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-1H HAZARDOUS, TOXIC AND RADIOACTIVE WASTE

July 2025

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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 Oakwood Beach 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. Removal of non-native plants and creation of native vegetative mosaic and tidal channels;
2. Dune restoration;
3. Rip rap placement; and
4. Other ancillary features (e.g., maintained lawn trail, osprey nests, etc.)

The Oakwood Beach AE consists of several ecosystem restoration measures specific to coastal storm risk management. The AE area is collocated within Great Kills Park Gateway National Recreation Area, on the eastern portion of the park, and comprises approximately 39-acres of the approximately 523-acre park. The Study Area is depicted on separate figures within the EA but can be generally described as the eastern portion of Great Kills Park bounded to the north by the Oakwood Beach Wastewater Treatment Plant (WWTP), to the south by the Lower Bay, to the west by Buffalo Street, and to the north by an arbitrary line extending from the Oakwood Beach WWTP to Buffalo Street.

The surrounding area includes the remainder of Great Kills Park to the west and north, Lower Bay to the south, and the Oakwood Beach WWTP and vacant wooded lands/beach to the east. Further landward exists primarily residential land use.

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.

2 REGIONAL DESCRIPTION

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

This Oakwood Beach AE is located in the Lower Bay 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.

2.1 STUDY AREA DESCRIPTION

The Study Area is located on the eastern extent of a parcel identified as Block 5067, Lot 1, of the Staten Island Borough. This parcel owner is identified as New York City (NYC) Department of Parks and Recreation (NYC Planning, 2025) and encompasses the entirety of Great Kills Park, Gateway National Recreational Area. The Study Area is characterized as an urban area consisting of municipal parkland with nearby industrial property, residential development, and Lower Bay.

3 HISTORICAL CHARACTERISTICS

3.1 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs from the NYC Now & Then Geographical Informational System (GIS) tool were reviewed. The following years were reviewed: 1924, 1996, and 2022.

A discussion and comparison of historical aerial photographs in chronological order from present day is included below:

2022
Appears similar to today. The 2022 Historical Aerial Photograph is included below as Figure 1.

Figure 1: 2022 Historical Aerial Photograph.

1996
Appears similar to the previous photograph with slight deviations in the coastline, likely due to natural erosion and coastal impacts. The 1996 Historical Aerial Photograph is included below as Figure 2.

Figure 2: 1996 Historical Aerial Photograph.

1924

Appears significantly different from the previous photographs, likely due to anthropogenic development, particularly on the western portion, and natural erosion and coastal impacts to the shore. Notably, Buffalo Street and the Oakwood Beach WWTP had not yet been constructed. The 1924 Historical Aerial Photograph is included below a Figure 3.

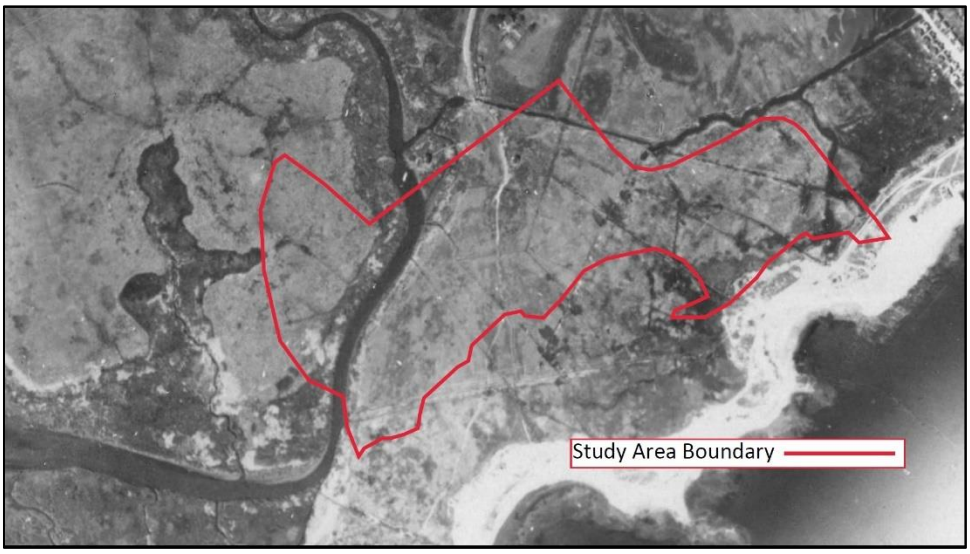

Figure 3: 1924 Historical Aerial Photograph.

4 REVIEW OF ENVIRONMENTAL DATABASES

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

4.1 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

4.1.1 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. 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 NPL or Delisted NPL sites in the Study Area or within one-mile radius.

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 is one SEMS site, Great Kills Park (Gateway National Recreation Area) (ID# NYN000200666), hereafter referred to as GKP 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 4.

