F I N A L

Decision Document
Areas 9 and 19
Former Raritan Arsenal
Edison, New Jersey

Prepared for

US Army Corps of Engineers®

FUDS Project Number: C02NJ0084-03 and C02NJ0084-13
Contract: W912DY-09-D-0060
Task Order: 003

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Contents

Acronyms and Abbreviations

ARAR	applicable or relevant and appropriate requirements
ASA	Assistant Secretary of the Army
BAP TEQ	benzo(a)pyrene toxic equivalent
BERA	baseline ecological risk assessment
bgs	below ground surface
CEA	Classification Exception Area
CEHNC	U.S. Army Engineering and Support Center, Huntsville
CENAN	USACE, New York District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	(Superfund) Code of Federal Regulations
COC	constituent of concern
COPC	constituent of potential concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSM	conceptual site model
DD	Decision Document
DERP	Defense Environmental Restoration Program
DoD	U.S. Department of Defense
EOD	explosive ordnance disposal
FUDS	Formerly Used Defense Sites
FRA	former Raritan Arsenal
GSA	U.S. General Services Administration
HA	hazard assessment
HHRA	human health risk assessment
IE&E	Installations, Energy and Environment
IGD	Interim Guidance Document
LEAD	Letterkenny Army Depot
MC	munitions constituent
MD	munitions debris
MEC	munitions and explosives of concern
mm	millimeter
MRS	munitions response site
NCP	National Oil and Hazardous Substances Pollution Contingency Plan

NJDEP	New Jersey Department of Environmental Protection
PP	Proposed Plan
PAH	polycyclic aromatic hydrocarbon
RI	Remedial Investigation
SVOC	semivolatile organic compound
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
UU/UE	unlimited use/unrestricted exposure
VOC	volatile organic compound
Weston	Weston Solutions, Inc.

Part 1: The Declaration

1.1 Site Name and Location

The former Raritan Arsenal (FRA) is located in Edison, Middlesex County, New Jersey. The FRA currently constitutes one munitions response site (MRS) that includes several areas of interest that are in various states of investigation or remediation. Areas 9 and 19 are located on the western side of the FRA. Area 9 comprises approximately 53 acres near the center of a former magazine area, and Area 19 comprises approximately 294 acres that encompass the magazine area around Area 9.

1.2 Statement of Basis and Purpose

This Decision Document (DD) is being presented by the U. S. Army Corps of Engineers (USACE) to describe the selected remedy for Areas 9 and 19 (soil, sediment and surface water) at the FRA[1]. The USACE Formerly Used Defense Sites (FUDS) Program is conducting response activities in accordance with the Defense Environmental Restoration Program (DERP) statute (10 U.S. Code [USC] § 2701 et seq.), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) (42 USC § 9620 et seq.), Executive Orders 12580 and 13016, and the National Oil and Hazardous Substances Pollution Contingency Plan, more commonly known as the National Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] Part 300).

The USACE executes the FUDS Program on behalf of the Army, including drafting DDs and implementing selected remedial actions. The support agency is New Jersey Department of Environmental Protection (NJDEP).

Areas 9 and 19 are not on the National Priorities List (NPL). USACE has adopted the term "Decision Document" for the documentation of remedial action decisions at installations that are not on the NPL. This DD follows the U.S. Environmental Protection Agency (USEPA) document *Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (USEPA, 1999). A DD is similar to the Record of Decision prepared to document the CERCLA remedy selection process for an NPL site. The information supporting the decision on this selected remedial action is contained in the Administrative Record.

1.3 Description of the Selected Remedy

The site is likely to remain under industrial use in the foreseeable future; however, a hypothetical residential scenario was included to evaluate an unlimited used and unrestricted exposure (UU/UE) scenario as required by DODM 4715.20. No unacceptable risk to public health or welfare and the environment from actual or threatened military releases of hazardous substances to soil, sediment, or surface water was identified. Potential exposures to groundwater were not evaluated in the human health risk assessment (HHRA) because groundwater at the FRA has been evaluated as a separate operable unit (USACE, 2019).

Therefore, it is the USACE's judgment as the lead agency that no action is necessary at Areas 9 and 19 soil, sediment, and surface water with respect to U.S. Department of Defense (DoD) constituents to protect public health or welfare or the environment. NJDEP does not concur with the decision to take no action.

[1] Groundwater at the FRA has been evaluated as a separate operable unit.

1.4 Statutory Determinations

No remedy will be taken at this site, therefore a five-year review will not be required.

1.5 Authorizing Signature

The DoD is the lead agency under the DERP for the former Raritan Arsenal FUDS and USACE has developed DD for DoD. This DD is consistent with CERCLA, as amended, and the NCP. The DD is approved by the undersigned, pursuant to the delegated authority in the Assistant Secretary of the Army (ASA) for Installations, Energy and Environment (IE&E) memorandum dated 24 June 2019, subject: Assignment of Mission Execution Functions Associated with DoD Lead Agent Responsibilities for the FUDS Program, and the 9 February 2017 Memo Interim Guidance Document (IGD) for the FUDS DD Staffing and Approval.

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KAREN J. BAKER

Programs Director

Part 2: Decision Summary

2.1 Project Name, Location, and Description

FRA includes approximately 3,200 acres located along the northern bank of the Raritan River. A map depicting the location of the FRA is presented in Figure 2.1. The majority of the FRA land area lies within Edison Township, with smaller portions of the site located in Woodbridge Township and the Borough of Sayreville, in Middlesex County, New Jersey, approximately 20 miles southwest of lower Manhattan (Dames and Moore, 1993).

Currently, most of the FRA is privately owned and zoned for industrial use. The majority of the FRA has been developed into the Raritan Center Industrial Park, owned by Federal Business Centers and Summit Associates, Inc. Other major current landowners or tenants include Middlesex County College, Thomas Edison County Park, USEPA Region 2, and the U.S. General Services Administration (GSA). Private residences are located to the north of the FRA, where land use is zoned as mixed residential and commercial. Currently, over 40 property owners have land within the boundaries of the FRA.

Areas 9 and 19 are located on the western side of the FRA in Edison Township. Area 9 comprises approximately 53 acres near the center of a former magazine area, and Area 19 comprises approximately 294 acres that encompass the magazine area around Area 9 (Figure 2.2). Area 9 is owned by Summit Associates, Inc. The developed portion of Area 19 north/northwest of the northern Area 9 boundary is owned by Federal Business Centers. The remaining undeveloped portions of Area 19 are primarily owned by Summit Associates, Inc.. Two developed parcels east of Area 9, along the northern side of Sunfield Avenue, are owned by Garden State Buildings, LP. One developed parcel southeast of Area 9, at the intersection of Sunfield Avenue and Raritan Center Parkway, is owned by S/L Center Parkway Associates.

2.2 Project MRS History and Regulatory Requirements

The FRA was largely agricultural prior to its purchase by the U.S. Government in 1917. Between 1917 and 1918 the U.S. Army erected a major arsenal facility on the strategic New Jersey site. The facility included large cantonment areas, a hospital, barracks, storage and maintenance buildings, and a host of ordnance and munitions-related facilities, including magazines, storage yards, shipping facilities, and disposal areas. Operations at the site included the receipt, storage, shipment, repacking, and decommissioning of ordnance, arms, and machinery. The FRA was used extensively by the Army from 1918 to 1963.

