Draft Integrated Interim Response Feasibility Report and Environmental Assessment for Actionable Elements

NEW YORK-NEW JERSEY HARBOR AND TRIBUTARIES COASTAL STORM RISK MANAGEMENT FEASIBILITY STUDY

APPENDIX A-3C HAZARDOUS, TOXIC AND RADIOACTIVE WASTE

July 2025

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1 INTRODUCTION

The United States Army Corps of Engineers (USACE) New York District is preparing an Integrated Interim Response Feasibility Report (FR) and Environmental Assessment (EA) for the East Riser Actionable Element (AE) of the New York & New Jersey Harbor & Tributaries Focus Area Feasibility Study (NYNJHATS).

This Hazardous, Toxic and Radioactive Waste (HTRW) Report constitutes a Sub-Appendix that was prepared to support HTRW discussions in the main EA Appendix, analyze HTRW sites within or near the Study Area, and evaluate other environmental concerns that could impact the proposed project.

1.1 STUDY AREA

The proposed project includes:

1. Approximately 4,150 feet of channel modifications;
2. Removal and replacement of two bridge culverts; and
3. Upgrades for a railroad bridge

The East Riser AE consists of several project features to increase flow conveyance capacity of the East Riser Ditch. The AE Site is identified as an existing channel that extends through a heavily industrial area (inclusive of a small residential area nested within) from the Teterboro Airport at its northernmost extent to a tide gate at Berry's Creek at its southernmost extent. The AE Site also includes the limited areas around three structure improvements (e.g., two bridge culvert replacements and a railroad bridge upgrade). For the purpose of this HTRW Report, the Study Area shall consist of this AE Site.

The surrounding area includes a similarly industrial and residential area with wetlands nearby. Teterboro Airport is to the north and the Meadowlands Sports Complex is to the south.

1.2 REGULATORY FRAMEWORK

This HTRW report was prepared in accordance with the USACE Engineering Regulation (ER) 1165-2-132 and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 42 United States Code (USC) 9601 et seq. HTRW is defined by ER 1165-2-132 as:

"Except for dredged material and sediments beneath navigable waters proposed for dredging… HTRW includes any material listed as a "hazardous substance" under [CERCLA]… Dredged material and sediments beneath navigable waters proposed for dredging qualify as HTRW only if they are within the boundaries of a site designated by the EPA or a state for a response action (either a removal action or a remedial action) under CERCLA, or if they are part of a National Priority List (NPL) site under CERCLA."

This HTRW report was prepared by performing the following:

- Review existing and readily available environmental information, inclusive of Federal and State records of contaminated sites within or near the Study Area and other existing reports;
- Identification of contaminated sites that are collocated within or near the areas of the proposed project; and
- Determine if collocated or nearby contaminated sites may affect or be affected by the project.

1.3 LIMITS OF REPORT

This HTRW Report relies on publicly available HTRW data. No field visits, site investigations, or samplings were performed. The public databases do not always identify the exact location of an HTRW site within a real property parcel, the media (e.g., soil, sediment, groundwater) that is contaminated, nor the specific chemicals responsible for the contamination. The Study Area is within the New York Metropolitan Area which has an extensive history of anthropogenic activity that leads to inherent uncertainty of the subsurface conditions.

Additionally, certain information typical of HTRW Reports (e.g., topography) is not included in this Sub-Appendix due to the information being discussed in the main EA Appendix.

1.4 REGIONAL DESCRIPTION

The regional description, including topography, geology, hydrogeology, and other usually pertinent information, is discussed in the main EA Appendix.

This East Riser AE is located in the Hackensack/Passaic Planning Region. This Planning Region is defined and further discussed in the 2022 Integrated Feasibility Report (IFR) and Tier 1 Environmental Impact Statement (EIS). For HTRW information on this Planning Region as a whole, refer to HTRW Appendix A9 of the 2022 IFR/EIS.

2 HISTORICAL CHARACTERISTICS

2.1 HISTORICAL AERIAL PHOTOGRAPHS

The New Jersey Office of Information Technology (NJOIT), Office of Geographic Information Systems (OGIS) maintains a Geographic Information Systems (GIS) interactive map displaying historical aerial photographs throughout the State from 1930 (NJOIT, 2012). A discussion and comparison of the present-day and 1930s historical aerial photographs of the Study Area is included below.

Present

The present-day Historical Aerial Photograph is included below as Figure 1.

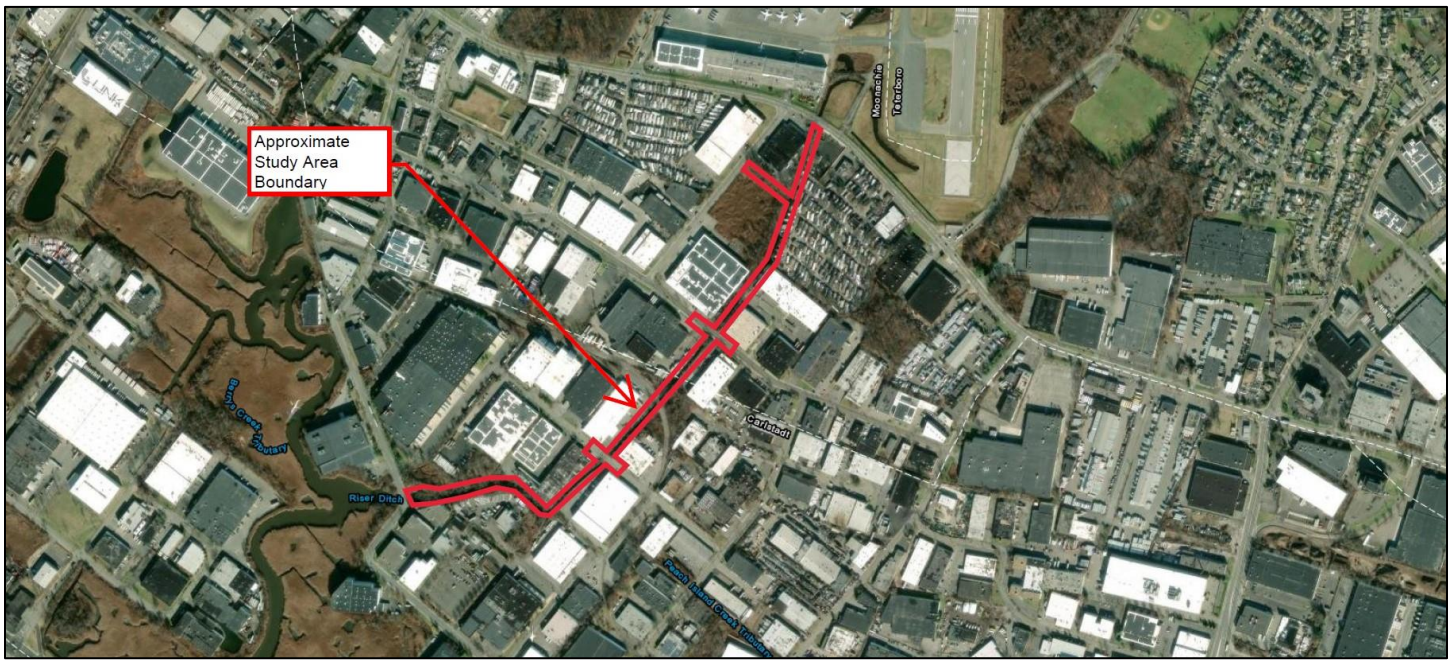

Figure 1: Present-Day Aerial Photograph.

1930

There is substantially less development in the 1930 Historical Aerial Photograph. None of the structures adjacent to the Study Area are present. Instead, the areas are vacant wooded land and wetlands, with the exception of the northern tip, which appears to be surrounded by several agricultural plots. The 1930 Historical Aerial Photograph is included below as Figure 2.