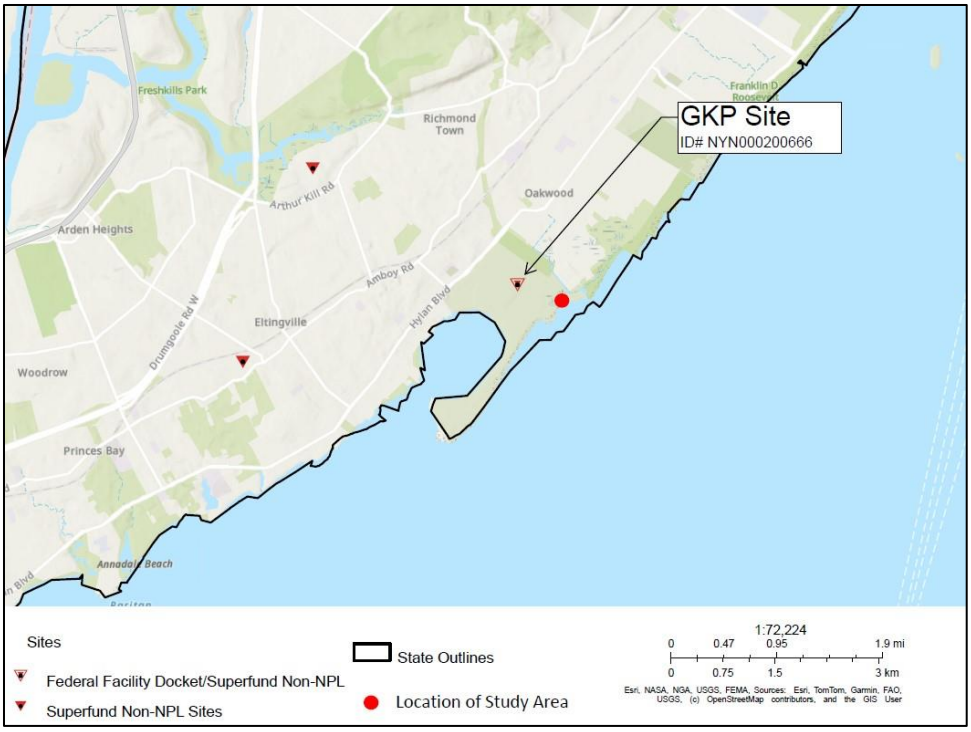

Figure 4: USEPA CIMC Superfund Listings.

GKP Site (ID# NYN000200666)

The GKP Site was part of a 1925 land plan to develop Marine Park (a.k.a. Great Kills Park). The plan involved placement of waste fill to raise the property elevation, fill in the wetlands, and increase the useable land footprint to allow the property to be developed as a city park and shorefront recreation area. Using waste fill for this purpose was common practice at this time. The majority of the waste fill was placed from 1944 to 1948. The GKP site is managed by the National Parks Service (NPS) (NPS, 2024).

In 2005 elevated levels of radioactivity were first discovered by the New York City Police Department, which was developing a baseline radiological map of the City. From 2005 to 2007, NPS, working in conjunction with other entities, found additional areas of elevated radioactivity within the park. The source of radioactivity was subsequently determined to be Radium-226. Between 2007 and 2009, the NPS completed a Preliminary Assessment of the Site and initiated an Interim Response Action in which NPS excavated and removed seven identified locations of radioactive contamination. A time critical removal action (TCRA) was completed by NPS from 2012 to 2015 that included restricting public access through the installation of over 18,000 feet of perimeter fencing and performing other investigations. The results of the TCRA demonstrated that radioactive sources were commingled with other waste fill material and distributed throughout areas of the park where former waste disposal had historically occurred (NPS, 2024).

The GKP Site includes two operable units (OUs), OU1 and OU2. OU1 includes 43 acres on the eastern portion of the Park and an Environmental Investigation Report for the OU was released in 2017. OU2 includes 237 acres in the north and middle of the park with remedial investigation completed in 2022. The GKP Site is both adjacent and overlapping with the Study Area as shown below in Figure 5 (NPS, 2017) (NPS, 2019).