Because of changing needs of the DoD, the FRA was phased out and closed in 1963. When it closed, many areas were surface cleared to remove ordnance and munitions. In the late 1980s, the USACE initiated environmental investigations. Site Inspections included records reviews, interviews with former employees, and direct inspection of all areas where the FRA conducted activities that could have adversely impacted the environment.

Area 9 was delineated to surround the former location of magazine H-65, which was destroyed on November 9, 1943, by an explosion of French naval ammunition (Metcalf and Eddy, 1991). The explosion occurred while French-made, 152-millimeter (mm) loaded cartridges were being transferred from the magazine to a freight car. During the transfer, one of the cartridges ignited and started a fire in the freight car, which was also loaded with 90-mm ammunition. A subsequent explosion resulted in the detonation of ammunition stored in both the freight car and the magazine, which at the time contained

semi-fixed cartridges (35-mm, 90-mm, and 152-mm), full rounds (37-mm and 90-mm), hand grenades, 81-mm mortar shells, miscellaneous small arms, and impulse charges. A fragmentation survey conducted as part of the incident investigation found items including steel and brass fragments, live 90-mm ordnance, 152-mm cartridge cases, and 90-mm cartridge cases on the surface or buried in the surrounding area. Reportedly, a cleanup was conducted after the incident; however, no record of ordnance recovery or disposal is available (IT Corporation, 1992).

Area 19 historically housed a magazine area with buildings containing either low or high explosives. The standard magazines, which contained low explosives, were permanent buildings approximately 50 feet wide by 200 feet long. The magazines containing high explosives were approximately 20 feet wide by 40 feet long. A rail line was constructed along each row to transport material to and from the magazine buildings (Roy F. Weston, 1996a).

2.2.1 Prior Investigations and Studies

Previous investigation and removal action activities conducted at Areas 9 and 19 include the following:

- LEAD Cleanup Operations (Area 9), 1963
- Ordnance Removal Action (Area 9), 1965
- Clearance Activities (Area 9), 1981
- Soil and Groundwater Investigation (Area 9), 1987
- Test Pitting and Soil Sampling (Area 9), 1988
- Surface Clearance (Area 9), 1988
- Phase I RI (Areas 9 and 19), 1992
- Magnetometer Survey (Areas 9 and 19), 1993
- Sampling Investigation (Area 9), 1993
- Phase II RI (Areas 9 and 19), 1994
- Supplemental Phase II RI (Areas 9 and 19), 1996
- Sector Density Estimate Investigation (Area 9), 1998
- Supplemental 2 Phase II RI (Area 9), 1999
- Baseline Ecological Risk Assessment (BERA) (Areas 9 and 19), 2005

A total of seven separate phases of work performed at Areas 9 and 19 included some type of munitions and explosives of concern (MEC) investigation or removal. Data are consistent with one MEC release mechanism (i.e., the 1943 explosion of magazine H-65) with minimal impact, which has since been addressed through cleanup and construction activities.

In 1963, approximately 5 acres within Area 9 were decontaminated by burning the ground and vegetation to destroy propellant powder, small arms ammunition, and primers. The ground was then disked to a depth of 6 inches, and the ground surface was burned again prior to recommendation of the area for unrestricted use. An additional 4 acres of Area 9 was cleaned and swept with a mine detector, after which the area was initially recommended for surface use only, based on the potential for buried live ammunition. The surface-use-only restriction continued following the discovery of one shell projectile encountered at 1-foot below ground surface (bgs) during clearance of a portion of Area 9 in 1981. The shell was removed by the Fort Monmouth Explosive Ordnance Disposal (EOD) Unit (Dames & Moore, 1993).

From 1987 to 1988, intrusive investigation of 6 acres of land within Area 9 identified 19 munitions debris (MD) items, including 37-mm projectiles, 3-inch projectiles, a 12-inch-long 81-mm mortar round, .30-caliber rounds and cases, and a .308-caliber case. No MEC-related items were discovered. Additionally, the 4-acre portion of Area 9 previously swept with a mine detector was excavated to a depth of 5 feet bgs. No MEC were discovered, and the excavation was backfilled with clean fill. Following

this removal action, it was recommended that the surface-use-only restriction be removed (Foster Wheeler, 2000).

In 1993, intrusive investigations were conducted across an approximately 0.3-acre portion of Area 9; 29.9 acres of Area 10 that included developed portions of the park within Area 19; and an additional 2.4 acres of Area 19 that were within the estimated fragmentation line from the magazine explosion in Area 9. No MEC were discovered. An evaluation of historical documents completed in 1998 concluded that the MEC density within Areas 9 and 19 was minimal based on historical cleanup efforts and the lack of MEC discovery during the more recent investigations.

Surface and subsurface soil, soil gas, and groundwater samples that were collected at Areas 9 and 19 between 1988 and 2009 were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls, metals, and explosives. Samples were collected from areas of former magazines, observed debris, historical ground scars, railroad spurs, open storage areas, and fill areas identified from historical aerial photographs. Analytical results were evaluated primarily against the NJDEP criteria in effect at the time of the investigation.

Samples were collected in 2005 to quantitatively evaluate potentially complete ecological exposure pathways identified for soil, sediment, and surface water in the facility-wide BERA (Weston Solutions, Inc. [Weston], 2008). No evidence of ecological risks to freshwater habitats were identified, with the possible exception of arsenic in Area 19 sediments. Arsenic was detected at elevated concentrations in areas downgradient from historical arsenic-based herbicide application areas, and was determined not to represent a CERCLA release.

The documents associated with the previous investigations are part of the Administrative Record. In addition, summaries of data, results, and recommendations associated with these reports were extracted from the individual reports and incorporated into the RI report (CH2M, 2016a) to provide a comprehensive summary of the site-specific investigation activities conducted at Areas 9 and 19. Activities and analysis associated with the current RI report are summarized below.

Remedial Investigation

Historical records documenting the phases of investigation and removal actions conducted at Areas 9 and 19 from 1963 to 2005 provided adequate characterization data to estimate the potential exposure-related risks for Areas 9 and 19, and these data were used to develop an updated conceptual site model (CSM). Analytical data collected from 1994 through 2010 were used to estimate the potential exposure-related risks in an RI specifically focused on Areas 9 and 19 (CH2M, 2016a).

Few munitions items have been found during extensive MEC investigations at Areas 9 and 19. Clearance operations on 6 acres of land within Area 9 in 1987 and 1988 identified no hazardous or nonhazardous MEC-related items on the surface or in the subsurface. Additionally, no MEC were found during intrusive investigations across large portions of Areas 9 and 19. Based on the previous investigations and removal actions, MEC has been removed from and has not been identified outside of the identified MEC release area (former magazine H-65), and there is no longer an explosive risk at Areas 9 and 19.

Remedial Investigation Conclusions and Recommendations

Because no evidence of MEC contamination and no unacceptable risks associated with potential exposures to DoD-related constituents of potential concern (COPCs) were identified, the RI did not recommend a feasibility study for Areas 9 and 19. Based on the evaluation of data previously collected as presented in the RI, no action was recommended for Areas 9 and 19 soil, sediment or surface water (groundwater has been evaluated for the FRA as a separate operable unit).

