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SITE MANAGEMENT PLAN FISCAL YEARS 2022 THROUGH 2026 JEB LITTLE CREEK VA

02/01/2022

CH2M HILL

Naval Facilities Engineering Systems Command Mid-Atlantic
Virginia Beach, Virginia

Site Management Plan
Fiscal Years 2022 through 2026

Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

February 2022

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JEB Little Creek
Virginia Beach, Virginia

February 2022

Prepared for NAVFAC Mid-Atlantic
by CH2M HILL, Inc.
Virginia Beach, Virginia
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Acronyms and Abbreviations

A-A	anti-aircraft
ABM	abrasive blast material
AOC	Area of Concern
AST	aboveground storage tank
Baker	Baker Environmental, Inc.
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
CCR	Construction Completion Report
CD	cyclodextrin
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CH2M	CH2M HILL, Inc.
CIP	Community Involvement Plan
COC	constituent of concern
COPC	constituent of potential concern
DD	Decision Document
DNAPL	dense non-aqueous phase liquid
DoD	Department of Defense
Ebasco	Ebasco Environmental Consultants
EE/CA	Engineering Evaluation/Cost Analysis
ER	Environmental Restoration
ERA	Ecological Risk Assessment
ERD	enhanced reductive dechlorination
ESD	Explanation of Significant Differences
FFA	Federal Facilities Agreement
FS	Feasibility Study
FWES	Foster Wheeler Environmental Services
FY	fiscal year
GIS	geographic information system
HHRA	Human Health Risk Assessment
IAS	Initial Assessment Study
IR	Installation Restoration
IRA	Interim Removal Action
IRACR	Interim Remedial Action Completion Report
IRI	Interim Remedial Investigation
ISCO	in situ chemical oxidation
JEB	Joint Expeditionary Base
LTM	long-term monitoring
LUC	land use control
µg/L	micrograms per liter
MC	munitions constituent
MCL	maximum contaminant level
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program

MNA	monitored natural attenuation
MWR	Morale, Welfare, and Recreation
NA	no action
NAB	Naval Amphibious Base
NACIP	Navy Assessment and Control of Installation Pollutants
NAVFAC	Naval Facilities Engineering Command
Navy	Department of the Navy
NFA	no further action
NPL	National Priorities List
NTCRA	Non-Time-Critical Removal Action
O&M	operation and maintenance
ORC	Oxygen Releasing Compound
OWS	oil-water separator
PA	Preliminary Assessment
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PCP	pentachlorophenol
PSI	Preliminary Site Inspection/Investigation
PWD	Public Works Department
RA	Remedial Action
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RAO	remedial action objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
ROD	Record of Decision
RRRS	Relative Risk Ranking System
RVS	Round 1 Verification Step
SAP	Sampling and Analysis Plan
SERA	Screening Ecological Risk Assessment
SI	Site Investigation
SMP	Site Management Plan
SPCC	Spill Prevention, Control, and Countermeasures
SRI	Supplemental Remedial Investigation
SWMU	solid waste management unit
TAL	target analyte list
TCA	trichloroethane
TCE	trichloroethene
TCRA	Time-Critical Removal Action
UFP-QAPP	Uniform Federal Policy for Quality Assurance Project Plan
USEPA	United States Environmental Protection Agency
UST	underground storage tank
UTL	upper tolerance limit

VDEQ	Virginia Department of Environmental Quality
VOC	volatile organic compound
VPDES	Virginia Pollution Discharge Elimination System
yd^3	cubic yard

SECTION 1

Introduction

On October 1, 2009, Hampton Roads' first Joint Base was established. This new installation comprises the former Naval Amphibious Base (NAB) Little Creek and Army post of Fort Story; the new name is Joint Expeditionary Base (JEB) Little Creek-Fort Story. With the forming of this new command, the Department of the Navy (Navy) assumed responsibility for management of both properties and merged public meetings regarding the ongoing Environmental Restoration (ER) program. However, separate records will be maintained to ensure the integrity of ongoing efforts at both properties. When required for public notices and distributions, the former bases are identified jointly as JEB Little Creek-Fort Story. For ER Program documents, the Bases are referred to separately as JEB Little Creek and JEB Fort Story.

This document presents the fiscal years (FYs) 2022 through 2026 SMP for JEB Little Creek, Virginia Beach, Virginia. The SMP meets the requirements of the final Federal Facilities Agreement (FFA) between the Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Division, Virginia Department of Environmental Quality (VDEQ), and Region 3 of the United States Environmental Protection Agency (USEPA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), to address environmental contamination at applicable JEB Little Creek sites (Navy, 2003a). The SMP is being submitted for use by the JEB Little Creek ER Tier I Partnering Team and their respective organizations—NAVFAC, JEB Little Creek, USEPA, and VDEQ. **Figure 1-1** illustrates the location of JEB Little Creek.

The purpose of the SMP is to provide a management tool for NAVFAC, JEB Little Creek, VDEQ, USEPA, and consultants for use in planning, scheduling, and setting priorities for environmental remedial response activities to be conducted at JEB Little Creek. The SMP establishes schedules and conceptual approaches for continued CERCLA activities at JEB Little Creek ER sites. The schedules and work descriptions consist of the following:

- Site descriptions and proposed activities for the current FY.
- Conceptual schedules and general work approaches for activities planned for the 5-year period FY 2022 through FY 2026.

The prioritization of activities and the proposed schedules were developed by the JEB Little Creek Tier I Partnering Team, and are based on the following factors:

- The Tier I Partnering Team's relative ranking of the sites regarding the potential risks to human health and the environment.
- NAVFAC's internal funding goal of having remedies in place at all JEB Little Creek sites by the end of FY 2016.
- Goals set by the Tier I Partnering Team to meet requirements of USEPA, VDEQ, NAVFAC, and the public.

The SMP is a working document that is updated annually to maintain an up-to-date documentation and summary of environmental actions at JEB Little Creek. This SMP updates and supersedes the FY 2021 SMP distributed in April 2021.

SECTION 2

Background and Site Descriptions

JEB Little Creek covers approximately 2,215 acres in the northwestern portion of Virginia Beach, Virginia, adjacent to the Chesapeake Bay (**Figure 1-1**). The area surrounding the Base is low-lying and relatively flat, and includes several freshwater lakes (Chubb Lake, Lake Bradford, Little Creek Reservoir/Lake Smith, and Lake Whitehurst) located on or adjacent to the Base. JEB Little Creek is situated around four saltwater bodies: Little Creek Harbor, Little Creek Cove, Desert Cove, and Little Creek Channel, which connects the coves and harbor with the Chesapeake Bay (**Figure 2-1**).

The former NAB Little Creek began operations as a permanent base in 1946. The Base's mission was the training of landing craft personnel for operational assignments. JEB Little Creek has expanded in both area and complexity of its mission over the past 70 years. Base personnel provide logistic facilities and support services for local commands, organizations, home-ported ships, and other U.S. and allied units to meet amphibious warfare-training requirements of the U.S. armed forces. Past and present operations at JEB Little Creek include vehicle and boat maintenance, boat painting and sandblasting, construction and repair of buildings and piers, mixing and application of pesticides, electroplating of musical instruments, laundry and dry cleaning, medical and dental treatment, and the generation of steam for heat. In addition to these industrial land uses, JEB Little Creek is used for recreational, commercial, and residential purposes. Specifically, the southeastern corner of the Base has been developed for residential use.

2.1 Environmental History

Comprehensive environmental restoration activities at JEB Little Creek began in 1984, under the Navy Assessment and Control of Installation Pollutants (NACIP) Program, renamed the Installation Restoration Program in 1986, when it was changed to reflect the requirements of CERCLA as amended by the Superfund Amendments and Reauthorization Act of 1986. The former NAB Little Creek (now referred to as JEB Little Creek) was identified as a Federal Facility on USEPA's National Priorities List (NPL) on May 10, 1999. A FFA was finalized between the Navy, USEPA Region 3, and VDEQ in November 2003. In accordance with the FFA, all past and future work at ER sites and solid waste management units (SWMUs) will be reviewed and a course of action for future work requirements at each site will be developed. The FFA also includes specific requirements for the preparation and contents of this SMP.

The following sections provide an overview of the CERCLA process and a summary of the facility-wide and site-specific studies completed to date at JEB Little Creek. **Table 2-1** lists the status of each of the sites at JEB Little Creek. **Table 2-2** lists each of the studies conducted at those sites identified in the FFA as sites requiring additional investigation which resulted in no further action (NFA) Record of Decisions (RODs) following completion of the additional investigation.

2.2 CERCLA Process

The objectives of the CERCLA process are to evaluate the nature and extent of contamination at a site, and to identify, develop, and implement appropriate remedial actions (RAs) to protect human health and the environment. The major elements of the CERCLA process are identified and described in **Table 2-3**.

The documents prepared for the CERCLA program are maintained in information repositories for review by the public. The index of JEB Little Creek Administrative Records is available at the following location:

http://go.usa.gov/DyzB

Documents are available to the public in the Administrative Record that can also be accessed by contacting the following:

Public Affairs Office
Joint Expeditionary Base Little Creek-Fort Story
2600 Tarawa Ct., Suite 100
Virginia Beach, Virginia 23459-3297
Phone: (757) 462-8425

Public participation is an element of the CERCLA process. JEB Little Creek has developed a Community Involvement Plan (CIP) and established a Restoration Advisory Board (RAB) that comprises members of the community, local environmental group members, and state and federal officials, and that met annually through the achievement of the 2015 construction completion to keep the community informed of environmental issues at JEB Little Creek.

2.3 Facility-wide Investigations

Various facility-wide studies and investigations, including preliminary studies and detailed site investigations (SIs), have been completed at JEB Little Creek since 1984 in response to the Navy's ER Program. Preliminary studies conducted to identify and assess sites posing a potential threat to human health or the environment resulting from past or current operations or waste management activities included the following:

- Initial Assessment Study (IAS)
- Resource Conservation and Recovery Act (RCRA) Round I Verification Step (RVS)
- Phase I Interim RCRA Facility Assessment (RFA)
- Basewide Per- and Polyfluoroalkyl Substances (PFAS) Preliminary Assessment

A total of 133 potentially-contaminated sites, areas, or SWMUs at JEB Little Creek were identified for evaluation in the IAS, RVS, RFA, and other JEB Little Creek assessments. **Table 2-1** provides the correlated listing of JEB Little Creek sites, SWMUs, and areas of concern (AOCs).

Some of the SIs included multiple sites specifically identified in the IAS for further evaluation and were not focused on an assessment of a specific site. These major investigations included the following:

- RVS
- RFA
- Interim Remedial Investigation (IRI)
- Preliminary Site Inspection/Investigation (PSI)
- Remedial Investigation (RI)/Feasibility Study (FS) and SI
- Relative Risk Ranking System (RRRS)
- Background Investigation
- SWMU/IR Summary

The details and results of the investigations identified in this section are summarized herein.

2.3.1 Initial Assessment Study

The IAS at JEB Little Creek was completed in December 1984 by Rogers, Golden, and Halpern. Its purpose was to identify and assess sites that posed a potential threat to human health or the environment because of contamination from prior hazardous waste management activities. The study entailed the collection and evaluation of activity records relating to waste generation, handling, and disposal; characterization of physical conditions at the sites such as hydrogeology; and identification of migration pathways and potential receptors. The results of these data evaluation efforts were used to develop recommendations concerning the need for a confirmation study at a given site, the goal of which was to verify the presence of contamination and determine the need for further characterization and/or remediation.

The IAS examined 17 sites at JEB Little Creek (IR Sites 1 through 17). Six sites were recommended for confirmation studies: Sites 7, 9, 10, 11, 12, and 13. Of the remaining 11 sites, mitigation measures were recommended for four of the sites (Sites 4, 5, 15, and 16), and no action (NA) was recommended for six of the sites (Sites 1, 2, 6, 8, 14, and 17). Site 3, the West Annex Fuel Spill, was addressed under a separate action to recover free-floating oil from the water table. Though identified for NA in the IAS, Site 17, the Building 1256 Motor Oil Disposal Area, was later added to the PSI by the Navy.

The IAS recommendations to conduct confirmation studies were based largely on findings that contaminants from disposal areas may migrate toward surface water bodies with little attenuation, owing to a lack of clays and organic material in subsurface soil, and in relatively short timeframes because of high permeabilities in the water table aquifer. The potentially-impacted surface waters included Little Creek Cove, Lake Bradford, and Lake Smith. Lake Bradford and Lake Smith are used for recreational purposes, and Lake Smith also serves as the secondary municipal water supply for the City of Norfolk. Delineation of an actual threat or risk in the IAS was not possible because of the lack of site-specific hydrogeologic and groundwater quality data.

The IAS presented detailed recommendations concerning the installation and sampling of monitoring wells; the sampling of surface soil, surface water, and sediment; and the types of laboratory analyses to be completed. The recommendations also addressed well completion depths and water-level monitoring requirements. Many of the recommendations were aimed at resolving the data gaps identified in the IAS. These recommendations became the scope of work for the RVS, detailed in the next subsection.

2.3.2 Round 1 Verification Step

The RVS at JEB Little Creek was completed in October 1986 by CH2M HILL, Inc. (CH2M) and was the first step in the confirmation study process (CH2M, 1986). The purpose of the study was to verify the presence or absence of contamination at the six sites recommended in the IAS for a Confirmation Study (Sites 7, 9, 10, 11, 12, and 13). The scope of work of the RVS activities at each site was initially established by the recommendations presented in the IAS, with notable deviations added concerning the number of installed monitoring wells and the samples collected.

As part of the work conducted for the RVS, 31 monitoring wells were installed for the collection of groundwater samples and groundwater elevation data to determine groundwater flow directions. Surface water and sediment samples were collected to investigate potential impacts on nearby surface water bodies. Subsurface soil samples were collected to delineate the vertical extent of contamination in probable source areas.

As stated in the RVS, the results of the Round 1 sampling and analysis activities indicated that little or no contamination was leaving any of the three landfill sites addressed in the RVS (Sites 7, 9, and 10). Contamination was detected in one or more environmental media at Sites 11, 12, and 13. These results indicated that contamination was being released from these three sites, but the magnitudes and distributions of this contamination could not be determined based on the RVS findings alone. The results of the sampling and analysis activities were used to develop recommendations for additional investigations at all six sites. These recommendations were generally limited to continued or expanded sampling conducted during the IRI (**Section 2.3.4**) to further refine the RVS results.

2.3.3 RCRA Facility Assessment Report

A RFA was conducted at JEB Little Creek in 1989 (A. T. Kearney, 1989). The RFA identified 147 SWMUs and several AOCs where wastes had been stored and/or where contaminants may have been released to the environment. Twenty-two of these SWMUs and two AOCs are associated with the 17 sites identified in the IAS (for example, SWMUs 123 through 126 are located within the boundary of Site 7).

JEB Little Creek decided not to renew their RCRA Part B permit; therefore, a RCRA Facility Investigation (RFI) was not conducted, and the Base dropped out of the RCRA corrective action program. However, JEB Little Creek decided to investigate 17 of the SWMU sites by including them in the Navy's RRRS sampling program. The 17 SWMUs investigated were chosen because USEPA had identified them as the sites of highest concern.

2.3.4 Interim Remedial Investigation

The IRI was conducted in 1991 by Ebasco Environmental Consultants (Ebasco) to collect additional data and determine if further characterization activities or RAs were warranted at Sites 7, 9, 10, 11, 12, or 13 (Ebasco, 1991b). The objectives of this investigation were to conduct a second round of sampling at the six sites sampled during the RVS, and to integrate the historical and newly-acquired data, along with site-specific recommendations for further action, into a single document. The data were used to develop a recommended response action, a Human Health Risk Assessment (HHRA), and site-specific recommendations concerning additional characterization.

2.3.5 Preliminary Site Inspection

A PSI was conducted in 1991 by Ebasco to assess the threat to human health and the environment from five sites (Sites 4, 5, 15, 16, and 17). Constituents of concern (COCs) were detected in groundwater at Site 5, and further sampling was recommended (Ebasco, 1991a). At Site 16, elevated levels of polychlorinated biphenyls (PCBs) were detected in soil, and additional sampling was recommended to delineate contamination. Remediation was also recommended for Site 16. NFA was proposed for Sites 4, 15, and 17.

2.3.6 Remedial Investigation/Feasibility Study and Site Investigation

Between 1993 and 1994, Foster Wheeler Environmental Services (FWES) conducted an RI/FS at Sites 7, 9, 10, 11, 12, and 13 (FWES, 1994a). The RI/FS included a Phase 1 Baseline HHRA and Ecological Risk Assessment (ERA). In addition, FWES also conducted an SI at Sites 5 and 16 (FWES, 1994b). The investigations included soil, groundwater, sediment, surface water, and soil-gas sampling. Additional groundwater monitoring wells were also installed and sampled. The FS recommended long-term groundwater monitoring for Sites 9 and 10, a source removal action and post-removal monitoring for Site 11, and additional evaluations at Sites 7, 12, and 13. The SI recommended semiannual groundwater monitoring at Site 5 and a soil removal action at Site 16.

2.3.7 Relative Risk Ranking System Report

An RRRS and a revised RRRS analysis were completed by Baker Environmental, Inc. (Baker) in 1996 (Baker, 1996). The purpose of the analysis was to gather contaminant, pathway, and receptor information for the 17 SWMUs that were originally identified in the RFA as being potential sites impacted by contamination. Data were collected for each of the 17 SWMUs through a field investigation in October 1995. The field investigation was aimed at the identification of contaminants in surface soil, subsurface soil, and groundwater. The results of the investigation were used to identify the relative risk posed by each SWMU according to the contaminants present, the migration pathways, and the potential receptors for each medium at the SWMU. Both human health and ecological receptors were considered.

Based on the RRRS, three of the SWMUs were identified as posing a high risk and six SWMUs were identified as presenting a medium risk. The remaining eight SWMUs were identified as presenting a low-risk. The high- and medium-risk SWMUs are as follows:

- High-risk SWMUs:
  - **SWMU 84—**Demolition Debris Landfill (also referred to as IR Site 8)
  - **SWMU 105—**Steam Plant Fly Ash Silo (“new” SWMU 2)
  - **SWMU 111—**Pier 10 Sandblast Yard (“new” SWMU 3)
- Medium-risk SWMUs:
  - **SWMU 17—**Small Transformer Storage Area (redesignated as “new” SWMU 1 and also referred to as IR Site 14)
  - **SWMU 117—**Special Boat Squadron 2 Battery Storage Area (redesignated as “new” SWMU 4 and also referred to as IR Site 4)

- **SWMU 130—**Building 3896 Boat Painting Area (redesignated as "new" SWMU 5)
- **SWMU 131-133—**Seabee Area (consolidated and redesignated as "new" SWMU 6)

The SWMUs were consolidated and renumbered as indicated.

2.3.8 Background Investigations

A Background Groundwater Quality Study was conducted that included three rounds of groundwater sampling completed at JEB Little Creek on November 31, 1991, September 15, 1992, and June 30, 1993 (Allied, 1992; FWES, 1994a). The purposes of this study were to collect, organize, and present data on background groundwater quality and conditions.

The groundwater quality information was obtained from a network of eight monitoring wells installed in locations throughout the Base to avoid areas of known or suspected contamination. Some deficiencies in this initial background study were later identified. The analyses performed on the groundwater samples used relatively high detection limits and did not include all Target Analyte List (TAL) total or dissolved metals analyses. Neither surface soil nor shallow subsurface soil samples were collected. The collected subsurface soil samples were from below the water table adjacent to the screened interval of each well. None of the data were validated.

CH2M completed an additional background investigation for JEB Little Creek in December 2000 (CH2M, 2001b). The objective of the investigation was to establish the background concentrations of metals, pesticides, and polycyclic aromatic hydrocarbons (PAHs) in surface and subsurface soil and groundwater for use in comparison to ER Program site data to better identify release-related COCs. The statistical calculations for both soil and groundwater chemical concentrations included upper tolerance limits (UTLs) and 95 percent confidence intervals, which are used for comparison in the risk screening process.

Background soil samples were collected at nonimpacted areas that are typical of underlying hydrogeologic conditions at JEB Little Creek and areas representative of anthropogenic background conditions. These areas included fill areas composed of dredged sediments and past agricultural land use areas where pesticides may have been used. A total of 29 surface and 29 subsurface soil samples were collected during the investigation. Analytical data from background soil samples represent surface and subsurface soil in fill, urban, and native soil areas. Background water quality samples were collected in January 2000 at six existing background wells, one newly-installed well, and three wells located upgradient of base ER sites.

In September 2000, a technical memorandum was prepared in response to a USEPA comment pertaining to evaluating potential seasonal fluctuations in groundwater quality (CH2M, 2003). In the summer of 2001, background monitoring wells were again sampled. The analytical data from the winter 2000 and summer 2001 sampling events were compared, and no significant differences in seasonal variation were identified. It was noted that substantial differences in groundwater concentrations were observed for specific parameters in specific locations. Background UTLs were reassessed as part of the 2001 technical memorandum, and more conservative UTLs were presented for arsenic (4 micrograms per liter [μg/L]) and iron (17,100 μg/L).

2.3.9 SWMU/Installation Restoration Summary

In June 2000, the former NAB Little Creek summarized all available information on the 147 SWMUs, 8 AOCs, and 17 IR sites at the facility (NAB Little Creek, 2000). The report included photographs and information obtained from the RFA and RRRS. **Table 2-1** provides the correlated listing of JEB Little Creek sites, SWMUs, and AOCs.

2.3.10 Basewide Per- and Polyfluoroalkyl Substances Investigations

In 2016, NAVFAC Headquarters released a directive to conduct a comprehensive compilation of existing information about known or potential releases and potential migration pathways for PFAS, an emerging contaminant, at naval facilities (Navy, 2016). As part of the NAVFAC Headquarters directive, a Navy-wide review of records was conducted to establish an inventory of locations where PFAS may have been used, stored, released, or disposed of at Navy installations. In response to this direction, a Preliminary Assessment (PA) Work Plan for

PFAS at JEB Little Creek was completed in 2019. The PA Report is being developed and is scheduled to be finalized in FY 2022.

2.4 Site-specific Investigations and Remediation Activities

The SMP is updated annually to revise project schedules and provide current SI information for the JEB Little Creek CERCLA ER Program. The document review and comment periods are based on FFA guidelines. The schedules derived from these guidelines assume informal dispute resolution. Flow charts depicting the primary and secondary document submittal and dispute resolution aspects of the FFA process are included as **Tables 2-4, 2-5,** and **2-6**.

The Navy will conduct CERLCA Five-Year Reviews for sites with RAs documented in a ROD. The first Five-Year Review for JEB Little Creek was finalized in March 2009 and included Sites 9, 10, 11, 12, and 13, which were sites with a signed ROD at the time the Five-Year Review was completed (CH2M, 2009a). The second Five-Year Review was finalized in March 2014, and included Sites 7, 9, 10, 11, 11a, 12, and 13, which were sites with a signed ROD at the time the second Five-Year Review was completed (CH2M, 2014).

The schedule for Base-wide activities is provided in **Table 2-7**.

There are no remaining sites under investigation in the ER Program at JEB Little Creek. Sites with a ROD and remedy-in-place include Sites 7, 9, 10, 11, 11a, 12, 13, and SWMU 3. These sites are depicted on **Figure 2-1** and discussed in Section 2.4.1. Response is complete for Site 8, SWMU 7a, SWMU 7b, and SWMU 8. These sites are discussed in Section 2.4.2. The site descriptions and remediation activities scheduled for these sites are detailed herein.

2.4.1 Remedy-in-Place Sites

RODs have been signed for Sites 7, 9, 10, 11, 11a, 12, 13, and SWMU 3, and the selected remedies have been implemented; however, not all remedial action objectives (RAOs) have been achieved. Long-term monitoring (LTM) and land use control (LUC) inspections for Sites 7, 9, 10, 11, 11a, 12 and 13, and SWMU 3 are ongoing to ensure the remedies continue to be protective of human health and the environment.

JEB Little Creek has elected to follow Navy recommendations for conducting an installation-wide Five-Year Review for all sites with remedies in place. The Five-Year Review is required 5 years from the initiation of the first RA where hazardous substances, pollutants, or contaminants remain onsite above levels that allow for unlimited use and unrestricted exposure. The triggering action of the statutory review process was the signature of the Sites 9 and 10 ROD in December 2003 by the Navy.

The first Five-Year Review for JEB Little Creek was signed in March 2009, and included those sites with a signed ROD at the time the document was completed (Sites 9, 10, 11, 12, and 13) (CH2M, 2009a). The first Five-Year Review determined the selected remedy is in place, functioning as designed, and is protective of human health and the environment for Sites 9, 10, 11, 12, and 13.

The second Five-Year Review for JEB Little Creek was signed in March 2014 (CH2M, 2014). The sites with signed RODs when the second Five-Year Review was completed, and therefore the sites included in the second Five-Year Review, were Sites 7, 9, 10, 11, 11a, 12, and 13 (CH2M, 2014). The second Five-Year Review determined the selected remedy is in place, functioning as designed, and is protective of human health and the environment for Sites 7, 9, 10, 11, 11a, 12, and 13.

The third Five-Year Review for JEB Little Creek was signed in March 2019 (CH2M, 2019). The sites with signed RODs when the third Five-Year Review was completed were Sites 7, 9, 10, 11, 11a, 12, and 13, and SWMU 3. The next Five-Year Review is scheduled for 2024. The third Five-Year Review determined the selected remedies are in place, functioning as designed, and are protective of human health and the environment for Sites 7, 9, 10, 11, 11a, 12, and 13, and SWMU 3. For Site 10, barium was detected during the last sampling event, so barium was

recommended for inclusion in the Site 10 analytical suite. The EPA made the determination of protective in the short-term for Sites 7, 9, 10, 11 due to the potential presence of per- and polyfluoroalkyl substances (PFAS).

2.4.1.1 Site 7—Amphibious Base Landfill

Site Chronology

Date	Event/Document	Document Administrative Record Number[a]
December 1984	IAS	000130
October 1986	Round 1 Verification Step	000022
March 1989	RCRA Facility Assessment	000008
November 1991	IRI	000104
January 1992	Site Summary	001354
March 1993	Memorandum Discussing Sediment Samples at Site 7 and the Construction of Wetlands at the Site	000202
November 1994	RI/FS for Sites 7 and 9 through 13	000226, 000352, 000353
January 1996	RRRS and Revised RRRS	000349
February 1997	FS Revision	000212
October 1997	Proposed Remedial Action Plan	000128
January 1998	Decision Document (DD)	000132
January 1998	RA – Soil Cover and Debris Removal initiated	--
November 1998	Final LTM Letter Report, Round 1	--
January 1999	Contractor Closeout Report	000404
April 1999	LTM Letter Report, Round 2	--
May 1999	Former NAB Little Creek on NPL	000439
October 1999	LTM Letter Report, Round 3	--
June 2000	LTM Letter Report, Round 4	--
June 2000	Screening Ecological Risk Assessment (SERA) – IR Sites 5, 7, 8, 9, 10, 11, 12, 13, and 16, and SWMU 3	000417
June 2001	LTM Letter Report, Round 5	--
March 2002	LTM Letter Report, Round 6	--
August 2002	LTM Letter Report, Round 7	--
February 2003	LTM Letter Report, Round 8	--
June 2003	LTM Letter Report, Round 9	--
October 2003	FFA	000540
March 2004	Canal Sediment Delineation Results and Recommended Path Forward	001855
November 2004	RI/HHRA/ ERA	000650/000651
February 2005	Engineering Evaluation/Cost Analysis (EE/CA)	000829
March 2005	Action Memorandum	000834
August 2005	LTM Report for Rounds 10 and 11	--
November 2005	Debris Delineation Results	000917

Date	Event/Document	Document Administrative Record Number[a]
August 2006	Non-time-critical Removal Action (NTCRA) for removal of canal sediment initiated	--
January 2008	NTCRA Construction Completion Report	001359
January 2008	Phase I Operations and Maintenance (O&M) Action initiated	--
March 2008	Phase II and III O&M Action initiated	--
April 2008	Phase I O&M Interim Closeout Report	002332
August 2008	Focused Feasibility Study	001461
July 2009	Phase II and III O&M Construction Completion Report	--
September 2009	ROD	000932
March 2012	LTM Sampling and Analysis Plan (SAP)	--
May 2012	Post-ROD groundwater sampling conducted	--
June 2012	Remedial Action Completion Report (RACR)	001622
September 2012	O&M Action completed	--
October 2013	LTM Report	001808
March 2014	Five-Year Review	002091
November 2017	LTM Data Evaluation Technical Memorandum	--
April 2018	Post-ROD Groundwater LTM initiated	
March 2019	Five-Year Review	002702
August 2019	Groundwater LTM SAP	

Notes:

[a] Documents submitted after the ROD are not required to be included in the Administrative Record.

Site Description and History

Site 7, the Amphibious Base Landfill, comprises approximately 38 acres in the south-central portion of JEB Little Creek (**Figure 2-2**). The Amphibious Base Landfill operated between 1962 and 1979. The Commonwealth of Virginia Department of Health issued a nonconforming permit on August 28, 1979 to allow disposal on an interim basis at Site 7, because conditions were not conducive for landfilling. In 1982, the permit was terminated and landfilling operations ceased. Initially, waste disposal operations at the site were conducted as a trench-type landfill with open burning of refuse in the trenches. The landfill later operated as an area landfill, with refuse spread over the ground and covered regularly. The estimated landfill waste volume is approximately 500,000 cubic yards (yd^3), originating from Base housing and other residential activities at the installation. Waste oils and metals were also reportedly disposed of in the landfill starting in 1970. After closure, the landfill area continued to be used as a metal collection and transfer site, a temporary storage site for wastes, and a burn area for scrap wood and trees. Open burning halted in 1984. Waste storage activities at the site ceased in 1994.

Land and Resource Use

A laydown area was constructed in October 2015 in the northeastern portion of the landfill and is being used by facility personnel as an equipment storage area. Future land use such as industrial, recreational, and operational activities may occur in accordance with LUC provisions, provided the activities are consistent with ensuring continued protection of human health and the environment. Groundwater at JEB Little Creek is not currently used as a potable water source, nor is it expected to be used as a future potable water source. Potable water is supplied to the Base and surrounding community by the cities of Virginia Beach and Norfolk.

History of Contamination

The potential for site contamination from disposal practices was initially identified in the IAS (RGH, 1984). Field investigations were conducted from 1986 to 1994 to characterize the nature and extent of contamination at the site. Investigation results indicated contamination from prior disposal practices at Site 7, primarily associated with PAHs, PCBs, and metals in surface and subsurface soil, sediment, surface water and groundwater.

Human health and ecological risk assessments were conducted for Site 7. Except for waste-in-place, no potentially unacceptable risks from exposure to site soil, groundwater, surface water and sediment were identified. Potential ecological risks associated with surface soil, as well as sediment and surface water in Little Creek Cove and the vegetated wetlands, were considered low (acceptable), based on the frequency and magnitude of screening value exceedances. However, copper, lead, Aroclor-1260, and five pesticides were identified as constituents of potential concern (COPCs) in sediment in the central portion of the western drainage canal. Based on these results, a NTCRA was conducted in 2007 to remove contaminated sediment in this portion of the canal. Following the removal of 1 foot of sediment, the canal was backfilled with 1 foot of clean fill to its original depth, and the eastern bank of the landfill was stabilized using concrete matting and vegetation to prevent landfill contents from eroding into the canal (JV I, 2008b). Following completion of the NTCRA, no potentially unacceptable ecological risks remained at the site.

Remedy Selection

To address potentially unacceptable risks from direct exposure to landfill contents remaining onsite, a ROD for Site 7 was signed in September 2009 (Navy, 2009d). The selected remedy for Site 7 outlined in the ROD is a soil cover over the landfill, groundwater LTM, and LUCs, which was selected to meeting the following RAO:

- Prevent human and ecological receptor exposure to landfill contents through a containment presumptive remedy (2-foot soil cover and groundwater monitoring) and LUCs.

The following LUC objectives for Site 7 were selected in the ROD:

- Prohibit digging into or disturbance of the existing soil cover and landfill contents.
- Prohibit the use of the site for residential, child care, elementary or secondary school, or playground facilities.

These LUC objectives, in addition to the following objective, have been implemented with the actions detailed in the LUC RD for Site 7 (Navy, 2010b):

- Maintain the integrity of any current or future monitoring system such as monitoring wells.

Remedy Implementation

The Site 7 RACR was signed in July 2012 and documents that the remedy is in place and functioning as intended (Navy, 2012a). The LUC RD for Site 7 was finalized in 2010 (Navy, 2010b). A survey plat was filed with the City of Virginia Beach documenting land use restrictions. Signs have been maintained around the perimeter of the site to notify individuals of restricted land use and provide contact information. Annual landfill inspections were implemented in 2009 for Site 7. Results of the inspection are documented in letter reports provided to USEPA and VDEQ. Groundwater LTM was initiated in 1998 and is ongoing.

Landfill cover O&M activities were conducted between January and July 2008 and consisted of removal of approximately 85 tons of concrete and debris from the landfill, stabilization of the northern and eastern banks of the landfill using concrete matting and bamboo core logs, extension of the landfill soil cover north towards Little Creek Cove and east toward Helicopter Road, and removal of surface debris from the portion of the landfill called the Ear (JV I, 2008a and JV III, 2009). Landfill cover O&M actions were conducted in September 2012 and May 2013 to address site stormwater drainage and repair a sinkhole observed during site inspections (CH2M, 2014).