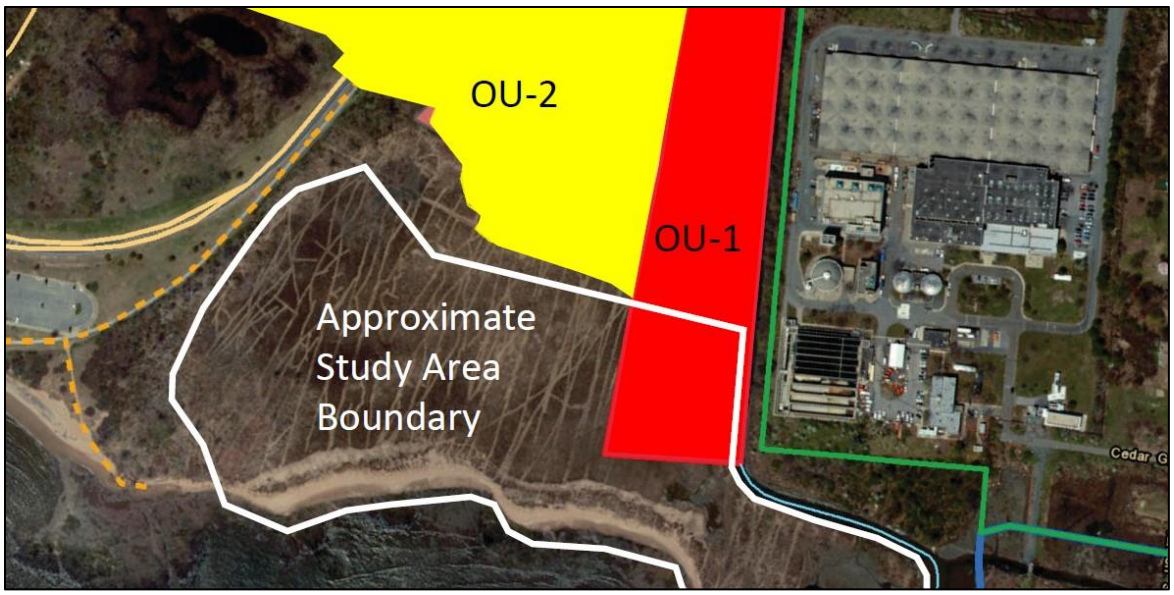

Figure 5: GKP OU Locations.

OU1 was established so that the investigation results could inform construction planning for the South Shore of Staten Island Coastal Storm Risk Management Project. Within OU1, historical operations, including waste disposal and sludge management, have resulted in contaminant sources and impacts to environmental media. Previous investigations and Site historical research identified the primary contaminant sources within OU1 are: 1) waste fill derived from historical waste disposal operations at the GKP Site (e.g., refuse, incinerator residue, and coal ash), 2) radiological artifacts incidentally contained in waste fill, and 3) sewage sludge that was dried in the sludge impoundment area and then used as a soil amendment (artificial topsoil) after the completion of waste disposal operations in OU1.

Based on available figures associated with the GKP Site, it appears that the southeastern extent of waste fill appears to be adjacent to the Study Area boundary (i.e., not within the Study Area). Waste fill is associated with potential comingling of radiological artifacts and distributed radiological contamination that are the sources of radioactive readings. A figure showing waste fill extents in comparison with the approximate Study Area boundary is shown below on Figure 6 and Figure 7.

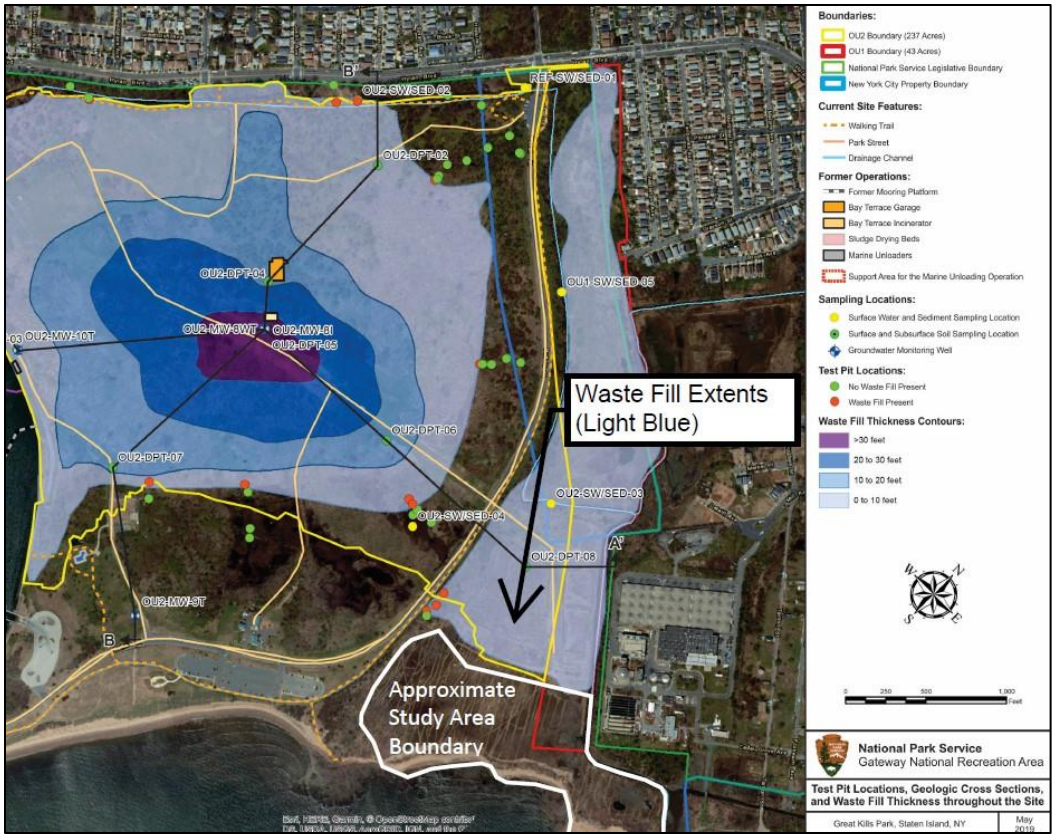

Figure 6: GKP Waste Fill Locations.

