FIFTH FIVE-YEAR REVIEW REPORT FOR GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE FRANKLIN COUNTY, NEW YORK

Prepared by

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

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Superfund and Emergency Management Division

Date

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LIST OF ABBREVIATIONS & ACRONYMS

10 MGL	10 Million Gallon Lagoon
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Contaminants of Concern
CY	Cubic Yard
DCE	Dichloroethylene
EDA	East Disposal Area
ERT	Environmental Response Team
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FS	Feasibility Study
FYR	Five-Year Review
GM	General Motors (Central Foundry Division)
ICs	Institutional Controls
ILF	Industrial Landfill
MCL	Maximum Contaminant Limit
µg/L	Micrograms per liter
mg/kg	Milligrams per kilogram
NCP	National Contingency Plan
NDA	North Disposal Area
ng/L	Nanogram per liter
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	Operation and maintenance
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
PFAS	Per- and poly-fluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
RACER	Revitalizing Auto Communities Environmental Response Trust
RA	Remedial Action
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SLR	St. Lawrence River
SMP	Site Management Plan
SRMT	Saint Regis Mohawk Tribe
TCE	Trichloroethylene
TSCA	Toxic Substances Control Act
UAO	Unilateral Administrative Order
USACE	United Stated Army Corp of Engineer
UU/UE	Unlimited Use and Unrestricted Exposure
VC	Vinyl chloride
VOC	Volatile Organic Compound
YOY	Young of Year

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 General Motors (Central Foundry Division) (GM) Superfund site (Site). The triggering action for this statutory review is the September 30, 2020, signature date of the previous FYR report. 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 review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Oil and Hazardous Substances Pollution Contingency Plan, also known as the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)), and considering EPA policy.

The Site consists of two operable units (OUs). OU1 addresses contamination in the St. Lawrence River (SLR), GM Site soils, St. Regis Mohawk Tribal (SRMT) soils and sediments, North Disposal Area (NDA), Raquette River, surface water runoff, groundwater, and industrial lagoons. OU2 addresses contamination in the Industrial Landfill (ILF), East Disposal Area (EDA), and groundwater beneath these areas. Both OUs are addressed in this FYR. See **Appendix A, Figure 1**, attached, for the Site plan, which outlines the former GM property boundaries, as well as the areas of contamination beyond the property line.

The Site FYR was led by Victoria Rubino, EPA Remedial Project Manager (RPM). Other EPA participants included Joel Singerman (Central New York Remediation Section Supervisor), Marian Olsen (human health risk assessor), Tara Bhat (human health risk assessor), Abigail DeBofsky (ecological risk assessor), Liana Agrios (hydrogeologist), Larisa Romanowski (community involvement coordinator), and Dino Zack (AECOM, the U.S. Army Corps of Engineers' [USACE's] oversight contractor). The Revitalizing Auto Communities Environmental Response Trust (RACER)[1] was notified of the initiation of the FYR. The FYR began on November 8, 2024.

Site Background

The Site, located on the SLR approximately seven miles east of the Village of Massena, New York (NY), is situated approximately two miles south of the City of Cornwall, Ontario, Canada. Land use in the area surrounding the Site is a mix of residential and industrial. The Site is situated on approximately 218 acres of industrial and undeveloped land located in an otherwise rural area.

The Site is bordered on the north and east by the Mohawk Territory of Akwesasne also includes portions of the SRMT jurisdiction in Akwesasne. The Site is located on the shore of the SLR which is in a jurisdictional complex area bordering both Canada and the Mohawk Territory of Akwesasne. The property immediately west of the former GM plant is owned by the St. Lawrence Seaway Corporation,

[1] The RACER Trust was created in March 2011 by a consent decree in the United States Bankruptcy Court for the Southern District of NY to clean up and position for redevelopment certain real properties owned by GM and various GM affiliates at the time of GM's bankruptcy in 2009.

New York State Department of Transportation, and Alcoa, Inc. Route 37 and the Raquette River are situated to the south. This Site includes portions of the SLR and Raquette River. See **Appendix A, Figure 1.**

In 1959, GM began operating an aluminium die-casting plant on the property. In the mid-1980s, GM ceased die-casting operations at the facility, but continued operations on a smaller scale by casting aluminium parts through a procedure known as the lost-foam process. Until 1980, polychlorinated biphenyls (PCBs) were used as a component of the hydraulic fluids used in the die-casting process.

The handling and on-site disposal of contaminated wastewater sludges resulted in PCB, total phenolic compounds (phenols), and volatile organic compounds (VOC) contamination throughout the Site. On June 1, 2009, GM and certain subsidiaries filed for bankruptcy. In July 2009, manufacturing operations were discontinued at the facility. In March 2011, RACER was formed and assumed ownership and responsibility for the cleanup of the Site.

Appendix B, attached, summarizes the documents utilized to prepare this FYR. **Appendix C**, attached, summarizes the Site's geology/hydrogeology and land use. For more details related to background, physical characteristics, geology/hydrogeology, land/resource use, and history related to the Site, please refer to: http://www.epa.gov/superfund/gm-massena.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: General Motors (Central Foundry Division) Superfund Site		
EPA ID: NYD091972554		
Region: 2	**State:** NY	**City/County:** Massena/St Lawrence
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the Site achieved construction completion?** No	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Victoria Rubino		
Author affiliation: Victoria Rubino		
Review period: 11/8/2024 – 9/5/2025		
Date of Site inspection: 8/20/2025		
Type of review: Statutory		
Review number: 5		
Triggering action date: 9/30/2020		
Due date *(five years after triggering action date)*: 9/30/2025		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The Site was placed on the Superfund National Priorities List (NPL) in 1983.

In 1985, GM entered into an Administrative Order on Consent (Index No. II CERCLA-50201) with EPA to perform a remedial investigation/feasibility study (RI/FS) to determine the nature and extent of the contamination and to identify and evaluate remedial alternatives. The RI/FS was completed in 1989. The RI concluded that PCBs were present in fish, soil, sediment, and groundwater. In addition, elevated concentrations of total phenols and VOCs were present in surface water, soil, sediment, and groundwater. The baseline risk assessment performed as part of the RI assumed that the Site itself would not be redeveloped for residential use in the future, but the exposure assumptions did consider nearby residents of the St. Regis Mohawk Tribe. The results identified elevated cancer risks, above EPA's target risk range of $1x10^{-6}$ (one in a million) to $1x10^{-4}$ (one in ten thousand), associated with exposure via fish ingestion, wildlife consumption, water ingestion and breast milk. Noncancer hazard above EPA's threshold of unity was also identified for the same pathways. The risks and hazards associated with ingestion of fish and wildlife were much greater than the other pathways evaluated. A quantitative ecological risk assessment was not performed as part of the RI/FS. However, qualitative evaluations supporting the 1991 and 1992 RODs identified potential ecological risks to fish, ducks, geese, frogs, and turtles because of elevated PCBs in tissue, as well as concentrations of dioxin and mercury in fish tissue.

Response Actions

Discrete Areas

There are a number of discrete areas of contamination associated with the Site, including three former disposal areas (the ILF, the NDA, and the EDA; four former industrial lagoons; sediments in the SLR and the Raquette River; and Tribal land soils and sediments in Turtle Creek and Turtle Cove (collectively referred to as "Tribal soils and sediments"). See **Appendix A, Figure 2**. These areas are described below.

Lagoons

Four unlined industrial lagoons, referred to as the 350,000-gallon lagoon, 500,000 gallon lagoon, 1.5-million gallon lagoon (1.5 MGL), and 10 million gallon lagoon (10 MGL), were used to process industrial wastes containing PCB-contaminated liquids, sludges, and soils.

Industrial Landfill

The ILF is a 12-acre former disposal area in the Site's northeast corner that contains plant contaminated foundry sands, debris, and PCB-contaminated sludges. VOCs and phenols were also detected in the landfill.

North Disposal Area

The NDA is a subsurface area located adjacent to the 1.5 MGL. Before it was remediated, it was comprised of three distinct areas - a buried interceptor lagoon and two disposal pits. PCB-contaminated sludges and

debris were placed in the NDA during plant operations. Sampling at the NDA indicated high levels of PCBs at depths up to approximately 45 feet. Phenols were also detected in the NDA.

East Disposal Area

The EDA was used to dispose of construction and demolition debris, as well as wastewater treatment sludges. In 1975, the failure of a containment berm surrounding the EDA caused water and other materials to flow eastward onto SRMT property.

St. Lawrence River

The SLR was contaminated through direct discharge of PCB-contaminated wastewaters through an outfall pipe and through overland surface water runoff. Approximately 10 acres of the St. Lawrence River were contaminated in this manner.

Raquette River

In 1970, PCB-contaminated soils excavated during a plant expansion were placed on the north bank of the Raquette River. Sediments in the Raquette River were contaminated through direct discharge via an outfall pipe from the plant, as well as from surface water runoff from contaminated bank soils.

Tribal Land Soils and Sediments

Tribal land soils and sediments were contaminated during a failure of a containment berm surrounding the EDA. Sediments in the three-acre Turtle Cove were contaminated through the runoff of contaminated surface soils and suspected subsurface discharge from the ILF. The PCB-contaminated soils and sediments are located on residential parcels located on SRMT lands.

Remedy Selection

EPA issued two Records of Decision (RODs) for the Site. An OU1 ROD was issued in 1990, addressing contamination in the SLR, Raquette River, Site soils, SRMT soils and sediments, the NDA and industrial lagoons, surface water runoff, and groundwater. An OU2 ROD was issued in 1992, addressing contamination in the EDA and the ILF, as well as groundwater flowing beneath each area.

The major components of the OU1 remedy include:

- Excavate and treat SRMT soils greater than 1 milligram/kilogram (mg/kg) PCBs;
- Dredge and treat SLR sediments greater than 1 mg/kg PCBs;
- Dredge and treat Raquette River sediments greater than 1 mg/kg PCBs;
- Excavate and treat Raquette Riverbank soils greater than 1 mg/kg PCBs;
- Dredge and treat SRMT sediments greater than 0.1 mg/kg PCBs;
- Excavate and treat miscellaneous Site soils greater than 10 mg/kg PCBs;
- Excavate and treat NDA soils greater than 10 mg/kg PCBs;
- Excavate and treat active and inactive industrial lagoons with soils greater than 10 mg/kg PCBs;
- On-site treatment of soils and sludges greater than 10 mg/kg PCBs;
- On-site disposal of treated wastes;

- Testing of other PCB treatment technologies;
- On-site treatment of surface water runoff in the EDA; and
- Extraction and treatment of contaminated Site groundwater.

The major components of the OU2 remedy include:

- Excavation of soil PCBs at concentrations at or above 500 mg/kg, all sludge, and all visibly oily soil from the EDA at the Site;
- Consolidation and in-place containment of less contaminated soils (containing PCBs at concentrations above 10 mg/kg and below 500 mg/kg) in the EDA and control of groundwater migration from EDA through the use of a composite cap and a slurry wall;[2]
- Recontouring, regrading, and containment of contaminated material in the ILF and control of groundwater migration from the ILF through the use of a composite cap and slurry wall; and
- Treatment of excavated material from the EDA by either biological treatment (or another innovative treatment technology which has been demonstrated to achieve Site treatment goals) or thermal destruction to be determined by EPA following OU1 treatability testing.

There were no remedial action objectives (RAOs) explicitly identified in either of the RODs, however, each of the alternatives evaluated in the OU1 and OU2 RODs, as well as the cleanup goals, were derived with the primary intention of reducing PCBs in soil, sludges, sediments and groundwater thereby reducing risk to human and ecological receptors.

In April 1992, EPA issued a Unilateral Administrative Order (UAO) to GM (Index No. II CERCLA-20207) to undertake the design and construction of the remedy selected in the 1990 ROD. In August 1992, EPA issued a UAO to GM (Index No. II CERCLA-20215) to undertake the design and construction of the remedy selected in the 1992 ROD.

As stated above, both RODs indicated that the method for on-site treatment would be determined through a treatability study. Based on the results of the treatability studies, in 1995, EPA issued a "Post-Decision" Proposed Plan that identified thermal desorption as the preferred treatment technology for contaminated materials and proposed the designation of a Resource Conservation and Recovery Act (RCRA) Corrective Action Management Unit to contain the contaminated materials at the Site. The 1995 Proposed Plan also recommended that the treatment level for contaminated materials be raised to 500 mg/kg PCBs from 10 mg/kg.

Although the modifications to the remedy called for in the 1995 Proposed Plan were fully protective of human health and the environment and in compliance with EPA policies and regulations, EPA determined that based on public opposition, a shift in the remediation strategy was warranted. In 1998, EPA withdrew the 1995 Proposed Plan with the issuance of a new plan that was largely accepted by the public. The 1998 Proposed Plan resulted in a 1999 ROD amendment for OU1 that allowed for the off-site disposal (rather than on-site treatment with on-site disposal) of SLR sediments, Raquette River sediments, soils excavated during the installation of the groundwater control system, and Tribal soils and sediments.

In 2000, EPA further modified the 1990 OU1 ROD and 1999 ROD amendment and issued an Explanation of Significant Differences (ESD), allowing for on-site treatment (via solidification) and off-site disposal

[2] The construction of a slurry wall was contingent on the results of additional groundwater testing to be conducted during the design.

rather than on-site treatment (via thermal desorption) and on-site disposal of materials excavated from the inactive lagoons. This plan moved forward with overall community and Tribal support.

In June 2009, GM filed for bankruptcy. In August 2010, EPA issued an administrative order under which directed Motors Liquidation Company (f/k/a General Motors Corporation) to implement a removal action at the Site. Under the Order, the company was directed to cease and desist, in the absence of EPA approval, from taking further actions involving preparation of the GM Plant, which was heavily contaminated with PCBs, for demolition. The Order also specified that the company must properly perform the demolition and address the PCB-contaminated material at the facility, including the building slab and sub-slab materials and significant amounts of PCB-contaminated soil underlying the buildings. The ownership of the GM property and responsibility for the cleanup of the Site was ultimately transferred to RACER. The transfer in ownership did not impact the cleanup plans for the Site.

Status of Implementation

St. Lawrence River Sediments, Raquette River and Turtle Cove (OU1)

In 1994 and 1995, approximately 13,250 cubic yards (CY) of PCB-contaminated sediment (along with rocks and boulders) were dredged from the SLR embayment adjacent to the Site. Following dewatering, the dredged material was placed in containment cells at the Site and covered. The material within the containment cells was later disposed off-site as part of the NDA and lagoons remedial activities. Although GM successfully removed over 99% of the PCB mass in the sediments, it was unsuccessful in consistently meeting the cleanup level of 1 mg/kg PCBs.

Despite multiple attempts to eliminate the contamination in the immediate vicinity of the outfall, the PCB levels continued to exceed the cleanup level. For this reason, a subaqueous multilayer cap was placed in the SLR over a 2-acre area, which reduced the surface concentrations of PCBs in the capped area to less than the 1 mg/kg PCB cleanup goal. The average PCB concentration in the remaining 8 acres was 3 mg/kg. The cap covers an area approximately 300 feet along the shoreline and extends approximately 250 feet into the SLR.

In 2002 and 2003, the Raquette Riverbank area of the Site was addressed. Approximately 7,420 CY of soil with PCB concentrations greater than 10 mg/kg was removed from the Raquette River bank and disposed off-site; approximately 2,710 CY of soil with PCB concentrations between 1 mg/kg and 10 mg/kg was removed and transferred to the EDA which was later capped; and approximately 1,440 CY of sediments with PCB concentrations greater than 1 mg/kg was removed and placed in a containment cell at the site. The containment cell material was later disposed off-site as part of the NDA and lagoons remedial activities.

In 2004 and 2005, approximately 18,440 CY of soil and sediment with PCB concentrations less than 10 mg/kg were removed from Turtle Cove and transferred to the EDA and approximately 18,240 CY of sediment with PCB concentrations greater than 10 mg/kg were removed from Turtle Cove and placed in containment cells at the Site, including approximately 2,880 CY of sediment that was isolated and covered in the EDA. The containment cell material was later disposed off-site as part of the NDA and lagoons remedial activities.

Manufacturing Plant Building Demolition (Removal Action)

The demolition of the plant was not considered in the RODs as the plant was operational, however, this work was performed pursuant to an August 18, 2010, removal order. Except for the concrete slab, the former powertrain plant facility was demolished and removed in 2011 (Phase I Demolition). This effort resulted in the off-site disposal of 24,530 tons of Toxic Substances Control Act (TSCA)/hazardous waste and 9,176 tons of non-TSCA and asbestos-containing waste and the recycling of 19,128 tons of metals.

The Phase II Demolition was conducted in 2012 and 2013 and entailed removing the concrete slab, concrete structures beneath the slab (tunnels, basements, etc.), as well as soil contaminated with PCBs greater than 10 mg/kg or phenols greater than 50 mg/kg. This effort included the off-site disposal of 147,175 tons of TSCA/hazardous waste, 16,922 tons of non-TSCA/non-hazardous material, and 1,791 tons of recyclable steel. Concrete that was not impacted was crushed for reuse at the Site. All excavations were backfilled with recycled concrete and imported soil fill, and the footprint of the former powertrain plant area was restored with a surface cover consisting of 9 inches of crushed stone or concrete and 3 inches of gravel.

North Disposal Area and Lagoons (OU1)

In 2013 and 2014, the NDA remedial effort was completed. This effort included the demolition of several outbuildings, removal of four lagoon structures, and removal of soil within the NDA with PCBs greater than 10 mg/kg or phenols greater than 50 mg/kg. This effort included the offsite disposal of 172,693 tons of TSCA/hazardous waste, 32,982 tons of non-TSCA/non-hazardous material, and 767 tons of recyclable steel. All excavations were backfilled with imported clean fill and stormwater conveyance structures were installed. The entire area was restored with 6 inches of vegetated soil.

East Disposal Area (OU2)

In 2014 and 2015, the following EDA RAs were completed:

- Excavation of all sludge, visibly oily soil, and soil and debris with PCB concentrations equal to or greater than 500 mg/kg from the EDA, followed by off-site disposal at a TSCA disposal facility;
- Excavation of soils with PCB concentrations equal to or greater than 10 mg/kg and less than 500 mg/kg from the EDA Infield, (a 6.5-acre area to the west of the EDA footprint) followed by consolidation within the EDA footprint;
- Excavation of soils with phenol concentrations greater than 50 mg/kg from the EDA Infield (the area west of the EDA proper) followed by consolidation within the EDA footprint; and
- Excavation of the temporary stockpiles located in on-site containment cells, followed by consolidation within the EDA footprint.

Approximately 144,000 tons of materials were disposed off-site as TSCA hazardous waste. Non-TSCA material was placed in the EDA and portions of the EDA were regraded to accommodate an engineered cap system (installed as part of the ILF remedial action (RA)). All excavations were backfilled with imported clean fill, and the EDA Infield was restored with 6 inches of vegetated soil. The EDA was restored as part of the ILF RA, which involved construction of a RCRA landfill cap.

Industrial Landfill (OU2)

In 2015 and 2016, the 150-foot ILF setback and ILF capping were completed. These efforts included removing approximately 105,000 CY of landfill waste along the northern and eastern slopes of the landfill and placing it on the western side of the ILF. The creation of this setback was not a requirement of the ROD but was agreed to as part of the GM bankruptcy settlement agreement. This activity included the removal and off-site disposal of approximately 550 tons of material with PCB concentrations greater or equal to 500 mg/kg and/or visibly impacted material. Once all the material had been removed or relocated, a RCRA landfill cap (an approximately 18.3-acre engineered cap) was constructed over the combined ILF and EDA footprints.

Tribal Land Soils and Sediments (OU1)

In 2007, a portion of the Tribal Soils were remediated on two of the three impacted parcels. A total of 1,710 CY of soil with PCB concentrations greater than 1 mg/kg were excavated and the disturbed areas were restored in Removal Areas designated 1-5. Contaminated soil under 10 mg/kg was transferred to the EDA in a containment cell on the GM property for disposal. One location in removal area 5 had a sample above 10 PPM (14.3 mg/kg). Approximately 6 cy of contaminated soil from Removal Area 5 was placed in an EDA containment cell designated for material greater than 10 mg/kg. 120 confirmation samples verified the cleanup level of 1 mg/kg was obtained (Arcadis, 2008).

Additional PCB-contaminated soils and sediments are located on residential parcels located on SRMT lands that have not been remediated due to the inability to obtain access. Access was granted in 2021 to perform pre-design investigation (PDI) sediment and soil sampling and, again in 2023, to perform a PDI vegetation survey. The Remedial Design (RD), performed by RACER's consultants, was approved and signed by EPA in June 2024 (Ramboll, 2024). At the time of this review, additional pre-construction activities and the physical RA is pending with the US Army Corp of Engineers, and construction has not yet started. Pending completion of pre-construction activities, the expected RA construction on-site mobilization start date for construction will be in 2027.

10 Million Gallon Lagoon (OU1)

In 2017 and 2018, the 10 MGL remedial effort was completed. This included draining the lagoon, demolition of the oil separator structure and the Millwater Pump House and removing sediment/soils with PCBs greater than 10 mg/kg or phenols greater than 50 mg/kg for off-site disposal.

Final Site Cover

A final cover system was placed over approximately 84 acres of the Site to reduce the potential for surface water to come in contact with residual PCBs (*i.e.*, <10 mg/kg) and to promote positive overland drainage of surface water across the Site. The cover was constructed by placing a demarcation layer (black filter fabric) overlain by a 12-inch soil cover (6-8 inches of imported fill overlain with 4-6 inches of topsoil) and seeded. As part of the final Site cover activities, the stormwater conveyance structures noted above were abandoned.

Groundwater Collection and Treatment (OU2)

Construction of the groundwater recovery system, which was completed in 2016, consists of eight recovery wells installed along the northern side of the ILF and eastern side of the property (see figures in **Appendix D**). The recovery wells were turned on in phases, and the system was fully operational with all eight recovery wells pumping, by February 2018. The former facility's wastewater treatment plant was used to treat the collected water until August 2020 when the new treatment system construction was completed. A Groundwater Extraction and Treatment System Construction Completion Report was approved in August 2020.

Institutional Controls Summary

Institutional controls (ICs) that will be implemented at the Site are summarized in **Table 1**, below.

Table 1: Summary of Planned and/or 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)**
Soil, Groundwater, Vapor Intrusion	Yes	No	OU1	Prevent the utilization of the groundwater underlying the Site proper, prevent the development of the Site for residential use, allow access for maintenance and monitoring activities, and perform a vapor intrusion evaluation in areas of future construction to determine whether this would be a pathway of concern and, if the potential for vapor intrusion exists in any such area, install a vapor mitigation system.	Environmental Easement, Planned 2030
Soil, Groundwater	Yes	Partially[3]	OU2	Prevent the utilization of the groundwater underlying the Site proper, prevent the development of the Site for residential use, and allow access for maintenance and monitoring activities.	Environmental Easement, Planned 2030
Industrial Landfill Cap	Yes	No	OU2	Protect the integrity of the cap by prohibiting intrusive activities.	Environmental Easement, Planned 2030
SLR and Turtle Cove Sediment and Fish Tissue	Yes	No	OU1	Prevent consumption of fish in the SLR and Turtle Cove.	New York State Department of Health (NYSDOH) fish advisory (updated 2019)

[3] The ROD for OU2 states that "deed restrictions would be placed on the G.M. property to discourage its use as a residential area in the future.

Systems Operations/Operation and Maintenance

The long-term operation and maintenance (O&M) management plan for the Site is under development for all required areas. The draft Site Management Plan (SMP) is currently under review by the EPA. An interim SMP is currently being utilized for O&M implementation.

Subaqueous Cap Physical Inspection

A physical inspection of the subaqueous SLR Cap was conducted on June 27th, and 28th 2023 by RACER consultants Arcadis, and the EPA Environmental Response Team (ERT) dive team, using an underwater video camera. Both a vegetation survey and cap inspection were performed. Based on the observations made during the 2023 vegetation survey and sediment cap inspection, the SLR sediment cap appears to be intact with no visual deficiencies or anomalies identified (**Appendix A, Figures 7 and 8**).

An underwater inspection of Turtle Cove was also planned in 2023 but was not performed because of access restrictions.

Past inspections of the subaqueous SLR cap conducted in 1996, 1997, 2001, 2006, 2011, 2017 (with underwater video camera by EPA's ERT dive team), 2019 (by the EPA dive team during sampling) similarly indicated that the subaqueous cap had maintained its integrity and needed no repairs. During the 2019 SLR Passive Sampler and Sediment Assessment, no deficiencies in the cap were observed at sample locations.

Fish Tissue Sampling

Monitoring of fish tissue PCB concentrations in the SLR and Turtle Cove began in 1997, only for spottail shiners (whole-body composite forage fish). Sampling of smallmouth bass and brown bullhead (individual adult fish fillet samples) was added to the fish monitoring program in 2008. Spottail shiners were collected from 1997 through 2001 and again in 2007. Adult fish sampling was conducted in 2008, 2012, 2016-2018, 2021, 2022, and 2024.

The goal of the fish tissue sampling is to monitor trends in PCB concentrations in fish tissue over time and space, provide data to support continuing or revising the fish consumption advisory, and assess short term PCB bioavailability and/or ecologic exposure.

Fish tissue monitoring for the current FYR cycle was conducted in 2021, 2022, and 2024. Adult fish were collected and analyzed for PCBs during all three monitoring events in this FYR period. Young of Year (YOY) were collected during the 2022 and 2024 sampling events. Six individuals for adult smallmouth bass (*Micropterus dolomieui*), brown bullhead (*Ameiurus nebulosus*) fillet samples, and YOY spottail shiner (*Notropis hudsonius*) whole-body composite samples were targeted in each of the following areas: the Sediment Cap/Removal Area, the Cove, the Upstream of Site, and Downstream of Site locations. Substitute species were collected as necessary in all three years and included: walleye as a top-down predatory fish species, white sucker as a bottom-feeding fish species, and round goby as a forage fish species with a limited home range. Due to continuous lack of availability of target species, beginning in 2024 fish were reported using the following groups: "predatory fish" encompass adult smallmouth bass, largemouth bass, and walleye; "bottom-feeding fish" encompass adult brown bullhead and white sucker; and "YOY fish" include spottail shiners and round goby **(Appendix A: Table 9 and 10).** Target species will remain the same, but alternative species will be collected, as needed.

For all three sampling events (2021, 2022, and 2024), multiple sampling efforts were performed, during both day and night boat electrofishing, to locate schools, loose aggregates, or random individuals of spottail shiners or other minnow species. Few to no spottail shiners, or their substitute species (emerald shiner [*Notropis atherinoides*] and bluntnose minnow [*Pimephales notatus*]) were observed at any location over the entire sampling effort. As such, no spottail shiner samples were available for collection or PCB analysis during 2021, 2022, or 2024. Instead, as proposed in the 2022 St. Lawrence River Fish Sampling Plan (Arcadis 2022a), round goby (*Neogobius melanostomus*), a prevalent forage fish species, were collected as a substitute YOY species with n=10 individuals per sample.

The data from the 2016 fish sampling effort had revealed elevated results that were not consistent with earlier sampling events. To understand the reason for the elevated PCB levels seen in fish in 2016, biomagnification of PCBs in the food chain at the Site was evaluated in 2017 to understand differences in PCB concentrations across dredged areas (see Fourth FYR). Sampling from 2017 to 2024 show overall lower levels of PCBs in fish but they continue to remain higher than the upstream and downstream reference locations.

To evaluate the biomagnification, round goby and zebra mussels (*Dreissena polymorpha*) were added to the sampling program in 2017 and collected by EPA ERT scientific divers and RACER. Zebra mussels and round gobies were collected at fourteen locations total across the Sediment Cap/Removal Area, Cove, and upstream of Site areas (See Fourth FYR). Again in 2021, 2022, and 2024, round goby was collected. Both zebra mussels and round goby are invasive species and have been observed in great numbers at the Site and throughout the SLR, which has impacted the sampling methodology.

In 2021, the fish consumption advisory in the vicinity of the GM Site was further expanded by the New York State Department of Health (NYSDOH). The updated fish advisory recommended that no fish species be eaten from the "South Channel Bridge (including Turtle Creek Cove) downstream to the north end of Raquette Point (Navigation Light Number 11)" due to PCBs in fish tissue (NYSDOH 2023). This area encompasses the GM Site, and extends upstream approximately 400 meters (m) and downstream approximately 1,100 m. As such, this area includes both the Sediment Cap/Removal Area and Turtle Cove and extends to the approximate mid-point of both the Upstream of Site and Downstream of Site sample areas.

In addition to the site-specific fish monitoring, a three-site fish report was conducted by EPA to evaluate 2016 and 2022 fish tissue data between the Alcoa Aggregation, Reynolds Metals, and General Motors Central Foundry Superfund Sites. PCB concentrations in fish tissue from these two events were reviewed, summarized, and evaluated in a summary report to identify any apparent trends in fish tissue concentrations amongst the three sites. The report is still under review, and the data and conclusions are not part of the FYR.

Sediment Sampling

Sediment sampling was conducted in 2023 as a follow up to the 2019 passive sampler and sediment sampling event. The objective of the sediment sampling was to further investigate potential source areas of PCBs that could contribute to the elevated fish tissue PCB levels observed at the Site. This was completed by performing additional sediment sampling at locations with elevated concentrations of PCBs in bulk surface sediment samples, or passive surface water or passive porewater samples, as documented in the results of the 2019 St. Lawrence River Passive Sampler and Sediment Assessment (Arcadis, 2020).

Sediment cores were collected via a boat-mounted vibracore unit. The cores were driven through the overlying soft sediment and approximately 12 inches into the underlying material (glacial till or hardpan clay), or to refusal. At two locations (ERT-09E and ERT-06N), multiple attempts were made to collect samples via vibracore, but no sample material was recovered. At these two locations, a petite ponar dredge was utilized to collect a 0 to 3-inch sample of the soft sediment.

A total of 28 sediment sample locations were proposed in the SLR **(Appendix A, Figure 3).** Three primary areas were identified where PCB concentrations were highest in bulk surface sediment, passive surface water, and/or passive porewater from the 2019 Sampling Results. These locations included ERT-05 in the Removal Area (west of the cap); ERT-06, ERT-07, and ERT-09 in the Removal Area (east of the cap); and ERT-16 and ERT-17 adjacent to the sheet pile wall in the Cove. Additional samples were proposed to define each area horizontally by stepping out approximately 50 feet in each direction (north, east, south, west) to collect another sample. Three samples were also proposed on each side of the sediment cap, along the eastern and western edge, at evenly spaced intervals, to investigate if PCBs are migrating horizontally from underneath the cap. The northernmost sample location along the western edge of the cap (sample location Cap-West-01) was adjusted to be as close as possible to historical sample location 1075-4. This is the location that had the highest PCB sediment concentration in 1995 following dredging (6,281 mg/kg), which was subsequently capped. Two additional locations were sampled west of the Cap-West-01 sample location to provide data for an area that did not have historical sample coverage.

A total of 12 sediment sample locations were proposed for the Cove **(Appendix A, Figure 3).** Samples were proposed at four locations alongside and close to the base of the sheet pile wall. These were near the locations sampled in 2005 (VB16, VB19, VB23, and VB 27) and in 2019 (ERT-16 and ERT-17). An additional six samples were proposed along the shore of the Cove, which included locations adjacent to the Mohawk Uplands Soil sediment trap, and along the northern and northeastern edges of the Cove. Two samples were also proposed in the middle of the Cove.

In 2019, 33 passive samplers were deployed to assess the dissolved PCB concentrations in the sediment porewater and surface water of the SLR adjacent to the Site and determine if PCBs were potentially breaking through the subaqueous cap (**see Fourth FYR Appendix A, Figure 3).** The passive samplers were partially imbedded into the surface for 42 days. The passive sampling devices were analyzed for PCBs in two sections (below the sediment/surface water interface and above the sediment/surface water interface). Additionally, sediment samples were collected next to each passive sampler and analyzed for PCBs. The 2023 sampling event expanded the sediment sampling effort to include vertical sampling to the underlying till. For additional discussion on the 2019 sampling effort, refer to the **Fourth FYR**.

Groundwater Monitoring

Since the OU1 ROD was issued in 1990, groundwater investigations have been conducted. In 2021, an updated Groundwater Sampling Plan was approved (Mott Macdonald, 2021). Sitewide groundwater sampling and reporting is currently performed annually for all ROD-specified Contaminants of Concern (COC)s. For those wells located in close proximity to the former 10 MGL, groundwater sampling and analysis is performed semi-annually **(Appendix D, Table 1)**. Adjustments to this schedule, the monitored locations, and the location-specific analytes may be adjusted at some future date based on the monitoring data results collected over time.

Groundwater sampling during this FYR period was conducted annually in September 2020, September through December 2021, September 2022, September 2023, and September 2024. The samples were analyzed for PCBs (total Aroclors), VOCs (1,2- dichloroethene [1,2-DCE]), trichloroethylene [TCE], and vinyl chloride (VC), and total phenols. A subset of wells was sampled for PCBs only in February 2021, June 2021, September through October 2021, December 2021, February 2022, June 2022, April 2023, April 2024, and April 2025 **(Appendix D, Table 1).**

Additionally, a Remedial Action Report for OU1 groundwater was approved in 2023, documenting completion of the OU1 area groundwater remedy implementation. The report documented the quality of this Site's groundwater in the OU1 area and provided a summary of other OU1 area cleanups, which were the likely sources of the isolated location of groundwater contamination, specifically, elevated polychlorinated biphenyls at the MW-302 well cluster, in the OU1 area groundwater (Mott Macdonald, 2023).

