Explanation of Significant Differences

Former Cape Poge Little Neck Bomb Target Land and Inland Water Munitions Response Sites

> FUDS Project No. D01MA0595 Projects MRS01 and MRS02

> > Martha's Vineyard, MA

September 2024

U.S. Army Engineering and Support Center, Huntsville U.S. Army Corps of Engineers, New England District

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ACRONYMS AND ABBREVIATIONS

AR	Administrative Record
bbs	below bathymetric surface
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DD	Decision Document
DGM	digital geophysical mapping
ESD	Explanation of Significant Differences
FS	Feasibility Study
FUDS	Formerly Used Defense Site
IVS	Instrument Verification Strip
LUC	Land Use Control
MA	Massachusetts
MassDEP	Massachusetts Department of Environmental Protection
MD	munitions debris
MEC	munitions and explosives of concern
MK	Mark
MRS	munitions response site
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
PA	Preliminary Assessment
RA	remedial action
RAO	Remedial Action Objective
RI	Remedial Investigation
TCRA	Time Critical Removal Action
TOI	Targets Of Interest
TTOR	The Trustees of Reservations
USACE	United States Army Corps of Engineers
UU/UE	unlimited use/unrestricted exposure
UXO	Unexploded Ordnance

1.0 INTRODUCTION

This Decision Document (DD) presents a description of the modification to the preferred remedy at the Former Cape Poge Little Neck Bomb Target Site, as originally detailed in the *Final Decision Document, Former Cape Poge Little Neck Bomb Target Munitions Response Sites,* Martha's Vineyard, Massachusetts [MA], U.S. Army Corps of Engineers, New England District, March 2015. The DD was approved by Karen Baker, Acting Chief, Environmental Community of Practice on 13 April 2015.

1.1 Site Name and Location

The Formerly Used Defense Site (FUDS) Former Cape Poge Little Neck Bomb Target Site FUDS Property No. D01MA0595 is located on Martha's Vineyard, MA. Munitions response sites (MRS) covered under this DD are:

- Land MRS (Project 01), 62 acres
- Inland Water MRS (Project 02), 172 acres.

The Former Cape Poge Little Neck Bomb Target Site is located on Chappaquiddick Island, which is within the Town of Edgartown, Dukes County, Martha's Vineyard, MA. The Land MRS, approximately 62 acres in size, encompasses the Little Neck Bomb Target Area and consists of upland land, beach areas, ponds, and marsh lands. The Inland Water MRS encompasses approximately 172 acres in Cape Poge Bay. Currently, the Land MRS is owned by The Trustees of Reservations (TTOR) and the Inland Water MRS is owned by the Commonwealth of MA.

1.2 Lead and Support Agencies

The Department of the Army is the lead agency. The United States Army Corps of Engineers (USACE) is the executing agency for investigating, reporting, evaluating and implementing remedial actions (RA) at the former Cape Poge Little Neck Bomb Target Site. USACE, New England District is the FUDS project manager. The Massachusetts Department of Environmental Protection (MassDEP) is the lead regulatory agency.

1.3 Legal Authority for Explanation of Significant Differences

This Explanation of Significant Differences (ESD) has been prepared to provide the public with an explanation of and to document a USACE modification of the selected remedy for the FUDS Cape Poge Little Neck Bomb Target Site. Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code §96 I 7(c), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at Title 40 Code of Federal Regulations (CFR) §300.435(c)(2)(i) require that an ESD be prepared when differences or changes in the RA significantly change, but do not fundamentally alter the remedy selected in the DD with respect to scope, performance, or cost.

1.4 Summary of Circumstances Requiring an Explanation of Significant Differences

The circumstances that have led to this ESD are detailed in Section 2.0. During the Remedial Investigation (RI), the geophysical equipment's limit of detection of items was a depth of 3 feet deep. As such, the selected remedy for both MRSs was for a subsurface remediation of MEC to a depth of 3 feet (Section 2.2). However, during the Remedial Action (RA), several MEC items were recovered at depths

greater than 3 feet due to favorable orientation of items and/or pursuing and clearing in a particular excavation below 3 feet in each MRS (Section 2.3), which is beyond the consistent detection depth of the geophysical detectors.

