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FINAL RECORD OF DECISION FOR SITE 7 LANDFILL SOUTH OF "P" BARRICADES OPERABLE UNIT 10 (OU 10) NWS EARLE NJ

09/01/2010

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RECORD OF DECISION

SITE 7-LANDFILL SOUTH OF "P" BARRICADES
OPERABLE UNIT 10

NAVAL WEAPONS STATION EARLE, COLTS NECK, NEW JERSEY

NAVFAC
Naval Facilities Engineering Command

NAVAL WEAPONS STATION EARLE
COLTS NECK, N.J.

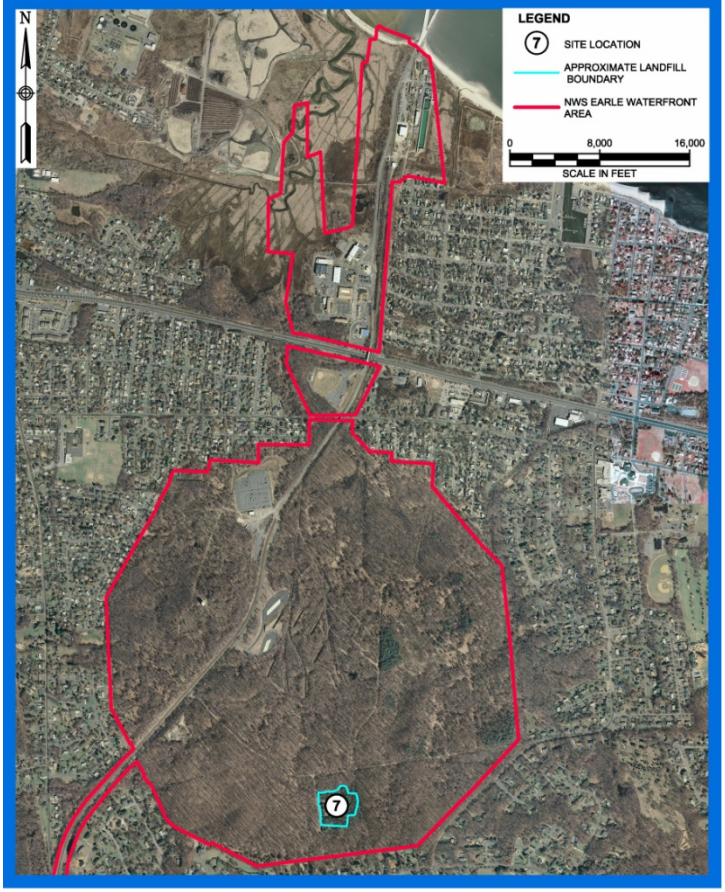
SEPTEMBER 2010

1.0 DECLARATION

1.1 SITE NAME AND LOCATION

Site 7 – Landfill South of "P" Barricades, Operable Unit (OU) 10 at Naval Weapons Station (NWS) Earle, Colts Neck, New Jersey, United States Environmental Protection Agency (EPA) ID number NJ0170022172.

FIGURE 1-1. SITE LOCATION MAP



1.2 STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) presents the Selected Remedy for Site 7 (see Figure 1-1), which was selected by the United States Navy (Navy) and EPA in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), 42 U.S.C. §§9601, et seq, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on information contained in the Administrative Record for the site. The New Jersey Department of Environmental Protection (NJDEP) concurs with the Selected Remedy.

1.3 DESCRIPTION OF SELECTED REMEDY

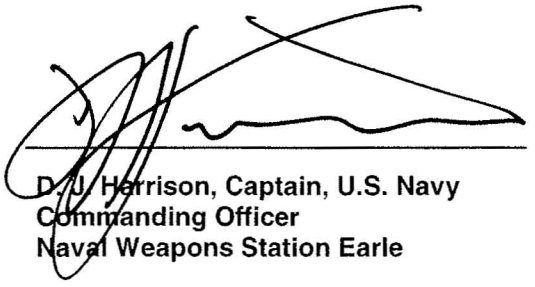
The Navy and EPA, in consultation with the NJDEP, have determined that a CERCLA remedial action is not necessary at Site 7 to protect the public health and welfare or the environment from actual or threatened releases of hazardous substances, pollutants, or contaminants into the environment. No action (NA) is the Selected Remedy for Site 7.

1.4 STATUTORY DETERMINATIONS

No threats to human health or the environment have been identified at Site 7; therefore, no remedial action is required. This NA determination meets the requirements of CERCLA Section 121 and the NCP. Because no hazardous substances, pollutants, or contaminants are present at the site in excess of levels that allow for unlimited use and unrestricted exposure, five-year reviews are not required.

The Selected Remedy will allow for the reasonably anticipated future land use, which is non-residential. This ROD documents the final remedy for Site 7 and does not include or affect any other sites at NWS Earle.