Proposed Plan

A PP was produced to summarize and document the RI, as well as the USACE rationale for recommending a no action remedy at Areas 9 and 19. The PP was made available to the public on February 14, 2019, followed by a public meeting on February 26, 2019. The comments from the public received during the public comment period and at the public meeting are summarized in the Responsiveness Summary, which is contained in Part 3.0 of this DD.

2.2.2 Regulatory Background

The DoD has the responsibility to remediate former DoD facilities under the DERP for FUDS and, therefore, is responsible for site investigation and remediation activities at the Site. USACE's goal is to achieve regulatory closure for the Site. FUDS program policy requires USACE to:

- Comply with DERP, CERCLA, the NCP, and Army policies for the FUDS program;
- Coordinate with the lead regulator, which is the NJDEP;
- Conduct a RI with a baseline risk assessment to evaluate the need for remediation; and
- Attain standards and meet requirements that are consistent with CERCLA and NCP processes and criteria.

Site investigation and remediation activities must follow federal laws, guidance, and methods. The NJDEP has participated by providing regulatory oversight of the FUDS investigation. The RI was conducted under the DERP for FUDS**,** and performed in accordance with the CERCLA and NCP.

2.3 Community Participation

The scope of community participation activities performed was consistent with the USEPA CERCLA guidance for community involvement (USEPA, 2005), Section 300 of the NCP, and USACE guidance Engineering Pamphlet 200-3-1 (USACE, 2011).

USACE completed the following activities as part of its public outreach effort:

- A Community Relations Plan was prepared for FRA in March 2013 (USACE, 2013);
- Conducted a technical project planning meeting in November 2011 with stakeholders, including NJDEP;
- Provided project materials, including a history, location maps, and fact sheets, for the USACE website, Administrative Record, and Information Repository; and
- Solicited public comment on the PP (USACE, 2019) through a February 2019 public notice and a public meeting on February 26, 2019 at the Edison Senior Citizen Center. The PP was released to the public on the USACE New York District website for the FRA: http://www.nan.usace.army.mil/Raritan and at the information repository locations:

  Information Repository

  U.S. Army Corps of Engineers, New York District
  2890 Woodbridge Avenue
  Edison, NJ 08837

Central Information Repository

USACE New York District Office
26 Federal Plaza
New York, NY 10278

A public comment period occurred from February 18, 2019 through March 23, 2019. USACE published a public notice in the Home New Tribune on February 14, 2019, and Middlesex County News/Star Ledger on February 15, 2019 announcing the PP public meeting and the availability of the PP for public comment.

2.4 Scope and Role of Response Action

The RI concluded that no evidence of MEC contamination was found and no unacceptable risks associated with potential exposures to COPCs associated with military operations were identified within Areas 9 and 19 soil, sediment or surface water. Based on the results of the RI and previous investigations and removal actions, no further investigative or response actions are necessary for Areas 9 and 19 soil, sediment or surface water.

2.5 Summary of Site Characteristics

2.5.1 Conceptual Site Model

A Conceptual Site Model describes the contaminant sources, release and transport mechanisms, the exposure media, exposure pathways, and potentially exposed human populations for a site. The primary source of potential contamination at Areas 9 and 19 is MEC resulting from the explosion of magazine H-65 in 1943, which was located in Area 9. MEC debris that was scattered during the explosion was historically found on the ground surface and shallow subsurface within portions of Area 9. Exposure pathways associated with Areas 9 and 19 include site receptors in contact with impacted surface and shallow subsurface soil, sediment, or surface water (groundwater has been evaluated as a separate operable unit).

Land use in the western portion of the FRA where Areas 9 and 19 are located is currently primarily commercial/industrial, with structures including large industrial buildings. All of Area 9 and approximately two-thirds of Area 19, has been developed. The southwestern portion of Area 19 consists primarily of freshwater palustrine forested wetlands and contains a wooded wetland portion of Thomas Edison County Park. A small portion of Area 19 also consists of tidal wetlands of varying salinities (Roy F. Weston, Inc., 1996a). The anticipated future use of the site is for continued active industrial/commercial use; however, a hypothetical residential scenario was also evaluated. Based on the anticipated future use of Areas 9 and 19, it is reasonable to assume that commercial/industrial receptors would be present in the future either as customers or as personnel. Construction/utility workers would also be present under the future development scenario.

Few munitions items have been found during extensive MEC investigations at Areas 9 and 19 (see Section 2.2.1). Clearance operations on 6 acres of land within Area 9 in 1987 and 1988 identified no hazardous or nonhazardous MEC-related items on the surface or in the subsurface. Additionally, no MEC were found during intrusive investigations across large portions of Areas 9 and 19. Therefore, exposure pathways associated with site receptors in contact with MEC are considered incomplete.

2.5.2 Site Overview

The physical and cultural characteristics of Areas 9 and 19 are presented in this section. No areas of historical or archaeological importance are known to exist on site.

Physical Setting

Areas 9 and 19 are within the FRA, which includes approximately 3,200 acres located along the northern bank of the Raritan River. The majority of the FRA is located in Edison Township, with a portion of the site located in Woodbridge Township, in Middlesex County, New Jersey, approximately 20 miles southwest of lower Manhattan (Figure 2.1).

Geology

The geology across FRA is characterized by an overburden layer, approximately 10 to 80 feet thick, composed of unconsolidated sediments underlain by bedrock consisting of shales, metamorphosed shales, and an igneous diabase sill (Weston, 2008).

Soils

The soils present within the FRA study area reflect extensive human activity in the northern sections. Cut and fill activities, clay pits, and fluvial alterations within the FRA have led to inconsistent subsurface profiles. Soils identified within the FRA are mapped into three general groups by the U.S. Department of Agriculture, Soil Conservation Service (SCS). The SCS mapped soils at FRA consist of the following:

Urban land-Boonton-Haledon: Urban land and nearly level to strongly sloping, deep, well-drained to somewhat poorly-drained soils that have a firm or very firm loamy subsoil on uplands.

Klej-Atsion-Evesboro: Nearly level to strongly sloping, deep, excessively well-drained and moderately well-drained to poorly-drained soils with a sandy subsoil and substratum on terraces and uplands.

Sulfaquents-Sulfihemists-Psamments: Nearly level, deep, excessively-drained to very poorly-drained mineral and organic soils with a grayish or black subsoil on tidal flats. Surface material typically grades gently from tidal marsh material near the Raritan River to sands and sandy loams between 1 to 2 miles inland.

Based on Areas 9 and 19 site-specific boring logs associated with site investigations, shallow soils beneath Area 9 consist of reworked native soils, classified as poorly-graded sand with variable amounts of silt and gravel, and these soils range up to 10 feet thick (Roy F. Weston, 1996b). Shallow soils in Area 19 are generally similar to Area 9 with the reworked native and fill soils that range in thickness from 1 to 11 feet. Thicker fill is found beneath the former magazine rows, and the shallow soils also contain debris such as brick, concrete, and cinders. At Area 19, the Meadowmat formation occurs from about 19 feet above mean sea level (amsl) to about 2 feet below mean sea level (bmsl), and is consistently about 2 feet thick. The Lower Sand is located at about 5 feet amsl, and ranges in thickness from 3 to 35 feet. The Weathered Bedrock unit is located from about 13 feet amsl to 10 feet bmsl at a thickness ranging from 20 to 35 feet, but is absent in places, likely representing erosion by the Raritan River (Roy F. Weston, 1996a).

