the 5 locations, only one showed detectable concentrations of TCE at 0.33 and 0.19 ug/m^3 in the sub-slab and indoor air, respectively. These detected levels were below EPA's TCE and PCE indoor air and sub-slab VISLs for commercial use.

Site Inspection

The inspection of the Site was conducted on 01/14/2024. In attendance were Michelle Granger, Paul Zarella, Ula Filipowicz, Tara Bhat, and Joseph Hayes from EPA, and Tom Roche from USACE. Both Sites were found to be in good condition and no issues were identified. The purpose of the inspection was to assess the protectiveness of the remedy.

V. TECHNICAL ASSESSMENT

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

The remedies for the Montgomery Township Housing Development and Rocky Hill Municipal Well Sites are functioning as intended by the decision documents.

The MTHD OU2 and RHMW OU2 groundwater remedy includes extraction of the contaminated groundwater through pumping from the two most contaminated areas of the aquifer, followed by on-site treatment with liquid-phase GAC adsorption. After treatment to meet New Jersey Pollutant Discharge Equivalency System (NJPDES) requirements, the water is discharged to surface water. A groundwater sampling program to monitor the effectiveness of the cleanup was also implemented and includes an evaluation of plume attenuation outside the extraction and treatment system footprint. In addition, subslab and indoor air sampling of properties overlying the contaminated plume will continue to be performed on a periodic basis.

Groundwater sampling indicates that the pump and treat systems continue to contain and remove contamination in the two primary source areas. Outside of the capture zones, the Secondary Plume has been reduced in the vicinity of both GWTFs compared to the 2002 extent of the Secondary TCE Plume (see Figure 3).

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?

There have been no physical changes to the Sites that would adversely affect the protectiveness of the remedy. Land use assumptions, exposure assumptions and pathways, and clean up levels considered in the decision document followed risk assessment guidance used by EPA and remain valid. Although specific parameters may have changed since the time the risk assessment was completed, the process that was used remains valid.

Consistent with previous assessments, this FYR focused on two primary exposure pathways: direct ingestion of contaminated groundwater (as a potable water source) and the possibility of vapor intrusion into buildings constructed over the plume. No potential receptors are currently using the contaminated groundwater for potable purposes, ensuring direct exposure to site groundwater by current receptors has been interrupted. Further, a CEA has been established which places restrictions on future well drilling in the affected area which ensures that future use of site groundwater stays an incomplete exposure pathway.

The RODs stated that the objective of the remediation alternatives was to reduce the groundwater concentrations of TCE to 1 ppb. The document also noted that the remediation objective (i.e., the cleanup goals) for PCE and 1,1-DCE were 1 ppb and 2 ppb, respectively. These cleanup goals remain unchanged. The cleanup goals and remedial action objectives identified in the RODs remain valid.

The potential for subsurface vapor intrusion (VI) into air within buildings that overlay a VOC groundwater plume is the other exposure pathway of interest evaluated as part of this FYR document. The results of paired sub-slab and indoor air samples collected in February 2023 showed detections of TCE and PCE fell within or below EPA's target cancer risk range and did not exceed the noncancer hazard threshold of 1.

EPA will continue to work with the state to determine future emerging contaminant sampling needs. The focus of the ROD was exposure to contaminated groundwater through potable uses. Because soil and surface water are not impacted, exposure to ecological receptors is not a concern.

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

No new information has called into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU2 MTHD OU2 RHMW

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
Operable Unit: OU2 MTHD OU2 RHMW	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedies at the MTHD and the RHMW Superfund Sites are protective of human health and the environment.	

Sitewide Protectiveness Statement
Protectiveness Determination: Protective
Protectiveness Statement: The remedies at the MTHD and RHMW Sites are protective of human health and the environment.

VIII. NEXT REVIEW

The next FYR report for the MTHD and RHMW Superfund Sites is required five years from the completion date of this review.

APPENDIX A – Tables

TABLE 1 – Groundwater Contaminant Trends

TCE - Maximum Concentrations Detected

Location	ROD Cleanup Standard	2020	2021	2022	2023	2024
Groundwater Treatment Facility #1 (MW-30D)	1.0	16.0	0.5U	3.32	11.7	6.22
Groundwater Treatment Facility #2 (MW-20S)	1.0	57	50	25.1	21.0	10.2
Secondary Plume (MW-22D)	1.0	17.0	2.90	2.69	2.63	4.35
Former Fifth Dimension (FD-01)	1.0	5.40	6.80	3.56	6.29	5.10

All concentrations are in parts per billion (ppb).
TCE = Trichloroethene
U = Not detected at listed detection limit