1.5 AUTHORIZING SIGNATURES



08 OCT 10

D. J. Harrison, Captain, U.S. Navy
Commanding Officer
Naval Weapons Station Earle

Date

John S. Fusco

11/12/10

Walter Mugdan, Director
Emergency Remedial Response Division
U. S. Environmental Protection Agency,
Region 2

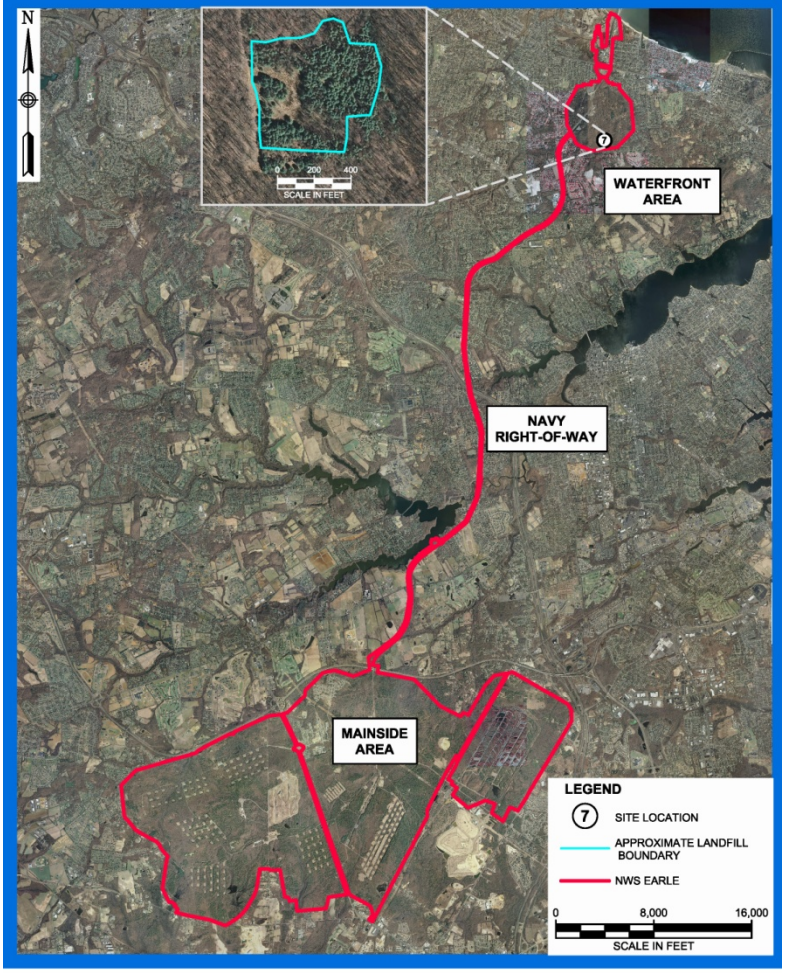
Date

2.0 DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND BRIEF DESCRIPTION

NWS Earle, EPA ID number NJ0170022172 is located in Monmouth County, New Jersey, approximately 47 miles south of New York City. Commissioned in 1943, the primary mission of NWS Earle is to supply ammunition to the Atlantic Fleet. The station consists of two areas, the 10,248-acre Main Base (Mainside area), located inland, and the 706-acre Waterfront Area. The two areas are connected by a 10-mile-long corridor that serves as a right-of-way for a government road and rail line (see Figure 2-1).

FIGURE 2-1. SITE 7 LOCATION



The Mainside area is located in Colts Neck Township and consists primarily of a large area specially developed for ordnance handling operations including production and storage; the area is encumbered by explosive safety quantity distance (ESQD) arcs. Other land use in the Mainside area consists of residences, offices, workshops, warehouses, recreational space, open space, and undeveloped land. The Waterfront Area, approximately 20 percent of which is considered marshland, is located in Middletown Township. The surrounding land use is commercial and single-family residential. Munitions and other supplies destined for Navy ships are transported through the 10-mile-long right of way from the Mainside to the Waterfront Area and to waiting ships at piers located in the Lower Hudson River Bay near Sandy Hook, New Jersey. Site 7 is located in the southern portion of the Waterfront Area known as Chapel Hill.

Site 7, the Landfill South of "P" Barricades, is approximately 5 acres in size based on a 1974 EPA Environmental Photographic Interpretation Center (EPIC) aerial photograph and 2009 test pit investigation. From 1965 to 1977, the site was used for disposal of municipal-type solid waste and waste from Waterfront industrial operations. **Wastes** reportedly consisted of munitions shipping wastes and dunnage (lumber used to secure and space a ship's cargo during transport), shop wastes from the Waterfront Public Works Shop and Munitions Handling Laboratory (glass, wood, small quantities of waste paint, thinners, and solvents), and domestic refuse. The landfill materials were covered with a thin to non-existent layer of loose sand quarried from the surrounding area. Based on the extent of disturbance depicted in the 1974 EPIC photograph and the average thickness of waste encountered during a 1991 test pit investigation, approximately **19,800 cubic yards** of waste materials may be present at the site. The immediate areas surrounding Site 7 are heavily wooded. An unpaved road borders the landfill to the north. Other earthen and grass covered roads are located along the western and southern perimeters of the site. The ground surface slopes downward to the north from approximately 145 feet above mean sea level (msl) near monitoring well MW07-03 to approximately 125 feet msl near MW07-02. Figure 2-2 details the current site layout.

NWS Earle is an active facility, and environmental investigations and remediations at the base are funded under Environmental Restoration, Navy (ER,N). The Navy is the lead agency for CERCLA activities at the facility, and EPA and NJDEP are support agencies.