Hydrology

Groundwater hydrology at FRA is characterized by separate aquifers in the overburden and bedrock. Groundwater within the overburden and bedrock aquifers flows southeastward across FRA toward the Raritan River. The occurrence and depth to groundwater in the overburden zone varies from 2 to 30 feet bgs. The geology across FRA is characterized by an overburden layer, approximately 10 to 80 feet thick,

composed of unconsolidated sediments underlain by bedrock consisting of shales, metamorphosed shales, and an igneous diabase sill (EODT, 1993; Weston, 1996a).

Based on a review of the drilling logs for the monitoring wells installed at the site, groundwater at Areas 9 and 19 is found from approximately 5 to 10 feet bgs. Perched groundwater is present in the shallow fill soils, but these soils are not considered to be a major water-bearing unit.

Groundwater flow direction is to the southeast beneath both Areas 9 and 19 (Roy F. Weston, 1996a, 1996b). Groundwater levels in the Upper Sand unit are reportedly not tidally influenced, whereas those in the Lower Sand unit may be tidally influenced up to 2,500 feet from the Raritan River. The differing hydrogeologic characteristics of these units may be explained in part by the presence of the Meadowmat Formation, which acts as a semi-confining unit of silt and clay between the Upper and Lower Sand units. The Lower Sand unit is the primary water-bearing unit within the overburden, and it may exhibit both confined and unconfined characteristics (Weston, 1996).

Currently there is no use of groundwater at Areas 9/19. Groundwater at the FRA has been evaluated as a separate operable unit (USACE, 2019).

Nature and Extent of Contamination

The primary source of potential contamination at Areas 9 and 19 is MEC resulting from the 1943 explosion of magazine H-65, which was located in Area 9. As described in Section 2.2, few munitions items have been found during extensive MEC investigations at Areas 9 and 19. Clearance operations on 6 acres of land within Area 9 in 1987 and 1988 identified no hazardous or nonhazardous MEC-related items on the surface or in the subsurface. Additionally, no MEC were found during intrusive investigations across large portions of Areas 9 and 19. Based on the previous investigations and removal actions, minimal potential exists for MEC exposure from the identified MEC release area (former magazine H-65). The data also suggest that there is no longer an explosive risk at Areas 9 and 19.

MEC investigations, site history, and soil gas sampling were used to identify sample locations for potential environmental media contamination at Areas 9 and 19, as described in Section 2.2. In Area 9, 31 surface soil samples and 9 subsurface soil samples were collected. In Area 19, 119 surface soil samples, 40 subsurface soil samples, 25 surface water samples and 31 sediment samples were collected. Sample analyses included VOCs, SVOCs, pesticides, PCBs, metals, and explosives. Detected concentrations of COPCs identified in surface soil, subsurface soil, surface water, and sediment (summarized in Section 2.7.1) do not pose a risk to current/future receptors as summarized below. Explosives were not detected in any samples at Areas 9 or 19.

A baseline HHRA was conducted for Areas 9 and 19 at the FRA to estimate the potential risks to human receptors associated with exposures to constituents detected in surface and subsurface soil, surface water, and sediment within Areas 9 and 19. The potential receptors evaluated under a current land use scenario were recreational users/trespassers, industrial workers, and maintenance workers at the FRA. Under a future land use scenario, the potential receptors evaluated included construction workers and hypothetical residents (although the site is likely to remain under industrial use for the foreseeable future). The HHRA did not identify an unacceptable risk associated with exposure of current or future receptors at Areas 9 and 19 to COPCs associated with DoD releases.

BERA fieldwork was conducted in 2005 for a site-wide BERA (Weston, 2008). Results did not indicate any site-related potential for ecological risk associated with Areas 9 or 19, with the possible exception of arsenic in the Area 19 drainage sediments. A BERA addendum was completed as part of the 2016 RI (CH2M, 2016a) to evaluate the potential for ecological risk from DoD-related activities at Areas 9 and 19. The RI confirmed that elevated arsenic concentrations were detected downgradient from historical arsenic-based herbicide application areas, and the presence of arsenic was therefore not identified as a

CERCLA release (CERCLA § 107[i]; 42 United States Code [U.S.C.] § 9607[i]). Accordingly, no evaluation of arsenic was recommended. The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) defines pesticide to include herbicides (see 7 U.S.C. 136). As the arsenic was released in accordance with FIFRA, there is no release of a hazardous substance under CERCLA. If there is no CERCLA release, then there is no authority to act under the FUDS program. The BERA and the addendum to the BERA did not identify any unacceptable risk to ecological receptors from Areas 9 and 19.

2.6 Current and Potential Future Land and Water Uses

2.6.1 Land Use

Area 9 consists of approximately 53 acres of land, encompassed by the 294 acres of land that comprise Area 19. Land use within Areas 9 and 19 is currently primarily commercial/industrial with large industrial buildings. The southern portion of Area 19 consists of undeveloped wetlands and a wooded wetland portion of Thomas Edison County Park; therefore, it is considered as recreational in land use. Current receptors would be maintenance workers, industrial/commercial workers, recreational users/ trespassers, and construction/utility workers. Future land use is anticipated to be the same as the current land use, where Areas 9 and 19 remain under active industrial/commercial use; however, a hypothetical residential scenario was also evaluated.

2.6.2 Groundwater Use

Currently there is no use of groundwater at Areas 9 and 19. Potential exposures to groundwater were not evaluated in the HHRA because groundwater at the FRA has been evaluated as a separate operable unit (USACE, 2019). A Classification Exception Area (CEA) has been established as part of the selected remedy for the FRA groundwater precluding its use until such time as DoD-related COC levels are reduced to allow unrestricted use. The CEA applies to any existing wells at the FRA, and prohibits the installation of other potentially potable wells.

2.7 Summary of Project MRS Risks

Removal actions and investigations at Areas 9 and 19 from 1963 to 2005 are consistent with the CSM that suggests there was one primary MEC release mechanism (i.e., the 1943 explosion of magazine H-65) and that the impacts generated by that MEC release were addressed through subsequent cleanup and construction activities. One shell projectile was discovered at 1-foot bgs and removed during clearance of a portion of Area 9 in 1981, and no additional MEC items were identified during seven separate phases of MEC investigations performed at Areas 9 and 19. As summarized below, both an HHRA and BERA were conducted during the RI, which was based on data collected during historical environmental investigations. The HHRA and BERA evaluated potential exposure pathways for the receptors identified at the site. The HHRA showed no unacceptable risks associated with exposure to COPCs from potential CERCLA releases caused by military operations. Additionally, no evidence of ecological risks from release of a hazardous substance under CERCLA was found during the BERA.

For these reasons, USACE recommended no action.