Past groundwater quality investigations have indicated the presence of COCs dissolved in the Site's groundwater, particularly in monitoring wells located on the northern side of the ILF and northeast of the 10 MGL. These locations continue to be monitored.

Routine O&M at the Site includes maintaining the groundwater collection and treatment system, perimeter fence, and access road, and mowing the landfill cap and sections of the Site cover.

Remedy Resiliency

The performance of the remedy is currently not at risk due to extreme weather events in the region and near the Site. The remedy as designed and implemented takes into consideration the most likely local effects of extreme weather in the region, which is in-river or upland flooding caused by extreme precipitation events or rapid snowmelt. There are several other local factors that EPA has considered in concluding that the remedy is sufficient to address more intense and extreme weather events that may arise. First, the SLR water level is controlled by the Robert Moses Power Dam located upstream of the Site. Therefore, flooding of the Site is highly unlikely. Second, the toe of the landfill is approximately 15 feet above the surface of the river. Additionally, there are several features of the constructed remedy that ensure it is resilient in the face of future extreme weather events:

- Surface water drainage features around the landfill are designed to shed more than three times the capacity required by State regulations.
- The landfill cap has two drainage layers, rather than one, to transmit any precipitation that may enter the cap, ensuring that the rainfall or snowmelt are transmitted to a drainage swale via a geocomposite layer as well as a perforated pipe network.
- The subaqueous cap in the SLR has a large armor stone layer on top of sand, carbon, and gravel, which was inspected by EPA ERT divers in 2017, 2019, and 2023 and has not shown evidence of ice scour or washouts; and
- The property has been covered with approximately 400,000 CY of clean fill over and 84 acre area and graded to promote sheet flow runoff and avoid erosion.

The implemented remedy at the Site has not experienced damage during storm events, including a 3.5-inch rain event in 2018 and the remnants of Hurricane Debbie in August 2024. The August 2024 storm was 2 day rain event and produced up to 6.98 inches of rain recorded with SRMT's equipment at NADP NY22 Site. There were no washouts, damaged areas, or evidence of taxing the cover soils, geocomposite

drainage layer, piping system, or perimeter swales. The stormwater management features associated with the ILF cap system, around the ILF perimeter, sufficiently managed all stormwater runoff and infiltration associated with this event. While there was no impact to the remedy during the 2024 high rain event, a portion of the uncontaminated riverbank by Outfall 003 was impacted, along with a portion of the perimeter fence. Measures will be implemented by RACER in 2026 to restore the portion of the riverbank and outfall 003 area in accordance with the interim SMP, and stone berms will be constructed by the perimeter fence near the outfall 003 area to prevent future occurrences. Appendix E includes additional details and tools used for severe weather and remedy resilience assessment in line with regional practices.

III. PROGRESS SINCE THE LAST REVIEW

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

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

OU #	Protectiveness Determination	Protectiveness Statement
1	Protectiveness Deferred	A protectiveness determination for OU1 cannot be made until the remedy is complete and additional sampling to determine the source of PCBs in the previously-remediated Turtle Cove and SLR has been conducted and whether additional efforts are necessary to ensure protectiveness. It is expected that a protectiveness statement will be issued within three years of the date of this report.
2	Will be Protective	The remedy for OU2 is expected to be protective of human health and the environment upon completion of all groundwater and soil remedial activities and the implementation of ICs. In the interim, remedial activities completed, to date, have adequately addressed all exposure pathways that result in unacceptable risks in these areas.
Sitewide	Protectiveness Deferred	A protectiveness determination cannot be made until the remedy is complete and additional sampling to determine the source of PCBs in the previously-remediated Turtle Cove and SLR has been conducted and whether additional efforts are necessary to ensure protectiveness.

***Table 3**: Status of Recommendations from the Fourth FYR*

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
01	An IC requiring the performance of a vapor intrusion evaluation in areas of future construction to determine whether this would be a pathway of concern and, if the potential for vapor intrusion exists in any such area, install a vapor mitigation system, is not part of the selected remedy for the site.	An IC requiring the performance of a vapor intrusion evaluation in areas of future construction to determine whether this would be a pathway of concern and, if the potential for vapor intrusion exists in any such area, install a vapor mitigation system, needs to be incorporated into the remedy via an ESD.	Ongoing	The SMP and Easement documents will be updated to include a requirement for vapor mitigation system installation if buildings are constructed on site. A soil vapor intrusion evaluation will be performed in areas of future enclosed building construction to determine if vapor intrusion presents a pathway of concern. The property is still owned by RACER and there are no current building plans.	Click here to enter a date
01	Contaminated sediments have been detected in the previously-remediated Turtle Cove and St. Lawrence River. The source of this contamination is unknown.	Following remediation of the Tribal soils, Cove sediments need to be resampled and, if appropriate, based upon those sample results, measures taken to address the contaminated sediments. Additional sampling and/or biota sampling will be needed to delineate PCB sediment contamination in the SLR. Additional investigations should be performed to determine the source of PCBs and whether additional remediation efforts are necessary to ensure protectiveness.	Ongoing	Sediment Sampling in the Turtle Cove and SLR was performed in 2023 as a follow up to the 2019 passive surface water/porewater and sediment sampling and to investigate sediment PCB concentrations further. Fish sampling was conducted in 2021, 2022, and 2024. Tribal soils and sediments have not been remediated yet, but this work is expected to begin in 2027.	Click here to enter a date

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 7, 2024, 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 GM Site. 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 Site, Larisa Romanowski, posted a public notice on the EPA site webpage (www.epa.gov/superfund/gm-massena) and provided the notice to the SRMT Environment Division and the town and village of Massena by email on July 30, 2025 with a request that the notice be posted in municipal offices and on their respective webpages. The public notice was also distributed via the Site's email Listserv. The notice indicated that a FYR would be conducted at the Site to ensure that the cleanup at the Site 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: Region 2 Superfund Records Center, 290 Broadway, 18th Floor, New York, New York; the Saint Regis Mohawk Tribe Environment Division, Community Service Building, 850 Rt. 37, Akwesasne, New York; and the Massena Public Library, 41 Glen Street, Massena, New York. Efforts will be made to reach out to local public officials to inform them of the results.

Data Review

Fish Tissue

There were three fish sampling events conducted for this FYR: 2021, 2022, and 2024. An RAO for fish tissue was not identified in the ROD. Monitoring is conducted for fish consumption, in accordance with NYSDOH fish advisory regulations see **Appendix B** for reference and link), and to evaluate trends or anomalies as it relates to remedy protectiveness. PCB fillet concentrations of 2 mg/kg or higher are considered "Do Not Eat" by the Great Lakes Fish Consumption Advisory Protocol (Anderson, *et al.*, 1993). Additionally, the EPA ROD for the nearby Grasse River site selected a remediation goal (RG) of 0.05 mg/kg PCBs in fish fillet for the protection of human health and a RG of 0.01 mg/kg PCBs in fish for the protection of Mohawk health based on adult Tribal subsistence consumption rates. For Young of Year sampling, there has been a decrease in the population of spottail shiners, and school fish in general in the study area. Therefore, round goby, a small prey forage fish, was collected to fulfill the YOY sampling requirement.

Historic mean total PCB concentrations for predatory fish, bottom feeding, and Young of Year can be found below in **Tables 4, 5, and 6,** respectively. Overall, mean fish tissue PCB concentrations for the Sediment Cap/Removal Area, and Turtle Cove remain higher than upstream and downstream of the Site. Historic Site fish summary statistics can be found in **Appendix A, Tables 9 and 10**. Composition of fish species used for each trophic level are discussed in the O&M section above.

***Table 4**: Historic Predatory Fish PCB Data*

	Mean Total PCB Concentrations (mg/kg)							
Sample Area	**2008**	**2012**	**2016**	**2017**	**2018**	**2021**	**2022**	**2024**
Background	0.18	--	--	--	--	--	--	--
Upstream of Site	--	--	--	1.2	--	0.68	0.46	0.34

Sediment Cap/Removal Area	2.8	3.0	14	2.6	1.6	4.2	2.1	2.3
Turtle Cove	2.0	2.0	13	0.84	4.6	3.6	3.9	1.5
Downstream of Site	--	0.26	0.38	0.30	0.41	0.32	0.36	0.45

Note: Background in these tables refers to samples collected upstream of the Moses-Saunders Power Dam in 2008.

The mean total PCB concentrations in predatory fish have remained consistent with the exception of the 2016 sampling event, which had elevated PCB levels for undetermined reasons. Since 2016, the mean fish tissue concentrations have remained relatively consistent for Downstream, Sediment Cap/Removal Area, and the Turtle Cove, with no clear trend. Upstream of the Site were the lowest results observed for predatory fish since sampling began there in 2017.

***Table 4**: Historic Bottom-Feeding Fish PCB Data*

	Mean Total PCB Concentrations (mg/kg)							
Sample Area	**2008**	**2012**	**2016**	**2017**	**2018**	**2021**	**2022**	**2024**
Background	0.024	--	--	--	--	--	--	--
Upstream of Site	--	--	--	0.15	--	0.74	0.32	0.12
Sediment Cap/Removal Area	1.4	1.7	1.6	0.36	0.36	0.19	0.63	0.98
Turtle Cove	2.0	0.47	5.0	1.4	0.89	1.6	0.68	1.6
Downstream of Site	--	0.10	0.047	0.073	0.11	0.093	0.082	0.067

The mean total PCB concentrations in bottom feeding fish for the Sediment Cap/Removal area varied slightly during this FYR sample period began with the lowest in 2021 (0.19 mg/kg) and highest in 2024 (0.98 mg/kg). Overall, since 2008, the results have varied. Turtle Cove was generally consistent during this review period with the lowest in 2022 at 0.68 mg/kg and the highest in both 2021 and 2024 (1.6 mg/kg). Upstream and Downstream of the Site remain lower than the Sediment Cap/Removal and Turtle Cove.

***Table 5**: Historic Young-of-Year Fish PCB Data*

	Mean Total PCB Concentration (mg/kg)								
Sample Area	**1997**	**1998**	**1999**	**2000**	**2001**	**2007**	**2017**	**2022**	**2024**
Upstream of Site	--	--	--	--	--	--	0.14	0.11	0.14
Sediment Cap/Removal Area	1.2	3.6	2.4	1.5	3.7	0.94	1.8	2.5	2.5
Turtle Cove	--	--	--	--	--	0.80	4.4	12	2.4
Downstream of Site	--	--	--	--	--	--	--	0.46	0.25

YOY sampled in 2022 and 2024 during this review period had the same mean concentration in the Sediment Cap/Removal Area (2.5 mg/kg) for both years, whereas there was a decrease in mean concentration for the Turtle Cove from 2022 (12 mg/kg) to 2024 (2.4 mg/kg). The 2024 mean in the Cove is the lowest observed since 2007 and was a similar mean concentration to the 2024 SLR YOY. The 2022 and 2024 YOY mean total PCB results in the Sediment Cap/Removal Area and Turtle Cove remain higher than the YOY fish PCB in the upstream and downstream locations. The Cove had higher mean PCB concentrations than the Sediment Cap/Removal area in 2017 and 2022, but decreased to slightly below

the Sediment Cap/Removal Area mean in 2024. The upstream location (range of 0.11 to 0.14 mg/kg) is similar to the NYSDEC forage fish tissue criterion of 0.11 mg/kg. (**Appendix A, Table 10**).

The YOY fish PCB data show similar trends as the adult bottom-feeding and predatory fish, with PCBs being higher at the Sediment Cap/Removal Area and in the Cove, and lower at the Upstream and Downstream of Site sample areas.

The 2021, 2022, and 2024 results for bottom-feeding and predatory fish all exhibit elevated PCB levels localized adjacent to the Site, especially for predatory fish. PCB levels decline downstream to levels nearing background conditions, which are locally defined by the adult fish data collected by GM in 2008 upstream of the Moses-Saunders Power Dam.

While there is no historical background PCB data for YOY, potential reasons for the elevated concentrations at the Site should continue to be evaluated, including upstream and downstream locations.

There are differences observed in the 2021, 2022, and 2024 data between tropic levels with generally higher PCBs in predatory fish than in bottom-feeding fish (**Appendix A, Table 9**). This is consistent with the historic Site adult fish sampling PCB data and potentially could be due to differences in feeding preference or bioaccumulation rates (Arcadis, 2025).

As detailed in the Fourth FYR, predatory and bottom-feeding fish showed a spike in PCB concentrations in 2016 compared to previous and subsequent years. The highest PCB levels in fish in 2016 occurred in predatory fish at 45 mg/kg in the Sediment Cap/Removal Area and 44 mg/kg in the Cove. These were at least an order of magnitude higher than most other fish tissue PCB results collected in 2016. Bottom feeding fish also showed similar elevated PCB concentrations in fillets for some individuals, but to a lesser extent. Sample area seemed to be the primary factor in the 2016 fish sampling event. Adult fish collected from the Sediment Cap/Removal Area and Turtle Cove had higher PCB concentrations compared to other areas or years sampled. As mentioned above, while predatory fish PCB concentrations were typically higher than bottom-feeding fish PCB concentrations, due possibly to differences in feeding preference, trophic level, and/or rates of bioaccumulation, both types of fish have shown similar trends in PCB concentrations over time.

Subsequent adult fish tissue sampling events have shown overall lower PCB concentrations compared to the 2016 fish sampling event. That said, the adult fish collected in the Sediment Cap/Removal Area and Turtle Cove in 2017, 2018, 2021, 2022, and 2024 generally remain elevated when compared with Background, the Upstream and Downstream of Site sample areas, and with the NYSDOH fish consumption advisory.

The most recent fish Sampling results from 2024, generally follow a similar trend to the previous years. Total PCB and lipid-normalized PCB concentrations in 2024 for predatory fish were higher in the Sediment Cap/Removal Area and the Cove, and lower Upstream and Downstream of the Site. Mean total PCBs for predatory fish were 0.34, 2.3, 1.5, and 0.45 mg/kg for the Upstream of Site, Sediment Cap/Removal Area, the Cove, and Downstream of Site sample areas, respectively. Mean lipid-normalized PCBs for predatory fish were 18, 66, 150, and 13 mg/kg-lipid at the same sample areas, respectively. The mean lipid-normalized PCB concentrations (150 mg/kg) for predatory fish from Turtle Cove are the most elevated.

Total PCB and lipid-normalized PCB concentrations for bottom-feeding fish in 2024 were also higher in the Sediment Cap/Removal Area and the Cove, and lower Upstream and Downstream of the Site. Mean total PCBs for bottom-feeding fish were 0.12, 1.0, 1.6, and 0.067 mg/kg for the Upstream of Site, Sediment Cap/Removal Area, the Cove, and Downstream of Site sample areas, respectively. Mean lipid-normalized PCBs for bottom-feeding fish were 12, 57, 115, and 5.2 mg/kg-lipid, respectively.

Fish Tissue trends are continuing to be assessed as they relate to remedy protectiveness; therefore, additional statistical and non-statistical approaches are needed.

Sediment Sampling

The 2023 Sediment Sampling event was the only sediment sampling event conducted during this review period and was a follow-up to the 2019 passive surface water/porewater and sediment sampling event. A vibracore was used to sample both till or hardpan clay and soft sediment, whereas the 2019 sediment sampling only sampled the soft sediment. Three distinct areas of the Site were sampled for this event: the Cove, the Removal Area east of the sediment cap, and the Removal Area west of the cap, as well as two locations in the river upstream of the Site. There were 28 sample locations in the SLR portion of the dredged areas, and 12 sediment sample locations in the Cove.

The total PCB concentrations detected at the 2023 sample locations, compared against the ROD-established 1.0 mg/kg cleanup criteria for the SLR, are located in **Appendix A, Figures 4** and **5,** and **Table 3**. Total PCB concentrations exceeding the 1.0 mg/kg cleanup criteria were detected at six of the 28 sampling locations and in a total of 10 of the 93 sample intervals in the SLR. The highest total PCB concentration detected in the SLR (6.6 mg/kg) was in the 0 to 6-inch interval of soft sediment collected at location Cap-West-01, which is near the location that had the highest PCB concentration detected in 1995. None of the 17 samples collected from the underlying glacial till contained PCB concentrations above the cleanup criteria.

A summary of total PCBs by area can be found in **Appendix A, Table 5**. In the area upstream of the Removal Area, no samples exceeded 1.0 mg/kg and the mean concentration of PCBs in these samples was 0.34 mg/kg. In the Removal Area west of the cap, the mean concentration of the 27 samples collected in soft sediments was 0.69 mg/kg. Five (19%) of these samples exceed the 1.0 mg/kg criteria **(Appendix A, Table 5)**. In the Removal Area east of the cap, the mean concentration of the 42 samples collected in soft sediments was 0.63 mg/kg. Five (12%) of these samples exceed the 1.0 mg/kg criteria. The mean concentration for the 17 underlying till samples in the river (east and west of the cap) was 0.091 mg/kg, and the maximum concentration was 0.47 mg/kg. Locations Cap-West-01 and Cap-West-02, situated along the cap, had the highest PCB concentrations. As shown on **Figure 4** and **Table 2** within the river, total PCB concentrations in soft sediment were higher in samples collected adjacent to the cap area than in areas farther from the cap.

Total PCB concentrations detected at the 2023 sample locations within the Cove, with concentrations compared against the ROD-established 0.1 mg/kg cleanup criteria are found in **Appendix A, Table 4** and **Figure 6**. Total PCB concentrations exceeding the 0.1 mg/kg cleanup criteria were detected at six of the 12 sampling locations and in a total of 14 of 40 sample intervals. The highest total PCB concentration detected in Turtle Cove (3.39 mg/kg) was in the 0 to 6-inch interval of soft sediment collected at location Cove-07, which is adjacent to the sheet pile wall. In the overlying soft sediments of Turtle Cove, the mean concentration of the 21 samples collected was 0.37 mg/kg. Six (29%) of the 21 samples exceed the 0.1 mg/kg criteria.

In the underlying hardpan clay and till of Turtle Cove, the mean concentration of the 19 samples collected was 0.45 mg/kg. Eight (42%) of the 19 samples exceed the 0.1 mg/kg criterion.

The total number of samples where PCB concentrations were detected above the cleanup criteria is higher in Turtle Cove as compared to the SLR, but the cleanup criteria is an order of magnitude lower in the Cove. Turtle Cove remediation in 2005/2006 excavated contaminated material to below the 0.1 mg/kg cleanup criteria. Between 2006 and 2019, there was an increase in PCBs in the sediment within Turtle Cove, from an unknown source.

Potential sources continue to include the upland Tribal Soils which has planned remediation in 2027, groundwater under the ILF, or sediment transport from the SLR. EPA will continue to assess risk and the need for future investigations related to the presence of PCB concentrations above cleanup criteria.

Groundwater

During this review period, groundwater samples were collected from September 2020 to April 2025. In general, the higher concentrations of COCs continue to be detected in monitoring wells associated with the ILF, closest to the sheet pile wall along Turtle Cove. Exceedances of PCBs continued to be detected in the vicinity of the 10 MGL and were detected on the east and southeastern side of the ILF for the first time.

Thirty-three monitoring wells were abandoned in 2018 and 2019 because groundwater samples collected from these locations have been non-detect or below groundwater cleanup criteria for ROD-specified COCs for the last decade or longer. Many of these wells were installed in the 1980s as part of the original Site investigations and are no longer needed for long-term, post-remediation monitoring. The final long-term monitoring network will be identified in the SMP.

Groundwater sampling locations and concentration trend plots for MW-16A, MW-16B, MW-302S, PW-301 and MW-706 are depicted in **Appendix D**.

Polychlorinated Biphenyls

During this review period, the highest concentrations of total PCBs were detected in three monitoring wells located north of the ILF (MW-16A, MW-16B, and PW-301), one monitoring well east of the ILF (MW-26B) and one monitoring well located northeast of the 10 MGL (MW-302S). The highest concentration of PCBs was detected in monitoring well MW-16B at a concentration of 34.8 micrograms per liter (µg/L) (2021), which exceeds the ROD cleanup goal of 0.1 µg/L. Maximum concentrations of PCBs in MW-26B, PW-301, and MW-16A were detected at 27.5 µg/L (2022), 12.7 µg/L (2022), and 1.90 µg/L (2023) respectively. Total PCB concentrations detected in the immediate vicinity of the ILF in monitoring wells MW-16A, MW-16B, and PW-301 have generally decreased since 2007. Since 2019, PCB concentrations in PW-301 increased to a concentration of 12.7 µg/L (2022) but then decreased to 9.51 µg/L (2024).

MW-706, which is screened in the upper glaciolacustrine and located north of the ILF between Turtle Cove and the recovery wells, had PCB exceedances reported for the first time in September 2022. A maximum concentration of 0.374 µg/L (2023) was reported in this well which is higher than historic trends. MW-707, which is located adjacent to MW-706 but screened deeper in the lower till, reported either non detect or very low concentrations or PCBs. Additional sampling in MW-706 is warranted to monitor PCB concentration trends.

In general, exceedances of total PCBs remain isolated to the MW-302 well cluster in the vicinity of the 10 MGL lagoon. Total PCB concentrations detected in monitoring well MW-302S have remained above the Site cleanup standard of 0.1 µg/L since 2007, with a maximum concentration of 1.17 µg/L (April 2025) reported during this review period. Concentrations declined since Feb 2021 and were reported below the Site cleanup standard in June 2022 (0.061 µg/L) but then continued to fluctuate above criteria until increasing to 1.17 µg/L in April 2025. PCBs sporadically exceeded criteria in MW-302D since February 2020, with a maximum concentration of 0.480 µg/L reported in April 2024. In MW-23B, located west of MW-302S/D, total PCBs were detected for the first time slightly above criteria at a concentration of 0.142 µg/L in September 2024.

Total PCB concentrations were reported above the Site cleanup standard during this review period in monitoring wells to the east (MW-26A, MW-26B, OBS10-04C, OBS10-06B, MW-602, and MW-709) and southeast (MW-713, MW-714, MW-715, and MW-720) of the ILF. These are the first exceedances of total PCBs to be reported in this area. The maximum concentration of PCBs in wells on the east side of the ILF was reported in MW-26B with a concentration of 27.5 µg/L (2022). This was the first exceedance of PCBs reported in this well. PCB concentrations decreased to 0.362 µg/L (2023) and were not detected during the September 2024 sampling event. Maximum concentrations of PCBs in wells on the eastern and southeastern side of the ILF were in OBS10-06B and MW-714 with reported exceedances of 0.692 µg/L (2023) and 0.608 µg/L (2023), respectively. Additional sampling in monitoring wells east and southeast of the ILF is warranted to monitor PCB concentration trends.

Volatile Organic Compounds

During this review period, VOC exceedances were only reported in three monitoring wells (MW-16A, MW-706, and MW-707), which are located north of the ILF. Historically, the highest concentrations of 1,2-DCE were reported in MW-16A with the highest concentration detected in November 2014 (460 µg/L). Since then, 1,2-DCE concentrations have significantly declined and remained below the Site cleanup standard of 5 µg/L since 2019. VC still exceeds the Site cleanup standard of 2 µg/L but has declined since the last review period when this contaminant was detected at 120 µg/L. The most recent concentration of VC in MW-16A was reported at 6.3 µg/L (September 2024). 1,2-DCE and VC also exceeded their respective criteria in MW-706. Concentrations of 1,2-DCE decreased from 14 µg/L (2021) to 11 µg/L (2022) to 8.3 µg/L (2023), before increasing to 11 µg/L in September 2024. Similarly, VC decreased from 12 µg/L (2021) to 6.5 µg/L (2022) to 3 µg/L (2023) but then increased to 7.1 µg/L in September 2024. In MW-707, VC remained slightly above the Site cleanup standard of 2 µg/L until September 2020 but then decreased below criteria during this review period. MW-706 had VC of 7.1 ug/L in September 2024. Detections of TCE did not exceed the cleanup standard of 5 µg/L in any monitoring well during this review period.

Total Phenolic Compounds

There were no detections of phenols above the Site cleanup standard of 1 µg/L during this review period. Phenols have not exceeded criteria in any monitoring wells since 2014.

Emerging Contaminants Sampling

As discussed in the previous FYR, emerging contaminant sampling was performed on-site from August-September 2019 to evaluate the presence of per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane in MW-302S, MW-602, MW-604, MW-703, MW-713, and PW-301. Monitoring wells MW-302S, MW-

604, MW-703, and PW-301 are in the northern area of the Site near the SLR, while monitoring wells MW-602 and MW-713 are located in the eastern area of the Site in the vicinity of the ILF. Of the six wells sampled, there were detections of 1,4-dioxane in one monitoring well (PW-301) and detections of PFAS in five monitoring wells (MW-302S, MW-602, MW-604, MW-703, and PW-301).

NYSDEC adopted a 1,4-dioxane drinking water MCL of 1 µg/L in 2020 and an ambient water quality guidance value of 0.35 µg/L in 2023. The concentration of 1,4-dioxane at monitoring well PW-301 (0.0758 µg/L) from 2019 was below both the 2020 NYSDEC MCL and 2023 ambient water quality guidance value.

In April 2024, EPA finalized federal drinking water MCLs for perfluorooctanoic acid (PFOA) and perfluoro-octane sulfonate (PFOS) at 4 nanograms per liter (ηg/L). In 2020, NYSDEC established drinking water MCLs for PFOA and PFOS of 10 ηg/L. In 2023, NYSDEC released ambient water quality guidance values of 6.7 ηg/L for PFOA and 2.7 ηg/L for PFOS (NYSDEC, 2023). Revisiting the sampling results in the context of the state and federal MCLs and state guidance values, there were PFOA and PFOS concentrations detected in select monitoring wells that exceeded these values. Regarding the federal drinking water MCL of 4 ηg/L, exceedances were as follows: MW-302 (PFOA: 6.71 ηg/L and PFOS: 5.83 ηg/L), MW-604 (PFOA: 13.5 ηg/L), and PW-301 (PFOA: 4.02 ηg/L and PFOS: 4.71 ηg/L). In the context of the ambient water quality guidance values, the exceedances were as follows: MW-302S (PFOA: 6.71 ηg/L and PFOS: 5.83 ηg/L), MW-604 (PFOA: 13.5 ηg/L), and PW-301 (PFOS: 4.71 ηg/L). The only well to exceed the NYSDEC drinking water MCL of 10 ηg/L was MW-604 where PFOA was detected at a concentration of 13.5 ng/L. Concentrations of PFOA and PFOS were below all criteria in MW-703 and MW-602 and were not detected in MW-713. Any additional PFAS sampling will be evaluated in consultation with NYSDEC.

Site Inspection

The FYR site inspection was performed between August 18 through August 20, 2025, which included Victoria Rubino (EPA RPM), Kelly Hale (NYSDEC PM), Dave Grant (RACER representative), Craig Arquette (SRMT PM), and Dan Casey (Arcadis representative). The purpose of the inspection was to assess the protectiveness of the remedy, including ILF cap, Raquette riverbank, Site cover, SLR bank and cap, perimeter fence and gravel road, outfalls, and condition of the monitoring wells. The inspection was conducted during a period of repair work to address minor site maintenance items observed during an earlier inspection in November 2024 attended by Dino Zack, AECOM (EPA oversight), and Craig Arquette (SRMT Environment Division). These items were documented in a punch list developed and submitted to EPA for review on November 11th, 2024. EPA sent the list to RACER on December 23rd, 2024. All items were addressed by RACER in 2025. No new issues were identified during the August 2025 inspection.

V. TECHNICAL ASSESSMENT

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

Remedial Action Performance

The RODs, as modified by the ROD amendment and ESD, call for a number of remedial activities that are discussed below. As previously noted, PCBs in fish and sediments in the SLR and Turtle Cove

continue to be investigated. The remedy is not complete with Tribal soils and sediments yet to be remediated.

Construction of the groundwater collection and treatment system is complete. An RA Report was finalized in September 2023.

On-Site Soils and Sludges: From July 2000 through June 2001, the sludge in the 350,000- and 1.5-million-gallon lagoons were solidified, and contaminated soils were excavated. The lagoons were backfilled, retrofitted with a high-density polyethylene liner, and put back into service as process water lagoons and to collect and hold storm water, respectively. In 2013, these lagoons, as well as PCB-contaminated sludge and soils in the NDA, were excavated to the 10 mg/kg PCBs cleanup level and restored. Clean up levels were not achieved in discrete areas of the NDA where oils and PCBs were found at depth in the excavation. As a result of the proximity of the deep excavation to the SLR and potential safety concerns, the excavation was discontinued, and five groundwater sumps were installed in these areas to pump oils that are collected and monitor any impact from these oils. Because no oils were observed in the collection sumps, the sumps were abandoned in 2018, during the restoration of the NDA.

Tribal Land Soils and Sediments: PCB-contaminated soils remain on residential parcels located on SRMT lands. The timing of remediation has been extended as a result of issues related to obtaining access. However, the RD was approved and signed by EPA in June 2024. Additional pre-construction activities are currently being performed with the US Army Corp of Engineers. Pending completion of pre-construction activities, the expected RA on-site mobilization start date for construction will be in 2027.

Groundwater: Since the collection system began fully operating in 2018 concentrations of PCBs, total phenols, and VOCs have reduced considerably in monitoring locations that have historically recorded the highest levels, indicating that the remedy has been effective at reducing contaminant concentrations in groundwater. A comparison of PCB concentrations between samples collected in 2007 and 2014, prior to the operation of the collection system, and samples collected in 2024 indicate a decrease in PCB concentrations. For example, PCB concentrations in MW-16A were reduced from 160 µg/L in 2014 to 1.72 µg/L in 2024. (99% reduction). In MW-16B, PCB concentrations were detected at 270 µg/L in 2014 but decreased to 7.63 µg/L in 2024 (97% reduction). VOC concentrations have also decreased in MW-16A and MW-16B since operation of the collection system began. In MW-16A, trans-1,2-DCE and VC concentrations were reported at 460 µg/L and 130 µg/L in 2014 but were reduced to 1.8 µg/L and 6.3 µg/L in 2024. In MW-16B, trans-1,2-DCE and VC concentrations were reported at 120 µg/L and 39 µg/L in 2007 but were reduced to 0.70 µg/L (non-detect) and 0.13 µg/L in 2024. Total phenols were reported in multiple monitoring wells prior to pumping; however, total phenols have not been detected or were detected well below criteria since 2019.

Although groundwater concentrations have reduced since operation of the collection system began in 2018, concentrations of VOCs and total PCBs continue to exceed their cleanup values in several monitoring wells. In addition, there were also monitoring wells that had reported total PCB exceedances for the first time on the north of the ILF (MW-706), the east side of the ILF (MW-26A, MW-26B, OBS10-04C, OBS10-06B, MW-602, and MW-709), and the southeast side of the ILF (MW-713, MW-714, MW-715, and MW-720). Recent pump test data suggest that contaminated groundwater is likely being captured by the groundwater collection system in OU2, however, continued groundwater sampling is warranted to monitor total PCB concentration trends, specifically in MW-706 which is located between the north side of the ILF and Turtle Cove. The collection system will be fully evaluated, and data reviewed with SRMT and NYSDEC to determine if groundwater is a potential source of contamination to Turtle Cove.

Sediments: While the sediment cleanup goals of 0.1 mg/kg were met during the remediation of Turtle Cove in 2005, the most recent sediment sampling conducted in Fall 2023 shows PCB contamination above the Tribal clean up goal, similar to the 2019 sample results. The source of this contamination will continue to be investigated. Some potential sources could be the result of overland flow of contaminated soils and sediments from the un-remediated upland Tribal area, sediment transport from the SLR, or a previous or current release from the groundwater. Additional sampling will be needed after the Tribal soils and sediments are remediated, and additional remedial measures may be taken to address the contaminated sediments.

The 2023 sediment sampling, like the 2019 sampling event, detected PCBs above the cleanup level of 1 mg/kg PCBs in the SLR. While there was a spike in PCB levels in fish tissue in 2016, those levels have been lower in all subsequent sampling events including 2021, 2022, and 2024 but remain of concern. The 2023 sediment sampling was performed to determine if the PCBs in the sediments could be a potential source of PCBs in fish.

Implementation of Institutional Controls and Other Measures

Some ICs have been implemented. This includes fish advisory signs posted along the SLR and fish consumption advisory updates through the NYSDOH. The current advisory for the river adjacent to the Site, last updated in 2019, is "Do Not Eat." Additional ICs included in **Table 1** pertaining to soil, groundwater, vapor intrusion, sediment and the ILF cap are planned to be implemented in 2027.

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

Although RAOs were not explicitly identified in the RODs, the risk assumptions and cleanup levels used at the time of the remedy remain valid. Toxicity values for the Site COCs have remained unchanged since the previous FYR. Additional details are provided below by media.

Groundwater: Groundwater cleanup levels were established for PCBs (0.1 µg/L), phenol (1 µg/L), 1,2-DCE (5 µg/L), TCE (5 µg/L) and VC (2 µg/L) based on federal MCLs, which are still considered protective. Though exceedances of the cleanup goals were identified in groundwater during this FYR period, nearby residents and on-site workers obtain drinking water from a public water system that meets appropriate drinking water standards. When considering the potential for vapor intrusion via groundwater, many of the sampling results were below their respective screening levels for vapor intrusion for commercial properties (calculated using the EPA Vapor Intrusion Screening Level calculator available at https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levelcalculator). However, some of the results suggest the potential for vapor intrusion should there be future development, which is not expected at this time. Appropriate measures through the SMP and environmental easements will be taken to assure that future property owners are aware of the need to conduct further analysis (*e.g.*, evaluate the concentrations of VOCs in monitoring wells located near future development areas to determine whether additional sampling or installation of a vapor mitigation system during construction is appropriate). This applies only to the areas of the Site where Vapor Intrusion Screening Levels have been exceeded (the northern area of the industrial landfill).