Five-year Schedule

The 5-year schedule for Site 7 is presented in **Table 2-8**. Planned activities at Site 7 consist of the following:

- LTM UFP-SAP
- LTM
- Soil Cover Repair
- Five-Year Review

2.4.1.2 Site 9—Driving Range Landfill and Site 10—Sewage Treatment Plant Landfill

Site Chronology

Date	Event/ Document	Document Administrative Record Number [a]
December 1984	IAS	000130
October 1986	RVS	000022
March 1989	RFA	000008
November 1991	IRI	000104
November 1994	RI/FS for Sites 7 and 9–13	000226, 000352, 000353
May 1996	Semiannual Groundwater Monitoring Initiated at Sites 9 and 10	--
November 1996	Project Plans for Groundwater Monitoring at Sites 5, 9, 10, and 11	000118
January 1997	Groundwater Monitoring Letter Report – Round 1	--
January 1997	Proposed Remedial Action Plan	000121
June 1997	DD	000217
July 1998	Groundwater Monitoring Letter Report – Rounds 2 & 3	--
July 1998	Groundwater Monitoring Letter Report – Round 4	--
November 1998	Groundwater Monitoring Letter Report – Round 5	--
May 1999	Former NAB Little Creek on NPL	000439
October 1999	Groundwater Monitoring Letter Report – Round 7	--
January 2000	Semiannual Groundwater Monitoring program revised to Annual Groundwater Monitoring Program	--
February 2000	Soil Cover Survey	--
May 2000	Groundwater Monitoring Summary Report for Rounds 1 through 6	--
June 2000	Groundwater Monitoring Letter Report – Round 8	--
June 2000	Screening Ecological Risk Assessment	000417
November 2000	Groundwater Monitoring Letter Report – Round 9	--
February 2001	Revised RI/HHRA/FS	000425
March 2001	Baseline Ecological Risk Assessment (BERA)	000424
March 2001	Proposed Remedial Action Plan	000436
August 2002	Groundwater Monitoring Letter Report – Round 10	--
November 2002	Groundwater Monitoring Letter Report – Round 11	--
October 2003	FFA	000540
November 2003	Groundwater Monitoring Letter Report – Round 12	--

Date	Event/ Document	Document Administrative Record Number [a]
December 2003	ROD	000571
March 2004	LUC RD	--
September 2004	LTM Report for Round 12 and Data Trend Analysis for Rounds 1 through 12	--
September 2004	Project Plans for the Post-ROD LTM Program	--
September 2004	Initiated Quarterly Inspections and Annual LTM	--
February 2005	Interim Remedial Action Completion Report (IRACR)	000940
August 2005	FY 2005 LTM Report, Sites 9 and 10	000902
January 2007	FY 2006 LTM Report, Sites 9 and 10	001042
March 2008	FY 2007 LTM Report, Sites 9 and 10	--
January 2009	FY 2008 LTM Report, Sites 9 and 10	000095
March 2009	Five-Year Review	001534
September 2009	O&M Action initiated	--
April 2010	Construction Completion Report (CCR)	--
May 2013	LUC RD Revision 1	--
March 2014	Five-Year Review	002091
December 2015	O&M Action completed	--
May 2017	LTM Data Evaluation Technical Memorandum	--
November 2017	Groundwater LTM SAP	--
December 2017	Post-ROD Groundwater LTM initiated	--
March 2019	Five-Year Review	002702

Notes:

[a] Documents submitted after the ROD are not required to be included in the Administrative Record.

Site Description and History

Site 9, the Driving Range Landfill, comprises approximately 6 acres in the northeastern portion of the installation, northwest of the golf course, directly east of the Sewage Treatment Plant Landfill (Site 10) and Hewitt Drive, and approximately 500 feet south of the Chesapeake Bay shoreline (**Figure 2-3**). The Driving Range Landfill was used for the disposal of solid waste from 1950 through 1956, and was not closed under a regulatory authority program. Landfilling methods entailed excavating trenches and backfilling them with waste. Trench depths were likely limited by the water table. The estimated land disposal volume was 40,000 yd^3 of waste. An incinerator, located on Hewitt Drive opposite the western perimeter of Site 9, was active during the landfill operating period and reportedly burned combustible materials generated by the facility. The landfill reportedly received ash and bypassed materials from the incinerator, PCBs, pesticides, used motor oil, paints, solvents, acids, bases, asbestos, and solid waste from the base (RGH, 1984).

Following termination of landfill operations, a soil cover was placed over the landfill and the installation converted the area into the Eagle Haven Golf Course driving range. In association with the 1953 Pistol Range, closed under the Military Munitions Response Program (MMRP), a berm was constructed using clean fill along the east side of Hewitt Drive. Sewage sludge was placed along the southern site boundary to enhance growth of the grass. The thickness of the soil cover across most of Site 9 is between 2 and 5 feet.

Site 10, the Sewage Treatment Plant Landfill, comprises approximately 18 acres in the northeastern portion of the installation, west of Site 9—Driving Range Landfill, and approximately 500 feet south of the Chesapeake Bay shoreline (**Figure 2-3**). The Sewage Treatment Plant Landfill operated from 1941 until 1968. Landfilling operations began in the southern portion of the site, which included an extension of Desert Cove, and then moved northward to the associated marsh lowlands. Between 1941 and 1952, the Sewage Treatment Plant Landfill was the only operational landfill on the base, and received household and industrial wastes (that is, containing PCBs, pesticides, paints, solvents, acids, and bases) and demolition debris until the Driving Range Landfill (Site 9) was opened in 1952 (RGH, 1984). Between 1952 and 1968, sewage sludge from the onsite wastewater treatment plant was disposed in the northwestern portion of the Site 10 landfill. The estimated disposal volume was 46,500 yd^3 of waste.

Following termination of landfill operations, a soil cover was placed over the Site 10 landfill and the installation converted part of the area for use as a baseball field and military combat exercises. The thickness of the soil cover across most of Site 10 is between 2 and 6 feet.

Land and Resource Use

Site 9 is currently used as the Eagle Haven Golf Course driving range and is managed by JEB Little Creek Morale, Welfare, and Recreation (MWR). The southeastern portion of Site 10 is currently used as recreational baseball fields and is also managed by Little Creek MWR. The vegetated dune area located in the northeastern portion of Site 10 is currently used for military combat exercises. Current and future land uses of the sites are not expected to change. The land surrounding the sites is used for industrial and recreational purposes. Groundwater at JEB Little Creek is not currently used as a potable water source, nor is it expected to be used as a future potable water source. Potable water is supplied to the base and surrounding community by the cities of Virginia Beach and Norfolk.

History of Contamination

Site 9 is an approximately 6-acre area used between 1950 through 1956 for the disposal of ash and bypassed materials from the incinerator, PCBs, pesticides, used motor oil, paints, solvents, acids, bases, asbestos, and solid waste from the base. Site 10 is an approximately 18-acre area used between 1941 until 1968 for the disposal of household and industrial wastes (that is, contaminated with PCBs, pesticides, paints, solvents, acids, and bases), demolition debris, and sewage sludge.

Human health and ecological risk assessments were conducted for Sites 9 and 10. The HHRA identified potentially unacceptable risks associated with future potable use of groundwater at the sites, based on antimony, cadmium, manganese, thallium, and zinc concentrations. While it is assumed that there are potentially unacceptable human health risks associated with theoretical exposure to the waste-in-place in the landfills, no unacceptable risks to human health associated with exposure to surface soil at either site were identified (CH2M, 2001a). Potential ecological risks associated with exposure to contaminated media were also evaluated in the Baseline (Step 3) ERA (CH2M, 2001b). The Baseline ERA concluded that no potentially unacceptable ecological risks were present at Sites 9 and 10.

Remedy Selection

The ROD for Sites 9 and 10 was signed in December 2003 (Navy, 2003b). The ROD summarized the risks to human health and ecological receptors, established RAOs, and defined the selected remedy. The remedy for Sites 9 and 10, LUCs and LTM of groundwater, was selected to meet the following RAOs:

- Prevent or minimize direct contact of human and ecological receptors with landfill contents.
- Prevent unacceptable risks to potential receptors for groundwater.
- Control surface water runoff and erosion.

The following LUC objectives for Sites 9 and 10 were selected in the ROD:

- Prohibit digging into or disturbing the existing soil covers or contents of the landfills.
- Prohibit residential development on the sites.
- Prohibit the use of the shallow aquifer groundwater beneath the sites other than for environmental monitoring and testing.

Remedy Implementation

Survey plats were filed with the Virginia Beach Circuit Court in the Commonwealth of Virginia on August 9, 2004 for Site 9 and August 6, 2004 for Site 10 to provide public notice of the environmental conditions and limitations on the use of the property and record the LUC boundary (CH2M, 2005). As outlined in the LUC RD, Sis were initiated in October 2004, and have been conducted on a quarterly basis to monitor unauthorized activities and land use changes. A consensus agreement revising the inspection frequencies at Sites 9 and 10 was signed in May 15, 2013 that reduced the required SI frequency from quarterly at both sites to annually at Site 9 and biannually at Site 10. The change is documented in the LUC RD Revision 1 (Navy, 2013b). Checklists and data reports are completed during inspections and issued to USEPA and VDEQ.

Landfill cover O&M activities were conducted in December 2015 to repair two areas containing soil ruts along the vehicle access path and remove dispersed surface debris. No buried landfill waste was observed to be exposed within the ruts. The soil ruts were backfilled with geotextile fabric, geotextile grids, stone, and sand to reinforce the areas of soil rutting. In addition to repairing the soil ruts, sand fence was installed across the length of the two openings in the central portion of the vegetated dune area to prevent vehicle access.

Five-year Schedule

The 5-year schedule for Sites 9 and 10 is presented in **Table 2-9**. Planned activities at Sites 9 and 10 consist of the following:

- LTM UFP-SAP
- LTM
- Five-Year Review

2.4.1.3 Site 11—School of Music Plating Shop

Site Chronology

Date	Event/Document	Document Administrative Record Number [a]
December 1984	IAS	000130
October 1986	RVS	000022
March 1989	RFA	000008
August 1993	EE/CA	001018
November 1994	RI/FS for Sites 7 and 9-13	000226, 000352, 000353
November 1994	DD for Removal of Neutralization Tank, Piping, and Surrounding Soil	000125
October 1995	Removal Action Work Plan	000289
May 1996	Interim Remedial Action (IRA) Closeout Report; post-removal groundwater monitoring initiated	000119
April 1998	Supplemental RI initiated	000215
May 1999	Former NAB Little Creek on NPL	000439
June 2000	SERA	000417
June 2002	Cyclodextrin (CD) solution pilot test	--

Date	Event/Document	Document Administrative Record Number [a]
October 2003	FFA	000540
June 2004	Supplemental Remedial Investigation (SRI)/HHRA	000656
September 2005	Vapor Intrusion Investigation	000920
March 2006	SRI Addendum/Revised HHRA	001028
June 2006	FS	001030
October 2006	Pentachlorophenol Technical Memorandum	--
October 2006	Proposed Plan	--
July 2007	ROD	001221
December 2008	Remedial Action Work Plan (RAWP)	001481
March 2009	Five-Year Review	001534
March 2009	LUC RD	001531
July 2009	Annual LUC inspections initiated	--
May 2009	Enhanced Reductive Dechlorination (ERD) Injections Complete	--
May 2010	LUC RD Revision 1	--
June 2010	Remedial Action Construction Completion Report	--
June 2011	Enhanced Reductive Dechlorination Annual Groundwater Monitoring Summary	001120
February 2012	IRACR	001572
March 2012	Draft Final Post-ROD LTM Uniform Federal Policy for Quality Assurance Project Plans (UFP-SAP), Revision 1, Groundwater LTM initiated	--
May 2012	Vapor Intrusion LTM initiated	--
May 2013	LUC RD Revision 2	--
March 2014	Five-Year Review	002091
July 2015	LTM Report	--
May 2015	1,4-Dioxane Groundwater Investigation Complete	--
April 2016	1,4-Dioxane Groundwater Investigation Report	002325
September 2016	ERD Injections and Bioaugmentation Complete	--
December 2016	Stormwater Pipes Investigation Complete	--
March 2017	LTM Report	--
May 2017	Stormwater Pipes Investigation Report	--
January 2017	RA O&M CCR	--
October 2018	Draft LTM UFP-SAP	--
March 2019	Five-Year Review	002702

Notes:

[a] Documents submitted after the ROD are not required to be included in the Administrative Record.

Site Description and History

Site 11, the Former School of Music Plating Shop, is in the eastern portion of the base, near the intersection of Seventh and E Streets (**Figure 2-4**). Activities at the Former School of Music Plating Shop have resulted in a chlorinated solvent plume underlying the School of Music (Building 3602), southwest of the former plating shop.

The former plating shop operated between 1964 and 1974, after which plating operations were transferred to a separate facility. During operation, small quantities of plating baths, acids, and lacquer strippers were disposed of in the plating shop sink, which drained into an in-ground, concrete neutralization tank and its associated piping, and eventually into the storm sewer system (RGH, 1984). It was reported that approximately 10 gallons of plating baths, acids, and lacquer stripper were disposed into the neutralization tank through the shop sinks each year of its operation (RGH, 1984). During its period of operation, the plating shop reportedly used silver cyanide, copper cyanide, chromic acid (brite dip), nickel plating baths, and various acids. In addition, lacquer strippers and lacquer were also used. There are no records of chlorinated solvents being used at this site; however, degreasing solvents such as trichloroethene (TCE) and 1,1,1-trichloroethane (TCA) historically have been associated with operations at similar facilities. The neutralization tank, piping, and surrounding soil were excavated in 1996.

Land and Resource Use

Currently, Site 11 consists of the School of Music and its associated parking lot. Building 3651 is used for storing miscellaneous items, and the grass field located north of the School of Music is used for marching band practice and drill sessions. Enlisted quarters, industrial activities, and administrative offices surround the site. Groundwater at JEB Little Creek is not currently used as a potable water source, nor is it expected to be used as a future potable water source. Potable water is supplied to the base and surrounding community by the cities of Virginia Beach and Norfolk.

History of Contamination

Chlorinated volatile organic compounds (VOCs) were historically released to groundwater from the former plating shop neutralization tank. Groundwater contamination includes a residual source area adjacent to the former neutralization tank and a down-gradient plume consisting predominantly of dissolved-phase contaminants. Groundwater contamination is highly stratified, with the interval just above the clay (approximately 21 to 23 feet below ground surface [bgs]) containing the greatest concentrations of contaminants. Shallower groundwater contains much lower VOC concentrations. Investigations have not confirmed the presence of dense, non-aqueous phase liquid (DNAPL); however, the maximum detected concentration of TCE in groundwater indicates that DNAPL may be present based on the rule of thumb that concentrations in excess of 1 percent of a compound's aqueous solubility suggest the nearby presence of DNAPL. No VOCs have been detected in samples collected from the underlying Yorktown aquifer.

Human health and ecological risk assessments were conducted for Site 11. Based on the results of the HHRA, no potentially unacceptable carcinogenic risks or noncarcinogenic hazards associated with exposure to site soil were identified. It was concluded that exposure to shallow groundwater may pose potentially unacceptable carcinogenic risks and/or noncarcinogenic hazards for future construction workers, industrial workers, and adult/child residents. Risks and hazards were primarily associated with exposure to VOCs in groundwater. No potentially unacceptable risks were identified from exposure to indoor air under existing site conditions. The ERA concluded there are no unacceptable ecological risks to terrestrial receptors at Site 11 because no complete and significant exposure pathways to surface soil exist at the site and the source area (subsurface neutralization tank and piping) was removed in 1996. There is no complete and significant pathway for ecological receptor exposure to groundwater and no aquatic habitats exist on or near the site.

Remedy Selection

The ROD for Site 11 was signed in July 2007 (Navy, 2007a). The ROD summarized the risks to human health and ecological receptors, established RAOs, and defined the selected remedy. The selected remedy for Site 11 was defined as groundwater treatment through ERD and LUCs to meet the following RAOs:

- Prevent exposure to Site 11 groundwater until concentrations of VOCs have been reduced to levels that allow for unlimited use and unrestricted exposure.
- Reduce concentrations of VOCs in Site 11 groundwater to cleanup levels to the maximum extent practicable within a reasonable amount of time.

The following LUC objectives for Site 11 were selected in the ROD:

- Prohibit the withdrawal of groundwater except for environmental monitoring and testing.
- Prohibit the use of the site for residential, child care, elementary or secondary school, or playground facilities.
- Maintain the integrity of any current or future remedial or monitoring system.

A consensus agreement was signed on May 19, 2010 documenting the addition of the following LUC objective to the LUC RD for Site 11:

- Prevent dermal contact with groundwater by construction workers.

Additionally, to protect against any potential human health risk related to vapor intrusion resulting from changes in land use, a consensus agreement was signed in May 15, 2013 adding the following LUC objective to the LUC RD for Site 11:

- Prohibit changes from current building use or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of necessary mitigation measures.

Remedy Implementation

In advance of remedy implementation, leaking sanitary sewer lines in the vicinity of Site 11 were repaired in October 2007. RA began in January 2009 with monitoring well installation. Following monitoring well installation, groundwater LTM was initiated, with the baseline sampling event in March 2012, and LTM is ongoing. Groundwater injection of emulsified vegetable oil product was performed in April/May 2009. Remedy construction was documented in the RA CCR (JV I, 2010). Following substrate injection, performance monitoring was conducted at a frequency of 1-, 3-, 6-, 9-, and 12-months post-injection. The Site 11 IRACR was signed in February 2012 and documented that the remedy was in place and functioning as designed (Navy, 2012a).

The LUC RD for Site 11 was finalized in March 2009 (Navy, 2009b). A survey plat for Site 11 was filed with the City of Virginia Beach on June 2, 2011 to provide public notice of the Site 11 environmental conditions and limitations on the use of the property and to record the LUC boundary (Navy, 2012a). As outlined in the LUC RD, annual inspections are conducted to monitor unauthorized activities and land use changes. Checklists and data reports are completed during inspections and issued to USEPA and VDEQ.

Five-year Schedule

The 5-year schedule for Site 11 is presented in **Table 2-10**. Planned activities at Site 11 consist of the following:

- LTM GW UFP-SAP
- LTM VI UFP-SAP
- LTM
- Five-Year Review

2.4.1.4 Site 11a—Building 3033 Former Waste Oil Tank

Site Chronology

Date	Event/Document	Document Administrative Record Number [a]
August 2001	Site 11 Groundwater Investigation	--
June 2003	Site 11a Supplemental Investigation	000519
October 2003	FFA	000540
July 2006	Treatability Study	000990
July 2010	RI	001168
February 2011	RI Addendum	001177
June 2011	FS	001131
August 2011	Proposed Plan	001138
August 2011	ROD	001149
October 2012	100% Submittal Basis of Design	--
October 2012	RAWP and SAP	001629
November 2012	ERD Injections Complete	--
March 2013	RA CCR	--
April 2013	LUC RD	001739
May 2013	Annual LUC inspections initiated	--
September 2013	IRACR	001791
March 2014	Five-Year Review	002091
September 2014	Groundwater and Vapor Intrusion LTM initiated	--
May 2015	HAPSITE Investigation	--
September 2015	ROD Memo to File	--
November 2016	LTM Report	--
November 2016	Remedy Optimization Investigation	--
October 2018	Remedy Optimization Investigation Report	002626
March 2019	Five-Year Review	002702

Notes:

[a] Documents submitted after the ROD are not required to be included in the Administrative Record.

Site Description and History

Site 11a, the Building 3033 Former Vehicle Repair Facility and Waste Oil Tank, is in the central portion of JEB Little Creek, near the intersection of Seventh and E Streets (**Figure 2-5)**. Currently, the site consists of Buildings 3606 (single-residency barracks) and 3606A (Quarter Deck), with unpaved areas that have been landscaped with shrubs, bushes, grass, and several large trees surrounding the buildings. Two former buildings, Buildings 3033 and 3034, were historically located at Site 11a. Former Building 3033 was used as a 12-bay vehicle repair facility. Historical records indicate the presence of an underground waste oil tank associated with the vehicle repair activities. The tank was previously identified as SWMU 60 and closed under CERCLA with no further action following a desktop audit. The contents of the tank were not documented and there is no record of solvent disposal in the tank. The tank was reportedly excavated and removed in 1988 under the VDEQ Underground

Storage Tank (UST) Program. Former Building 3034 was used as a garden supply center. No releases associated with this building have been documented.

Site 11a was identified in 1998 when VOCs were detected in groundwater from a Site 11 upgradient monitoring well (LS11-MW16D) during the Site 11 Supplemental RI (CH2M, 2010). Groundwater samples were collected in 1999 in the Site 11a vicinity as part of Site 11 investigations to identify a potential upgradient source of VOCs. Consequently, the VOC groundwater contamination upgradient of Site 11 became identified in the FFA in 2003 as Site 11a, an Appendix B Preliminary Screening Area, and was proposed for investigation under CERCLA. Investigation results indicate site activities have resulted in a chlorinated solvent plume underlying the barracks parking lot and grassy field.

Land and Resource Use

Currently, surface features at Site 11a consist of Buildings 3606 and 3606A, their surrounding asphalt parking areas, and an open-mown grass field. Building 3606 is a five-story barracks building used as single- or double-occupancy lodging for active duty personnel. Building 3606A is a one-story building used primarily for administrative and recreational activities associated with the barracks. The open field south of Building 3606 is used primarily as a recreational area for building occupants. Groundwater at JEB Little Creek is not currently used as a potable water source, nor is it expected to be used as a future potable water source.

History of Contamination

Although no record of a release associated with former Buildings 3033 and 3034 has been identified, investigation results indicate chlorinated VOCs were historically released to groundwater. Groundwater contamination includes a small source area near the footprint of the former Building 3033 and the suspected location of the former waste oil UST, with dissolved-phase contaminants extending south-southwest following the primary direction of groundwater flow and extending north beneath Building 3606. TCE is the most horizontally extensive VOC, while tetrachloroethene (PCE) is concentrated in the source area and the area just south of the source area. Groundwater contamination is predominately present in the bottom 5-foot interval just above the clay confining unit (approximately 23 to 28 feet bgs). Data do not indicate the presence of DNAPL at the site. No VOCs have been detected in samples collected from the underlying Yorktown aquifer.

Human health and ecological risk assessments were conducted for Site 11a. Based on the results of the HHRA, no potentially unacceptable risks or hazards associated with exposure to site soil were identified. It was concluded that exposure to shallow groundwater may pose unacceptable hazards and risks for future construction workers and adult/child residents. Risks and hazards were primarily associated with exposure to VOCs in groundwater. No potentially unacceptable current or future risks were identified from exposure to indoor air under existing site conditions. However, the risk assessment concluded that if future structures are constructed at the site, risks could exceed the USEPA target risk levels based on the sub-slab vapor concentrations and USEPA's conservative generic soil vapor to indoor air attenuation factor. The ERA concluded that there are no unacceptable ecological risks because there is no complete pathway for ecological receptor exposure to groundwater and no aquatic habitats exist on or near the site.

Remedy Selection

The ROD for Site 11a was signed in September 2011 (Navy, 2011). The ROD summarized the risks to human health and ecological receptors, established RAOs, and defined the selected remedy. The selected remedy for Site 11a was defined as groundwater treatment through ERD, groundwater monitoring, and LUCs to meet the following RAOs:

- Reduce concentrations of COCs in the source area and the down-gradient plume to cleanup levels (MCLs) through treatment to the maximum extent practicable within a reasonable amount of time.
- Prevent exposure to Site 11a groundwater and groundwater emissions in indoor air until concentrations of COCs have been reduced to levels that allow for unlimited use and unrestricted exposure.

The following LUC objectives for Site 11a were selected in the ROD:

- Prohibit activities that would result in contact with shallow groundwater except for environmental monitoring.
- Prohibit the withdrawal of shallow groundwater except for environmental monitoring.
- Prohibit construction of new buildings at the site without making sure vapor intrusion mitigation measures are included in building design.
- Prohibit the use of the site for child care, elementary or secondary school, or playground facilities.
- Maintain the integrity of any current or future remedial or monitoring system.

Following implementation of the Site 11a remedy, increases in PCE and TCE were observed near Building 3606 during the September 2014 LTM sampling event. Remedy optimization activities were conducted in 2016 to assess whether an unidentified and ongoing shallow (vadose zone) contaminant source existed near Building 3606, and if so, to determine whether the extent of the source area had been characterized. The results of these activities indicated that a small, localized soil source area exists in the vicinity of where a UST was formerly located. Since this soil source could potentially continue leaching VOCs to groundwater and the time to attain cleanup levels and site closure will be prolonged until the source area is degraded, it was determined that Site 11a remedy could take longer than what had been assumed in the ROD. Therefore, an Explanation of Significant Differences (ESD) was drafted to include a targeted soil removal be added to the remedy and be performed to remove the potential source of groundwater contamination (Navy, 2021).

Remedy Implementation

Remedy implementation began in April 2012 with the installation of five new monitoring wells and baseline groundwater sampling. Groundwater injection of emulsified vegetable oil product was performed in November 2012. Remedy construction was documented in the RA CCR (Osage, 2013). Following substrate injection, performance monitoring was conducted at a frequency of 1-, 3-, and 6-months post-injection. Performance monitoring results indicated the remedy was successful in achieving the geochemical conditions required to facilitate ERD (Osage, 2013). Groundwater and vapor intrusion LTM at Site 11a was initiated in September 2014 and is ongoing. The Site 11a IRACR was signed in September 2013 and documented that the remedy was in place and functioning as designed (Navy, 2013c).

The LUC RD for Site 11a was finalized in April 2013 (Navy, 2013a). A survey plat for Site 11a was filed with the City of Virginia Beach on July 8, 2013 to provide public notice of the Site 11a environmental conditions and limitations on the use of the property and to record the LUC boundary (Navy, 2013a). As outlined in the LUC RD, annual inspections are conducted to monitor for unauthorized activities and land use changes. Checklists and data reports are completed during inspections and issued to USEPA and VDEQ.

Five-year Schedule

The 5-year schedule for Site 11a is presented in **Table 2-11**. Planned activities at Site 11a consist of the following:

- LTM GW UFP-SAP
- LTM VI UFP-SAP
- LTM
- Remedy Optimization Soil Removal and ERD Injections
- Soil Removal Construction Completion Report
- Five-Year Review

2.4.1.5 Site 12—Exchange Laundry Waste Disposal Area

Site Chronology

Date	Event/Document	Document Administrative Record Number [a]
December 1984	IAS	000130
October 1986	RVS	000022
March 1989	RFA	000008
August 1990	Environmental Assessment Phase I	Not available
April 1991	Environmental Assessment Phase II	000009
November 1991	IRI	000104
June 1992	Site Closeout Report	--
November 1994	RI/FS for Sites 7 and 9-13	000226, 000352, 000353
May 1999	Former NAB Little Creek on NPL	000439
June 2000	SERA	000417
October 2000	SRI	000422
March 2003	BERA	001368
October 2003	FFA	000540
March 2004	FS	--
September 2004	Revised FS	000783
September 2004	Revised FS Addendum	0011444
June 2005	Proposed Plan	0000866
September 2005	ROD	0000927
September 2005	Periodic site inspections initiated	
August 2006	ESD	0001032
February 2007	RAWP	--
April 2007	ERD Injections Complete	--
October 2008	RA CCR	001473
October 2008	ERD Annual Groundwater Monitoring Summary	--
February 2009	LUC RD	001529
March 2009	Five-Year Review	001534
March 2009	Second ERD Injections complete	--
July 2009	Annual LUC inspections initiated	--
May 2010	LUC RD Revision 1	--
May 2010	IRACR	002333
January 2011	Draft Final, Post-ROD LTM UFP-SAP	--
March 2011	Groundwater LTM initiated	--
September 2011	Third ERD Injections Complete	--
May 2013	LUC RD Revision 2	--

Date	Event/Document	Document Administrative Record Number [a]
March 2014	Five-Year Review	002091
July 2015	LTM Report	--
September 2015	Fourth ERD Injections Complete	--
August 2016	Remedial Action O&M CCR	--
March 2017	LTM Report	--
March 2019	Five-Year Review	002702
June 2017	Remedy Optimization Investigation	--
January 2020	Remedy Optimization Technical Memorandum	--
July 2020	Remedy Optimization Work Plan	--

Notes:

[a] Documents submitted after the ROD are not required to be included in the Administrative Record.

Site Description and History

Site 12, the Former Exchange Laundry/Dry Cleaning Facility, is in the eastern portion of the Base, near the intersection of Amphibious Drive and B Street (**Figure 2-6**). Use of the Former Exchange Laundry/Dry Cleaning Facility has resulted in a chlorinated solvent plume underlying the existing commissary parking lot.

The Former Exchange Laundry/Dry Cleaning Facility (former Building 3323) operated from 1973 until 1987, when it was demolished for the construction of the existing commissary (Building 3445). During operation, an estimated 1,320 gallons of waste, including PCE, soap, sizing, and dyes associated with dry cleaning activities, were disposed in a stormwater catch basin located to the northeast (RGH, 1984). Of this total, 200 gallons were estimated to be PCE sludge. The catch basin and associated storm sewer line were removed in 1992 for construction of the existing commissary.

Land and Resource Use

Currently, Site 12 consists of the base commissary, its associated parking lot, and a self-service car wash. Enlisted quarters, industrial activities, and administrative offices surround the site.

Groundwater at JEB Little Creek is not currently used as a potable water source, nor is it expected to be used as a future potable water source. Potable water is supplied to the base and surrounding community by the cities of Virginia Beach and Norfolk. Groundwater supply wells at the base golf course, located approximately 3,600 feet southeast of Site 12, provide non-potable water from the Yorktown aquifer to irrigate the golf course.

LUCs are currently maintained within an area of restricted land and groundwater use at Site 12 and the area is inspected on an annual basis (Navy, 2009a; Navy, 2010a; Navy, 2013b). The LUCs restrict land use and prevent exposure to shallow groundwater until site conditions allow for unlimited use and unrestricted exposure.

History of Contamination

Chlorinated VOC wastes generated by the Former Exchange Laundry/Dry Cleaning Facility were historically released to the surface or near surface through the storm sewer and percolated downward to groundwater. Groundwater contamination includes two residual source areas located north and west of the former laundry/dry cleaning facility. Chlorinated VOCs in groundwater extend from the source areas west toward the canal and slightly east. The vertical extent of VOCs in groundwater is about 20 feet downward to the clay confining unit, with higher contaminant concentrations near the top and bottom of the aquifer separated by lower concentrations in the intermediate aquifer depths. Concentrations of VOCs were historically higher near the bottom of the aquifer in the source areas. Data do not indicate the presence of DNAPL at the site. Chlorinated VOCs have not been detected in canal surface water or sediment. Additionally, groundwater sampling conducted

to the west of the canal does not indicate VOCs are migrating under the canal. No VOCs have been detected in samples collected from the underlying Yorktown aquifer.

Human health and ecological risk assessments were conducted for Site 12. Based on the results of the HHRA, no potentially unacceptable risks or hazards associated with exposure to site soil, sediment, and surface water were identified. It was concluded that exposure to shallow groundwater may pose potentially unacceptable hazards and risks for future adult/child residents. Risks and hazards were primarily associated with exposure to VOCs in groundwater. As part of a site characterization study, soil gas samples were collected for analysis of VOCs to evaluate potential vapor intrusion pathways prior to the construction of the Commissary in 1995 (ATEC, 1993). Per a recommendation of the study, a passive subsurface venting system was installed under the commissary floor to prevent the possibility of vapor migration into the new building. Therefore, an evaluation of vapor intrusion risk has not been conducted at Site 12. In response to construction of a handicap-accessible ramp at the southwestern corner of the commissary in April 2010, an assessment of risk associated with construction worker exposure to groundwater was conducted in 2011. Potentially unacceptable risks were identified from dermal exposure to VOCs in groundwater by a construction worker.

The ERA concluded there are no unacceptable risks to terrestrial receptors at Site 12 because no complete and significant exposure pathways exist at the site due to its developed nature. For aquatic receptors, potentially unacceptable risks were identified for exposure to constituents in sediment and surface water in the drainage canal. However, as a result of the leaking sanitary sewer line intercepting groundwater prior to discharge to the canal, the ERA concluded that there was no complete transport pathway for groundwater associated with the site to discharge to the canal. The leaking sewer line has been subsequently repaired and this transport pathway is now potentially complete. The ERA also concluded that potential ecological risks in the canal associated with surface water exposures were acceptable and that potential risks associated with sediment exposures (for several metals) were low because of the limited habitat present in the canal (essentially a linear ditch) and the limited spatial area of the screening value exceedances (all metals exceedances were confined to a single sample near a stormwater outfall). Further, none of these metals are likely attributable to Site 12 based on site history and the spatial pattern of the concentrations in the canal. Additionally, no unacceptable risks associated with food web exposures were identified. Based on the overall results of the ERA, potential site-related ecological risks in the drainage canal adjacent to Site 12 are considered to be acceptable.

Remedy Selection

The ROD for Site 12 was signed in September 2005 (Navy, 2005). The ROD summarized the risks to human health and ecological receptors, established RAOs, and defined the selected remedy. The selected remedy for Site 12 outlined in the ROD was in situ chemical oxidation (ISCO), ERD, LTM, and LUCs. In October 2006, an ESD was signed removing the ISCO portion of the remedy as a result of the likelihood for metals mobilization in groundwater. Therefore, the selected remedy for Site 12 was defined as groundwater treatment through ERD, groundwater monitoring, and LUCs to meet the following RAOs:

- Prevent unacceptable risk to human health and the environment from exposure to chlorinated VOCs in groundwater.
- Reduce chlorinated VOC concentrations to their MCLs by applying best available technologies.

The following LUC objectives for Site 12 were selected in the ROD:

- Prohibit the withdrawal of groundwater except for environmental monitoring and testing.
- Prohibit the use of the site for residential, child care, elementary or secondary school, or playground facilities.
- Maintain the integrity of any current or future remedial or monitoring system.

LUC objectives have been implemented with the actions detailed in the LUC RD (Navy, 2009a). LUCs will be maintained until concentrations of VOCs in groundwater have been reduced to levels that allow unlimited use and unrestricted exposure.

In response to construction of a handicap-accessible ramp at the southwestern corner of the commissary in April 2010, assessment of risk associated with construction worker exposure to groundwater was evaluated. Potentially unacceptable risks were identified from dermal exposure to VOCs in groundwater. Because the existing remedy is protective of the more-conservative, residential exposure scenario, no changes to RAOs or cleanup levels were warranted. However, a consensus agreement was signed on May 19, 2010 documenting the addition of the following LUC objective to the LUC RD for Site 12:

- Prevent dermal contact with groundwater by construction workers.

To protect against any potential human health risk related to vapor intrusion resulting from changes in land use, a consensus agreement was signed in May 15, 2013 adding the following LUC objective to the LUC RD for Site 12:

- Prohibit changes from current building use or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of necessary mitigation measures.