2.7.1 Baseline Human Health Risk Assessment

A baseline HHRA was conducted for Areas 9 and 19 at the FRA based on data collected from 1994 through 2010. Constituents of potential concern (COPCs) at Areas 9 and 19 were identified for surface (0 to 2 feet bgs) and subsurface (2 to 10 feet bgs) soil, sediment, and surface water. COPCs identified for Areas 9 and 19 are summarized below:

- Surface Soil (0 to 2 feet bgs) – One pesticide (heptachlor epoxide), eight inorganic chemicals (aluminum, antimony, arsenic, cobalt, iron, manganese, thallium, and vanadium) and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) as benzo(a)pyrene toxic equivalents (BAP TEQs) were identified as COPCs in surface soil.
- Subsurface Soil (2 to 10 feet bgs) – Six inorganic chemicals (antimony, arsenic, cobalt, iron, thallium, and vanadium) and cPAHs as BAP TEQs were identified as COPCs in subsurface soil.
- Surface Water – Five VOCs (1,2-dichloroethane, cis-1,2-dichloroethene, total-1,2-dichloroethene, trichloroethene, and vinyl chloride) and 12 inorganic chemicals (aluminum, antimony, arsenic, barium, cobalt, iron, lead, manganese, nickel, selenium, thallium, and vanadium) were identified as COPCs in surface water.
- Sediment – One SVOC (bis[2-ethylhexyl] phthalate), two persistent organo-chlorine pesticides (4,4 DDD and dieldrin), 10 inorganic chemicals (aluminum, antimony, arsenic, cobalt, cyanide, iron, manganese, mercury, thallium, and vanadium), and cPAHs as BAP TEQs were identified as COPCs in sediment.

Potential carcinogenic risks and noncarcinogenic hazards were estimated for the COPCs within the identified media for various receptors. The estimated risks and hazard indices were compared to the acceptable cancer risk range and hazard index values. The DERP considers an acceptable excess lifetime cancer risk range for a site to be within one in ten thousand and one in a million ($1x10^{-4}$ to $1x10^{-6}$) and an acceptable noncarcinogenic hazard index to be 1 or less (DoD Manual 4715.20). The purpose of the HHRA was to estimate the potential risks to human receptors associated with exposures to constituents detected in surface and subsurface soil, surface water, and sediment within Areas 9 and 19. The potential receptors evaluated under a current land use scenario were recreational users/trespassers, industrial workers, and maintenance workers at the FRA. Under a future land use scenario, the potential receptors evaluated included construction workers and hypothetical residents (although the site is likely to remain under industrial use for the foreseeable future). The estimated cancer risks and hazard indices to receptor groups under current and future land uses are within the acceptable risk criteria. Therefore, no COCs were identified in surface soil, surface water, or sediment for a current/future recreational user/trespasser and various worker scenarios.

A “hot spot” analysis was conducted as part of the HHRA for Areas 9 and 19 and compared the detected site concentrations in soil and sediment to 100 times (3 times for lead) the USEPA regional screening levels and NJDEP regional background levels. The purpose of the “hot spot” analysis was to evaluate the presence of a discrete area where concentrations are considerably higher than those present in the surrounding area. The “hot spot” analysis assumed potential human receptors could be exposed to a small, localized area of elevated concentrations within the 294 acres that comprise Areas 9 and 19. No “hot spot” areas were identified for arsenic or PAHs, which were evaluated as BAP TEQs, in soil or sediment.

The majority of the calculated cancer risks and hazard indices were from chemicals that occur both in background and site media. The risk contributions from arsenic and PAHs are likely attributable to anthropogenic background levels and are related to former DoD activities from areas associated with historical application of arsenical based herbicides and pesticides. The PAHs are likely from nonpoint anthropogenic sources, such as vehicular traffic or asphalt pavements. The arsenic and PAHs detected in site soil were not the result of a CERCLA release during former operations at Areas 9 and 19, which means that there is no authority to remediate them under the FUDS program. Furthermore, DoD-related constituents do not present an unacceptable risk for under any of the exposure scenarios evaluated for

current and foreseeable future land use conditions. Therefore, Areas 9 and 19 were recommended for no action based on the results of the HHRA.

2.7.2 Baseline Ecological Risk Assessment

Field activities for a site-wide BERA were conducted in 2005, and data were collectively assessed in a weight-of-evidence approach to determine whether significant ecological risks were present at the former Arsenal compared to site reference areas. No evidence was found of ecological risk to freshwater habitats at the former Arsenal, with the possible exception of arsenic in Area 19 sediments. No risks from arsenic were documented in Area 19 based on the available evidence, but the benthic macroinvertebrate community consisted primarily of pollution- tolerant chironomids, and the sediment bioassay test was inconclusive (Weston, 2008).

A BERA addendum was completed as part of the 2016 RI (CH2M, 2016a) to evaluate the potential for ecological risk from DoD-related activities at Areas 9 and 19. The RI confirmed that elevated arsenic concentrations were detected downgradient from historical arsenic-based herbicide application areas, and the presence of arsenic was therefore not identified as a CERCLA release (CERCLA § 107[i]; 42 USC § 9607[i]).

2.8 Documentation of Significant Changes

The PP recommends a no action remedy for the Areas 9 and 19. Since publication of the PP, no changes to the recommendation of no action have been made.

Part 3: Responsiveness Summary

The public comment period extended from February 18, 2019 through March 23, 2019. A notice identifying the date and time of a public meeting, as well as the availability of the Proposed Plan, was published in the Home News Tribune on February 14, 2019, and in the Middlesex County News/Star Ledger on February 15, 2019. The meeting was held to discuss the PP on February 26, 2019 at the Edison Senior Center from 7 PM to 8 PM. Representatives of CENAN, U.S. Army Engineering and Support Center, Huntsville (CEHNC), CH2M, and members of the public attended. The meeting transcript has been placed in the Administrative Record at the CENAN office in Edison, NJ. No written comments were received during the public comment period.

NJDEP does not concur with the USACE decision for No Action at Areas 9 and 19. A letter dated February 15, 2018 includes NJDEP's original review of the Proposed Plan. The USACE responded to NJDEP comments in a letter dated November 20, 2018. A final letter was received from NJDEP on January 2, 2019 (summarized in section 3.1). NJDEP agrees there is no MEC hazard in Area 9, but believes Area 19 is not adequately characterized for MEC. All referenced correspondence is included in Appendix A.

NJDEP did not provide comments pertaining to HTRW issues in their review of the Proposed Plan. However, NJDEP did not accept the Final RI Report dated June 2016 (CH2M, 2016a) and in their final RI review letter dated May 18, 2017 they stated PAHs and arsenic detected above state standards would need to be addressed. USACE has documented in the Final RI Report and in letters to NJDEP that arsenic and PAHs are attributed to background, anthropogenic sources and historic application of arsenic-based herbicides/pesticides, none of which are the responsibility of the government under the FUDS program.

3.1 Stakeholder Issues and Lead Executing Agency Responses

Summary of NJDEP Comments on the Proposed Plan:

NJDEP reviewed the Proposed Plan and provided comments in letters dated May 15, 2018 and January 2, 2019 (Appendix A). NJDEP agrees that a MEC hazard in Area 9 is not likely to exist. However, it is NJDEP's position that Area 19 has not been sufficiently characterized to determine if a MEC hazard is present and that absent further investigation, an FS is necessary to formalize the standard "Raritan Land Use Controls (LUCs)" as they are currently being implemented by Middlesex County for all Raritan Areas in which a MEC hazard exists.