Sediment: The results of the 2023 sediment sampling event found levels of PCBs above the ROD-established 1.0 mg/kg cleanup criteria at several sampling locations near the cap area and the 0.1 mg/kg cleanup criteria within the Cove. Further information about the PCB levels in sediment can be found in

the Data Review section. Despite the elevated levels, exposure risks are minimal as swimming and wading in the dredged area is unlikely because physical hazards, limited access, and river currents in the SLR in the dredged area.

Fish Consumption*:* NYSDOH has issued fish consumption advisories for the SLR and Turtle Cove. The advisory extends from the mouth of the Grasse River downstream to the north end of Raquette Point (Navigation Light Number 11) adjacent to the Site, as well as the Alcoa Aggregation, Reynolds Metals Superfund Sites. The State's advisory for this area of the SLR was updated in 2019 and now mirrors Tribal consumption guidelines. See **Appendix B** for the link to the advisory. Within the above-mentioned area, both fish consumption advisories now restrict the eating of any fish species due to the presence of contaminants. Less restrictive fish consumption advice applies for other areas of the SLR located in the Akwesasne Territory.

Soils: Residential properties where access was granted for remediation meet the residential cleanup goal of 1 mg/kg for PCBs. This value remains protective. There remain residential properties where access for remediation has historically not been granted, and soil remains above the cleanup level. Remediation of the additional properties on Tribal land is expected to begin in summer 2027 pending access agreements and completion of a cultural resources 1B survey.

Ecological: A quantitative ecological risk assessment was not performed as part of the RI/FS. However, qualitative evaluations supporting the 1991 and 1992 RODs identified potential ecological risks to fish, ducks, geese, frogs, and turtles because of elevated PCBs in tissue, as well as concentrations of dioxin and mercury in fish tissue. Although the methods used to evaluate ecological risk at the time of the RODs are different compared to current Superfund guidance, the assumptions used and the decision to take an action remains valid. There were two cleanup values chosen for PCBs in the sediment and soils based upon the location of the contamination. PCB-contamination on the SRMT lands had a cleanup goal of 0.1 mg/kg, while the PCB-contamination on the remainder of the GM portion of the Site had a cleanup goal of 1 mg/kg. These cleanup values are still valid. As described earlier, the 2016 fish sampling data showed a spike in PCB concentrations, followed by decreases in subsequent years. However, since the concentrations in sediment identified during recent sampling remain above the cleanup goals, further investigations to identify the source of the PCBs will be undertaken, as discussed above, with additional actions as necessary. Biota monitoring will continue to be performed, and ecological risk will be further evaluated once the upland Tribal soils are remediated.

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

There is no additional information that calls into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
None

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): 1	**Issue Category: Changed Site Conditions**			
	Issue: Elevated PCB levels above cleanup goals in sediments continue to be detected in Turtle Cove and SLR. PCBs continue to remain elevated in fish tissue compared to upstream samples as well. Upland Tribal soils need to be remediated before a full investigation can occur.			
	Recommendation: After the upland Tribal soils are remediated, further evaluate the distribution of PCBs in sediment and fish tissue within Turtle Cove and SLR, investigate whether other potential sources remain and evaluate residual risks.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	9/30/2029

OU(s): 1 & 2	**Issue Category: Institutional Controls**			
	Issue: ICs to prevent the utilization of the groundwater underlying the Site proper, prevent the development of the Site for residential use, allow access for maintenance and monitoring activities, perform a vapor intrusion evaluation in areas of future construction to determine whether this would be a pathway of concern and, if the potential for vapor intrusion exists in any such area, install a vapor mitigation system, and protect the integrity of the ILF cap have not been established.			
	Recommendation: The above-noted ICs need to be implemented.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	1/1/2030

OU(s): 1	**Issue Category: Monitoring**			
	Issue: Groundwater concentrations remain elevated or have slightly increased above cleanup levels in some monitoring wells, especially closest to the recovery well system.			
	Recommendation: Continue to evaluate monitoring well concentrations, especially in the area closest to the recovery well system. If consistent increasing trends are reported, evaluate whether further action may be necessary.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	9/30/2027

OTHER FINDINGS

In addition, the following are recommendations that were identified during the FYR and may improve management of O&M but do not affect current and/or future protectiveness:

- ICs required for protectiveness related to groundwater, soil, sediment, fish tissue, vapor intrusion and the landfill cap were identified as being necessary for remedy protectiveness and should be included in a decision document.

VII. PROTECTIVENESS STATEMENT

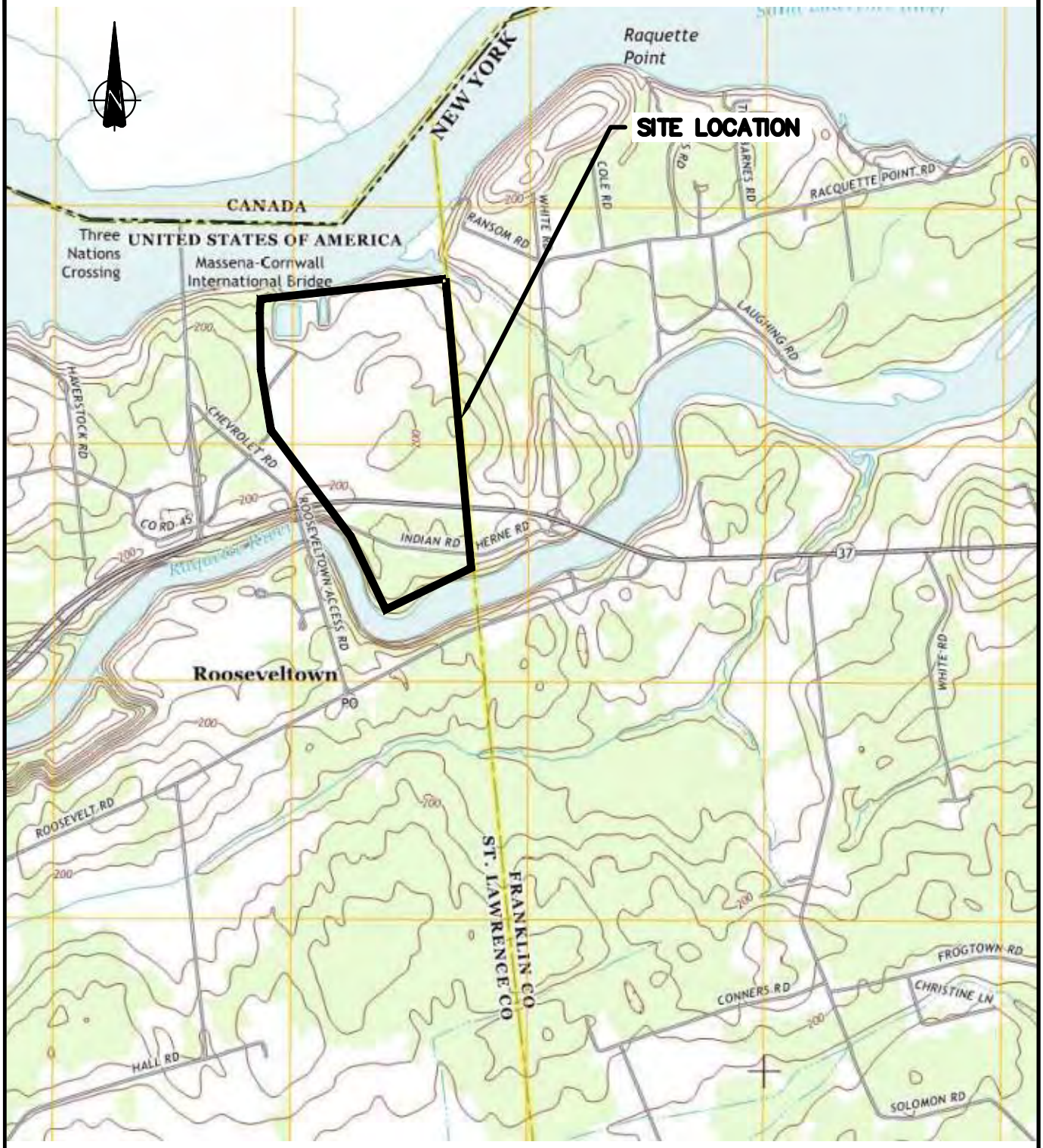
Protectiveness Statement(s)		
Operable Unit: 01	*Protectiveness Determination:* Protectiveness Deferred	*Planned Addendum Completion Date:* 9/30/2029
Protectiveness Statement: A protectiveness determination for OU1 cannot be made until the Tribal soils portion of the remedy is complete, additional sampling to determine the source of PCBs in the previously-remediated Turtle Cove and SLR is performed and whether additional remediation efforts are necessary to ensure protectiveness. It is expected that a protectiveness statement will be issued within four years from the date of this report, once upland Tribal Soils have been remediated and sediments have been further evaluated. Additionally, groundwater trends will be further evaluated over the next five years and ICs need to be implemented through the final Site Management Plan.		
Operable Unit: 02	*Protectiveness Determination:* Short-term Protective	
Protectiveness Statement: The remedy for OU2 is protective of human health and the environment in the short term. To be protective in the long-term, ICs need to be implemented through the final Site Management Plan.		

VIII. NEXT REVIEW

The next FYR report for the GM Superfund Site is required five years from the completion date of this review.

APPENDIX A

Figures



REFERENCE: U.S.G.S. 7.5 MINUTE QUADRANGLE HOGANSBURG, NEW YORK

2,000 0 2,000 4,000

SCALE IN FEET

MOTT MACDONALD

CERTIFICATE NO. 24GA28016600

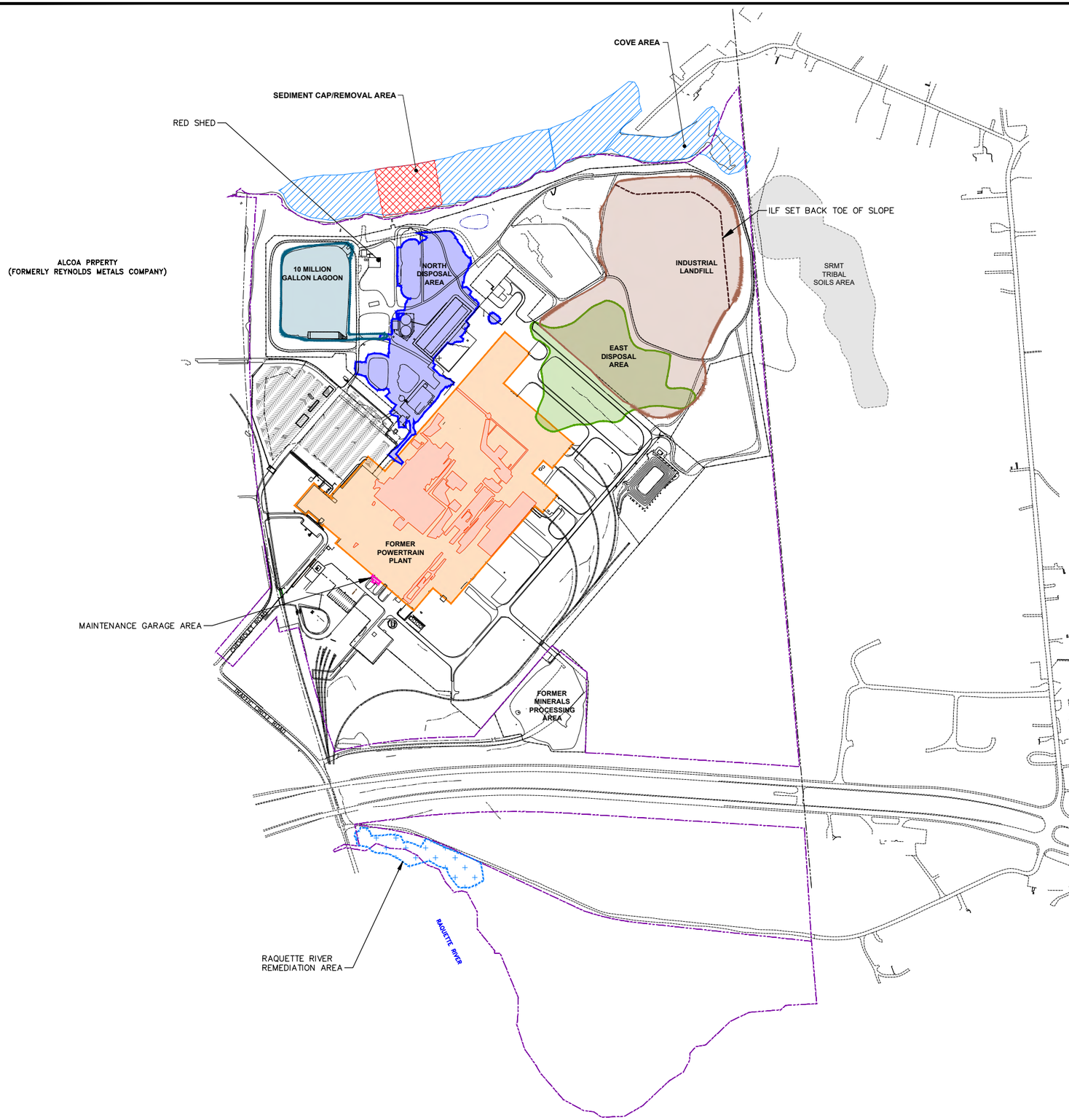
111 Wood Avenue South
Iselin, NJ 08830

RACER TRUST - MASSENA, NY

OU1 AREA REMEDIAL ACTION REPORT FOR GRUNDWATER

FIGURE 1 - SITE LOCATION MAP

Designed	Drawn	Checked	Approved	Date



LEGEND:

- MONITORING WELL
- PROPERTY LINE
- PHASE I DEMOLITION LIMITS
- PHASE II EXCAVATION AREAS
- NDA REMEDIATION AREA
- EDA REMEDIATION AREA
- ILF SET BACK AND CAP AREA
- 10 MG LAGOON REMEDIATION AREA
- MAINTENANCE GARAGE EXCAVATION AREA
- SEDIMENT REMOVAL AREA
- SEDIMENT CAP
- RAQUETTE RIVER REMEDIATION AREA
- SRMT TRIBAL SOILS AREA
- FORMER GM PROPERTY BOUNDARY

GENERAL NOTES:

1. BASEMAP INFORMATION TAKEN FROM DRAWING BY WILL LAMICA (JUNE 2005).
2. ALL FEATURE LOCATIONS ARE APPROXIMATE.
3. LIMITS OF PHASE I DEMOLITION AREA, PHASE II EXCAVATION LIMITS ARE APPROXIMATE ONLY.
4. LIMITS OF THE NDA REMEDIATION AREA, EDA REMEDIATION AREA, ILF REMEDIATION AREA, 10 MG LAGOON AREA, AND MAINTENANCE GARAGE AREA AS PROVIDED ON AS-BUILT DRAWINGS FOR EACH RESPECTIVE AREA.

0 280' 560'
GRAPHIC SCALE

GM MASSENA
CENTRAL FOUNDRY DIVISION SUPERFUND SITE
MASSENA, NEW YORK

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

CITY: SYRACUSE, NY GROUP: ENVCAD DB: K.SARTORI PIC: /TM: A. RICHARDSON LYR:ON=*; OFF=REF
C:\Users\ksarton\BIM 360\Arcadis\ANA - RACER TRUST\Project Files\MASSENA CENTRAL FOUNDRY SITE 1\2020\300433010\1-DWG\GMMassena-01-Fig 1-SitePln.dwg LAYOUT: 1 SAVED: 9/21/2020 12:50 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ---- PLOTTED: 9/21/2020 3:33 PM BY: SARTORI, KATHERINE
XREFS: IMAGES:
GMMASSENABORDER-XLD
X-Base-1

ST. LAWRENCE RIVER

REMOVAL AREA

SEDIMENT CAP

REMOVAL AREA

THE COVE

OUTFALL 003

OUTFALL 004

LEGEND:

- 2019 SEDIMENT SAMPLE LOCATION
- SEDIMENT REMOVAL AREA
- SEDIMENT CAP AREA
- 2023 SEDIMENT SAMPLE LOCATION
- COVE REMEDIATION LIMITS
- 1995 SEDIMENT SAMPLE LOCATION
- 2004/2005 COVE SIDEWALL VERIFICATION SAMPLES
- 2004/2005 COVE BOTTOM VERIFICATION SAMPLES
- 2004/2005 VIBRACORE SAMPLE LOCATION

0 80' 160'
GRAPHIC SCALE

NOTES:

1. AERIAL PHOTO SOURCED FROM GOOGLE EARTH PRO, IMAGERY DATE OCTOBER 1, 2022.

RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
MASSENA, NEW YORK

SEDIMENT SAMPLING LOCATIONS

ARCADIS

FIGURE 3

REMOVAL AREA

SEDIMENT CAP

CAP-WEST-05		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.053
	(6"-12")	0.067
	(12"-18")	0.012
	(18"-22")	0.017
Till	(0"-3")	ND

CAP-WEST-04		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.160
Till	(0"-3")	0.012

CAP-WEST-01		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	6.600
	(6"-12")	1.420

CAP-WEST-02		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	ND
	(6"-12")	0.100
	(12"-18")	2.510
	(18"-24")	2.078
	(24"-36")	2.491
	(36"-42")	0.411

SLR-UP-01		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.486
	(6"-12")	0.629 J
	(12"-18")	0.394 J
	(18"-24")	0.075 J
	(24"-27")	0.023 J

SLR-UP-02		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.449
	(6"-12")	0.301

ERT-05W		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.128
	(6"-12")	0.166 J
	(12"-18")	ND
	(18"-24")	ND
Till	(0"-3")	ND

ERT-05N		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.230
Till	(0"-3")	0.055 J

ERT-05			
Material	Sample Interval	10/29/2019	10/30/2023
Soft Sediment	(0"-6")	0.40 J	0.200
	(6"-12")	---	0.025 J
	(12"-18")	---	ND
	(18"-24")	---	ND
	(24"-36")	---	ND
Till	(0"-3")	---	ND

CAP-WEST-03		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.910 J
	(6"-12")	0.320
	(12"-15")	0.013
Till	(0"-3")	0.042

ERT-05E		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.763
Till	(0"-3")	ND

OUTFALL 003

LEGEND:

2019 SEDIMENT SAMPLE LOCATION

SEDIMENT REMOVAL AREA

SEDIMENT CAP AREA

2023 SEDIMENT SAMPLE LOCATION

1995 SEDIMENT SAMPLE LOCATION

0 40' 80'
GRAPHIC SCALE

NOTES:

1. AERIAL PHOTO SOURCED FROM GOOGLE EARTH PRO, IMAGERY DATE OCTOBER 1, 2022.
2. ALL RESULTS ARE TOTAL PCB CONCENTRATIONS, REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg).
3. SHADED VALUES INDICATE AN EXCEEDANCE OF THE CLEANUP GOAL.
4. J = THE COMPOUND WAS IDENTIFIED, HOWEVER, THE NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION.

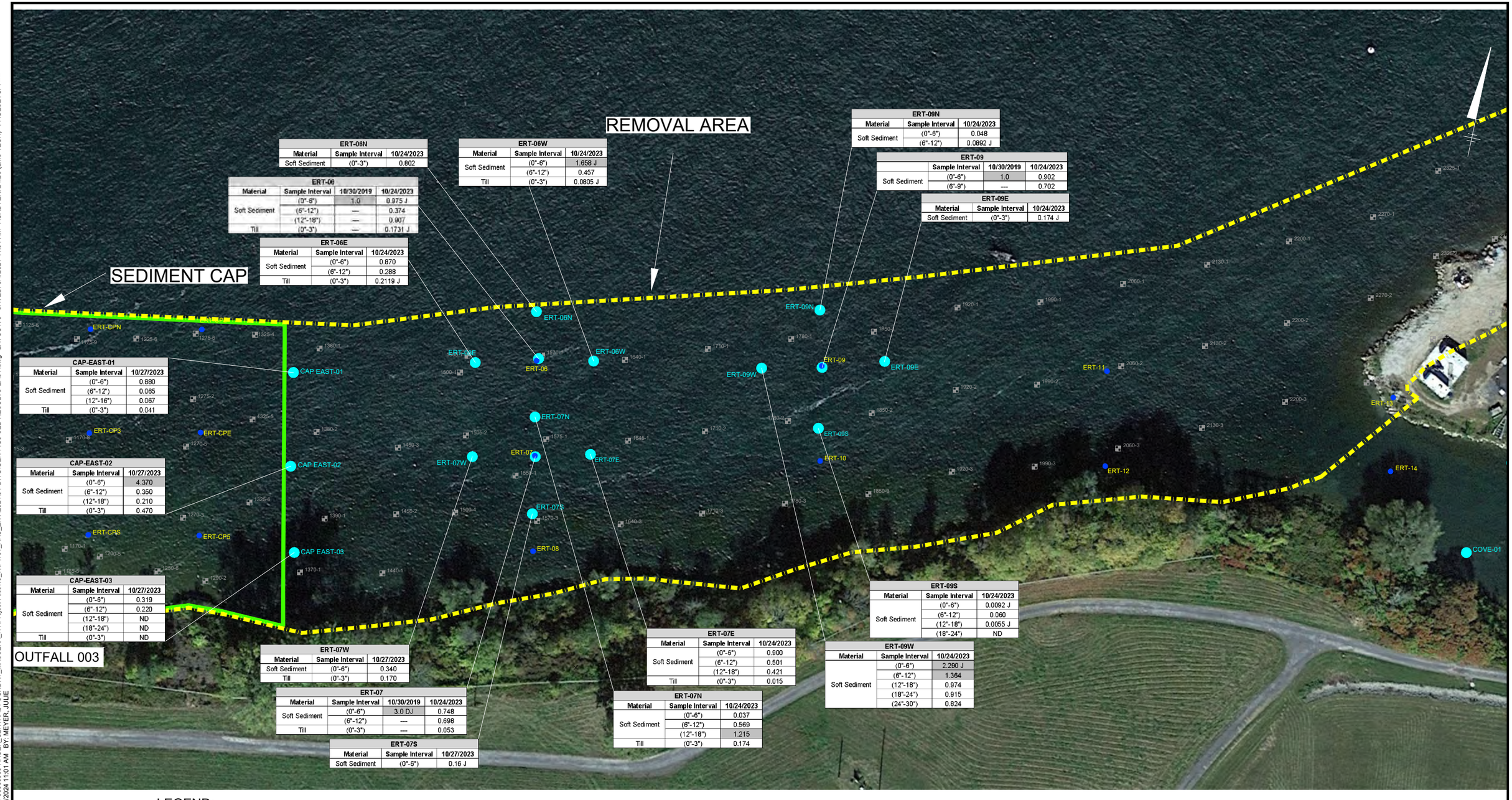
RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
MASSENA, NEW YORK

TOTAL PCB CONCENTRATIONS - WEST OF SEDIMENT CAP

ARCADIS

FIGURE 4

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: L. FORAKER T: RITSCHEL L. FORAKER LD: PIC: H. VANDEWALKER PM: H. VANDEWALKER TM: S. HILL LYR: ON=*;OFF=*REF*
C:\Users\jmeyer\DC\ACCDocs\Arcadis ACC US\AUS-99999999-RACER_CENTRAL FOUNDRY_MASSENA_NY\Project Files\10_WIP\10T_ARC_ENV\2024\01-DWG\GEN-FIG\1-SED RESULTS-WEST.dwg LAYOUT: 2 SAVED: 3/4/2024 10:59 AM ACADVER: 24.2S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/4/2024 11:01 AM BY: MEYER, JULIE
XREFS: IMAGES: PROJECTNAME: ----
FSL-X-TITLE GEPRO 10-01-22 EXPANDED.jpg



ERT-06N		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-3")	0.802

ERT-06W		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-6")	1.658 J
	(6"-12")	0.457
Till	(0"-3")	0.0805 J

ERT-06			
Material	Sample Interval	10/30/2019	10/24/2023
Soft Sediment	(0"-6")	1.0	0.375 J
	(6"-12")	---	0.374
	(12"-18")	---	0.907
Till	(0"-3")	---	0.1731 J

ERT-06E		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-6")	0.870
	(6"-12")	0.288
Till	(0"-3")	0.2119 J

ERT-09N		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-6")	0.048
	(6"-12")	0.0892 J

ERT-09			
	Sample Interval	10/30/2019	10/24/2023
Soft Sediment	(0"-6")	1.0	0.902
	(6"-9")	---	0.702

ERT-09E		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-3")	0.174 J

CAP-EAST-01		
Material	Sample Interval	10/27/2023
Soft Sediment	(0"-6")	0.880
	(6"-12")	0.065
	(12"-16")	0.067
Till	(0"-3")	0.041

CAP-EAST-02		
Material	Sample Interval	10/27/2023
Soft Sediment	(0"-6")	4.370
	(6"-12")	0.350
	(12"-18")	0.210
Till	(0"-3")	0.470

CAP-EAST-03		
Material	Sample Interval	10/27/2023
Soft Sediment	(0"-6")	0.319
	(6"-12")	0.220
	(12"-18")	ND
	(18"-24")	ND
Till	(0"-3")	ND

ERT-07W		
Material	Sample Interval	10/27/2023
Soft Sediment	(0"-6")	0.340
Till	(0"-3")	0.170

ERT-07			
Material	Sample Interval	10/30/2019	10/24/2023
Soft Sediment	(0"-6")	3.0 DJ	0.748
	(6"-12")	---	0.698
Till	(0"-3")	---	0.053

ERT-07S		
Material	Sample Interval	10/27/2023
Soft Sediment	(0"-6")	0.16 J

ERT-07E		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-6")	0.900
	(6"-12")	0.501
	(12"-18")	0.421
Till	(0"-3")	0.015

ERT-07N		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-6")	0.037
	(6"-12")	0.569
	(12"-18")	1.215
Till	(0"-3")	0.174

ERT-09S		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-6")	0.0092 J
	(6"-12")	0.060
	(12"-18")	0.0055 J
	(18"-24")	ND

ERT-09W		
Material	Sample Interval	10/24/2023
Soft Sediment	(0"-6")	2.290 J
	(6"-12")	1.364
	(12"-18")	0.974
	(18"-24")	0.915
	(24"-30")	0.824

LEGEND:

2019 SEDIMENT SAMPLE LOCATION

SEDIMENT REMOVAL AREA

SEDIMENT CAP AREA

2023 SEDIMENT SAMPLE LOCATION

1995 SEDIMENT SAMPLE LOCATION

0 40' 80'
GRAPHIC SCALE

NOTES:

1. AERIAL PHOTO SOURCED FROM GOOGLE EARTH PRO, IMAGERY DATE OCTOBER 1, 2022.
2. ALL RESULTS ARE TOTAL PCB CONCENTRATIONS, REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg).
3. SHADED VALUES INDICATE AN EXCEEDANCE OF THE CLEANUP GOAL.
4. J = THE COMPOUND WAS IDENTIFIED, HOWEVER, THE NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION.

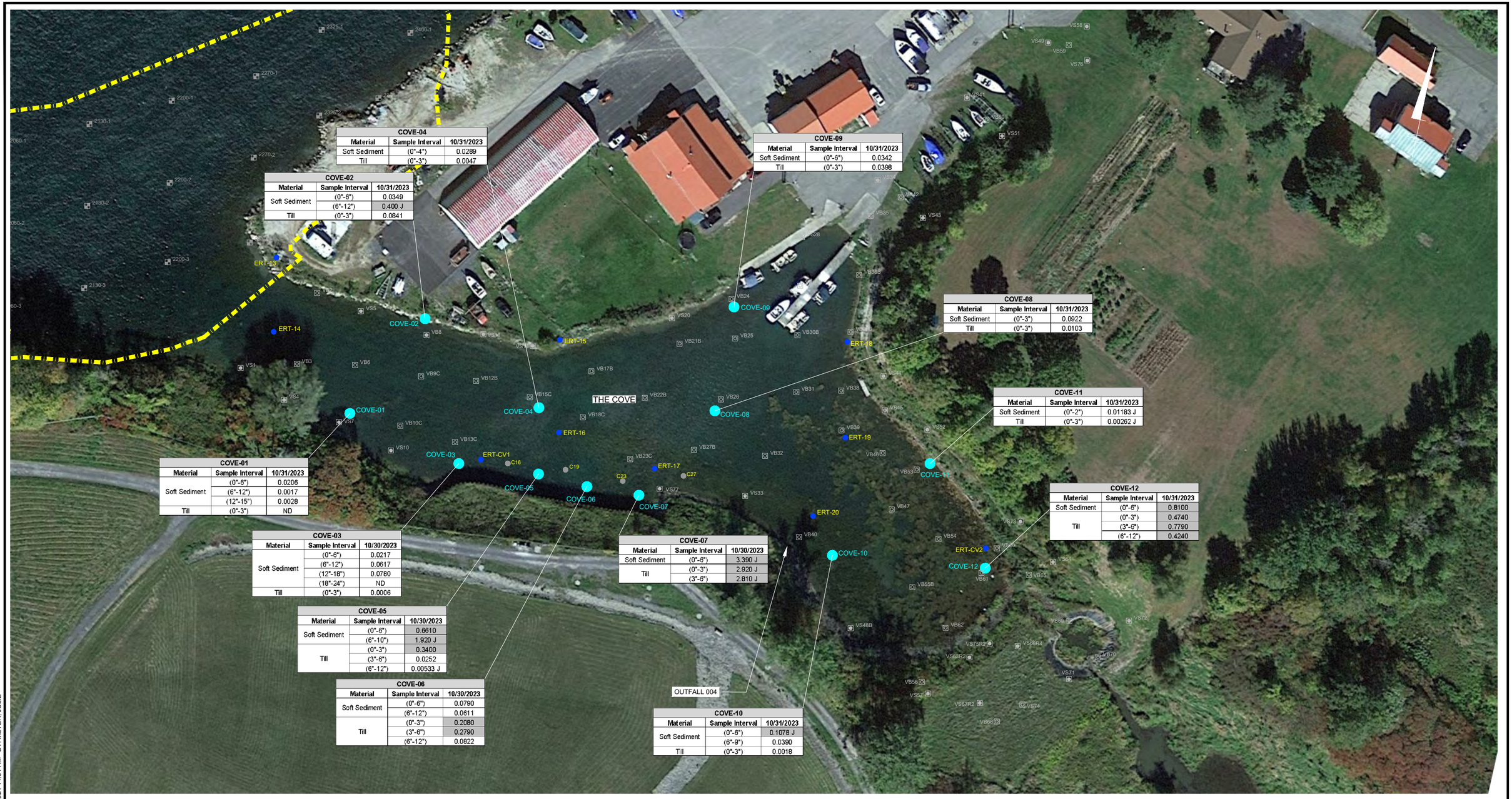
RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
MASSENA, NEW YORK

TOTAL PCB CONCENTRATIONS - EAST OF SEDIMENT CAP

ARCADIS

FIGURE 5

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: L. FORAKER T: RITSCHEL L. FORAKER LD: PIC: H. VANDEWALKER PM: H. VANDEWALKER TM: S. HILL LYR: ON=*;OFF=*REF*
C:\Users\jmeyer\DC\ACCDocs\Arcadis ACC US\AUS-99999999-RACER_CENTRAL FOUNDRY_MASSENA_NY\Project Files\10_WIP\10T_ARC_ENV\2024\01-DWG\GEN-FIG3-SED RESULTS-EAST.dwg LAYOUT: 3 SAVED: 3/4/2024 11:01 AM ACADVER: 24.2S (LMS TECH) PAGESETUP: ---
PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/4/2024 11:01 AM BY: MEYER, JULIE
XREFS: IMAGES: PROJECTNAME: ---
FSL-X-TITLE GEPRO 10-01-22 EXPANDED.jpg



COVE-01		
Material	Sample Interval	10/31/2023
Soft Sediment	(0"-6")	0.0206
	(6"-12")	0.0017
	(12"-15")	0.0028
Till	(0"-3")	ND

COVE-02		
Material	Sample Interval	10/31/2023
Soft Sediment	(0"-6")	0.0349
	(6"-12")	0.400 J
Till	(0"-3")	0.0841

COVE-03		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.0217
	(6"-12")	0.0617
	(12"-18")	0.0780
	(18"-24")	ND
Till	(0"-3")	0.0006

COVE-04		
Material	Sample Interval	10/31/2023
Soft Sediment	(0"-4")	0.0289
Till	(0"-3")	0.0047

COVE-05		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.6610
	(6"-10")	1.920 J
Till	(0"-3")	0.3400
	(3"-6")	0.0252
	(6"-12")	0.00533 J

COVE-06		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	0.0790
	(6"-12")	0.0611
Till	(0"-3")	0.2080
	(3"-6")	0.2790
	(6"-12")	0.0822

COVE-07		
Material	Sample Interval	10/30/2023
Soft Sediment	(0"-6")	3.390 J
Till	(0"-3")	2.920 J
	(3"-6")	2.810 J

COVE-08		
Material	Sample Interval	10/31/2023
Soft Sediment	(0"-3")	0.0922
Till	(0"-3")	0.0103

COVE-09		
Material	Sample Interval	10/31/2023
Soft Sediment	(0"-6")	0.0342
Till	(0"-3")	0.0398

COVE-10		
Material	Sample Interval	10/31/2023
Soft Sediment	(0"-6")	0.1078 J
	(6"-9")	0.0390
Till	(0"-3")	0.0018

COVE-11		
Material	Sample Interval	10/31/2023
Soft Sediment	(0"-2")	0.01183 J
Till	(0"-3")	0.00262 J

COVE-12		
Material	Sample Interval	10/31/2023
Soft Sediment	(0"-6")	0.8100
Till	(0"-3")	0.4740
	(3"-6")	0.7790
	(6"-12")	0.4240

ERT-CP5
ERT-05W

LEGEND:

2019 SEDIMENT SAMPLE LOCATION

SEDIMENT REMOVAL AREA

2023 SEDIMENT SAMPLE LOCATION

1995 SEDIMENT SAMPLE LOCATION

2004/2005 COVE SIDEWALL VERIFICATION SAMPLES

2004/2005 COVE BOTTOM VERIFICATION SAMPLES

2004/2005 VIBRACORE SAMPLE LOCATION

0 40' 80'
GRAPHIC SCALE

NOTES:

1. AERIAL PHOTO SOURCED FROM GOOGLE EARTH PRO, IMAGERY DATE OCTOBER 1, 2022.
2. ALL RESULTS ARE TOTAL PCB CONCENTRATIONS, REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg).
3. SHADED VALUES INDICATE AN EXCEEDANCE OF THE CLEANUP GOAL.
4. J = THE COMPOUND WAS IDENTIFIED , HOWEVER, THE NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION.

RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION)
SUPERFUND SITE
MASSENA, NEW YORK

TOTAL PCB CONCENTRATIONS - TURTLE COVE

ARCADIS

FIGURE 6

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: L. FORAKER T: RITSCHEL L. FORAKER LD: PIC: H. VANDEWALKER PM: H. VANDEWALKER TM: S. HILL LYR: ON=*;OFF=*REF*
C:\Users\jmeyer\DC\ACCDocs\Arcadis ACC US\AUS-99999999-RACER_CENTRAL FOUNDRY_MASSENA_NY\Project Files\10_WIP\10T_ARC_ENV\20240101-DWG\GEN-FIG4-SED RESULTS- COVE.dwg LAYOUT: 4 SAVED: 3/4/2024 10:58 AM ACADVER: 24.2S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/4/2024 11:01 AM BY: MEYER, JULIE
XREFS: IMAGES: PROJECTNAME: ----
FSL-X-TITLE GEPRO 10-01-22 EXPANDED.jpg

LEGEND:

- SEDIMENT REMOVAL AREA
- SEDIMENT CAP AREA
- TRANSECTS/AREAS VISUALLY INSPECTED BY DIVERS

NOTE:

1. AERIAL PHOTO OBTAINED FROM GOOGLE EARTH DATED 10/2022.

0 80' 160'
GRAPHIC SCALE

RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
MASSENA, NEW YORK

SEDIMENT CAP INSPECTION SITE MAP AND DIVE LOCATIONS

ARCADIS

FIGURE 7

CITY: SYRACUSE DIV/GROUP: ENVCAD DB: L. FORAKER T. RITSCHEL L. FORAKER LD: PIC: H. VANDEWALKER PM: H. VANDEWALKER TM: S. HILL LYR: ON=*;OFF=*REF*
C:\Users\lamicelli\ACCDocs\Arcadis\AUS-RACER TRUST-CENTRAL FOUNDARY SITE-MASSENA New York\Project Files\2023\01-in Progress\01-DWG\D\VEPLAN-FIG01-CAP LOCATION.dwg LAYOUT: 1 SAVED: 10/11/2023 1:56 PM ACADVER: 24.2S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE:
PLTFULL.CTB PLOTTED: 10/12/2023 9:53 AM BY: IAMICELI, KIMBERLY
XREFS: IMAGES: PROJECTNAME: ----
FSL-X-TITLE FSL-X-IMAGE-2022-10.jpg
FSL-X-IMAGE-2022-10

LEGEND:

E 13+50	INSPECTION TRANSECT STATION (EASTERLY)
	TRANSECTS VISUALLY INSPECTED BY DIVERS
X	FENCE
	ADDITIONAL INSPECTION AREA

NOTES:

1. MAPPING IS PHOTOGRAMETRICALY DERIVED FROM AERIAL PHOTOGRAPHY.
2. BASE MAPPING CONTOUR INTERVAL EQUALS 2-FEET.

0 20' 40'
GRAPHIC SCALE

RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION)
SUPERFUND SITE
MASSENA, NEW YORK

SEDIMENT CAP INSPECTION AREAS

ARCADIS

FIGURE
8

CITY: SYRACUSE, NY DIV/GROUP: ENVCAD DB: K. DAVIS LD:(Opt) PIC: C. PETERS PM: R. BOELTER TM: D. BUYS LYR:ON=*;OFF=*REF*
C:\Users\amicel\ACCDocs\Arcadis\AUS-RACER TRUST-CENTRAL FOUNDARY SITE-MASSENA New York\Project Files\2023\01-In Progress\01-DWG\GEN-FIG 02 SED CAP INSP TRNSCT.dwg LAYOUT: 2 SAVED: 10/11/2023 1:53 PM ACADVER: 24.2S (LMS TECH) PAGESETUP:---- PLOTSTYLETABLE:
PLTHALF.CTB PLOTTED: 10/12/2023 9:56 AM BY: IAMICELI, KIMBERLY
XREFS: IMAGES: PROJECTNAME: ----
50081X02
FSL-X-TITLE

LEGEND:

- SEDIMENT REMOVAL AREA
- SEDIMENT CAP AREA

NOTES:

1. AERIAL PHOTO OBTAINED FROM GOOGLE EARTH DATED 10/2022.

0 800' 1600'
GRAPHIC SCALE

RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
MASSENA, NEW YORK

FISH SAMPLING AREAS SITE WIDE

ARCADIS

FIGURE 9

C:\Users\GSTEINBERGER\DC\ACCDocs\Arcadis ACC US\AUS-99999999-RACER_CENTRAL FOUNDRY_MASSENA_NY\Project Files\10_WIP\10T_ARC_ENV\2024\01-DWG\FSWP2024-FIG01.dwg LAYOUT: 1 SAVED: 5/6/2024 10:49 AM ACADVER: 24.3S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/6/2024 10:53 AM BY: STEINBERGER, GEORGE
XREFS: IMAGES: PROJECTNAME: ----
FSL-X-TITLE FSL-X-IMAGE-2022-10.jpg
FSL-X-IMAGE-2022-10

LEGEND:

- SEDIMENT REMOVAL AREA
- SEDIMENT CAP

NOTES:

1. AERIAL PHOTO OBTAINED FROM GOOGLE EARTH DATED 10/2022.

0 120' 240'
GRAPHIC SCALE

RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
MASSENA, NEW YORK

FISH SAMPLING AREAS UPSTREAM OF SITE

ARCADIS

FIGURE
10

C:\Users\GSTEINBERGER\DCACCDocs\Arcadis ACC US\AUS-9999999-RACER_CENTRAL FOUNDRY_MASSENA_NY\Project Files\10_WIP\10T_ARC_ENV\2024\01-DWG\FSWP2024-FIG02-FIG03-FIG04.DWG LAYOUT: 2 SAVED: 5/6/2024 10:52 AM ACADVER: 24.3S (LMS TECH) PAGESETUP:
C-LD2B-PDF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/6/2024 10:54 AM BY: STEINBERGER, GEORGE
XREFS: IMAGES: PROJECTNAME: ---
FSL-X-TITLE FSL-X-IMAGE-2022-10.jpg
FSL-X-IMAGE-2022-10

LEGEND:

SEDIMENT REMOVAL AREA

NOTES:

1. AERIAL PHOTO OBTAINED FROM GOOGLE EARTH DATED 10/2022.

0 300' 600'
GRAPHIC SCALE

RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
MASSENA, NEW YORK

FISH SAMPLING AREAS DOWNSTREAM OF SITE

ARCADIS

FIGURE
11

C:\Users\GSTEINBERGER\DCAD\Docs\Arcadis ACC USAUS-99999999-RACER_CENTRAL FOUNDRY_MASSENA_NY\Project Files\10_WIP\10T_ARC_ENV\2024\01-DWG\FSWP2024-FIG02-FIG03-FIG04.DWG LAYOUT: 4 SAVED: 5/6/2024 10:52 AM ACADVER: 24.3S (LMS TECH) PAGESETUP: ---
PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/6/2024 10:54 AM BY: STEINBERGER, GEORGE
XREFS: IMAGES: PROJECTNAME: ---
FSL-X-TITLE FSL-X-IMAGE-2022-10.jpg
FSL-X-IMAGE-2022-10

LEGEND:

- SEDIMENT REMOVAL AREA
- SEDIMENT CAP

NOTES:

1. AERIAL PHOTO OBTAINED FROM GOOGLE EARTH DATED 10/2022.
2. SEDIMENTS WERE ALSO REMOVED FROM THE SEDIMENT CAP AREA PRIOR TO CAP PLACEMENT.

0 120' 240'
GRAPHIC SCALE

RACER TRUST
FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION)
SUPERFUND SITE
MASSENA, NEW YORK

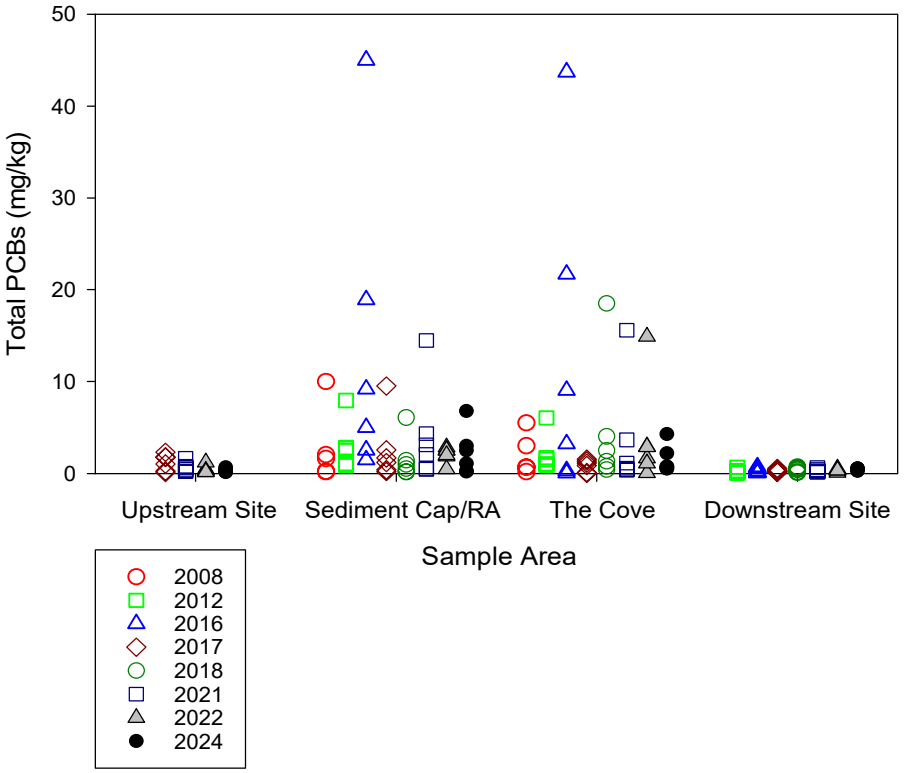
FISH SAMPLING AREAS SEDIMENT CAP/REMOVAL AREA AND THE COVE

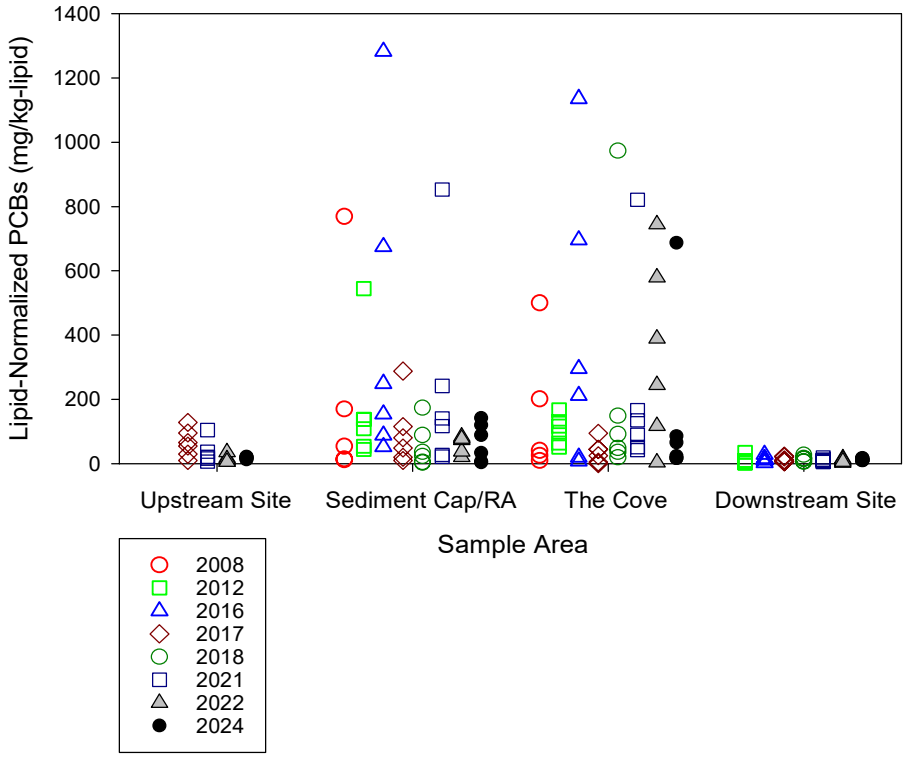
ARCADIS

FIGURE 12

C:\Users\GSTEINBERGER\DC\ACCDocs\Arcadis ACC US\AUS-999999999-RACER_CENTRAL FOUNDRY_MASSENA_NY\Project Files\10_WIP\10T_ARC_ENV\2024\01-DWG\FSWP2024-FIG02-FIG03-FIG04.DWG LAYOUT: 3 SAVED: 5/6/2024 10:52 AM ACADVER: 24.3S (LMS TECH) PAGESETUP: ---
PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/6/2024 10:54 AM BY: STEINBERGER, GEORGE
XREFS: IMAGES: PROJECTNAME: ---
FSL-X-TITLE FSL-X-IMAGE-2022-10.jpg
FSL-X-IMAGE-2022-10

Predatory Fish





Notes:
1. Smallmouth bass were targeted as the predatory fish species; largemouth bass or walleye were collected as a substitute species for smallmouth bass when unavailable.
2. All adult fish samples were processed as individual NYSDEC standard fillets and analyzed for PCB Aroclors and percent lipids.
3. Sample results shown above are total PCB and lipid-normalized PCB wet-weight concentrations.
4. Data are shown for years fish were collected at a particular sample area; not all sample areas were targeted each collection year.

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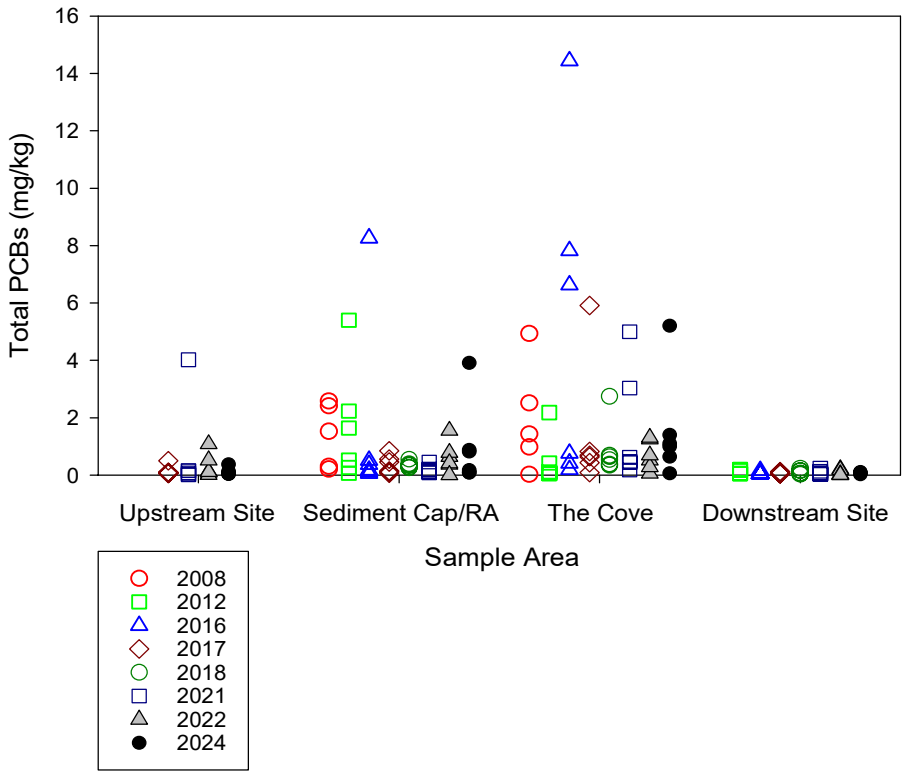
MASSENA, NEW YORK

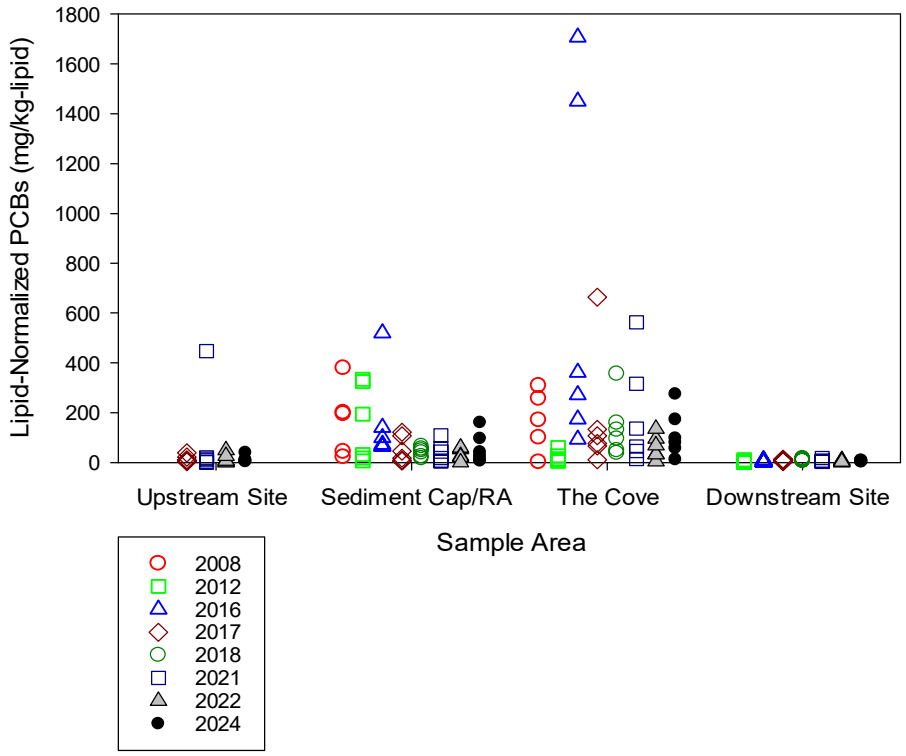
2008-2024 PLOT OF PCBS IN ADULT PREDATORY FISH FILLET SAMPLES

ARCADIS

Figure 13

Bottom-Feeding Fish





Notes:
1. Brown bullhead were targeted as the bottom-feeding fish species; white sucker were collected as a substitute species for brown bullhead when unavailable.
2. All adult fish samples were processed as individual NYSDEC standard fillets and analyzed for PCB Aroclors and percent lipids.
3. Sample results shown above are total PCB and lipid-normalized PCB wet-weight concentrations.
4. Data are shown for years fish were collected at a particular sample area; not all sample areas were targeted each collection year.

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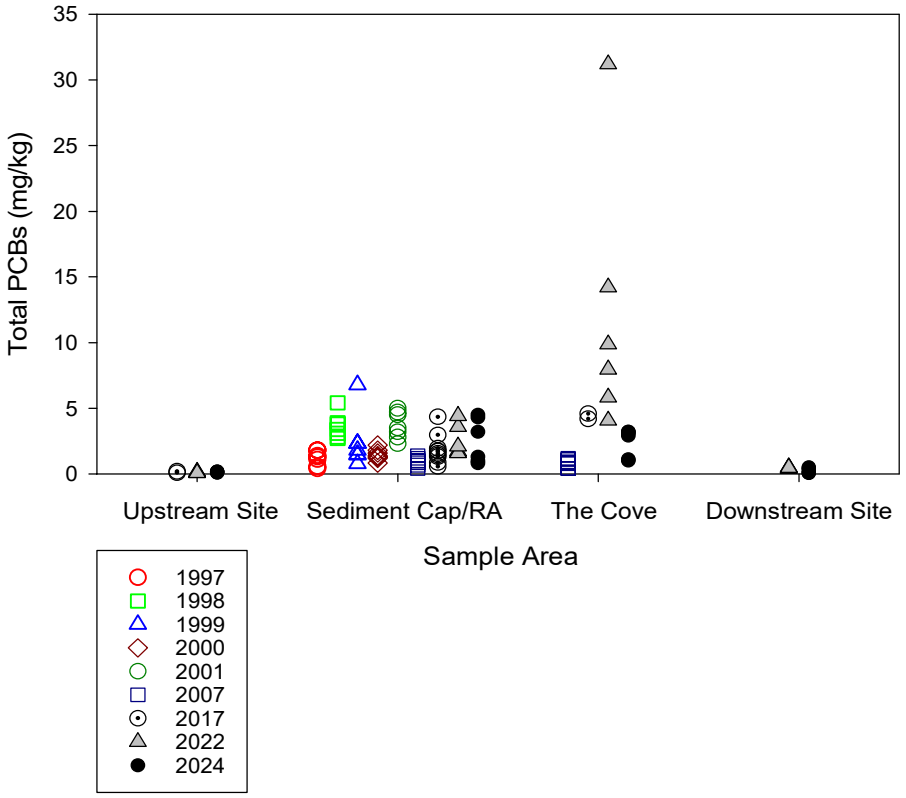
SUPERFUND SITE
MASSENA, NEW YORK

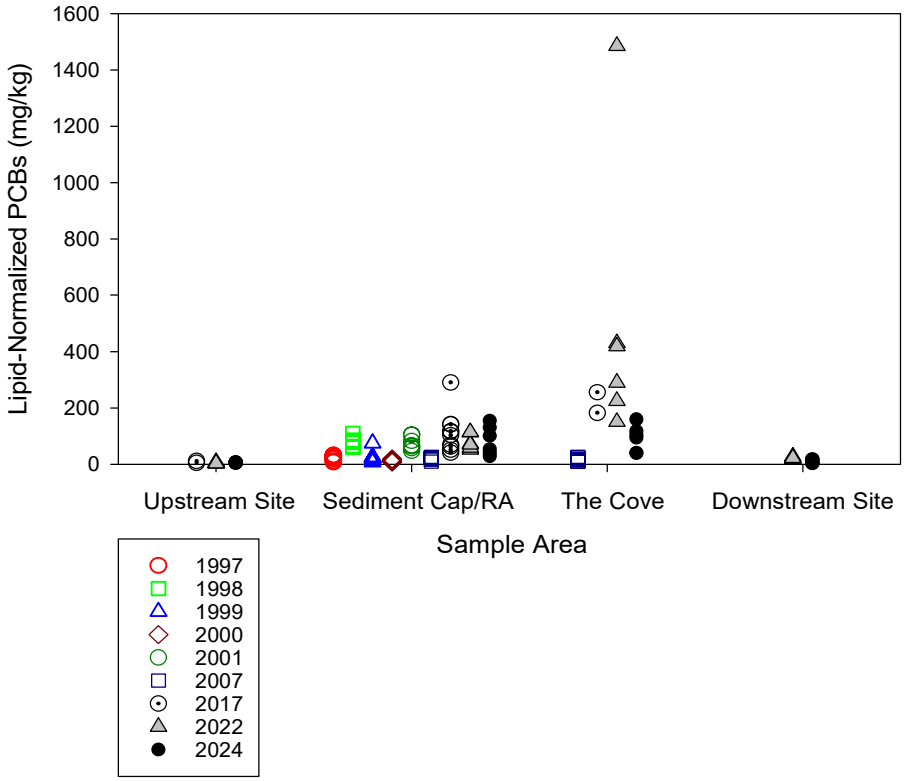
2008-2024 PLOT OF PCBS IN ADULT BOTTOM-FEEDING FISH FILLET SAMPLES

ARCADIS

Figure 14

Young-of-Year Fish





Notes:
1. Spottail shiner were targeted as the young-of-year fish species; round goby were collected as a substitute species for spottail shiner when unavailable.
2. All young-of-year fish samples were processed as whole-body composites and analyzed for PCB Aroclors and percent lipids.
3. Sample results shown above are total PCB and lipid-normalized PCB wet-weight concentrations.
4. Data are shown for years fish were collected at a particular sample area; not all sample areas were targeted each collection year.

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SUPERFUND SITE
MASSENA, NEW YORK

1997-2024 PLOT OF PCBS IN YOUNG-OF-YEAR FISH COMPOSITE SAMPLES

ARCADIS

Figure 15

APPENDIX A: TABLES

Table 1:
2023 Vegetation Survey Summary: Saint Lawrence River Sediment Cap Inspection

	West Removal Area	SLR Sediment Cap	East Removal Area
Vegetation Coverage			
Near Shore (Shallow Water)	30%	10%	60%
Far Shore (Deeper Water)	90%	95%	100%
Vegetation Types			
	Water Stargrass – 75% Water Celery – 20% Coontail – 5% White Stem or Clasping-Leaf Pondweed – <1% Water Milfoil – <1%	Water Stargrass – 85% Water Celery – 5% Coontail – 5% Water Milfoil – 5%	Water Stargrass – 85% Water Celery – 10% Coontail – 5% White Stem or Clasping-Leaf Pondweed – <1% Water Milfoil – <1%
General Observations			
Substrate	sand/gravel/cobble/ boulders	sand/gravel/cobble	sand/gravel/cobble/ boulders
Sediment Depth (in.)	1 – 7”	0 – 1”	0 – 3”

Note: All percentages are estimated based on visual observation.

Table 2
Sediment Sample Location Field Observations
2023 Sediment Report
RACER Trust - Former General Motoros (Central Foundry Division) Superfund Site
St. Lawrence River, Massena, New York

Sample Area	Location ID	Date Collected	Probed Sediment Depth (feet)	Vibracore Penetration (feet)	Sediment Recovery (feet)	Water Depth (feet)	Sample Location (Northing, Easting)		General Description of Soft Sediment	General Description of Underlying Material
Upstream	SLR-UP-01	10/30/23	1.2	2.2	2.1	7.0	2242811.25	431360.77	Loose silt with little to trace sand, and some gravel	No underlying material was recovered
	SLR-UP-02	10/30/23	0.5	1.0	0.9	4.5	2242804.05	431409.14		
Removal Area - West of Cap	ERT-05	10/30/23	2.0	3.5	3.4	2.5	2242658.34	431741.29	Loose sand, sandy clay, and clayey sand, with some silt, and gravel	Stiff, sandy clay, with little gravel
	ERT-05N	10/30/23	0.2	2.0	2.0	3.3	2242705.18	431729.02		
	ERT-05E	10/30/23	0.2	2.0	1.9	2.5	2242668.02	431791.90		
	ERT-05W	10/30/23	2.4	3.1	3.1	1.7	2242647.31	431689.08		
	Cap West-04	10/30/23	0.4	1.0	0.9	8.0	2242778.25	431765.63		
	Cap West-05	10/30/23	1.2	2.1	2.1	6.0	2242798.04	431837.29		
Edge of Sediment Cap	Cap West-01	10/30/23	0.4	0.8	0.7	6.3	2242817.62	431906.28	Loose silt and sand with some gravel	Firm sandy and silty clay with trace sand
	Cap West-02	10/30/23	0.5	3.8	3.6	8.9	2242757.42	431919.53		
	Cap West-03	10/30/23	1.7	2.4	2.2	3.8	2242695.79	431918.68		
	Cap East-01	10/27/23	1.5	1.5	1.5	14.5	2242900.77	432224.49		
	Cap East-02	10/27/23	0.6	2.3	2.2	9.5	2242822.53	432238.80		
	Cap East-03	10/27/23	0.5	2.6	2.6	5.5	2242751.52	432256.92		
Removal Area - East of Cap	ERT-06	10/24/23	0.5	2.2	2.0	16.5	2242955.52	432425.48	Loose sand, with some sand, sandy silt, silty sand, and clayey silt, with some gravel	Stiff, sandy clay, with some gravel
	ERT-06N	10/24/23	0.2	0.0	0.0	19.2	2242994.10	432415.48		
	ERT-06E	10/24/23	0.5	1.4	1.3	18.5	2242941.12	432373.62		
	ERT-06W	10/24/23	0.5	1.3	1.3	15.5	2242963.21	432471.62		
	ERT-07	10/24/23	0.3	2.0	1.9	10.2	2242873.56	432440.06		
	ERT-07N	10/24/23	0.7	1.8	1.7	12.5	2242906.50	432432.85		
	ERT-07E	10/24/23	0.4	3.0	2.9	9.7	2242885.23	432485.47		
	ERT-07S	10/27/23	0.2	0.4	0.4	8.7	2242825.67	432447.66		
	ERT-07W	10/27/23	0.4	1.0	1.0	11.4	2242862.48	432387.81		
	ERT-09	10/24/23	0.5	0.8	0.8	15.5	2242998.22	432662.33		
	ERT-09N	10/24/23	0.4	0.8	0.6	17.0	2243045.47	432650.44		
	ERT-09E	10/23/23	0.0	0.0	0.0	NR	2243014.24	432713.27		
	ERT-09S	10/24/23	0.2	2.0	2.0	10.0	2242947.09	432670.04		
	ERT-09W	10/24/23	0.3	2.3	2.4	16.2	2242986.98	432612.30		
Cove	Cove-01	10/31/23	0.3	2.0	1.8	2.4	2242958.21	433229.73	Loose silt, with trace sand and gravel	Stiff to firm sandy clay, with some trace sand and silt, and trace gravel
	Cove-02	10/31/23	0.5	3.5	3.5	3.5	2243049.58	433275.18		
	Cove-03	10/30/23	2.0	2.5	2.4	3.0	2242935.92	433328.41		
	Cove-04	10/31/23	0.5	3.7	3.7	6.9	2242996.06	433384.79		
	Cove-05	10/30/23	1.0	2.2	2.1	7.0	2242941.27	433396.13		
	Cove-06	10/30/23	0.5	2.0	2.0	8.5	2242939.36	433438.26		
	Cove-07	10/30/23	0.1	1.0	1.0	4.3	2242941.40	433482.70		
	Cove-08	10/31/23	0.5	2.0	1.9	7.0	2243024.43	433530.68		
	Cove-09	10/31/23	0.7	2.0	2.0	3.9	2243113.55	433528.20		
	Cove-10	10/31/23	1.0	2.5	2.5	2.0	2242925.76	433653.05		
	Cove-11	10/31/23	1.0	4.0	3.9	2.6	2243018.63	433717.59		
	Cove-12	10/31/23	1.5	4.5	4.4	1.8	2242942.00	433781.55		

Acronym and Abbreviation:
NR = not recorded

Table 3
Summary of Analytical Results - St. Lawrence River
2023 Sediment Report
RACER Trust - Former General Motoros (Central Foundry Division) Superfund Site
St. Lawrence River, Massena, New York