Remedy Implementation

Remedial action began in March 2007 with the installation and sampling of monitoring wells and injection wells. Based on the results of baseline sampling, additional groundwater sampling was conducted in April 2007 via direct-push technology to delineate the western and southwestern edge of the plume. Groundwater injection of emulsified vegetable oil product was performed in March/April 2007. Remedy construction was documented in the RA CCR (JV I, 2008b). Following substrate injection, performance monitoring was conducted at a frequency of 1-, 3-, 6-, 9-, and 12-months post-injection. Performance monitoring results indicated the remedy was successful in achieving the geochemical conditions required to facilitate ERD (CH2M, 2009b). The Site 12 IRACR was signed in May 2010 and documented that the remedy was in place and functioning as designed (Navy, 2010a). Groundwater LTM at Site 12 was initiated in March 2012 and is ongoing.

The LUC RD for Site 12 was finalized in February 2009 (Navy, 2009a). A survey plat for Site 12 was filed with the City of Virginia Beach on March 25, 2010 to provide public notice of the Site 12 environmental conditions and limitations on the use of the property and to record the LUC boundary (Navy, 2009a). As outlined in the LUC RD, periodic inspections are conducted to monitor unauthorized activities and land use changes. Checklists and data reports are completed during inspections and issued to USEPA and VDEQ.

Five-year Schedule

The 5-year schedule for Site 12 is presented in **Table 2-12**. Planned activities at Site 12 consist of the following:

- LTM UFP-SAP
- LTM
- Remedy Optimization
- Five-Year Review

2.4.1.6 Site 13—Public Works Pentachlorophenol Dip Tank and Wash Rack

Site Chronology

Date	Event/Document	Document Administrative Record Number [a]
1982	Dip tank and associated drying racks dismantled	
December 1984	IAS	000130
October 1986	RVS	000022
March 1989	RFA	000008
November 1991	IRI	000104
November 1994	RI/FS for Sites 7 and 9-13	000226, 000352, 000353
March 1999	EE/CA	000332

Date	Event/Document	Document Administrative Record Number [a]
March 1999	IRA initiated	--
May 1999	Former NAB Little Creek on NPL	000439
July 1999	Removal Action Closeout Report	000457
June 2000	SERA	000417
August 2000	Oxygen-releasing Compound (ORC) Pilot Study initiated	--
October 2001	BERA	000475
May 2002	SRI/HHRA	000465
March 2003	ORC Groundwater Remediation Report	000472
October 2003	FFA	000540
June 2004	FS	000573
September 2004	ERD and ISCO Treatability Study initiated	--
August 2006	Treatability Study Report	000989
June 2007	Vapor Intrusion Investigation Technical Memorandum	001214
July 2007	Proposed Plan	001280
September 2007	ROD	001268
March 2009	Five-Year Review	001534
March 2009	LUC RD	001531
July 2009	Annual LUC inspections initiated	--
March 2010	RAWP	002345
May 2010	LUC RD Revision 1	--
May 2010	ERD Injections Complete	--
April 2011	RA CCR	001109
December 2011	ERD Groundwater Monitoring Summary	--
June 2012	Draft Final Post-ROD LTM UFP-SAP, Revision 2	--
September 2012	Groundwater LTM initiated	--
September 2012	IRACR	001647
May 2013	LUC RD Revision 2	--
March 2014	Five-Year Review	002091
July 2015	LTM Report	--
December 2016	Stormwater Pipes Investigation	--
March 2017	LTM Report	--
May 2017	Stormwater Pipes Investigation Report	--
July 2017	Remedy Optimization Investigation	--
November 2017	LUC RD Revision 3	002415
June 2018	Remedy Optimization Investigation Report	--
March 2019	Five-Year Review	002702

Notes:

[a] Documents submitted after the ROD are not required to be included in the Administrative Record.

Site Description and History

Site 13, the Former Public Works Center Dip Tank and Wash Rack, is in the eastern portion of the base within the facility Public Works Department (PWD) compound, near the intersection of 7th and F Streets in the eastern portion of JEB Little Creek, approximately one block west of Site 11 (**Figure 2-7**).

During operation, the site consisted of a former 1,500-gallon, in-ground dip tank that was used to treat wood with a mixture of pentachlorophenol (PCP), diesel, and kerosene, associated washing/drying racks, and an open area formerly used by the PWD to store supplies and equipment. From the early 1960s to 1974, wood was treated in the dip tank solution, allowed to dry at onsite racks, and subsequently distributed for use on the base. The dip tank and associated drying racks were dismantled and removed in 1982. Contaminated soil was excavated as part of an IRA in 1999. The area was then paved with asphalt and converted to a PWD storage area. The wash rack, installed in 1945, was used to clean vehicles and equipment with steam and biodegradable chemicals. The wash rack consists of a concrete pad surrounded by a concrete curb, with a centrally located drain leading to an oil-water separator. An unpaved storage area located adjacent to the wash rack was used to store various materials and equipment.

Land and Resource Use

Currently, Site 13 continues to be used by the PWD for base maintenance activities and consists of several buildings (Buildings 3165, 3165B, 3165D, 3165E, and 3174), the former wash rack, and the PWD parking lot. Enlisted quarters, industrial activities, and administrative offices surround the site. Groundwater at JEB Little Creek is not currently used as a potable water source, nor is it expected to be used as a future potable water source. Potable water is supplied to the base and surrounding community by the cities of Virginia Beach and Norfolk.

History of Contamination

Use of the former dip tank and wash rack has resulted in a chlorinated organic compound plume (VOCs and PCP) underlying the PWD parking lot. Direct releases of PCP may have occurred from the former dip tank to subsurface soil and groundwater. The source of chlorinated VOCs was not specifically identified but appears to have been within the PWD at a location west or southwest of the dip tank. Chlorinated VOC and PCP concentrations are highest in the upper portion of the Columbia aquifer (approximately 3 to 12 feet bgs), with VOCs highest in the central parking area and PCP highest adjacent to the former dip tank. Detected concentrations of PCP in shallow groundwater indicate nonaqueous-phase liquid PCP may have been concentrated in soil above the water table or in the top few feet of the aquifer and was unable to migrate down through the water column. Detected concentrations of VOC compounds do not indicate the presence of DNAPL at Site 13.

Human health and ecological risk assessments were conducted for Site 13. Based on the results of the HHRA, no potentially unacceptable risks or hazards associated with exposure to site soil were identified. It was concluded that exposure to shallow groundwater may pose potentially unacceptable risks and hazards for future construction workers, industrial workers, and adult/child residents. Risks and hazards were primarily associated with PCP and VOCs in groundwater. No potentially unacceptable risks were identified from exposure to indoor air under existing site conditions. The ERA concluded that there were no unacceptable ecological risks for terrestrial receptors at Site 13. There is no complete pathway for direct ecological exposures to groundwater, no complete and significant transport pathway for groundwater or stormwater discharge to surface water bodies, and no aquatic habitats exist on the site.

Remedy Selection

The ROD for Site 13 was signed in September 2007 (Navy, 2007b). The ROD summarized the risks to human health and ecological receptors, established RAOs, and defined the selected remedy. The selected remedy for Site 13 was defined as groundwater treatment through ERD and LUCs to meet the following RAOs:

- Prevent exposure to Site 13 groundwater until concentrations of PCP and VOCs have been reduced to levels that allow for unlimited use and unrestricted exposure.

- Reduce concentrations of PCP and VOCs in Site 13 groundwater to cleanup levels through treatment to the maximum extent practicable within a reasonable amount of time.

The following LUC objectives for Site 13 were selected in the ROD:

- Prohibit the withdrawal of groundwater except for environmental monitoring and testing.
- Prohibit the use of the site for residential, child care, elementary or secondary school, or playground facilities.
- Maintain the integrity of any current or future remedial or monitoring system.

A Consensus Agreement was signed on May 19, 2010 documenting the addition of the following LUC objective to the LUC RD for Site 13:

- Prevent dermal contact with groundwater by construction workers.

Additionally, to protect against any potential human health risk related to vapor intrusion resulting from changes in land use, a consensus agreement was signed in May 15, 2013 adding the following LUC objective to the LUC RD for Site 13:

- Prohibit changes from current building use or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of necessary mitigation measures.

A Consensus Agreement was signed on November 16, 2017 documenting changes to the LUC boundary to encompass the extent of groundwater contamination migration outside of the then current LUC boundary.

Remedy Implementation

Remedial action began in December 2008 with baseline groundwater sampling from existing monitoring wells to establish pre-treatment conditions. Beginning in March 2010, remedial action continued with the installation of monitoring wells and injection wells. Following installation, baseline groundwater samples were collected from the newly-installed monitoring wells. Groundwater injection of emulsified vegetable oil product was performed in May 2010. Remedy construction was documented in the RA CCR (JV III, 2011). Following substrate injection, performance monitoring was conducted at a frequency of 1-, 3-, 6-, 9-, and 12-months post-injection. Groundwater LTM at Site 13 was initiated in September 2012 and is ongoing. The Site 13 IRACR was signed in September 2012 and documented that the remedy was in place and functioning as designed.

The LUC RD for Site 13 was finalized in March 2009 (Navy, 2009c). A survey plat for Site 13 was filed with the City of Virginia Beach on September 20, 2011 to provide public notice of the Site 13 environmental conditions and limitations on the use of the property and to record the LUC boundary (Navy, 2012b). As outlined in the LUC RD, annual inspections are conducted to monitor unauthorized activities and land use changes. Checklists and data reports are completed during inspections and issued to USEPA and VDEQ.

Five-year Schedule

The 5-year schedule for Site 13 is presented in **Table 2-13**. Planned activities at Site 13 consist of the following:

- LTM UFP-SAP
- LTM
- Remedy Optimization Soil Removal and Groundwater Injections
- Five-Year Review

2.4.1.7 New SWMU 3 (SWMU 111)—Pier 10 Sandblast Yard

Site Chronology

Date	Event/Document	Document Administrative Record Number [a]
December 1999	SI	000355
June 2000	Screening ERA	000417
January 2001	Draft Baseline ERA	001031
August 2005	RI/HHRA/ERA	000911
August 2009	Supplemental RI/HHRA/ERA	000222
February and December 2009	Pre-FS Sediment Investigations	001517 and 001074
July 2012	Risk Assessment Update (Groundwater to Surface Water)	001542
December 2012	EE/CA for NTCRA for Sediment	001723
December 2012	Benthic Invertebrate Evaluation (Technical Memorandum)	001662
May 2013	NTCRA for removal of sediment	--
June 2013	Risk Assessment Update	001750
September 2013	NTCRA Construction Summary Memorandum	001786
November 2013	Time-Critical Removal Action (TCRA) for removal of sediment	--
September 2014	TCRA CCR	002209
October 2014	Focused FS	002199
December 2014	ROD	002234
March 2015	LUC RD	002250
July 2015	IRACR	--
October 2016	LTM initiated	--
March 2019	Five-Year Review	002702

Notes:

[a] Documents submitted after the ROD are not required to be included in the Administrative Record.

Site Description and History

SWMU 3, Pier 10 Sandblast Yard, is in a developed area on Little Creek Harbor's western side (**Figure 2-8)**. SWMU 3 was used for sandblasting boats between 1962 and 1984. Sandblasting activities took place on a 0.04-acre concrete pad located to the west of Building 1263. After 1984, anchors and chains were sandblasted on the concrete pad. The residual, used abrasive blast material (ABM) was periodically sampled, determined to be non-hazardous, and removed from the site. However, some residual ABM, consisting of paint chips and blast grit, covered the unpaved ground south of the pad to the water's edge and the near-shore bottom of Little Creek Harbor. In 1982, a fence was installed around the sandblasting area to limit access to the site and minimize windblown sandblast materials from migrating outside the fenced area. In 1995, the concrete pad was taken out of service, and a new sandblasting area was constructed in the northwestern corner of the site. The new sandblasting area consisted of a 0.4-acre concrete pad surrounded by a 4- to 5-foot-high concrete wall. All sandblasting operations at SWMU 3 ceased in 1996 when a new indoor sandblasting facility, Building CB125, was completed adjacent to SWMU 7b.

Land and Resource Use

The terrestrial portion of SWMU 3 includes a fenced area containing Buildings 1262 (firefighting equipment storage), 1263 (welding and metal-working shop), and 1268 (wood storage), and two concrete pads formerly used for sandblasting operations. Within the fenced area, the ground surface is generally covered in concrete, asphalt, or gravel. Little to no vegetation covers unpaved areas. Outside of the fenced area are Buildings 1265-1 and 1265-3 (IT support administrative spaces), 1516 (former MWR marina shop), 1528 (MWR restrooms), and 1604 (United Service Organization administrative and cooking space). A small, grassy area is located outside the fence; otherwise, the ground surface is generally covered in concrete, asphalt, or gravel. The topography at SWMU 3 is relatively flat and gently slopes east/southeast towards Little Creek Harbor.

A catch basin connected to Virginia Pollution Discharge Elimination System (VPDES)-permitted Outfall 008 (Permit Number VA0079928), located under Pier 10 approximately 35 feet from its easternmost edge, conveys surface runoff from the site into Little Creek Harbor. Under the current VPDES permit, Outfall 008 is defined as a stormwater outfall and has no monitoring requirements. In addition to what is conveyed by the catch basin and outfall, a portion of the stormwater runoff from SWMU 3 flows directly into Little Creek Harbor as sheet flow.

Groundwater at JEB Little Creek is not currently used as a potable water source, nor is it expected to be used as a future potable water source. Potable water is supplied to the base and surrounding community by the cities of Virginia Beach and Norfolk.

History of Contamination

Historical releases from SWMU 3 likely occurred from the accumulation of sandblasting residue on the ground surface. Before 1993, runoff from sandblasting operations occurred as sheet flow to Little Creek Harbor. In 1993, a catch basin connected to VPDES-permitted Outfall 008 (Permit Number VA0079928) was constructed to receive runoff from various areas. Following construction of the new concrete pad surrounding the catch basin, surface runoff from the more recent sandblasting area flowed to this catch basin and emptied into Little Creek Harbor via VPDES-permitted Outfall 008.

Human health and ecological risk assessments were conducted for SWMU 3. Based on the results of the HHRA, no unacceptable risks were identified for current or future receptor exposure to surface water, sediment, or soil. No potentially unacceptable human health carcinogenic risks or non-cancer hazards associated with construction worker exposure to groundwater were identified. Unacceptable carcinogenic risks and non-cancer hazards were associated with future adult/child resident and industrial worker exposure to groundwater. The HHRA indicated that currently there is no route for human exposure to vapors in building indoor air resulting from the volatilization of VOCs in groundwater (vapor intrusion). However, because of the presence of VOCs in groundwater, and the uncertainties associated with quantifying risks associated with potential future vapor intrusion, it was assumed that vapor intrusion from shallow groundwater into indoor air could pose potentially unacceptable risks to future building occupants. The HHRA concluded that discharge of groundwater to surface water does not pose an unacceptable incremental increase in risks from exposure to surface water in Little Creek Harbor. The HHRA indicated potentially unacceptable risks for future residents if the groundwater is used as a potable water supply. These potential unacceptable risks are associated with exposure to vinyl chloride and TCE in groundwater.

The ERA concluded that there were no unacceptable risks to terrestrial receptors at SWMU 3 because no complete and significant exposure pathways exist at the site due to its developed nature. However, the presence of ABM residues in sediment is a potential continuing source of contaminants to Little Creek Harbor and it was recommended that these residues be removed to eliminate this transport pathway. To address the transport pathway, two sediment removal actions (NTCRA and TCRA) were completed in 2013.

In 2012, an evaluation was completed to update the 2005 BERA evaluation of risks associated with groundwater discharge to surface water to include groundwater data collected as part of the 2009 SRI and include an evaluation of bioaccumulation potential. The evaluation concluded that the discharge of groundwater (based on the chemical concentrations from existing data) does not represent an unacceptable incremental increase in risks

to aquatic receptors in Little Creek Harbor. Based on this, the Navy, in partnership with USEPA and VDEQ, agreed that no further evaluation of the groundwater to surface water transport pathway at SWMU 3 is warranted. Since there are no direct ecological exposures to groundwater, no unacceptable ecological risks are associated with this medium at SWMU 3.

Remedy Selection

The ROD for SWMU 3 was signed in December 2014 (Navy, 2014). The ROD summarized the risks to human health and ecological receptors, established RAOs, and defined the selected remedy. The selected remedy for SWMU 3 was defined as groundwater treatment through monitored natural attenuation (MNA) and LUCs to meet the following RAOs:

- Prevent potable use of groundwater and exposure to groundwater emissions via vapor intrusion until concentrations of COCs allow for unlimited use and unrestricted exposure.
- Monitor the natural attenuation of groundwater COCs until concentrations allow for unlimited use and unrestricted exposure.

The following LUC objectives for SWMU 3 were selected in the ROD:

- Prohibit the withdrawal of groundwater for anything other than environmental monitoring
- Prohibit changes from current building uses or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of mitigation measures
- Prohibit the use of the site for child care, elementary or secondary school, or playground facilities; and
- Maintain the integrity of any current or future remedial or monitoring system.

Remedy Implementation

The SWMU 3 IRACR was signed in July 2015 and documented that the remedy was in place and functioning as designed (Navy, 2015b). Groundwater LTM at SWMU 3 was initiated in October 2016 and is ongoing. The LUC RD for SWMU 3 was finalized in March 2015 (Navy, 2015a). A survey plat for SWMU 3 was filed with the City of Virginia Beach on May 20, 2015 to provide public notice of the SWMU 3 environmental conditions and limitations on the use of the property and to record the LUC boundary (Navy, 2015b). As outlined in the LUC RD, annual inspections are conducted to monitor unauthorized activities and land use changes. Checklists and data reports are completed during inspections and issued to USEPA and VDEQ.

Five-year Schedule

The 5-year schedule for SWMU 3 is presented in **Table 2-14**. Planned activities at SWMU 3 consist of the following:

- LTM UFP-SAP
- LTM
- Five-Year Review

2.4.2 Response Complete Sites

2.4.2.1 Response Complete—Site Screening and Investigation Process

One hundred and four sites warranted NA following desktop audits by the Navy, USEPA, and VDEQ (**Table 2-1**). In addition, following the SIs, 20 sites were closed with NFA. Currently, there are no sites or AOCs proposed for a screening assessment. If a potential CERCLA release is discovered, documentation will be provided in subsequent SMP updates. The locations of the NA and NFA sites are shown on **Figure 2-9** and a brief discussion of the SI NFA sites is provided herein.

During FY 2002, a closeout report was prepared for Sites 5, 15, and 16 and SWMU 2 (CH2M, 2002). The analytical results from samples collected at Site 5 and SWMU 2 indicated concentrations below human health screening

criteria and low-to-negligible ecological risk because of the lack of direct exposure pathways. Removal actions were conducted at Sites 15 and 16 in 1995 that consisted of excavation and disposal of PCB-contaminated soil, vegetation, and a utility pole at Site 16. Additional sampling indicated that Sites 15 and 16 were not expected to pose unacceptable risks to human health and the environment. Based on these findings, the JEB Little Creek Tier I Partnering Team determined that NFA was required at these sites. Land use at these sites is unrestricted.

In June 2003, the Navy, USEPA, and VDEQ agreed to close out SWMU 30 with NFA and inform the Navy program staff managing USTs and aboveground storage tanks (ASTs) of their responsibility for any future "needed" action. Any further assessment or remediation will be covered under the Spill Prevention, Control, and Countermeasures (SPCC) Plan/UST Program.

AOCs H, I, and J, and Site 14 were evaluated in August 2003, and the analytical results from samples collected indicated no human health or ecological risk at any of the sites. Based on these findings, the Navy, USEPA, and VDEQ determined that NFA was appropriate for these sites, and the Final Closeout Report was signed in March 2004 (CH2M, 2004a). Land use at these sites is unrestricted.

SWMUs 96, 97, 98, and 119 were evaluated in June 2004. Desktop audits as well as site visits showed no additional sampling was required to close out these sites. The analytical results from samples collected at SWMU 119 indicated no human health or ecological risk at this site. Based on these findings, the Navy, USEPA, and VDEQ determined that NFA was appropriate for these sites, and the Final Closeout Report was signed in September 2004 (CH2M, 2004b). Land use at these sites is unrestricted.

SWMUs 5, 6, 13, 18, and 116, Site 6, and AOC D were evaluated in FY 2005. Desktop audits showed no additional sampling was required for SWMUs 18 and 116, and AOC D. The analytical results from samples collected at SWMUs 5, 6, and 13, and Site 6 indicated no human health or ecological risks at the sites. Based on these findings, the Navy, USEPA, and VDEQ agreed that NFA was appropriate for SWMUs 5, 6, and 13, and Site 6 sites; the Final Site Screening Assessment Closeout Report was signed in January 2006 (CH2M, 2006). Land use at SWMUs 5, 6, 13, 18, and 116, Site 6, and AOC D sites is unrestricted.

2.4.2.2 Response Complete—Record of Decision

Following a quantitative assessment of human health and ecological risks, RODs have been signed for Site 8 and SWMUs 7a, 7b, and 8 that require NFA (**Figure 2-9**).

2.5 Military Munitions Response Program

The Department of Defense (DoD) has established the MMRP under the Defense Environmental Restoration Program to address munitions and explosives of concern (MEC) and munitions constituents (MCs) at other-than-operational ranges. The DoD and the Navy are establishing policy and guidance for munitions and response actions under the MMRP; however, the key program drivers developed to date conclude that munitions response actions will be conducted under the process outlined in the National Contingency Plan as authorized by CERCLA.

Seven other-than-operational ranges, the Anti-Aircraft (A-A) Target Rifle Range, Chemical Defense Area, Depth Charge Testing Area, 1942 Pistol Range, 1944 Pistol Range, 1953 Pistol Range, and the MWR Skeet Range were identified and associated with JEB Little Creek. Following identification, a PA was completed for the MWR Skeet Range that recommended further investigations (Malcolm Pirnie, 2006). In addition, a five-site PA was finalized in September 2007 for the remaining areas identified as potentially-impacted by MMRP activities (Malcolm Pirnie, 2007) that recommended further investigation for the A-A Target Rifle Range, Depth Charge Testing Area, 1944 Pistol Range, and 1953 Pistol Range (**Figure 2-9**). Based upon the results of the PA, a consensus agreement to formally remove the Chemical Defense Area and 1942 Pistol Range from further study was signed by the Navy, USEPA, and VDEQ in September 2011.

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Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
ER Site 7	SWMUs 123-126	Amphibious Base Landfill	NW corner of the intersection of Helicopter Road and Amphibious Drive	CERCLA /ERP	ER Site (ROD)	ROD with LUCs (RIP)	A Final RI/HHRA/ERA was completed under the CERCLA IR Program. Eleven rounds of long-term monitoring of groundwater, sediment, and surface water were completed. LTM was discontinued in 2004 until a ROD was signed. An IRA for canal sediment was completed in January-April 2007. A FFS was finalized in August 2008 outlining LUCs with groundwater LTM as the presumptive remedy. Additional subsurface debris investigation was conducted on the western "ear" of the landfill in February 2008. O&M of the landfill soil cover was completed in three phases beginning in 2008. CCRs were finalized in April 2008 and July 2009. A Proposed Plan was finalized in January 2009 and a ROD was signed in September 2009. The LUC RD was completed in December 2010. A LTM plan was finalized in March 2012 and LTM groundwater sampling was conducted in May 2012. A RACR was signed in July 2012. Soil cover O&M was completed in September 2012 and May 2013. The second Five-year Review was signed in March 2014. The groundwater LTM Rationale Technical Memorandum was finalized in November 2017. The draft groundwater LTM UFP SAP was submitted in March 2018.
ER Site 9	SWMU 24	Driving Range Landfill	Near Bldg 3699, NNE Portion of Base, East of Desert Cove	CERCLA /ERP	ER Site (ROD)	ROD with LUCs (RIP)	A Proposed Plan was completed in March 2001 and the Final ROD was signed in December 2003. The selected remedy is LUCs and continued LTM of groundwater. The FY08 LTM report was finalized in January 2009 and a Five-year Review was signed in March 2009. Based on the recommendations in the Five-year Review, revision to the LTM plan was required. A revised draft technical memorandum reviewing existing groundwater LTM data and providing the rationale for exiting LTM at Site 9 was submitted in November 2013. A draft RACR was submitted in March 2012. The second Five-year Review was signed in March 2014. The groundwater LTM Rationale Technical Memorandum was finalized in May 2017. The groundwater LTM UFP SAP was finalized in November 2017.
ER Site 10	SWMU 25 and SWMU 26	Sewage Treatment Plant Landfill - Desert Cove Landfill (SWMU 25); Sewage Treatment Plant Landfill - South of Desert Cove Landfill (SWMU 26)	Desert Cove Area, just west of former base sewage treatment plant	CERCLA /ERP	ER Site (ROD)	ROD with LUCs (RIP)	A Proposed Plan was completed in March 2001 and the Final ROD was signed in December 2003. The selected remedy is LUCs and continued LTM of groundwater. The FY08 LTM report was finalized in January 2009 and a Five-year Review was signed in March 2009. Based on the recommendations in the Five-year Review, revision to the LTM plan was required. The second Five-year Review was signed in March 2014. Soil cover O&M was completed in December 2015. The final groundwater LTM Rationale Technical Memorandum was submitted in August 2016. The groundwater LTM Rationale Technical Memorandum was finalized in May 2017. The groundwater LTM UFP SAP was finalized in November 2017.

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Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
ER Site 11	SWMU 27 and SWMU 28	Former School of Music Plating Shop (SWMU 27); Former School of Music Neutralization Tank (SWMU 28);	School of Music Area, East Central Portion of Base	CERCLA /ERP	ER Site (ROD)	ROD with LUCs (RIP)	A final SRI, SRI addendum for HHRA, FS, and Proposed Plan have been completed under the CERCLA ER Program. A ROD was signed in July 2007 and the selected remedy is bio-remediation with LTM and LUCs. The final RA work plan was submitted in December 2008 and the RA was completed in April 2009. An RA CCR was finalized in June 2010. An IRACR was signed in February 2012. A LTM plan was finalized in March 2012 and LTM groundwater and vapor intrusion sampling was initiated in March and April 2012. The second Five-year Review was signed in March 2014. The Final LTM report (Baseline LTM through September 2013) was submitted in November 2014. A UFP SAP for 1,4-dioxane sampling was completed in April 2015. The 1,4-Dioxane Groundwater Summary Technical Memorandum was completed in April 2016. An additional round of ERD injections was completed in August/September 2016. A stormwater inspection was completed in December 2016 and the technical memorandum was finalized in February 2017. The second LTM report (2014 and 2015 sampling events) was finalized in March 2017. The pre-draft, third LTM report (2016 and 2017 sampling events) was submitted March 2018.
ER Site 11a		Building 3033 Former Waste Oil Tank	North of Site 11	CERCLA /ERP	ER Site (ROD)	ROD with LUCs (RIP)	Upgradient groundwater results at Site 11 indicated VOC contamination. As part of a treatability study, ISCO was used to treat VOCs in groundwater in March 2004, and was not successful in reducing VOC concentrations to below the MCLs. An RI was conducted in FY08 and the final RI/HHRA/ERA report was submitted in July 2010. Vapor Intrusion sampling was conducted in November 2009 and March 2010 as part of an RI Addendum. The final RI Addendum was submitted in February 2011. Additionally, a groundwater sampling event conducted in September 2009 to further evaluate PCP distribution at the site determined PCP should not be considered a COC at Site 11a. An FS was finalized in June 2011. A ROD was signed in September 2011. The selected remedy is bio-remediation with LTM and LUCs. The remedy was implemented in November 2012 and the RA CCR was finalized in June 2013. The LUC RD was finalized in April 2013. An IRACR was signed in September 2013. The second Five-year Review was signed in March 2014. A final LTM plan was finalized in November 2014. Baseline LTM sampling was conducted in September 2014, and bi-annual sampling began in March 2015. A VI HAPSITE investigation was conducted in May 2015. The second LTM report (2014 and 2015 sampling events) was finalized in November 2016. A Remedy Optimization UFP SAP was finalized in November 2016. The remedy optimization investigation was completed in November and December of 2016. The draft Remedy Optimization Report was submitted in January 2018. The pre-draft, third LTM report (2016 and 2017 sampling events) was submitted March 2018.

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Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
ER Site 12	SWMU 77	NEX Laundry Disposal Area	Bldg 3323 in SE corner of base	CERCLA /ERP	ER Site (ROD)	ROD with LUCs (RIP)	A Final RI/HHRA/ERA and a Final FS have been completed. A ROD was finalized in September 2005. An ESD to the ROD was signed in October 2006; the remedy is bio-remediation with LTM and LUCs. The remedy was implemented in April 2007 and an RA CCR was finalized in October 2008. An IRACR was signed in May 2010. The LTM plan was finalized in January 2011 and bi-annual LTM groundwater sampling was initiated in March 2011. Remedial system O&M was conducted in August/September 2011. The second Five-year Review was signed in March 2014. The Final LTM report (Baseline LTM through September 2013) was submitted in November 2014. An additional round of ERD injections occurred in September 2015. The second LTM report (2014 and 2015 sampling events) was finalized in March 2017. The Remedy Optimization UFP SAP was finalized in June 2017. The remedy optimization investigation was completed in February 2018. The Remedy Optimization Report is scheduled for completion in FY18. The pre-draft, third LTM report (2016 and 2017 sampling events) was submitted in March 2018.
ER Site 13	SWMU 14 and SWMU 15	PWC Wash Rack (SWMU 14); PWC PCP Dip Tank (SWMU 15)	Bldg 3165, in the vicinity of the Public Works Compound; Paved Yard in the Public Works Center compound west of Bldg 3175, East-Central Portion of Base	CERCLA /ERP	ER Site (ROD)	ROD with LUCs (RIP)	A Final RI/HHRA/ERA and a Final FS have been completed. A TS was conducted in November 2004; injection of ISCO and anaerobic bioremediation was completed and documented in a November 2006 TS report. A ROD was signed in September 2007 and the selected remedy is bioremediation with LTM and LUCs. A final RA work plan was submitted in March 2010 and the RA was completed in May 2010. An RA CCR was finalized in April 2011. An IRACR was signed in November 2012. A bi-annual LTM plan was finalized in June 2012 and LTM groundwater sampling was initiated in September 2012. The second Five-year Review was signed in March 2014. The Final LTM report (Baseline LTM through September 2013) was submitted in November 2014. The Remedy Optimization UFP SAP was finalized in July 2017. The remedy optimization investigation was completed in July 2017. The draft Remedy Optimization Report was submitted in February 2018. The pre-draft, third LTM report (2016 and 2017 sampling events) was submitted March 2018.
New SWMU 3	Formerly SWMU 111, was part of IR Site 2, IR Site 2 (sandblast areas) no longer used as each sandblast area now identified as separate SWMUs	Pier 10 Sandblasting Yard	West of Little Creek Channel	CERCLA /ERP	ER Site (RI / EE/CA / IRA / PP / ROD)	ROD with LUCs (RIP)	A RI/HHRA/ERA was finalized in September 2005. Supplemental investigation for VOCs/metals in GW and abrasive blast material (ABM) delineation in sediment was conducted in FY07 and the SRI/HHRA/ERA report was finalized in August 2009. Pre-FS sediment sampling was conducted in November 2009. Benthic invertebrate sampling was conducted in August 2010 and the Benthic Invertebrate Evaluation technical memorandum was finalized in December 2012. Sediment remediation area delineation sampling was conducted in December 2012 and an IRA for sediment surrounding the drydock and anchoring system was completed in May 2013. A TCRA to address soil and remaining sediment was completed in March 2014 and the final CCR was submitted in October 2014. Pre-Feasibility Study Groundwater Sampling was completed in August 2014. The final Focused Feasibility Study was submitted in October 2014. A ROD was signed in December 2014. A LUC RD was finalized in March 2015. The IRACR was finalized in July 2015. The LTM UFP SAP was finalized in September 2016. Groundwater LTM was initiated in October 2016.

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MWR Skeet Range		Morale, Welfare, and Recreation Skeet Range	Northwest of Desert Cove and east of Little Creek Channel	CERCLA /MMRP	MMRP Site (SI)	Response Complete (NFA)	PA completed in 2006 recommended further investigation. A Site Investigation UFP SAP was finalized in June 2010 and sampling was completed in late June 2010. A Final SSP report was submitted in January 2011 and concluded the SSA does not pose a threat, or potential threat to public health, welfare, or the environment and, therefore, the area should be removed from further study. Tier 1 consensus for site closure was signed in January 2011.
A-A Target Rifle Range		Anti-Aircraft Target Rifle Range	South of Little Creek and west of Little Creek Channel	CERCLA /MMRP	MMRP Site (SSA)	Response Complete (NFA)	PA completed in 2007 recommended further investigation. A desktop audit was conducted and documented in a SSP Closeout Report submitted in September 2010. The report concluded the SSA does not pose a threat, or potential threat to public health, welfare, or the environment and, therefore, the area should be removed from further study. Tier 1 consensus for site closure was signed in September 2010.
1944 Pistol Range		1944 Pistol Range	South of Little Creek and west of Little Creek Channel	CERCLA /MMRP	MMRP Site (SSA)	Response Complete (NFA)	PA completed in 2007 recommended further investigation. A desktop audit was conducted and documented in a SSP Closeout Report submitted in September 2010. The report concluded the SSA does not pose a threat, or potential threat to public health, welfare, or the environment and, therefore, the area should be removed from further study. Tier 1 consensus for site closure was signed in September 2010.
1953 Pistol Range		1953 Pistol Range	West of Site 9 and south of Beach Drive within the northern portion of the Site 10	CERCLA /MMRP	MMRP Site (SSA)	Response Complete (NFA)	PA completed in 2007 recommended further investigation. A desktop audit was conducted and documented in a SSP Closeout Report submitted in September 2010. The report concluded the SSA does not pose a threat, or potential threat to public health, welfare, or the environment and, therefore, the area should be removed from further study. Tier 1 consensus for site closure was signed in September 2010.
Depth Charge Testing Area		Depth Charge Testing Area	Approximately 25 miles northeast of the installation in the Chesapeake Bay, offshore of Cape Charles	CERCLA /MMRP	MMRP Site (SSA)	Response Complete (NFA)	PA completed in 2007 recommended further investigation. A desktop audit was conducted and documented in a SSP Closeout Report submitted in September 2010. The report concluded the SSA does not pose a threat, or potential threat to public health, welfare, or the environment and, therefore, the area should be removed from further study. Tier 1 consensus for site closure was signed in September 2010.
Chemical Defense Area		Chemical Defense Area	South of Little Creek and west of Little Creek Channel	CERCLA /MMRP	MMRP Site (SSA)	Response Complete (NFA)	PA completed in 2007 recommended no further investigation due to no current contamination migration pathways existing or release mechanisms and therefore no potential human or ecological receptors at the site. The SSA does not pose a threat, or potential threat to public health, welfare, or the environment and, therefore, the area should be removed from further study. Tier 1 consensus for site closure was signed in September 2011.
1942 Pistol Range		1942 Pistol Range	Northwest of Desert Cove and east of Little Creek Channel	CERCLA /MMRP	MMRP Site (SSA)	Response Complete (NFA)	PA completed in 2007 recommended no further investigation due to no potential exposure to site media by human or ecological receptors. The SSA does not pose a threat, or potential threat to public health, welfare, or the environment and, therefore, the area should be removed from further study. Tier 1 consensus for site closure was signed in September 2011.