1.5 Administrative Record

This ESD will become part of the Administrative Record (AR) file for the Cape Poge Little Neck Bomb Target Site, Projects D01MA059501 and D01MA059502, in accordance with the NCP at 40 CFR §300.825(a). For the former Cape Poge Little Neck Bomb Target Site, an AR has been established at the Edgartown Public Library (open Mon-Sat 10am – 5pm), 216 58 North Water Street, P.O. Box 5249, Edgartown, MA 02539, and in Concord, MA, at the New England District Office. Public notice of the ESD will be published in *The Martha's Vineyard Times and the Vineyard Gazette*.

2.0 SUMMARY OF SITE HISTORY, CONTAMINATION AND SELECTED REMEDY

This section provides a summary of site history, contamination issues, and the selected remedy being implemented.

2.1 Site History and Contamination

<u>Site History.</u> Between 1944 and 1947, the MRSs were used for day and night practice bombing activities using water-filled bombs, miniature bombs, and flares. Practice bombs were used with signals (also called spotting charges) that would permit pilots to observe bombing accuracy. The signals contained expelling charges and marker charges composed of pyrotechnic mixtures. Upon impact with water or land, the signal would detonate, producing a flash and a large puff of smoke. Since the end of military operations in 1947, practice bombs, primarily consisting of the AN-Mark (MK)23 containing spotting charges have been identified at the MRSs.

<u>Visual Sweep</u>. In 2008, a visual ordnance sweep was conducted to identify immediate public safety hazards, identify and remove non-hazardous ordnance items or related items and place the items in secure storage, and to identify and remove any non-ordnance items which could be construed as an ordnance item resulting in a response by Massachusetts State Bomb Squad or local law enforcement personnel. The visual sweep covered approximately 15,300 linear feet of beach which was approximately 31 feet wide. The visual sweep resulted in the identification, removal, and storage of 15 AN-MK23 fragments.

<u>Preliminary Assessment (PA) and Time Critical Removal Action (TCRA).</u> In early 2009, a PA was prepared by USACE St. Louis District. The PA determined that the US Navy utilized practice ordnance at the bombing target site. In later 2009, a TCRA was conducted at the Cape Poge Little Neck Bomb Target Site on approximately 46 acres within portions of the Land and Inland Water MRS. The magnetometer-assisted surface/subsurface/underwater clearance operations resulted in the removal of 127 munitions and explosives of concern (MEC) items and 1,916 pounds of non- munitions debris (MD). Items identified and removed included scrap items, AN-MK23, and AN- MK5 practice bombs.

<u>Remedial Investigation/Feasibility Study (RI/FS).</u> The RI/FS was initiated in 2009 and concluded in 2014. Key findings of the RI included confirmation of the target area, and that MEC and MD items were concentrated around the historic bomb target location. A total of 88 MEC items and 325 MD items were identified between the two MRSs during the RI. The delineation of MEC and MD was completed in November 2014, resulting in three MRSs, comprising the Land MRS (62 acres), Inland Water MRS (172

acres), and the Remaining Lands MRS (115 acres). A No Further Action recommendation was made for the Remaining Lands MRS (FUDS Property No. D01MA0595, Project 03) at the completion of the RI and was not carried forward to the FS phase. During the RI, a total of 88 MEC items and 325 MD items were recovered, including intact and expended AN-MK23 3- pound practice bombs and the remnants of a 100-pound practice bomb. Within the Land MRS, the 83 MEC and 279 MD items were recovered between 6 inches and 3 feet below ground surface (bgs), with an average depth of recovery observed at 2 feet bgs on land. Within the Inland Water MRS, the 5 MEC and 46 MD items were recovered between 1 and 3 feet bgs.