ARCADIS

Sample Area	Sample Location	Material	Sample Interval (inch)	Sample ID	Date Collected	Total PCBs (mg/kg)	Notes/Comments
Upstream	SLR-UP-01	Soft Sediment	0-6	SLR-UP-01-SS (0"-6")	10/30/2023	**0.486**	
			6-12	SLR-UP-01-SS (6"-12")	10/30/2023	**0.629 J**	
			12-18	SLR-UP-01-SS (12"-18")	10/30/2023	**0.394 J**	
			18-24	SLR-UP-01-SS (18"-24")	10/30/2023	**0.075 J**	
			24-27	SLR-UP-01-SS (24"-27")	10/30/2023	**0.023 J**	
	SLR-UP-02	Soft Sediment	0-6	SLR-UP-02-SS (0"-6")	10/30/2023	**0.449**	
			6-12	SLR-UP-02-SS (6"-12")	10/30/2023	**0.301**	
Removal Area - West of Cap	ERT-05	Soft Sediment	0-6	ERT-05-SS (0"-6")	10/30/2023	**0.200**	
			6-12	ERT-05-SS (6"-12")	10/30/2023	**0.025 J**	
			12-18	ERT-05-SS (12"-18")	10/30/2023	ND	
			18-24	ERT-05-SS (18"-24")	10/30/2023	ND	
			24-36	ERT-05-SS (24"-36")	10/30/2023	ND	
		Glacial Till	0-3	ERT-05-T (0"-3")	10/30/2023	ND	
			3-6	ERT-05-T (3"-6")	10/30/2023	NA	
	ERT-05E	Soft Sediment	0-6	ERT-05E-SS (0"-6")	10/30/2023	**0.763**	
		Glacial Till	0-3	ERT-05E-T (0"-3")	10/30/2023	ND	
			3-6	ERT-05E-T (3"-6")	10/30/2023	NA	
			6-12	ERT-05E-T (6"-12")	10/30/2023	NA	
	ERT-05N	Soft Sediment	0-6	ERT-05N-SS (0"-6")	10/30/2023	**0.230**	
		Glacial Till	0-3	ERT-05N-T (0"-3")	10/30/2023	**0.055 J**	
			3-6	ERT-05N-T (3"-6")	10/30/2023	NA	
			6-12	ERT-05N-T (6"-12")	10/30/2023	NA	
	ERT-05W	Soft Sediment	0-6	ERT-05W-SS (0"-6")	10/30/2023	**0.128**	
			6-12	ERT-05W-SS (6"-12")	10/30/2023	**0.166 J**	
			12-18	ERT-05W-SS (12"-18")	10/30/2023	ND	
			18-24	ERT-05W-SS (18"-24")	10/30/2023	ND	
		Glacial Till	0-3	ERT-05W-T (0"-3")	10/30/2023	ND	
			3-6	ERT-05W-T (3"-6")	10/30/2023	NA	
			6-12	ERT-05W-T (6"-12")	10/30/2023	NA	
	CAP-WEST-04	Soft Sediment	0-6	CAP-WEST-04-SS (0"-6")	10/30/2023	**0.160**	
		Glacial Till	0-3	CAP-WEST-04-T (0"-3")	10/30/2023	**0.012**	
			3-6	CAP-WEST-04-T (3"-6")	10/30/2023	NA	
	CAP-WEST-05	Soft Sediment	0-6	CAP-WEST-05-SS (0"-6")	10/30/2023	**0.053**	
			6-12	CAP-WEST-05-SS (6"-12")	10/30/2023	**0.067**	
			12-18	CAP-WEST-05-SS (12"-18")	10/30/2023	**0.012**	
			18-22	CAP-WEST-05-SS (18"-22")	10/30/2023	**0.017**	
		Glacial Till	0-3	CAP-WEST-05-T (0"-3")	10/30/2023	ND	
Removal Area - West of Cap (Edge of Sediment Cap)	CAP-WEST-01	Soft Sediment	0-6	CAP-WEST-01-SS (0"-6")	10/30/2023	**6.600**	
			6-12	CAP-WEST-01-SS (6"-12")	10/30/2023	**1.420**	
	CAP-WEST-02	Soft Sediment	0-6	CAP-WEST-02-SS (0"-6")	10/30/2023	ND	
			6-12	CAP-WEST-02-SS (6"-12")	10/30/2023	**0.100**	
			12-18	CAP-WEST-02-SS (12"-18")	10/30/2023	**2.510**	
			18-24	CAP-WEST-02-SS (18"-24")	10/30/2023	**2.078**	
			24-36	CAP-WEST-02-SS (24"-36")	10/30/2023	**2.491**	
			36-42	CAP-WEST-02-SS (36"-42")	10/30/2023	**0.411**	
	CAP-WEST-03	Soft Sediment	0-6	CAP-WEST-03-SS (0"-6")	10/30/2023	**0.910 J**	
			6-12	CAP-WEST-03-SS (6"-12")	10/30/2023	**0.320**	
			12-15	CAP-WEST-03-SS (12"-15")	10/30/2023	**0.013**	
		Glacial Till	0-3	CAP-WEST-03-T (0"-3")	10/30/2023	**0.042**	
			3-6	CAP-WEST-03-T (3"-6")	10/30/2023	NA	
			6-12	CAP-WEST-03-T (6"-12")	10/30/2023	NA	
Removal Area - East of Cap (Edge of Sediment Cap)	CAP-EAST-01	Soft Sediment	0-6	CAP-EAST-01 (0"-6")	10/27/2023	**0.880**	
			6-12	CAP-EAST-01 (6"-12")	10/27/2023	**0.065**	
			12-16	CAP-EAST-01 (12"-16")	10/27/2023	**0.067**	
		Glacial Till	0-3	CAP-EAST-01-T (0"-3")	10/27/2023	**0.041**	
	CAP-EAST-02	Soft Sediment	0-6	CAP-EAST-02-SS (0"-6")	10/27/2023	**4.370**	
			6-12	CAP-EAST-02-SS (6"-12")	10/27/2023	**0.350**	
			12-18	CAP-EAST-02-SS (12"-18")	10/27/2023	**0.210**	
		Glacial Till	0-3	CAP-EAST-02-T (0"-3")	10/27/2023	**0.470**	
			3-6	CAP-EAST-02-T (3"-6")	10/27/2023	NA	
			6-9	CAP-EAST-02-T (6"-9")	10/27/2023	NA	
	CAP-EAST-03	Soft Sediment	0-6	CAP-EAST-03-SS (0"-6")	10/27/2023	**0.319**	
			6-12	CAP-EAST-03-SS (6"-12")	10/27/2023	**0.220**	
			12-18	CAP-EAST-03-SS (12"-18")	10/27/2023	ND	
			18-24	CAP-EAST-03-SS (18"-24")	10/27/2023	ND	
		Glacial Till	0-3	CAP-EAST-03-T (0"-3")	10/27/2023	ND	
			3-6	CAP-EAST-03-T (3"-6")	10/27/2023	NA	
			6-9	CAP-EAST-03-T (6"-9")	10/27/2023	NA	

Table 3
Summary of Analytical Results - St. Lawrence River
2023 Sediment Report
RACER Trust - Former General Motoros (Central Foundry Division) Superfund Site
St. Lawrence River, Massena, New York

ARCADIS

Sample Area	Sample Location	Material	Sample Interval (inch)	Sample ID	Date Collected	Total PCBs (mg/kg)	Notes/Comments
Removal Area - East of Cap	ERT-06	Soft Sediment	0-6	ERT-06-SS (0"-6")	10/24/2023	**0.975 J**	
			6-12	ERT-06-SS (6"-12")	10/24/2023	**0.374**	
			12-18	ERT-06-SS (12"-18")	10/24/2023	**0.907**	
		Glacial Till	0-3	ERT-06-T (0"-3")	10/24/2023	**0.1731 J**	
			3-6	ERT-06-T (3"-6")	10/24/2023	NA	
	ERT-06E	Soft Sediment	0-6	ERT-06E-SS (0"-6")	10/24/2023	**0.870**	
			6-12	ERT-06E-SS (6"-12")	10/24/2023	**0.288**	
		Glacial Till	0-3	ERT-06E-T (0"-3")	10/24/2023	**0.2119 J**	
	ERT-06N	Soft Sediment	0-3	ERT-06N-SS (0"-3")	10/24/2023	**0.802**	Sample collected with Ponar [a]
	ERT-06W	Soft Sediment	0-6	ERT-06W-SS (0"-6")	10/24/2023	**1.469 J**	
			6-12	ERT-06W-SS (6"-12")	10/24/2023	**0.457**	
		Glacial Till	0-3	ERT-06W-T (0"-3")	10/24/2023	**0.0805 J**	
			3-6	ERT-06W-T (3"-6")	10/24/2023	NA	
	ERT-07	Soft Sediment	0-6	ERT-07-SS (0"-6")	10/24/2023	**0.748**	
			6-12	ERT-07-SS (6"-12")	10/24/2023	**0.698**	
		Glacial Till	0-3	ERT-07-T (0"-3")	10/24/2023	**0.053**	
			3-6	ERT-07-T (3"-6")	10/24/2023	NA	
			6-12	ERT-07-T (6"-12")	10/24/2023	NA	
	ERT-07E	Soft Sediment	0-6	ERT-07E-SS (0"-6")	10/24/2023	**0.900**	
			6-12	ERT-07E-SS (6"-12")	10/24/2023	**0.501**	
			12-18	ERT-07E-SS (12"-18")	10/24/2023	**0.421**	
		Glacial Till	0-3	ERT-07E-T (0"-3")	10/24/2023	**0.015**	
			3-6	ERT-07E-T (3"-6")	10/24/2023	NA	
			6-12	ERT-07E-T (6"-12")	10/24/2023	NA	
	ERT-07N	Soft Sediment	0-6	ERT-07N-SS (0"-6")	10/24/2023	**0.037**	
			6-12	ERT-07N-SS (6"-12")	10/24/2023	**0.569**	
			12-18	ERT-07N-SS (12"-18")	10/24/2023	**1.215**	
		Glacial Till	0-3	ERT-07N-T (0"-3")	10/24/2023	**0.174**	
			3-6	ERT-07N-T (3"-6")	10/24/2023	NA	
	ERT-07S	Soft Sediment	0-6	ERT-07S-SS (0"-6")	10/27/2023	**0.160 J**	
	ERT-07W	Soft Sediment	0-6	ERT-07W-SS (0"-6")	10/27/2023	**0.340**	
		Glacial Till	0-3	ERT-07W-T (0"-3")	10/27/2023	**0.170**	
			3-6	ERT-07W-T (3"-6")	10/27/2023	NA	
	ERT-09	Soft Sediment	0-6	ERT-09-SS (0"-6")	10/24/2023	**0.902**	
			6-9	ERT-09-SS (6"-9")	10/24/2023	**0.702**	
	ERT-09E	Soft Sediment	0-3	ERT-09E-SS (0"-3")	10/23/2023	**0.174 J**	Sample collected with Ponar [b]
	ERT-09N	Soft Sediment	0-6	ERT-09N-SS (0"-6")	10/24/2023	**0.048**	
			6-12	ERT-09N-SS (6"-12")	10/24/2023	**0.0892 J**	
	ERT-09S	Soft Sediment	0-6	ERT-09S-SS (0"-6")	10/24/2023	**0.0092 J**	
			6-12	ERT-09S-SS (6"-12")	10/24/2023	**0.060**	
			12-18	ERT-09S-SS (12"-18")	10/24/2023	**0.0055 J**	
			18-24	ERT-09S-SS (18"-24")	10/24/2023	ND	
	ERT-09W	Soft Sediment	0-6	ERT-09W-SS (0"-6")	10/24/2023	**2.290 J**	
			6-12	ERT-09W-SS (6"-12")	10/24/2023	**1.364**	
			12-18	ERT-09W-SS (12"-18")	10/24/2023	**0.974**	
			18-24	ERT-09W-SS (18"-24")	10/24/2023	**0.915**	
			24-30	ERT-09W-SS (24"-30")	10/24/2023	**0.824**	

Notes:

[a] Nine attempts were made to collect sample via vibracore, but none were successful.
[b] Three attempts were made to collect sample via vibracore, but none were successful.
Bold values indicate a detected concentration.
Shaded values indicate an exceedance of the cleanup criteria of 1.0 mg/kg established for St. Lawrence River sediments.
Sample intervals measured from top of soft sediment and from top of glacial till.

Acronyms and Abbreviations:
J = The compound was identified; however, the associated numerical value is an estimated concentration.
mg/kg = milligram per kilogram (dry weight)
NA = sample was collected and held at laboratory pending results of overlying sample, but was not analyzed
ND = not detected
PCB = polychlorinated biphenyl

Table 4
Summary of Analytical Results - The Cove
2023 Sediment Sampling Report
RACER Trust - Former General Motors (Central Foundry Division) Superfund Site
St. Lawrence River, Massena, New York

Sample Area	Sample Location	Material	Sample Interval (inch)	Sample ID	Date Collected	Total PCBs (mg/kg)	Notes/Comments
Cove	COVE-1	Soft Sediment	0-6	COVE-01-SS (0"-6")	10/31/2023	**0.02058 J**	
			6-12	COVE-01-SS (6"-12")	10/31/2023	**0.00173 J**	
			12-15	COVE-01-SS (12"-15")	10/31/2023	**0.00281 J**	
		Hardpan Clay	0-3	COVE-01-T (0"-3")	10/31/2023	ND	
			3-6	COVE-01-T (3"-6")	10/31/2023	NA	
			6-9	COVE-01-T (6"-9")	10/31/2023	NA	
	COVE-02	Soft Sediment	0-6	COVE-02-SS (0"-6")	10/31/2023	**0.0349**	Split Sample
			6-12	COVE-02-SS (6"-12")	10/31/2023	**0.4000 J**	
		Hardpan Clay	0-3	COVE-02-T (0"-3")	10/31/2023	**0.0841**	
			3-6	COVE-02-T (3"-6")	10/31/2023	NA	
			6-12	COVE-02-T (6"-12")	10/31/2023	NA	
Cove at Sheet Pile Wall	COVE-03	Soft Sediment	0-6	COVE-03-SS (0"-6")	10/30/2023	**0.0217**	Split Sample
			6-12	COVE-03-SS (6"-12")	10/30/2023	**0.0617**	
			12-18	COVE-03-SS (12"-18")	10/30/2023	**0.0780**	
			18-24	COVE-03-SS (18"-24")	10/30/2023	ND	
		Hardpan Clay	0-3	COVE-03-T (0"-3")	10/30/2023	**0.0006**	Split Sample
Cove	COVE-04	Soft Sediment	0-4	COVE-04-SS (0"-4")	10/31/2023	**0.0289**	
		Hardpan Clay	0-3	COVE-04-T (0"-3")	10/31/2023	**0.0047**	Split Sample
			3-6	COVE-04-T (3"-6")	10/31/2023	NA	
			6-12	COVE-04-T (6"-12")	10/31/2023	NA	
Cove at Sheet Pile Wall	COVE-05	Soft Sediment	0-6	COVE-05-SS (0"-6")	10/30/2023	**0.6610**	Split Sample
			6-10	COVE-05-SS (6"-10")	10/30/2023	**1.920 J**	
		Hardpan Clay	0-3	COVE-05-T (0"-3")	10/30/2023	**0.3400**	
			3-6	COVE-05-T (3"-6")	10/30/2023	**0.0252**	
			6-12	COVE-05-T (6"-12")	10/30/2023	**0.00533 J**	
	COVE-06	Soft Sediment	0-6	COVE-06-SS (0"-6")	10/30/2023	**0.0790**	
			6-12	COVE-06-SS (6"-12")	10/30/2023	**0.0611**	Split Sample
		Hardpan Clay	0-3	COVE-06-T (0"-3")	10/30/2023	**0.2080**	
			3-6	COVE-06-T (3"-6")	10/30/2023	**0.2790**	
			6-12	COVE-06-T (6"-12")	10/30/2023	**0.0822**	
	COVE-07	Soft Sediment	0-6	COVE-07-SS (0"-6")	10/30/2023	**3.390 J**	
		Hardpan Clay	0-3	COVE-07-T (0"-3")	10/30/2023	**2.920 J**	Split Sample
			3-6	COVE-07-T (3"-6")	10/30/2023	**2.810 J**	
Cove	COVE-08	Soft Sediment	0-3	COVE-08-SS (0"-3")	10/31/2023	**0.0922**	Split Sample
		Hardpan Clay	0-3	COVE-08-T (0"-3")	10/31/2023	**0.01025**	
			3-6	COVE-08-T (3"-6")	10/31/2023	NA	
			6-12	COVE-08-T (6"-12")	10/31/2023	NA	
	COVE-09	Soft Sediment	0-6	COVE-09-SS (0"-6")	10/31/2023	**0.0342**	Split Sample
		Hardpan Clay	0-3	COVE-09-T (0"-3")	10/31/2023	**0.0398**	
			3-6	COVE-09-T (3"-6")	10/31/2023	NA	
			6-12	COVE-09-T (6"-12")	10/31/2023	NA	
	COVE-10	Soft Sediment	0-6	COVE-10-SS (0"-6")	10/31/2023	**0.1078 J**	
			6-9	COVE-10-SS (6"-9")	10/31/2023	**0.0390**	
		Hardpan Clay	0-3	COVE-10-T (0"-3")	10/31/2023	**0.0018**	Split Sample
			3-6	COVE-10-T (3"-6")	10/31/2023	NA	
			6-12	COVE-10-T (6"-12")	10/31/2023	NA	
	COVE-11	Soft Sediment	0-2	COVE-11-SS (0"-2")	10/31/2023	**0.0118**	
		Hardpan Clay	0-3	COVE-11-T (0"-3")	10/31/2023	**0.0026**	
			3-6	COVE-11-T (3"-6")	10/31/2023	NA	
			6-12	COVE-11-T (6"-12")	10/31/2023	NA	
	COVE-12	Soft Sediment	0-6	COVE-12-SS (0"-6")	10/31/2023	**0.8100**	
		Hardpan Clay	0-3	COVE-12-T (0"-3")	10/31/2023	**0.4740**	
			3-6	COVE-12-T (3"-6")	10/31/2023	**0.7790**	
			6-12	COVE-12-T (6"-12")	10/31/2023	**0.4240**	

Table 4
Summary of Analytical Results - The Cove
2023 Sediment Sampling Report
RACER Trust - Former General Motors (Central Foundry Division) Superfund Site
St. Lawrence River, Massena, New York

Notes:
Bold values indicate a detected concentration
Shaded values indicate an exceedance of the cleanup criteria of 0.1 mg/kg established for Cove sediments.
Sample intervals measured from top of soft sediment and from top of hardpan clay.
Split Samples were provided to Saint Regis Mohawk Tribe at time of sample collection.

Acronyms and Abbreviations:
J = The compound was identified; however, the associated numerical value is an estimated concentration.
mg/kg = milligram per kilogram (dry weight)
NA = sample was collected and held at laboratory pending results of overlying sample, but was not analyzed
ND = not detected
PCB = polychlorinated biphenyl

Table 5
Summary of Total PCBs by Area
2023 Sediment Sampling Report
RACER Trust - Former General Motors (Central Foundry Division) Superfund Site
St. Lawrence River, Massena, New York

	Surface Sediment (0-6-inch interval of soft sediment)		Soft Sediment (full depth of soft sediment)		Underlying Material (glacial till/hardpan clay)	
	Mean Total PCBs (mg/kg)	Number of Samples	Mean Total PCBs (mg/kg)	Number of Samples	Mean Total PCBs (mg/kg)	Number of Samples
St. Lawrence River						
Upstream of Site	0.468	2	0.337	7	---	0
Removal Area (west of cap)	0.256	6	0.116	16	0.014	6
Edge of Sediment Cap	2.182	6	1.112	21	0.140	4
Removal Area (east of cap)	0.708	14	0.634	32	0.125	7
All River locations	0.915	28	0.630	76	0.089	17
The Cove						
Away from Sheetpile Wall	0.143	8	0.132	12	0.182	10
Adjacent to Sheetpile Wall	1.038	4	0.697	9	0.741	9
All Cove locations	0.441	12	0.374	21	0.447	19

Note:
Half the detection limit was used for non-detect PCB results when calculating means.

Acronyms and Abbreviations:
--- = not applicable
mg/kg = milligrams per kilogram (dry weight)
PCBs = polychlorinated biphenyls

Table 6
Statistical Summary of HIstorical Total PCBs by Area
2023 Sediment Sampling Report
RACER Trust - Former General Motors (Central Foundry Division) Superfund Site
St. Lawrence River, Massena, New York

Area	Matrix	Sample Year	Frequency of Detection	Total PCBs (mg/kg)							Cleanup Goal Exceedances
				Minimum	Maximum	Mean	Standard Dviation	95%UCL	Median	Cleanup Goal	
Upstream	Soft Sediment	2019	2/2 (100%)	0.03	0.07	--	--	--	--	1.0	0
		2023	7/7 (100%)	0.023	0.629	0.34	0.22	0.45	0.39	1.0	0
Removal Area - West of Sediment Cap	Soft Sediment	1995	31/31 (100%)	0.076	8.22	3	2.5	3.8	3	1.0	21
		2019	4/5 (80%)	< 0.33	0.4	[0.23]	0.15	0.39	0.33	1.0	0
		2023	21/27 (77.8%)	< 0.0099	6.6	0.69	1.4	1.2	0.13	1.0	5
	Glacial Till	2023	3/7 (42.9%)	< 0.0091	0.055	--	--	--	--	1.0	0
Sediment Cap[a]	Soft Sediment	1995	32/32 (100%)	0.57	6281	220	1,100	810	11	1.0	30
		2019	3/8 (37.5%)	< 0.33	0.9	--	--	--	--	1.0	0
Removal Area - East of Sediment Cap	Soft Sediment	1995	50/50 (100%)	0.036	8.41	3.2	2.5	3.8	2.9	1.0	38
		2019	7/8 (87.5%)	< 0.33	3	0.79	0.9	1.4	0.42	1.0	1
		2023	39/42 (92.9%)	< 0.0097	4.37	0.63	0.76	0.84	0.44	1.0	5
	Glacial Till	2023	9/10 (90%)	< 0.0098	0.47	0.14	0.13	0.21	0.13	1.0	0
Cove	Surface Sediment	2004/05	18/47 (38.3%)	< 0.001	0.099	--	--	--	--	0.1	0
		2019	8/9 (88.9%)	< 0.33	2.8	0.78	0.92	1.3	0.33	0.1	7
	Soft Sediment	2023	20/21 (95.2%)	< 0.00046	3.39	0.37	0.8	0.68	0.061	0.1	6
	Deep Sediment	2004/05	3/4 (75%)	< 0.01	0.045	--	--	--	--	0.1	0
	Hardpan Clay	2023	18/19 (94.7%)	< 0.00045	2.92	0.45	0.86	0.77	0.082	0.1	8

Notes:
[a] For the Sediment Cap Area, 1995 samples were collected before installation of the Sediment Cap; 2019 samples were collected on top of the Sediment Cap.
95% upper confidence limits for the arithmetic mean estimated using bias-corrected and accelerated bootstrap method.
Arithmetic mean and standard deviation reported for datasets with no non-detect results
Kaplan-Meier mean and standard deviation reported for datasets with non-detect results.
Non-detects evaluated at full quantitation limit for percentile estimate.
Statistics not reported for datasets with small sample size (n<5) and/or low frequency of detection (≤50%).

Acronyms and Abbreviations:
-- = not applicable
mg/kg = milligrams per kilogram (dry weight)
PCBs = polychlorinated biphenyls

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Table 7
Results of 2024 St. Lawrence River Fish Collection Activities
2024 Resident Adult Fish Field Data and PCB Fillet Results

RACER TRUST - FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
ST. LAWRENCE RIVER, MASSENA, NEW YORK

Sample Area	Fish Species Type	Fish Species	Sample ID	Date Collected	Total Length (cm)	Fish Weight (g)	Fish Gender	Anomalies	Fish Collection Location (Easting, Northing)	Percent Lipids (%)	Total PCBs (mg/kg)	Lipid-Normalized PCBs (mg/kg-lipid)
Upstream of Site	Predatory	Smallmouth bass	US-2494-SB	9/4/24	38.0	915	Male	-	429638.876 2242390.32	2.3	0.45	20
		Smallmouth bass	US-2495-SB	9/4/24	45.7	1683	Female	a	430133.037 2242652.23	4.1	0.68	16
		Walleye	US-2496-WE	9/4/24	50.6	1195	Male	b,c	430251.120 2242690.87	1.5	0.24	16
		Walleye	US-2497-WE	9/4/24	48.4	1066	Male	d,e	429917.300 2242552.36	1.5	0.33	22
		Walleye	US-2498-WE	9/4/24	43.4	686	Male	-	429734.318 2242464.66	0.96	0.13 J	13
		Walleye	US-2499-WE	9/4/24	44.3	866	Female	-	429926.408 2242552.86	0.95	0.20	21
	Bottom-Feeding	Brown bullhead	US-2500-BB	9/4/24	29.2	361	Female	-	430963.548 2242827.88	0.94	0.37	39
		Brown bullhead	US-2501-BB	9/4/24	28.5	302	Male	-	430726.819 2242755.39	0.47	0.029 J	6.2
		White sucker	US-2502-WS	9/4/24	43.1	1004	Female	d,f	429562.981 2242347.61	1.3	0.047 J	3.6
		White sucker	US-2503-WS	9/4/24	42.6	920	Male	-	429960.131 2242575.37	1.1	0.12	11
		White sucker	US-2504-WS	9/4/24	39.6	690	Female	d	429999.117 2242588.54	1.2	0.053 J	4.4
		White sucker	US-2505-WS	9/4/24	43.9	1021	Male	-	430776.164 2242781.37	1.1	0.077 J	7.0
Sediment Cap/ Removal Area	Predatory	Smallmouth bass	Cap/RA-2458-SB	9/4/24	40.9	1274	Female	e,g	431762.536 2242806.44	4.5	0.30 J	6.7
		Smallmouth bass	Cap/RA-2459-SB	9/4/24	35.5	799	Male	h	432147.508 2242829.69	3.3	2.9	89
		Smallmouth bass	Cap/RA-2460-SB	9/4/24	34.8	681	Male	-	432159.636 2242770.56	2.1	2.5	120
		Smallmouth bass	Cap/RA-2461-SB	9/4/24	42.0	1390	Male	-	431595.955 2242732.48	3.2	1.1	34
		Smallmouth bass	Cap/RA-2462-SB	9/4/24	40.4	1126	Male	d,e,i	432237.004 2242799.46	4.5	0.19 J	4.3
		Smallmouth bass	Cap/RA-2463-SB	9/4/24	43.6	1479	Female	d,j	431936.117 2242826.75	4.8	6.8	142
	Bottom-Feeding	Brown bullhead	Cap/RA-2464-BB	9/4/24	22.8	271	Unknown	-	431493.767 2242767.67	0.84	0.81	96
		Brown bullhead	Cap/RA-2465-BB	9/4/24	29.1	380	Female	k	431545.938 2242758.63	1.6	0.091 J	5.7
		Brown bullhead	Cap/RA-2466-BB	9/4/24	20.2	122	Unknown	-	432742.911 2242936.11	0.29	0.078 J	27
		White sucker	Cap/RA-2467-WS	9/4/24	42.7	1076	Male	-	431869.253 2242778.23	1.3	0.17 J	13
		White sucker	Cap/RA-2468-WS	9/4/24	43.1	1046	Male	-	431508.100 2242759.93	2.1	0.87	41
		White sucker	Cap/RA-2469-WS	9/4/24	44.5	1220	Female	-	432257.212 2242760.59	2.4	3.9	160
The Cove	Predatory	Smallmouth bass	Cove-2470-SB	9/4/24	25.0	256	Male	-	433307.954 2242990.31	2.3	0.55	24
		Smallmouth bass	Cove-2471-SB	9/4/24	47.4	1570	Female	l,m	433281.226 2243009.39	1.1	0.73	66
		Smallmouth bass	Cove-2472-SB	9/4/24	39.8	1116	Female	-	433142.985 2243047.92	3.0	0.51	17
		Smallmouth bass	Cove-2473-SB	9/4/24	47.0	1651	Female	a,i	433103.933 2243025.05	2.5	2.1	86
		Smallmouth bass	Cove-2474-SB	9/4/24	41.6	1090	Female	-	433137.123 2243022.33	4.2	0.73	17
		Walleye	Cove-2475-WE	9/4/24	36.0	394	Male	n	433602.912 2243083.97	0.62	4.3	687
	Bottom-Feeding	Brown bullhead	Cove-2476-BB	9/4/24	34.0	637	Female	g	433356.334 2242983.42	1.4	1.4	97
		Brown bullhead	Cove-2477-BB	9/4/24	27.8	293	Female	-	433614.936 2243010.78	0.54	0.064 J	12
		Brown bullhead	Cove-2478-BB	9/4/24	31.0	573	Female	-	433256.835 2243011.11	1.9	1.1	57
		White sucker	Cove-2479-WS	9/4/24	33.9	481	Male	-	433570.623 2243091.58	0.37	0.64	172
		White sucker	Cove-2480-WS	9/4/24	46.7	1131	Male	a,d	433165.935 2243027.05	1.9	5.2	274
		White sucker	Cove-2481-WS	9/4/24	38.3	708	Female	-	433575.307 2243083.72	1.3	1.0	79

Table 7
Results of 2024 St. Lawrence River Fish Collection Activities
Resident Adult Fish Field Data and PCB Fillet Results

RACER TRUST - FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
ST. LAWRENCE RIVER, MASSENA, NEW YORK

Sample Area	Fish Species Type	Fish Species	Sample ID	Date Collected	Total Length (cm)	Fish Weight (g)	Fish Gender	Anomalies	Fish Collection Location (Easting, Northing)	Percent Lipids (%)	Total PCBs (mg/kg)	Lipid-Normalized PCBs (mg/kg-lipid)
Downstream of Site	Predatory	Smallmouth bass	DS-2482-SB	9/4/24	44.1	1392	Female	o	434095.231 2244247.69	2.5	0.45	18
		Smallmouth bass	DS-2483-SB	9/4/24	43.9	1269	Female	n	434320.126 2244473.62	3.3	0.32	9.8
		Smallmouth bass	DS-2484-SB	9/4/24	42.0	1247	Male	-	435081.843 2245186.04	4.5	0.56	12
		Smallmouth bass	DS-2485-SB	9/4/24	48.2	1660	Female	-	434062.174 2244180.98	2.6	0.28	11
		Smallmouth bass	DS-2486-SB	9/4/24	44.5	1749	Female	i	435704.715 2245757.66	5.1	0.54	11
		Smallmouth bass	DS-2487-SB	9/4/24	39.3	1221	Male	-	434490.955 2244626.77	3.2	0.51	16
	Bottom-Feeding	Brown bullhead	DS-2488-BB	9/4/24	21.5	151	Female	-	436794.974 2245620.72	1.3	0.067 J	5.2
		Brown bullhead	DS-2489-BB	9/4/24	29.0	389	Female	-	437342.633 2245451.98	1.5	0.070 J	4.7
		White sucker	DS-2490-WS	9/4/24	30.9	383	Male	-	437385.049 2245454.01	1.1	0.022 J	1.9
		White sucker	DS-2491-WS	9/4/24	43.5	937	Female	p	436722.997 2245655.84	1.7	0.059 J	3.5
		White sucker	DS-2492-WS	9/4/24	43.0	851	Female	-	437204.029 2245480.18	1.3	0.11 J	8.2
		White sucker	DS-2493-WS	9/4/24	43.7	965	Female	-	436764.865 2245630.67	1.0	0.076 J	7.6

Notes:

1. Sample areas are shown on Figure 1; Approximate fish collection locations are shown on Figures 2, 3, and 4.
2. Smallmouth bass were targeted as the predatory fish species; walleye were collected as a substitute species for smallmouth bass when unavailable.
3. Brown bullhead were targeted as the bottom-feeding fish species; white sucker were collected as a substitute species for brown bullhead when unavailable.
4. All samples were processed as individual NYSDEC standard fillets and analyzed for PCB Aroclors and percent lipids.
5. Lipid-normalized PCB concentrations were calculated using half the detection limit for sample results that were non-detect.
6. Fish gender was determined by the analytical laboratory during sample processing (filleting).
7. External anomalies, if present, were noted in the field; internal anomalies, if present, were noted in the laboratory.
8. Easting and northing units are in feet based on New York State Plane NAD 1983 datum.

J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
cm = centimeter
g = gram
- = No anomalies observed
% = percent
mg/kg = milligrams per kilogram wet weight (ppm - parts per million)
mg/kg-lipid = milligrams per kilogram lipid

a = Minor split fins
b = Leeches caudal, right pelvic fin
c = Abrasion right side
d = Split caudal fin
e = Eroded dorsal fin
f = Mild blackspot
g = Infected/prolapsed anus
h = Eroded right maxillary
i = Eroded opercular flap
j = Small tumor posterior left mandible
k = Missing right chin barbels
l = Eroded caudal fin
m = Empty stomach/gastrointestinal tract
n = Split dorsal fin
o = Split anal fin
p = Open wound/lesion left side

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Table 8
Results of 2024 St. Lawrence River Fish Collection Activities
2024 Resident Young-of-Year Fish Field Data and PCB Whole-Body Results

RACER TRUST - FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
ST. LAWRENCE RIVER, MASSENA, NEW YORK

Sample Area	Fish Species	Sample ID	Date Collected	Number of Individuals	Length Range (cm)	Fish Sample Weight (g)	Anomalies	Percent Lipids (%)	Total PCBs (mg/kg)	Lipid-Normalized PCBs (mg/kg-lipid)
Upstream of Site	Round Goby	US-2518-RG	9/5/24	15	5.4 - 7.3	54.7	-	2.8	0.18	6.5
	Round Goby	US-2519-RG	9/5/24	15	5.5 - 7.3	57.0	-	2.8	0.17	6.2
	Round Goby	US-2520-RG	9/5/24	10	5.6 - 6.9	34.3	-	2.6	0.16	6.3
	Round Goby	US-2521-RG	9/5/24	15	5.5 - 6.4	43.8	-	2.7	0.14	5.0
	Round Goby	US-2522-RG	9/5/24	15	4.0 - 6.5	37.8	-	2.7	0.11 J	4.1
	Round Goby	US-2523-RG	9/5/24	15	5.9 - 6.7	44.7	-	2.7	0.089 J	3.3
Sediment Cap/ Removal Area	Round Goby	Cap/RA-2506-RG	9/5/24	15	5.5 - 6.5	44.2	-	3.2	3.2	100
	Round Goby	Cap/RA-2507-RG	9/5/24	15	5.3 - 6.8	47.8	-	3.3	4.3	130
	Round Goby	Cap/RA-2508-RG	9/5/24	15	5.3 - 6.9	42.2	-	2.9	4.5	154
	Round Goby	Cap/RA-2509-RG	9/5/24	15	4.2 - 6.6	45.7	-	2.5	0.99	40
	Round Goby	Cap/RA-2510-RG	9/5/24	10	5.5 - 7.5	35.3	-	2.9	0.81	28
	Round Goby	Cap/RA-2511-RG	9/5/24	10	5.0 - 6.8	31.4	-	2.4	1.3	53
The Cove	Round Goby	Cove-2512-RG	9/5/24	10	5.3 - 7.2	35.8	-	2.5	1.0	40
	Round Goby	Cove-2513-RG	9/5/24	10	5.0 - 7.0	31.6	-	3.1	2.9	94
	Round Goby	Cove-2514-RG	9/6/24	10	4.6 - 7.3	26.1	-	2.7	3.2	117
	Round Goby	Cove-2515-RG	9/6/24	10	4.5 - 7.4	25.5	-	2.0	3.2	159
	Round Goby	Cove-2516-RG	9/6/24	10	4.4 - 7.3	24.6	-	3.0	3.1	104
	Round Goby	Cove-2517-RG	9/5/24	10	4.6 - 7.0	34.2	-	2.8	1.0	39
Downstream of Site	Round Goby	DS-2524-RG	9/5/24	10	6.0 - 7.2	35.4	-	2.8	0.50	18
	Round Goby	DS-2525-RG	9/5/24	10	5.7 - 7.0	35.2	-	2.7	0.42	16
	Round Goby	DS-2526-RG	9/5/24	10	5.6 - 6.8	34.9	-	2.5	0.32	13
	Round Goby	DS-2527-RG	9/5/24	15	5.2 - 7.1	46.8	-	2.4	0.061 J	2.5
	Round Goby	DS-2528-RG	9/5/24	15	5.2 - 7.1	46.2	-	2.6	0.093 J	3.6
	Round Goby	DS-2529-RG	9/5/24	10	5.6 - 6.2	25.9	-	2.3	0.11 J	5.0

Notes:

1. Sample areas are shown on Figure 1; Approximate fish collection locations are shown on Figures 2, 3, and 4.
2. Spottail shiner were targeted as the young-of-year fish species; round goby were collected as a substitute species for spottail shiner when unavailable.
3. All samples were processed as whole-body composites and analyzed for PCB Aroclors and percent lipids.
4. Lipid-normalized PCB concentrations were calculated using half the detection limit for sample results that were non-detect.
5. External anomalies, if present, were noted in the field.