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Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
IR Site 1		Building 1231 Oil Disposal Area	West of Little Creek Channel	CERCLA /ERP	NFA/ IR Site	Response Complete (NFA)	This site was investigated within the UST program. Because the unit is in good condition and is located in a contained area, the Revised RFA recommended NFA. DEQ approved closure of the site in August 1994.
IR Site 2	See New SWMU 3, New SWMU 7, and New SWMU 8						
IR Site 3	SWMU 102	West Annex Fuel Leak - Piers 11-19	Piers 11-19 along the west side of Little Creek Channel	CERCLA /ERP	NFA/ UST/VPDES	Response Complete (NFA)	This SWMU was included in the IR Program (Site 3). However, NFA was recommended because the site will be monitored and regulated under the UST and VPDES Programs and assocoated permits. On August 10, 1999, EPA and DEQ recommended NFA due to coverage under other programs.
IR Site 4		Reserve Center Motor Oil Disposal Area	Naval Marine Reserve Center West of Little Creek Channel	CERCLA /ERP	NFA/ UST	Response Complete (NFA)	This site was investigated through the UST and IR Programs (SWMU 59). DEQ granted closure of the Site in October 1991. The Navy does not own this land, and did not own it during disposal activities. The Naval Marine Reserve Center is responsible for this area. The site was sampled under the IR program as part of a PSI, and NFA was recommended. In the PSI report, an April 2003 consensus for NFA based on it being a UST site.
IR Site 5	SWMU 118	Motor Oil Disposal Area Special Boat Unit Yard	Between Buildings T-9 and T-11 in the SW Area of the Base	CERCLA /ERP	NFA/ IR Site	Response Complete (NFA)	On August 10, 1999, the EPA and DEQ agreed that NFA for site screening was required for this SWMU based on its status as a CERCLA IR Site. Decision Document preparation was conducted in 1999 and a risk assessment and FS was needed (March 2000). In June 2002, two groundwater samples were collected, no human health risk was identified, and low to negligible ecological impacts were found. NFA was recommended. Closeout of the site occurred in September 2002.
IR Site 6	SWMU 117/ 4	Special Boat Unit 2 Battery Storage Area / Battery Acid Disposal Area	On the SE corner of Bldg 103, in the SW Area of the Base	CERCLA /IRP	IR Site (SSA)	Response Complete (NFA)	On January 27, 1999, EPA, DEQ, and the Navy discussed this site. It was agreed that further investigation was required. Existing information suggests a potential problem. One groundwater sample was collected and analyzed for lead during the 2005 SSA. The NFA Closeout report was signed in January 2006.
IR Site 8	SWMU 84	Demolition Debris Landfill	NE corner of the intersection of Amphibious Drive and Helicopter Road	CERCLA /IRP	IR Site (ROD)	Response Complete (NFA)	A final RI/HHRA/ERA was completed under the CERCLA IR Program. An IRA and wetlands creation were completed in FY06 and is the final remedy for the site. A NFA ROD was signed in July 2008.

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Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
IR Site 14	SWMU 16 and SWMU 17/1	Transformer Storage Area - Old Pole Yard (SWMU 16); Small Transformer Storage Area (SWMU 17/1)	Bldg 3664 across 7th Street from the Public Works Compound, East-Central Portion of Base	CERCLA /ERP	IR Site / Preliminary Screening/NFA	Response Complete (NFA)	NFA was recommended in the IAS; consensus was achieved at the August 1999 Partnering meeting for a desktop audit of the site and a review of historical data and clarification of regulatory standards or action levels for PCBs. It was determined that some additional sampling may be required in the drum storage area. In March 2000, EPA, DEQ, and the Navy agreed this SWMU would be addressed in Appendix B of the FFA. A Preliminary Site Screening was conducted in August 2003. Surface and subsurface soil samples were collected in the former drum storage area. Results indicated no human health or ecological risk and the site was recommended for NFA. A Final Close Out Report was issued and signed in March 2004.
IR Site 15	AOC A	PCB Capacitor Spill - Fire Station Number 1	Electric Utility Pole on E Street	CERCLA /ERP	NFA/ IR Site	Response Complete (NFA)	In June 2002, four soil samples were collected and no human health or ecological risks were identified. NFA was recommended. Closeout of the site occurred in September 2002.
IR Site 16	AOC B	PCB Capacitor Spill - Pole Number 425	PCB Capacitor Pole located 300 ft east of the intersection of Amphibious Dr. and Helicopter Rd.	CERCLA /ERP	NFA/ IR Site	Response Complete (NFA)	In June 2002, six soil samples were collected and no human health or ecological risks were identified. NFA was recommended. Closeout of the site occurred in September 2002.
IR Site 17	SWMU 113	Motor Disposal Area	Bldg 1256, between piers 11 and 12	CERCLA /ERP	NFA/ IR Site	Response Complete (NFA)	Oil-stained soil was removed in 1986; PSI sampling revealed concentrations of lead ranging from 7 to 57 ppm; one TPH result of 2750 ppm was found in the oil-stained area. Four surface soil and four subsurface soil samples were collected in 2002 and no stained soil was evident. NFA determined by DEQ in April 2003.
Old SWMU 1		Paint Shop Waterwall- Building 3165	Along Gator Blvd in Bldg 3165 D, two blocks from the baseball diamond	CERCLA	NFA	Response Complete (NFA)	No releases were identified in the 1988 VSI. The revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
New SWMU 2	SWMU 105	Steam Plant Flyash Silo	In Building 757 between Murray Road and Amphibious Drive	CERCLA	NFA	Response Complete (NFA)	In June 2002, two soil samples and one groundwater sample were collected and no human health or ecological risks were identified. NFA was recommended. Closeout of the site occurred in September 2002.
Old SWMUs 2-5		Wood dust/chip collection bins	Buildings 3165, 3227, 3334, and 3530	CERCLA	NFA	Response Complete (NFA)	Old SWMU 2 - PWC Carpentry Shop; Old SWMU 3 - Training Service Carpentry Shop; SWMU 4 - Maintenance Carpentry Shop; SWMU 5 - MWR Carpentry Shop. No releases were identified in the 1988 VSI. Since there are no hazardous wastes or hazardous constituents managed, the revised RFA recommended NFA (June 30, 1999).

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New SWMU 5	SWMU 130	Port Ops Boat Painting Area	Port Ops Building 3896, west of piers 56-59	CERCLA	SSA	Response Complete (NFA)	On May 10, 1999, EPA, DEQ, and the Navy discussed the demolition of all buildings in this area. After comparing sampling results to industrial soil RBCs, it was concluded that no special precautions needed to be taken for demolition. One monitoring well groundwater sample was collected in a 2005 SSA. No unacceptable risk was determined, and the NFA Closeout report was signed in January 2006.
Old SWMU 6		NEX Maintenance Shop Spent Battery AA	Building 3334, NW of the 5th and B St intersection	CERCLA	NFA	Response Complete (NFA)	No releases were identified in the 1988 VSI. The revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
New SWMU 6	SWMUs 131-133	Seabee Area - CB124	East of Pier 47: South of Desert Cove	CERCLA, SI Process	SSA	Response Complete (NFA)	EPA, DEQ, and the Navy discussed this site on April 19 and May 10, 1999. Based on comparison of the chemical concentrations found in the soil to Industrial RBCs, EPA and DEQ agreed that NFA was required for the soil. However, due to elevated metals concentrations in groundwater, the collection of three filtered groundwater samples was recommended near the previous sampling locations W1, S2, and W4 using geoprobe or another direct-push technology. An SSA was conducted in 2005. There was no unacceptable risk, and a NFA close out report was signed in January 2006.
Old SWMU 7		NEX Maintenance Shop Satellite Accumulation Area	Building 3334, NW of the 5th and B St intersection	CERCLA	NFA	Response Complete (NFA)	No releases were identified in the 1988 VSI. The revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
New SWMU 7	SWMU 137, formerly part of IR Site 2, IR Site 2 (sandblast areas) no longer used as each sandblast area now identified as separate SWMUs	Small Boats Sandblast Yard - Piers 51-59. In June 2004, The Tier I Partnering Team agreed to separate the terrestrial portion of SWMU 7 from the aquatic portion (Desert Cove). SWMU 7a includes the soil and groundwater of SWMU 7, and SWMU 7b includes the sediment and surface water of desert cove.	Piers 36-55	CERCLA /ERP	ER Site (RI / EE/CA / IRA / PP / ROD)	Response Complete (NFA)	IRA for lead in surface soil was completed in September 2004. Final RI/HHRA/ERA was submitted in December 2004. The conclusions indicated that there is no overall human health or ecological risk in GW or Soil (SWMU 7a). The SWMU 7a NFA ROD was signed in June 2005; however, further investigations were necessary to assess ecological risk in Desert Cove (SWMU 7b) sediment. Post-MILCON action sediment sampling was conducted in November 2009 and August 2010. The Post-MILCON Action evaluation was finalized in July 2012. An IRA to address metals in sediment was completed in May 2013. A NFA ROD was signed in September 2013.
Old SWMU 8		Base Exchange (East Annex) Gas Station Dumpster	Building 3615 in the eastern portion of the base	CERCLA	NFA	Response Complete (NFA)	Oily stains were present on the dumpster, the concrete surface, and over the curbed surface and into a grassy area during the VSI. However, On September 20, 1993, photos were taken to compare with the VSI photo. The dumpster was not present. No stains were observed on the grass area behind the curb. On March 9, 1999, EPA and DEQ agreed that NFA was required for this SWMU.

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New SWMU 8	SWMU 144, formerly part of IR Site 2, IR Site 2 (sandblast areas) no longer used as each sandblast area now identified as separate SWMUs	West Annex Sandblasting Area	Vacant Lot west of the ACU 2 Area in the West Annex	CERCLA /IRP	IR Site (ROD)	Response Complete (NFA)	An IRA was completed in September 2004 to removal outfall sediment posing potential unacceptable ecological risk. The Final RI/HHRA/ERA was submitted in December 2004. The conclusions indicated that there was no overall human health or ecological risk in soil, groundwater, surface water, and sediment, and no further action was recommended for the site. The NFA PP/ROD was signed in June 2005.
SWMU 9		PWC Training Center Scrap Metal Dumpster	Adjacent to Building 3614	CERCLA	NFA	Response Complete (NFA)	Since there are no hazardous wastes or hazardous constituents managed, the revised RFA recommended NFA (June 30, 1999).
SWMU 10		PWC Sheet Metal Shop Scrap Metal Dumpster	Adjacent to Building 3165	CERCLA	NFA	Response Complete (NFA)	Since there are no hazardous wastes or hazardous constituents managed, the revised RFA recommended NFA (June 30, 1999).
SWMU 11		Harbormaster Shop Scrap Metal Dumpster	Building 3894 near Port Ops, west of piers 56-59	CERCLA	NFA	Response Complete (NFA)	In the Navy's comments on the draft RFA in August 1988, it was reported that the dumpster had been removed, oil-contaminated soil had been removed, and the area had been covered with asphalt. On March 9, 1999, EPA and DEQ agreed that NFA was required at this site.
SWMU 12		The Former Wharf Building Shop	Near Building 3165 in the proximity of the Public Works Facility	CERCLA	NFA	Response Complete (NFA)	Recommended for NFA for the following reasons: 1) No releases or staining were identified during the VSI. 2) There is no evidence that PCP was ever used in this area. 3) As part of the ERP, sampling has been completed in the area and no PCP contamination was detected in the soil. 4) The area is part of CERCLA IR Site 13. It was determined through the ERP that NFA was required in this area due to a lack of contamination. On March 9, 1999, EPA and DEQ agreed to NFA for this site.

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SWMU 13		Former Pesticide Shop	Building 3170 near Building 3166 and intersection of 6th and F Streets (Off Gator Blvd)	CERCLA	SSA	Response Complete (NFA)	On January 27, 1999, EPA, DEQ, and the Navy discussed this site. It was agreed that further investigation was required. Existing information suggests a potential problem. Soil and groundwater samples were collected in 2005 and the SSA did not pose risk. The NFA Close out report was signed in January 2006.
SWMU 14 and SWMU 15	See ER Site 13						
SWMU 16 and SWMU 17/1	See IR Site 14						
SWMU 18		PWC Trans. Garage Spent Battery Shop, Collection Area	North of Public Works Facility Area in Building 3661	CERCLA	Preliminary Screening	Response Complete (NFA)	Two grab samples were collected in the grassy area behind the old batteries, composited, and tested for lead and zinc. A picture from 1993 indicated another battery storage area. A desktop audit indicated no potential risk. NFA consensus was achieved in May 2005.
SWMU 19		PWC Transportation Garage - Paint Booth Filters	Near Bldg 3661 in East/Central Portion of Base	CERCLA	NFA	Response Complete (NFA)	The revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
SWMU 20		PWC Transportation Garage - Salvage Parts Storage Area	Building 3661 North of the Public Works Facility	CERCLA	NFA	Response Complete (NFA)	The revised RFA suggested that soil sampling be conducted in order to determine if hazardous constituents have been released. Two surface soil and one groundwater sample were collected in 1995. They were analyzed for VOCs, SVOCs, and TAL Metals. Due to a lack of contamination detected in this study, and a lack of staining observed in subsequent visits, on March 10, 1999, the Navy, EPA, and DEQ recommended NFA for this site.
SWMU 21		PWC Transportation Garage - Lubricating Oil Storage Area	Building 3661 North of the Public Works Facility	CERCLA	NFA	Response Complete (NFA)	The Revised RFA suggested that soil sampling be conducted and that samples be analyzed for SVOCs, metals, and PCBs. However, on March 10, 1999, when the Navy, EPA, and DEQ visited the site, it was confirmed that the 3-inch high curb did have a concrete base. The area where the drums were stored was inside a berm. Due to the integrity of the berm, a release to the environment was unlikely. EPA and DEQ agreed that NFA was required.
SWMU 22		PWC Transportation Garage - Wash Rack	Bldg 3661 in East/Central Portion of Base	CERCLA	NFA	Response Complete (NFA)	Because the unit was in good condition, the revised RFA recommended NFA (June 30, 1999).

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SWMU 23		Rifle Range	NE Corner of Base	CERCLA	NFA	Response Complete (NFA)	NFA was recommended for this SWMU due to the approved closure of the Lead Waste Pile by DEQ in July 1995, the EPA definition that munitions are not solid wastes, and the closure requirements under the range rule, independent of RCRA and CERCLA. Consensus was achieved during the May 1999 partnering meeting that the site is regulated under the Munitions Rule. TBD status determined (3/00) for further consideration of the Rule on active ranges; Navy policy is no action on active ranges.
SWMU 24	See ER Site 9						
SWMU 25 and SWMU 26	See ER Site 10						
SWMU 27 and SWMU 28	See ER Site 11						
SWMU 29		Harbormaster's Office Area - Paint/Thinner Residue Tank	Bldg 3894; East/Central Portion of base	CERCLA	NFA	Response Complete (NFA)	The draft RFA stated that the tank had been drained and removed. Because the unit is in good condition, the revised RFA recommended NFA (June 30, 1999).
SWMU 30		Leaking Above Ground Diesel Tank	Bldg 3400, in the SE portion of the Base	SPCC/AST	NFA	Response Complete (NFA)	The 150 gallon diesel tank rests on four steel legs atop an asphalt surface. A concrete berm has been placed around the tank. The tank and the berm are currently in good condition. Any further assessment or remediation will be covered under the SPCC Plan/AST Program. In June 2003, the team agreed to close out SWMU 30 with NFA. The CNRMA IR staff will inform CNRMA UST/AST staff of responsibility for any future “needed” action.
SWMU 31		Pier 10 Leaking Above Ground Fuel Tanks	On Pier 10 near Bldg 1263	SPCC/AST	NFA	Response Complete (NFA)	The three fuel tanks holding JP-5, gasoline, and diesel were removed in 1995. Drums containing waste oil are still present at the site. However, the drums are resting on a steel platform above a concrete pad in good repair. The pad is bermed by a 4-inch high concrete curb containing a valve that allows release to the outside of the bermed area. The area is in compliance with the SPCC Plan, and on June 30, 1999, the site was approved for NFA by the EPA, DEQ, and the Navy. Any further assessment or remediation will be covered under the SPCC Plan/AST Program.
SWMU 32		NEX (East Annex) Gas Station - Battery Storage Area	East end of Base	CERCLA	NFA	Response Complete (NFA)	On March 10, 1999, EPA, DEQ, and the Navy visited the site. Due to the lack of evidence of a release or stains reported in the RFA, the very small area potentially affected, and the lack of significant contamination detected in 1995, EPA and DEQ agreed that NFA was required for this SWMU.
SWMU 33		NEX (East Annex) Gas Station - Satellite Accumulation Area	East end of Base	CERCLA	NFA	Response Complete (NFA)	On March 10, 1999, EPA, DEQ, and the Navy visited the site. Due to the lack of evidence of a release or stains reported in the RFA, the very small area potentially affected, and the lack of significant contamination detected in 1995, EPA and DEQ agreed that NFA was required for this SWMU.

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SWMU 34		NEX Vending Office Used Oil UST	Bldg 3319, Southeast Corner of the Base	UST	NFA	Response Complete (NFA)	The tank was removed in 1990. A Site Characterization was submitted to DEQ. The Navy received notification from DEQ on August 27, 1991 that no further assessment or remedial action were necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 35		PWC Transportation Garage Used Oil UST	Bldg 3661 in East/Central Portion of Site, north of Public Works Facility	UST	NFA	Response Complete (NFA)	The tank was removed in 1989. A Site Characterization was submitted to the DEQ. No closure letter was received by the Navy. However, per a telephone conversation with Tom Madigan on April 13, 1999, the unit is defined as closed in the DEQ database. The draft RFA stated that the stained soil surrounding the tank fill pipes had been removed and disposed. Consensus was achieved at the June 1999 Partnering meeting for NFA since the site is under the UST program.
SWMU 36		Auto Hobby Shop Used Oil UST	Bldg 3530 Between 5th and 3rd Streets in the SE Corner of the Base	UST	NFA	Response Complete (NFA)	The tank was closed in place in 1991. Two Site Characterization Reports have been submitted to DEQ. A Corrective Action Plan was also submitted and approved by the DEQ. Implementation of the CAP began in March 1998. Free product is being recovered at the site. The site is monitored weekly and quarterly progress reports are submitted to DEQ. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 37		CB301-3 Seabee Maintenance Used Oil Tank	CB301-3 South of Desert Cove	UST	NFA	Response Complete (NFA)	The tank was removed under Phase IV of the UST Program. It was replaced with double-wall fiberglass tanks and piping with interstitial monitoring on the tanks and piping. The Navy received notification from the DEQ on September 20, 1994 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 38		ACU-4 Used Oil Tanks	Bldg 3817, slightly west of Desert Cove Area in the north/central portion of the base	UST	NFA	Response Complete (NFA)	Two 2550 gallon USTs were removed in 1992. The Navy had no closure letter on file. Status in the DEQ database identified the tanks as "currently in use." The Navy will continue to coordinate with DEQ on these tanks. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 39		East Annex Gas Station Used Oil Tank	Bldg 3615 in the far eastern portion of the base	UST	NFA	Response Complete (NFA)	The 550 gallon UST installed in 1961 was removed in 1991. The Site Characterization was submitted to the DEQ. The Navy received notification from the DEQ on August 17, 1994 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 40		BMU-2 Used Oil Tank	Bldg 3142, south of the baseball fields in the North/Central portion of the Base	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass-reinforced plastic was installed in 1985 and removed in 1991. A Site Characterization was sent to the DEQ. The Navy received notification from the DEQ on August 16, 1994 that no further assessment or remedial action was necessary at the site.
SWMU 41		MWR Equipment Rental Used Oil Tank	Bldg 3108, NW of the Public Work Facility	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass-reinforced plastic was installed in 1985 and removed in 1990. A Site Characterization was sent to the DEQ. The Navy received notification from the DEQ on October 18, 1991 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.

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SWMU 42		ACU-2 Used Oil Tank 3	Bldg 1231 west of the Little Creek Channel	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass-reinforced plastic was installed in 1981 and removed in 1991. A Site Characterization was sent to the DEQ. The Navy received notification from the DEQ on August 16, 1994 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 43		ACU-2 Used Oil Tank 4	Bldg 1231 west of the Little Creek Channel	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass-reinforced plastic was installed in 1981 and removed in 1991. A Site Characterization was sent to the DEQ. The Navy received notification from the DEQ on August 16, 1994 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 44		NSWG-2 Used Oil Tank	Between Buildings T-9 and T-11 in the SW Area of the Base	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass-reinforced plastic was installed in 1985 and removed in 1991. A Site Characterization was sent to the DEQ. The Navy received notification from the DEQ on August 16, 1994 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 45	cross-reference with SWMU 139 and 142	Naval Special Warfare Group 2 Solvent Tank	Bldg 3806 in the central region of the base, just north of Pier 59	UST	NFA	Response Complete (NFA)	Within the NSWG command are the SEAL teams. NAB Little Creek is a resident command to four SEAL teams. All four occupy one large compound, of which Bldg 3806 is a part. Only one solvent tank existed in this compound, although three different SWMU numbers were assigned. This is a duplicate of SWMU 139. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 46		NAMS Used Oil Tank 4	Bldg 3872, in the proximity of Desert Cove	UST	NFA	Response Complete (NFA)	The 500 gallon UST was constructed of stainless steel and installed in 1985. The tank was removed by 1994. The Navy received notification from the DEQ on June 8, 1994 that no further assessment or remediation was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 47		SURTASS-3 Used Oil Tank	Bldg 1558 west of Little Creek Channel	UST	NFA	Response Complete (NFA)	The 4000 gallon UST constructed of fiberglass reinforced plastic was installed in 1985 and used for storage of NORPAR 12. The tank was removed in 1995. The Navy received notification from DEQ on August 15, 1995 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA since site is under UST program.
SWMU 48		Oil/Water Separator	Bldg 3896, Port Ops, west of piers 56-59	HRSD	NFA	Response Complete (NFA)	All of the Base Oil/Water Separators discharge to the sanitary sewer system and are therefore covered under the HRSD Permit. The Oil/Water Separators are inspected and cleaned as necessary to prevent releases to the sanitary sewer system. The EPA, DEQ, and Navy discussed these SWMUs on June 30, 1999 and NFA was recommended for these SWMUs.
SWMU 49		Used Oil Tank 1	Bldg 3860, west of Desert Cove in the North/Central portion of the base	UST	NFA	Response Complete (NFA)	The 10,000 gallon UST constructed of fiberglass-reinforced plastic and installed in 1976 was removed in 1992. It was replaced with a new double-walled, 10,000 gallon tank. If additional contamination is discovered, it will be investigated through the UST Program.

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SWMU 50		Used Oil Tank 2	Bldg 3860, west of Desert Cove in the North/Central portion of the base	UST	NFA	Response Complete (NFA)	The 500 gallon UST constructed of steel was removed in 1989. A closure letter was not sent to the Navy and could not be located. The site is listed as "closed" in the DEQ database. It was reiterated by Tom Madigan on April 1, 1999 that the tanks are closed and therefore NFA. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 51		Used Oil Tank 6	Bldg 3530, south of Desert Cove	UST	NFA	Response Complete (NFA)	The 500 gallon UST constructed of stainless steel was installed in 1954 and removed in 1990. A closure letter was not sent to the Navy and could not be located. The site is listed as "closed" in the DEQ database. It was reiterated by Tom Madigan on April 1, 1999 that the tanks are closed and therefore NFA was recommended. Consensus was achieved at the June 1999 Partnering meeting for NFA since the site is under the UST program.
SWMU 52		CB208 Used Oil Tank	South of Building CB-210, slightly south of Desert Cove	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass-reinforced plastic and installed in 1983 was removed in 1994. The Navy received notification from DEQ on May 27, 1994 that no further assessment or remedial action was necessary at the site. If additional contamination is discovered, it will be investigated through the UST Program.
SWMU 53		CB214 Used Oil Tank	Bldg CB214, directly south of Desert Cove	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass-reinforced plastic and installed in 1983 was removed in 1994. The Navy received notification from DEQ on May 27, 1994 that no further assessment or remedial action was necessary at the site. Consensus was achieved at the June 1999 Partnering meeting for NFA since the site is under the UST program.
SWMU 54		CB301-4 Seabee Maintenance Used Oil Tank	Bldg CB301-4	UST	NFA	Response Complete (NFA)	The tank was removed under Phase IV of the UST Program. It was replaced with double-wall fiberglass tanks and piping with interstitial monitoring on the tanks and piping. The Navy received notification from the DEQ on September 20, 1994 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 55		CB315 Used Oil Tank	South of Desert Cove Area	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass and reinforced plastic was installed in 1983 and removed in 1991. The Navy received notification from DEQ on August 16, 1994 that no further assessment or remedial action was necessary at the site. Consensus was achieved at the June 1999 Partnering meeting for NFA since the site is under the UST program.
SWMUs 56-58		SIMA Used Oil Tanks 2-4	Building 1265 west of Little Creek Channel	UST	NFA	Response Complete (NFA)	All three tanks were 1000 gallon USTs constructed of steel and installed in 1984. SWMU 56 was removed by 1994. SWMUs 57 and 58 were removed in 1991 and replaced with oil/water separators. A Site Characterization was sent to DEQ. The Navy received notification from DEQ on August 16, 1994 that no further assessment or remedial action was necessary. In June 1999, consensus for NFA was achieved since the site is under the UST program.

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SWMU 59		Naval/Marine Reserve Center Used Oil Tank 1	SW portion of the base, west of Little Creek Channel	UST	NFA	Response Complete (NFA)	The 550 gallon UST constructed of fiberglass-reinforced plastic and installed in 1983 was removed in 1991. The Navy received notification from DEQ on October 18, 1991 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 60		Used Oil Tank	Bldg 3033, north of the Music School	UST	NFA	Response Complete (NFA)	The Navy has a closure letter on file. Tom Madigan of TRO-DEQ identified this unit as "closed" in the DEQ database and reiterated that the tanks are closed and NFA is required. In June 1999, consensus for NFA was achieved since the site is under the UST program. If additional contamination is discovered, it will be investigated through the UST Program.
SWMU 61		Harbormaster's Office Above Ground Used Oil Tanks	Building 3894, East/Central Portion of Base	CERCLA	NFA	Response Complete (NFA)	The tank has been drained and removed (Draft RFA Navy comment). Because the unit is in good condition and is located in a contained area, the Revised RFA recommended NFA. Consensus for NFA was achieved (June 30, 1999).
SWMU 62		CB210 ELCS Mechanic Shop Above Ground Used Oil Tank	CB210 ELCS	CERCLA	NFA	Response Complete (NFA)	Because the unit is in good condition and is located in a contained area, the Revised RFA recommended NFA (June 30, 1999). No releases were identified, the SWMU is managed under the SPCC Plan as AST, and the tank is no longer in service.
SWMU 63		Fuel Farm Platform Above Ground Waste Oil Tanks	Bldg 3867, West of Desert Cove	SPCC/AST	NFA	Response Complete (NFA)	These tanks will be replaced with convault tanks as part of the SPCC upgrade. The EPA, DEQ, and Navy discussed this SWMU on June 30, 1999. EPA and DEQ agreed that as long as the tanks are registered, NFA was required for this SWMU. All tanks over 660 gal are registered at Little Creek. If additional contamination is discovered, it will be investigated through the SPCC Program.
SWMU 64		BMU-2 Maintenance Above Ground Waste Oil Tank	Bldg 3142	CERCLA	NFA	Response Complete (NFA)	The tank was replaced with convault AST 10/98, soil sampling was conducted during replacement, and the tank is managed under the SPCC Program. Because the unit is in good condition and is located in a contained area, the revised RFA recommended NFA (June 30, 1999).
SWMUs 65-75		Facility Oil/Water Separators	Facility Wide	HRSD	NFA	Response Complete (NFA)	The EPA, DEQ, and Navy discussed these SWMUs on June 30, 1999 and NFA was recommended. All of the Base Oil/Water Separators discharge to the sanitary sewer system and are therefore covered under the HRSD Permit. The Oil/Water Separators are inspected and cleaned as necessary to prevent releases to the sanitary sewer system.

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SWMU 76		Hazardous Waste Storage Pad	North of Gates 4 and 5 in the Southeast corner of the Base	CERCLA	NFA	Response Complete (NFA)	Clean closure DEQ letter received in April 1997. Consensus was achieved for NFA.
SWMU 77	See ER Site 12						
SWMU 78		Navy Exchange Vending Office Drum Area	Exact location could not be determined after visit to building 3319	CERCLA	NFA	Response Complete (NFA)	In September 1993 the site was visited, and no drums were present. As part of the UST Program, a Site Characterization has been performed near the SWMU. No contamination was detected. The Navy, EPA, and DEQ visited the site on March 10, 1999 and could not find the drums or any soil staining. Consensus for NFA was achieved.
SWMU 79		Navy Exchange Vending Office Scrap Yard	SE Portion of Base, Bldg 3319	CERCLA	NFA	Response Complete (NFA)	The site has been a vending office since 1954, all items have been removed, and it is no longer a scrap yard. No release was noted during the VSI, and since there is no hazardous waste or hazardous constituents managed at the site, the RFA recommended NFA for this SWMU (June 30, 1999).
SWMU 80		MWR Auto Hobby Shop Paint Booth Filters	Bldg 3530 Between 5th and 3rd Streets	CERCLA	NFA	Response Complete (NFA)	The revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999). Painting operations ceased in 1996.
SWMU 81		MWR Auto Hobby Shop Stain in Parking Lot Area	Southeast portion of base between 5th and 3rd Streets	CERCLA	NFA	Response Complete (NFA)	On March 10, 1999, EPA, DEQ, and the Navy visited the site. The reported oil stains and stressed vegetation around the edges of the parking lot could not be located. The locations of the dumpsters and stains on the picture from the VSI were located. A Site Characterization was performed near this site as part of the UST Program. No soil or groundwater contamination was detected at the site with the exception of the area immediately surrounding the UST.
SWMU 82		Boone Clinic Medical X-Ray Silver Recovery Unit	Bldg 3505, Medical Clinic Building	CERCLA	NFA	Response Complete (NFA)	No release was identified during the VSI, the revised RFA stated that this site is recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
SWMU 83		Boone Clinic Dental Clinic	Bldg 3505, Medical Clinic Building	CERCLA	NFA	Response Complete (NFA)	No release was identified during the VSI, the revised RFA stated that this site is recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
SWMU 84	See IR Site 8						
SWMU 85		SIMA Machine Shop	Bldg 1265	CERCLA	NFA	Response Complete (NFA)	In 1998, SIMA vacated the building. No release was identified during the VSI, and the revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).

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SWMU 86		SIMA Grind Shop	Bldg 1265	CERCLA	NFA	Response Complete (NFA)	In 1998, SIMA vacated the building. No release was identified during the VSI, and the revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
SWMU 87		SIMA Rewind Shop	Bldg 1265	CERCLA	NFA	Response Complete (NFA)	No release was identified during the VSI, and the revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999). In 1998, SIMA vacated the building.
SWMU 88		SIMA Mechanical Calibration Laboratory	Bldg 1265	CERCLA	NFA	Response Complete (NFA)	No release was identified during the VSI, and the revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999). In 1998, SIMA vacated the building.
SWMU 89		SIMA Carpentry Shop	Bldg 1265	CERCLA	NFA	Response Complete (NFA)	No release was identified during the VSI, and the revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999). In 1998, SIMA vacated the building.
SWMU 90		SIMA Boat Shop Storage Yard Satellite Accumulation Area	Exact location could not be determined after visit to building 1265	CERCLA	NFA	Response Complete (NFA)	The revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor. In June 1999, consensus for NFA was achieved (June 30, 1999).
SWMU 91		SIMA Cable Rigger Shop Storage Satellite Accumulation Area	Bldg 1265	CERCLA	NFA	Response Complete (NFA)	No release was identified during the VSI, and the revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999). In 1998, SIMA vacated the building.
SWMUs 92-95		CB301 Seabee Vehicle Maintenance Facility	Bldg CB301, South of Desert Cove	CERCLA	NFA	Response Complete (NFA)	No release was identified during the VSI, and the revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
SWMU 96		CB301 Seabee Vehicle Maintenance Facility Scrap Storage Area	Bldg CB301, South of Desert Cove	CERCLA	Preliminary Screening	Response Complete (NFA)	A desktop audit was completed in April 2004. NFA was determined due to Seabee activity. This area is an active industrial facility and will be covered under RCRA. A close out report was signed in September 2004.
SWMU 97		CB301 Seabee Vehicle Maintenance Facility Storm Drain	Bldg CB301, South of Desert Cove	VPDES	Preliminary Screening	Response Complete (NFA)	A drain is located immediately west of the northwest corner of CB301. Further assessment and remediation will be covered under the VPDES Program. A desktop audit was completed in April 2004. NFA was determined due to Seabee activity. This area is an active industrial facility and will be covered under RCRA. A close out report was signed in September 2004.
SWMU 98		CB210 Elevated Causeways Mechanic Shop Material Dispensing Area	Bldg CB210, South of Desert Cove	CERCLA	Preliminary Screening	Response Complete (NFA)	A desktop audit was completed in April 2004. NFA was determined due to Seabee activity. This area is an active industrial facility and will be covered under RCRA. A close out report was signed in September 2004.
SWMU 99		Solid Waste Incinerator Site	Bounded by Helicopter Road to the west, 10th Street to the South, and Hewitt Drive to the East	CERCLA	NFA	Response Complete (NFA)	Operation of the unit ended in 1957. The revised RFA recommended NFA for this site because the unit has been removed and there is no evidence of a release (June 30, 1999).
SWMU 100		Fuel Farm Loading Platform Underground Storage Tank	Adjacent to Desert Cove near Bldg 3867	CERCLA/UST	NFA	Response Complete (NFA)	Above ground oil tanks (SWMU 63) are associated with this SWMU, and this SWMU is also managed under the UST program.