PCE - Maximum Concentrations Detected

Location	ROD Cleanup Standard	2020	2021	2022	2023	2024
Groundwater Treatment Facility #1 (MW-04D)	1.0	11.0	19.0	5.43	6.61	43.5
Groundwater Treatment Facility #2 (PGT MW-05)	1.0	1.1	0.24J	0.630	0.710	0.5U
Secondary Plume (MW-27D)	1.0	0.29J	0.29J	0.5U	3.64	18.0
Former Fifth Dimension (FD-01)	1.0	0.5U	0.5U	0.5U	0.5U	0.5U

All concentrations are in parts per billion (ppb).
PCE = Tetrachloroethene (Perchloroethylene)
U = Not detected at listed detection limit
J = Approximate concentration of compound

APPENDIX B – Figures

FIGURE 1 – Site Location Map

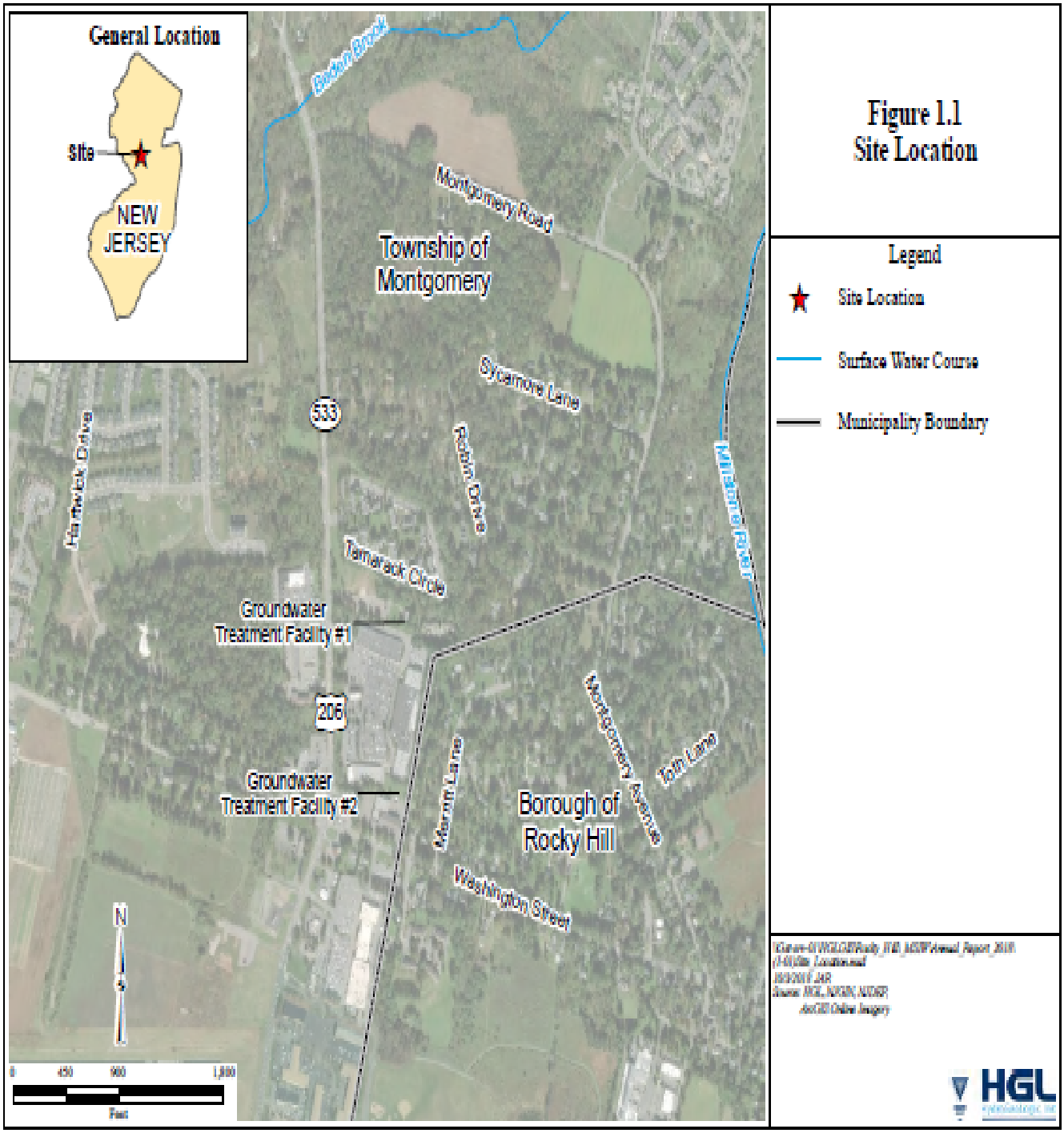


FIGURE 2 – Monitoring Well Location Map

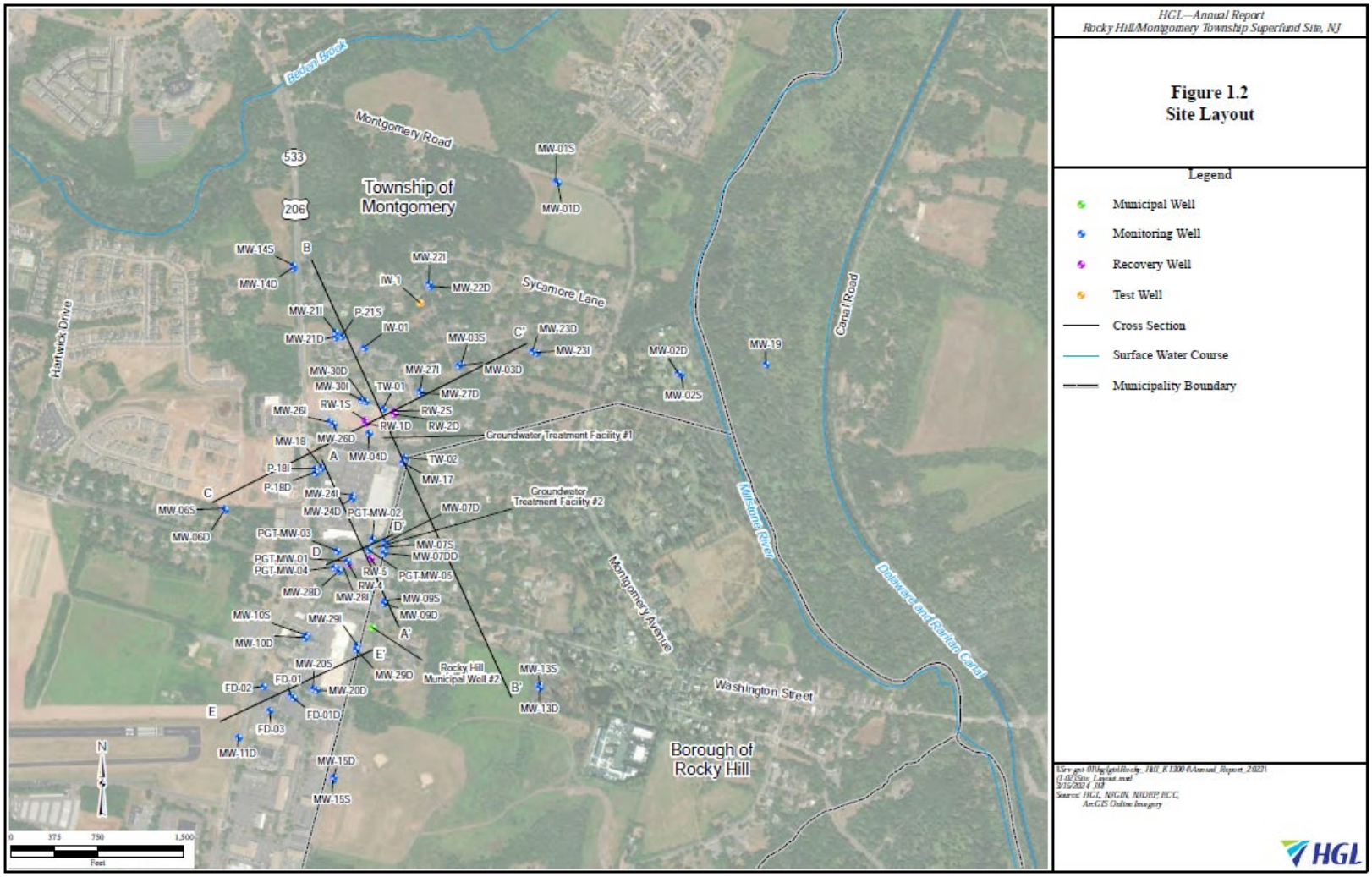
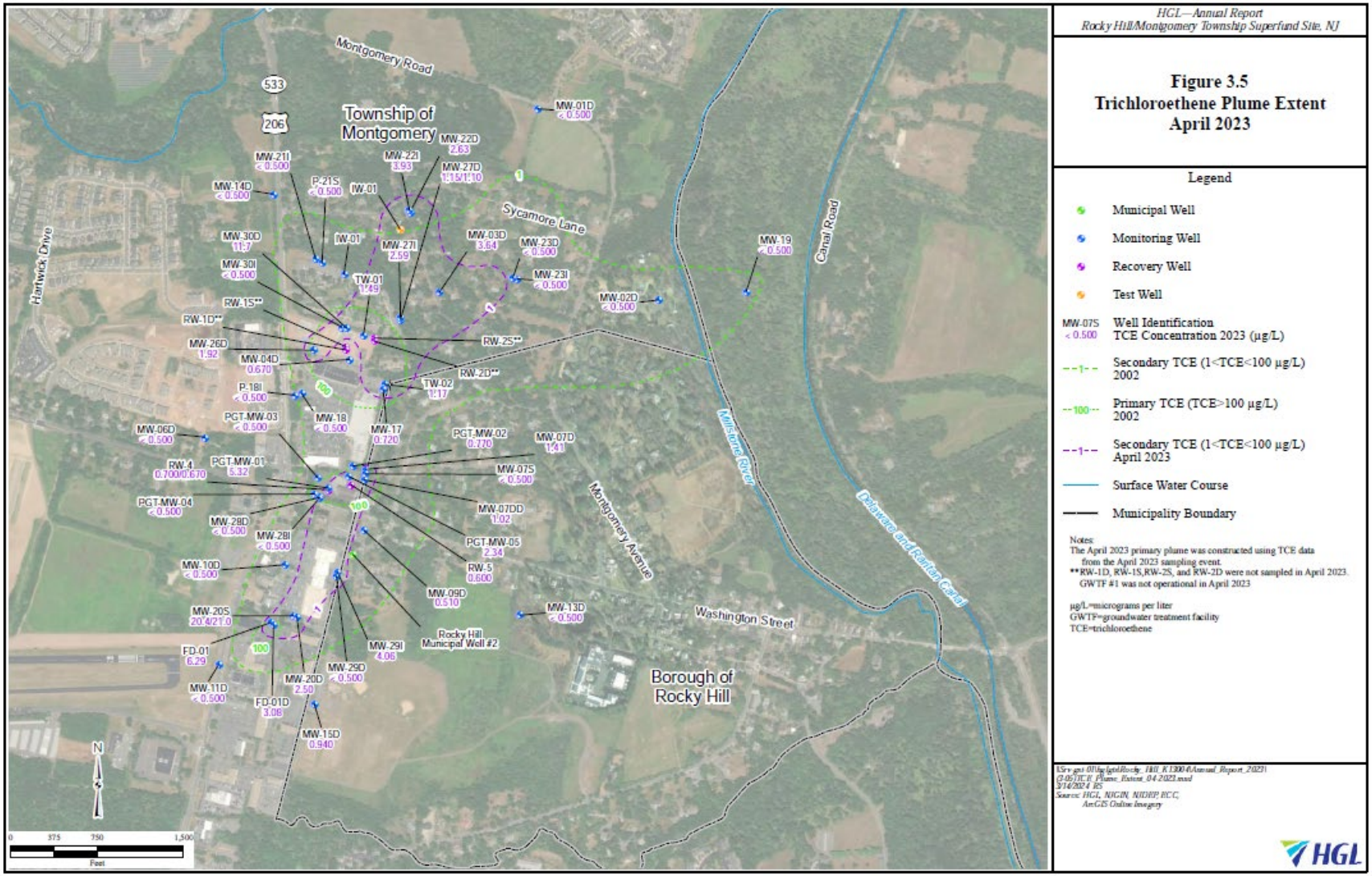