2.2 Remedy Selection

As documented in the 2015 DD, the Remedial Action Objective (RAO) for the Land MRS is: "to protect recreational users, visitors, and workers at the MRS from explosive hazards associated with MEC exposure in the top three feet of soil during intrusive activities and by wave action/dune erosion." Furthermore, the DD states that for the Land MRS, the selected remedy by the USACE was Alternative 4 Subsurface Clearance, which includes: "subsurface remediation of MEC to 3 feet bgs over the entire 62 acre MRS. While this subsurface clearance is ongoing, interim Land Use Controls (LUC) (posting signs at public access locations and distribution of brochures and fact sheets notifying the public of explosive safety hazards when encountering MEC and Army's 3Rs policy (i.e., Recognize, Retreat, Report), and an educational component to provide site-specific awareness training for the local community) will be implemented. After all clearance operations are complete, a review of the site will be made (similar to a CERCLA 5 year review) that will ensure the effectiveness of the RAs for UU/UE [unlimited use/unrestricted exposure]."

As documented in the 2015 DD, the RAO for the Inland Water MRS is "to protect recreational users, visitors, shell fisherman and other workers at the MRS from explosive hazards associated with MEC exposure in to top three feet of sediment during intrusive activities." Furthermore, the DD states that for the Inland Water MRS, the selected remedy by the USACE was Alternative 3 Subsurface Clearance, which includes: "subsurface remediation of MEC to 3 ft below sediment surface (pond floor) over the entire 172 acre MRS. Since eelgrass, a sensitive habitat, is known to exist within the Inland Water MRS, this alternative will require coordination with TTOR and MA NHESP. After completion of the subsurface clearance, LTM would continue at this MRS to include post-construction vegetation monitoring, awareness components such as posting signs at public access locations and distribution of brochures and fact sheets notifying the public of explosive safety hazards when encountering MEC and Army's 3Rs policy (i.e., Recognize, Retreat, Report), and an educational component to provide site-specific awareness training for the local community."

The DD concluded the following:

- The selected remedies effectively reduced the MEC hazards present by reducing the public's exposures to MEC while remaining cost effective.
- The preferred alternatives improved awareness by providing information to the TToR, as landowner and the public (educational awareness), which further reduced the chance of accidental exposures.
- The selected remedies achieved the respective RAO of minimizing or eliminating the explosive hazard to the public and TTOR Rangers by reducing explosive hazards.

2.3 Remedy Implementation

The selected remedy for the Cape Poge Little Neck Bomb Target Site was implemented in 2015 and concluded in 2019. The following paragraphs describe pertinent details of the RA.

The specific components of the selected remedy were:

- Mobilization
- Site management
- Survey and Positioning
- Environmental coordination
- Brush clearing (where needed in Land MRS)
- Digital geophysical mapping (DGM) and data analysis
- Anomaly reacquisition and resolution
- Anomaly and MEC removal
- MPPEH disposal
- MDAS waste stream treatment offsite disposal
- Site Restoration
- Demobilization
- Bittersweet Treatment
- Post construction vegetation and Bittersweet monitoring (Inland MRS)
- Development and reproduction of training materials
- Annual Interim LUC which included annual ordnance training, site inspections, and sign maintenance.

Prior to the collection of DGM data, Instrument Verification Strips (IVSs) for land and water were established. For the land IVS, it was established that the smallest Target of Interest (TOI), the MK23 practice bomb, could be detected by the DGM sensors up to 36-inches bgs at the worst-case orientation (i.e., horizontal). Therefore, 36-inches bgs was determined as the minimum detection and clearance depth benchmark to which greater depths may be achieved from more favorable TOI orientations (i.e., vertical) or preferential environments (e.g., benign clean sand, salt water intrusions). For the water IVS, the MK23 practice bomb TOI could be detected at 32-inches below bathymetric surface (bbs) at the worst-case orientation from an estimated flight height of 18-inches above the saltwater-sediment surface. Thus, similar to the land testing, a minimum detection and clearance depth was established for the marine environment to which greater depths can be achieved, primarily from more favorable orientations or reduced sensor height above bathymetric surface.