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SWMU 101		Beachmaster Unit 2 Satellite Accumulation Area	Southeast of Site 10	CERCLA	NFA	Response Complete (NFA)	On May 11, 1999, the EPA, DEQ, and the Navy visited the site and could not determine its exact location. They resolved that NFA was required.
SWMU 102	See IR Site 3						
SWMU 103		Stationary Crane Area	Between Piers 10 and 11 located along Little Creek Cove	CERCLA	NFA	Response Complete (NFA)	Unit has been removed and there was no evidence of a release; it was subsequently recommended for NFA in the revised RFA (June 30, 1999).
SWMU 104		Steam Plant Baghouses	In Building 757 between Murray Road and Amphibious Drive	CERCLA	NFA	Response Complete (NFA)	The unit is in good condition and was recommended for NFA in the revised RFA (June 30, 1999).
SWMU 105	See New SWMU 2						
SWMU 106		Steam Plant French Drain	In Building 757 between Murray Road and Amphibious Drive	CERCLA	NFA	Response Complete (NFA)	Unit is associated with SWMU 105 and 107, operation began 1956, and the SWMU is also covered under a HRSD Permit. The unit is in good condition and was recommended for NFA in the revised RFA (June 30, 1999).
SWMU 107		Steam Plant Coal Pile Leachate Collection System	In Building 757 between Murray Road and Amphibious Drive	CERCLA	NFA	Response Complete (NFA)	Unit is associated with SWMU 105 and 106, operation began 1956, and the SWMU is also covered under a HRSD Permit. The unit is in good condition and was recommended for NFA in the revised RFA (June 30, 1999).
SWMU 108		Steam Plant Fuel Tanks and Associated Pipes	In Building 757 between Murray Road and Amphibious Drive	SPCC/AST	NFA	Response Complete (NFA)	The steam plant fuel tanks were inspected in 1995, and no evidence of leaks was detected. Monitoring was also completed and no evidence of contamination or free product was found. The EPA, DEQ, and the Navy discussed this SWMU on June 30, 1999 and agreed that as long as the tanks were registered, NFA was necessary for this SWMU. Any further assessment or remediation will be covered under the SPCC/AST Program.
SWMU 109		Steam Plant Floor Drains	In Building 757 between Murray Road and Amphibious Drive	HRSD	NFA	Response Complete (NFA)	Drains from the steam plant enter the sanitary sewer system and are covered by the HRSD Permit. Therefore, NFA has been recommended for this SWMU. Status is pending verification that drains are off-line (3/00). It was confirmed that back drains have been sealed, with the front drains uncertain (3/00).
SWMU 110		90-Day Accumulation Area	Two bays in Bldg 106 and an outdoor storage yard adjacent to Bldg 106	CERCLA	NFA	Response Complete (NFA)	Because the unit is in good condition and is located in a contained area, the Revised RFA recommended NFA (June 30, 1999).
SWMU 111	See New SWMU 3						
SWMU 112		Pier 10 Sandblasting Area Satellite Accumulation Area	Location cannot be determined	CERCLA	NFA	Response Complete (NFA)	On March 10, 1999, EPA, DEQ, and the Navy visited this SWMU. The best estimate of its former location was determined to be in the middle of the parking lot. Since it is covered, it poses no likely risk to health. EPA and DEQ agreed that NFA was required.

Table 2-1. Site Status Summary Table
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia

Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
SWMU 113	See IR Site 17						
SWMU 114		ACU-2 Drum Rack and Tank Area	Building 1522, west of Little Creek Channel	SPCC/AST	NFA	Response Complete (NFA)	An SPCC/AST Site. The ACU 2 drum rack and tank area consists of 100 square foot concrete area surrounded by a berm. The berm will be demolished and removed as part of SPCC upgrades. All stained soil will be excavated. TPH soil samples are to be collected under the SPCC and the results provided to EPA/DEQ. PWC is to provide information.
SWMU 115		ACU-2 Fuel Dispensing Area	Building 1522, west of Little Creek Channel	SPCC/AST	NFA	Response Complete (NFA)	An SPCC/AST Site. Two metal tanks rest on a concrete slab surrounded by a 6-inch concrete berm. This area will be addressed as part of the SPCC upgrades. The existing tanks will be replaced with convaults. The berm will be partially demolished and the rest filled in to form a raised platform for the new tanks. PWC will collect 3 grab samples to form one composite for TPH on each long side of the berm, 2 grab samples to form one composite for TPH; a total of 4 composite samples are to be collected. PWC is to provide information. DEQ close out letter was recevied on March 15, 2000. One composite sample comprised of 7 grabs from the bottom of the excavation collected in Sept 1999 and analyzed for TPH diesel, with a result of 422 mg/kg. The excavation was backfilled and a prefab slab and convault were installed.
SWMU 116		MWR Recreation Boat Maintenance Facility	Bldg 3021 in the northeast corner of the base	CERCLA	Preliminary Screening	Response Complete (NFA)	The site was sampled during the Relative Risk Ranking; soil samples were collected along the fence line in 1995 and analyzed for VOCs and metals. An SSA was conducted in FY05. EPA has considered analysis for SVOCs may be required. Sample results show lead was not found to be significant, and no significant volatiles were found. A desktop audit was conducted in 2005 and indicated the site did not pose risk. An NFA consensus signed in May 2005.
SWMU 177/4	See IR Site 6						
SWMU 118	See IR Site 5						
SWMU 119		Former Special Warfare Group 2 Electronics Shop	South of Little Creek Channel, Bldg W112	CERCLA	Preliminary Screening	Response Complete (NFA)	In March 2004, the Navy, DEQ, and USEPA jointly scoped the collection of three groundwater samples from 10-15' bgs for the analysis of TCL VOCs, and TCL SVOCs. The results showed no unacceptable human health or ecological risk. The close out report was signed in September 2004.
SWMU 120		VC-6 Satellite Accumulation Area	Directly South of Pier 6, Bldg 2074	CERCLA	NFA	Response Complete (NFA)	On October 4, 1993 the site was visited, and there was no evidence of stains or releases. On April 19, 1999, EPA and DEQ agreed that NFA was required for this SWMU.
SWMU 121		Landing Force Training Command Satellite Accumulation Area	Bldg 3532	CERCLA	NFA	Response Complete (NFA)	No releases were identified during the VSI, and the revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).

Table 2-1. Site Status Summary Table
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia

Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
SWMU 122		Gymnasium Emergency Generator	Bldg 3147, Southeast of the Public Works Facility	CERCLA	NFA	Response Complete (NFA)	On May 6, 1999, the location of the generator was identified. No staining or evidence of a release was present. EPA, DEQ, and Navy, visited the site on May 11, 1999 and agreed that NFA was warranted.
SWMUs 123-126	See ER Site 7						
SWMU 127		Amphibious Base Landfill Transfer Station	South of the intersection of Amphibious Drive and Murray Rd.	CERCLA	NFA	Response Complete (NFA)	On April 19, 1999, EPA and DEQ agreed that NFA was required for this site.
SWMU 128		Port Ops Lube Oil Dispensing Area Storm Water Drain	Building 3896, near port ops, west of piers 56-59	VPDES	NFA	Response Complete (NFA)	A VPDES site. Sediment samples directly under the outfall may be required (detailed in August 1999 meeting minutes), but the EPA, DEQ, and the Navy have agreed that NFA is necessary for the soil or groundwater near the site.
SWMU 129		Port Ops Satellite Accumulation Area	Port Ops Building 3896, west of piers 56-59	CERCLA	NFA	Response Complete (NFA)	On March 10, 1999, EPA, DEQ, and the navy visited this SWMU. The compound was in good condition, and there was no evidence that releases could have occurred to soil in the area. EPA and DEQ agreed that NFA was required for the soil and groundwater near the site. However, due to reported releases to the storm drain, sediment samples were proposed, but due to Navy policy, they were not collected.
SWMU 130	See New SWMU 5						
SWMU 130-133	See New SWMU 6						
SWMU 134		Portable Waste Oil Tanks Piers 51-59	Piers 51-59	SPCC/AST	NFA	Response Complete (NFA)	New portable waste oil tanks with the proper secondary containment are now in use at the piers. In June 1999, consensus for NFA was achieved. Any further assessment or remediation will be covered under the SPCC Plan/AST Program.
SWMU 135		Hydraulic Fuel Leak	Piers 51-59; dog leg of the pier near building 3882	CERCLA	NFA	Response Complete (NFA)	The leak described in the Revised RFA could not be located. No evidence of staining or a release was present at the estimated location of the site. On May 11, 1999, the EPA and DEQ visited the site and determined that NFA was necessary.
SWMU 136		Mobile Diving Salvage Unit II Salvage Area - Piers 51-59	Piers 51-59	CERCLA	NFA	Response Complete (NFA)	On May 11, 1999, EPA, DEQ, and the Navy visited the area. No staining was found. A new building had been built on top of the site. Thus, the EPA and DEQ determined that NFA was necessary.
SWMU 137	See New SWMU 7						
SWMU 138		SEAL Team 4 Satellite Accumulation Area	Building 3806 South of Desert Cove	CERCLA	NFA	Response Complete (NFA)	On April 19, 1999, EPA, DEQ, and the Navy visited this SWMU. EPA and DEQ agreed that NFA was required for the soil and groundwater near the site. However, due to reported releases to the storm drain, sediment samples under the outfall NR-26A, 33, and 34 were recommended. A sediment sample was collected adjacent to the storm drains as part of the SWMU 7b RI. Additionally, the area was dredged as part of the 2008 Military Construction project in Desert Cove.

Table 2-1. Site Status Summary Table
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia

Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
SWMU 139	Cross-referenced with SWMU 45	SEAL Team 4 Waste PD 680 Tank	Bldg 3806 South of Desert Cove	UST	NFA	Response Complete (NFA)	The 200-gallon tank constructed of fiberglass-reinforced plastic and installed in 1983 was removed in 1990. The Navy received notification from the DEQ on October 18, 1991 that no further assessment or remedial action was necessary at the site. In June 1999, consensus for NFA was achieved since the site is under the UST program.
SWMU 140		SEAL Team 4 Spent Battery Staging Area	Bldg 3806 South of Desert Cove	CERCLA	NFA	Response Complete (NFA)	The revised RFA stated that this site was recommended for NFA because it is located inside a building or under a roof with a concrete floor (June 30, 1999).
SWMU 141		SEAL Delivery Vehicle 4 Satellite Accumulation Area	Building 3806 South of Desert Cove	CERCLA	NFA	Response Complete (NFA)	On April 19, 1999, EPA, DEQ, and the Navy visited this SWMU. EPA and DEQ agreed that NFA was required for the soil and groundwater near the site. However, due to reported releases to the storm drain, sediment samples under the outfall NR-26A, 33, and 34 were recommended. A sediment sample was collected adjacent to the storm drains as part of the SWMU 7b RI. Additionally, the area was dredged as part of the 2008 Military Construction project in Desert Cove.
SWMU 142	Cross-referenced with SWMU 139 and SWMU 45	SEAL Delivery Vehicle 4 Waste PD 680 Tank	Bldg 3806 South of Desert Cove	UST	NFA	Response Complete (NFA)	Within the NSWG command are the SEAL teams. NAB Little Creek is the resident command to four SEAL teams. All four occupy one large compound, of which Bldg 3806 is a part. Only one solvent tank existed in this compound, although three different SWMU numbers were assigned. This is a duplicate of SWMU 139.
SWMU 143		Former Seabee Vehicle Maintenance Facility - CB201	Bldg CB201: South of Desert Cove	CERCLA	NFA	Response Complete (NFA)	EPA and DEQ agreed that NFA was required for soil and groundwater near the site as long as it could be confirmed that the tanks for the gas station had been properly closed. Since there is no storm sewer or catch basin to sample sediments, EPA and DEQ decided on NFA for this site on June 30, 1999.
SWMU 144	See New SWMU 8						
SWMU 145		Fuel Oil Tank	Bldg 3029, Fire Station 1, near the golf course	SPCC/AST	NFA	Response Complete (NFA)	This SWMU no longer exists. The area where Bldg 3029 (Fire Station #1) was located is now an open field. The tank has been removed, and there is no evidence of oil staining. NFA consensus occurred at the June 1999 Partnering meeting pending a site visit. Any further assessment or remediation will be covered under the SPCC Plan/AST Program.
SWMU 146		SEAL Team 2 Material Storage Area	Bldg 3813: North of Pier 59	CERCLA	NFA	Response Complete (NFA)	On April 19, 1999, EPA, DEQ, and the Navy visited this SWMU. EPA and DEQ agreed that NFA was required for the soil and groundwater near the site. However, due to reported releases to the storm drain, sediment samples under outfall NR-26A, 33, and 34 were recommended. A sediment sample was collected adjacent to the storm drains as part of the SWMU 7b RI. Additionally, the area was dredged as part of the 2008 Military Construction project in Desert Cove.
SWMU 147		Facility Storm Sewers/Drains	Throughout Facility	VPDES	NFA	Response Complete (NFA)	The stormwater system is covered by a VPDES permit. Both the draft Subpart S and the RFA guidance state that it is not the EPA's position to include releases permitted under other environmental laws in the corrective action program. Therefore, NFA was recommended (June 1999).
AOC A	See IR Site 15						
AOC B	See IR Site 16						

Table 2-1. Site Status Summary Table
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia

Site ID	Other ID	Name/Description	Location	Env. Program	CERCLA Process (followed or to be followed)	Current Status	Comments/Notes
AOC C		Non-PCB Transformer Leak	Building 366, north of Public Works Facility	CERCLA	NFA	Response Complete (NFA)	After confirming that the transformer did not contain PCBs, the DEQ, EPA, and Navy discussed this AOC and agreed that NFA was required on May 11, 1999.
AOC D		PCB Transformer Leak	Bldg 3530 Between 5th and 3rd Streets in the SE Corner of the Base	CERCLA	Preliminary Screening	Response Complete (NFA)	A desktop audit was conducted in May 2005 did not indicate a potential release; therefore, a NFA consensus statement was signed in May 2005.
AOC E		Non-PCB Transformer Leak	Adjacent to Port Ops, Building 3896	CERCLA	NFA	Response Complete (NFA)	After confirming that the transformer did not contain PCBs, the DEQ, EPA, and Navy discussed this AOC and agreed that NFA was required on May 11, 1999.
AOC F		Emergency Generator Leak - Pier 59	Pier 59	CERCLA	NFA	Response Complete (NFA)	On April 19, 1999, EPA and DEQ agreed that NFA was required for the AOC.
AOC G		Emergency Generator Leak - Fire Station Number 1	Fire Station #1; Building 3029	CERCLA	NFA	Response Complete (NFA)	The area where Bldg 3029 (Fire Station #1) was located is now an open field. The generator has been removed and there is no evidence of any oil staining. On April 19, 1999, EPA and DEQ agreed that NFA was required for this AOC.
AOC H		Pesticide Mixing Area	Buildings 3109 and 3630, near golf course	CERCLA	Preliminary Screening/NFA	Response Complete (NFA)	On January 27, 1999, EPA, DEQ, and the Navy discussed the site. It was agreed that further action was required, although no specific priority or timeline was assigned. Limited soil sampling for pesticides was recommended. In March 2000, EPA, DEQ, and the Navy agreed this site would be addressed in Appendix A of the FFA. A Preliminary Screening was conducted in August 2004. Soil (surface and subsurface) samples were collected. Results indicated no human health or ecological risks at the AOC. USEPA, DEQ, and Navy agreed that NFA was required at the Site. A Final Close Out report was issued and signed in March 2004. Land use is unrestricted at the site.
AOC I		Golf Course Pond Area	Golf course Hole 9	CERCLA	Preliminary Screening/NFA	Response Complete (NFA)	During the December 2000 partnering meeting, EPA, DEQ and the Navy discussed this site. It was agreed that further action was required, although no specific priority or timeline was assigned. A Preliminary Screening was conducted in August 2004. Soil (surface and subsurface) samples were collected and analyzed for Site 9 COCs and the results indicated no human health or ecological risk at the site. Additionally, one sediment sample was collected in the golf course pond for Site 9 COCs to assess the potential for ecological risk at the site. Results indicated no ecological risk from site runoff in sediment. The Navy, USEPA, and DEQ agreed that NFA was required and a Final Close Out Report was issued and signed in March 2004. Land use is unrestricted at the site.
AOC J		Burn Area	Across Hewitt Drive from driving range	CERCLA	Preliminary Screening/NFA	Response Complete (NFA)	During the December 2000 partnering meeting, EPA, DEQ and the Navy discussed this site. It was agreed that further action was required, although no specific priority or timeline was assigned. A Preliminary Screening was conducted in August 2004. Soil (surface and subsurface) samples and one groundwater sample were collected. The results indicated no human health or ecological risk at the site. The USEPA, Navy, and DEQ agreed NFA was required for the site and a Final Close Out Report was issued and signed in March 2004. Land use is unrestricted at the site.

Table 2-2. Environmental Studies, Investigations, and Actions Conducted to Date
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia

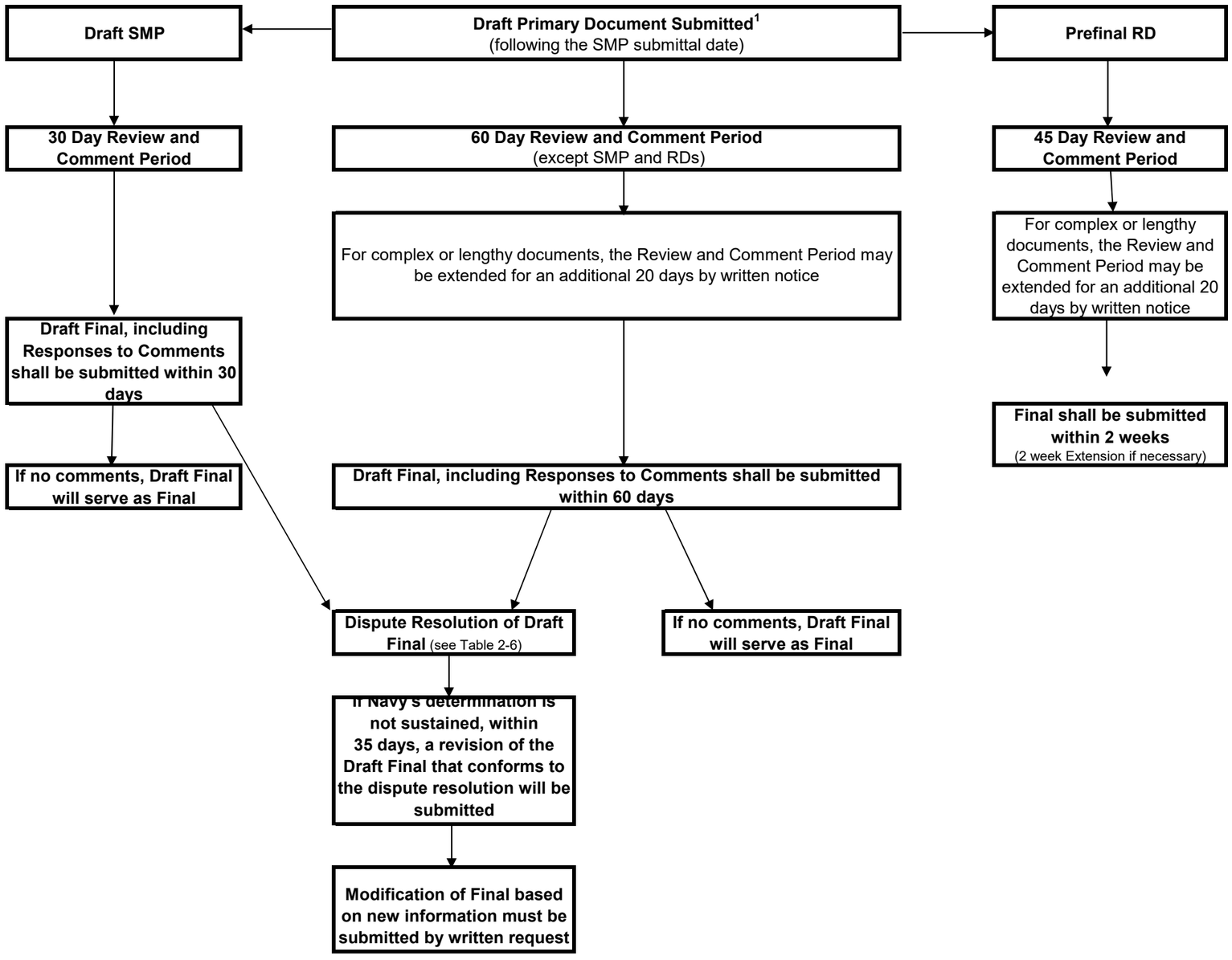
ER Site or SWMU	Pre-NPL Investigations/Actions						Post-NPL Investigations/Actions									
	Preliminary Studies/Investigations															
	1984 IAS	1989 RFA	1986 RVS	1991 IRI	1996 RRRS	Site Specific Investigations	Site Investigation	Remedial Investigation	Feasibility Studies	EE/CAs and IRAs	Pilot/Treatability Studies	Additional Investigations	Proposed Plan Record of Decision	Remedial Designs/Actions	LTM and O&M	Five-year Review	Site Closeout
ER Site 8	X	X			X		SI - December 1999	RI/HHRA/ERA - November 2004		EE/CA for surface debris removal- December 2000 IRA for surface debris removal- Jan 2002 Construction Closeout Report - June 2002 EE/CA for landfill removal and wetland construction- Jan 2005 IRA for landfill removal and wetland construction - September 2005 - August 2006 CCR- April 2007			PP - March 2008 NFA ROD - August 2008				NFA ROD - August 2008
"New" SWMU 7 (SWMU 137)		X					SERA - January 2001 SI - August 2001	RI/HHRA/ERA - December 2004				Post-MILCON Action Sediment Sampling - November 2009 Benthic Invertebrate Sampling - August/September 2010 Post-MILCON Action Evaluation (SWMU 7b) - July 2012 Sediment Remediation Area Delineation - December 2012	PP (SWMU 7a) - March 2005 NFA ROD (SWMU 7a) - June 2005 PP (SWMU 7b) - September 2013 NFA ROD (SWMU 7b) - September 2013				NFA ROD (SWMU 7a) - June 2005 NFA ROD (SWMU 7b) - September 2013
"New" SWMU 8 (SWMU 144)		X					SERA - January 2001 SI - August 2001	RI/HHRA/ERA - December 2004		EE/CA (soil) - November 2000 IRA for ABM in soil - November 2000 Construction Completion - February 2001 EE/CA for outfall sediment - June 2004 IRA for outfall sediment - September 2004 CCR - December 2004		Sediment and Subsurface Soil Sampling for EE/CA development - February 2004	PP - June 2005 NFA ROD - June 2005				NFA ROD - June 2005

BERA: Baseline Ecological Risk Assessment
CD: Cyclodextrin
CCR - Construction Completion Report
DD: Decision Document
EA: Environmental Assessment
EE/CA: Engineering Evaluation and Cost Analysis
ERA: Ecological Risk Assessment
FFA: Federal Facility Agreement
FFS: Focused Feasibility Study
FS: Feasibility Study
GWM: Groundwater Monitoring
HHRA: Human Health Risk Assessment
IAS: Initial Assessment Study
IRA: Interim Removal Action
IRACR: Interim Remedial Action Completion Report
IRI: Interim Remedial Investigation
LTM: Long Term Monitoring
LUC: Land Use Controls
MIP: Membrane Interface Probe
NFA: No Further Action
ORC: Oxygen Release Compound - TM
PDB: Passive Diffusion Bags
PFS: Preliminary Feasibility Study
PP: Proposed Plan
PSI: Preliminary Site Inspection
RA: Remedial Action
RAWP: Remedial Action Work Plan
RI: Remedial Investigation
RD: Remedial Design
RFA: RCRA Facility Assessment
ROD: Record of Decision
RRRS: Relative Risk Ranking System
RVS: Round 1 Verification Step
SCR: Site Closeout Report
SERA: Screening Ecological Risk Assessment
SI: Site Investigation
SRI: Supplemental Remedial Investigation
TM: Technical Memorandum
WP: Work Plan

Table 2-3. CERCLA Process
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia

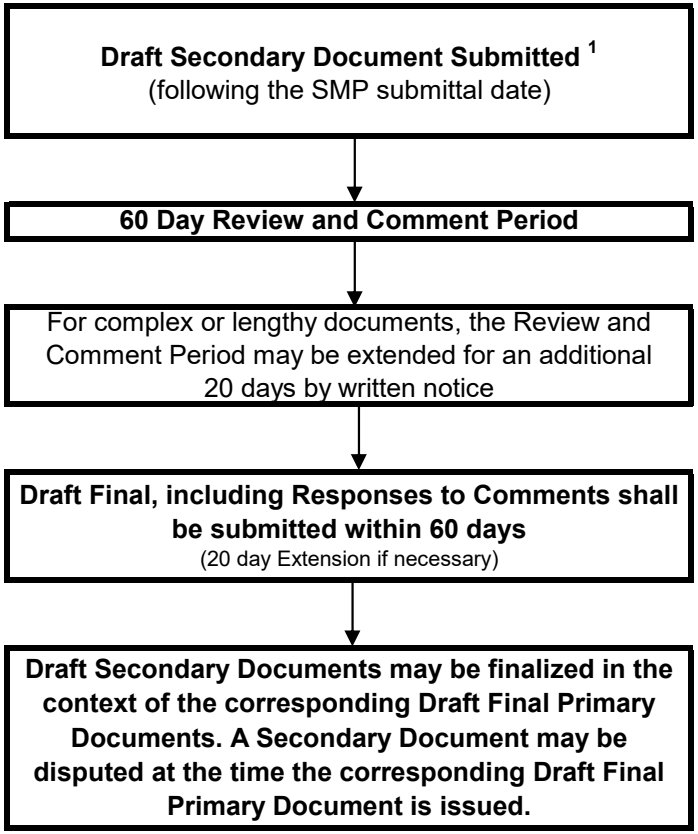
Preliminary Assessment (PA)	Initiation of concern about a site, area, or potential contaminant source. The PA is a limited-scope assessment designed to distinguish between sites that clearly pose little or no threat to human health or the environment and sites that may pose a threat and require further investigation. Environmental samples are rarely collected during a PA. The PA also identifies sites requiring assessment for possible response actions. If the PA results in a recommendation for further investigation, an SI is conducted.
Site Investigation (SI)	Some sites warrant preliminary or interim investigations, studies, or removal/remedial actions. If it is unclear as to whether a site should be included in the CERCLA RI/FS process, an SI is sometimes conducted to make a general determination if activities at the site have impacted environmental media. SIs typically include the collection of environmental and waste samples to determine which hazardous substances are present at a site and to determine if these substances have been released to the environment.
Remedial Investigation (RI)	During an RI, data are collected to characterize site conditions, determine the nature of the waste, assess risk to human health and the environment, and, if necessary, conduct treatability testing to evaluate the potential performance and cost of the treatment technologies being considered.
Treatability Study (TS)	Treatability studies may be conducted at any time during the CERCLA process. The need for a treatability study generally is identified during the FS. Treatability studies may be classified as either bench-scale (laboratory study) or pilot-scale (field studies). For technologies that are well-developed and tested, bench-scale studies are often sufficient to evaluate performance. For innovative technologies, pilot tests may be required to obtain the desired information. Pilot tests simulate the physical and chemical parameters of the full-scale process, and are designed to bridge the gap between bench-scale and full-scale operations. Treatability studies are performed to assist in the evaluation of a potentially promising remedial technology. The primary objectives of treatability testing are to provide sufficient data to allow treatment alternatives to be fully developed and evaluated during the FS and to support the remedial design of a selected alternative.
Engineering Evaluation/Cost Analysis (EE/CA) and Interim Removal Action (IRA)	Removal actions are implemented to clean up or remove hazardous substances from the environment at a specific site in order to mitigate the spread of contamination. Removal actions may be implemented at any time during the CERCLA process. Removal actions are classified as either time-critical or non-time-critical. Actions taken immediately to mitigate an imminent threat to human health or the environment, such as the removal of corroded or leaking drums, are classified as time-critical removal actions. Removal actions that may be delayed for 6 months or more without significant additional harm to human health or the environment are classified as non-time-critical removal actions (NTCRA). For an NTCRA, an EE/CA is prepared rather than the more extensive FS. An EE/CA focuses only on the substances to be removed rather than on all contaminated substances at the site. It is possible for a removal action to become the final remedial action if the risk assessment results indicate that no further remedial action is required in order to protect human health and the environment.
Feasibility Study (FS)	The FS is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions. The RI and FS can be conducted concurrently; data collected in the RI influence the development of remedial alternatives in the FS, which in turn affect the data needs and scope of treatability studies and additional field investigations. This phased approach encourages the continual scoping of the site characterization effort, which minimizes the collection of unnecessary data and maximizes data quality.
Proposed Plan (PP)	A PP presents the remedial alternatives developed in the FS and recommends a preferred remedial alternative. The public has an opportunity to comment on the PP during an announced formal public comment period. Site information is compiled in an administrative record and placed in the general IR program information repositories established at local libraries for public review. The public comments are reviewed and the responses are recorded in a document called a Responsiveness Summary. At the end of the public comment period, an appropriate remedial alternative is chosen to protect human health and the environment. All parties directly involved in the restoration program (Navy, EPA, and VDEQ) must agree on the selected alternative.
Record of Decision (ROD)	The ROD document is issued to explain the selected remedial action. Public comments received during the PP are addressed as part of the responsiveness summary in the ROD. A notice to the public is issued when the ROD is signed by Navy and EPA following State concurrence.
Remedial Design/Remedial Action (RD/RA)	The final stage in the process is the RD/RA. The technical specifications for cleanup remedies and technologies are designed in the RD phase. If land use controls are a component of the remedy, the Land Use Control Remedial Design is generated during this phase. The RA is the actual construction or implementation phase of the cleanup process.
Remedy In Place	For long-term remedies where it is anticipated that remedial action objectives will be achieved over a long period, the RIP milestone signifies the completion of the remedial action construction phase, and that the remedy has been implemented and has been demonstrated to be functioning as designed (i.e., all testing has been accomplished and the remedy will function properly). Once all RCs and RIPs have been documented for every site at the facility and the terms of the FFA have been met, site closeout and NPL deletion is completed.
Response Complete	Within the CERCLA process there are multiple points at which a decision can be made that no further response action is required; properly documented (necessary regulatory notification or application for concurrence has occurred), these decisions constitute response complete and/or site closeout. RC is the point at which the remedy has achieved the required reduction in risk to human health and the environment (cleanup goals have been met). Response complete is followed by site closeout.
Five Year Review	Five-year reviews generally are required by CERCLA or program policy when hazardous substances remain on site above levels that permit unrestricted use and unlimited exposure. Five-year reviews provide an opportunity to evaluate the implementation and performance of a remedy to determine whether it remains protective of human health and the environment. Generally, reviews are performed 5 years after the initiation of a CERCLA response action, and are conducted every 5 years thereafter as long as future uses remain restricted. Five-year reviews for JEB Little Creek are performed by the Navy, the lead agency for the site, but EPA retains responsibility for determining the protectiveness of the remedy.