FIGURE 2-2. SITE 7 LANDFILL SOUTH OF "P" BARRICADES

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

Table 2-1 provides brief summaries of previous investigations at Site 7. Previous investigations found that approximately 5 acres of the site were used for the disposal of municipal-type solid waste and waste from Waterfront industrial operations. During the Phase I RI **test pit investigation**, a layer of trash ranging in thickness from 2.5 to 6 feet was encountered in the majority of test pits, and **cover material** was thin to non-existent. No detailed records regarding the construction of the landfill exist; however, no underlying liner appears to be present and only a thin to non-existent layer of soil covers the landfill waste materials. **Groundwater** was sampled during several different investigations as outlined in Table 2-1. Groundwater sample results were compared to EPA Maximum Contaminant Levels (MCLs) and NJDEP Groundwater Quality Standards (GWQS). A shallow (0 to 6 inches) soil sample was collected during the Phase II RI north of the landfill edge to determine potential impacts to downgradient surface soils. The sample was collected from a broad drainage way and for purposes of the Phase II RI and HHRA was considered as a sediment sample. The sample is now correctly viewed as a surface soil sample.

TABLE 2-1. PREVIOUS INVESTIGATIONS AND SITE DOCUMENTATION

INVESTIGATION	DATE	ACTIVITIES
Initial Assessment Study	1983	Site-wide survey that identified 29 areas of concern at NWS Earle based on employee interviews, record searches, and site tours. No sampling was conducted, and Site 7 was not recommended for a confirmation study.
Confirmation Study	1986	Three groundwater monitoring wells were installed around the site perimeter, and samples were collected and analyzed for inorganic and organic compounds. Acetone and di-n-butylphthalate were detected at concentrations slightly less than their respective NJDEP groundwater quality standards (GWQS). Further groundwater sampling for volatile organic compounds was recommended.
Phase I Remedial Investigation (RI)	1991-1992	Seven test pits were excavated, and soil samples were collected from two of the test pit locations to obtain a physical description of landfill cover and waste material and obtain samples for chemical analyses. No inorganics or organics were detected in the test pit samples at concentrations exceeding the current criteria for NJDEP residential direct contact, non-residential direct contact, or impact to groundwater. Groundwater samples were collected from five wells (three existing and two newly installed) during three sampling events. Beryllium, cadmium, chromium, iron, lead, and manganese were detected at maximum concentrations exceeding GWQS and EPA Maximum Contaminant Levels (MCLs). 1,1,2,2-Tetrachloroethane and 1,1,2-trichloroethane were detected in one well at concentrations that exceeded GWQS.
Phase II RI	1995-1996	The majority of all samples collected from site related wells had concentrations of inorganics which were lower than the GWQS and the MCL for each such inorganic. For example, concentrations of most metals in Site 7 groundwater were within the range of background results. Aluminum and iron were detected in excess of GWQS and background concentrations. Manganese was detected in one well at a concentration less than the background concentration but greater than its GWQS. Thallium was detected in one well in excess of its GWQS. No volatile organic compounds were detected above GWQS. A shallow (0 to 6 inches below ground surface) soil sample was collected north of the landfill edge to determine potential impacts to downgradient surface soil. The sample was collected from a broad drainage way, and for purposes of the Phase II RI and HHRA, was considered as a sediment sample. The sample is now correctly viewed as a soil sample. No organic compounds were detected in surface soil or surface water (small stream approximately 500 feet north of the site).
April 2005 Groundwater Sampling	2005	Site monitoring wells were sampled and analyzed for aluminum, iron, manganese, thallium, 1,1,2-trichloroethane, benzene, chlorobenzene, and chloroform. Aluminum was detected in only one of the five site monitoring wells. It was detected in the sidegradient well MW07-05 at a concentration that exceeded the GWQS. Iron was detected in only two wells at

TABLE 2-1. PREVIOUS INVESTIGATIONS AND SITE DOCUMENTATION		
INVESTIGATION	**DATE**	**ACTIVITIES**
		concentrations that exceeded GWQS; however, the concentration detected in downgradient well MW07-04 was less than the concentration in the sidegradient well (MW07-05). Manganese was detected in one upgradient well and one downgradient well at concentrations exceeding the GWQS (wells MW07-03 and MW07-02, respectively). The manganese concentration detected in the downgradient well was significantly less than the concentration in the upgradient well. Thallium, which was detected in one well during the Phase II RI, was not detected in any of the April 2005 samples. No organic compounds were detected at concentrations that exceeded GWQS or MCLs. Groundwater was the only medium sampled during the April 2005 investigation.
Feasibility Study (FS)	2008	Based on the results of the RI and subsequent sampling, potential alternatives to address landfill waste materials were developed and evaluated. Following issuance of the FS, NJDEP requested an additional groundwater investigation to define the vertical extent and presence of certain volatile organic compounds (VOCs) immediately adjacent to, and downgradient of the landfill.
July 2009 Groundwater Sampling	2009	Discrete-interval groundwater sampling was conducted at two locations downgradient of the landfill with analysis for benzene, chlorobenzene, chloroform, and 1,1,2-trichloroethane, contaminants which had previously been detected in site groundwater. Benzene and chloroform were the only compounds detected; they were detected at estimated concentrations slightly greater than method detection limits and significantly less than their respective GWQS and MCLs. Concentrations detected did not increase or vary significantly with increasing depth below ground surface.
August 2009	2009	Wetland evaluation and test pit investigation were conducted by the Navy. The wetland evaluation was focused on the surface of the landfill where heavy grasses and tall reeds were present. Based on the evaluation no wetlands are present within the Site 7 boundary. The test pit investigation was conducted to determine the limits of the buried waste materials. The landfill outline is shown on Figure 2-2.