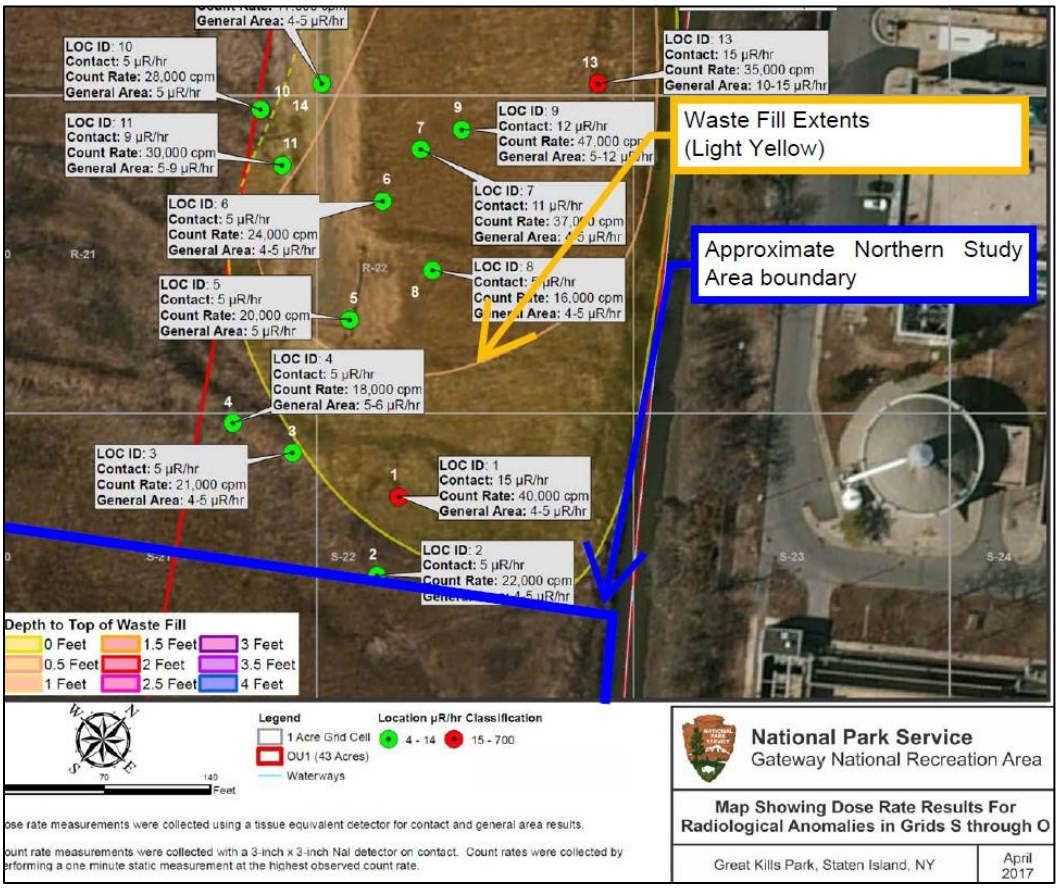

Figure 7: GKP Waste Fill Locations (Zoomed In).

Additionally, based on available figures associated with the GKP Site, it appears that the sludge drying beds are near, but not within, the northern Study Area boundary, as shown below on Figure 8.

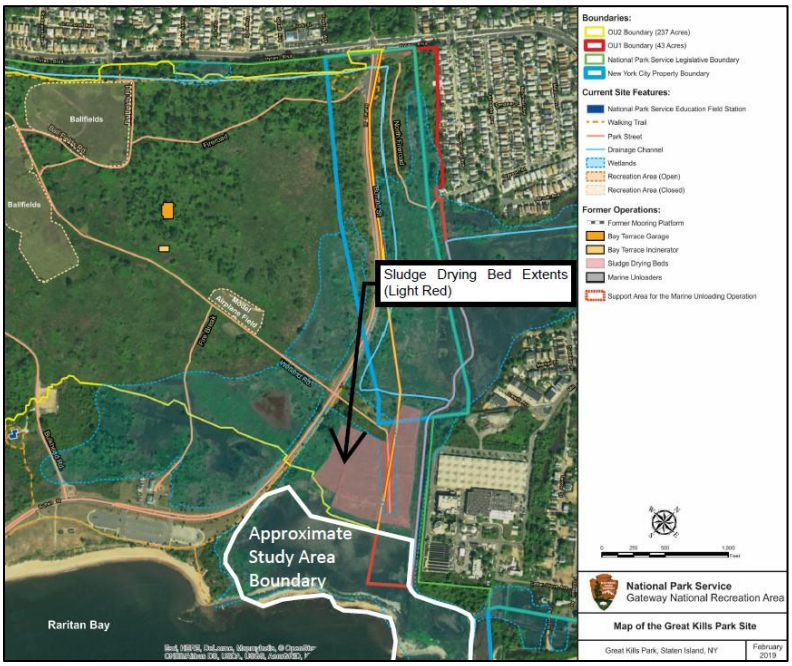

Figure 8: GKP Sludge Drying Bed Locations.