Table 2-4. Primary Document Submittal Flow Chart FFA Process
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia



[1]JEB Little Creek Primary Documents Include: Remedial Investigation (RI)/Feasibility Study (FS)/Focused Feasibility Study (FFS) Work Plans, RI Reports, FS and FFS Reports, Proposed Remedial Action Plans (PRAPs), Records of Decision (RODs), Final Remedial Designs (RDs), Remedial Action Work Plans, Remedial Action Completion Reports (RACRs), and Site Management Plans (SMPs)

Table 2-5. Primary Document Submittal Flow Chart FFA Process
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia



[1]Little Creek Secondary Documents Include: Health and Safety Plans (HSPs), Non-Time-Critical Removal Action (NTCRA) Plans, Pilot/Treatability Study Work Plans and Reports, Engineering Evaluation/Cost Analysis (EE/CA) Reports, Well Closure Methods and Procedures, Preliminary/Conceptual Designs or equivalents, Prefinal Remedial Designs (RDs), Periodic Reviews/5-Year Review Assessment Reports, Removal Action Memorandums, Preliminary Closeout Reports (PCORs)/Final Closeout Reports (FCORs)

Table 2-6. Dispute Resolution Flow Chart FFA Process
Site Management Plan for FY 2022 - 2026
JEB Little Creek
Virginia Beach, Virginia

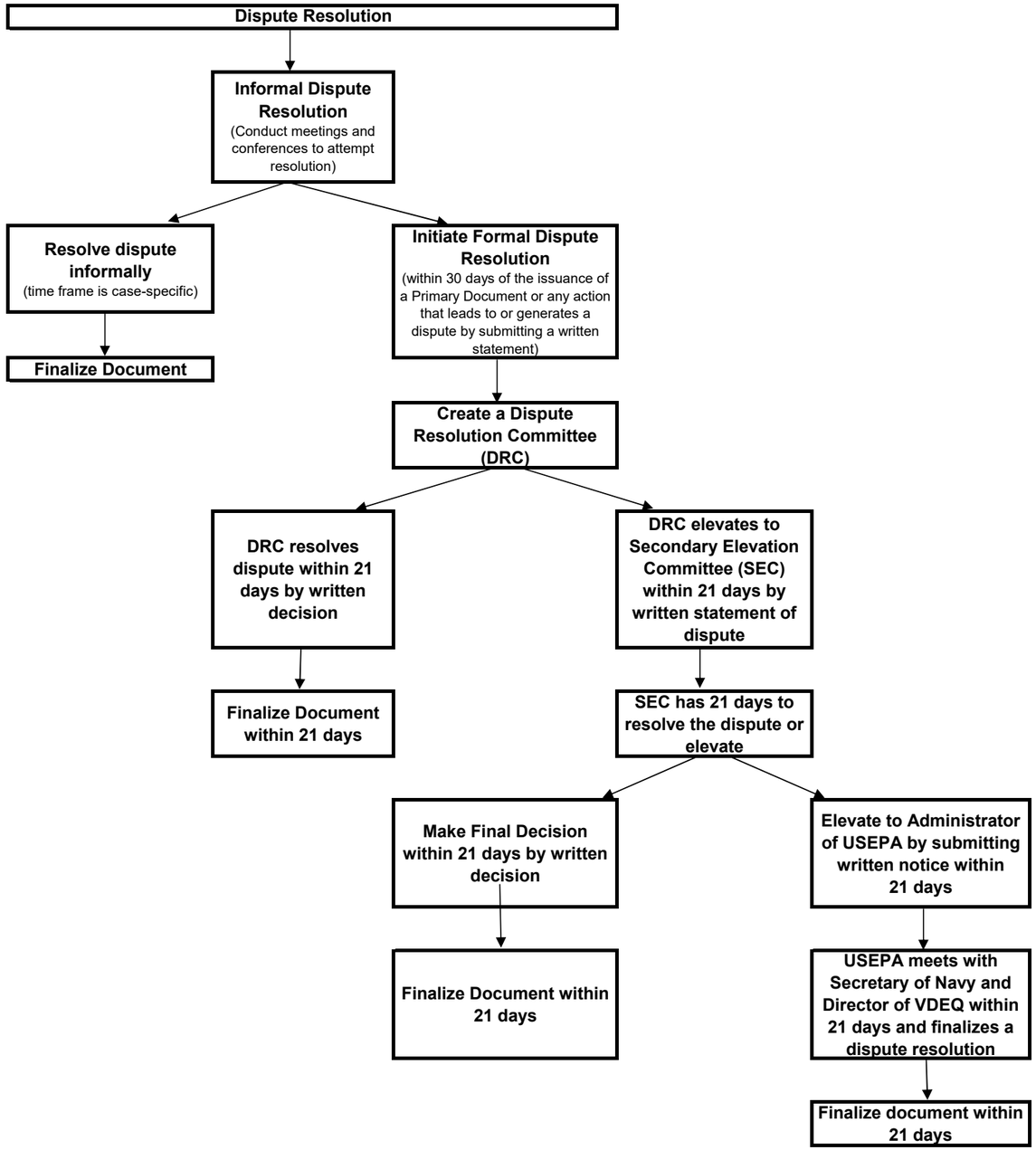
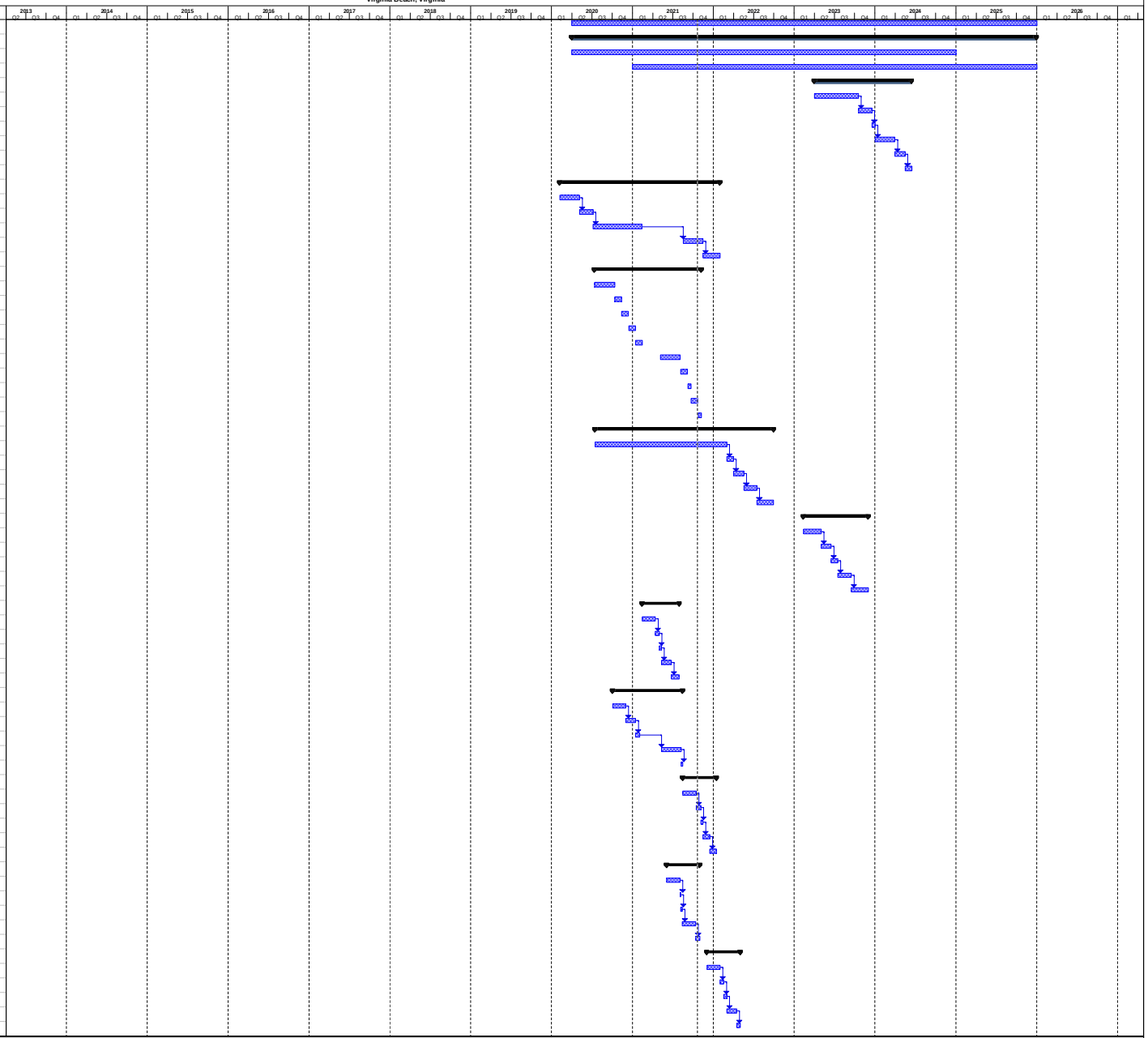


Table 2-7 Schedule for Base Wide Activities
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish	Successors
1	**BASE WIDE ACTIVITIES**	**2100 days**	**Wed 1/1/20**	**Tue 9/30/25**	
2	**5-Year Site Management Plan**	**2099 days**	**Wed 1/1/20**	**Mon 9/29/25**	
3	Annual Updates	1734 days	Wed 1/1/20	Sun 9/29/24	
4	Site Management Plans	1826 days	Thu 10/1/20	Tue 9/30/25	
5	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**	
6	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23	7
7	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23	8
8	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23	9
9	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23	10
10	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24	11
11	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24	
12	**PFAS Preliminary Assessment**	**724 days**	**Fri 11/8/19**	**Sun 10/31/21**	
13	Pre-Draft Report	90 days	Fri 11/8/19	Wed 2/5/20	14
14	Navy Review & Comment Resolution	60 days	Thu 2/6/20	Sun 4/5/20	15
15	Draft Report	221 days	Mon 4/6/20	Thu 11/12/20	16
16	Regulatory Review & Comment Resolution	90 days	Tue 5/18/21	Sun 8/15/21	17
17	Final Report	77 days	Mon 8/16/21	Sun 10/31/21	
18	**PFAS Site Inspection**	**482 days**	**Mon 4/13/20**	**Sat 8/7/21**	
19	Pre-Draft UFP-SAP	90 days	Mon 4/13/20	Sat 7/11/20	
20	Navy Review & Comment Resolution	30 days	Mon 7/13/20	Tue 8/11/20	
21	Draft UFP-SAP	31 days	Wed 8/12/20	Fri 9/11/20	
22	Regulatory Review & Comment Resolution	30 days	Tue 9/15/20	Wed 10/14/20	
23	Final UFP-SAP	30 days	Fri 10/16/20	Sat 11/14/20	
24	Pre-Draft Report	90 days	Thu 2/4/21	Tue 5/4/21	
25	Navy Review & Comment Resolution	30 days	Thu 5/6/21	Fri 6/4/21	
26	Draft Report	14 days	Tue 6/8/21	Mon 6/21/21	
27	Regulatory Review & Comment Resolution	30 days	Wed 6/23/21	Thu 7/22/21	
28	Final Report	13 days	Mon 7/26/21	Sat 8/7/21	
29	**PFAS SI SAP**	**807 days**	**Wed 4/15/20**	**Thu 6/30/22**	
30	Pre-Draft Report	595 days	Wed 4/15/20	Tue 11/30/21	31
31	Navy Review & Comment Resolution	30 days	Wed 12/1/21	Thu 12/30/21	32
32	Draft Report	47 days	Fri 12/31/21	Tue 2/15/22	33
33	Regulatory Review & Comment Resolution	59 days	Wed 2/16/22	Fri 4/15/22	34
34	Final Report	76 days	Sat 4/16/22	Thu 6/30/22	
35	**PFAS SI Report**	**292 days**	**Sun 11/13/22**	**Thu 8/31/23**	
36	Pre-Draft Report	80 days	Sun 11/13/22	Tue 1/31/23	37
37	Navy Review & Comment Resolution	45 days	Wed 2/1/23	Fri 3/17/23	38
38	Draft Report	30 days	Sat 3/18/23	Sun 4/16/23	39
39	Regulatory Review & Comment Resolution	61 days	Mon 4/17/23	Fri 6/16/23	40
40	Final Report	76 days	Sat 6/17/23	Thu 8/31/23	
41	**FY20 Semi-Annual LUC**	**168 days**	**Sat 11/14/20**	**Fri 4/30/21**	
42	Pre-Draft Report	60 days	Sat 11/14/20	Tue 1/12/21	43
43	Navy Review & Comment Resolution	17 days	Wed 1/13/21	Fri 1/29/21	44
44	Draft Report	10 days	Sat 1/30/21	Mon 2/8/21	45
45	Regulatory Review & Comment Resolution	45 days	Tue 2/9/21	Thu 3/25/21	46
46	Final Report	36 days	Fri 3/26/21	Fri 4/30/21	
47	**FY20 Site 10 Semi-Annual LUC**	**317 days**	**Fri 7/3/20**	**Sat 5/15/21**	
48	Pre-Draft Report	60 days	Fri 7/3/20	Mon 8/31/20	49
49	Navy Review & Comment Resolution	45 days	Tue 9/1/20	Thu 10/15/20	50
50	Draft Report	19 days	Fri 10/16/20	Tue 11/3/20	51
51	Regulatory Review & Comment Resolution	90 days	Tue 2/9/21	Sun 5/9/21	52
52	Final Report	6 days	Mon 5/10/21	Sat 5/15/21	
53	**CIP Report**	**152 days**	**Mon 5/17/21**	**Fri 10/15/21**	
54	Pre-Draft Report	60 days	Mon 5/17/21	Thu 7/15/21	55
55	Navy Review & Comment Resolution	21 days	Fri 7/16/21	Thu 8/5/21	56
56	Draft Report	10 days	Fri 8/6/21	Sun 8/15/21	57
57	Regulatory Review & Comment Resolution	31 days	Mon 8/16/21	Wed 9/15/21	58
58	Final Report	30 days	Thu 9/16/21	Fri 10/15/21	
59	**FY21 Site 10 Semi-Annual LUC**	**149 days**	**Fri 3/5/21**	**Sat 7/31/21**	
60	Pre-Draft Report	60 days	Fri 3/5/21	Mon 5/3/21	61
61	Navy Review & Comment Resolution	4 days	Tue 5/4/21	Fri 5/7/21	62
62	Draft Report	6 days	Sat 5/8/21	Thu 5/13/21	63
63	Regulatory Review & Comment Resolution	60 days	Fri 5/14/21	Mon 7/12/21	64
64	Final Report	19 days	Tue 7/13/21	Sat 7/31/21	
65	**FY21 Semi-Annual LUC**	**152 days**	**Thu 9/2/21**	**Mon 1/31/22**	
66	Pre-Draft Report	60 days	Thu 9/2/21	Sun 10/31/21	67
67	Navy Review & Comment Resolution	17 days	Mon 11/1/21	Wed 11/17/21	68
68	Draft Report	13 days	Thu 11/18/21	Tue 11/30/21	69
69	Regulatory Review & Comment Resolution	45 days	Wed 12/1/21	Fri 1/14/22	70
70	Final Report	17 days	Sat 1/15/22	Mon 1/31/22	

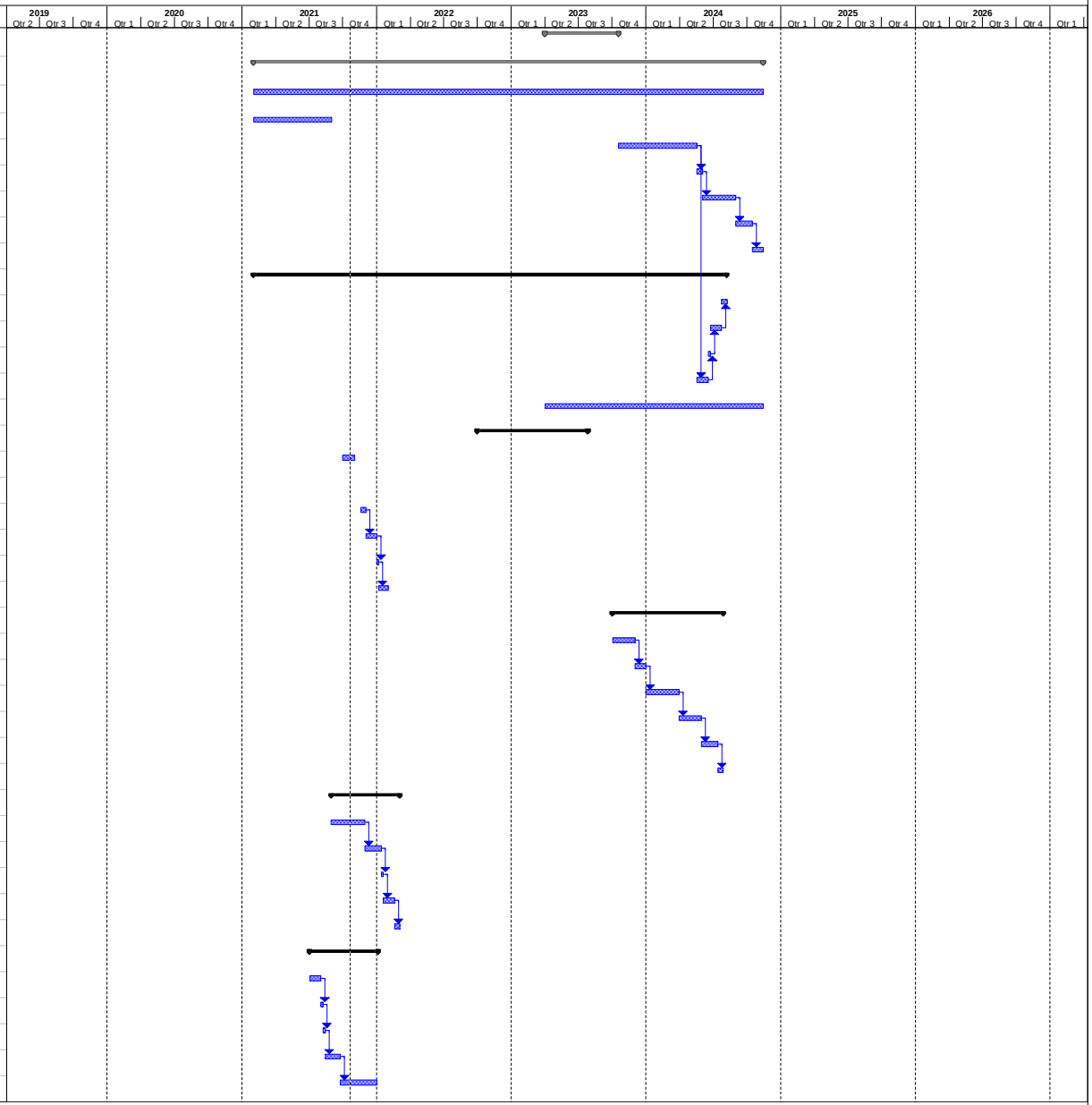


Task
Milestone
Summary
Rolled Up Task
Rolled Up Milestone
Rolled Up Progress
External Tasks
Project Summary
Split
Rolled Up Split
External Milestone
External Milestone
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Progress
Deadline

Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft Final Documents within a reasonable number of days.

Table 2-8 Schedule for Site 7 - Amphibious Base Landfill
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish	Successors
0		199 days	Sun 1/1/23	Tue 7/18/23	
1	ST7	1382 days	Sun 11/1/20	Tue 8/13/24	
2	**Site 7 Operations and Maintenance and LTM**	**1382 days**	**Sun 11/1/20**	**Tue 8/13/24**	
3	Pre-Draft Report	212 days	Sun 11/1/20	Mon 5/31/21	
4	Navy Review & Comment Resolution	212 days	Wed 7/19/23	Thu 2/15/24	5,13
5	Draft Five Year Review	15 days	Fri 2/16/24	Fri 3/1/24	6
6	Regulatory Review & Comment Resolution	90 days	Sat 3/2/24	Thu 5/30/24	7
7	Final Five Year Review	45 days	Fri 5/31/24	Sun 7/14/24	8
8	Five Year Review Signature	30 days	Mon 7/15/24	Tue 8/13/24	
9	**PFAS Preliminary Assessment**	**1284 days**	**Sun 11/1/20**	**Tue 5/7/24**	
10	Final Report	15 days	Tue 4/23/24	Tue 5/7/24	
11	Regulatory Review & Comment Resolution	30 days	Sun 3/24/24	Mon 4/22/24	10
12	Draft Report	6 days	Mon 3/18/24	Sat 3/23/24	11
13	Navy Review & Comment Resolution	31 days	Fri 2/16/24	Sun 3/17/24	12
14	CERCLA Five Year Review	591 days	Sun 1/1/23	Tue 8/13/24	
15	**Site 7 2021 LTM Report**	**300 days**	**Fri 7/1/22**	**Wed 4/26/23**	
16	Pre-Draft LTM Report	31 days	Thu 7/1/21	Sat 7/31/21	17
17	Navy Review & Comment Resolution	17 days	Tue 8/30/22	Tue 8/17/21	18
18	Draft LTM Report	14 days	Wed 8/18/21	Tue 8/31/21	19
19	Regulatory Review	30 days	Wed 9/1/21	Thu 9/30/21	20
20	Comment Resolution	5 days	Fri 10/1/21	Tue 10/5/21	21
21	Final LTM Report	26 days	Wed 10/6/21	Sun 10/31/21	
22	**Site 7 2022-2023 LTM Report**	**300 days**	**Mon 7/3/23**	**Sat 4/27/24**	
23	Pre-Draft LTM Report	60 days	Mon 7/3/23	Thu 8/31/23	24
24	Navy Review & Comment Resolution	30 days	Fri 9/1/23	Sat 9/30/23	25
25	Draft LTM Report	90 days	Sun 10/1/23	Fri 12/29/23	26
26	Regulatory Review	60 days	Sat 12/30/23	Tue 2/27/24	27
27	Comment Resolution	45 days	Wed 2/28/24	Fri 4/12/24	28
28	Final LTM Report	15 days	Sat 4/13/24	Sat 4/27/24	
29	**Site 7 GW LTM SAP**	**186 days**	**Mon 5/31/21**	**Thu 12/2/21**	
30	Pre-Draft LTM SAP	90 days	Mon 5/31/21	Sat 8/28/21	31
31	Navy Review & Comment Resolution	45 days	Sun 8/29/21	Tue 10/12/21	32
32	Draft LTM SAP	6 days	Wed 10/13/21	Mon 10/18/21	33
33	Regulatory Review & Comment Resolution	30 days	Tue 10/19/21	Wed 11/17/21	34
34	Final Report	15 days	Thu 11/18/21	Thu 12/2/21	
35	**Site 7 Soil Cover Repair Work Plan**	**186 days**	**Fri 4/2/21**	**Mon 10/4/21**	
36	Pre-Draft	60 days	Fri 4/2/21	Sat 5/1/21	37
37	Navy Review & Comment Resolution	5 days	Mon 5/3/21	Fri 5/7/21	38
38	Draft Work Plan	6 days	Sat 5/8/21	Thu 5/13/21	39
39	Regulatory Review & Comment Resolution	37 days	Fri 5/14/21	Wed 6/23/21	40
40	Final Work Plan	90 days	Thu 6/24/21	Thu 9/30/21	

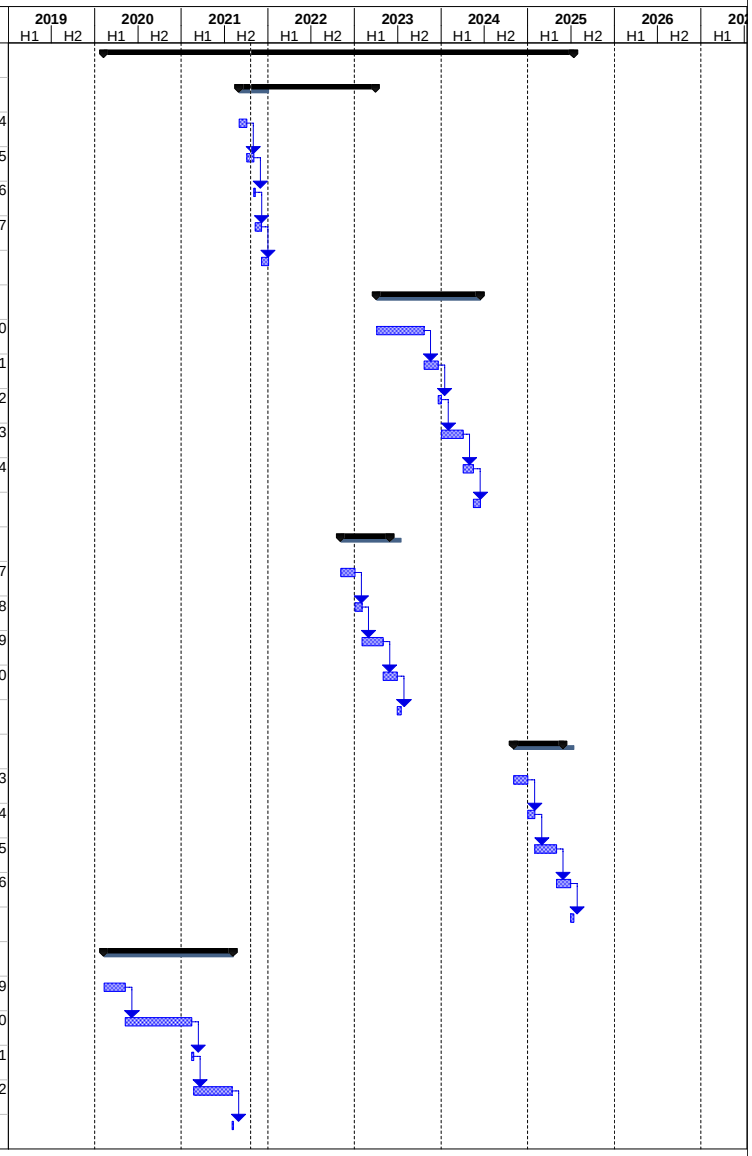


Task | External Tasks | Rolled Up Split | Inactive Milestone | Duration-only | Start-only | External Milestone
Milestone | Project Summary | External Milestone | Inactive Summary | Manual Summary Rollup | Finish-only | Deadline
Summary | Split | External Milestone | Manual Task | Manual Summary | External Tasks

Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft Final Documents within a reasonable number of days.

Table 2-9 Schedule for Site 9-Driving Range Landfill & Site 10-Sewage Treatment Plant Landfill
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish	Successors
1	**Sites 9 and 10 Operations and Maintenance and LTM**	**1983 days**	**Fri 11/8/19**	**Sat 4/12/25**	
2	**PreDraft LTM SAP**	**577 days**	**Mon 5/31/21**	**Wed 12/28/22**	
3	Pre-Draft LTM SAP	31 days	Mon 5/31/21	Wed 6/30/21	4
4	Navy Review & Comment Resolution	31 days	Thu 7/1/21	Sat 7/31/21	5
5	Draft LTM SAP	6 days	Sun 8/1/21	Fri 8/6/21	6
6	Regulatory Review & Comment Resolution	25 days	Sat 8/7/21	Tue 8/31/21	7
7	Final Report	30 days	Wed 9/1/21	Thu 9/30/21	
8	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**	
9	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23	10
10	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23	11
11	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23	12
12	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23	13
13	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24	14
14	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24	
15	**Sites 9 and 10 2021 LTM Report**	**210 days**	**Mon 8/1/22**	**Sun 2/26/23**	
16	PreDraft LTM Report	60 days	Mon 8/1/22	Thu 9/29/22	17
17	Navy Review & Comment Resolution	30 days	Fri 9/30/22	Sat 10/29/22	18
18	Draft LTM Report	90 days	Sun 10/30/22	Fri 1/27/23	19
19	Regulatory Review & Comment Resolution	60 days	Sat 1/28/23	Tue 3/28/23	20
20	Final LTM Report	15 days	Wed 3/29/23	Wed 4/12/23	
21	**Sites 9 and 10 2022-2023 LTM Report**	**210 days**	**Thu 8/1/24**	**Wed 2/26/25**	
22	PreDraft LTM Report	60 days	Thu 8/1/24	Sun 9/29/24	23
23	Navy Review & Comment Resolution	30 days	Mon 9/30/24	Tue 10/29/24	24
24	Draft LTM Report	90 days	Wed 10/30/24	Mon 1/27/25	25
25	Regulatory Review & Comment Resolution	60 days	Tue 1/28/25	Fri 3/28/25	26
26	Final LTM Report	15 days	Sat 3/29/25	Sat 4/12/25	
27	**Sites 9 and 10 PFAS Preliminary Assessment**	**545 days**	**Fri 11/8/19**	**Wed 5/5/21**	
28	PreDraft	90 days	Fri 11/8/19	Wed 2/5/20	29
29	Navy Review & Comment Resolution	281 days	Thu 2/6/20	Thu 11/12/20	30
30	Draft Report	6 days	Fri 11/13/20	Wed 11/18/20	31
31	Regulatory Review & Comment Resolution	163 days	Thu 11/19/20	Fri 4/30/21	32
32	Final Report	5 days	Sat 5/1/21	Wed 5/5/21	

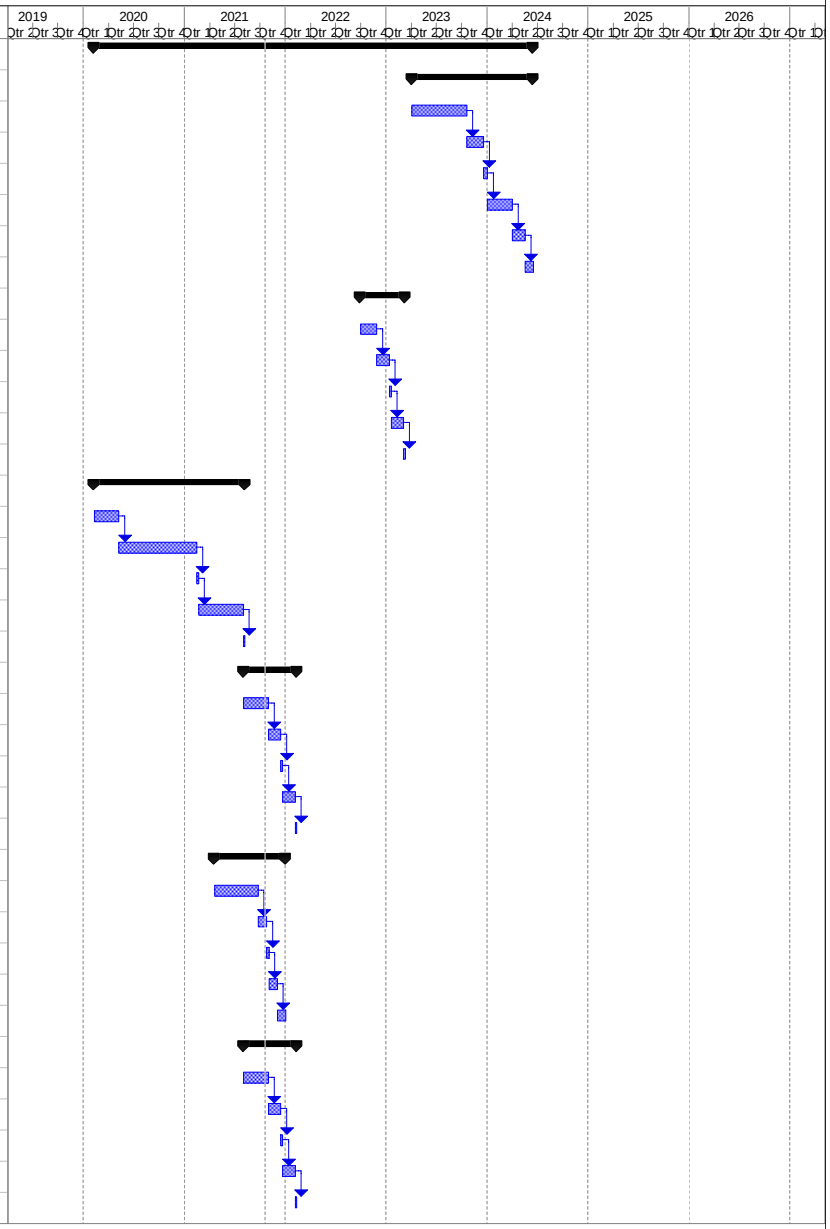


Task	Split	Inactive Summary	Start-only
Milestone	Rolled Up Split	Manual Task	Finish-only
Summary	External Milestone	Duration-only	External Tasks
External Tasks	External Milestone	Manual Summary Rollup	External Milestone
Project Summary	Inactive Milestone	Manual Summary	Deadline

Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft Final Documents within a reasonable number of days.