There have been no cited violations under federal or state environmental law or any past or pending enforcement actions pertaining to the cleanup of Site 7.

2.3 COMMUNITY PARTICIPATION

The Navy has performed public participation activities in accordance with CERCLA and the NCP throughout the CERCLA site cleanup process at NWS Earle. The Navy has a comprehensive community relations program for NWS Earle, and community relations activities are conducted in accordance with the NWS Earle Community Relations Plan. These activities include technical and Restoration Advisory Board (RAB) meetings with local officials and the establishment of an Information Repository at the local library for dissemination of information to the community. The public participation activities conducted by the Navy in accordance with CERCLA meets the requirements for Notification and Public Outreach as outlined by NJDEP for site remediation.

The Navy organized a RAB in 1995 to review and discuss NWS Earle environmental issues with local community officials and concerned citizens. The RAB consists of representatives of the Navy, EPA, NJDEP, and members of the community. The RAB has met periodically since its inception. The NWS Earle Information Repository is located at the Monmouth County Library – Eastern Branch, 1001 Route 35, Shrewsbury, New Jersey. Documents and other relevant information relied on in the remedy selection process are available for public review at the Information Repository, which includes a copy of the Administrative Record. For access to the Administrative Record or additional information about the Environmental Restoration Program at NWS Earle, contact the NWS Public Affairs Office, Building C-2, 201 Highway 34 South, Colts Neck, NJ, 07722.

In accordance with Sections 113 and 117 of CERCLA, the Navy provided a public comment period from August 20 to September 19, 2010, for the proposed NA described in the Proposed Plan for Site 7. A public meeting to present the Proposed Plan was held on September 14, 2010, at the Monmouth County Library Headquarters, Manalapan, New Jersey. **Public notice** of the meeting and availability of documents was published in the Asbury Park Press on August 20 through August 22, 2010.

2.4 SCOPE AND ROLE OF OPERABLE UNIT

Site 7 is part of a comprehensive environmental investigation and cleanup program currently being performed at NWS Earle under CERCLA authority pursuant to the Federal Facility Agreement (FFA) signed by the Navy in December 1990. Navy Environmental Restoration Program (NERP) cleanup activities are being performed under CERCLA, except at those sites that are subject to Resource Conservation and Recovery Act (RCRA) regulations or the NJDEP Underground Storage Tank (UST) program. Site 7 has been identified by EPA as OU 10 and is one of the 27 IR sites that have been identified at NWS Earle. RODs for OUs 1 through 9 have been finalized and signed by the Navy and EPA. The Site Management Plan (SMP) for NWS Earle further details the IR sites, OU designations, ROD issuance dates (if applicable), and schedule for post-ROD activities. The SMP is updated by the Navy on a regular basis.

No remedial actions are required at Site 7 because no unacceptable risks to human health or the environment were identified.

2.5 SITE CHARACTERISTICS

Figure 2-3 presents the Site 7 conceptual site model (CSM), which identifies potential contaminant sources, contaminant release mechanisms, transport routes, and receptors under current and future land use scenarios. The primary contaminant release and transport mechanisms include infiltration of precipitation through the waste materials into the underlying groundwater. Due to the presence of vegetation over much of the landfill surface, runoff and erosion of waste material constituents is also a release and transport mechanism but to a much lesser extent. Human health and ecological receptors are discussed in Sections 2.7.1 and 2.7.2, respectively.