FIGURE 3 – Site Overview



APPENDIX C – Remedy Resilience Assessment

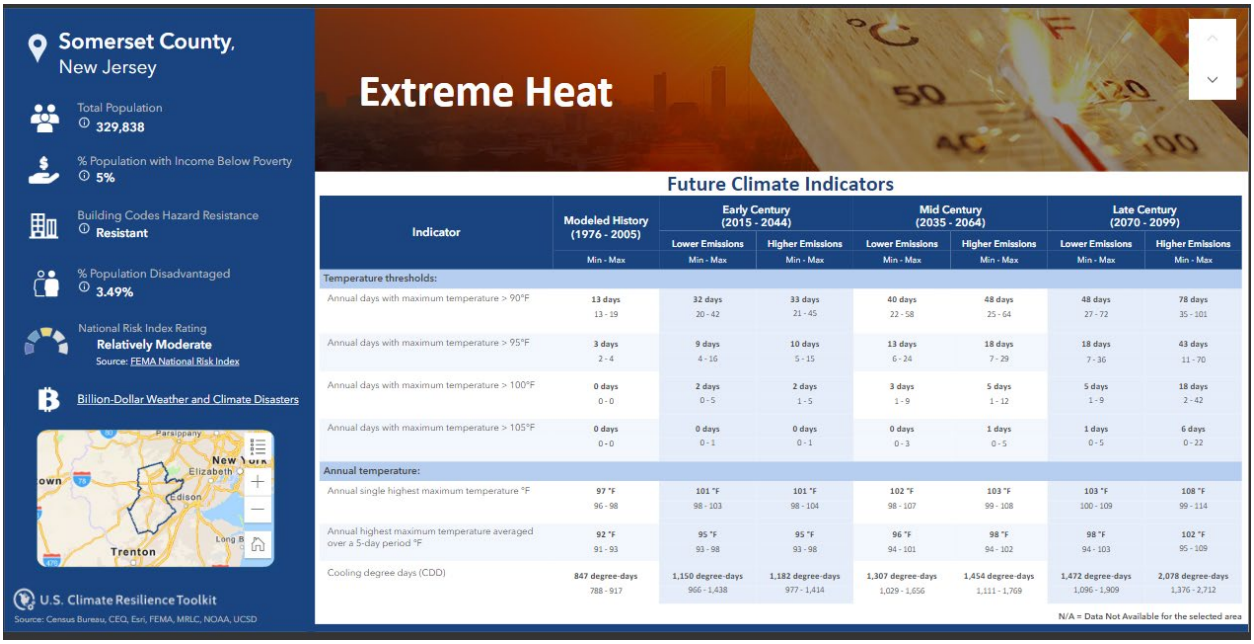
Two tools were considered appropriate to assess the Montgomery/Rocky Hill Superfund Sites. For the purpose of this analysis, the following address was used to screen the Sites: 1377 US-206, Skillman, NJ 08558. Screenshots from each of the tools assessed are included below (Figures E-1 through E-7).

The first tool is the Temperature/Precipitation/Drought/Wildfire/Flooding – CMRA Run for Somerset County, NJ. The second tool is called the *NOAA Sea Level Rise Viewer*. The CMRA Assessment Tool was used to examine five hazards for the county the Sites falls within. According to this tool, the National Risk Index Rating for extreme heat is "Relatively Moderate." The projected increase of days per year with maximum temperatures >100°F is shown in Figure E- 1. The risk for drought is relatively low (Figure E-2), for wildfire is very low (Figure E-3) for flooding is relatively high (Figure E-4) and for coastal inundation very low (Figure E-5). Even though the risk for flooding is relatively high, the NOAA Sea Level Rise Viewer shows that the Sites are not near the coast and will not be affected by a potential sea level rise of 10 feet (Figures E-6 and E-7).

MTHD OU2 and RHMW OU2 addresses groundwater contamination. The remedy consists of the extraction of contaminated groundwater from the primary source areas (where TCE is approximately greater than 100 ppb), within the contaminant plume, followed by on-site treatment and surface water discharge, and taking samples from the existing monitoring well network. The less contaminated groundwater in the secondary plume limits (where TCE concentrations are less than 100 ppb) will be permitted to attenuate through natural means. VOC concentrations and natural attenuation parameters are monitored in the secondary plume on a regular basis as part of the long-term groundwater sampling program. All remaining contamination is underground and is, thus, unlikely to be significantly affected by storms, flood, drought, or fire. Currently, the sampling is performed by NJDEP personnel once a year and during each event the condition of the Sites is reported on.

Based on this information, potential Site impacts from severe weather effects have been assessed, and the performance of the remedy is currently not at risk due to the expected effects.