For the Land portion of the MRS, DGM surveys were performed across the original MRS and MRS stepout areas where MEC was found near the MRS boundaries and the 100 foot 360 degree clearance in all directions from the last known MEC find were not met. A total of 78 acres were geophysically mapped and 38,348 geophysical anomalies were investigated by Unexploded Ordnance (UXO)-qualified teams. For the Land MRS, a total of 78 acres were cleared of MEC to 3 ft bgs. Items recovered included 2,060 MEC/UXO items (AN-MK23 practice bombs and AN-MK6 flare fuzes) and approximately 24,674 pounds of MD (MK4, MK15, AN-MK23, and AN-MK6), 22 pounds of small arms debris (0.50 caliber and shotgun debris) and 3,215 pounds of non-munitions related debris. The MEC/UXO items were recovered at depths ranging from the surface to seven feet below ground surface with 98 percent (%) of the items found within three feet.

For the Inland Water portion of the MRS, DGM surveys were performed across the majority of the original MRS boundary and MRS stepout areas to attain the 100 foot 360 degree clearance in all directions from the last known MEC find, while areas unsuitable for DGM were surveyed via analog methods. A total of 228.3 acres were geophysically mapped and 7,566 geophysical anomalies were investigated and resolved by UXO qualified divers. Items recovered included 1,767 MEC/UXO items (AN-MK23 practice bombs) and approximately 623 pounds of MD (MK15 and AN-MK23), 1 pound of small arms debris (0.50 caliber and shotgun debris) and 14,675 pounds of non-munitions related debris. The MEC/UXO items were recovered at depths ranging from the surface to five feet (bbs) with 99% of the MEC/UXO items found within the top three feet.

3.0 BASIS FOR SIGNIFICANT DIFFERENCES

Several MEC items were recovered deeper than demonstrated as detectable by the technological equipment applications in the land and water IVSs at the orientations and depths tested. For the Land portion of the MRS, 40 of the 2,060 MEC items were recovered at depths greater than 36 inches. For the Inland water portion of the MRS, 32 of the 1,767 MEC items were recovered at depths greater than 32 inches. Deeper items could have been detected and then removed through one of three common scenarios: 1) removal of overburden during investigation creating a shallower path to deeper items; 2) incidental recovery of deeper items after recovery of shallower items; or 3) detection/recovery easement due to preferential orientation (i.e., vertical) generating a larger digital response signal than otherwise possible (i.e., worst-case horizontal).

4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCES

Per the 2015 DD, after all clearance operations were complete, a review of the site was to be made to ensure the effectiveness of the RAs for UU/UE.

The maximum depth that items were recovered during the RI in both the Land and Inland Water MRSs was 3 feet bgs. Based on these findings, coupled with the limitations of the geophysical equipment to detect items down to a maximum of 3 feet, and the anticipated depth of receptor interaction, the selected remedy of a subsurface remediation of MEC to a depth of 3 feet bgs in the Land MRS and approximately 3 feet bbs in the inland water MRS was selected. During RA activities, the consistent detection depth of the geophysical sensors met these criteria. However, a total of 46 MEC items were recovered in both the Land and Inland Water MRSs at greater depths than 3 feet. Since several items were recovered below the consistent detection depth, it cannot be stated with certainty that additional deeper items do not remain. Also, due to the dynamic site conditions resulting in significant ocean and shoreline erosion and accretion, these deeper items could potentially become more shallow or be exposed over time.

Therefore, while the RA was successfully implemented in accordance with the selected remedy as stated in the 2015 DD, potential residual risks from MEC remain, necessitating a revision to the RAO and the remedy for both the Land and Inland Water MRSs. The revised RAOs are as follows:

- Land MRS: to protect recreational users, visitors, and workers at the MRS from explosive hazards associated with MEC exposure during intrusive activities and by wave action/dune erosion;
- Inland Water MRS: to protect recreational users, visitors, shell fisherman and other workers at the MRS from explosive hazards associated with MEC exposure during intrusive activities.