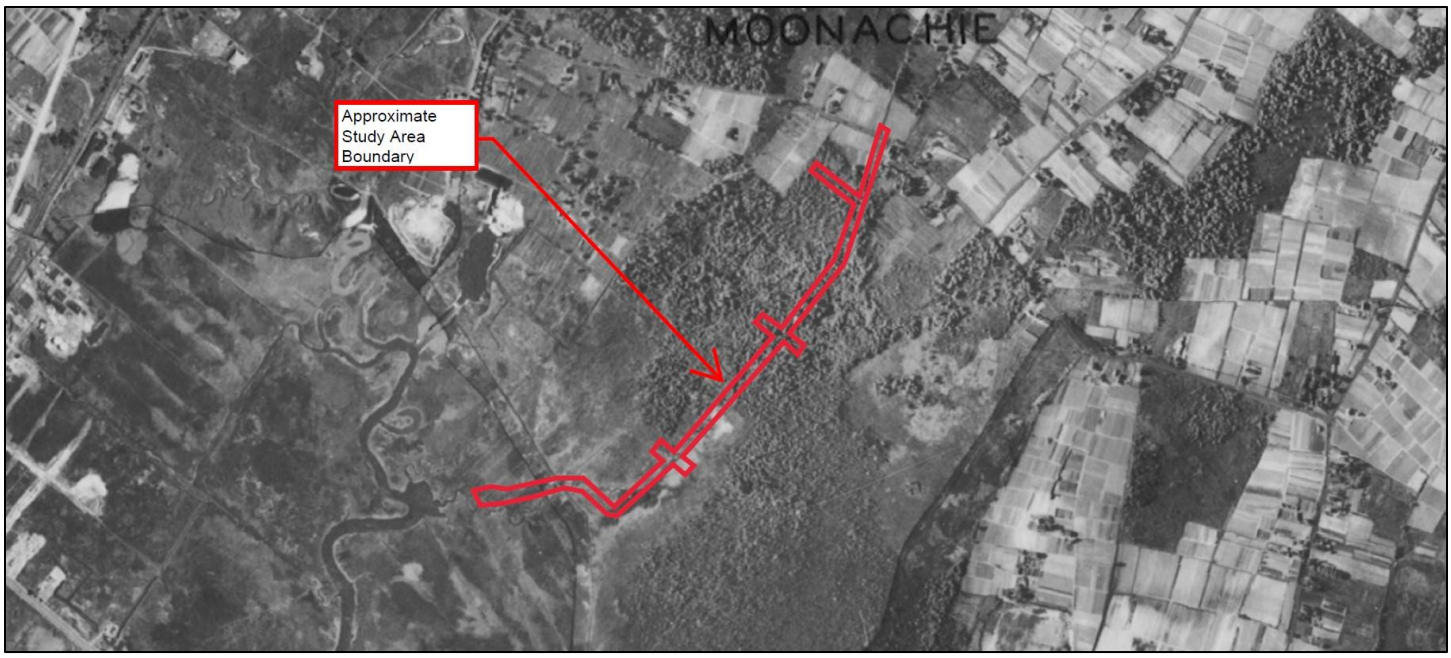

Figure 2: 1930s Historical Aerial Photograph.

3 REVIEW OF ENVIRONMENTAL DATABASES

Environmental databases pertaining to HTRW contamination are maintained online by the United State Environmental Protection Agency (USEPA) and the New Jersey Department of Environmental Protection (NJDEP). Based on a review of the readily available USEPA and NJDEP databases, several listings were identified near or within the Study Area.

3.1 FEDERAL RECORDS

USEPA maintains various environmental databases and interactive mapping tools. The following USEPA tools were utilized for preparing this report:

- Cleanups in My Community (CIMC), located at: https://map22.epa.gov/cimc
- EnviroAtlas, located at: https://enviroatlas.epa.gov/enviroatlas/interactivemap
- Resource Conservation and Recovery Act Information (RCRAInfo) Search, located at: https://enviro.epa.gov/envirofacts/rcrainfo/search

3.1.1 Superfund

CERCLA was established by Congress in 1980, giving USEPA the funds and authority to remediate contaminated sites where there is no identifiable responsible party. The purpose of CERCLA, also referred to as Superfund, is to protect human health and the environment, identify responsible parties to pay for remediation, involve communities in the process, and return contaminated sites to productive uses (USEPA, 2024).

The most contaminated sites under the Superfund Program are those listed on the National Priority List (NPL). The NPL includes over 1,200 sites that represent a significant risk to human health and the environment. There are three reported NPL sites within a one-mile radius of the Study Area, with one NPL site directly adjacent.

For a site to be removed from the NPL, USEPA follows criteria set in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP); however, the sites remain on the Delisted NPL database. There are no reported Delisted NPL sites within a one-mile radius of the Study Area.

For sites investigated by the USEPA that are not elevated to the NPL, their information and data are still compiled on the Superfund Enterprise Management System (SEMS) to ensure adequate tracking of hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of the Superfund Program. There are two SEMS site identified within a one-mile radius of the Study Area.

A depiction of regional Superfund database listings in relation to the Study Area is included below as Figure 3.

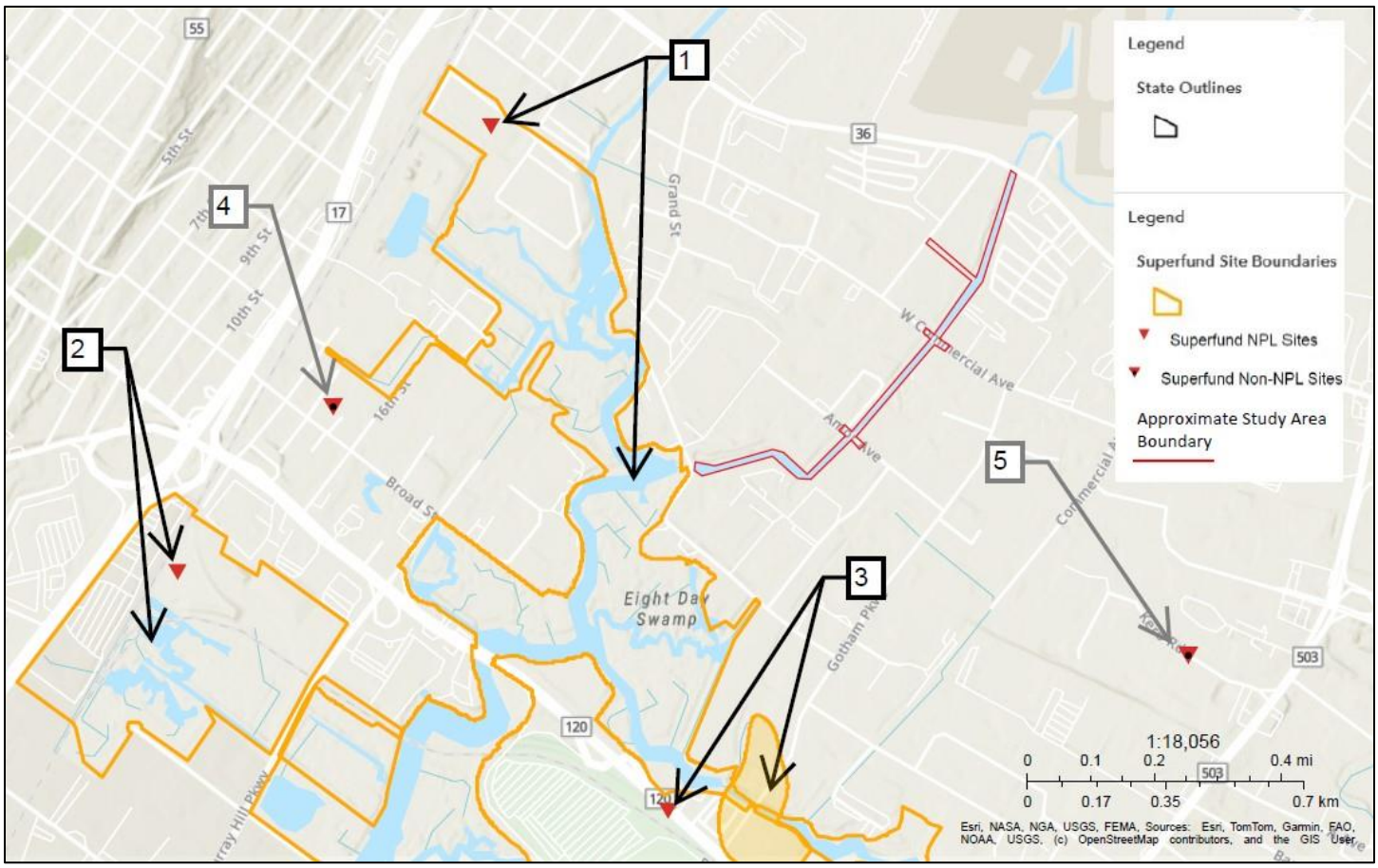

Figure 3: USEPA CIMC Superfund Listings.