USACE Response to NJDEP Comments:

The USACE letter dated November 20, 2018 (Appendix A) providing responses to comments explains that it is the USACE's position that the site characterization, MEC evaluation, HHRA and ERA completed for the RI (CH2M, 2016b) provide sufficient evidence that there is no longer an explosive risk at Areas 9 and 19. An evaluation of the existing MEC removal and investigation data indicates that the primary MEC release area (Area 9 Magazine H-65 Explosion) was cleared and investigation data across other portions of these areas, including Area 19, indicates that there is no risk for MEC. NJDEP's letter dated January 2, 2019 reiterates their position that Area 19 has not been sufficiently characterized for MEC.

Summary of Comments Received During the Public Comment Period:

No comments were received during the public comment period, including the public meeting.

3.2 Technical and Legal Issues

The public participation requirements set out in the NCP at 40 CFR 300.430(f)(3) have been met for former Areas 9 and 19. There were no significant technical or legal issues raised in the process of developing this Decision Document.

Part 4: References

CH2M HILL, Inc., 2013. *Final Community Relations Plan, Former Raritan Arsenal*. March.

CH2M HILL, Inc. (CH2M). 2016a. *Areas 9 and 19 Remedial Investigation Report, Former Raritan Arsenal, Edison, New Jersey*. June.

CH2M HILL, Inc. (CH2M). 2016b. *Memorandum for the Record, Issues of Non-Concurrence with NJDEP Remedial Investigation/Feasibility Studies, Former Raritan Arsenal, Edison, New Jersey*. March.

CH2M HILL, Inc. (CH2M). 2019. *Proposed Plan, Former Raritan Arsenal, Areas 9 and 19*. February.

Dames & Moore, Inc. (Dames & Moore), 1993. *Final Phase I Remedial Investigation of Select Areas of the Former Raritan Arsenal.* April.

Department of Defense. 2018. *DoD Manual 4715.20 DERP Management*. August.

Foster Wheeler. 2000. *Draft Final Engineering Evaluation/Cost Analysis, Former Raritan Arsenal*. April.

International Technology Corporation. 1992. *Former Raritan Arsenal Removal Action, Edison, New Jersey.* May.

Metcalf and Eddy, Inc. 1991. *Archives Search Report for Middlesex County College and Thomas A. Edison Park, Former Raritan Arsenal, Edison, New Jersey.* October.

Roy F. Weston, Inc. 1996a. *Final Report of Investigation, Former Raritan Arsenal, Area 19 Investigation.* August.

Roy F. Weston, Inc. 1996b. *Final Report of Investigation, Former Raritan Arsenal, Area 9 Investigation.* August.

United States Army Corps of Engineers (USACE). 2019. *Final Decision Document, Former Raritan Arsenal Groundwater and Vapor Intrusion Operable Unit, FUDS Project Number C02NJ0084-02*. May.

U.S. Environmental Protection Agency (USEPA). 1999. *Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents.* July.

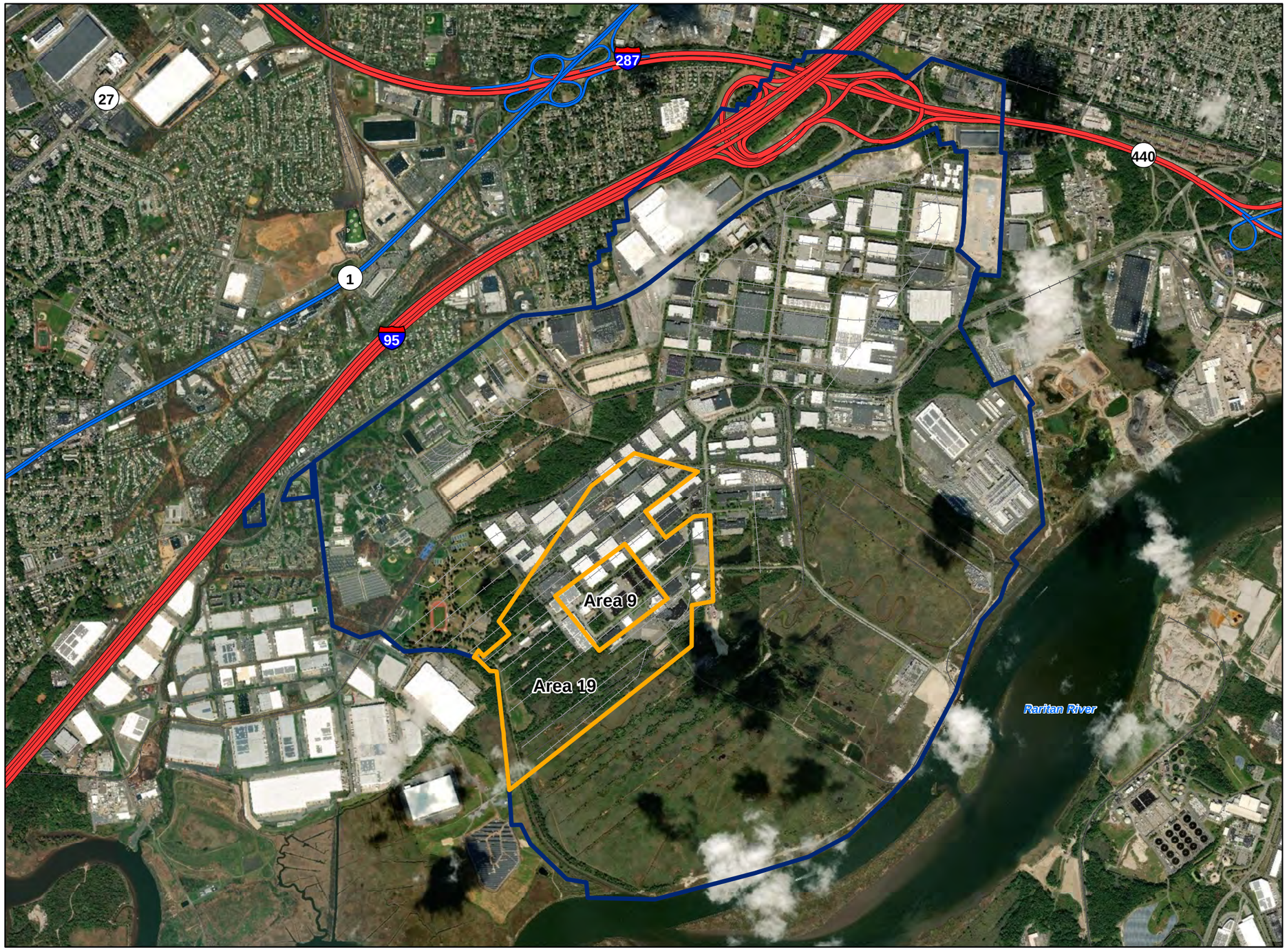
U.S. Environmental Protection Agency (USEPA). 2014. *Regional Screening Levels for Chemical Contaminants at Superfund Sites.* May. http://www.epa.gov/region9/superfund/prg/.