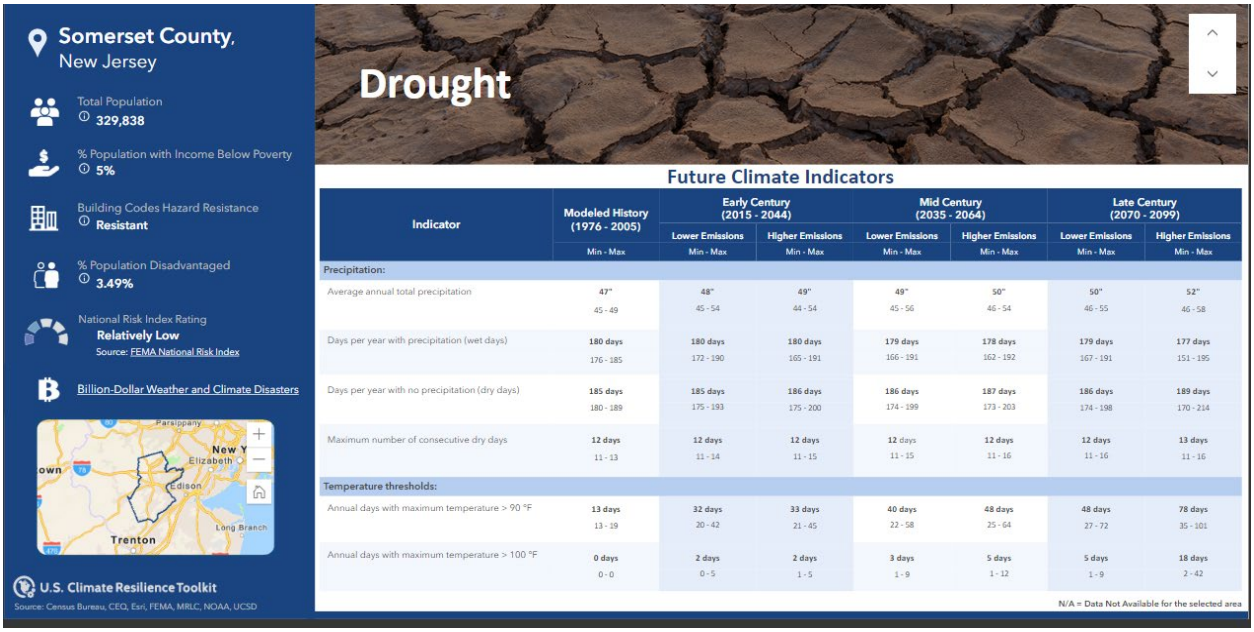
Figure E-1 Extreme Heat



Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Temperature thresholds:							
Annual days with maximum temperature > 90°F	13 days 13 - 19	32 days 20 - 42	33 days 21 - 45	40 days 22 - 58	48 days 25 - 64	48 days 27 - 72	78 days 35 - 101
Annual days with maximum temperature > 95°F	3 days 2 - 4	9 days 4 - 16	10 days 5 - 15	13 days 6 - 24	18 days 7 - 29	18 days 7 - 36	43 days 11 - 70
Annual days with maximum temperature > 100°F	0 days 0 - 0	2 days 0 - 5	2 days 1 - 5	3 days 1 - 9	5 days 1 - 12	5 days 1 - 9	18 days 2 - 42
Annual days with maximum temperature > 105°F	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 3	1 days 0 - 5	1 days 0 - 5	6 days 0 - 22
Annual temperature:							
Annual single highest maximum temperature °F	97 °F 96 - 98	101 °F 98 - 103	101 °F 98 - 104	102 °F 98 - 107	103 °F 99 - 108	103 °F 100 - 109	108 °F 99 - 114
Annual highest maximum temperature averaged over a 5-day period °F	92 °F 91 - 93	95 °F 93 - 98	95 °F 93 - 98	96 °F 94 - 101	98 °F 94 - 102	98 °F 94 - 103	102 °F 95 - 109
Cooling degree days (CDD)	847 degree-days 788 - 917	1,150 degree-days 966 - 1,438	1,182 degree-days 977 - 1,414	1,307 degree-days 1,029 - 1,656	1,454 degree-days 1,111 - 1,769	1,472 degree-days 1,096 - 1,909	2,078 degree-days 1,376 - 2,712

N/A = Data Not Available for the selected area

Figure E-2 Drought



Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Average annual total precipitation	47" 45 - 49	48" 45 - 54	49" 44 - 54	49" 45 - 56	50" 46 - 54	50" 46 - 55	52" 46 - 58
Days per year with precipitation (wet days)	180 days 176 - 185	180 days 172 - 190	180 days 165 - 191	179 days 166 - 191	178 days 162 - 192	179 days 167 - 191	177 days 151 - 195
Days per year with no precipitation (dry days)	185 days 180 - 189	185 days 175 - 193	186 days 175 - 200	186 days 174 - 199	187 days 173 - 203	186 days 174 - 198	189 days 170 - 214
Maximum number of consecutive dry days	12 days 11 - 13	12 days 11 - 14	12 days 11 - 15	12 days 11 - 15	12 days 11 - 16	12 days 11 - 16	13 days 11 - 16
Temperature thresholds:							
Annual days with maximum temperature > 90 °F	13 days 13 - 19	32 days 20 - 42	33 days 21 - 45	40 days 22 - 58	48 days 25 - 64	48 days 27 - 72	78 days 35 - 101
Annual days with maximum temperature > 100 °F	0 days 0 - 0	2 days 0 - 5	2 days 1 - 5	3 days 1 - 9	5 days 1 - 12	5 days 1 - 9	18 days 2 - 42