Supplemental detail pertaining to the Superfund listings is included below as Table 2.

Table 1: Superfund Listings

Key	Site Name	Site Number	Category	Distance
1	Ventron/Velsicol	NJD980529879	NPL	Adjacent
2	Universal Oil Products (Chemical Division)	NJD002005106	NPL	0.5 miles
3	Scientific Chemical Processing	NJD070565403	NPL	0.4 miles
4	Hartin Paint & Filler Corp	NJD001337575	SEMS	0.5 miles
5	Land Air Express	NJN000206580	SEMS	0.6 miles

Based on proximity to the Study Area, only the Ventron/Velsicol Site will be discussed in this HTRW Report due to its potential to affect the Study Area. All other Superfund sites are assumed to be at a sufficient distance such that they will not negatively impact the Study Area.

Ventron/Velsicol Site (ID# NJD980529879)

The following is an excerpt from the USEPA Superfund website for the Ventron/Velsicol Site:

"The Ventron/Velsicol site is located in the boroughs of Wood-Ridge and Carlstadt, New Jersey. A mercury processing plant operated at the site from 1929 until 1974. Process waste, containing mercury and other contaminants was disposed of on the 40-acre property and to Berry's Creek. Soils, groundwater, surface water and sediments are contaminated. Off-site sediments, surface water and biota are also contaminated.

The site also includes the Berry's Creek Study Area, which comprises Berry's Creek and its surrounding wetlands and waterways. Berry's Creek is an approximately 6.5-mile tributary of the Hackensack River. The creek travels through the boroughs of Carlstadt, East Rutherford, Lyndhurst, Moonachie, Rutherford, Teterboro, and Wood-

Ridge. The creek originates near Teterboro Airport, meanders through reed marshes, and then discharges into the Hackensack River. Berry's Creek Study Area has also been impacted by two other federal Superfund sites (Universal Oil Products and Scientific Chemical Processing) as well as several hazardous waste sites managed by New Jersey. Mercury, methyl mercury, and PCBs are the primary contaminants and have been found at elevated levels throughout the surface water, sediment and biota in the area.

Prior to 1927, most of the site was marshland. From 1927 to 1974, various parties operated a mercury processing plant on part of the site. In 1929, F.W. Berk and Company, Inc. (Berk) began operating a processing plant and manufacturing mercury products. Berk continued to operate the plant until 1960, when the corporation dissolved. Wood Ridge Chemical Corporation (WRCC), a wholly owned subsidiary of the Velsicol Chemical Corporation (Velsicol), acquired the plant and the property. The main operations of the mercury processing plant included the manufacture of red oxide of mercury, yellow oxide of mercury, phenyl mercuric acetate and other organic and inorganic mercury compounds. The plant also reclaimed mercury from both in-house and customer waste products (e.g., amalgams, batteries, thermometers, impure mercury).

Velsicol continued to operate the plant until 1968, when the Ventron Corporation (Ventron), a predecessor to Morton, purchased WRCC and the 7-acre parcel on which the plant was located from Velsicol. Velsicol retained ownership of the rest of the site property until transferring ownership to NWI Land Management, Inc., in 1986. Ventron operated the plant until its closure in 1974. In 1974, the parcel of land where the plant was located was sold to Robert and Rita Wolf (Wolf). Wolf demolished the plant in 1974 and, in 1975, subdivided the land and transferred title of the western parcel to U.S. Life Insurance Company. Two warehouses were built, one on each parcel.

The warehouse on the western part of the site (the U.S. Life [Jerbil] Warehouse) was built first, after the upper layer of contaminated soil was removed and disposed of on the eastern portion of the site. Construction of the Wolf Warehouse on the eastern part of the site was meant to contain mercury-contaminated soils under the foundation and/or the asphalt pavement surrounding the building. However, no post-construction documentation of this containment structure is available.

The 19-acre part of the site between the developed area and Berry's Creek (i.e., the undeveloped area) was used as a dumping area for various materials, including demolition material and domestic solid waste, after 1960. Beginning in the 1970s, the New Jersey Department of Environmental Protection (NJDEP) oversaw various investigations of soil, groundwater, surface water, sediment and air quality at the site. After immediate actions to protect human health and the environment, and additional investigations, EPA placed the site on the Superfund program's National Priorities List in September 1984" (USEPA, 2025).

Additional information about the Veltron/Velsico Site can be found at the following link:
https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0200674

3.1.2 RCRAInfo

Hazardous waste information is contained in the RCRAInfo database, a national program management and inventory system about hazardous waste handlers. The RCRAInfo database includes information on generator facility handler type, including whether a facility is a Large Quantity Generator (LQG), Small Quantity Generator (SQG), or Very Small Quantity Generator (VSQG). Descriptions of each are included below:

- LQG: generates more than 1,000 kilograms (kg) of hazardous waste or 1 kg of acutely hazardous waste per month;
- SQG: generates between 100 kg and 1,000 kg of hazardous waste per month; and
- VSQG: generates less than 100 kg of hazardous waste or less than 1 kg of acutely hazardous waste per month.

There are various listings on the RCRAInfo database, with many not relevant to the project. For the purpose of this report, only RCRAInfo listings within the immediate vicinity of the Study Area (i.e., generally a 1/16-mile radius) are identified below.