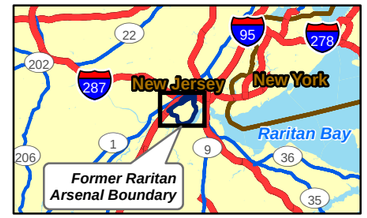
Weston Solutions, Inc. (Weston). 1996. *Final Site-Wide Hydrogeological Report Former Raritan Arsenal Phase II Remedial Investigation*. June.

Weston Solutions, Inc. (Weston). 2007. *Revised Draft Management Action Plan for the Former Raritan Arsenal, Edison, New Jersey.* January.

Weston Solutions, Inc. (Weston). 2008. *Baseline Ecological Risk Assessment Report, Former Raritan Arsenal, Edison, New Jersey.* March.

Figures





LEGEND

- Former Raritan Arsenal
- Area Boundary
- Railroads
- Historical Railroads

N

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Feet

Figure 2.1
Areas 9 and 19 General Site Location
Areas 9 and 19 Decision Document
Former Raritan Arsenal, Edison, NJ

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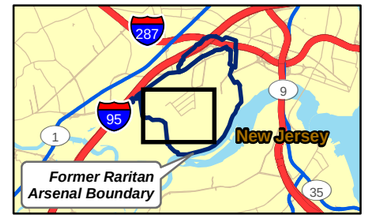

LEGEND

- Former Raritan Arsenal
- Area Boundary
- Historical Railroads

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0 400 800 1,600

Feet

Figure 2.2
Areas 9 and 19 General Site Layout
Areas 9 and 19 Decision Document
Former Raritan Arsenal, Edison, NJ

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Appendix A
NJDEP Comments on Proposed Plan

State of New Jersey

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Emergency Management Program
Mail Code 440-03
440 East State Street
Trenton, NJ 08625-0420
609-633-2168

CATHERINE R. MCCABE
Acting Commissioner

May 15, 2018

Helen K. Edge, Project Manager
Environmental, Interagency & International Services Branch
U.S. Army Corps of Engineers
New York District
26 Federal Plaza; Room 1811
New York, New York 10278-0090

Re: Draft Final Proposed Plan (PP) for Area 9 and 19
Former Raritan Arsenal
Woodbridge Avenue
Edison Township, Middlesex County, New Jersey
SRP PI# 006021

Dear Ms. Edge:

The New Jersey Department of Environmental Protection's (Department), Emergency Management Program has completed its review of the Draft Final Proposed Plan (PP), submitted by the United States Army Corps of Engineers (USACE) pursuant to the Department of Defense State Memorandum of Agreement (DSMOA) executed on April 3, 1992 and the Technical Requirements for Site Remediation at N.J.A.C. 7:26E. Please note that the Department's Emergency Management Program has only reviewed the munitions and explosives of concern (MEC) component of the referenced PP and is providing comments on same. Based on the review of the PP, the Department notes that the USACE has determined that a Feasibility Study (FS) was not required and therefore, the PP was compared to the Final Remedial Investigation (RI) Report.

The findings of the RI Report indicate a No Further Action recommendation. However, please note that the RI Report findings are contradicted by the Conceptual Site Model (CSM). Specifically, the following contradictions were identified:

- The RI Report CSM clearly states that a "minimal potential for MEC exposure" exists in Areas 9 and 19.
- CSM Figure 3-2 depicts a complete exposure pathway for surface MEC and a partially complete exposure pathway for subsurface MEC.

The PP correctly states, "Based on the previous investigations and removal actions, minimal potential exists for MEC exposure from the identified MEC release area (former magazine H-65)."

However, there is no discussion in the PP describing the complete exposure pathways for surface MEC and a partially complete exposure pathway for subsurface MEC. To ensure the public is presented with all the relevant information, the PP should address these CSM findings prior to the PP being accepted by the Department.

In addition, it is the Department's opinion that an FS is needed to formalize the standard "Raritan Land Use Controls (LUC)" as they are currently being implemented by Middlesex County for all Raritan Areas in which a MEC hazard exists to be protective of the public.

If you have any questions regarding these comments, please contact me at 973-631-6376 or at ralph.rodrigues@dep.nj.gov.

Sincerely,

Ralph Rodrigues,
New Jersey Department of Environmental Protection
Emergency Management Program

cc: Robert VanFossen, NJDEP/Emergency Management
Gary Pearson, NJDEP/Emergency Management
Anthony Cinque, NJDEP/Bureau of Case Management
Jay Elliot, Edison Health Department
Thomas Bourque, UXO Pro
Ms. Jean Leone, Summit Associates, Inc.
John Visceglia, Summit Associates, Inc.
Nicole Visceglia Rodgers, Federal Business Centers
John Orozco, Federal Business Centers

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK NEW YORK 10278-0090

20 November 2018

SUBJECT: Area 9 and 19 Munitions Response Site Prioritization Protocol and Proposed Plan, Former Raritan Arsenal, Edison, NJ

Mr. Ralph Rodrigues
State of New Jersey
Department of Environmental Protection
Emergency Management Program
Bureau of Emergency Response-North
7 Ridgedale Ave
Cedar Knolls, NJ 07927-1112

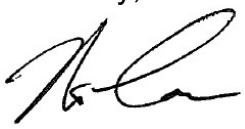
Dear Mr. Rodrigues:

Included are USACE's responses to comments provided by the State of New Jersey Department of Environmental Protection (NJDEP) on the Areas 9 and 19 Proposed Plan document in a letter dated May 15, 2018, and responses to comments provided by NJDEP on the Areas 9 and 19 Munitions Response Site Prioritization Protocol (MRSPP) document in a letter dated July 31, 2018. The comments did not result in any changes to the Proposed Plan or the MRSPP, but did result in changes to the RI Report dated April 2016; the associated page changes are provided to NJDEP for incorporation into Final RI Report copies.

Note that per direction from the USACE Environmental and Munitions Center of Expertise (EM-CX), the MRSPP is a living document and the Munitions Response Sites (MRSs) within the Raritan Arsenal Munitions Response Area (MRA) will be designated in the Formerly Used Defense Sites Management Information System (FUDSMIS) when the sites are further along in the CERCLA process.

If you have any additional questions and/or comments, please do not hesitate to contact me at matthew.t.creamer@usace.army.mil or (917) 790-8335.

Sincerely,



Mathew Creamer
Project Manager

RTC MEMORANDUM

CH2MHILL®

Responses to Comments received on the Draft Final Areas 9 and 19 Proposed Plan, Former Raritan Arsenal, Edison, New Jersey

PREPARED FOR: New Jersey Department of Environmental Protection

PREPARED BY: CH2M HILL

DATE: September 17, 2018

Provided below are our responses to comments provided by the State of New Jersey Department of Environmental Protection (NJDEP) on the referenced document in a letter dated May 15, 2018. The comments did not result in any changes to the Proposed Plan, but did result in changes to the RI Report dated April 2016; the associated page changes will be provided to NJDEP separately for incorporation into Final RI Report copies.