As shown by the above Figure 7 and Figure 8, no waste fill or sludge drying beds associated with the GKP Site are within the Study Area boundary. However, sampling conducted during environmental investigations of the OU1 area overlapping with the Study Area did identify select contaminants independent of the waste fill at elevated concentrations above the regional screening level. These contaminants included iron, radionuclides (i.e. radium-226, thorium-232 and uranium-238), arsenic, benzo(a)pyrene, and others either within the overlap of OU1 with the Study Area or directly adjacent. Comparing these concentrations with background concentrations directly north of the Oakwood Beach WWTP (outside of the GKP Site), it was found that these concentrations are largely comparable to background of this region.

4.1.2 RCRAInfo

Hazardous waste information is contained in the RCRAInfo database, a national program management and inventory system about hazardous waste handlers. 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 1/4-mile radius) are discussed below.

Figure 9: USEPA EnviroAtlas RCRA Listings.

Supplemental detail pertaining to the RCRA listings is included below as Table 1.

Table 1: RCRA Listings

Key	Site Name	Site Number	Status	Waste	Amount
1	NYC DEP BWT Oakwood Beach WWTP	NYD980779755	Active	Ignitable (D001)	27.6 tons
2	NY Power Auth - Oakwood Beach Fuel Cell	NYR000110296	Inactive	Not Listed	Not Listed
3	New York State Housing Trust Fund Corp	NYR000209130	Active	Several	Not Listed

Key 1: The NYC DEP BWT Oakwood Beach WWTP Site (ID# NYD980779755) is registered as an active RCRA Very Small Quantity Generator (VSQG) indicating the facility generates less than 100 kilograms (kg) of hazardous waste or less than 1 kg of acutely hazardous waste per month. The most recent generation data for the facility listed 5.1 tons of ignitable waste (D001) in 2023, 11.5 tons in 2019, and 11.0 tons in 2011. The Site is also associated with a North American Industry Classification System (NAICS) Code of 22132 indicating a sewage treatment facility.

Key 2: The NY Power Auth - Oakwood Beach Fuel Cell Site (ID# NYR000110296) 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 3: New York State Housing Trust Fund Corp Site (ID# NYR000209130) is registered as an active RCRA Small Quantity Generator (SQG) indicating that the facility generates between 100 kg and 1,000 kg of hazardous waste per month. The waste types listed for this Site include ignitable waste (D001); corrosive waste (D002); lead (D008); mercury (D009); 2-propanone (I) (or) acetone (I) (U002); mercury (U151); benzene, methyl-(or) toluene (U220); and benzene, dimethyl-(I,T) (or) xylene (I) (U239). The Site is also associated with a NAICS Code of 238910 indicating a site preparation contractor.

The RCRA Large Quantity Generator (LQG) database includes facilities that generate more than 1,000 kg of hazardous waste or 1 kg of acutely hazardous waste per month. There were no RCRA LQGs identified within the Study Aree or within a ½-mile radius. Additionally, no RCRA Transfer, Storage and Disposal Facilities (TSDF) were identified in the Study Area or within ½-mile radius.

4.2 STATE RECORDS

NYSDEC maintains a DECinfo Locator 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: inactive solid waste landfill, chemical bulk storage (CBS) facility, petroleum bulk storage (PBS) facilities, and wastewater facility state pollution discharge elimination system (SPDES). 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. A depiction of sites within these layers in relation to the Study Area is included below as Figure 10.