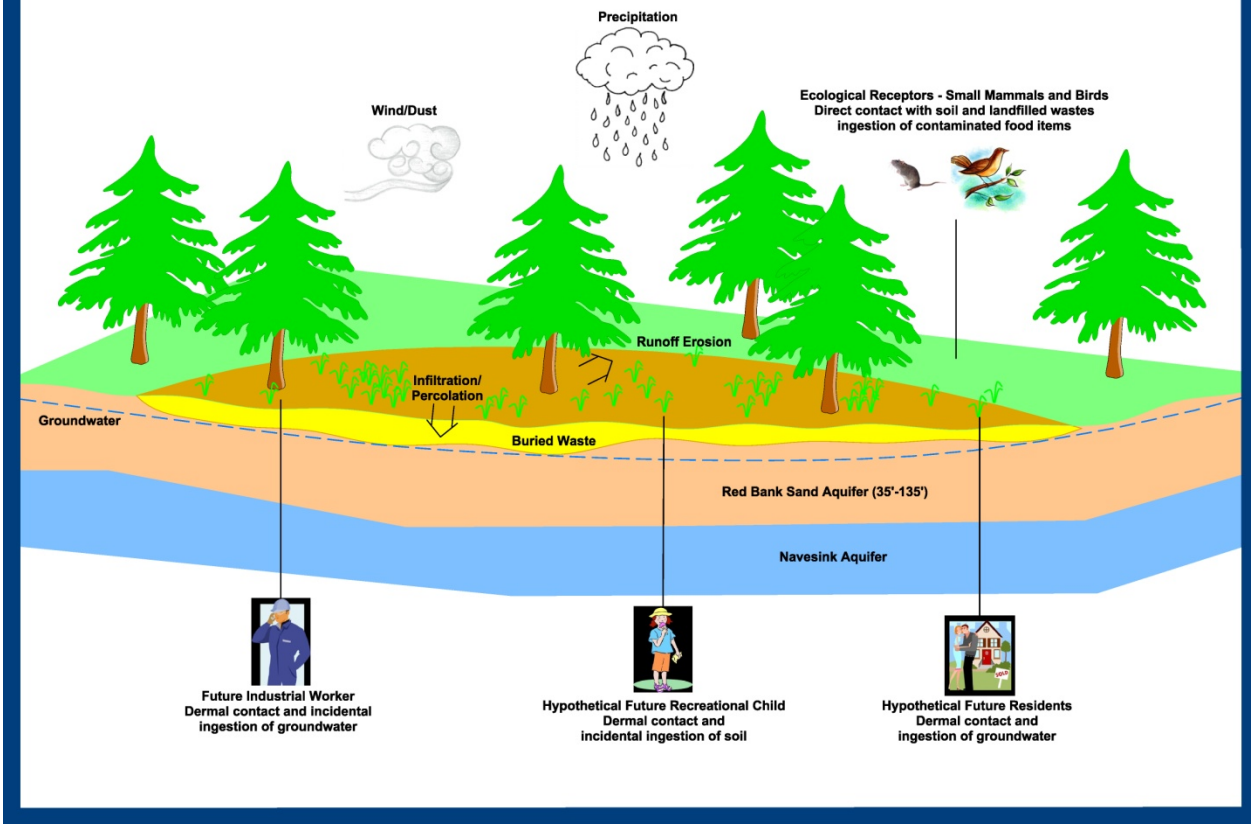
2.5.1 Physical Characteristics

The immediate areas surrounding Site 7 are heavily wooded. An unpaved road borders the site to the north and other earthen and grass-covered roads are located along the western and southern perimeters of the site. The topography at Site 7 is relatively level, although the site surface slopes to the north from approximately 145 feet above mean sea level (msl) near MW07-03 to approximately 125 feet above msl near MW07-02.

Site 7 is located within the outcrop area of the Red Bank Sand and Navesink formations, ranging in thickness from 35 to 135 feet. Groundwater in the Red Bank Sand and Navesink aquifer beneath the site occurs under unconfined conditions and the formations are interpreted to be hydraulically interconnected. Shallow groundwater flow direction is to the north to Sandy Hook Bay. The static water level beneath the site varies to some extent with the seasons and local precipitation patterns. Beneath Site 7, the average depth to water from the ground surface was approximately 15 feet. The closest surface water body is located approximately 1,500 feet west of the site; there are no surface water bodies located downstream of the site.

During a 1991-1992 test pit investigation, waste materials at Site 7 were encountered from the surface to depths of 3.5 to 6 feet below the existing grade. Groundwater or saturated wastes were not encountered during the test pit investigation.

FIGURE 2-3. SITE 7 CONCEPTUAL SITE MODEL



2.5.2 Nature and Extent of Contamination

Soil

During the 1991-1992 Phase I RI test pit investigation, soil samples were collected from two of the seven test pits and submitted for analysis. No inorganic or organic compounds were detected at concentrations above NJDEP residential and non-residential soil cleanup criteria or impact-to-groundwater criteria.

No organics were detected in a surface soil sample collected during the Phase II RI just north of the approximate landfill boundary.

Surface Water

As part of the 1995-1996 Phase II RI, one surface water sample was collected from a tributary within the Wagner Creek Watershed. No organic compounds were detected in the sample, and all other parameters were within the ranges of background concentrations.

Groundwater

Results evaluated in the 1995-1996 RI indicated that concentrations of most inorganics in Site 7 groundwater were within the ranges of the site upgradient well and NWS Earle background well results. Thallium was detected at a low concentration in one groundwater sample. The April 2005 sampling results indicated that aluminum was not detected in four of the five site monitoring wells. The aluminum

concentration detected in a sidegradient well (MW07-05) exceeded the GWQS. Iron was detected in only two wells, MW07-04 and MW07-05, at concentrations that exceeded the GWQS. However, the iron concentration in well MW07-04 was lower than the concentration detected in sidegradient well MW07-05. Thallium was not detected in groundwater in April 2005. Several VOCs were detected in groundwater samples evaluated during the RI; however, only chlorobenzene at 11 micrograms per liter (µg/L) exceeded then-current GWQS and MCL criteria. In 2005, the GWQS for chlorobenzene was increased to 50 µg/L. None of the VOCs analyzed in April 2005 exceeded their respective GWQS or MCLs.

The Navy conducted a groundwater discrete-interval sampling investigation in July 2009 for the purpose of determining the presence/absence and possible vertical extent of chlorobenzene, benzene, chloroform, and 1,1,2-trichloroethane, which had previously been detected in groundwater. Chlorobenzene and 1,1,2-trichloroethane were not detected in any of the groundwater samples. Benzene was detected in four of the discrete interval samples at estimated concentrations, less than the GWQS and the MCL. Likewise, chloroform was detected in one of the discrete-interval samples at an estimated concentration, significantly less than the GWQS.