No.	Ref. Page / Para.	NJDEP Comments	Responses
General Comments			
1.	General	The findings of the RI Report indicate a No Further Action recommendation. However, please note that the RI Report findings are contradicted by the Conceptual Site Model (CSM). Specifically, the following contradictions were identified: • The RI Report CSM clearly states that a "minimal potential for MEC exposure" exists in Areas 9 and 19. • CSM Figure 3-2 depicts a complete exposure pathway for surface MEC and a partially complete exposure pathway for subsurface MEC. However, there is no discussion in the PP describing the complete exposure pathways for surface MEC and a partially complete exposure pathway for subsurface MEC. To ensure the public is presented with all the relevant information, the PP should address these CSM findings prior to the PP being accepted by the Department.	The MEC CSM and text of the RI has been revised for consistency in the RI document and with the Proposed Plan. Specifically, the CSM now shows that there are no complete exposure pathways to MEC at Areas 9 and 19. In addition, the text of the RI indicating that there is "minimal potential for MEC exposure" has been revised to read: *The data collected and evaluated from previous investigations and removal actions suggest that the MEC released during the explosion of former magazine H-65 has been removed so there is no longer an explosive hazard associated with Areas 9 and 19; therefore, a MEC Hazard Assessment was not required. Consequently, no action is recommended for MEC.* A revised CSM and changed text pages will be submitted to NJDEP separately for incorporation into the Final RI. No changes have been made to the Proposed Plan in response to this comment.

No.	Ref. Page / Para.	NJDEP Comments	Responses
2.	General	It is the Department's opinion that an FS is needed to formalize the standard "Raritan Land Use Controls (LUCs)" as they are currently being implemented by Middlesex County for all Raritan Areas in which a MEC hazard exists to be protective of the public.	See response to Comment 1 and Issue #2 of the Issues of Non-Concurrence with NJDEP Remedial Investigation/Feasibility Studies Memorandum for the Record dated March 22, 2016. The RI evaluated the area and determined it does not require any UXO support, concluding No Action. LUCs were therefore not included in the No Action Decision Document.

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Emergency Management Program
Mail Code 440-03
440 East State Street
Trenton, NJ 08625-0420
609-633-2168

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

CATHERINE R. McCABE
Commissioner

January 2, 2019

Matthew Creamer, Project Manager
Environmental, Interagency & International Services Branch
U.S. Army Corps of Engineers
New York District
26 Federal Plaza; Room 1811
New York, New York 10278-0090

Re: Proposed Plan (PP) for Area 9 and 19 Response to Comments (RTCs)
Former Raritan Arsenal
Woodbridge Avenue
Edison Township, Middlesex County, New Jersey
SRP PI# 006021

Dear Ms. Edge:

The New Jersey Department of Environmental Protection's (Department), Emergency Management Program has completed its review of the Response to Comments (RTCs) for the Proposed Plan (PP) for Area 9 and 19, submitted by the United States Army Corps of Engineers (USACE) pursuant to the Department of Defense State Memorandum of Agreement (DSMOA) executed on April 3, 1992 and the Technical Requirements for Site Remediation at N.J.A.C. 7:26E. The RTCs were provided in response to the Department's May 15, 2018 Comment Letter. Please note that based on the Department's Emergency Management Program's review of the RTCs to the PP, the Department finds the responses unacceptable. Below are the Department's comments and justification for not concurring with the RTCs provided.

Please note that the Remedial Investigation (RI) Report for Area 9 and 19 has not been accepted by the Department to date. The Department's comments identifying the need for a munitions and explosives of concern (MEC) hazard assessment and a Feasibility Study (FS) with the intent to implement Land Use Controls (LUCs) remains unresolved. Specifically, the Department has concerns that potential MEC hazards are present in these areas of the property, which would require LUCs at a minimum. The USACE RTCs recommend revising the RI Conceptual Site Model (CSM) language to omit the "minimal potential MEC exposure" in this area and negate the need for LUCs. This is unacceptable.

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Please note that the Department performed an additional review of the RI Report to provide an assessment as to the reasons why the USACE and NJDEP initially deemed a potential MEC hazard existed during the original drafting of the RI Report and if it was now appropriate to delete the remaining MEC hazard by revising the RI Report as recommended by USACE in its RTCs.

Based on the Department's review, Area 9 has been the primary focus of the MEC cleanup operations and investigations for Area 9 and 19 and the Department is of the opinion that Area 9 has been fully characterized and is in agreement that a MEC hazard in Area 9 is not likely to exist. However, Area 19 has not received the same level of effort to characterize the site with only 2.4 acres of its 291 acres investigated for MEC. The grid investigation completed for Area 19 was not homogeneous with respect to characterizing the site for MEC scattered by a magazine explosion in a 360-degree pattern. In addition, Area 19 was used as an ammunition storage area and the previous investigations did not investigate all the areas in which munitions were stored. The grid investigation did not appear to have taken into consideration that military munitions may have been buried within the immediate areas of each of the magazines. There is significant evidence throughout the former Raritan Arsenal that the burying of munitions was a practice used to dispose of military munitions (e.g., five-concrete capped barrels containing 1,700 ordnance items were unearthed in Area 10, Parts I and II and munitions burial sites were uncovered in Area 16, both areas border Area 19, etc.).

The lack of an investigation designed to ensure the homogeneous sampling of Area 19 and the focused investigation in areas surrounding all the magazine locations resulted in uninvestigated sectors of Area 19 and a level of uncertainty that the site has been properly characterized. Since the site has not been characterized, the degree in which site users are exposed to a MEC hazard can't be reliably determined.

The Department notes that the RI Report indicates the existence of a "minimal potential for MEC exposure" (as documented by the MEC CSM and throughout the document text) and underscores the lack of certainty due to the lack of sampling to characterize the site. Due to this lack of certainty, Area 19 either requires further investigation in the areas where data gaps exist or requires a FS to determine the proper remedy for Area 19.

The Department again reiterates that the solution to this problem is to formalize the standard "Raritan LUCs" as they are currently being implemented by Middlesex County. This will provide the needed reinforcement for continuing to implement the "Raritan LUCs" and help ensure that they are periodically reviewed for protectiveness and updated if appropriate. Please note that carrying all Raritan Arsenal sites forward to the FS is necessary to document the remedy as implementation of the "Raritan LUCs" and to ensure the implementation and continued effectiveness of this selected remedy.

Therefore, as noted above, the Department rejects the RTCs provided by the USACE. Changing the RI Report CSM and removing the MEC exposure language from the RI Report to meet the USACE desired narrative for the PP is not appropriate. Please address the Department's concerns regarding Area 19 accordingly.

Please note that the Department is in receipt of the RTCs provided by the USACE for the Munitions Response Site Prioritization Protocol (MRSPP) for Area 9 and 19. Based on the above concerns related to Area 19, the Department will defer its review and comments of the MRSPP RTCs until the issues herein are addressed.

If you have any questions regarding these comments, please contact me at 973-631-6376 or at ralph.rodrigues@dep.nj.gov.

Sincerely,

Ralph Rodrigues,
New Jersey Department of Environmental Protection
Emergency Management Program

cc: Robert VanFossen, NJDEP/Emergency Management
Gary Pearson, NJDEP/Emergency Management
Scott Vondy, NJDEP/Bureau of Case Management
Jay Elliot, Edison Health Department
Thomas Bourque, UXO Pro
Ms. Jean Leone, Summit Associates, Inc.
John Visceglia, Summit Associates, Inc.
Nicole Visceglia Rodgers, Federal Business Centers
John Orozco, Federal Business Centers