Table 2-10 Schedule for Site 11- School of Music Plating Shop
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish	Successors
1	**Site 11 Schedule**	**1589 days**	**Fri 11/8/19**	**Thu 3/14/24**	
2	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**	
3	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23	4
4	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23	5
5	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23	6
6	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23	7
7	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24	8
8	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24	
9	**Site 11 2021 LTM Report**	**162 days**	**Tue 6/28/22**	**Tue 12/6/22**	
10	Pre-Draft Report	60 days	Tue 6/28/22	Fri 8/26/22	11
11	Navy Review & Comment Resolution	45 days	Sat 8/27/22	Mon 10/10/22	12
12	Draft Report	7 days	Tue 10/11/22	Mon 10/17/22	13
13	Regulatory Review & Comment Resolution	45 days	Tue 10/18/22	Thu 12/1/22	14
14	Final Report	5 days	Fri 12/2/22	Tue 12/6/22	
15	**PFAS Preliminary Assessment**	**545 days**	**Fri 11/8/19**	**Wed 5/5/21**	
16	Pre-Draft Report	90 days	Fri 11/8/19	Wed 2/5/20	17
17	Navy Review & Comment Resolution	281 days	Thu 2/6/20	Thu 11/12/20	18
18	Draft Report	6 days	Fri 11/13/20	Wed 11/18/20	19
19	Regulatory Review & Comment Resolution	163 days	Thu 11/19/20	Fri 4/30/21	20
20	Final Report	5 days	Sat 5/1/21	Wed 5/5/21	
21	**Site 11 2022-2023 LTM Report**	**192 days**	**Sun 5/2/21**	**Tue 11/9/21**	
22	Pre-Draft Report	90 days	Sun 5/2/21	Fri 7/30/21	23
23	Navy Review & Comment Resolution	45 days	Sat 7/31/21	Mon 9/13/21	24
24	Draft Report	7 days	Tue 9/14/21	Mon 9/20/21	25
25	Regulatory Review & Comment Resolution	45 days	Tue 9/21/21	Thu 11/4/21	26
26	Final Report	5 days	Fri 11/5/21	Tue 11/9/21	
27	**Site 11 GW LTM SAP**	**258 days**	**Sat 1/16/21**	**Thu 9/30/21**	
28	Pre-Draft SAP	158 days	Sat 1/16/21	Tue 6/22/21	29
29	Navy Review & Comment Resolution	32 days	Wed 6/23/21	Sat 7/24/21	30
30	Draft SAP	7 days	Sun 7/25/21	Sat 7/31/21	31
31	Regulatory Review & Comment Resolution	31 days	Sun 8/1/21	Tue 8/31/21	32
32	Final SAP	30 days	Wed 9/1/21	Thu 9/30/21	
33	**Site 11 VI SAP**	**192 days**	**Sun 5/2/21**	**Tue 11/9/21**	
34	Pre-Draft SAP	90 days	Sun 5/2/21	Fri 7/30/21	35
35	Navy Review & Comment Resolution	45 days	Sat 7/31/21	Mon 9/13/21	36
36	Draft SAP	7 days	Tue 9/14/21	Mon 9/20/21	37
37	Regulatory Review & Comment Resolution	45 days	Tue 9/21/21	Thu 11/4/21	38
38	Final SAP	5 days	Fri 11/5/21	Tue 11/9/21	

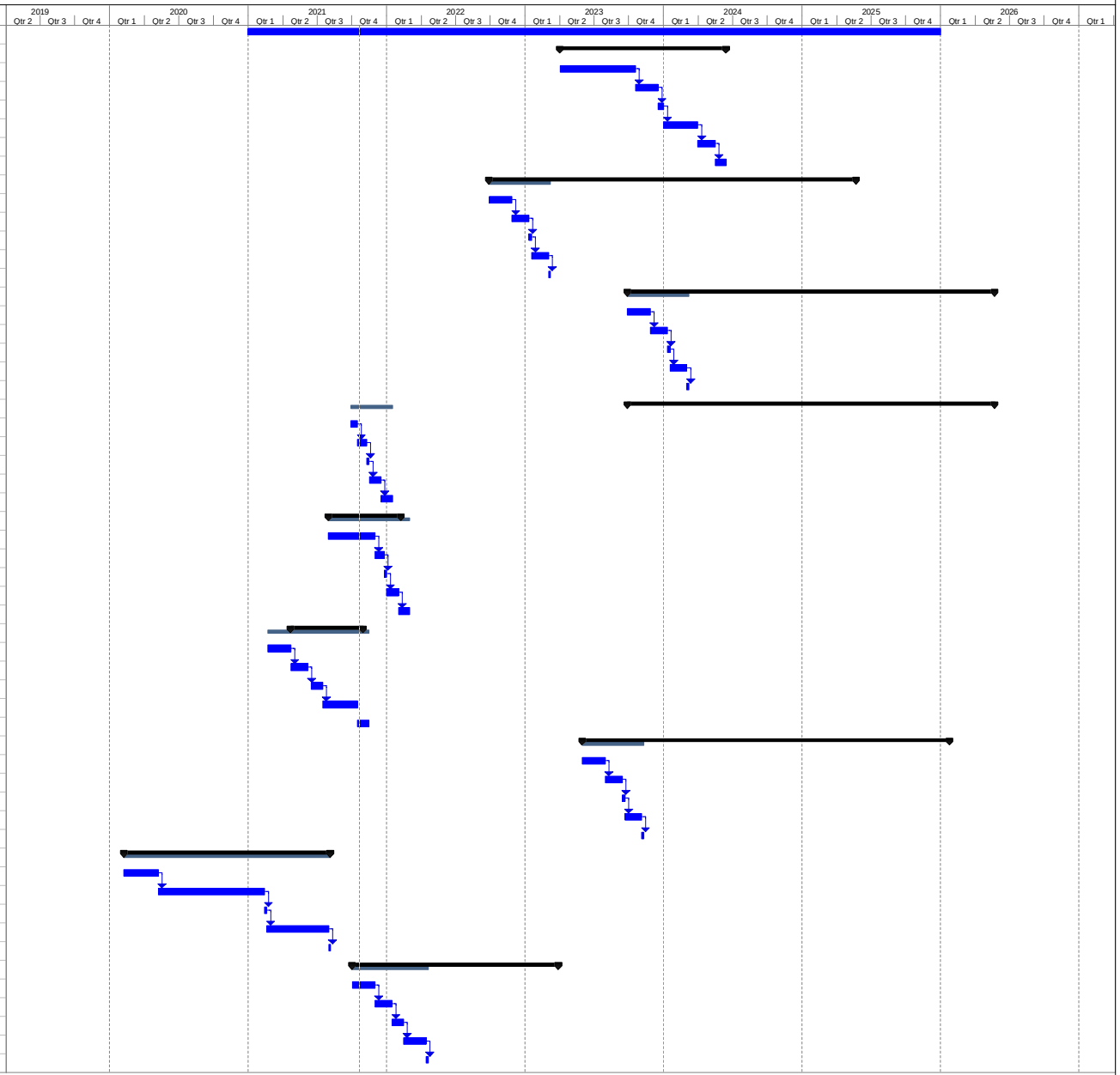


Task	Project Summary	Inactive Summary	Manual Summary	External Milestone
Split	External Tasks	Manual Task	Start-only	Progress
Milestone	External Milestone	Duration-only	Finish-only	Deadline
Summary	Inactive Milestone	Manual Summary Rollup	External Tasks	

Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft Final Documents within a reasonable number of days.

Table 2-11 Schedule for Site 11a-Building 3033 Former Waste Oil Tank
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Site 11a LTM**	**1826 days**	**Thu 10/1/20**	**Tue 9/30/25**	
2	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**	
3	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23	
4	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23	3
5	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23	4
6	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23	5
7	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24	6
8	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24	7
9	**Site 11a 2021 LTM Report**	**969 days**	**Tue 6/28/22**	**Thu 2/20/25**	
10	Pre-Draft Report	60 days	Tue 6/28/22	Fri 8/26/22	
11	Navy Review & Comment Resolution	45 days	Sat 8/27/22	Mon 10/10/22	10
12	Draft Report	7 days	Tue 10/11/22	Mon 10/17/22	11
13	Regulatory Review & Comment Resolution	45 days	Tue 10/18/22	Thu 12/1/22	12
14	Final LTM Report	5 days	Fri 12/2/22	Tue 12/6/22	13
15	**Site 11a 2022-2023 LTM Report**	**969 days**	**Wed 6/28/23**	**Fri 2/20/26**	
16	Pre-Draft Report	60 days	Wed 6/28/23	Sat 8/26/23	
17	Navy Review & Comment Resolution	45 days	Sun 8/27/23	Tue 10/10/23	16
18	Draft Report	7 days	Wed 10/11/23	Tue 10/17/23	17
19	Regulatory Review & Comment Resolution	45 days	Wed 10/18/23	Fri 12/1/23	18
20	Final LTM Report	5 days	Sat 12/2/23	Wed 12/6/23	19
21	**Site 11a GW LTM SAP**	**969 days**	**Wed 6/28/23**	**Fri 2/20/26**	
22	Pre-Draft Report	18 days	Mon 6/28/21	Thu 7/15/21	
23	Navy Review & Comment Resolution	24 days	Fri 7/16/21	Sun 8/8/21	22
24	Draft Report	7 days	Mon 8/9/21	Sun 8/15/21	23
25	Regulatory Review & Comment Resolution	30 days	Tue 8/17/21	Wed 9/15/21	24
26	Final LTM Report	30 days	Thu 9/16/21	Fri 10/15/21	25
27	**Site 11a VI SAP**	**191 days**	**Fri 4/30/21**	**Sun 11/7/21**	
28	Pre-Draft Report	123 days	Fri 4/30/21	Mon 8/30/21	
29	Navy Review & Comment Resolution	24 days	Tue 8/31/21	Thu 9/23/21	28
30	Draft Report	7 days	Fri 9/24/21	Thu 9/30/21	29
31	Regulatory Review & Comment Resolution	31 days	Fri 10/1/21	Sun 10/31/21	30
32	Final SAP	30 days	Mon 11/1/21	Tue 11/30/21	31
33	**Site 11a ESD**	**191 days**	**Wed 1/20/21**	**Fri 7/30/21**	
34	Pre-Draft Report	60 days	Sun 11/22/20	Wed 1/20/21	
35	Navy Review & Comment Resolution	45 days	Thu 1/21/21	Sat 3/6/21	34
36	Draft Report	30 days	Tue 3/16/21	Wed 4/14/21	35
37	Regulatory Review & Comment Resolution	92 days	Thu 4/15/21	Thu 7/15/21	36
38	Final Report	31 days	Fri 7/16/21	Sun 8/15/21	
39	**Site 11a CCR**	**969 days**	**Wed 3/1/23**	**Fri 10/24/25**	
40	Pre-Draft Report	60 days	Wed 3/1/23	Sat 4/29/23	
41	Navy Review & Comment Resolution	45 days	Sun 4/30/23	Tue 6/13/23	40
42	Draft Report	7 days	Wed 6/14/23	Tue 6/20/23	41
43	Regulatory Review & Comment Resolution	45 days	Wed 6/21/23	Fri 8/4/23	42
44	Final LTM Report	5 days	Sat 8/5/23	Wed 8/9/23	43
45	**Site 11a PFAS Preliminary Assessment**	**545 days**	**Fri 11/8/19**	**Wed 5/5/21**	
46	Pre-Draft Report	90 days	Fri 11/8/19	Wed 2/5/20	
47	Navy Review & Comment Resolution	281 days	Thu 2/6/20	Thu 11/12/20	46
48	Draft Report	6 days	Fri 11/13/20	Wed 11/18/20	47
49	Regulatory Review & Comment Resolution	163 days	Thu 11/19/20	Fri 4/30/21	48
50	Final LTM Report	5 days	Sat 5/1/21	Wed 5/5/21	49
51	**Site 11a Remedial Action Work Plan**	**545 days**	**Fri 7/2/21**	**Wed 12/28/22**	
52	Pre-Draft Report	60 days	Fri 7/2/21	Mon 8/30/21	
53	Navy Review & Comment Resolution	45 days	Tue 8/31/21	Thu 10/14/21	52
54	Draft Report	30 days	Fri 10/15/21	Sat 11/13/21	53
55	Regulatory Review & Comment Resolution	60 days	Sun 11/14/21	Wed 1/12/22	54
56	Final LTM Report	5 days	Thu 1/13/22	Mon 1/17/22	55

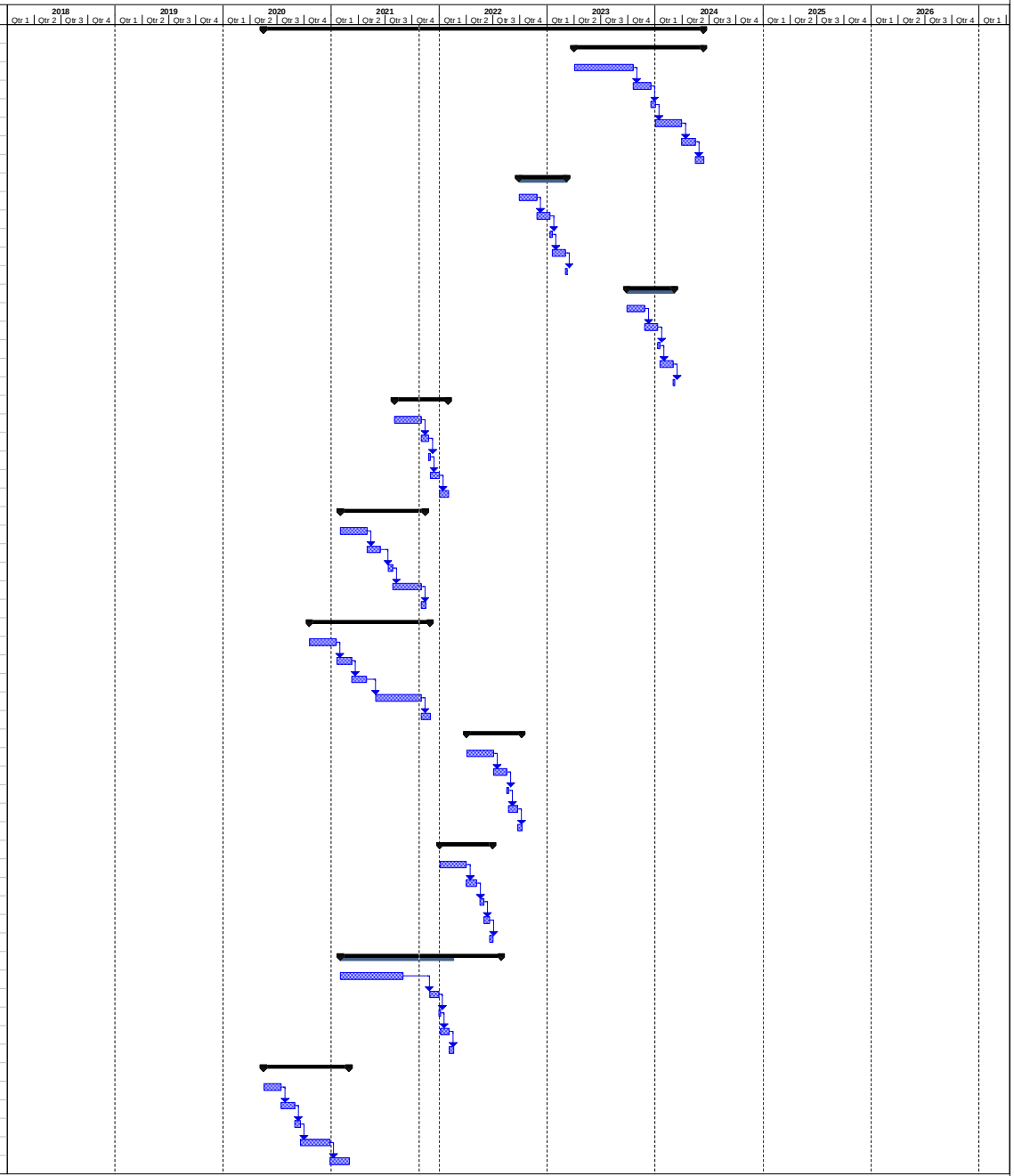


Task
Split
Milestone
Summary
Project Summary
External Tasks
External Milestone
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Progress
Deadline

Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft Final Documents within a reasonable number of days.

Table 2-12 Schedule for Site 12 - Exchange Laundry Waste Disposal Area
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish	Text1	Predecessors
1	**Site 12 LTM**	**1490 days**	**Sat 2/15/20**	**Thu 3/14/24**	**Change?**	
2	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**		
3	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23		
4	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23		3
5	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23		4
6	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23		5
7	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24		6
8	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24		7
9	**Site 12 LTM 2021 Report**	**162 days**	**Tue 6/28/22**	**Tue 12/6/22**		
10	Pre-Draft Report	60 days	Tue 6/28/22	Fri 8/26/22		
11	Navy Review & Comment Resolution	45 days	Sat 8/27/22	Mon 10/10/22		10
12	Draft LTM Report	7 days	Tue 10/11/22	Mon 10/17/22		11
13	Regulatory Review & Comment Resolution	45 days	Tue 10/18/22	Thu 12/1/22		12
14	Final LTM Report	5 days	Fri 12/2/22	Tue 12/6/22		13
15	**Site 12 LTM 2022-2023 Report**	**162 days**	**Wed 6/28/23**	**Wed 12/6/23**		
16	Pre-Draft Report	60 days	Wed 6/28/23	Sat 8/26/23		
17	Navy Review & Comment Resolution	45 days	Sun 8/27/23	Tue 10/10/23		16
18	Draft LTM Report	7 days	Wed 10/11/23	Tue 10/17/23		17
19	Regulatory Review & Comment Resolution	45 days	Wed 10/18/23	Fri 12/1/23		18
20	Final LTM Report	5 days	Sat 12/2/23	Wed 12/6/23		19
21	**Site 12 LTM SAP**	**182 days**	**Mon 5/3/21**	**Sun 10/31/21**		
22	Pre-Draft LTM SAP	90 days	Mon 5/3/21	Sat 7/31/21		
23	Navy Review & Comment Resolution	26 days	Sun 8/1/21	Thu 8/26/21		22
24	Draft LTM SAP	5 days	Fri 8/27/21	Tue 8/31/21		23
25	Regulatory Review & Comment Resolution	30 days	Wed 9/1/21	Thu 9/30/21		24
26	Final SAP	31 days	Fri 10/1/21	Sun 10/31/21		25
27	**Site 12 Plume Stop SAP**	**288 days**	**Sun 11/1/20**	**Sun 8/15/21**		
28	Pre-Draft SAP	90 days	Sun 11/1/20	Fri 1/29/21		
29	Navy Review & Comment Resolution	45 days	Sat 1/30/21	Mon 3/15/21		28
30	Draft SAP	16 days	Sun 4/11/21	Mon 4/26/21		29
31	Regulatory Review & Comment Resolution	96 days	Tue 4/27/21	Sat 7/31/21		30
32	Final SAP	15 days	Sun 8/1/21	Sun 8/15/21		31
33	**Site 12 Plume Stop CCR**	**409 days**	**Sun 7/19/20**	**Tue 8/31/21**		
34	Pre-Draft Report	90 days	Sun 7/19/20	Fri 10/16/20		
35	Navy Review & Comment Resolution	50 days	Mon 10/19/20	Mon 12/7/20		34
36	Draft Report	51 days	Tue 12/8/20	Wed 1/27/21		35
37	Regulatory Review & Comment Resolution	154 days	Sun 2/28/21	Sat 7/31/21		36
38	Final Report	31 days	Sun 8/1/21	Tue 8/31/21		37
39	**Site 12 Round 5 ERD Injection Work Plan**	**186 days**	**Mon 1/3/22**	**Thu 7/7/22**		
40	Pre-Draft Work Plan	90 days	Mon 1/3/22	Sat 4/2/22		
41	Navy Review & Comment Resolution	45 days	Sun 4/3/22	Tue 5/17/22		40
42	Draft Work Plan	6 days	Wed 5/18/22	Mon 5/23/22		41
43	Regulatory Review & Comment Resolution	30 days	Tue 5/24/22	Wed 6/22/22		42
44	Final Work Plan	15 days	Thu 6/23/22	Thu 7/7/22		43
45	**Site 12 Remedy Optimization Report**	**179 days**	**Mon 10/4/21**	**Thu 3/31/22**		
46	Pre-Draft Report	89 days	Mon 10/4/21	Fri 12/31/21		
47	Navy Review & Comment Resolution	35 days	Sat 1/1/22	Fri 2/4/22		46
48	Draft Report	14 days	Tue 2/15/22	Mon 2/28/22		47
49	Regulatory Review & Comment Resolution	20 days	Tue 3/1/22	Sun 3/20/22		48
50	Final Report	11 days	Mon 3/21/22	Thu 3/31/22		49
51	**Site 12 PFAS Preliminary Assessment**	**545 days**	**Sun 11/1/20**	**Fri 4/29/22**		
52	Pre-Draft Report	212 days	Sun 11/1/20	Mon 5/31/21		
53	Navy Review & Comment Resolution	31 days	Sun 8/29/21	Tue 9/28/21		52
54	Draft Report	6 days	Wed 9/29/21	Mon 10/4/21		53
55	Regulatory Review & Comment Resolution	30 days	Tue 10/5/21	Wed 11/3/21		54
56	Final Report	15 days	Thu 11/4/21	Thu 11/18/21		55
57	**Site 12 Remedy Optimization Work Plan**	**290 days**	**Sat 2/15/20**	**Mon 11/30/20**		
58	Pre-Draft Work Plan	60 days	Sat 2/15/20	Tue 4/14/20		
59	Navy Review & Comment Resolution	45 days	Wed 4/15/20	Fri 5/29/20		58
60	Draft Work Plan	19 days	Sat 5/30/20	Wed 6/17/20		59
61	Regulatory Review & Comment Resolution	100 days	Thu 6/18/20	Fri 9/25/20		60
62	Final Work Plan	66 days	Sat 9/26/20	Mon 11/30/20		61

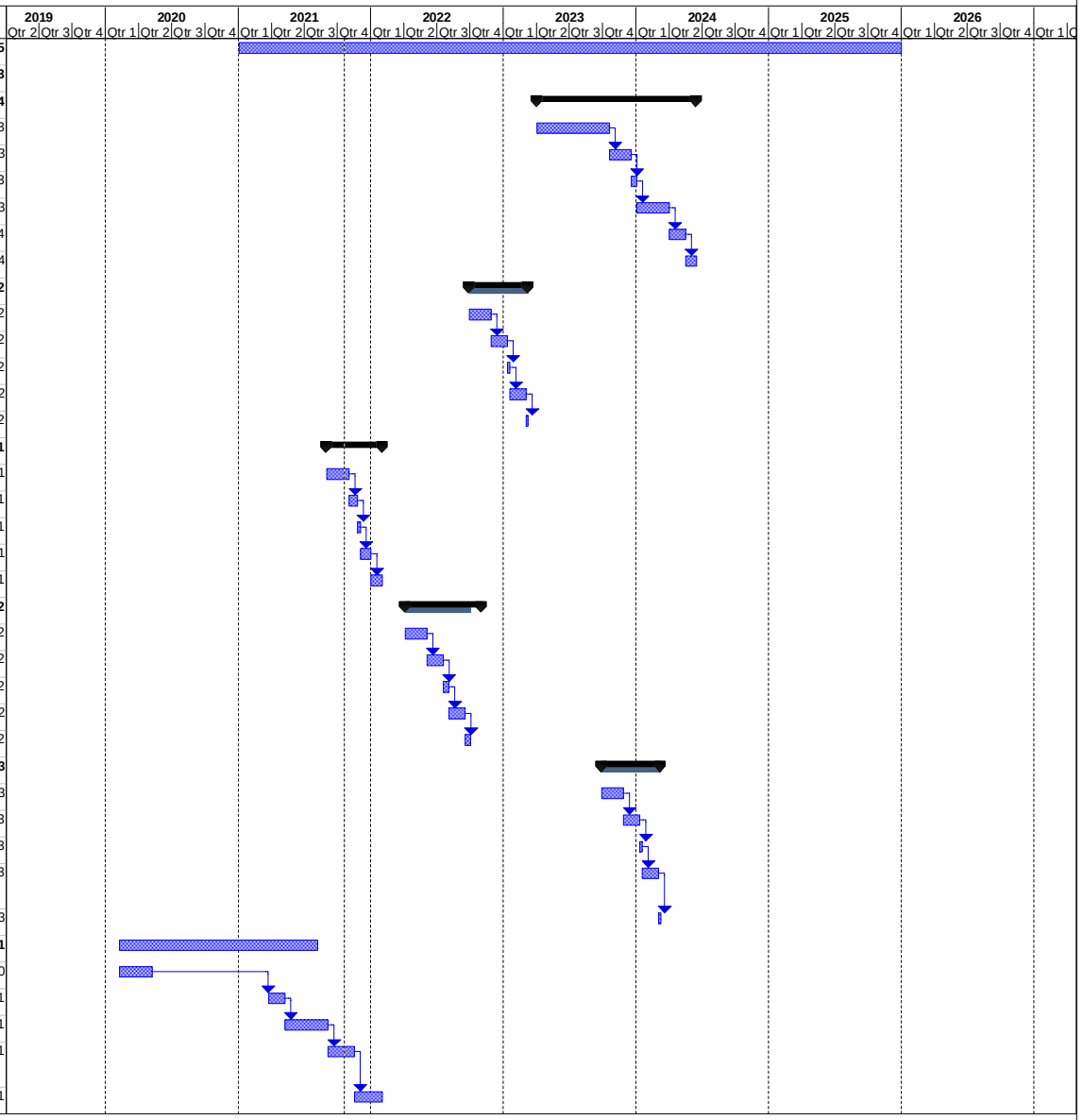


Task | Rolled Up Task | External Tasks | Rolled Up Split | Inactive Milestone | Duration-only | Start-only | External Milestone
Milestone | Rolled Up Milestone | Project Summary | External Milestone | Inactive Summary | Manual Summary Rollup | Finish-only | Progress
Summary | Rolled Up Progress | Split | External Milestone | Manual Task | Manual Summary | External Tasks | Deadline

Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft Final Documents within a reasonable number of days.

Table 2-13 Schedule for Site 13 - Public Works PCP Dip Tank and Wash Rack
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish
1	**Site 13 LTM**	**1826 days**	**Thu 10/1/20**	**Tue 9/30/25**
2	**Site 13 Re-Injections**	**30 days**	**Wed 1/1/03**	**Thu 1/30/03**
3	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**
4	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23
5	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23
6	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23
7	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23
8	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24
9	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24
10	**Site 13 2021 LTM Report**	**162 days**	**Tue 6/28/22**	**Tue 12/6/22**
11	Pre-Draft Report	60 days	Tue 6/28/22	Fri 8/26/22
12	Navy Review & Comment Resolution	45 days	Sat 8/27/22	Mon 10/10/22
13	Draft Report	7 days	Tue 10/11/22	Mon 10/17/22
14	Regulatory Review & Comment Resolution	45 days	Tue 10/18/22	Thu 12/1/22
15	Final LTM Report	5 days	Fri 12/2/22	Tue 12/6/22
16	**Site 13 GW LTM SAP**	**154 days**	**Mon 5/31/21**	**Sun 10/31/21**
17	Pre-Draft LTM SAP	62 days	Mon 5/31/21	Sat 7/31/21
18	Navy Review & Comment Resolution	24 days	Sun 8/1/21	Tue 8/24/21
19	Draft LTM SAP	7 days	Wed 8/25/21	Tue 8/31/21
20	Regulatory Review & Comment Resolution	30 days	Wed 9/1/21	Thu 9/30/21
21	Final Report	31 days	Fri 10/1/21	Sun 10/31/21
22	**Site 13 Injection Work Plan**	**210 days**	**Mon 1/3/22**	**Sun 7/31/22**
23	Pre-Draft Injection Work Plan	60 days	Mon 1/3/22	Thu 3/3/22
24	Navy Review & Comment Resolution	45 days	Fri 3/4/22	Sun 4/17/22
25	Draft Injection Work Plan	15 days	Mon 4/18/22	Mon 5/2/22
26	Regulatory Review & Comment Resolution	45 days	Tue 5/3/22	Thu 6/16/22
27	Final Injection Work Plan	15 days	Fri 6/17/22	Fri 7/1/22
28	**Site 13 2022-2023 LTM Report**	**162 days**	**Wed 6/28/23**	**Wed 12/6/23**
29	Pre-Draft Report	60 days	Wed 6/28/23	Sat 8/26/23
30	Navy Review & Comment Resolution	45 days	Sun 8/27/23	Tue 10/10/23
31	Draft Report	7 days	Wed 10/11/23	Tue 10/17/23
32	Regulatory Review & Comment Resolution	45 days	Wed 10/18/23	Fri 12/1/23
33	Final LTM Report	5 days	Sat 12/2/23	Wed 12/6/23
34	**PFAS Preliminary Assessment**	**545 days**	**Fri 11/8/19**	**Wed 5/5/21**
35	Pre-Draft Report	90 days	Fri 11/8/19	Wed 2/5/20
36	Navy Review & Comment Resolution	45 days	Tue 12/22/20	Thu 2/4/21
37	Draft Report	120 days	Fri 2/5/21	Fri 6/4/21
38	Regulatory Review & Comment Resolution	72 days	Sat 6/5/21	Sun 8/15/21
39	Final Report	77 days	Mon 8/16/21	Sun 10/31/21



Task	Rolled Up Progress	External Milestone	Duration-only	External Tasks
Milestone	External Tasks	External Milestone	Manual Summary Rollup	External Milestone
Summary	Project Summary	Inactive Milestone	Manual Summary	Progress
Rolled Up Task	Split	Inactive Summary	Start-only	Deadline
Rolled Up Milestone	Rolled Up Split	Manual Task	Finish-only	

Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft Final Documents within a reasonable number of days.

Table 2-14 Schedule for SWMU 3 - Pier 10 Sandblast Yard
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish	Predecessors	Text1
1	**SWMU 3 LTM**	**1019 days**	**Mon 5/31/21**	**Thu 3/14/24**		
2	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**		
3	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23		
4	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23	3	
5	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23	4	
6	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23	5	
7	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24	6	
8	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24	7	
9	**SWMU 3 2021 LTM Report**	**210 days**	**Tue 6/28/22**	**Mon 1/23/23**		
10	Pre-Draft Report	60 days	Tue 6/28/22	Fri 8/26/22		
11	Navy Review & Comment Resolution	45 days	Sat 8/27/22	Mon 10/10/22	10	
12	Draft Report	7 days	Tue 10/11/22	Mon 10/17/22	11	
13	Regulatory Review & Comment Resolution	45 days	Tue 10/18/22	Thu 12/1/22	12	
14	Final Report	5 days	Fri 12/2/22	Tue 12/6/22	13	
15	**SWMU 3 LTM SAP**	**154 days**	**Mon 5/31/21**	**Sun 10/31/21**		
16	Pre-Draft LTM SAP	62 days	Mon 5/31/21	Sat 7/31/21		
17	Navy Review & Comment Resolution	15 days	Tue 8/17/21	Tue 8/31/21	16	
18	Draft LTM SAP	6 days	Wed 9/1/21	Mon 9/6/21	17	
19	Regulatory Review & Comment Resolution	24 days	Tue 9/7/21	Thu 9/30/21	18	
20	Final Report	31 days	Fri 10/1/21	Sun 10/31/21	19	
21	**SWMU 3 2022-2023 LTM Report**	**210 days**	**Wed 6/28/23**	**Tue 1/23/24**		
22	Pre-Draft Report	60 days	Wed 6/28/23	Sat 8/26/23		
23	Navy Review & Comment Resolution	45 days	Sun 8/27/23	Tue 10/10/23	22	
24	Draft Report	7 days	Wed 10/11/23	Tue 10/17/23	23	
25	Regulatory Review & Comment Resolution	45 days	Wed 10/18/23	Fri 12/1/23	24	
26	Final Report	5 days	Sat 12/2/23	Wed 12/6/23	25	

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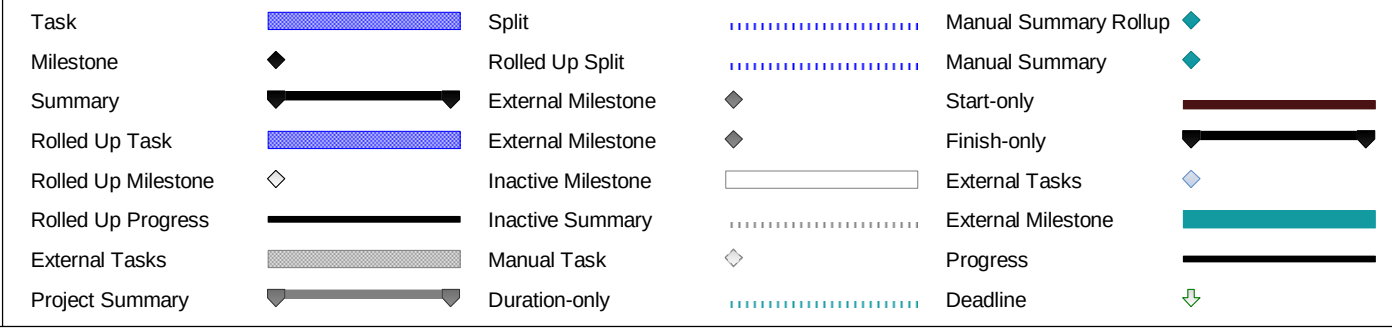
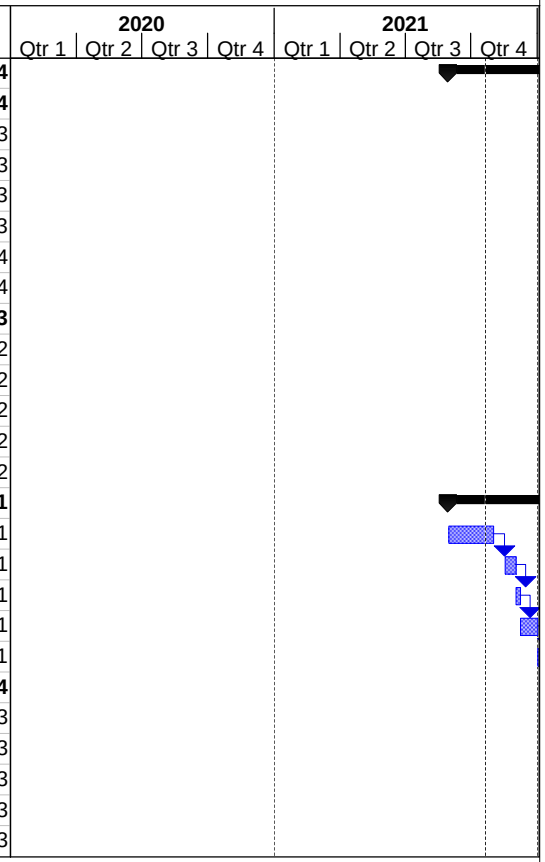
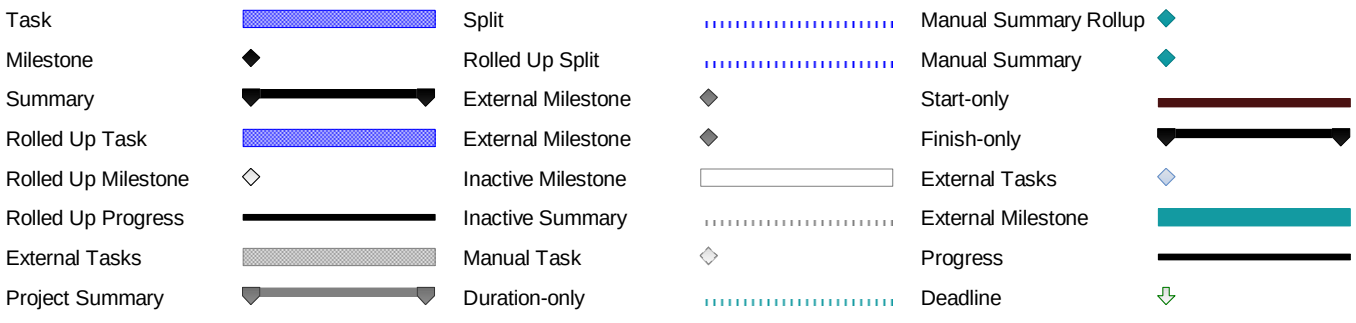


Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft and Final Documents within a reasonable number of days.