2.6 CURRENT AND POTENTIAL FUTURE SITE AND RESOURCES USES

NWS Earle is an active Navy facility and is expected to remain active for the foreseeable future. The primary mission of the facility is to supply ammunition to the Atlantic Fleet.

Site 7 is located in the southern portion of the Waterfront Area in a heavily wooded area. The Navy currently does not use Site 7 and does not have any plans to change its current non-use status.

Groundwater classification areas are established in New Jersey under the Groundwater Quality Standards in New Jersey Administrative Code (N.J.A.C.) 7:9C. The Waterfront Area, including Site 7 is located in a Class II-A: Groundwater Supporting Potable Water Supply area. Currently, groundwater underlying Site 7 is not used for drinking water and is not expected to be used in the future. The various buildings and facilities located in the Waterfront Area are connected to a public water supply (New Jersey American Water Company). A Classification Exception Area (CEA) designation for the groundwater beneath Site 7 will not be required.

2.7 SUMMARY OF SITE RISKS

2.7.1 Summary of Human Health Risk Assessment

As part of the 1995-1996 Phase II RI, a **human health risk assessment** (HHRA) and ecological risk screening were performed. The HHRA concluded that soil did not present an unacceptable risk to current or potential users. However, the HHRA concluded that groundwater posed an unacceptable non-carcinogenic risk for the hypothetical future resident reasonable maximum exposure (RME) scenario. The RME groundwater exposure scenario for the hypothetical industrial worker resulted in no unacceptable non-carcinogenic risk. For both the future resident and future industrial worker exposure scenarios the RME carcinogenic risks were within EPA's target acceptable risk range. The RME future recreational child surface soil exposure scenario resulted in a RME calculated acceptable risk for both carcinogenic and non-carcinogenic risks. Table 2-2 summarizes the **hypothetical future exposure pathways** at Site 7 and Table 2-3 summarizes the calculated RME and central tendency exposure (CTE) carcinogenic and non-carcinogenic risks as outlined in the RI.

TABLE 2-2. RECEPTORS AND EXPOSURE ROUTES EVALUATED IN HHRA

Receptor	Exposure Routes
Future Industrial Workers	Groundwater ingestion Groundwater dermal contact
Future Residents	Groundwater ingestion Groundwater dermal contact
Future Recreational Child Receptors	Surface soil ingestion Surface soil dermal contact

TABLE 2-3. SUMMARY OF ESTIMATED POTENTIAL HUMAN HEALTH RISKS (1995-1996 RI)

Receptor	Medium	Pathway	RME		CTE	
			Cancer Risk	Non-Cancer HI	Cancer Risk	Non-Cancer HI
Future Industrial Worker	Groundwater	Ingestion	$1x10^{-5}$	0.47	---	---
		Dermal	$4.2x10^{-7}$	0.0047	---	---
		Total	$1.1x10^{-5}$	0.47	---	---
Future Resident Adult	Groundwater	Ingestion	$1.5x10^{-6}$	NA	---	---
		Dermal	$3.3x10^{-7}$	NA	---	---
		Inhalation	$3.5x10^{-6}$	0.10		---
		Total	$5.3x10^{-6}$	0.10	---	---
Future Resident Child	Groundwater	Ingestion	NA	3.0	NA	1.4
		Dermal	NA	0.15	---	0.098
		Inhalation	NA	NA	---	---
		Total	NA	3.1	---	1.5
Future Recreational Child	Surface Soil	Ingestion	$1.9x10^{-7}$	0.006	---	---
		Dermal	$8x10^{-9}$	0.0015	---	---
		Total	$2x10^{-7}$	0.0075	---	---

--- CTE cancer or non-cancer risk was either not required or not applicable.
NA - Not applicable

The Phase II HHRA identified chemicals of potential concern (COPCs) that were the principal inorganics or organics contributing to the RME calculated risks. The principal COPCs that were identified as contributing to the calculated risk were thallium, 1,1,2-TCA, benzene, and chloroform. Thallium was detected in one of the five sampled wells during the 1995-1996 Phase II RI, but was not detected in any of the five site monitoring wells during the April 2005 groundwater sampling event. 1,1,2-TCA, benzene, and chloroform were not detected at levels exceeding GWQS or MCLs during the April 2005 sampling event.

The Navy performed a review of the human health risk assessment conclusions as part of the 2008 FS. As a result of that review, it was concluded that the major findings presented in the Phase II RI HHRA would not change. In 2009, the Navy conducted an additional groundwater investigation to further define the absence/presence and possible vertical extent of organic COPCs at the Site. The results of this investigation are summarized in Appendix A. Appendix A also presents a summary of the analytical results from the Phase II RI and April 2005 sampling events, and provides current human health screening levels and EPA and NJDEP drinking water and groundwater criteria for comparison.