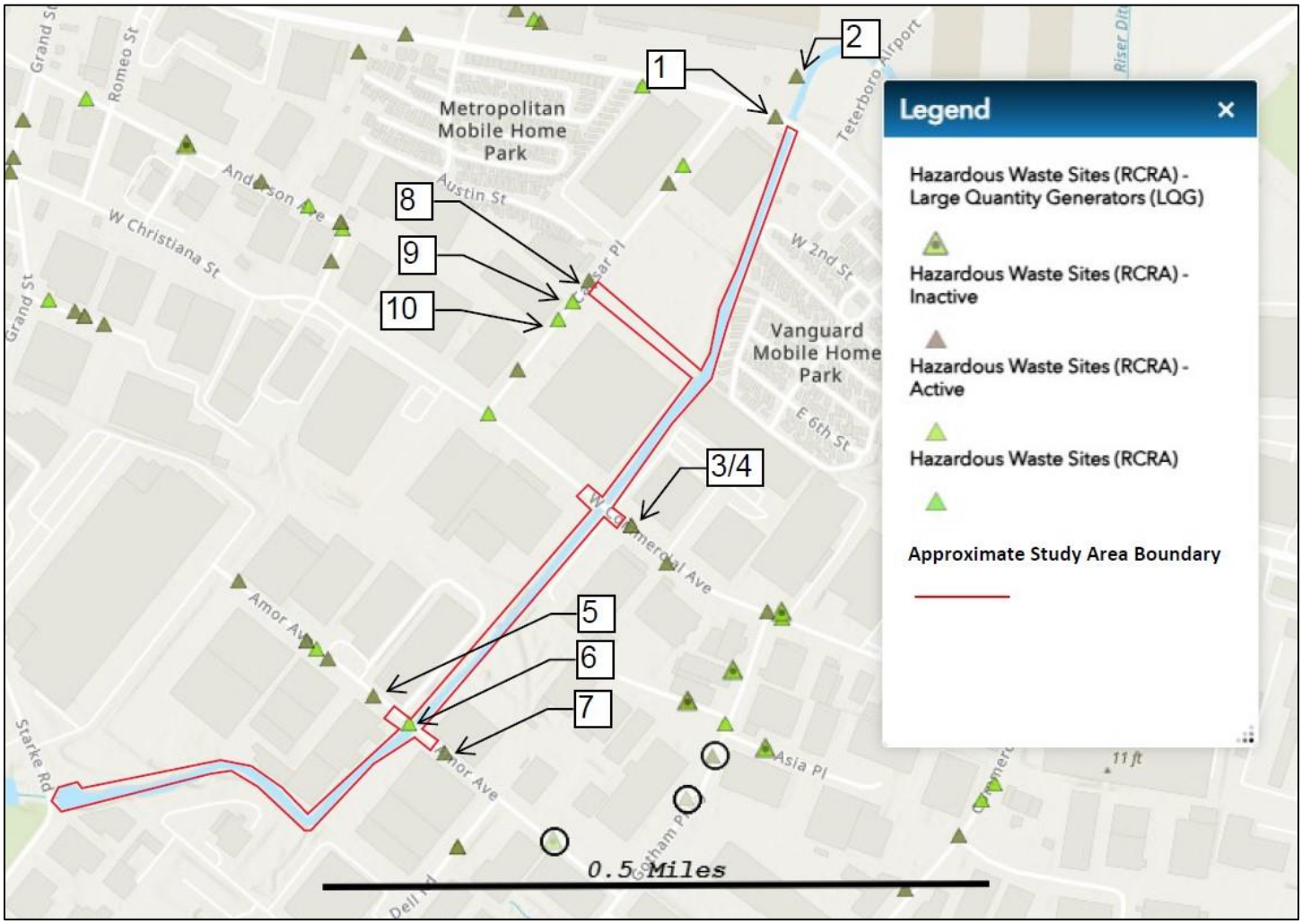

Figure 4: USEPA EnviroAtlas RCRA Listings.

Supplemental detail pertaining to the RCRA listings is included below as Table 2.

Table 2: RCRA Listings

Key	Site Name	Site Number	Status	Handler	Amount
1	Krischer Metal Products	NJD001338987	Inactive	Not Listed	Not Listed
2	Executive Jet @ Teterboro Airport	NJ0000136523	Inactive	Not Listed	Not Listed
3	Pilot Woodworking Co Inc	NJD070565593	Inactive	Not Listed	Not Listed
4	Midway Industrial Terminal	NJD981559958	Inactive	Not Listed	Not Listed
5	Atlantic Plywood	NJR000061960	Inactive	Not Listed	Not Listed
6	Amor Realty	NJR000022079	Active	Not Listed	Not Listed
7	Industrial Building @ 50 Amor Avenue	NJD082994260	Inactive	Not Listed	Not Listed
8	Newsworld Communications Inc	NJD986577807	Inactive	Not Listed	Not Listed
9	LPS Industries LLC.	NJD064329436	Active	SQG	175 tons
10	WNBC Moonachie Garage Facility	NJR000074716	Active	VSQG	Not Listed

Based on site characteristics (e.g., active status or known handler type) only key numbers 6, 9, and 10 will be discussed in this HTRW Report. All other nearby RCRA listings had an unlisted handler type, indicating they were below the thresholds to qualify as a VSQG and were unlikely to affect the Study Area.

Key 6: The Amor Realty Site (ID# NJR000022079) is registered as an active facility but was not associated with a RCRA handler type indicating it was below the thresholds of VSQG. There was minimal other information listed associated with this Site.

Key 9: The LPS Industries LLC Site (ID# NJD064329436) is registered as an active RCRA SQG indicating that the facility generates between 100 kg and 1,000 kg of hazardous waste per month. Available information for the facility indicated that 175 tons of hazardous waste was generated between 2001 and 2013; of the 175 tons, approximately 30% was shipped and 70% was managed. The waste types listed for this Site include ignitable waste (D001); barium (D005); chromium (D007); spent nonhalogenated solvents (F003/F005); and miscellaneous washes and sludges (K086). The Site is associated with several North American Industry Classification System (NAICS) Codes related to furniture manufacturing, bag manufacturing, printing, and metal fabricating.

Key 10: The WNBC Moonachie Garage Facility Site (ID# NJR000074716) is registered as an active RCRA VSQG indicating that the facility generates between 100 kg and 1,000 kg of hazardous waste per month. There was minimal other information listed associated with this Site.

There were no RCRA LQGs identified within the Study Aree or within a ¼-mile radius. Additionally, no RCRA Transfer, Storage and Disposal Facilities (TSDF) were identified in the Study Area or within ½-mile radius.

3.2 STATE RECORDS

NJDEP maintains a NJ-GeoWeb tool which compiles various environmental database listings and displays them on an interactive map. The tool displays several layers; however, upon review of the available listings the most relevant layers based on geographical proximity and applicability to the Study Area were: known contaminated sites (KCS), preferred ID (PI) sites, underground storage tanks (USTs), deed notice areas, groundwater contamination areas, and historical fill areas. Other database layers were reviewed as part of this report, but further discussion is not included due to either a lack of relevance or subject listings not being sufficiently close to the Study Area.

The notable database layers can be broken down into point listings (known contaminated sites, preferred ID sites, and USTs) and polygon listings (deed notice areas, groundwater contamination areas, historical fill areas). For the purpose of this report, only NJ-GeoWeb listings within the immediate vicinity of the Study Area (i.e., generally a 1/16-mile radius) are identified.

Depictions of the NJ-GeoWeb point listings and polygon listings in relation to the Study Area are included below as Figure 5 and Figure 6, respectively.