J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
U = Analyte not detected at concentration greater than the method detection limit (MDL).
cm = centimeter
g = gram
- = No anomalies observed
% = percent
mg/kg = milligrams per kilogram wet weight (ppm - parts per million)
mg/kg-lipid = milligrams per kilogram lipid

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Table 9
Results of 2024 St. Lawrence River Fish Collection Activities
Historic Site Resident Adult Fish Summary Statistics

RACER TRUST - FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
ST. LAWRENCE RIVER, MASSENA, NEW YORK

Sample Area	Fish Species Type	Year	Number of Individuals	Total Length (cm)			Fish Weight (g)			Percent Lipids (%)			Total PCBs (mg/kg)			Lipid-Normalized PCBs (mg/kg-lipid)		
				mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max
Background	Predatory	2008	5	36	30	40	904	471	1157	2.3	1.8	2.8	0.18	0.13	0.23	7.6	6.6	9.3
	Bottom-Feeding	2008	5	27	23	32	299	195	542	1.6	0.70	3.1	0.024	0.010	0.067	1.3	0.73	2.2
Upstream of Site	Predatory	2017	6	41	30	49	1136	493	1913	1.8	1.0	2.7	1.2	0.13	2.3	64	10	129
	Predatory	2021	6	38	28	43	1000	378	1650	2.5	1.2	4.1	0.68	0.24	1.7	34	6.8	105
	Predatory	2022	6	36	26	46	808	216	1585	3.0	2.3	3.8	0.46	0.17	1.2	15	5.8	36
	Predatory	2024	6	45	38	51	1068	686	1683	1.9	1.0	4.1	0.34	0.13	0.68	18	13	22
	Bottom-Feeding	2017	6	40	30	44	823	328	1045	1.0	0.48	1.4	0.15	0.050	0.50	15	4.2	39
	Bottom-Feeding	2021	6	41	34	47	901	534	1214	1.1	0.74	2.0	0.74	0.013	4.0	83	1.1	447
	Bottom-Feeding	2022	6	42	34	48	924	469	1352	2.0	1.0	3.3	0.3	0.012	1.1	16	1.2	50
	Bottom-Feeding	2024	6	38	29	44	716	302	1021	1.0	0.47	1.3	0.12	0.029	0.37	12	3.6	39
Sediment Cap/ Removal Area	Predatory	2008	5	37	30	40	810	465	1104	1.7	1.2	3.0	2.8	0.19	10	204	13	769
	Predatory	2012	6	37	25	45	1033	257	1594	1.9	1.5	2.3	3.0	0.86	8.0	172	45	545
	Predatory	2016	6	41	36	46	1268	759	1766	3.2	2.8	3.7	14	1.5	45	417	53	1282
	Predatory	2017	6	40	35	46	1217	768	1828	2.3	1.9	3.3	2.6	0.20	10	94	11	288
	Predatory	2018	6	38	30	45	923	448	1522	3.0	1.6	4.9	1.6	0.16	6.1	55	3.4	174
	Predatory	2021	6	35	29	44	838	397	1482	2.0	1.7	2.5	4.2	0.46	15	234	22	853
	Predatory	2022	6	41	33	51	1217	599	1854	3.3	2.4	4.9	2.1	0.49	2.9	63	21	84
	Predatory	2024	6	40	35	44	1125	681	1479	3.7	2.1	4.8	2.3	0.19	6.8	66	4.3	142
	Bottom-Feeding	2008	5	28	26	29	329	241	402	0.85	0.68	1.2	1.4	0.20	2.6	168	22	379
	Bottom-Feeding	2012	6	32	29	35	459	277	666	1.2	0.49	1.7	1.7	0.063	5.4	152	6.7	335
	Bottom-Feeding	2016	6	30	23	34	355	145	488	0.49	0.087	1.6	1.6	0.056	8.3	160	64	520
	Bottom-Feeding	2017	6	42	28	47	932	363	1181	0.91	0.52	1.2	0.36	0.065	0.85	51	5.4	121
	Bottom-Feeding	2018	6	37	28	45	710	334	1114	0.99	0.56	1.6	0.36	0.25	0.55	42	17	66
	Bottom-Feeding	2021	6	31	21	47	398	133	916	0.82	0.29	1.8	0.19	0.079	0.46	40	4.4	109
	Bottom-Feeding	2022	6	35	27	51	666	290	1558	1.7	1.1	2.9	0.63	0.010	1.6	37	0.72	60
	Bottom-Feeding	2024	6	34	20	45	686	122	1220	1.4	0.29	2.4	1.0	0.078	3.9	57	5.7	160

Table 9 continued.
Results of 2024 St. Lawrence River Fish Collection Activities
Historic Site Resident Adult Fish Summary Statistics

RACER TRUST - FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
ST. LAWRENCE RIVER, MASSENA, NEW YORK

Sample Area	Fish Species Type	Year	Number of Individuals	Total Length (cm)			Fish Weight (g)			Percent Lipids (%)			Total PCBs (mg/kg)			Lipid-Normalized PCBs (mg/kg-lipid)		
				mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max
The Cove	Predatory	2008	5	34	32	36	626	526	753	1.8	1.1	2.7	2.0	0.19	5.5	156	10	500
	Predatory	2012	6	37	24	48	989	207	1873	1.9	0.79	3.6	2.0	0.86	6.1	105	52	167
	Predatory	2016	6	40	36	46	1030	499	1545	2.6	0.32	3.9	13	0.065	44	395	8.3	1136
	Predatory	2017	6	40	30	49	1193	429	2013	2.5	1.2	3.5	0.84	0.025	1.6	36	0.69	94
	Predatory	2018	6	41	30	50	1209	408	2058	2.4	1.9	2.7	4.6	0.42	19	220	20	974
	Predatory	2021	6	45	31	58	1154	536	1938	1.2	0.65	2.2	3.6	0.39	16	218	43	821
	Predatory	2022	6	38	25	51	614	241	1077	1.1	0.29	2.0	3.9	0.065	15	347	4.6	745
	Predatory	2024	6	39	25	47	1013	256	1651	2.3	0.62	4.2	1.5	0.51	4.3	150	17	687
	Bottom-Feeding	2008	5	26	24	28	289	222	405	1.1	0.84	1.6	2.0	0.022	4.9	167	1.8	308
	Bottom-Feeding	2012	6	24	20	32	223	86	512	1.2	0.28	3.7	0.47	0.030	2.2	21	5.2	60
	Bottom-Feeding	2016	6	26	21	35	280	120	659	0.70	0.21	2.2	5.0	0.19	14	676	93	1707
	Bottom-Feeding	2017	6	36	24	44	656	174	1169	0.75	0.40	1.0	1.4	0.082	5.9	176	11	664
	Bottom-Feeding	2018	6	28	21	39	311	102	688	0.72	0.24	1.3	0.89	0.34	2.7	138	38	356
	Bottom-Feeding	2021	6	34	27	45	630	276	1093	0.90	0.35	1.3	1.6	0.18	5.0	190	14	562
	Bottom-Feeding	2022	6	34	26	42	521	249	813	1.2	0.88	1.5	0.68	0.060	1.3	62	4.6	135
	Bottom-Feeding	2024	6	35	28	47	637	293	1131	1.2	0.4	1.9	1.6	0.064	5.2	115	12	274
Downstream of Site	Predatory	2012	6	38	28	43	1031	413	1594	2.6	2.0	3.3	0.26	0.054	0.69	11	2.5	35
	Predatory	2016	6	40	33	47	1142	670	1836	2.6	1.4	3.6	0.38	0.063	0.73	14	2.8	29
	Predatory	2017	6	41	37	45	1128	845	1425	2.6	1.6	5.4	0.30	0.13	0.55	13	6.4	24
	Predatory	2018	6	43	40	45	1299	1098	1490	2.6	1.3	3.4	0.41	0.073	0.75	15	5.6	28
	Predatory	2021	6	35	29	39	821	411	1152	3.0	2.0	5.2	0.32	0.12	0.65	11	5.8	19
	Predatory	2022	6	44	35	50	1508	692	2153	3.9	2.5	5.3	0.36	0.12	0.54	10	3.1	17
	Predatory	2024	6	44	39	48	1423	1221	1749	3.5	2.5	5.1	0.45	0.28	0.56	13	10	18
	Bottom-Feeding	2012	6	30	28	32	426	301	561	2.7	1.4	5.0	0.10	0.030	0.20	3.9	1.0	11
	Bottom-Feeding	2016	6	43	40	45	933	719	1188	1.0	0.29	1.9	0.047	0.030	0.16	5.5	1.3	10
	Bottom-Feeding	2017	6	37	29	46	653	319	1086	0.92	0.44	1.5	0.073	0.044	0.13	8.7	3.9	14
	Bottom-Feeding	2018	6	38	30	47	716	284	1078	0.91	0.19	1.4	0.11	0.025	0.24	11	6.0	17
	Bottom-Feeding	2021	6	38	33	46	687	445	1037	1.3	0.74	1.9	0.093	0.033	0.24	6.9	3.5	18
	Bottom-Feeding	2022	6	42	31	53	938	358	1647	1.2	0.35	2.5	0.082	0.0090	0.22	5.2	1.1	10
	Bottom-Feeding	2024	6	35	22	44	613	151	965	1.3	1.0	1.7	0.067	0.022	0.11	5.2	1.9	8.2

Table 9 continued
Results of 2024 St. Lawrence River Fish Collection Activities
Historic Site Resident Adult Fish Summary Statistics

RACER TRUST - FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
ST. LAWRENCE RIVER, MASSENA, NEW YORK

Notes:

1. Sample areas are shown on Figure 1; Background is upstream of the Robert Moses Saunders Dam west of the Racer Trust Site.
2. Smallmouth bass were targeted as the predatory fish species; largemouth bass or walleye were collected as a substitute species for smallmouth bass when unavailable.
3. Brown bullhead were targeted as the bottom-feeding fish species; white sucker were collected as a substitute species for brown bullhead when unavailable.
4. All samples were processed as individual NYSDEC standard fillets and analyzed for PCB Aroclors and percent lipids.
5. Mean total PCB and lipid-normalized PCB concentrations were calculated using half the detection limit for sample results that were non-detect.
6. Data are shown for years fish were collected at a particular sample area; not all sample areas were targeted each collection year.
7. 2008 data were collected by Arcadis on behalf of General Motors (GM) as part of a fish consumption advisory evaluation. 2012 through 2024 data were collected by Arcadis on behalf of RACER Trust with oversight by USEPA as part of monitoring for the site.

cm = centimeter
g = gram
% = percent
mg/kg = milligrams per kilogram wet weight (ppm - parts per million)
mg/kg-lipid = milligrams per kilogram lipid
mean = arithmetic average
min = minimum
max = maximum

Table 10
Results of 2024 St. Lawrence River Fish Collection Activities
Historic Site Resident Young-of-Year Fish Summary Statistics

RACER TRUST - FORMER GENERAL MOTORS (CENTRAL FOUNDRY DIVISION) SUPERFUND SITE
ST. LAWRENCE RIVER, MASSENA, NEW YORK

Sample Area	Fish Species	Year	Number of Samples	Total Length (cm)			Fish Sample Weight (g)			Percent Lipids (%)			Total PCBs (mg/kg)			Lipid-Normalized PCBs (mg/kg-lipid)		
				mean	min	max	mean	min	max	mean	min	max	mean	min	max	mean	min	max
Upstream	Round Goby	2017	2	8.9	6.3	11.4	95.9	83.5	108	1.9	1.8	1.9	0.14	0.092	0.20	7.9	4.8	11
of Site	Round Goby	2022	6	6.7	5.4	8.0	41.1	39.0	42.6	2.4	2.1	2.6	0.11	0.078	0.19	4.8	3.4	8.9
	Round Goby	2024	6	6.1	4.0	7.3	45.4	34.3	57.0	2.7	2.6	2.8	0.14	0.089	0.18	5.2	3.3	6.5
Sediment Cap/	Spottail Shiner	1997	7	5.5	4.4	6.6	18.2	16.2	20.1	5.6	5.1	5.9	1.2	0.42	1.8	21	7.3	32
Removal Area	Spottail Shiner	1998	7	5.3	4.6	6.0	15.7	14.7	17.2	4.5	3.6	5.0	3.6	2.7	5.4	79	59	110
	Spottail Shiner	1999	7	5.5	4.5	6.5	17.9	16.3	19.8	9.2	6.4	11	2.4	0.79	6.8	27	8.4	75
	Spottail Shiner	2000	7	5.4	4.5	6.3	14.3	13.5	15.7	11	11	12	1.5	0.84	2.2	13	7.2	19
	Spottail Shiner	2001	7	5.1	4.3	5.9	16.6	16.0	18.5	5.0	4.5	5.6	3.7	2.3	5.0	75	47	105
	Spottail Shiner	2007	7	5.8	4.9	6.7	19.4	18.0	22.5	4.8	4.2	5.5	0.94	0.42	1.4	20	8.6	26
	Round Goby	2017	10	8.9	6.0	11.8	97.1	63.4	176	1.7	1.1	2.3	1.8	0.57	4.3	113	41	290
	Round Goby	2022	6	6.8	5.4	8.2	46.1	45.2	46.7	3.1	2.4	3.9	2.5	1.6	4.4	80	52	114
	Round Goby	2024	6	6.0	4.2	7.5	41.1	31.4	47.8	2.9	2.4	3.3	2.5	0.81	4.5	84	28	154
The Cove	Spottail Shiner	2007	7	5.8	4.8	6.8	22.4	21.0	23.9	4.7	4.4	5.5	0.80	0.43	1.2	17	8.9	26
	Round Goby	2017	2	8.7	6.1	11.3	101	87.2	114	2.1	1.8	2.3	4.4	4.2	4.6	219	182	255
	Round Goby	2022	6	7.2	5.8	8.5	59.4	56.9	62.6	2.7	1.9	3.4	12	4.1	31	500	151	1486
	Round Goby	2024	6	6.0	4.4	7.4	29.6	24.6	35.8	2.7	2.0	3.1	2.4	1.0	3.2	92	39	159
Downstream	Round Goby	2022	6	7.0	5.5	8.5	43.7	40.2	45.4	2.2	1.6	2.9	0.46	0.40	0.52	22	18	28
	Round Goby	2024	6	6.2	5.2	7.2	37.4	25.9	46.8	2.6	2.3	2.8	0.25	0.06	0.50	9.6	2.5	18

Notes:

1. Sample areas are shown on Figure 1. From 1997 through 2022, young-of-year fish were collected from locations across each sampling area; the sample results are representative of fish captured within each sample area rather than at individual locations. In 2024, young-of-year fish were collected from location-specific areas within each sample area, as shown on Figures 2, 3, and 4.
2. Spottail shiner were targeted as the young-of-year fish species; round goby were collected as a substitute species for spottail shiner when unavailable.
3. All samples were processed as whole-body composites, with 10 to 15 fish per composite, and analyzed for PCB Aroclors and percent lipids.
4. Mean total PCB and lipid-normalized PCB concentrations were calculated using half the detection limit for sample results that were non-detect.
5. Data are shown for years fish were collected at a particular sample area; not all sample areas were targeted each collection year.
6. 1997 through 2007 data were collected by Arcadis on behalf of General Motors (GM). 2017 through 2024 data were collected by Arcadis on behalf of RACER Trust, with oversight by USEPA, as part of monitoring for the site.

cm = centimeter
g = gram
% = percent
mg/kg = milligrams per kilogram wet weight (ppm - parts per million)
mg/kg-lipid = milligrams per kilogram lipid
mean = arithmetic average
min = minimum
max = maximum

APPENDIX B

Reference List

Documents, Data, and Information Reviewed in Completing the Five-Year Review	
Document Title, Author	**Date**
Record of Decision for OU 1 at General Motors Corporation, Central Foundry Division, Massena, NY, EPA	1990
Record of Decision for OU 2 at General Motors Corporation, Central Foundry Division, Massena, NY, EPA	1992
Record of Decision Amendment (OU 1), General Motors Corporation, Central Foundry Division, Massena, NY, EPA	1999
Explanation of Significant Difference OU1, General Motors Corporation, Central Foundry Division, Massena, NY, EPA	2000
Draft Remedial Investigation Report for Remedial Investigation/Feasibility Study at GMC – CFD Massena Facility - Volume I, RMT	1986
Draft Remedial Investigation Report for Remedial Investigation/Feasibility Study at GMC – CFD Massena Facility - Volume II, RMT	1986
Phase II Remedial Investigation Addendum Report for Remedial Investigation/Feasibility Study - Appendices, RMT	1988
Draft Feasibility Study for the Remedial Investigation/Feasibility Study GMC – CFD Massena Facility, RMT	1989
Preliminary Design Report for the Industrial Landfill, East Disposal Area/Containment Area and Site-Wide Groundwater Controls - Volume I, Camp Dresser & McKee	1994
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Fish PCB Concentrations and Consumption Patterns Among Mohawk Women at Akwesasne, Journal of Exposure Analysis and Epidemiology, Fitzgerald, E.F., Hwang, Brix, K.A., Bush, B., Cook, K., and Worsick, P.	1995
St. Lawrence River Sediment Removal Project Remedial Action Completion Report, BBL Environmental Services	1996
St. Lawrence River Monitoring and Maintenance Plan, BBL Environmental Services	1996
St. Lawrence River Monitoring and Maintenance Annual Report, BBL Environmental Services	1998
St. Lawrence River Monitoring and Maintenance Annual Inspection Report, BBL Environmental Services	1999
Industrial Landfill/GWCT Sampling & Analysis Report, Camp Dresser & McKee	2000
St. Lawrence River Monitoring and Maintenance Annual Inspection Report, BBL Environmental Services	2000
Industrial Landfill, General Motors Corp., Massena, New York, Camp Dresser & McKee Subsurface Investigation and Stratigraphy Parameters for Stability Analysis	2000
Wastewater Treatment System Interim Solids Removal & St. Lawrence River Sediment Disposal Completion Report, BBL Environmental Services	2000
Raquette River Bank Sampling & Analysis Report, Camp Dresser & McKee	2000
Groundwater Monitoring and Well Abandonment Work Plan, BBL Environmental Services	2000

Documents, Data, and Information Reviewed in Completing the Five-Year Review	
St. Lawrence River Monitoring and Maintenance Annual Inspection Report, BBL Environmental Services	2001
Groundwater Monitoring and Well Abandonment Completion Report, BBL Environmental Services	2001
Inactive Lagoons Interim Completion Report, GM Powertrain, Massena, NY, BBL Environmental Services	2001
Local Fish Consumption and Blood PCB levels among Women at Akwesasne. New York State Department of Health, Center for Environmental Health	2002
350,000 Gallon Lagoon, Final Design Specifications, General Motors Powertrain, Massena, NY, REALM	2003
Revised Final Specifications, Renovating the Former 350,000 Gallon Lagoon, General Motors Powertrain, Massena, NY, BBL Environmental Services, Inc.	2003
Groundwater Sampling Work Plan -2003, General Motors Powertrain, Massena, NY, BBL Environmental Services	2003
Raquette River Bank Site Remedial Action Completion Report, General Motors Powertrain, Massena, NY, BBL Environmental Services	2004
Cove Remedial Action Work Plan, GM Powertrain, Massena, NY, Sevenson Environmental Services, Inc. and BBL Environmental Services	2004
Environmental Monitoring and Clean-Up Confirmation Work Plan GM Powertrain, Massena, NY, BBL Environmental Services	2005
Site-Wide Groundwater Controls, Final Design Report, Text (Volume 1 of 6), General Motors Powertrain, Massena, NY, Camp Dresser & McKee	2004
Site-Wide Groundwater Controls, Final Design Report, Drawings (Volumes 2 of 6), General Motors Powertrain, Massena, NY, Camp Dresser & McKee	2004
Site-Wide Groundwater Controls, Final Design Report, Technical Specifications (Volume 3 of 6), General Motors Powertrain, Massena, NY, Camp Dresser & McKee	2004
Site-Wide Groundwater Controls, Final Design Report, Draft CQAP Text (Volume 4 of 6), General Motors Powertrain, Massena, NY, Camp Dresser & McKee	2004
Site-Wide Groundwater Controls, Final Design Report, Draft Post-Closure Monitoring Plan (Volume 5 of 6), General Motors Powertrain, Massena, NY, Camp Dresser & McKee	2004
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Draft Soils Northeast of the Industrial Landfill Remedial Action Completion Report, GM Powertrain, Massena, NY, BBL Environmental Services	2005
Mohawk Upland Area Remedial Action Completion Report, GM Powertrain Facility, Massena, NY. 2008	2008
Completion Report GM Massena– Phase 1 Building Demolition	2014
Completion Report GM Massena– Phase 2 Building Demolition	2014
Results of 2012 St. Lawrence River Fish Collection Activities RACER Trust (Former GM Massena Superfund Site)	2013
Akwesasne Family Guide to Eating Locally-Caught Fish. SRMT Environment Division. *Kentenhkó:wa*/November 2013. https://www.epa.gov/sites/default/files/2016-09/documents/srmt_fishadvisory_webfinal.pdf.	2013

Documents, Data, and Information Reviewed in Completing the Five-Year Review	
10 Million Gallon Final Report Former Powertrain Plant, General Motors Central Foundry Division Superfund Site. Mott Macdonald.	2019
Monthly RACER Progress Reports	2020-2025
Groundwater Extraction and Treatment System OU-2 Construction Completion Report, RACER Trust – Former GM Central Foundry Superfund Site, Massena, NY. Mott Macdonald.	2020
Results of 2019 St. Lawrence River passive sampler and sediment assessment - Former Powertrain Plant General Motors Corporation Central Foundry Division Superfund Site, Massena, New York. Arcadis.	2020
Groundwater Sampling Plan Central Foundry Superfund Site – Massena, NY Prepared for RACER Trust – Detroit MI, Mott Macdonald.	2021
Results of 2021 St. Lawrence River Fish Collection Activities Former Powertrain Plant General Motors Corporation Central Foundry Division Superfund Site. Arcadis.	2022
Results of 2022 St. Lawrence River Fish Collection Activities, Former General Motors (Central Foundry Division) Superfund Site	2023
2023 Sediment Sampling Report – Former General Motors Corporation Central Foundry Division Superfund Site Massena, NY. Arcadis.	2024
Climate Adaptation Profile: GM Central Foundry (Central Foundry Division) https://www.epa.gov/superfund/climate-adaptation-profile-general-motors-central-foundry-division	2023
2023 Addendum to June 1998 Division of Water Technical and Operational Guidance Series (TOGS) No 1.1.1. NYS DEC.	2023
NYSDOH Fish Advisory Update (St. Lawrence River, from Seaway International Bridge (including Turtle Creek Cove) downstream to north end of Raquette Point (Navigation Light Number 11) DON'T EAT. health.ny.gov/environmental/outdoors/fish/health_advisories/by_county.htm	2019
OU1 Area Groundwater Remedial Action Report – Final – Central Foundry Superfund Site- Massena NY prepared for RACER Trust- Detroit, MI. Mott Macdonald.	2023
Mohawk Uplands Area – General Motors Central Foundry Division Superfund Site, OU1 Final (100%) Design Report. Ramboll.	2024
Results of 2024 St. Lawrence River Fish Collection Activities, Former General Motors (Central Foundry Division) Superfund Site (Draft). Arcadis.	2025

APPENDIX C

Geology/Hydrogeology and Land and Resource Use

Site Geology

The Site is underlain by approximately 100 feet of unconsolidated materials that overlay bedrock. The unconsolidated materials, which are predominantly glacial in origin, are divided into five deposits based on their depositional history and physical properties. From top to bottom, these deposits are fill, clay, upper till, glaciolacustrine silty fine sand, and lower till.

The native fill unit primarily consists of silt and sand that ranges in thickness from approximately 5 to 10 feet and may be locally absent. The clay unit has been interpreted to be of marine or glaciolacustrine (glacial lake) origin (RMT 1986). CDM, Inc. (CDM; 2009) subdivides the clay unit into two members: an upper clay and a lower clay. Standard penetration test data provided in CDM (2009) indicate that the upper clay is of low to moderate density, with standard penetration resistance (N-values) ranging from 4 to 20, while the lower clay has significantly lower strength and density, with N-values ranging between 0 and 3. Collectively, the clay unit is present at an approximately 600-foot-wide band that parallels the SLR (RMT 1986) and pinches out near the western end of the 10 MG Lagoon. The lower clay unit appears to be mainly present beneath the 10 MG Lagoon. The clay unit is thickest beneath the 10 MG Lagoon (approximately 23 feet) and thins to the west to approximately 10 feet.

The upper and lower till deposits are continuous across the area encompassed by the NDA and Lagoons. The till deposits are very dense mixtures of gravel, sand, silt, and clay in varying proportions and contain cobbles and boulders. The upper till deposit is generally less than 10 feet thick, except near the western end of the 10 MG Lagoon, where it is nearly 30 feet thick. The lower till is approximately 60 feet thick. Both till deposits are very dense, with N-values commonly exceeding 50; N-values exceeding 100 are not uncommon in the tills.

The glaciolacustrine deposit is sandwiched between the till deposits and is discontinuous, pinching out south of the NDA, and to the west, beneath the 10 MG Lagoon. This deposit consists mainly of thinly bedded silt and fine sand, with variable amounts of gravel and clay, and is generally very dense, with N-values ranging from 22 to 100+. The thickness of the unit ranges from approximately 10 to 15 feet.
Bedrock beneath the Site consists of the Ogdensburg Dolostone, a gray-to-black colored dolomite, or magnesium limestone.

The depth to the water table is generally 5 to 10 feet. Of the five unconsolidated deposits, the glaciolacustrine unit yields modest quantities of groundwater, while the yield of the remaining deposits is poor. Groundwater moves generally north-northeastward, discharging to the STL.

Land and Resource Use

Manufacturing at the GM Site was discontinued in July 2009, but the property remains zoned for industrial purposes. Some areas of contamination are found beyond GM's property on residential SRMT lands. All residences within close proximity to the Site receive their water from a Tribal public drinking water supply (surface water source).

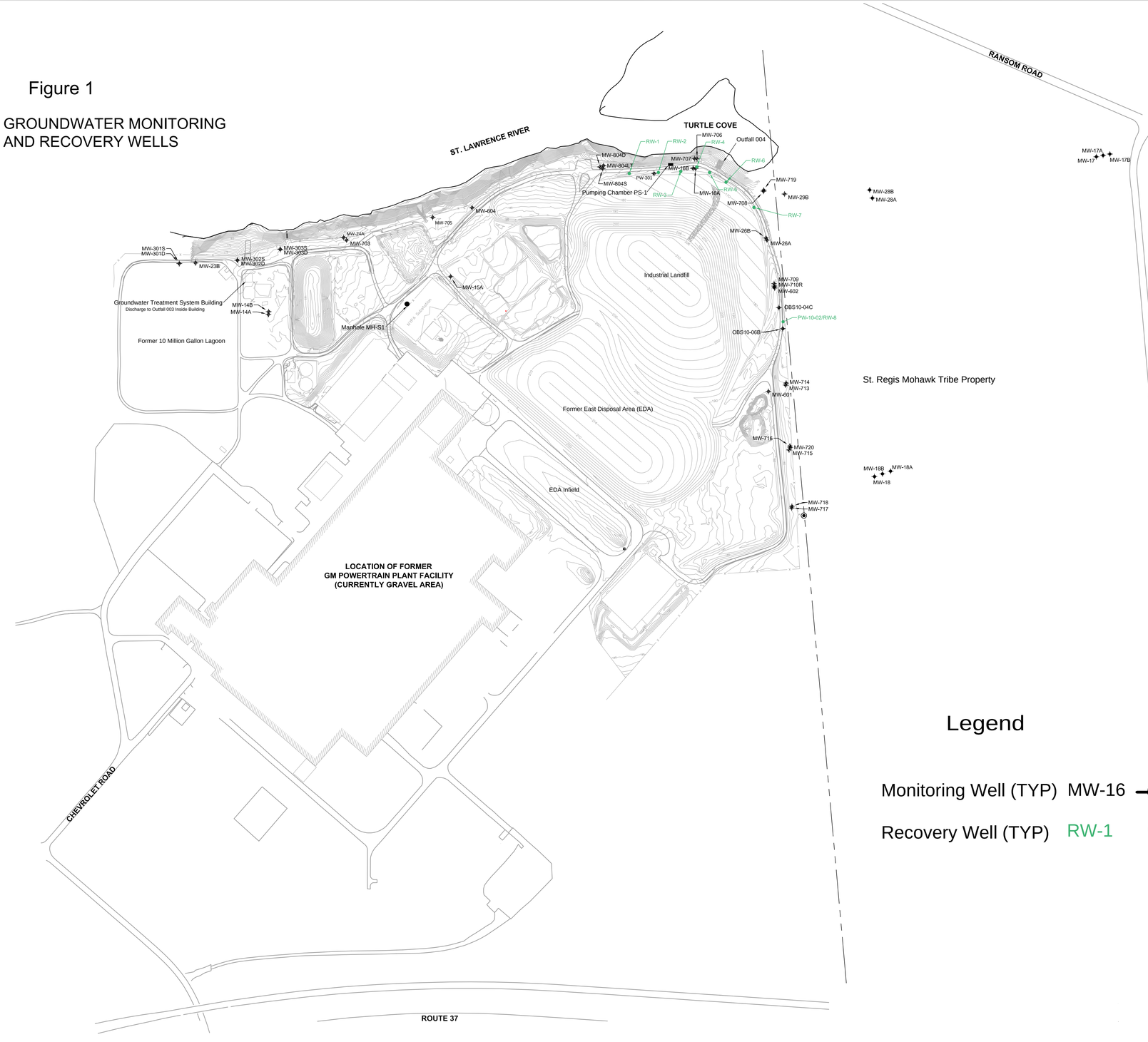
There are approximately 35 homes along the GM/Tribal border. The closest homes to the Site are situated on the shore of the remediated Turtle Cove and Turtle Creek. The SLR represents the international border with Canada and is an active marine shipping thoroughfare for ships traveling to and from the Great Lakes through the nearby Eisenhower Locks. It is also used for recreational boating. The Raquette River to the south is primarily used for recreational purposes.