The Navy, EPA, and NJDEP reviewed and evaluated the combined Site 7 groundwater analytical results, as presented in Appendix A, and concluded that Site 7 groundwater does not present an unacceptable risk to human health. Aluminum, iron, and manganese are not present in Site 7 groundwater at concentrations above health-based screening levels. The EPA secondary MCLs for these three inorganics are aesthetic-based and the GWQS are not risk-based. Thallium was detected in one well during the Phase II RI at a level above the MCL and GWQS. However, it was not detected in the other four wells sampled during the Phase II RI and was not present in any of the samples collected from the five site monitoring wells in April 2005. Organic compounds identified as COPCs in the Phase II RI were infrequently detected and when detected, were present at estimated concentrations at or near the detection limit. All detections were significantly below MCLs and when compared to EPA regional screening levels (RSLs) would result in risks estimated in the 10^{-5} to 10^{-6} range. Based on the Site 7 groundwater results and comparison to current human health criteria, the Navy and EPA, with concurrence from the NJDEP, have determined that a CERCLA remedial action is not warranted for Site 7 groundwater.

2.7.2 Summary of Ecological Risk Assessment

As part of the 1995-1996 RI, the Navy conducted a **screening-level ecological risk assessment** at Site 7. Ecological risks were estimated using hazard quotients (HQs), where an HQ exceeding 1 is considered an indicator of potential concern. The only inorganic detected at a concentration exceeding its ecological screening value (ESV) was arsenic in a moist surface soil sample collected in the forested area near the northern edge of the landfill where any off-site overland runoff from the landfill would likely occur. Because the soil in this area was moist due to recent rainfall, the sample was compared to sediment criteria in the RI. No organic compounds were detected in the moist soil sample. Aluminum and vanadium were conservatively retained as final COPCs because ESVs were not available, but concentrations of both inorganics were less than background concentrations.

Due to the extended time period between completion of the 1995-1996 RI and the 2008 FS, potential risks to plants, soil invertebrates, mammals, and birds resulting from exposure to chemicals in the moist surface soil sample were re-evaluated by comparing chemical concentrations to Ecological Soil Screening Levels (Eco-SSLs) developed by EPA (EPA, 2005a and supporting documents). Lead and vanadium were detected at concentrations that slightly exceeded their respective avian Eco-SSLs but were less than maximum detected background concentrations.

2.7.3 No Action Determination

The overall objective for the remediation of CERCLA sites is to protect human health and the environment from current or future risks posed by the site. Based on the baseline HHRA, the ecological risk assessment, the April 2005 and July 2009 groundwater sampling events and the current and reasonably anticipated future use of the site, no CERCLA remedial action is warranted for Site 7 environmental media.

2.8 DOCUMENTATION OF SIGNIFICANT CHANGES

CERCLA Section 117(b) requires an explanation of significant changes from the selected remedy presented in the Proposed Remedial Action Plan that was published for public comment. No significant changes to the remedy, as originally identified in the Proposed Remedial Action Plan, were necessary or appropriate.

3.0 RESPONSIVENESS SUMMARY

3.1 STAKEHOLDER COMMENTS AND LEAD AGENCY RESPONSES

Participants in the public meeting held on September 14, 2010, included representatives of the Navy, EPA, and NJDEP. Questions and concerns raised at the meeting were addressed at the meeting, as summarized in Table 3-1. One written comment was received by the Navy during the public comment period. The comment letter concurred with the selected remedy; therefore, no response from the Navy was required.

TABLE 3-1. SUMMARY OF QUESTIONS FROM PUBLIC INFORMATION SESSION

Question	Response
A member of the public asked about NJDEP approval of the remedy for Site 7. Will it be risk-based or some other basis?	Ms. Bergman (NJDEP) explained that NJDEP is reviewing the type of response to the 1996 human health and ecological risk assessments and the 2008 re-review. However, the GWQS are based on human health risks and the remedy had to meet these in order to not have to do any action.
A member of the public asked if there were any soil contaminants above residential standards.	Ms. Mang (Tetra Tech, Navy Contractor) explained that surface soil and test pit soil samples were collected and that no results posed a risk to human health or the environment.
A member of the public asked if a CEA, or anything like that, would be established for groundwater.	Ms. Bergman (NJDEP) explained that a CEA was discussed, however, it is NJDEP's opinion that a CEA for iron and aluminum is not required because they do not appear to be a site-related release. It has been determined that they can be attributed to naturally occurring background conditions.

3.2 TECHNICAL AND LEGAL ISSUES

No technical or legal issues associated with the Site 7 ROD were identified.

Acronyms

ACRONYMS

CEA	Classification Exception Area
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COPC	Chemical of Potential Concern
CSM	Conceptual Site Model
CTE	Central Tendency Exposure
Eco-SSL	Ecological Soil Screening Level
EPA	United States Environmental Protection Agency
EPIC	Environmental Photographic Interpretation Center
ER,N	Environmental Restoration, Navy
ESQD	Explosive Safety Quantity Distance
ESV	Ecological Screening Value
FFA	Federal Facility Agreement
FS	Feasibility Study
GWQS	Ground Water Quality Standard
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
MCL	Maximum Contaminant Level
msl	mean sea level
NA	No Action
NCP	National Contingency Plan
NERP	Navy Environmental Restoration Program
NJDEP	New Jersey Department of Environmental Protection
NWS	Naval Weapons Station
OU	Operable Unit
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act

RI	Remedial Investigation
RME	Reasonable Maximum Exposure
ROD	Record of Decision
RSL	Regional Screening Level
SARA	Superfund Amendments and Reauthorization Act
SMP	Site Management Plan
µg/L	microgram per liter
UST	Underground Storage Tank
VOC	Volatile Organic Compound