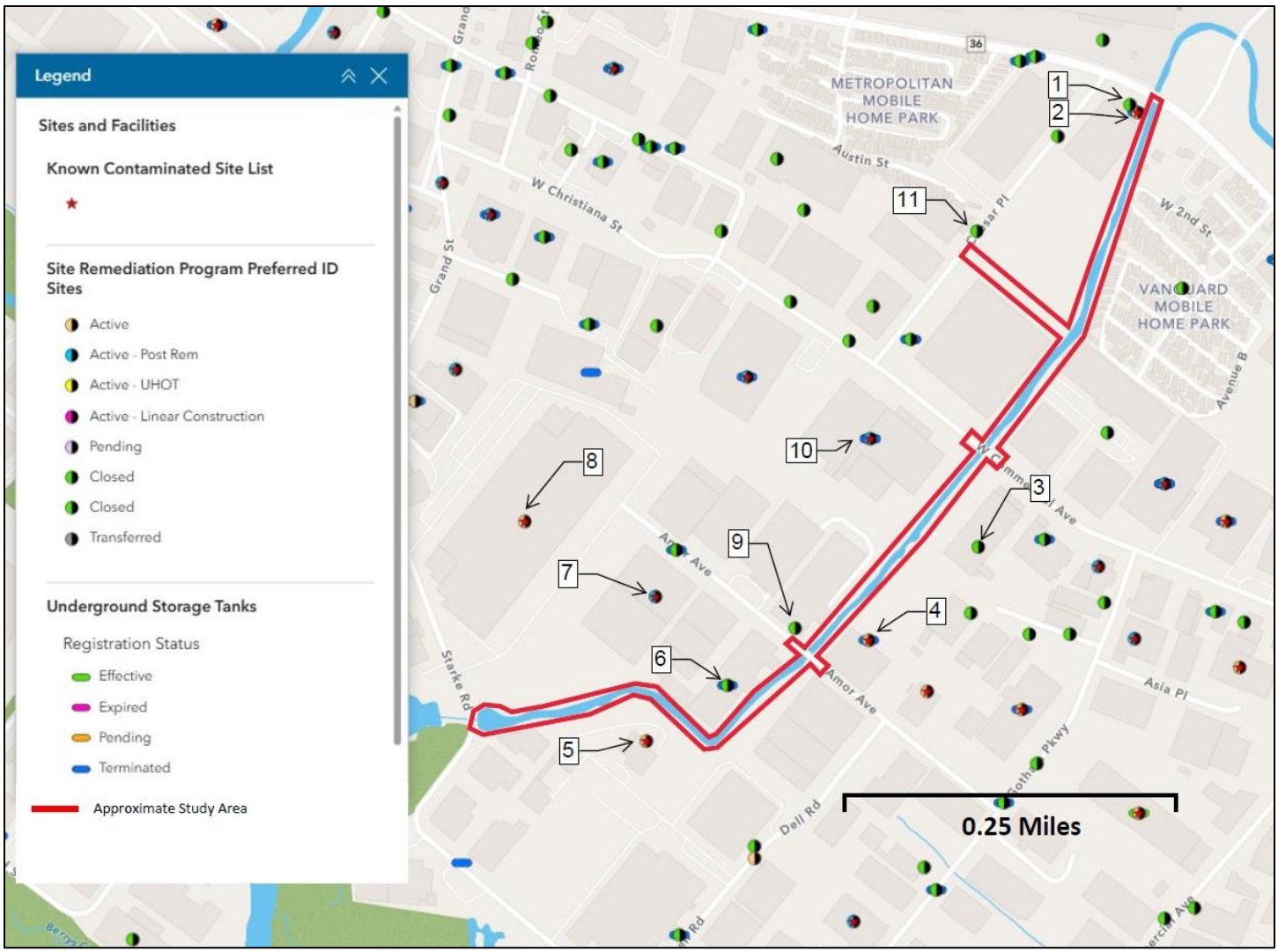

Figure 5: NJ-GeoWeb Point Listings.

Supplemental detail pertaining to the NJDEP NJ-GeoWeb listings is included below as Table 3.

Table 3: NJ-GeoWeb Point Listings.

Key	Site Name	ID#	Layer	Status
1	Krischer Metal Products	G000001019	PI	Closed
2	Caesar Palace Pump Station	019870	KCS/PI/UST	Active
3	Compo Industries Of Nj	G000003576	PI	Closed
4	S & J Manufacturing Corp	005538	KCS/PI/UST	Active
5	650-662 Dell	933991	KCS/PI	Active
6	Design Display Group Inc	018661	PI/UST	Closed
7	Pictorial Offset Corp	705250	KCS/PI	Active
8	Industrial Building @ 350 Starke Road	499089	KCS/PI	Active
9	Morris Park Avenue Incorporation	G000026213	PI	Closed
10	President Container Inc	013804	KCS/PI/UST	Active
11	Newsworld Communications Incorporated	G000006911	PI	Closed

Based on site characteristics (e.g., active status) only key numbers 2, 4, 5, 7, and 9 will be discussed in this HTRW Report. All other nearby NJDEP NJ-GeoWeb listings were listed as closed indicating contamination was addressed to the standards of NJDEP and was unlikely to affect the Study Area.

Key 2: This site had a documented spill of 1- to 250-gallons of gasoline from a UST in 1993. The soil contamination was noted as removed but the cleanup in progress.

Key 4: In 2020, remedial investigation borings were advanced to evaluate several areas of concern including: Area of Concern (AOC)-4 Outdoor Hazardous Waste Drum Storage Area; AOC-5 Outdoor Plastisol Drum Storage Area; AOC-11 Storm Sewer Collection System; and AOC-26 Petroleum Discharge Area. Excavation and off-site disposal of historic fill was conducted over certain parts of the site. Based on review of documents, it was unclear if additional remediation has been conducted since 2020.

Key 5: A soil sample near a loading dock for the 662 Dell Road building (Block 123, Lot 8) contained concentrations of various semivolatile organic compounds (SVOCs), metals, extractable petroleum hydrocarbons (EPH) and pesticides exceeding the soil remediation standards. An Indoor Air Building Survey/Sampling Form that was completed for the 650 Dell Road Building during a March 2021 sampling event identified several potential background sources for benzene and ethylbenzene, including a motor oil aboveground storage tank (AST), a diesel AST, a waste oil AST, several 55-gallon drums containing petroleum waste and various oily rags. A remedial investigation was planned as of 2024.

Key 7: A 2016 Preliminary Assessment was conducted for various AOCs mainly associated with storage tanks, staging areas, discharges, historic fill, and electrical equipment. The historic fill AOC was the only one warranting institutional and engineering controls based on assessments. All others were found to have minimal evidence of discharge and concern. Soil and groundwater samples were conducted around a UST found no evidence of discharge but did find elevated PAHs and metals consistent with historic fill in the area.

Key 8: Available documents for this listing were related to discharge notifications.

Key 9: Available documents for this listing were related to institutional controls due to groundwater contaminants associated with historic fill.

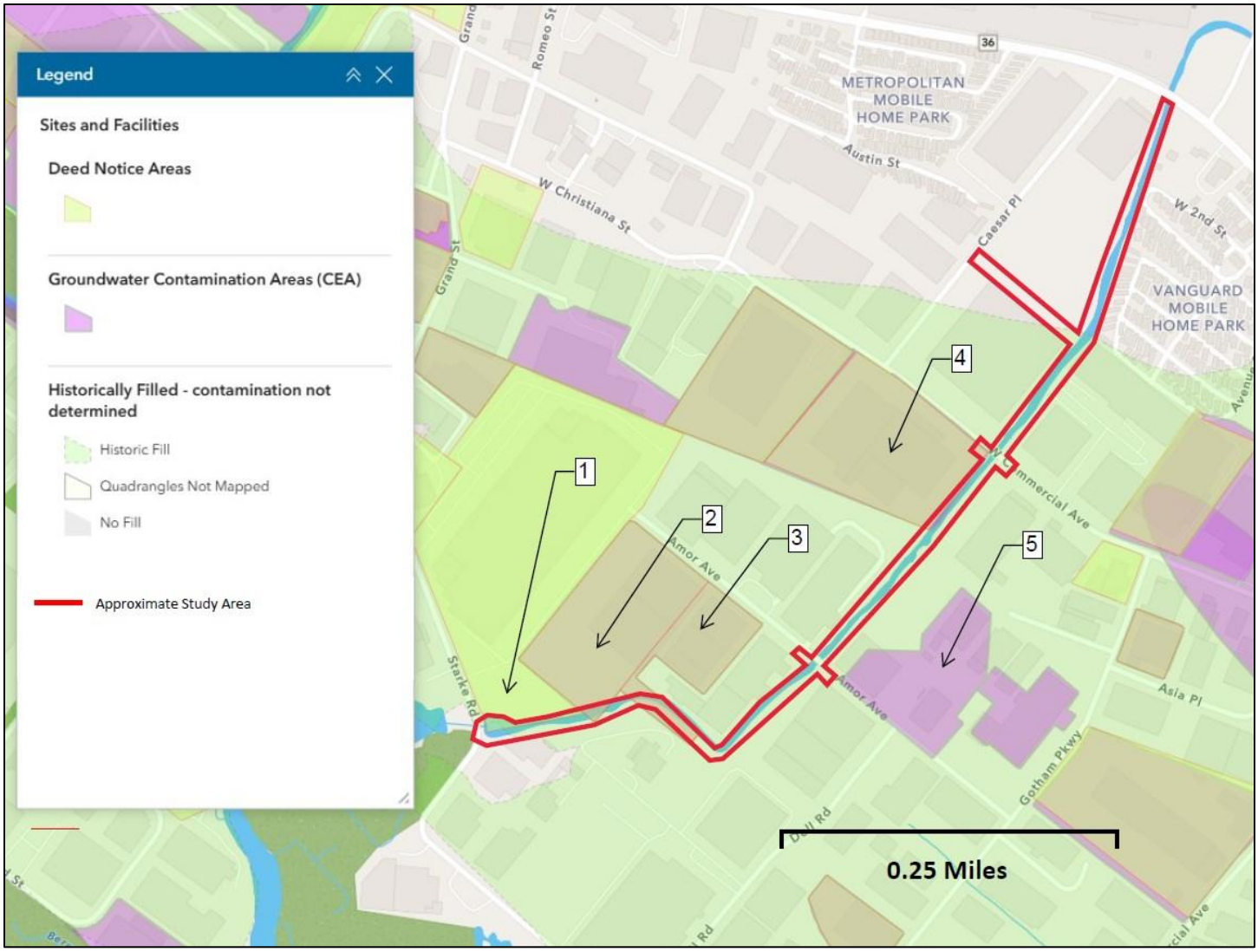

Figure 6: NJ-GeoWeb Polygon Listings.