APPENDIX D

Long-Term Groundwater Monitoring Well Locations and Concentration Graphs

Figure 1

GROUNDWATER MONITORING
AND RECOVERY WELLS



Legend

Monitoring Well (TYP) MW-16

Recovery Well (TYP) RW-1

200 0 200 400
SCALE IN FEET

Revision	Date

	Date
Designed	
Drawn EWP	
Checked	
Approved	
Date	

MOTT MACDONALD M M

Certificate No. 24GA28016600

111 Wood Avenue South
Iselin, New Jersey 08830-4112

RACER TRUST
DETROIT, MI

CENTRAL FOUNDRY SUPERFUND SITE – MASSENA, NY

Figure 2 - Site Plan

Job	No.	
351612	B/O 1	Total 1

P:\351612 – RACER 2015\GROUND WATER\ – DRAWINGS\DWG\2018-01-24 MW ABANDONMENT.DWG 1/26/2018 2:43 PM

Figure 2: MW-16A: 2007 – Present

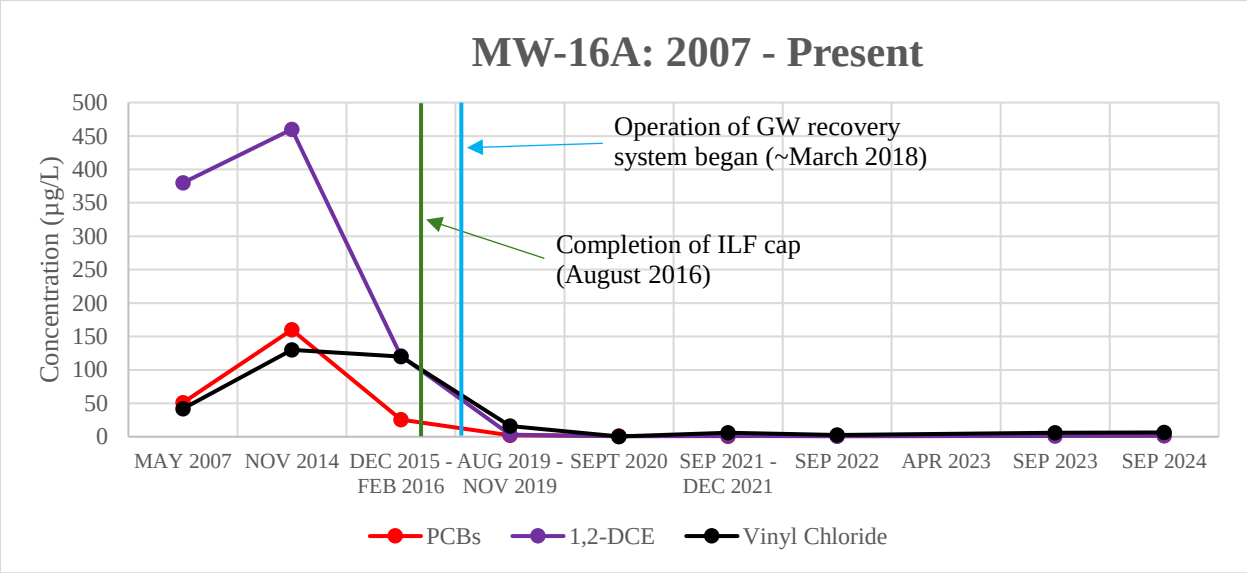


Figure 3: PCBs in MW-16A : 2019 – Present

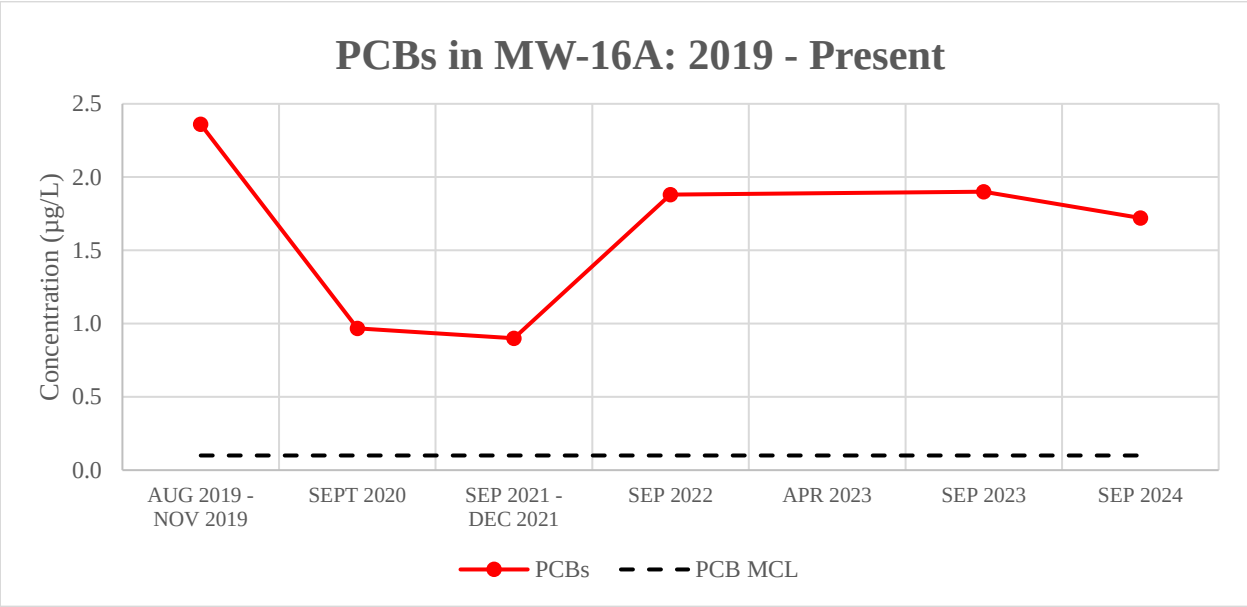


Figure 4: VOCs in MW-16A: 2019- Present

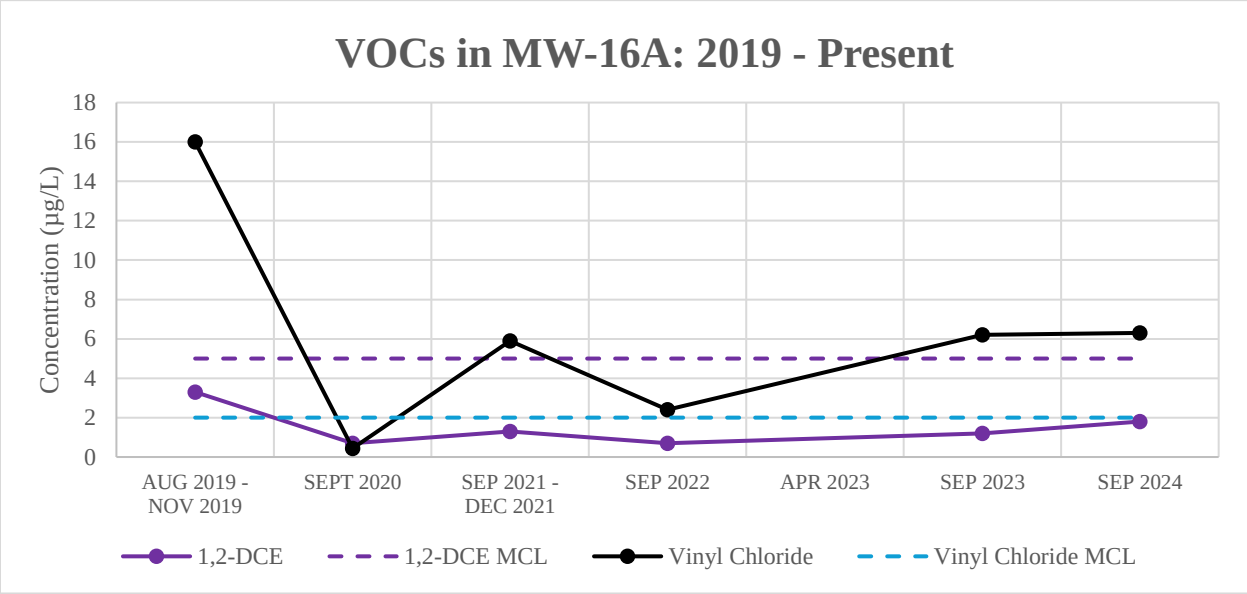


Figure 5: PCBs in MW-16B: 2007 - Present

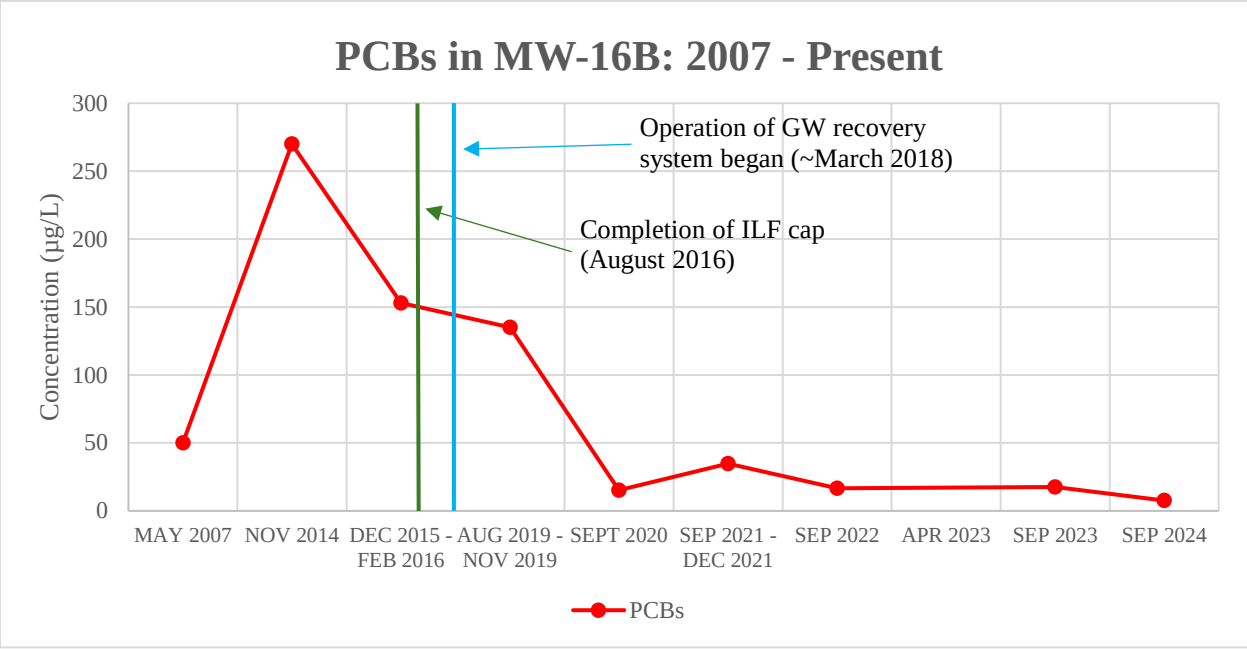


Figure 6: PCBs in MW-16B: 2019 – Present

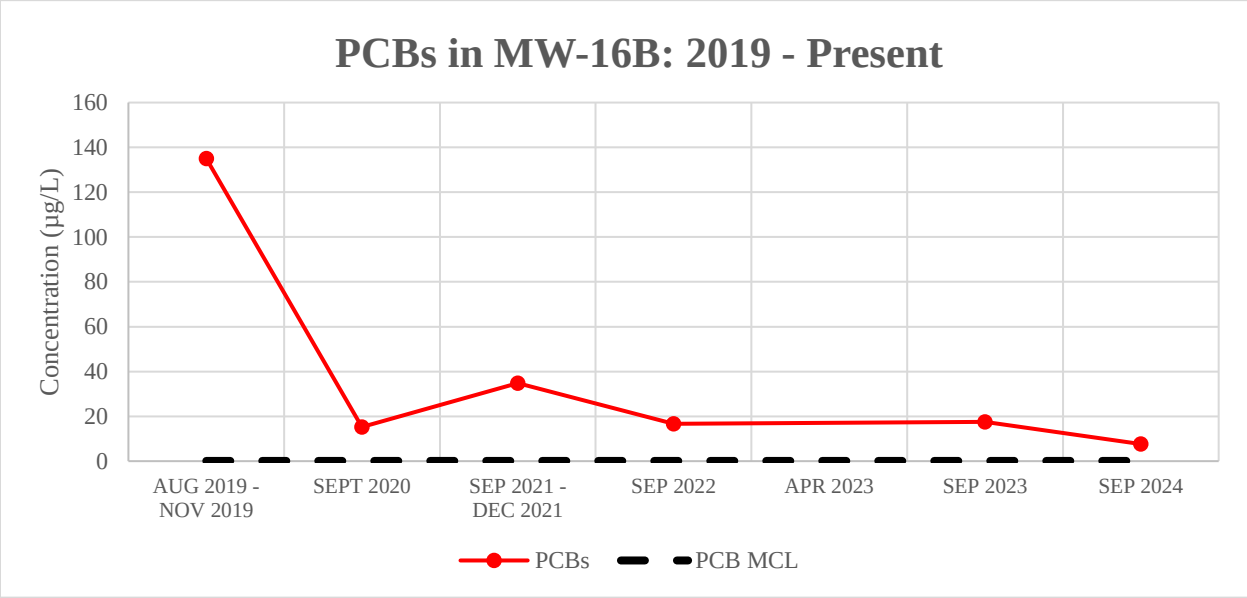


Figure 7: PCBs in MW-302S: 2007-Present

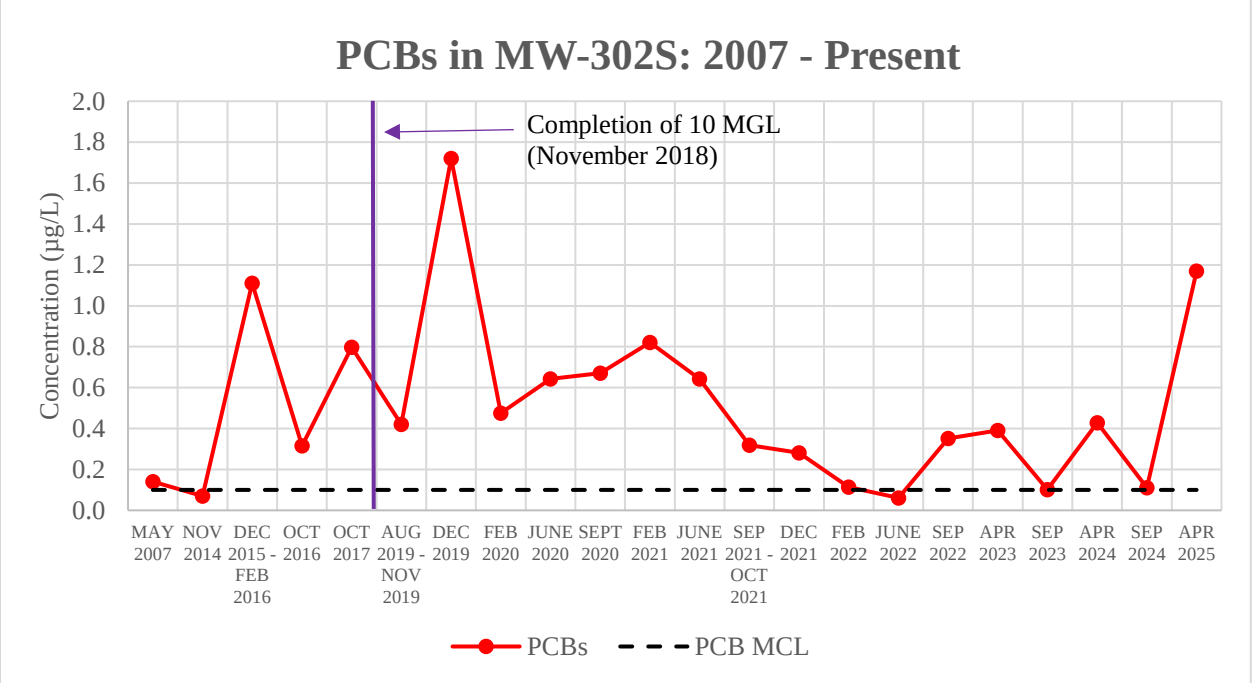


Figure 8: PCBs in PW-301: 2007-Present

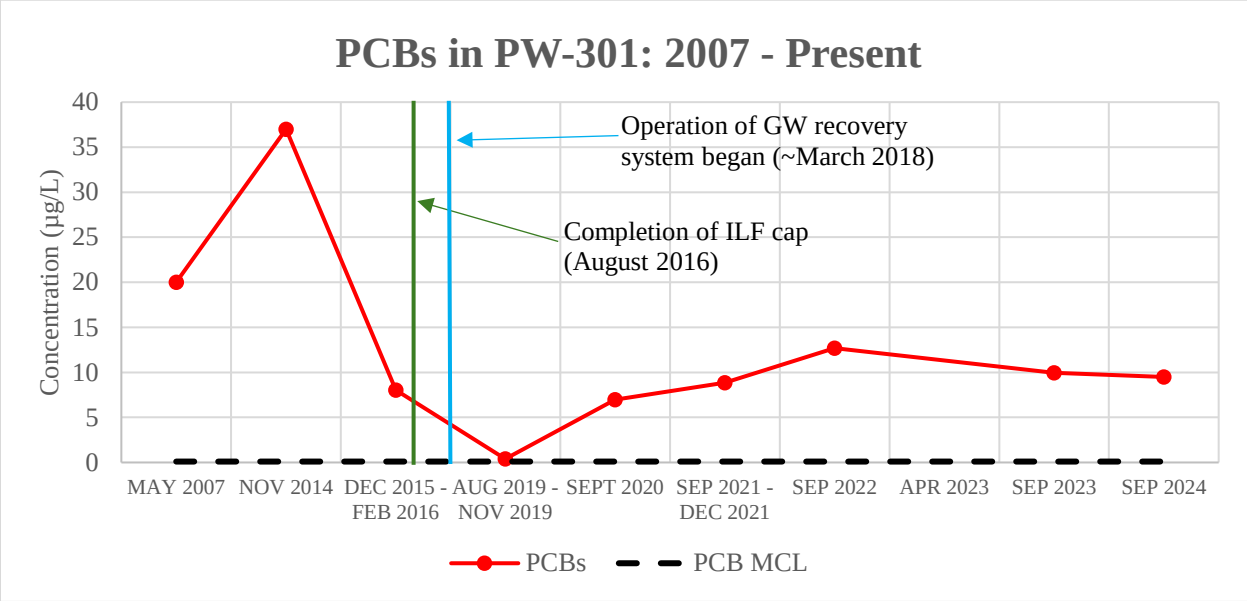


Figure 9: PCBs in MW-706: 2007 – Present

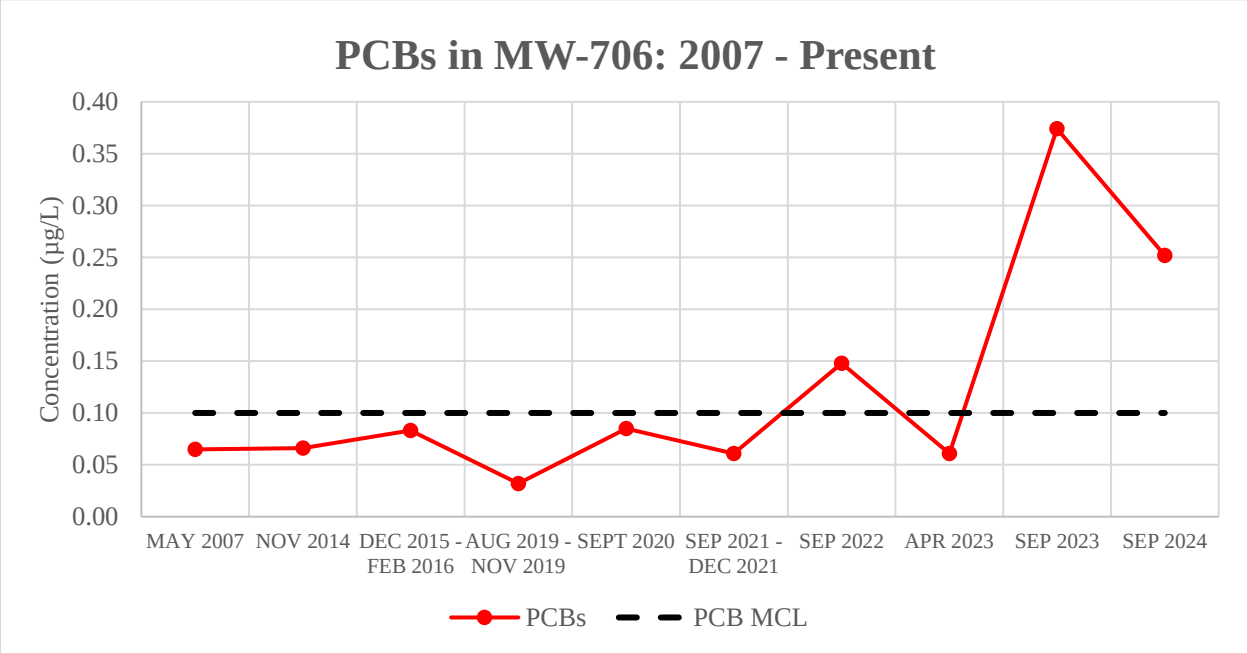
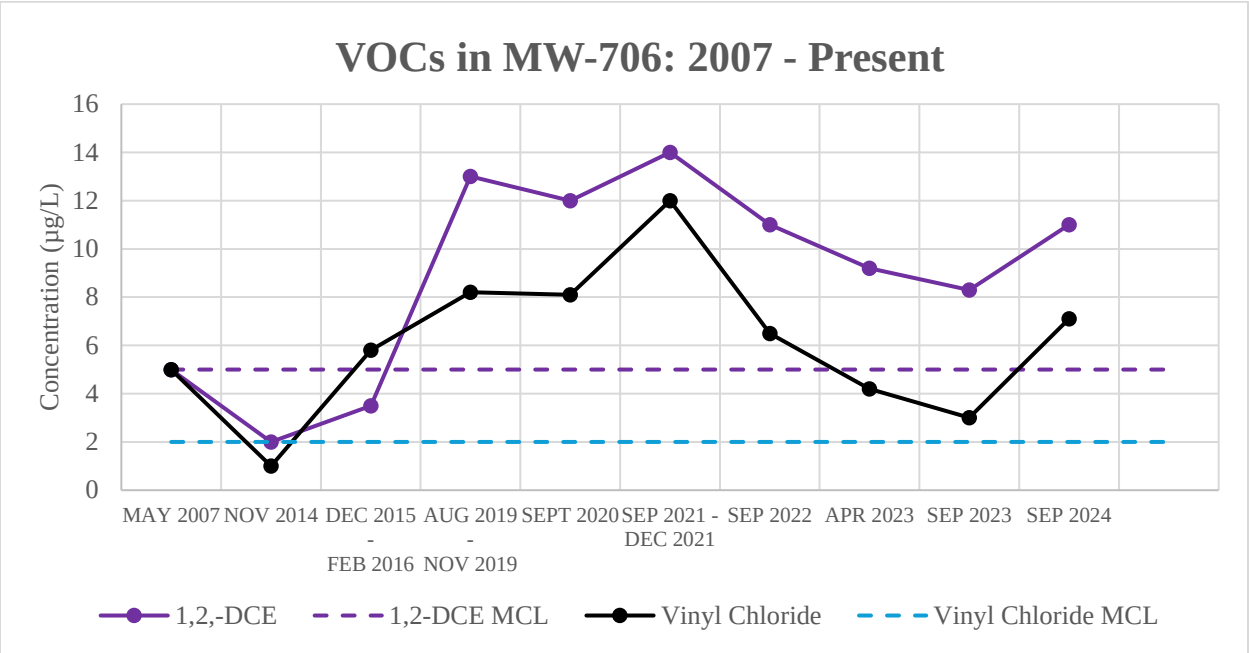


Figure 10: VOCs in MW-706: 2007 -Present



RACER Trust Central Foundry Superfund Site
Historical Groundwater Sampling Results (Annual Locations)
Total PCBs

Well ID	MAY 2007	NOV 2014	DEC 2015 - FEB 2016	AUG 2019 - NOV 2019	SEPT 2020	SEP 2021 - DEC 2021	SEP 2022	APR 2023	SEP 2023	SEP 2024
MW-14A	ND (0.065)	0.068	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-14B	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-15A	ND (0.065)	ND (.067)	ND (0.083)	0.045 J	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-16A	51 D	160	25.5	2.36	0.967	0.900	1.88	-	1.90	1.72
MW-16B	50 D	270	153	135	15.2	34.8	16.6	-	17.5	7.63
MW-17	-	-	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-17A	-	-	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-17B	-	-	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-18	-	-	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-18A	-	-	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-18B	-	-	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-24A	ND (0.065)	0.042 J	ND (0.083)	0.044 J	ND (0.032)	ND (0.061)	ND (0.061)	-	0.069 J	ND (0.061)
MW-26A	ND J (0.065)	0.066	ND (0.083)	0.172 J	0.079 J	0.156	0.586	-	0.368	0.263
MW-26B	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	0.138 J	0.062 J	27.5	ND (0.061)	0.362	ND (0.061)
MW-28A	-	-	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-28B	-	-	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-29B	ND (0.065)	ND (.057)	-	ND (0.032)	ND (0.032)	ND (0.061)	No Access	-	No Access	No Access
MW-303S	ND (0.065)	1.7	ND (0.083)	0.152 J	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-601	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-602	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	1.850	ND (0.061)	0.176	-	0.085	ND (0.061)
MW-604	0.073	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	0.664	ND (0.061)	ND (0.061)	0.091
MW-703	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-705	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-706	ND (0.065)	0.066	ND (0.083)	ND (0.032)	0.085	ND (0.061)	0.148	ND (0.061)	0.374	0.252
MW-707	ND (0.065)	ND (.058)	ND (0.083)	ND (0.032)	0.067 J	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-708	ND (0.065)	ND (.057)	-	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-709	ND (0.065)	0.049 J	ND (0.111)	0.149 J	ND (0.032)	ND (0.061)	0.536	ND (0.061)	0.131	0.1
MW-713	ND (0.065)	ND (.059)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	0.149	-	ND (0.061)	ND (0.061)
MW-714	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	0.088	-	0.608	ND (0.061)
MW-715	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	0.143	ND (0.061)
MW-716	ND (0.065)	ND (.063)	ND (0.083)	0.071 J	ND (0.032)	ND (0.061)	0.089	-	ND (0.061)	ND (0.061)
MW-717	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-718	ND (0.065)	ND (.057)	ND (0.083)	0.038 J	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-719	ND (0.065)	ND (.057)	-	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
MW-720	ND (0.065)	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	0.144	-	0.225	ND (0.061)
MW-804D	-	-	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	0.093	-	ND (0.061)	ND (0.061)
MW-804LT	-	-	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	0.086	-	ND (0.061)	ND (0.061)
MW-804S	-	-	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	ND (0.061)	ND (0.061)
OBS10-04C	-	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	0.122	0.066 J	-	0.257	0.066 J
OBS10-06B	-	ND (.057)	ND (0.083)	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	-	0.692	0.109
PW-301	20 D	37	8.03	0.393	6.98	8.84	12.7	-	9.95	9.51

PCB action level (specified by the ROD) = 0.1 ppb
Data are presented in ppb (ug/L)
- "ND" indicates analyte not detected at the method detection limit (MDL). This is followed by the analytical MDL in parentheses.
- "D" qualifier means the concentration was quantified from diluted analysis.
- "J" qualifier means an estimated value. The concentration is below the quantitation limit (RL) but above the method detection limit (MDL).
- "P" qualifier means the relative percent difference between the results for the two columns exceeds the method-specified criteria.
- Cells with a "-" indicate that samples were not collected from this location during this event.

XX	Exceeds ROD cleanup level of 0.1 ug/L
	Long Term Monitoring Location
	Outside Fence Location

RACER Trust Central Foundry Superfund Site
Historical Groundwater Sampling Results (Annual Locations)
Total Phenols

Well ID	MAY 2007	NOV 2014	DEC 2015 - FEB 2016	AUG 2019 - NOV 2019	SEPT 2020	SEP 2021 - DEC 2021	SEP 2022	APR 2023	SEP 2023	SEP 2024
MW-14A	ND (2.0)	ND (0.99)	ND (0.495)	ND (0.051)	ND (0.051)	ND (0.051)	ND (0.051)	-	ND (0.050)	ND (0.051)
MW-14B	2.3	1.66 J	ND (0.532)	ND (0.051)	ND (0.051)	ND (0.052)	ND (0.051)	-	ND (0.051)	ND (0.051)
MW-15A	14.6	1.3 J	ND (0.515)	ND (0.052)	ND (0.055)	ND (0.051)	ND (0.051)	-	ND (0.051)	ND (0.052)
MW-16A	4.4	.25 J	0.132 J	ND (0.050)	ND (0.052)	ND (0.050)	ND (0.051)	-	ND (0.050)	ND (0.049)
MW-16B	ND (2.0)	46 J	ND (0.602)	ND (0.051)	**0.123 J**	ND (0.053)	ND (0.051)	-	ND (0.051)	ND (0.052)
MW-17	-	-	-	ND (0.060)	ND (0.052)	ND (0.051)	No Access	-	No Access	No Access
MW-17A	-	-	-	ND (0.057)	ND (0.049)	**0.155 J**	No Access	-	No Access	No Access
MW-17B	-	-	-	ND (0.049)	ND (0.051)	ND (0.051)	No Access	-	No Access	No Access
MW-18	-	-	-	ND (0.054)	ND (0.052)	ND (0.051)	No Access	-	No Access	No Access
MW-18A	-	-	-	ND (0.056)	ND (0.049)	ND (0.051)	No Access	-	No Access	No Access
MW-18B	-	-	-	ND (0.056)	ND (0.053)	ND (0.050)	No Access	-	No Access	No Access
MW-24A	ND (2.0)	9.41 J	ND (0.556)	ND (0.051)	ND (0.051)	ND (0.051)	ND (0.051)	-	ND (0.051)	ND (0.051)
MW-26A	2.3	0.16 JB	ND (0.595)	ND (0.052)	ND (0.051)	ND (0.050)	ND (0.051)	-	ND (0.051)	ND (0.050)
MW-26B	ND (2.0)	0.15 JB	ND (0.617)	ND (0.051)	ND (0.052)	ND (0.051)	ND (0.051)	0.440 J	ND (0.050)	ND (0.051)
MW-28A	-	-	-	ND (0.051)	ND (0.051)	ND (0.051)	No Access	-	No Access	No Access
MW-28B	-	-	-	ND (0.049)	ND (0.050)	ND (0.051)	No Access	-	No Access	No Access
MW-29B	ND (2.0)	0.10 JB	-	ND (0.052)	ND (0.051)	ND (0.051)	No Access	-	No Access	No Access
MW-303S	2.3	ND (1.0)	ND (0.588)	ND (0.052)	ND (0.051)	ND (0.051)	0.240 J	-	ND (0.051)	ND (0.049)
MW-601	ND (2.0)	0.098 JB	ND (0.500)	ND (0.056)	ND (0.051)	ND (0.050)	ND (0.050)	-	ND (0.052)	ND (0.052)
MW-602	ND (2.0)	0.17 JB	ND (0.562)	ND (0.051)	ND (0.053)	ND (0.051)	ND (0.051)	-	ND (0.051)	ND (0.049)
MW-604	ND (2.0)	0.099 J	ND (0.532)	ND (0.052)	ND (0.051)	ND (0.051)	ND (0.051)	ND (0.051)	ND (0.052)	ND (0.051)
MW-703	ND (2.0)	0.10 JB	ND (0.495)	ND (0.055)	ND (0.048)	ND (0.050)	ND (0.051)	-	ND (0.050)	ND (0.052)
MW-705	ND (2.0)	0.10 JB	ND (0.617)	ND (0.055)	ND (0.052)	ND (0.050)	ND (0.051)	-	ND (0.051)	ND (0.050)
MW-706	ND (2.0)	0.092 JB	ND (0.617)	ND (0.051)	ND (0.053)	ND (0.050)	ND (0.051)	ND (0.051)	ND (0.051)	ND (0.051)
MW-707	ND (2.0)	0.095 JB	ND (0.610)	ND (0.050)	ND (0.049)	ND (0.050)	ND (0.050)	-	ND (0.052)	ND (0.051)
MW-708	ND (2.0)	0.13 JB	-	ND (0.052)	ND (0.051)	ND (0.051)	ND (0.055)	-	ND (0.050)	ND (0.048)
MW-709	ND (2.0)	0.255 JB	ND (0.543)	ND (0.051)	ND (0.051)	ND (0.050)	ND (0.051)	ND (0.051)	ND (0.050)	ND (0.052)
MW-713	ND (2.0)	ND (0.98)	ND (0.581)	ND (0.052)	ND (0.051)	ND (0.051)	ND (0.051)	-	ND (0.049)	ND (0.051)
MW-714	2.7	ND (0.96)	ND (0.538)	ND (0.049)	ND (0.052)	ND (0.050)	ND (0.051)	-	ND (0.050)	ND (0.051)
MW-715	ND (2.0)	0.13 JB	ND (0.575)	ND (0.055)	ND (0.051)	ND (0.051)	ND (0.051)	-	ND (0.051)	ND (0.050)
MW-716	ND (2.0)	0.11 JB	ND (0.588)	ND (0.052)	ND (0.052)	ND (0.051)	ND (0.051)	-	ND (0.050)	ND (0.050)
MW-717	ND (2.0)	0.095 JB	ND (0.588)	ND (0.052)	ND (0.051)	ND (0.051)	ND (0.051)	-	ND (0.049)	ND (0.052)
MW-718	ND (2.0)	0.096 JB	ND (0.588)	ND (0.051)	ND (0.052)	ND (0.050)	ND (0.051)	-	ND (0.051)	ND (0.052)
MW-719	ND (2.0)	0.16 JB	-	ND (0.052)	ND (0.052)	ND (0.051)	ND (0.051)	-	ND (0.049)	ND (0.053)
MW-720	-	0.20 JB	ND (0.538)	ND (0.053)	ND (0.049)	ND (0.050)	ND (0.049)	-	ND (0.051)	ND (0.051)
MW-804D	-	-	ND(0.058)	ND (0.512)	ND (0.050)	ND (0.051)	ND (0.051)	-	ND (0.051)	ND (0.051)
MW-804LT	-	-	2.39 J	ND (0.050)	ND (0.050)	ND (0.052)	ND (0.051)	-	ND (0.051)	ND (0.051)
MW-804S	-	-	ND (0.581)	ND (0.051)	ND (0.050)	ND (0.050)	ND (0.051)	-	ND (0.052)	ND (0.051)
OBS10-04C	-	ND (1.2)	ND (0.505)	ND (0.052)	ND (0.051)	ND (0.050)	ND (0.051)	-	ND (0.051)	ND (0.052)
OBS10-06B	-	0.089 J	ND (0.581)	ND (0.051)	ND (0.051)	ND (0.051)	ND (0.050)	-	ND (0.051)	ND (0.053)
PW-301	ND (2.0)	0.10 J	ND (0.658)	ND (0.051)	ND (0.051)	ND (0.050)	ND (0.051)	-	ND (0.050)	ND (0.051)

Phenol action level (specified by the ROD) = 1.0 ppb
Data are presented in ppb (ug/L)
- "ND" indicates analyte not detected at the method detection limit (MDL). This is followed by the analytical MDL in parentheses.
- "NA" indicates that no sample was collected
- "J" qualifier means an estimated value. The concentration is below the quantitation limit (RL) but above the method detection limit (MDL).
- Results from samples where compound also was found in the blank are indicated by a "B" qualifier.
- Total Phenols is obtained by the addition of the individual phenolic compound.
- Cells with a "-" indicate that samples were not collected from this location during this event.