N/A = Data Not Available for the selected area

Figure E-3 Wildfire

Figure E-4 Flooding

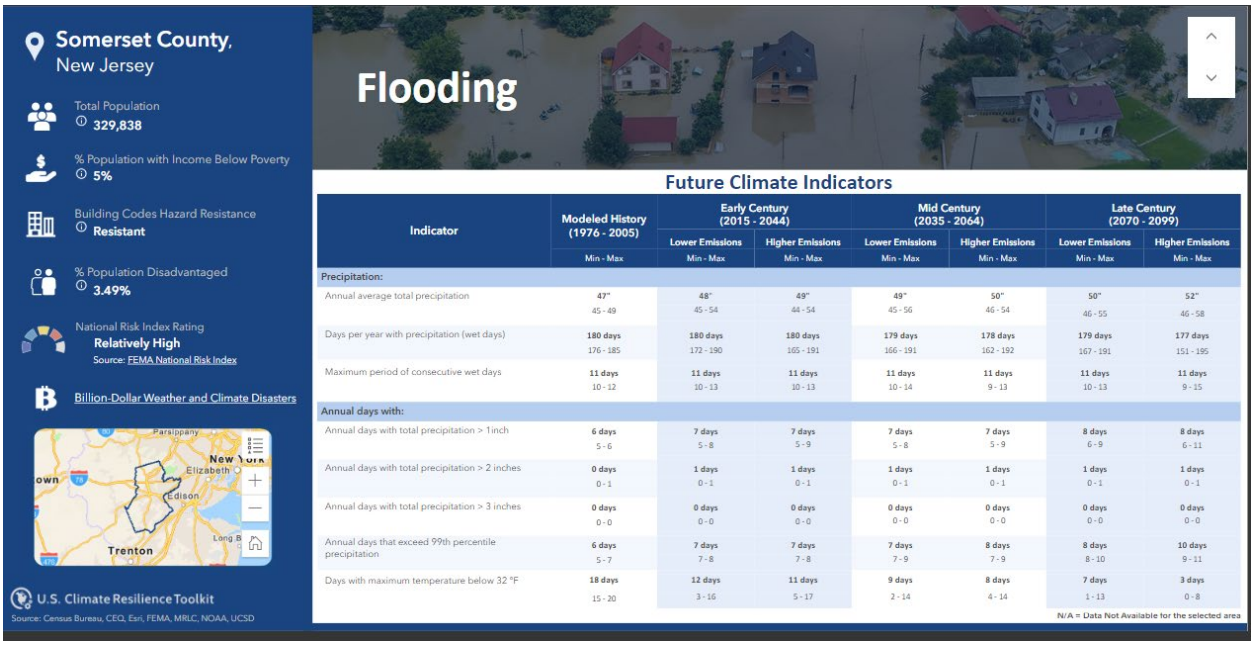


Figure E-5 Coastal Inundation