Much of the Study Area exists in areas of historic fill with various institutional and/or engineering controls for contamination on the adjacent or nearby areas. Deed notice and groundwater exception areas adjacent to the Study Area are discussed below and called out above in the above Figure 6.

Key 1 (Deed Notice): The Morris Park Avenue Corp SLF (ID# 499089) has an approved landfill gas management system to control methane. The site is a former closed sanitary landfill facility (ID# 0205B). Metals on site include arsenic, cadmium, chromium, lead, and zinc.

Key 2 (Deed Notice/Groundwater Contamination): This parcel is related to the Pictorial Offset Corp Site which is discussed above. The institutional controls are to address on-site historic fill.

Key 3 (Deed Notice/Groundwater Contamination): This parcel is related to the Pictorial Offset Corp Site which is discussed above. The institutional controls are to address on-site historic fill, with arsenic specifically mentioned.

Key 4 (Deed Notice/Groundwater Contamination): This parcel is related to the President Container Inc Site which is discussed above. The Deed Notice info describes an engineering control in the form of a slab, asphalt, and landscape cap of various thicknesses (e.g., slab 0.5-3 ft, asphalt/landscape 6-10 ft). Additionally, benzo[a]anthracene and total petroleum hydrocarbons were listed. The remaining details of the institutional controls are to address on-site historic fill.

Key 5 (Groundwater Contamination): The Elco Solvents Corps Site (ID# G000001197) listed numerous VOCs and SVOCs as the contaminants of concern for a groundwater classification exception area with a restriction depth of 56 ft. Specific contaminants include, but are not limited to, benzene, trichloroethene (TCE), tetrachloroethene (PCE), and vinyl chloride. Minimal other details were provided in the listing.

4 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

4.1 2020 SEDIMENT INVESTIGATION REPORT

In 2020, HDR Engineering, Inc. (HDR) prepared a Sediment Investigation Report for three sites, with one being the East Riser Ditch (ERD) that has the same approximate boundaries as the Study Area of this HTRW Report. The fieldwork informing the Sediment Investigation Report was conducted in accordance with a sampling plan that was commented on by the U.S. Fish and Wildlife Service (USFWS).

Twelve sediment sample locations were conducted for the channel and were based on the following rationale:

ID	Rationale
ER-01	Characterize sediment chemistry below the tide gate. Proximity to Morris Park Avenue Corporation landfill and Pictorial Offset Corp. KCS
ER-02	Sediment deposition at tide gate/culvert road crossing. Adjacent to Starke Road KCS and sites referenced in ER-01 rationale.
ER-03	Proximity to outfalls SWOF-259 and 260 which drain loading dock areas on either side of the ERD.
ER-04	Proximity to outfall SWOF-131 which drains loading dock area on south/east side of the ERD and outfall SWOF-295 which drains from the Pictorial Offset Corp site.
ER-05	Proximity to outfall SWOF-130 which drains loading dock area east of the ERD.
ER-06	Proximity to outfalls SWOF-128 and 129 which drain loading dock on east side of the ERD.
ER-07	Proximity to outfall SWOF-136 which drains loading area on west side of ditch (Elco Solvents Corporation site) and in area of sediment deposition at culvert.
ER-08	Proximity to outfall SWOF-334 which drains President Container Inc. KCS loading dock area west of ditch.
ER-09	In area of sediment deposition at culvert.
ER-10	Proximity to fill/stain area identified in historic aerial photograph review (future site of Caesar Place Park).
ER-11	Proximity of ditch drainage into ERD from Caesar Place.
ER-12	Proximity to former gas station.

Table 4: 2020 Sediment Investigation Report Rationale.

Sediment sampling in East Riser employed multiple methodologies over the course of several mobilizations for sample collection including: boat mounted vibracore; handheld, battery-operated vibracore; manual advancement of a 3-inch vibracore tube; and a 2-inch macrocore sampler deployed from a boat.

The contaminants of concern for the sampling were mercury, methyl mercury, and PCBs. Two depths were targeted for sampling: the dredge zone and the minimum proposed channel bottom (top 6 inches of sediment to be remaining after dredging if there was no cap).

Mercury

Mercury concentrations in samples of the material to be dredged and disposed off-site at other locations along the channel ranged from 1.1 milligrams per kilogram (mg/kg) at ERD-09 to 34.4 mg/kg at ERD-04.

Sediment samples from the minimum proposed channel bottom depths had mercury concentrations ranging from 11.5 mg/kg at ERD-02, the furthest downstream location within the ERD, to 0.041 mg/kg at ERD-12, the furthest upstream location. Except for ERD-02, the other ERD locations exhibited a substantial decrease in mercury concentrations with depth ranging from the aforementioned 0.041 mg/kg to a maximum of 2.9 mg/kg at locations ERD-08 and ERD-11. At the location with the highest surficial concentration, ERD-04 at 34.4 mg/kg, the mercury concentration is reduced to 1.2 mg/kg at the minimum proposed channel bottom depth. The NJDEP Effects Range-Median (ER-M) for saline waters for mercury is 0.71 mg/kg.

Methyl Mercury

Methyl mercury concentrations at the minimum proposed channel bottom depths ranged from non-detect

(detection limit of 0.019 nanograms per gram [ng/g]) to 4.86 ng/g at ERD-01 (outside of Study Area). Higher concentrations were detected in material to be dredged and disposed off-site. As a frame of reference, the median methyl mercury surface sediment concentration in upper Berry's Creek, where ERD is located, is 23 ng/g (USEPA, 2018). No NJDEP criterion for methyl mercury is available for comparison to the analytical data.

PCBs

Total PCB concentrations from samples of materials to be dredged ranged from 0.166 mg/kg at ERD-03 to 4.4 mg/kg at ERD-04. The NJDEP ER-M for saline waters for total PCBs is 0.18 mg/kg.

At the request of USFWS, for the minimum proposed channel bottom samples, in lieu of Total PCB Aroclors, PCB congeners were analyzed via Method 1668. To evaluate PCB congeners as opposed to Total PCB Aroclors, the dioxin-like PCB congener results were assessed together with the dioxin and furan results using the "toxic equivalence to 2,3,7,8-TCDD" (TEQ) approach in accordance with the NJDEP Ecological Evaluation guidance. TEQ values were produced for mammals, birds, and fish and were compared to a USFWS threshold value of 21.5 picograms per gram (pg/g) for Fish TEQs while Avian (Bird) TEQs were used for initial screening as they were most conservative value. The Fish TEQ values of all samples directly below the proposed dredging depth in the report were below the USFWS threshold value of 21.5 pg/g. Conversely, the Bird TEQ values of the same samples were all above the Bird TEQ ER-M with the exception of ERD-03, 06, and 12.

Management of Dredged and Excavated Sediment

The Sediment Investigation Report assumes that sediment removed as part of in-channel construction and dredging will be disposed of off-site at a facility licensed to accept the material. The Sediment Investigation Report also noted that NJDEP's Office of Dredging and Sediment Technology (ODST) will be consulted prior to construction to determine if any opportunities exist to beneficially re-use the dredged material at an upland site.