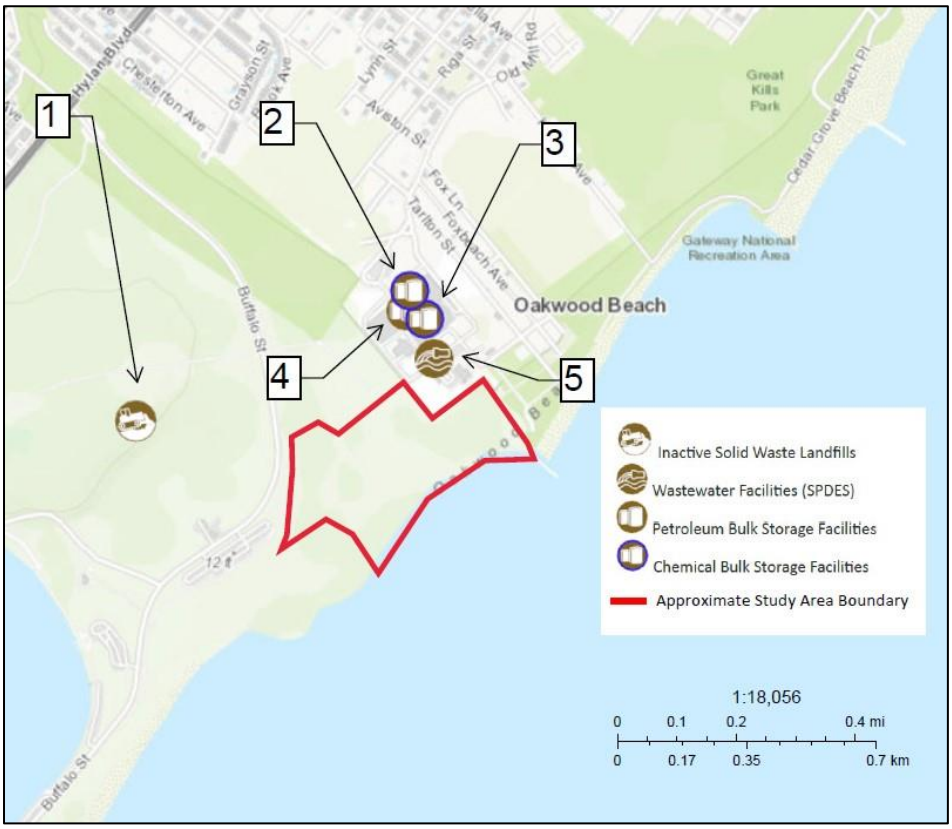

Figure 10: NYSDEC DECinfo Listings.

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

Table 2: NYSDEC DECinfo Listings.

Key	Site Name	ID#	Database
1	Great Kills	None Listed	Inactive Solid Waste
2	The City of New York/NYCDEP	2-000255	CBS
3	Oakwood Beach WRRF	2-000237	CBS
4	Oakwood Beach WWTP	2-456381	PBS
5	Oakwood Beach WWRF	NY0026174	Wastewater SPDES

Key 1: This is the GKP Site discussed in Section 4.1.1. The NYSDEC DECinfo provided minimal additional info.

Key 2: This unregulated/closed facility has two listed aboveground storage tanks (ASTs) with the status of closed – removed. There was previously one 6,200-gallon and 5,600-gallon AST both without storage data.

Key 3: This CBS facility was listed as active but did not have any ASTs or USTs associated with the site on NYSDEC's environmental remediation database.

Key 4: This active facility has nine in-service ASTs or USTs and six closed ASTs or USTs. All ASTs and USTs either currently or historically registered stored gasoline, diesel, or No. 2 fuel oil, with the exception of the active 1,000-gallon UST No. 009 which was listed as "other". The in-service tanks have a listed combined storage volume of 197,715-gallons and the closed tanks have a listed combined storage volume of 96,800-gallons.

Key 5: Oakwood Beach Wastewater Resource Recovery Facility (WWRF) is identified as a wastewater facility under State Pollutant Discharge Elimination System (SPDES) Permit No. NY0026174. Information regarding this SPDES permit can be found here: https://extapps.dec.ny.gov/data/IF/SPDES/NY0026174/

5 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

5.1 2017 FINAL ENVIRONMENTAL INVESTIGATION REPORT FOR GREAT KILLS PARK OPERABLE UNIT 1

The relevant portions of this report pertain to the overlap of OU1 and the Study Area, which is largely discussed in Section 4.1.1.

This report along with the 2018 report indicated that all areas of OU1 that are underlined by waste fill have the potential to exhibit chemical and radiological contamination associated with sewage sludge, waste fill, and radiological artifacts within the waste fill. The historical operations resulted in a well-mixed, but still heterogeneous source that is widespread throughout OU1, corresponding to an impacted area covering approximately 32 acres and comprising approximately 284,000 cubic yards of impacted media (NPS, 2017). Based on available figures, it does not appear that the waste fill extents onto the approximate Study Area.

5.2 2018 FINAL HISTORICAL SITE ASSESSMENT/RECORDS SEARCH SUMMARY REPORT

On the overall GKP Site, radionuclides identified include radium-226; natural uranium (uranium-234, -235, -238 and their progeny); and thorium-232. Metals and inorganic elements including: chromium, copper, and lead associated with the incinerator residue; arsenic, chromium and cobalt associated with the coal bottom ash; and arsenic, iron, manganese, phosphorus, silver, and vanadium associated with the sewage sludge were identified on the overall GKP Site. Based on studies conducted by USEPA, 4-chloroaniline, bis(2-ethylhexyl) phthalate, and benzo(a)pyrene were identified as contaminants in sewage sludge.