XX	Exceeds ROD cleanup level of 1.0 ug/L
	Long Term Monitoring Location
	Outside Fence Location

RACER Trust Central Foundry Superfund Site
Historical Groundwater Sampling Results for Select Locations
Total PCBs

Well ID	MAY 2007	NOV 2014	DEC 2015 - FEB 2016	OCT 2016	OCT 2017	AUG 2019 - NOV 2019	DEC 2019	FEB 2020	JUNE 2020	SEPT 2020
MW-302D	-	-	ND (0.083)	-	-	-	-	0.255	ND (0.032)	0.175
MW-302S	0.14	0.07	1.11	0.315	0.798	0.420	1.72	0.475	0.642	0.670
MW-302S FF	-	-	-	-	-	-	-	ND (0.032)	ND (0.032)	0.091

Well ID	NOV 2020	FEB 2021	JUNE 2021	SEP 2021 - OCT 2021	DEC 2021	FEB 2022	JUNE 2022	SEP 2022	APR 2023	SEP 2023
MW-302D	ND (0.032)	0.069 J	0.385	ND (0.061)	0.074	ND (0.061)	ND (0.061)	0.142	0.389	0.083
MW-302S	0.079 J	0.821	0.642	0.319	0.281	0.114	ND (0.061)	0.352	0.390	0.101
MW-302S FF	ND (0.032)	ND (0.032)	ND (0.061)	ND (0.061)	ND (0.061)	ND (0.061)	ND (0.061)	ND (0.061)	ND (0.061)	ND (0.061)

Well ID	APR 2024	SEP 2024	APR 2025
MW-302D	0.480	0.067 J	0.402
MW-302S	0.429	0.110	1.17
MW-302S FF	ND (0.061)	ND (0.061)	ND (0.013)

PCB action level (specified by the ROD) = 0.1 ppb
Data are presented in ppb (ug/L)
- "ND" indicates analyte not detected at the method detection limit (MDL). This is followed by the analytical MDL in parentheses.
- "D" qualifier means the concentration was quantified from diluted analysis.
- "J" qualifier means an estimated value. The concentration is below the quantitation limit (RL) but above the method detection limit (MDL).
- "FF" means field filtered sample.

XX **Exceeds ROD cleanup level of 0.1 ug/L**

APPENDIX E

Remedy Resiliency

In accordance with regional practice, three tools were utilized to assess the General Motors (Central Foundry Division) Site. Screenshots from each of the tools used are included below.

The first tool (see CMRA) examined five hazards (extreme heat, drought, wildfire, flooding, and costal inundation) for St. Lawrence County, the county in which the Site is located. According to the CMRA tool, the National Risk Index Rating for extreme heat, flooding and coastal inundation are "Relatively Moderate" (see Figures D-1 through D-3). However, no impacts from these hazards to the Site area or to the implementation or performance of the OU3 remedy have been observed. In addition, although the Site sits adjacent to the St. Lawrence River, the remediated area is significantly elevated above the surrounding area, which makes it less vulnerable to impacts from flooding and coastal inundation. The CMRA tool reported the risks for drought and wildfire, shown in Figures D-4 and D-5, respectively, as "Relatively Low."

The second tool is called the NOAA Sea Level Rise Viewer (SLRV) (see https://coast.noaa.gov/slr/). This tool assessed the potential for impacts to the Site vicinity from sea level rise and coastal flooding. The Site is located approximately miles from the coast. Therefore, coastal flooding is unlikely. Because surface water is located near the Site, flooding attributable to flooding from the river is highly likely. Figure D-6 from the SLRV shows that a 7-foot increase in the current mean higher high water (MHHW) level would result in a high risk of impacts from sea level rise to the Site vicinity.

The final tool is called the USGS U.S. Landslide Inventory (see https://www.usgs.gov/tools/us-landslide-inventory-and-susceptibility-map). As shown by Figure D-7, there is a low to moderate vulnerability of a landslide at the Site. The risk of landslides in the area is increasing based on the results. However, the remedy, as further described below, includes provisions that help prevent erosion and includes maintenance and inspections after storm events.

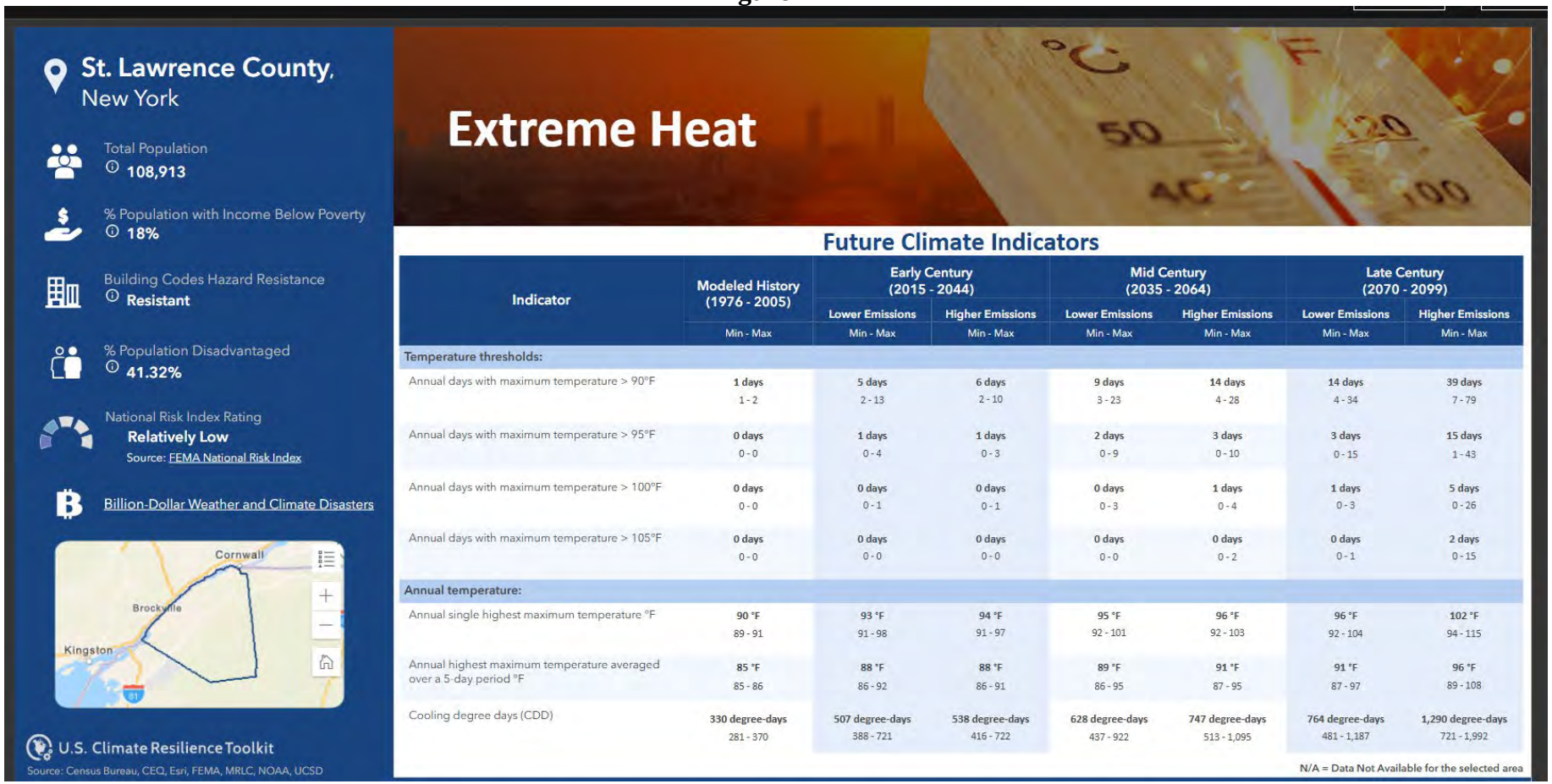
Potential site impacts from severe weather events have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of severe weather in the region and near the Site. The remedy as designed and implemented takes into consideration the most likely local effects of extreme weather in the region, which is in-river or upland flooding caused by extreme precipitation events or rapid snowmelt. There are several other local factors that EPA has considered in concluding that the remedy is sufficient to address more intense and extreme weather events that may arise. First, the SLR water level is controlled by the Robert Moses Power Dam located upstream of the Site. Therefore, flooding of the Site is highly unlikely. Second, the toe of the landfill is approximately 15 feet above the surface of the river. Additionally, there are several features of the constructed remedy that ensure it is resilient in the face of future extreme weather events:

- Surface water drainage features around the landfill are designed to shed more than three times the capacity required by state regulations.
- The landfill cap has two drainage layers, rather than one, to transmit any precipitation that may enter the cap, ensuring that the rainfall or snowmelt are transmitted to a drainage swale via a geocomposite layer as well as a perforated pipe network.

- The subaqueous cap in the SLR has a large armor stone layer on top of sand, carbon, and gravel, which was inspected by EPA ERT divers in 2017, 2019, and 2023 and has not shown evidence of ice scour or washouts; and
- The property has been covered with approximately 400,000 CY of clean fill over and 84 acre area and graded to promote sheet flow runoff and avoid erosion.

The implemented remedy at the Site has not experienced damage during storm events, including a 3.5-inch rain event in 2018 and the remnants of Hurricane Debbie in August 2024. There were no washouts, damaged areas, or evidence of taxing the cover soils, geocomposite drainage layer, piping system, or perimeter swales. The stormwater management features associated with the ILF cap system, around the ILF perimeter, sufficiently managed all stormwater runoff and infiltration associated with this event. While there was no impact to the remedy during the 2024 high rain event, a portion of the uncontaminated riverbank by Outfall 003 was impacted, along with a portion of the perimeter fence. Measures will be implemented by RACER in 2026 to restore the portion of the riverbank and outfall 003 area in accordance with the interim SMP, and stone berms with be constructed by the perimeter fence near the outfall 003 area to prevent future occurrences.

Figure E-1



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	1 days 1 - 2	5 days 2 - 13	6 days 2 - 10	9 days 3 - 23	14 days 4 - 28	14 days 4 - 34	39 days 7 - 79
Annual days with maximum temperature > 95°F	0 days 0 - 0	1 days 0 - 4	1 days 0 - 3	2 days 0 - 9	3 days 0 - 10	3 days 0 - 15	15 days 1 - 43
Annual days with maximum temperature > 100°F	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 3	1 days 0 - 4	1 days 0 - 3	5 days 0 - 26
Annual days with maximum temperature > 105°F	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 2	0 days 0 - 1	2 days 0 - 15
Annual temperature:							
Annual single highest maximum temperature °F	90 °F 89 - 91	93 °F 91 - 98	94 °F 91 - 97	95 °F 92 - 101	96 °F 92 - 103	96 °F 92 - 104	102 °F 94 - 115
Annual highest maximum temperature averaged over a 5-day period °F	85 °F 85 - 86	88 °F 86 - 92	88 °F 86 - 91	89 °F 86 - 95	91 °F 87 - 95	91 °F 87 - 97	96 °F 89 - 108
Cooling degree days (CDD)	330 degree-days 281 - 370	507 degree-days 388 - 721	538 degree-days 416 - 722	628 degree-days 437 - 922	747 degree-days 513 - 1,095	764 degree-days 481 - 1,187	1,290 degree-days 721 - 1,992

N/A = Data Not Available for the selected area

Figure E-2

St. Lawrence County, New York

Total Population
108,913

% Population with Income Below Poverty
18%

Building Codes Hazard Resistance
Resistant

% Population Disadvantaged
41.32%

National Risk Index Rating
No Rating
Source: FEMA National Risk Index

Billion-Dollar Weather and Climate Disasters

U.S. Climate Resilience Toolkit

Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

Future Climate Indicators

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	40" 39 - 41	42" 40 - 43	41" 39 - 44	42" 39 - 46	42" 40 - 45	42" 40 - 46	44" 41 - 49
Days per year with precipitation (wet days)	233 days 229 - 236	232 days 222 - 241	230 days 218 - 237	230 days 222 - 241	229 days 217 - 239	230 days 215 - 241	225 days 202 - 245
Days per year with no precipitation (dry days)	132 days 129 - 136	133 days 124 - 143	135 days 128 - 147	135 days 124 - 143	137 days 126 - 148	135 days 124 - 150	140 days 120 - 163
Maximum number of consecutive dry days	8 days 8 - 9	9 days 8 - 9	9 days 8 - 11	9 days 7 - 10	9 days 8 - 11	9 days 7 - 10	10 days 8 - 11
Temperature thresholds:							
Annual days with maximum temperature > 90 °F	1 days 1 - 2	5 days 2 - 13	6 days 2 - 10	9 days 3 - 23	14 days 4 - 28	14 days 4 - 34	39 days 7 - 79
Annual days with maximum temperature > 100 °F	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 3	1 days 0 - 4	1 days 0 - 3	5 days 0 - 26

N/A = Data Not Available for the selected area

Figure E-3


St. Lawrence County, New York
Total Population
108,913
% Population with Income Below Poverty
18%
Building Codes Hazard Resistance
Resistant
% Population Disadvantaged
41.32%
National Risk Index Rating
Very Low
Source: FEMA National Risk Index
Billion-Dollar Weather and Climate Disasters
Cornwall
Brockville
Kingston
U.S. Climate Resilience Toolkit
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD
Wildfire
Future Climate Indicators
Indicator
Modeled History (1976 - 2005)
Early Century (2015 - 2044)
Mid Century (2035 - 2064)
Late Century (2070 - 2099)
Lower Emissions
Higher Emissions
Min - Max
Precipitation:
Days per year with no precipitation (dry days)
132 days 129 - 136
133 days 124 - 143
135 days 128 - 147
135 days 124 - 143
137 days 126 - 148
135 days 124 - 150
140 days 120 - 163
Maximum number of consecutive dry days
8 days 8 - 9
9 days 8 - 9
9 days 8 - 11
9 days 7 - 10
9 days 8 - 11
9 days 7 - 10
10 days 8 - 11
Days per year with precipitation (wet days)
233 days 229 - 236
232 days 222 - 241
230 days 218 - 237
230 days 222 - 241
229 days 217 - 239
230 days 215 - 241
225 days 202 - 245
Temperature thresholds:
Annual days with maximum temperature > 90°F
1 days 1 - 2
5 days 2 - 13
6 days 2 - 10
9 days 3 - 23
14 days 4 - 28
14 days 4 - 34
39 days 7 - 79
Annual days with maximum temperature > 100°F
0 days 0 - 0
0 days 0 - 1
0 days 0 - 1
0 days 0 - 3
1 days 0 - 4
1 days 0 - 3
5 days 0 - 26
N/A = Data Not Available for the selected area

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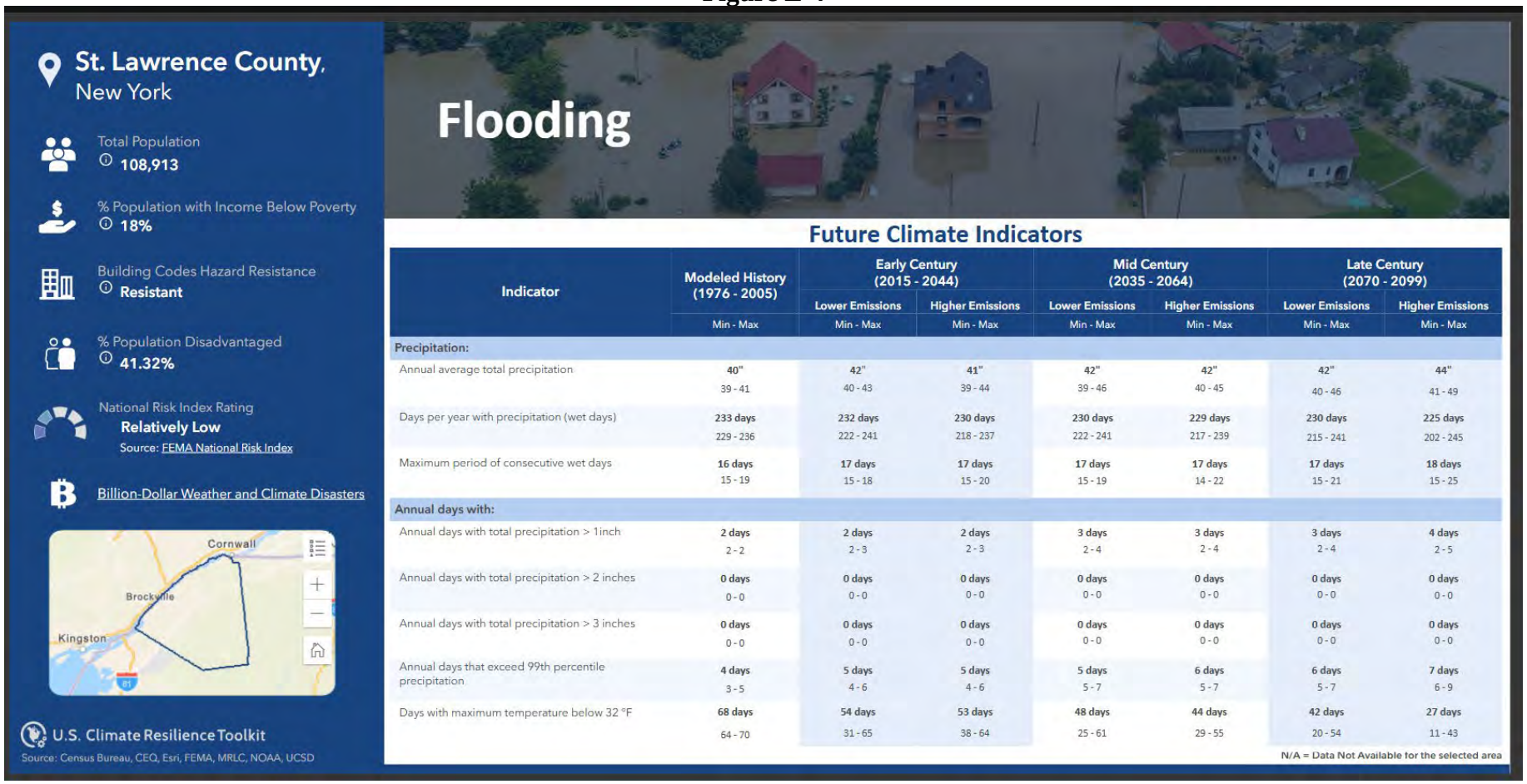
Figure E-4



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:							
Annual average total precipitation	40" 39 - 41	42" 40 - 43	41" 39 - 44	42" 39 - 46	42" 40 - 45	42" 40 - 46	44" 41 - 49
Days per year with precipitation (wet days)	233 days 229 - 236	232 days 222 - 241	230 days 218 - 237	230 days 222 - 241	229 days 217 - 239	230 days 215 - 241	225 days 202 - 245
Maximum period of consecutive wet days	16 days 15 - 19	17 days 15 - 18	17 days 15 - 20	17 days 15 - 19	17 days 14 - 22	17 days 15 - 21	18 days 15 - 25
Annual days with:							
Annual days with total precipitation > 1inch	2 days 2 - 2	2 days 2 - 3	2 days 2 - 3	3 days 2 - 4	3 days 2 - 4	3 days 2 - 4	4 days 2 - 5
Annual days with total precipitation > 2 inches	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0
Annual days with total precipitation > 3 inches	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0
Annual days that exceed 99th percentile precipitation	4 days 3 - 5	5 days 4 - 6	5 days 4 - 6	5 days 5 - 7	6 days 5 - 7	6 days 5 - 7	7 days 6 - 9
Days with maximum temperature below 32 °F	68 days 64 - 70	54 days 31 - 65	53 days 38 - 64	48 days 25 - 61	44 days 29 - 55	42 days 20 - 54	27 days 11 - 43

N/A = Data Not Available for the selected area

Figure E-5

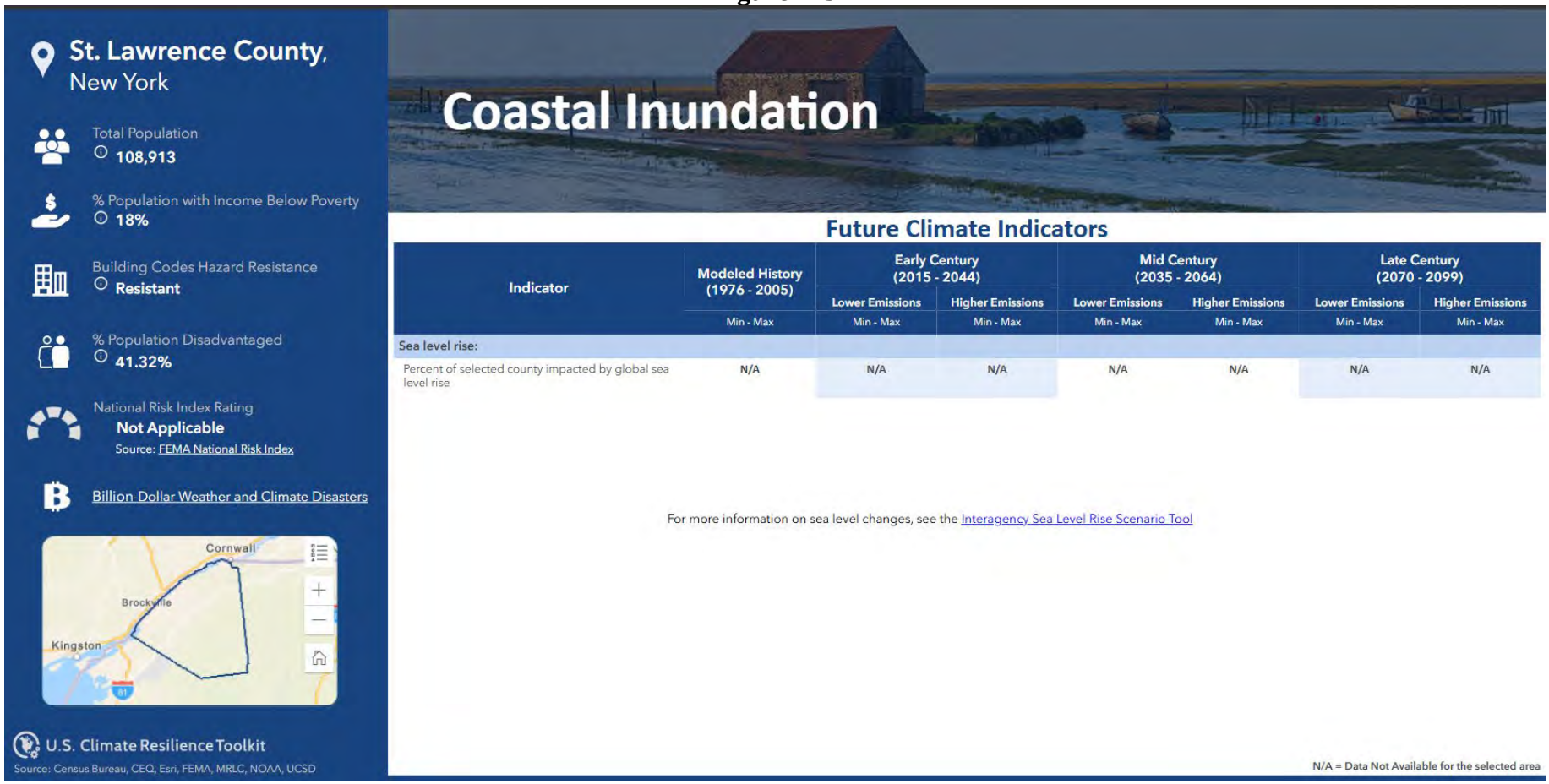

St. Lawrence County, New York
Total Population
108,913
% Population with Income Below Poverty
18%
Building Codes Hazard Resistance
Resistant
% Population Disadvantaged
41.32%
National Risk Index Rating
Not Applicable
Source: FEMA National Risk Index
Billion-Dollar Weather and Climate Disasters
Cornwall
Brockville
Kingston
U.S. Climate Resilience Toolkit
Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD
Coastal Inundation
Future Climate Indicators
Indicator
Modeled History (1976 - 2005)
Early Century (2015 - 2044)
Mid Century (2035 - 2064)
Late Century (2070 - 2099)
Lower Emissions
Higher Emissions
Min - Max
Sea level rise:
Percent of selected county impacted by global sea level rise
N/A
For more information on sea level changes, see the Interagency Sea Level Rise Scenario Tool
N/A = Data Not Available for the selected area

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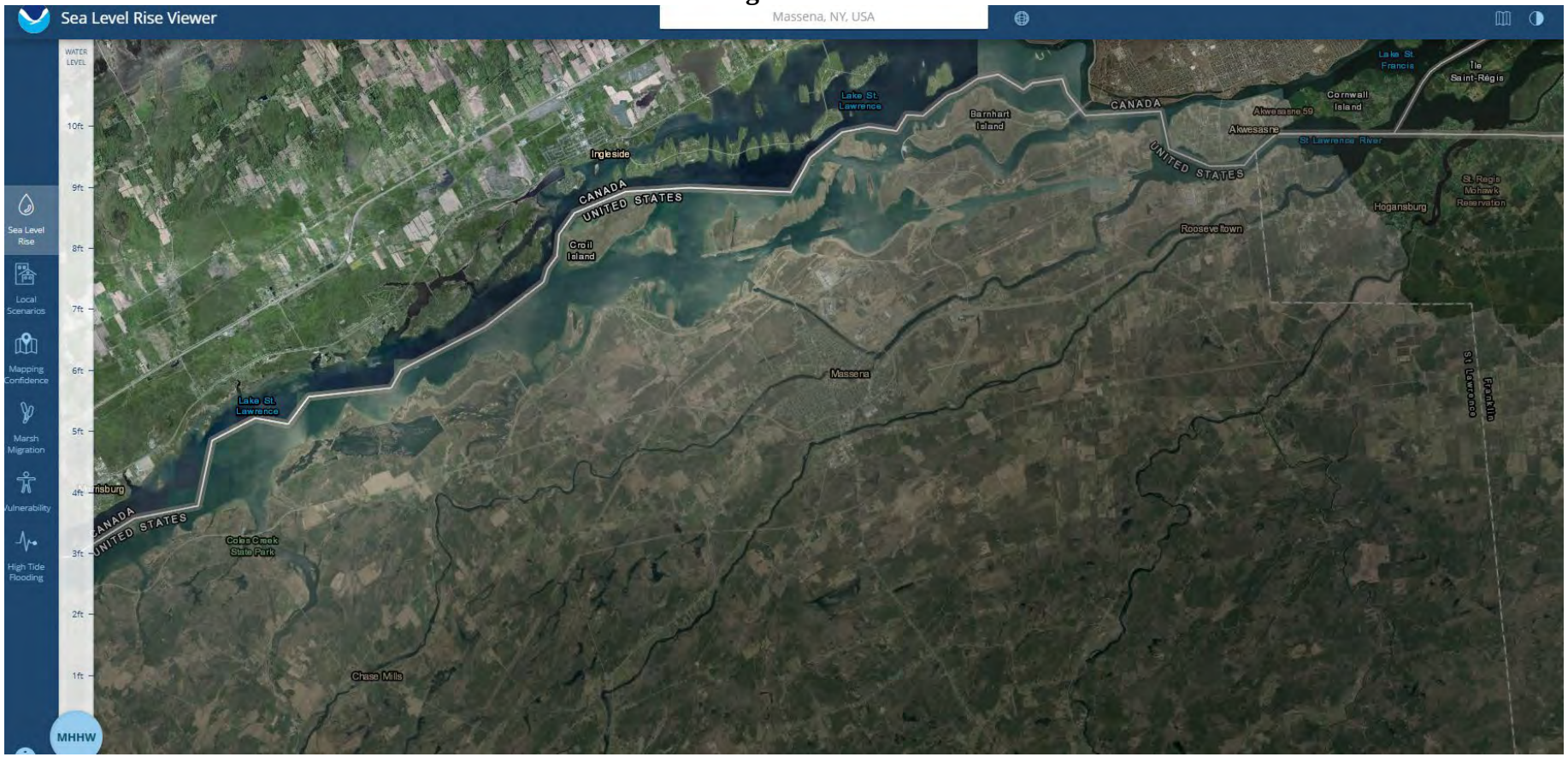
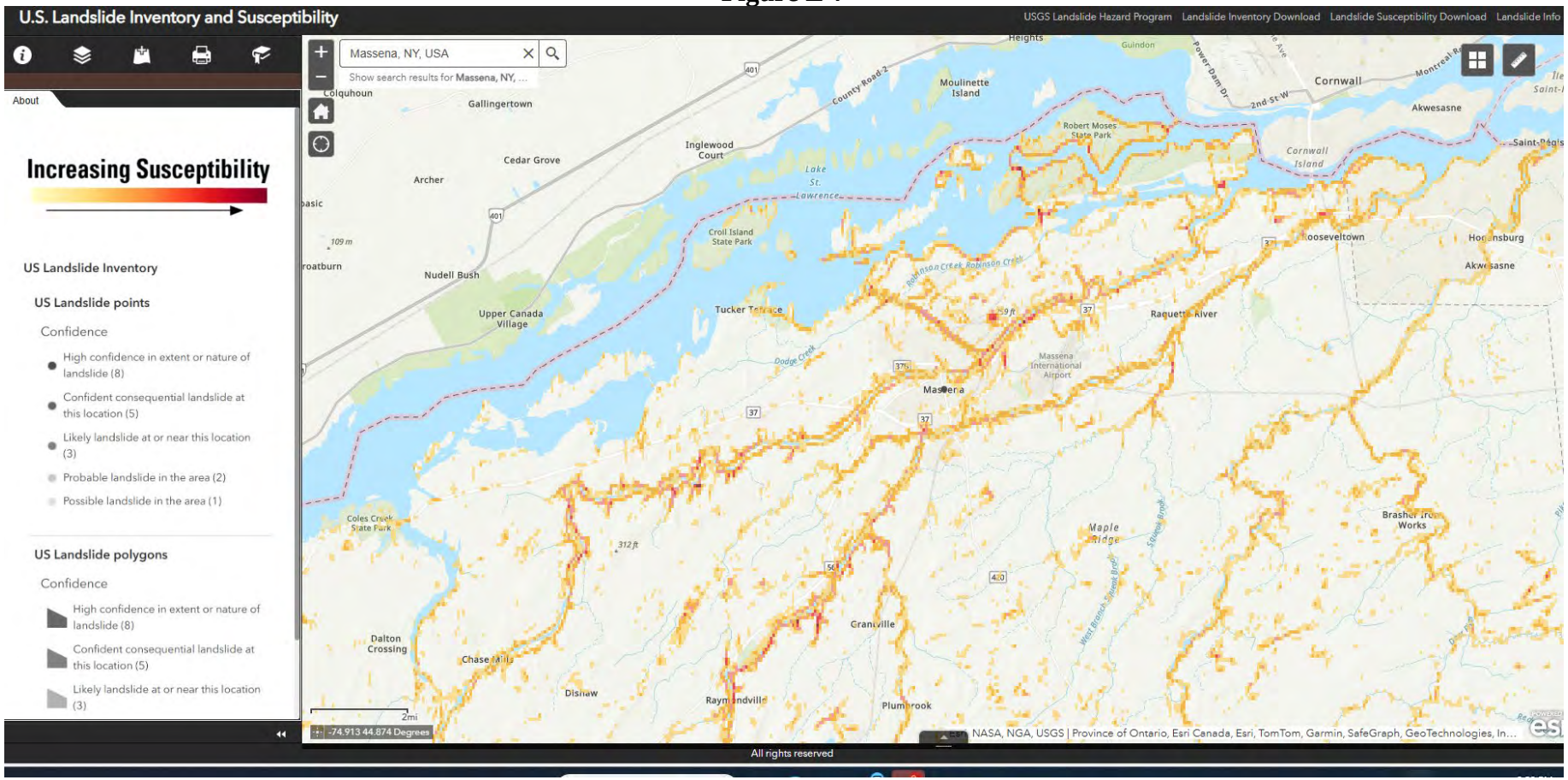
Figure E-6


Sea Level Rise Viewer
Massena, NY, USA
WATER LEVEL
10ft
9ft
8ft
7ft
6ft
5ft
4ft
3ft
2ft
1ft
MHHW
Sea Level Rise
Local Scenarios
Mapping Confidence
Marsh Migration
Vulnerability
High Tide Flooding
Lake St. Lawrence
Barnhart Island
CANADA
Cornwall Island
Akwesasne 59
Akwesasne
St Lawrence River
Lake St. Francis
Île Saint-Régis
UNITED STATES
Ingleside
CANADA
UNITED STATES
Croil Island
St. Regis Mohawk Reservation
Hogansburg
Rooseveltown
Massena
Lake St. Lawrence
St Lawrence
Franklin
Coles Creek State Park
Chase Mills

.

Figure E-7


U.S. Landslide Inventory and Susceptibility
USGS Landslide Hazard Program
Landslide Inventory Download
Landslide Susceptibility Download
Landslide Info
About
Increasing Susceptibility
US Landslide Inventory
US Landslide points
Confidence
High confidence in extent or nature of landslide (8)
Confident consequential landslide at this location (5)
Likely landslide at or near this location (3)
Probable landslide in the area (2)
Possible landslide in the area (1)
US Landslide polygons
Confidence
High confidence in extent or nature of landslide (8)
Confident consequential landslide at this location (5)
Likely landslide at or near this location (3)
Massena, NY, USA
Show search results for Massena, NY, ...
Colquhoun
Gallingertown
Moulinette Island
Cornwall
Akwesasne
Robert Moses State Park
Inglewood Court
Cedar Grove
Archer
Lake St. Lawrence
Cornwall Island
Croil Island State Park
Nudell Bush
Upper Canada Village
Tucker Terrace
Raquette River
Massena International Airport
Massena
Maple Ridge
Coles Creek State Park
Dalton Crossing
Chase Mills
Dishaw
Raymondville
Plumbrook
Granville
-74.913 44.874 Degrees
NASA, NGA, USGS | Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, In...
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