Post Construction Considerations

Channel improvements in ERD will involve removal of sediment along the ERD channel. Dredging will reduce the maximum concentrations of total mercury from 34.4 mg/kg to 2.9 mg/kg in remaining sediment. Methyl mercury concentrations in ERD sediment are about 1/5th of the median concentrations in Berry's Creek. Fish TEQs do not exceed the USFWS recommended 21.5 pg/g in any ERD sample except for the location within Berry's Creek that will be capped by the energy dissipation structure. The underlying clayey-silt layer exposed after dredging will present temporary ecological exposures. Over-excavation of an additional one foot of sediment and replacement with clean fill will result in an improvement in sediment quality compared to existing conditions for the contaminants of concern and will eliminate future ecological exposures.

4.1.1 Evaluations

Location ERD-01 will not be included as it is outside of the Study Area. Below is a summary of sample concentrations within the Study Area, the interval they were sampled from, and any thresholds exceeded. Relevant thresholds include the ER-M identified in the Sediment Investigation Report and the Toxicity Characteristic Leaching Procedure (TCLP) rule of 20 which indicates whether a concentration is theoretically capable of yielding a hazardous waste result (utilized for mercury only).

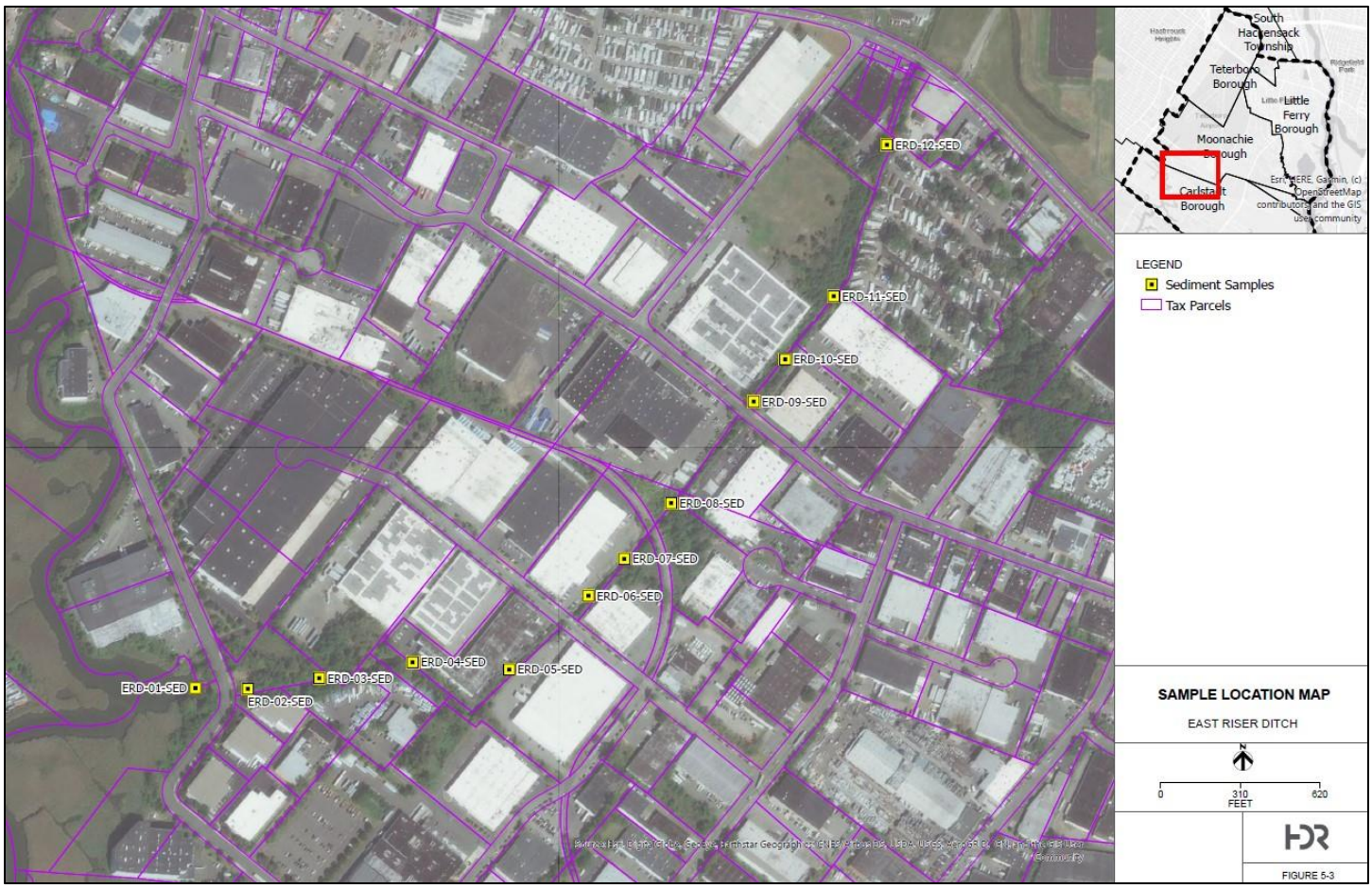

Figure 7: Sediment Investigation Report Sample Locations.

Mercury

Location	Interval (ft)		Result (mg/kg)
ERD-02	0	2.5	**17.1**
	2.5	3	**11.5**
ERD-03	0	2.25	**2.2**
	2.25	2.75	0.076
ERD-04	0	2.25	**29.9 / 34.4 (duplicate)**
	2.25	2.75	**1.2** / 0.9 (duplicate)
ERD-05	0	0.5	**2.3**
ERD-06	0	1.6	**3**
	1.6	2.1	0.098
ERD-07	0	1.75	**7.4**
	1.75	2.25	0.69
ERD-08	0	2.25	**5.4**
	2.25	2.75	**2.9**
ERD-09	0	2	**1.1**
	2	2.5	**2.2**
ERD-10	0	2.25	**5.7**
	2.25	2.75	0.53
ERD-11	0	3.25	**1.8 J**
	1	1.25	**2.5**
	3.25	3.75	**2.9**
ERD-12	0	2.75	**1.5**
	2.75	3.25	0.041

Location	Interval (ft)	Result (mg/kg)
Bold – Exceeding ER-M criteria from report (0.71 mg/kg) Red shade – Exceeding TCLP rule of 20 (4 mg/kg) J – Estimated value		

Table 5: East Riser Sediment Concentrations (Mercury)

Based on total mercury concentrations, shallow sediments in the areas of ERD-02, 04, 07, 08, and 10 have the potential to fail the toxicity characteristic, indicating the potential presence of hazardous waste. Generally, mercury concentrations decreased below the proposed dredging depth in the Sediment Investigation Report, with the exception of ERD 09 and 11, which showed marginal increases.

Methyl Mercury

Location	Interval (ft)		Result (ng/g)
ERD-02	0	2.5	**1.8**
	2.5	3	**4.82**
ERD-03	0	2.25	**8.05**
	2.25	2.75	ND
ERD-04	0	2.25	**6.57 / 7.67 (duplicate)**
	2.25	2.75	**0.423 / 0.235 (duplicate)**
ERD-05	0	0.5	**0.088**
ERD-06	0	1.6	**1.43**
	1.6	2.1	**2.44**
ERD-07	0	1.75	**2.14**
	1.75	2.25	**0.231**
ERD-08	0	2.25	**1.77**
	2.25	2.75	**1.02**
ERD-09	0	2	ND
	2	2.5	ND
ERD-10	0	2.25	**1.88**
	2.25	2.75	**2.3**
ERD-11	0	3.25	**1.44**
	1	1.25	ND
	3.25	3.75	ND
ERD-12	0	2.75	**1.32**
	2.75	3.25	ND
Bold – Exceeding ER-M criteria from report (0.01 ng/g) ND – Non-detect			

Table 6: East Riser Sediment Concentrations (Methyl Mercury)

NJDEP does not issue ER-M values for methyl mercury, which is acknowledged by the Sediment Investigation Report. The Sediment Investigation Report compares the methyl mercury values to a 0.01 ng/g value which was exceeded by any concentration with a detected value.