5.3 2019 OAKWOOD BEACH HABITAT RESTORATION PROJECT PHASE I ESA

A Phase I Environmental Site Assessment (ESA) was prepared by Hazen and Sawyer for New York City Department of Environmental Protection (NYCDEP) on February 1, 2019. The 2019 Phase I was conducted for a Subject Property with boundaries similar to the Study Area of this HTRW Report. The report also often references a Parent Property which is synonymous with the GKP Site. The following Recognized Environmental Concerns (RECs) were identified in the 2019 Phase I ESA (Hazen and Sawyer, 2019):

- Potential Subsurface Contamination Associated with Likely Presence of Historic Fill Materials: The Subject Property historically, consisted of marsh/swamp land or land subject to inundation from approximately 1891 until circa 1951. A small portion of the Subject Property appears to have been filled in and is depicted as vacant land/Great Kills Park between approximately 1949 and 1961. No information regarding the sources of the historic fill were identified. Based on the potential presence of fill materials on the Subject Property, and the absence of information regarding the sources of the fill materials used on any portion of the Subject Property, it is Hazen's opinion that the former historic fill represents a REC on the Subject Property or adjacent/surrounding properties.

  The adjacent property to the north was identified as a landfill area between 1966 and 1984. A waste fill area was also identified on the adjacent area to the north of the Subject Property. The Oakwood Beach Wastewater Treatment facility has been developed on the adjacent property since at least 1955. The EDR database report identified several databases listings, including Manifest, New York (NY) CBS, RCRA Non-Generator/No Longer Regulated, Facility Index System (FINDS), Enforcement and Compliance History Online (ECHO), NY SPDES, NY UST, NY AST and NY CBS AST associated with the Oakwood Beach Wastewater Treatment facility. The NY USTs have been removed/closed. The NY USTs and NY CBS ASTs are currently being used. Additionally, 20 spill incidents which have been closed were identified on the NYCDEP property (listed with the same address as Oakwood Beach Wastewater Treatment facility).

  Given the regulatory case closed status of the spill incidents and a hydrologic barrier, Hazen is of the opinion that the spills are not anticipated to represent an environmental concern to the proposed project. However, it is Hazen's opinion that the potential exists for contamination migration from the adjacent properties (located northwest and west) onto the Subject Property due to the identified former historic fill

on those properties. Therefore, Hazen recommends that all excavated materials should be handled and disposed of offsite in accordance with all applicable regulations and guidelines. In addition, Hazen recommends that a site-specific environmental health and safety plan/guidelines should be prepared and approved by NYCDEP prior to any construction activities on the Subject Property.

- Prior Environmental Reports/Investigations: According to a review of previous environmental documents, the subject 'Site' (referred to in this report as the Parent Property that includes a portion of the "Subject Property") was used as a landfill in the mid-1940s. The previous Historical Site Assessment/Records Search (HSA/RS) report identified data gaps due to limited (largely unknown) information associated with the adjacent Oakwood Beach Water Pollution Control Plant Underground Sewer Utility Lines. No waste fill area was identified on the proposed Subject Property; however,… [potential] contaminants of concern, including iron, radionuclides (i.e. radium-226, thorium-232 and uranium-238), and arsenic were identified in surface and/or subsurface soil samples conducted within Operable Unit 1 (OU1), at the subject 'Site' or Parent Property, (including the northeast portion of the Subject Property). Benzo(a)pyrene Toxic Equivalency (TEQ) exceeded residential Regional Screening Levels (RSLs) in surface soil samples collected at the northeastern portion of the Subject Property. No exceedances of benzo(a)pyrene TEQ were reported in the subsurface soil samples collected at the Subject Property. The sample results for surface and subsurface soil analyzed for Aroclor 1254 were reported as "non-detected". The Aroclor 1260 sample results for subsurface soil analyzed were reported as "non-detected"; however, surface soil analytical results were detected below residential RSL. Furthermore, the 2016 investigations confirmed the presence of chemicals, radionuclides in groundwater, surface water and sediment at levels that exceed background, and which pose a risk to human health and the environment. Hazen is of the opinion that the identified contamina[nts] on the Parent Property/section of the Subject Property within OU1, and adjacent/surrounding areas represent a REC.

  Therefore, Hazen recommends that soil and groundwater within the areas of the Subject Property that were not investigated during the 2016 investigations within OU1 be tested or assumed to be contaminated and then managed in accordance with governmental regulations. In addition, Hazen recommends that any construction activities be conducted in a manner that is protective of human health and the environment. Furthermore, any excavated materials should be handled or disposed of off-site in accordance with applicable regulatory requirements and guidelines. (Hazen and Sawyer, 2019).

In evaluating the RECs identified in the 2019 Phase I ESA, it should be noted that waste fill extents were since delineated, and the historic fill REC is related to separate unrelated filling of unknown origins. Additionally, any risks to human health and the environment referenced by Hazen and Sawyer were based on regional screening levels and is associated with disturbance of subsurface materials.