General References

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Detailed Reference Table

DETAILED REFERENCE TABLE

Item	Reference Phrase in ROD	Location in ROD	Location of Information in Administrative Record
1	19,800	Section 2.1	Feasibility Study for Site 7 Landfill South of "P" Barricades (OU 10). Section 2.7.1, page 2-15. Tetra Tech, 2008.
2	test pit investigation	Section 2.2	Installation Restoration Program Remedial Investigation/ Feasibility Study for 11 Sites at NWS Earle, Colts Neck, NJ. Pages 3-16, 4-52 to 4-55, Table A-4. Weston, 1993.
3	cover material	Section 2.2	Remedial Investigation Report for Naval Weapons Station Earle, Colts Neck, New Jersey. Section 10, page 10-1. B&RE, 1996.
4	Groundwater	Section 2.2	Feasibility Study for Site 7 Landfill South of "P" Barricades (OU 10). Section 1.3, pages 1-8 through 1-11. Tetra Tech, 2008.
5	public notice	Section 2.3	Public Notice for the Proposed Remedial Action Plan for Site 7 published in the Asbury Park Press on August 20 - 22, 2010.
6	human health risk assessment	Section 2.7	Remedial Investigation Report for Naval Weapons Station Earle, Colts Neck, New Jersey. Section 2.4, pages 2-37 to 2-106 and Section 10.7, pages 10-26 through 10-36. B&RE, 1996. Feasibility Study for Site 7 Landfill South of "P" Barricades (OU 10). Section 1.7, pages 1-18 to 1-21; Section 1.9, pages 1-23 to 1-24; Appendix D. Tetra Tech, 2008.
7	hypothetical future exposure pathways	Section 2.7.1	Remedial Investigation Report for Naval Weapons Station Earle, Colts Neck, New Jersey. Section 2.4.3, pages 2-55 to 2-61 and Section 10.7.1, pages 10-26 through 10-40. B&RE, 1996.
8	screening ecological risk assessment	Section 2.7.2	Remedial Investigation Report for Naval Weapons Station Earle, Colts Neck, New Jersey. Section 2.6, pages 2-106 to 2-127. B&RE, 1996. Feasibility Study for Site 7 Landfill South of "P" Barricades (OU 10). Section 1.8, pages 1-21 to 1-23; Section 1.9, pages 1-23 to 1-24; Appendix D. Tetra Tech, 2008.

Detailed site information referenced in this ROD in bold blue text is contained in the Administrative Record. For access to information contained in the Administrative Record for "Site 7 - Landfill South of "P" Barricades, Operable Unit 10" please contact the NWS Public Affairs Office, Building C-2, 201 Highway 34 South, Colts Neck, NJ 07722.

Appendix A
Site 7 Groundwater Results & Screening Criteria

SITE 7 - LANDFILL SOUTH OF "P" BARRICADES
GROUNDWATER COPCs AND COMPARISON TO CRITERIA

HHRA COPC	1995 Phase II RI MAX Concentration (location)	April 2005 Analytical Results MAX Concentration (location)	September 2009 Analytical Results MAX Concentration (location)	Frequency of Detection (1995 RI, April 2005 and September 2009)	Maximum Detected Site Concentration and Location	Maximum Background Concentration and Location	SDWA MCL	EPA Tapwater RSL	NJDEP GWQS
Aluminum	1850 (MW7-05)	1710 (MW7-05)	NA	6/11	1850 (MW7-05)	393 (MW7-03)	None	37000	200(1)
Iron	913 (MW7-01)	965 (MW7-05)	NA	7/11	965 (MW7-05)	706 (BGGW03)	None	26000	300(1)
Manganese	63.7(MW7-05)	118 (MW7-02)	NA	9/11	118 (MW7-02)	914 (MW7-03)	None	880	50(1)
Thallium	4.0 (MW7-01)	ND	NA	1/11	4.0 (MW7-01)	ND	2	None	2
Chlorobenzene	11 (MW7-02)	4.4 (MW7-02)	ND	2/18	11 (MW7-02)	ND	100	91	50
Chloroform	2.0J (MW7-04)	0.72J (MW7-04)	0.32J (07HP1-19)	3/18	2.0J (MW7-04)	ND	80(2)	0.19	70
Benzene	1.0J (MW7-02)	ND	0.27J (07HP1-38)	5/18	1.0J (MW7-02)	ND	5	0.41	0.2
1,1,2-Trichloroethane	1.0J (MW7-04)	ND	ND	1/18	1.0J (MW7-04)	ND	5	0.24	3

Units: micrograms per liter (µg/L)

Notes:

Safe Drinking Water Act (SDWA) MCLs are promulgated federal standards for public water supplies.

EPA Regional Screening Level (RSL) for Tapwater (May 2010).

NA Not Analyzed
ND Not Detected

J Concentration is considered estimated because the concentration was greater than the method detection limit but less than the reporting limit. For the September 2009 results, the method detection limit was 0.11 µg/L and the reporting limit was 1.0 µg/L.

(1) NJDEP GWQS for Aluminum (200 µg/L), Iron (300 µg/L) and Manganese (50 µg/L) are not risk-based.
(2) 1998 Final Rule for Disinfectants and Disinfection By-products; the total for trihalomethanes (THM) is 0.08 mg/L.