In the adjacent Berry's Creek, the median methyl mercury value was found to be 23 ng/g, indicating that the methyl mercury concentrations in the Study Area are approximately 1/5th the concentration. In general, methyl mercury concentrations were highest to the south (near Berry's Creek). Additionally, concentrations generally decreased below the proposed dredging depth in the Sediment Investigation Report, with the exception of ERD-02, 06, and 10.

PCBs

Location	Interval (ft)		Result
ERD-02	0	2.5	**0.57 mg/kg Total**
	2.5	3	**62 pg/g Bird TEQ**
ERD-03	0	2.25	0.166 mg/kg Total
	2.25	2.75	1.3 pg/g Bird TEQ
ERD-04	0	2.25	**4.4 / 3.8 mg/kg Total (duplicate)**
	2.25	2.75	**7.6 / 6.0 pg/g Bird TEQ (duplicate)**
ERD-05	0	0.5	**249 pg/g Bird TEQ**
ERD-06	0	1.6	**0.195 mg/kg Total**
	1.6	2.1	1.9 pg/g Bird TEQ
ERD-07	0	1.75	**0.59 J mg/kg Total**
	1.75	2.25	**8.5 pg/g Bird TEQ**
ERD-08	0	2.25	**0.26 mg/kg Total**
	2.25	2.75	**6.6 pg/g Bird TEQ**
ERD-09	0	2	**0.216 mg/kg Total**
ERD-10	0	2.25	**0.72 mg/kg Total**
	2.25	2.75	**8.4 pg/g Bird TEQ**
ERD-11	0	3.25	ND
	1	1.25	**0.338 mg/kg Total**
	3.25	3.75	**24 pg/g Bird TEQ**
ERD-12	0	2.75	**0.29 mg/kg Total**
	2.75	3.25	1.5 pg/g Bird TEQ

Bold – Exceeding ER-M criteria from report (0.18 mg/kg Total or 3.6 Bird TEQ)
Red shade – Exceeding NJDEP non-residential soil remediation standard for ingestion-dermal exposure (1.1 mg/kg)
ND – Non-detect
J – Estimated value

Table 7: East Riser Sediment Concentrations (PCBs)

The Sediment Investigation Report analyzed the material to be dredged for total PCBs and the material below the proposed dredging depth for toxic equivalence to 2,3,7,8-TCDD (i.e., TEQ). Many samples exceeded the ER-M values with one sample, ERD-04, exceeding the NJDEP non-residential soil remediation standard for ingestion-dermal exposure. It is difficult to ascertain whether the PCB concentrations decreased with depth as total PCB concentrations were not available for all samples.

Other Analytes

Select samples were analyzed for other analytes although discussion of these analytical results was not included in the Sediment Investigation Report. Only the chemicals of concern were discussed (e.g., mercury, methyl mercury, and PCBs). Sample summary tables of additional data can be found in the Sediment Investigation Report.

5 FINDINGS AND CONCLUSIONS

The Study Area exists in an urbanized portion of the New York Metropolitan Area that has been subject to a history of anthropogenic activity and other uses with the potential to affect the subsurface or otherwise impact the project. Through the evaluations contained within this HTRW Report, several relevant collocated environmental listings or other environmental concerns have been documented, including:

- Documented sediment contamination within the Study Area. Available reports, including the 2020 Sediment Investigation Report prepared by HDR, indicated the presence of elevated levels of mercury, methyl mercury, PCBs, and other analytes within sediments proposed to be dredged or excavated as part of project implementation. Based on further evaluation of the data, certain sediments had total mercury concentrations exceeding the TCLP rule of 20 indicating the potential to fail the toxicity characteristic for hazardous waste.
- The adjacent Ventron/Velsicol NPL Site (ID# NJD980529879) and impacted Berry's Creek. This NPL Site was historically a mercury processing plant with mercury, methyl mercury, and PCBs as the primary contaminants. They have been found at elevated levels throughout the surface water, sediment and biota in the area.
- NPL Sites within a one-mile radius of the Study Area with the potential to impact the adjacent Berry's Creek including:
    - Universal Oil Products (Chemical Division) (ID# NJD002005106)
    - Scientific Chemical Processing (ID# NJD070565403)
- Various RCRA listings, most notably:
    - Amor Realty Site (ID# NJR000022079)
    - LPS Industries LLC Site (ID# NJD064329436)
    - WNBC Moonachie Garage Facility Site (ID# NJR000074716)
- NJDEP NJ-GeoWeb listings, most notably:
    - Caesar Palace Pump Station (ID# 019870)
    - S & J Manufacturing Corp (ID# 005538)
    - 650-662 Dell (ID# 933991)
    - Pictorial Offset Corp (ID# 705250)
    - Industrial Building @ 350 Starke Road (ID# 499089)
    - Morris Park Avenue Incorporation (ID# G000026213)
    - President Container Inc (ID# 013804)
    - Elco Solvents Corps Site (ID# G000001197)
    - Documented historic fill throughout the Study Area

Environmental listings and concerns are ubiquitous with the New York Metropolitan Area, particularly in areas of historic heavy industrialization. As the proposed project progresses into the Pre-Construction Engineering and Design (PED) a subsurface planning investigation will take place to further characterize the subsurface conditions. This investigation will inform any potential HTRW risks associated with construction and implementation of the proposed project.

Should HTRW be identified during any phase of the project, it is USACE policy to avoid it as practicable. However, if HTRW avoidance is not possible it will be the responsibility of the Non-Federal Sponsor (NFS) to provide a clean site for the project, using 100% non-federal non-project funds, in accordance with ER 1165-2-132.

Implementation of this AE of the NYNJHATS provides not only benefit from a flood risk reduction standpoint, but also a benefit from an HTRW risk reduction standpoint. Project implementation will provide a clean East Riser Ditch with less impacts from historical anthropogenic activity. Additionally, storm damage to a significantly urbanized area, such as the Hackensack/Passaic Planning Region, can cause new releases of petroleum and/or hazardous substances, further spread historical contaminated soils and sediment, increase potential risk of exposure, and extend time and increase costs for addressing HTRW sites. In addition to the many benefits of this AE discussed in other parts of the main EA Appendix, it should be noted that implementation of this AE will

be associated with a distinct reduction in HTRW risk for the area due to a cleaner water body and reduced risk of flooding and its associated negative impacts to HTRW sites.

6 ACRONYMS

AE	Actionable Element
AOC	Area of Concern
AST	Aboveground Storage Tank
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CIMC	Cleanup in My Community
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPH	Extractable Petroleum Hydrocarbons
ER	Engineering Regulation
ERD	East Riser Ditch
FR	Feasibility Report
GIS	Geographical Information System
G	Gram
HDR	HDR Engineering, Inc.
HTRW	Hazardous, Toxic and Radioactive Waste
IFR	Integrated Feasibility Report
KCS	Known Contaminated Site
KG	Kilogram
MG	Milligram
LQG	Large Quantity Generator
NAICS	North American Industry Classification System
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFS	Non-Federal Sponsor
NPL	National Priority List
NJ	New Jersey
NJDEP	New Jersey Department of Environmental Protection
NJOIT	New Jersey Office of Information Technology
NYNJHATS	New York & New Jersey Harbor & Tributaries Focus Area Feasibility Study
ODST	Office of Dredging and Sediment Technology
OGIS	Office of Geographic Information Systems
MG	Milligram
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PED	Pre-Construction Engineering and Design
PI	Preferred ID
PG	Picogram
RCRA	Resource Conservation and Recovery Act
RCRAInfo	Resource Conservation and Recovery Act Information
RSL	Regional Screening Levels
SEMS	Superfund Enterprise Management System
SQG	Small Quantity Generator
SVOC	Semi-volatile Organic Compound
TCE	Trichloroethene
TCLP	Toxicity Characteristic Leaching Procedure
TSDF	Treatment, Storage, and Disposal Facilities
TEQ	Toxic Equivalency
USACE	United States Army Corps of Engineers
USC	United States Codes
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VSQG	Very Small Quantity Generator

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