5.4 2019 DRAFT FINAL ENVIRONMENTAL INVESTIGATION REPORT FOR GREAT KILLS PARK OPERABLE UNIT 2

Although OU2 does not overlap with the Study Area, this 2019 report does describe the nature and extent of contamination at the overall GKP Site, particularly in areas approximately ¼-mile away from the Study Area in the site interior.

Field activities effectively delineated the extent of waste fill at the Site. Within OU2, waste fill is thickest in the center, where it is approximately 37 feet thick near the former location of the Bay Terrace maintenance garage and incinerator. Waste fill is present in two areas at the Site, including a 171-acre area on the southwest side of Buffalo Street and a 48-acre area on the northeast side of Buffalo Street. Waste fill is present within 186 acres of OU2 and 31 acres of OU1; there are also 2 acres of waste fill outside of the Site boundary (i.e., outside of OU1 and OU2). The soil amendment containing sewage sludge overlies the waste fill from the ground surface to the top of the waste layer; although, the soil amendment may not be evident in areas of OU2 that were developed (e.g., recreational areas, along roads, and near sewer line (NPS, 2019).

The Phase 1 Remedial Investigation analytical results for soil, groundwater, sediment, and surface water indicate that metals, polychlorinated biphenyls (PCBs), dioxins/furans, pesticides, semi-volatile organic compounds (SVOCs)/polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and radionuclides are

present in OU2 at levels that exceed both human health and ecological screening benchmarks and may pose a risk to human health and the environment (NPS, 2019).

5.5 2022 TIER 1 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE SURVEY REPORT

The HTRW Appendix A9 of the 2022 IFR/EIS identified several sites in the Lower Bay Planning Region but none were within a ½-mile radius of the Study Area.

6 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:

- GKP SEMS Site (ID# NYN000200666). OU1 of the GKP Site overlaps with the northeast portion of the Study Area. The primary environmental concerns related to the GKP Site are chemical and radiological constituents present in waste fill derived from historical waste disposal operations and radiological artifacts incidentally contained in waste fill. Although the waste fill extents do not appear to overlap with the Study Area based on previous investigations, this site and its relation to the Study Area was documented as a REC in a 2019 Phase I ESA.
- The adjacent Oakwood Beach WWTP and its related environmental listings:
    - CBS: The City of New York/NYCDEP facility (ID# 2-000255) & Oakwood Beach WRRF facility (ID# 2-000237)
    - PBS: Oakwood Beach WWTP (ID# 2-456381)
    - Wastewater SPDES: Oakwood Beach WWRF (ID# NY0026174)
        - Effluent from the WWTP discharged under this SPDES permit has the potential to interact with the Study Area due to tidal channels (with the potential to receive SPDES effluent) being directly adjacent to the project and its proposed measures.
    - Documentation of 20 closed spill incidents at the property.
- The 2019 Phase I ESA identified a small portion of the Study Area that appeared to have been filled in between approximately 1949 and 1961. No information regarding the sources of the historic fill were identified. It was determined that the fill of unknown origins represented a REC. There exists the potential that certain project features will necessitate construction through this placed fill.

Environmental listings and concerns are ubiquitous within the New York Metropolitan Area, particularly along certain coastal boundaries with histories of shoreline alteration (e.g., filling). 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. Storm damage to a significantly urbanized area, such as the Lower Bay 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 reduced risk of flooding and its associated negative impacts to HTRW sites.

7 ACRONYMS

AE	Actionable Element
AST	Aboveground Storage Tank
CBS	Chemical Bulk
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CIMC	Cleanup in My Community
EA	Environmental Assessment
ECHO	Enforcement and Compliance History Online
EIS	Environmental Impact Statement
ER	Engineering Regulation
FINDS	Facility Index System
FR	Feasibility Report
GIS	Geographical Information System
GKP	Great Kills Park
HAS/RS	Historical Site Assessment/Records SearcH
HTRW	Hazardous, Toxic and Radioactive Waste
IFR	Integrated Feasibility Report
KG	Kilogram
LQG	Large Quantity Generator
NAICS	North American Industry Classification System
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFS	Non-Federal Sponsor
No.	Number
NPL	National Priority List
NPS	National Park Service
NY	New York
NYC	New York City
NYCDEP	New York City Department of Environmental Protection
NYNJHATS	New York & New Jersey Harbor & Tributaries Focus Area Feasibility Study
NYSDEC	New York State Department of Environmental Conservation
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbons
PBS	Petroleum Bulk Storage
PCB	Polychlorinated Biphenyls
PED	Pre-Construction Engineering and Design
RCRA	Resource Conservation and Recovery Act
RCRAInfo	Resource Conservation and Recovery Act Information
REC	Recognized Environmental Concern
RSL	Regional Screening Levels
SEMS	Superfund Enterprise Management System
SPDES	State Pollutant Discharge Elimination System
SQG	Small Quantity Generator
SVOC	Semi-volatile Organic Compound
TCRA	Time Critical Removal Action
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
WWRF	Wastewater Resource Recovery Facility
WWTP	Wastewater Treatment Plant

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