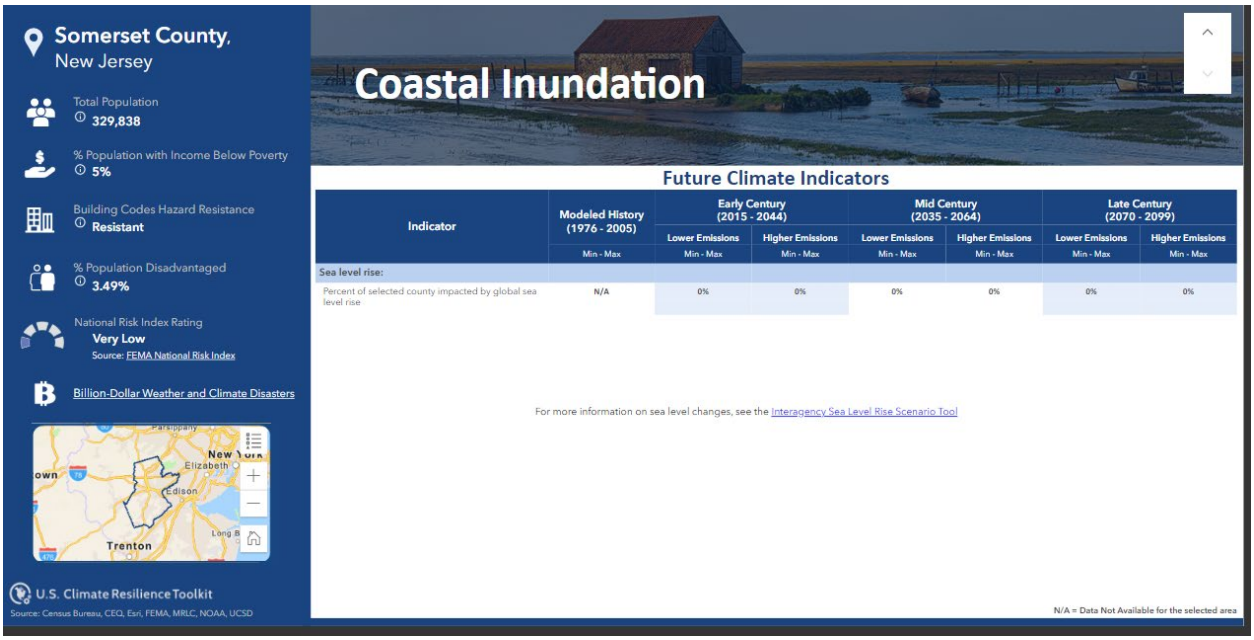


Figure E-6 NOAA Baseline

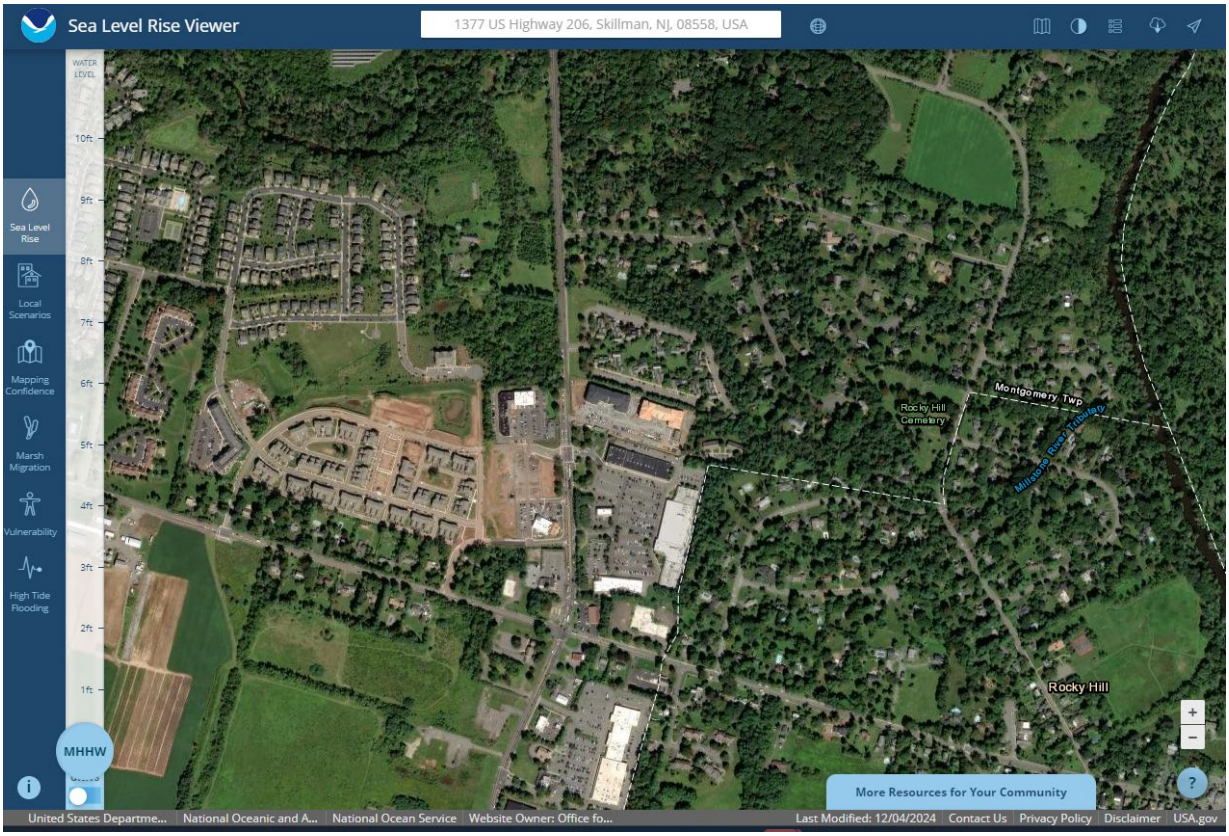


Figure E-7 NOAA 10 Feet