Table 2-14 Schedule for SWMU 3 - Pier 10 Sandblast Yard
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish
1	**SWMU 3 LTM**	**1019 days**	**Mon 5/31/21**	**Thu 3/14/24**
2	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**
3	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23
4	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23
5	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23
6	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23
7	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24
8	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24
9	**SWMU 3 2021 LTM Report**	**210 days**	**Tue 6/28/22**	**Mon 1/23/23**
10	Pre-Draft Report	60 days	Tue 6/28/22	Fri 8/26/22
11	Navy Review & Comment Resolution	45 days	Sat 8/27/22	Mon 10/10/22
12	Draft Report	7 days	Tue 10/11/22	Mon 10/17/22
13	Regulatory Review & Comment Resolution	45 days	Tue 10/18/22	Thu 12/1/22
14	Final Report	5 days	Fri 12/2/22	Tue 12/6/22
15	**SWMU 3 LTM SAP**	**154 days**	**Mon 5/31/21**	**Sun 10/31/21**
16	Pre-Draft LTM SAP	62 days	Mon 5/31/21	Sat 7/31/21
17	Navy Review & Comment Resolution	15 days	Tue 8/17/21	Tue 8/31/21
18	Draft LTM SAP	6 days	Wed 9/1/21	Mon 9/6/21
19	Regulatory Review & Comment Resolution	24 days	Tue 9/7/21	Thu 9/30/21
20	Final Report	31 days	Fri 10/1/21	Sun 10/31/21
21	**SWMU 3 2022-2023 LTM Report**	**210 days**	**Wed 6/28/23**	**Tue 1/23/24**
22	Pre-Draft Report	60 days	Wed 6/28/23	Sat 8/26/23
23	Navy Review & Comment Resolution	45 days	Sun 8/27/23	Tue 10/10/23
24	Draft Report	7 days	Wed 10/11/23	Tue 10/17/23
25	Regulatory Review & Comment Resolution	45 days	Wed 10/18/23	Fri 12/1/23
26	Final Report	5 days	Sat 12/2/23	Wed 12/6/23

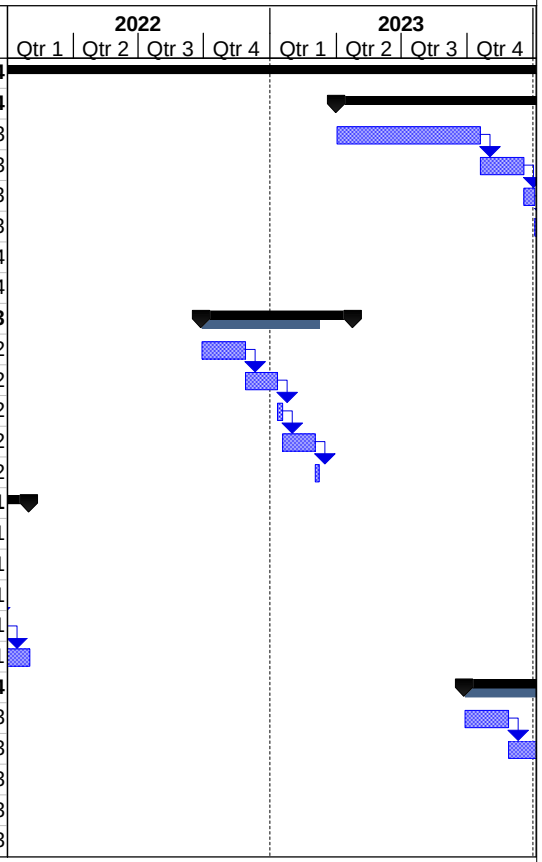




Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft and Final Documents within a reasonable number of days.

Table 2-14 Schedule for SWMU 3 - Pier 10 Sandblast Yard
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish
1	**SWMU 3 LTM**	**1019 days**	**Mon 5/31/21**	**Thu 3/14/24**
2	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**
3	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23
4	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23
5	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23
6	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23
7	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24
8	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24
9	**SWMU 3 2021 LTM Report**	**210 days**	**Tue 6/28/22**	**Mon 1/23/23**
10	Pre-Draft Report	60 days	Tue 6/28/22	Fri 8/26/22
11	Navy Review & Comment Resolution	45 days	Sat 8/27/22	Mon 10/10/22
12	Draft Report	7 days	Tue 10/11/22	Mon 10/17/22
13	Regulatory Review & Comment Resolution	45 days	Tue 10/18/22	Thu 12/1/22
14	Final Report	5 days	Fri 12/2/22	Tue 12/6/22
15	**SWMU 3 LTM SAP**	**154 days**	**Mon 5/31/21**	**Sun 10/31/21**
16	Pre-Draft LTM SAP	62 days	Mon 5/31/21	Sat 7/31/21
17	Navy Review & Comment Resolution	15 days	Tue 8/17/21	Tue 8/31/21
18	Draft LTM SAP	6 days	Wed 9/1/21	Mon 9/6/21
19	Regulatory Review & Comment Resolution	24 days	Tue 9/7/21	Thu 9/30/21
20	Final Report	31 days	Fri 10/1/21	Sun 10/31/21
21	**SWMU 3 2022-2023 LTM Report**	**210 days**	**Wed 6/28/23**	**Tue 1/23/24**
22	Pre-Draft Report	60 days	Wed 6/28/23	Sat 8/26/23
23	Navy Review & Comment Resolution	45 days	Sun 8/27/23	Tue 10/10/23
24	Draft Report	7 days	Wed 10/11/23	Tue 10/17/23
25	Regulatory Review & Comment Resolution	45 days	Wed 10/18/23	Fri 12/1/23
26	Final Report	5 days	Sat 12/2/23	Wed 12/6/23

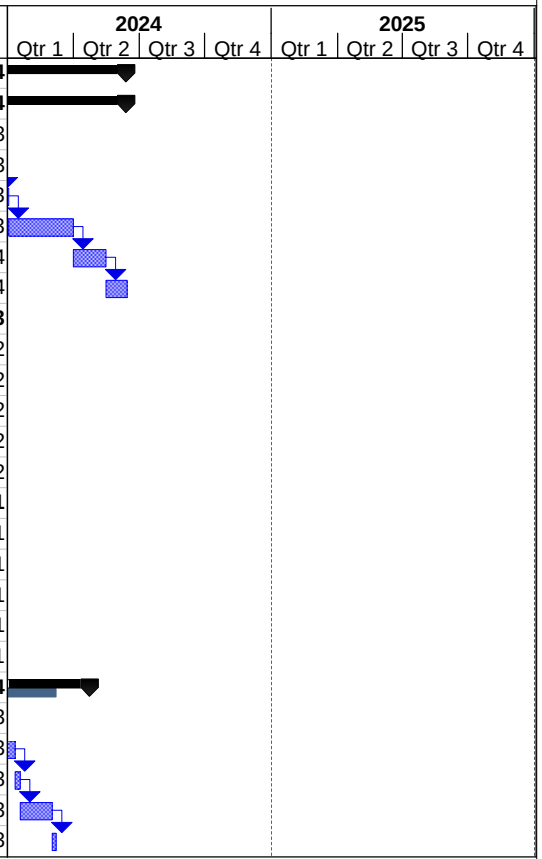


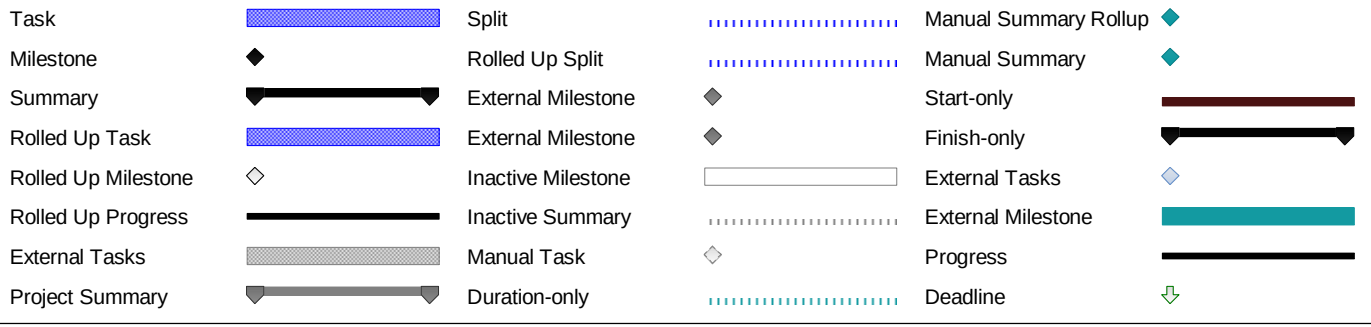
Task	Split	Manual Summary Rollup
Milestone	Rolled Up Split	Manual Summary
Summary	External Milestone	Start-only
Rolled Up Task	External Milestone	Finish-only
Rolled Up Milestone	Inactive Milestone	External Tasks
Rolled Up Progress	Inactive Summary	External Milestone
External Tasks	Manual Task	Progress
Project Summary	Duration-only	Deadline

Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft and Final Documents within a reasonable number of days.

Table 2-14 Schedule for SWMU 3 - Pier 10 Sandblast Yard
Site Management Plan for FY 2022 - 2026
JEB Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ID	Task Name	Duration	Start	Finish
1	**SWMU 3 LTM**	**1019 days**	**Mon 5/31/21**	**Thu 3/14/24**
2	**CERCLA Five Year Review**	**439 days**	**Sun 1/1/23**	**Thu 3/14/24**
3	Pre-Draft Five Year Review	199 days	Sun 1/1/23	Tue 7/18/23
4	Navy Review & Comment Resolution	60 days	Wed 7/19/23	Sat 9/16/23
5	Draft Five Year Review	15 days	Sun 9/17/23	Sun 10/1/23
6	Regulatory Review & Comment Resolution	90 days	Mon 10/2/23	Sat 12/30/23
7	Final Five Year Review	45 days	Sun 12/31/23	Tue 2/13/24
8	Five Year Review Signature	30 days	Wed 2/14/24	Thu 3/14/24
9	**SWMU 3 2021 LTM Report**	**210 days**	**Tue 6/28/22**	**Mon 1/23/23**
10	Pre-Draft Report	60 days	Tue 6/28/22	Fri 8/26/22
11	Navy Review & Comment Resolution	45 days	Sat 8/27/22	Mon 10/10/22
12	Draft Report	7 days	Tue 10/11/22	Mon 10/17/22
13	Regulatory Review & Comment Resolution	45 days	Tue 10/18/22	Thu 12/1/22
14	Final Report	5 days	Fri 12/2/22	Tue 12/6/22
15	**SWMU 3 LTM SAP**	**154 days**	**Mon 5/31/21**	**Sun 10/31/21**
16	Pre-Draft LTM SAP	62 days	Mon 5/31/21	Sat 7/31/21
17	Navy Review & Comment Resolution	15 days	Tue 8/17/21	Tue 8/31/21
18	Draft LTM SAP	6 days	Wed 9/1/21	Mon 9/6/21
19	Regulatory Review & Comment Resolution	24 days	Tue 9/7/21	Thu 9/30/21
20	Final Report	31 days	Fri 10/1/21	Sun 10/31/21
21	**SWMU 3 2022-2023 LTM Report**	**210 days**	**Wed 6/28/23**	**Tue 1/23/24**
22	Pre-Draft Report	60 days	Wed 6/28/23	Sat 8/26/23
23	Navy Review & Comment Resolution	45 days	Sun 8/27/23	Tue 10/10/23
24	Draft Report	7 days	Wed 10/11/23	Tue 10/17/23
25	Regulatory Review & Comment Resolution	45 days	Wed 10/18/23	Fri 12/1/23
26	Final Report	5 days	Sat 12/2/23	Wed 12/6/23





Note: The review and submittal dates are based on the FFA Process Flow Charts (Tables 2-4 through 2-6) or dates previously agreed upon and assume informal dispute resolution of Draft and Final Documents within a reasonable number of days.

\\dc1vs01\GISNavyClean\MIDLANT\LittleCreek\MapFiles\SMP\FY_2022_2026\Figure 2-1 RI_FS Sites.mxd3/31/2021CBOWMAN

Legend

- Site with a Final ROD and LUC
- Installation Area

N
W E
S

0 250 500 1,000 1,500
Feet

Figure 2-1
Locations of ER and MMRP Further Action Sites
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

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\\dc1vs01\GISNavyClean\MIDLANT\LittleCreek\MapFiles\SMP\FY_2022_2026\Figure 2-2 - Site 7 Layout.mxd3/31/2021CBOWMAN

Legend

- Fence
- Land Use Control Boundary

N
W E
S

0 200 400
Feet

Figure 2-2
Site Layout - Site 7
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

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Legend

- Land Use Control Boundary
- Buildings

N
W E
S

0 150 300
Feet

Figure 2-3
Site Layout - Sites 9 and 10
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

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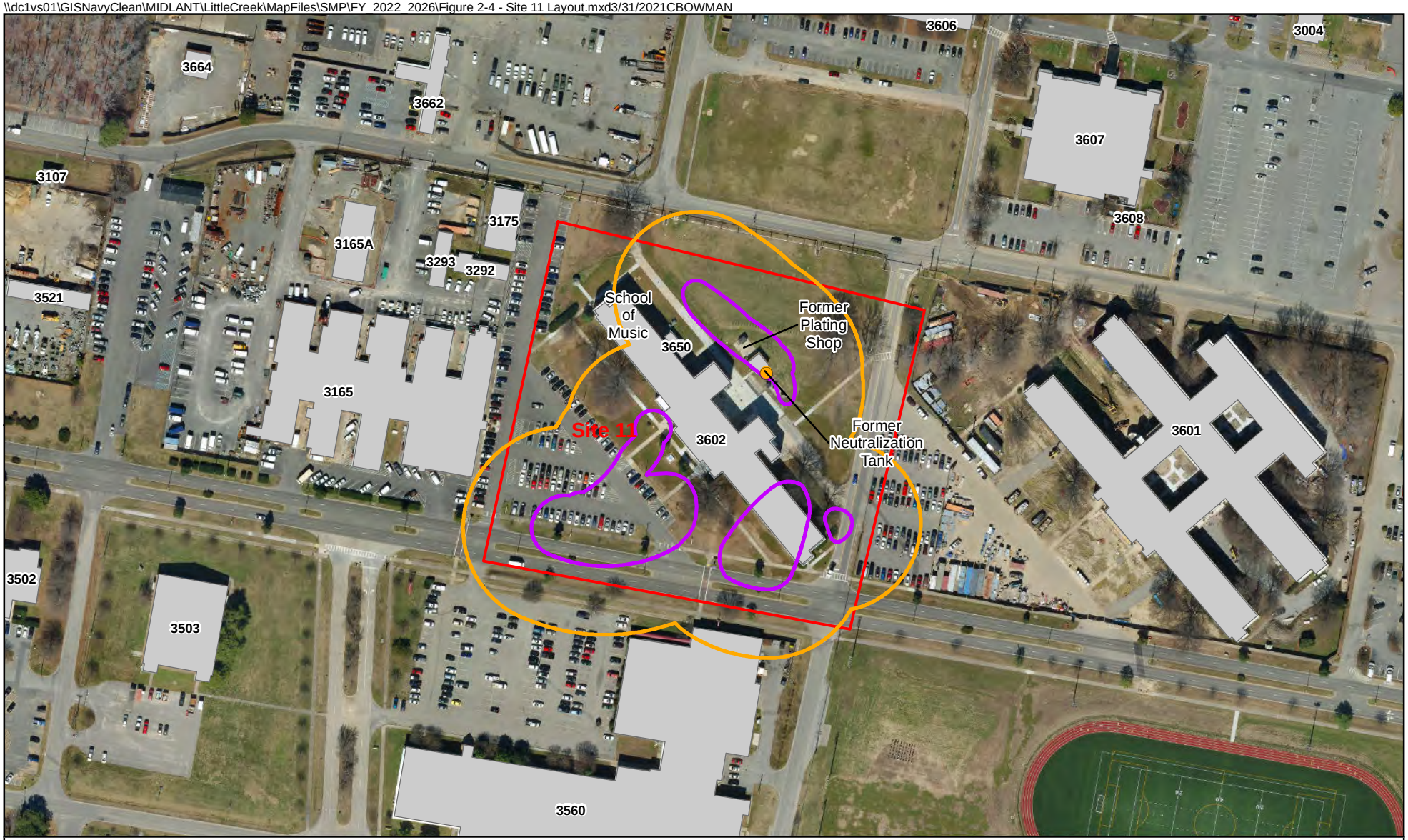


Legend

- Former Neutralization Tank
- Plume Boundary
- 100 foot VI Buffer Zone
- LUC Boundary
- Buildings

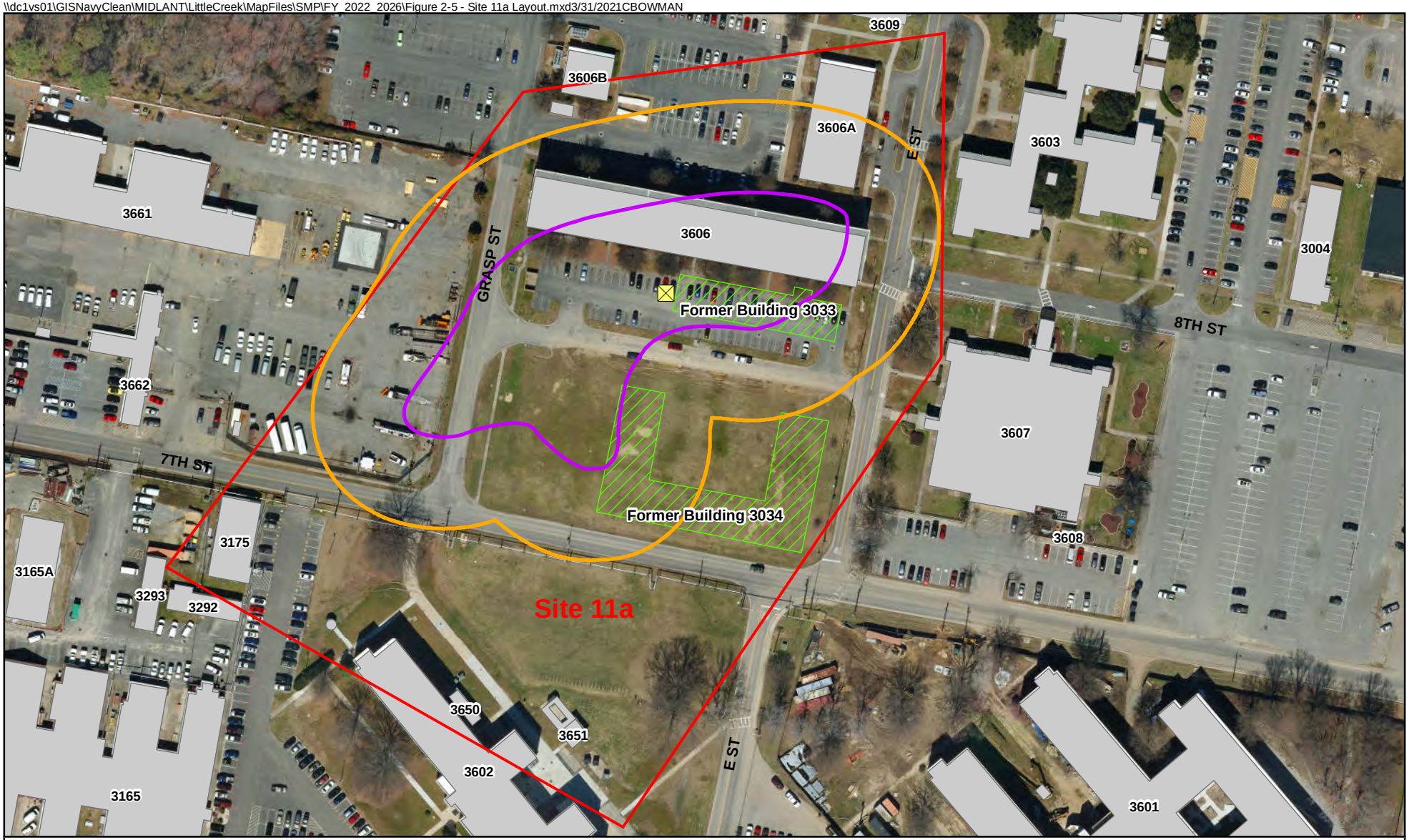
N
W E
S

0 100 200 Feet

Figure 2-4
Site Layout - Site 11
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ch2m

\\dc1vs01\GISNavyClean\MIDLANT\LittleCreek\MapFiles\SMP\FY_2022_2026\Figure 2-5 - Site 11a Layout.mxd3/31/2021CBOWMAN



Legend

- Approximate Location of Former Underground Waste Oil Tank
- Plume Boundary
- 100 foot VI Buffer Zone
- Land Use Control Boundary
- Former Building
- Buildings

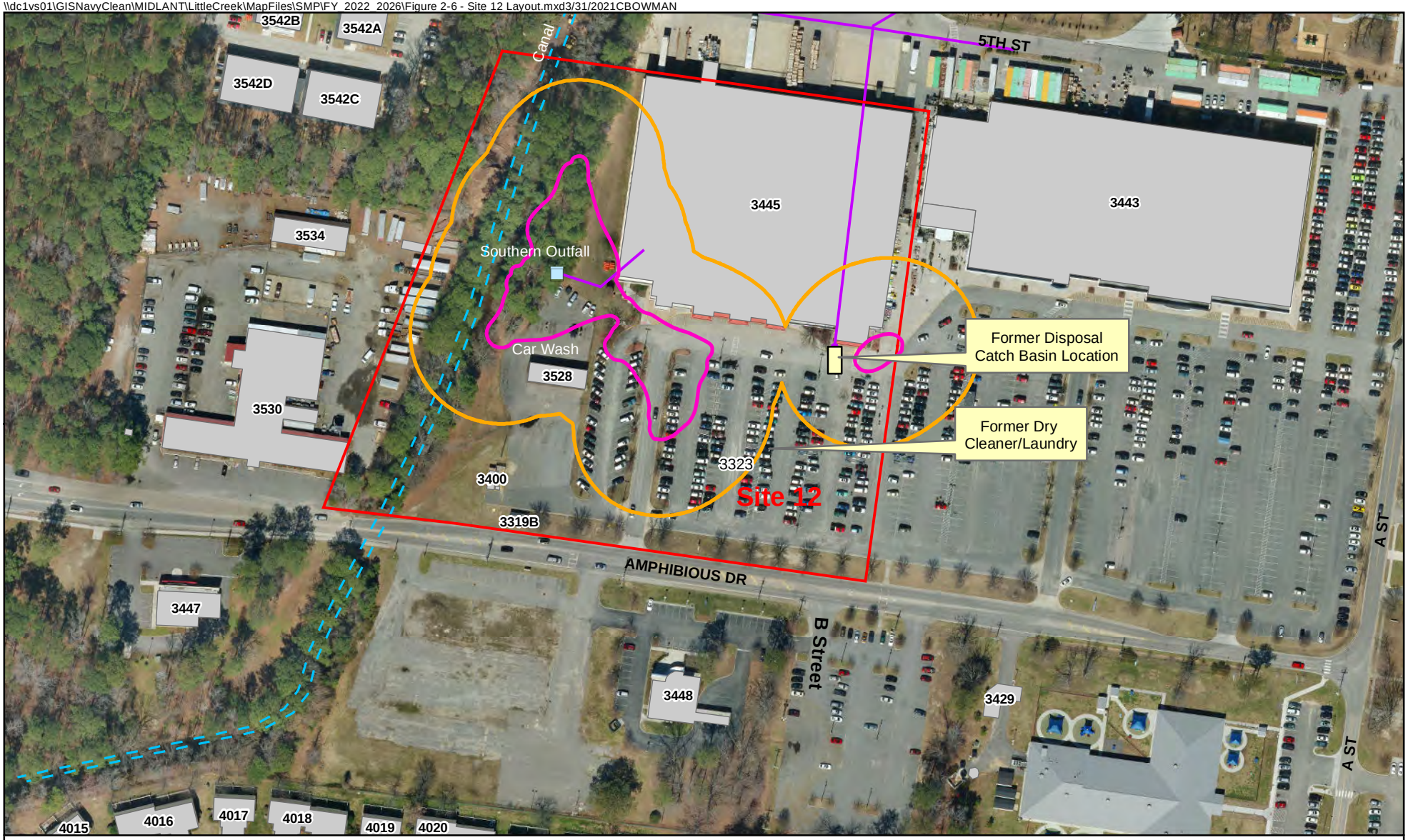
N
W E
S

0 75 150
Feet

Figure 2-5
Site Layout - Site 11a
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ch2m

\\dc1vs01\GISNavyClean\MIDLANT\LittleCreek\MapFiles\SMP\FY_2022_2026\Figure 2-6 - Site 12 Layout.mxd3/31/2021CBOWMAN



Legend

- Plume Boundary
- 100 foot VI Buffer Zone
- Outfall Location
- Freshwater Canal
- Former Storm Water Line
- Land Use Control Boundary
- Buildings

N
W E
S

0 90 180
Feet

Figure 2-6
Site Layout - Site 12
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

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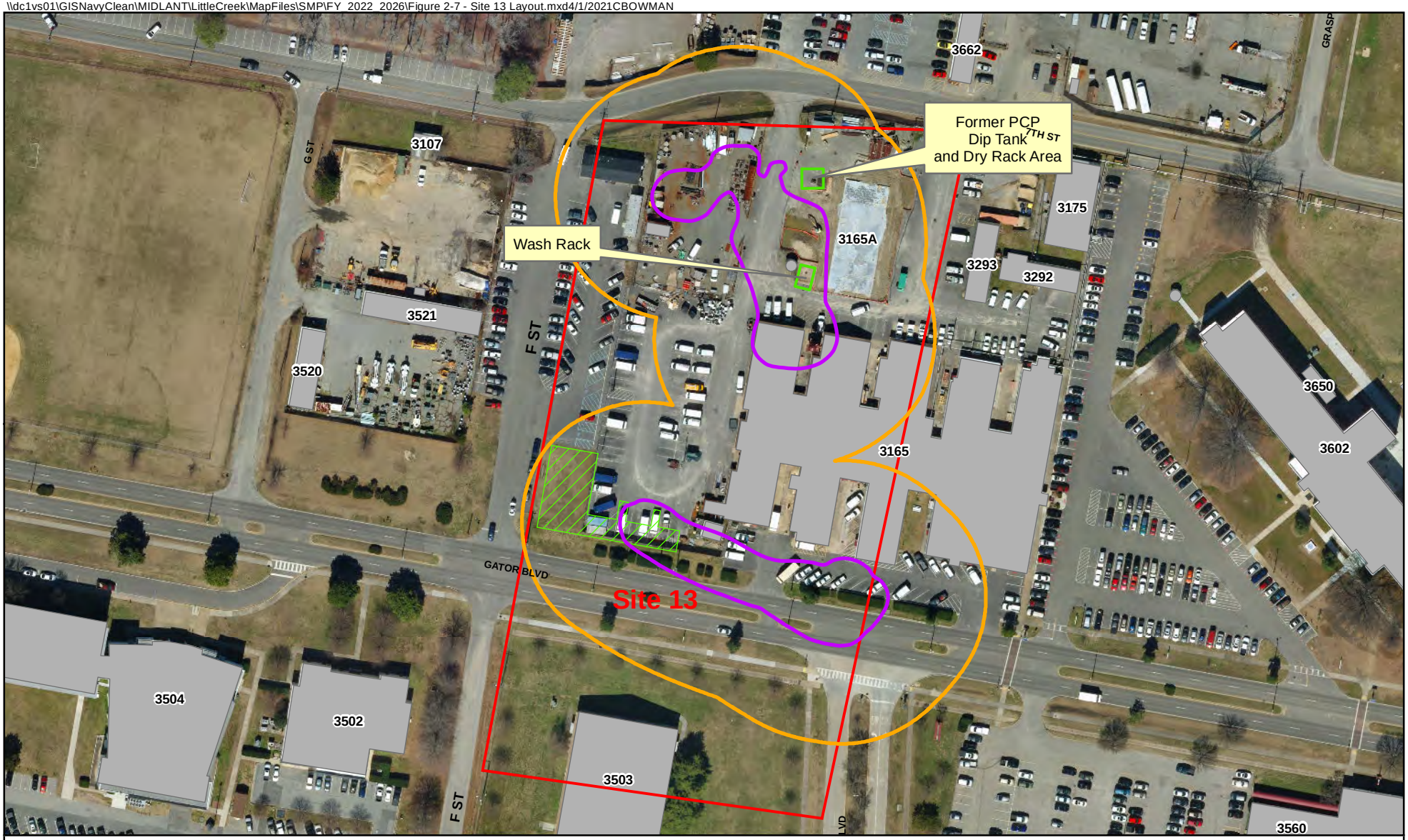
\\dc1vs01\GISNavyClean\MIDLANT\LittleCreek\MapFiles\SMP\FY_2022_2026\Figure 2-7 - Site 13 Layout.mxd4/1/2021CBOWMAN



Legend

- Plume Boundary
- 100 foot VI Buffer Zone
- Land Use Control Boundary
- Demolished Buildings
- Buildings

N
W E
S

0 140 280 Feet

Figure 2-7
Site Layout - Site 13
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

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\\dc1vs01\GISNavyClean\MIDLANT\LittleCreek\MapFiles\SMP\FY_2022_2026\Figure 2-8 - SWMU3 Layout.mxd3/31/2021CBOWMAN

Legend

- Plume Boundary
- 100 foot VI Buffer Zone
- Outfall Locations
- Underground Drain Pipe
- Fenced Area
- Picnic Area
- LUC Boundary
- Former Sandblasting Area (1962-1995)
- More Recent Sandblasting Area (1995-1996)
- Buildings

N
W E
S

0 125 250
Feet

Figure 2-8
Site Layout - SWMU 3
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

ch2m

\\dc1vs01\GISNavyClean\MIDLANT\LittleCreek\MapFiles\SMP\FY_2022_2026\Figure 2-9 - NFA Sites.mxd4/1/2021CBOWMAN

Legend

- No Action Sites
- No Further Action Sites
- Installation Boundary

N
W E
S

0 500 1,000 Feet

Figure 2-9
Locations of Response Complete ER and MMRP Sites, SWMUs, and AOCs Requiring No Action and No Further Action
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

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SECTION 3

Navy Land Use Planning

The JEB Little Creek ER Program has developed a geographic information system (GIS) that identifies all areas of past or present environmental concern. **Appendix A** identifies the ER sites and identifies the boundaries of potential environmental impact areas, including the extent of groundwater and soil contamination. Sites with LUCs in place are identified on **Table 3-1**. A CD is provided with the GIS layers in ArcView as displayed in **Appendix A**. This information is available to Base Planning personnel for environmental considerations during Base operational planning and decision-making. This GIS information will also be used by Base Planning personnel to ensure that LUCs are maintained at ER sites where the ROD identifies LUCs as part of the remedy.

If in the event DoD activities will influence the areas outlined or highlighted in **Appendix A**, the Navy Regional Project Manager should be consulted. Contact information is as follows:

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Naval Facilities Engineering Command, Mid Atlantic
9742 Maryland Ave. Bldg. N-26, Rm 3300
Norfolk, VA 23511-3095

(757) 341-2014

Email: cecilia.landin@navy.mil

Table 3-1. Land Use Controls
Site Management Plan for FY 2022-2026
JEB Little Creek
Virginia Beach, Virginia

ER Site or SWMU	Site Name	Date of Final ROD	Location on JEB Little Creek	Area of LUC Boundary	Land Use Controls
Site 7	Amphibious Base Landfill	18-Sep-09	Directly south of Little Creek Cove	1,352,821 sq ft	1) Prohibit digging into or disturbing the existing soil cover or landfill contents 2) Prohibit the use of the site for residential, child care, elementary or secondary school, or playground facilities
Site 9	Driving Range Landfill	15-Dec-03	Near Bldg 3699, NNE Portion of Base, East of Desert Cove	352,582 sq ft	1) Prohibit digging into or disturbing the existing soil cover or contents of the landfill 2) Prohibit residential development on the site 3) Prohibit use of the shallow aquifer groundwater beneath the sites other than for environmental monitoring and testing
Site 10	Sewage Treatment Plant Landfill	15-Dec-03	Desert Cove Area, just west of former base sewage treatment plant	708,037 sq ft	1) Prohibit digging into or disturbing the existing soil cover or contents of the landfill 2) Prohibit residential development on the site 3) Prohibit use of the shallow aquifer groundwater beneath the sites other than for environmental monitoring and testing
Site 11	School of Music Plating Shop	9-Jul-07	Behind the School of Music	268,732 sq ft	1) Prohibit the withdrawal of groundwater except for environmental monitoring and testing 2) Prevent dermal contact with groundwater by construction workers 3) Prohibit the use of the site for residential, child care, elementary or secondary schools, or playground facilities 4) Maintain the integrity of any current or future remedial or monitoring system 5) Prohibit changes from current building use or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of mitigation measures
Site 11a	Building 3033 Former Vehicle Repair Facility and Waste Oil Tank	7-Sep-11	North of Site 11	433,579 sq ft	1) Prohibit activities that would result in contact with shallow groundwater except for environmental monitoring 2) Prohibit the withdrawal of shallow groundwater except for environmental monitoring 3) Prohibit changes from current building use or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of mitigation measures 4) Prohibit the use of the site for child care, elementary or secondary school, or playground facilities 5) Maintain the integrity of any current or future remedial or monitoring system
Site 12	Former Exchange Dry Cleaning Facility	30-Sep-05	Parking Lot of JEB Little Creek Commissary	399,565 sq ft	1) Prohibit the withdrawal of groundwater except for environmental monitoring and testing 2) Prevent dermal contact with groundwater by construction workers 3) Prohibit the use of the site for residential, child care, elementary or secondary schools, or playground facilities 4) Maintain the integrity of any current or future remedial or monitoring system 5) Prohibit changes from current building use or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of mitigation measures
Site 13	Public Works Pentachlorophenol Dip Tank and Wash Rack	30-Sep-07	Behind Public Works Center	232,704 sq ft	1) Prohibit the withdrawal of groundwater except for environmental monitoring and testing 2) Prevent dermal contact with groundwater by construction workers 3) Prohibit the use of the site for residential, child care, elementary or secondary schools, or playground facilities 4) Maintain the integrity of any current or future remedial or monitoring system 5) Prohibit changes from current building use or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of mitigation measures
SWMU 3	Pier 10 Sandblast Yard	23-Dec-14	Western side of Little Creek Harbor	54,176 sq ft	1) Prohibit the withdrawal of groundwater except for environmental monitoring and testing 2) Prohibit the use of the site for residential, child care, elementary or secondary schools, or playground facilities 3) Maintain the integrity of any current or future remedial or monitoring system 4) Prohibit changes from current building use or construction of new buildings without further evaluation of potential vapor intrusion risks and/or implementation of mitigation measures

SECTION 4

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Appendix A
Land Use Planning
Potentially Impacted Areas

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Legend

- Groundwater Plumes
- Soil Contamination
- Removal Action Area
- Potential Impacted Area
- POL Site (Petroleum, Oil, and Lubricants)
- No Further Action Site
- LUC Boundary
- Installation Area

N
W E
S

0 250 500 1,000 1,500 Feet

Attachment A
Environmental Restoration Program and Military Munitions Response Program Sites
Potential Impacted Areas
Site Management Plan for FY 2022-2026
Joint Expeditionary Base (JEB) Little Creek-Fort Story
JEB Little Creek
Virginia Beach, Virginia

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