For both the Land and Inland Water MRS, the remedy is revised from interim LUCs to permanent LUCs. LUC measures include conducting UXO awareness training sessions for TToR and local first responders

(police and fire department personnel), distributing explosives safety educational materials provided by USACE to first responders and to TToR, conducting interviews with local officials and property owners, obtaining a summary of UXO related activity at the MRS, and inspecting and maintaining UXO hazard awareness signs. Currently, there are two signs, located at the Dyke Bridge and at Little Neck (Figure A), however the number of signs may change in the future in order to adequately cover any new access pathways to the beach as they are established.

A LUCIP has been in place since 2019 and will be updated by September 30, 2025. All signs as described in the LUCIP were installed in 2019 and continue to be monitored/maintained annually. Training was initiated in 2019 and continues annually. The safety brochures have been delivered.

Because UU/UE was not achieved, Five Year Reviews will continue to be conducted to evaluate the site and to determine if the remedy continues to be protective of human health and the environment.

The approximate cost for annual site inspection, sign maintenance, and educational awareness training is \$21,500; the approximate cost for the Five Year Review is \$63,675; and the approximate cost for a sign replacement (including mobilization for replacement) is \$21,000. The total cost change for a 30 year period is approximately \$1,700,000.

5.0 SUPPPORT AGENCY'S COMMENTS ON ESD

The United States Army consulted with MassDEP and provided them the opportunity to review and comment on this ESD for Cape Poge Little Neck Bomb Target Site in accordance with 40 CFR § 300.435(c) (2). MassDEP reviewed this ESD and had no regulatory comments. The MassDEP concurrence is documented in Appendix B.

6.0 STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and State laws and regulations that are applicable or relevant and appropriate to the RA, and is cost effective. The selected remedy utilized permanent solutions to the maximum extent practicable.

7.0 PUBLIC PARTICIPATION AND COMPLANCE

When this ESD for the Cape Poge Little Neck Bomb Target Site is finalized, a Notice of Availability and a brief description of the ESD will be published in *The Martha's Vineyard Times and the Vineyard Gazette*. This ESD will also become part of the AR. These actions will fulfill the public participation and compliance requirements set out in the 40 CFR §300.435(c)(2)(i).

8.0 SIGNATURE

Approved:

Date

RAVI I. AJODAH, SES Regional Programs Director North Atlantic Division United States Army Corps of Engineers

9.0 REFERENCES

- GSI Pacific, Inc., 2016, Final Uniform Federal Policy Quality Assurance Project Plan. Munitions and Explosives of Concern Remedial Action, Former Cape Poge Little Neck Bomb Target Land and Inland Water Munitions Response Sites, FUDS Property No. D01MA0595, Martha's Vineyard, Massachusetts, March.
- GSI Pacific, Inc., 2020, Final Remedial Action Report, Former Cape Poge Little Neck Bomb TargetMunitions Response Sites, Martha's Vineyard, Massachusetts, October.
- U.S. Army Corps of Engineers, 2014, Preliminary Assessment, Cape Poge Little Neck Bomb Target Site, Chappaquiddick Island, Massachusetts, FUDS Property Number – D01MA0595, January.
- U.S. Army Corps of Engineers, 2015, Decision Document, Former Cape Poge Little Neck Bomb Target Munitions Response Sites, Martha's Vineyard, Massachusetts, New England District, March.
- UXB International, Inc., 2014a, Final Remedial Investigation Cape Page Little Neck Formerly UsedDefense Site (FUDS) Property No. D01MA059501, Martha's Vineyard, Massachusetts, June.
- UXB International, Inc., 2014b, *Final Feasibility Study Cape Page Little Neck Formerly Used Defense Site (FUDS) Property No. D01MA059501, Martha's Vineyard, Massachusetts*, November.

APPENDIX A

Figure



Exhibit A

Former Cape Poge Little Neck Bomb Target Martha's Vineyard, MA

Legend

- P Vehicle Signs
- Inland Water MRS Boundary
- Land MRS Boundary
- Remaining Lands MRS Boundary



APPENDIX B

Regulatory Concurrence

Department of Environmental Protection

100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Maura T. Healey Governor

Kimberley Driscoll Lieutenant Governor Rebecca L. Tepper Secretary

> Bonnie Heiple Commissioner

Ms. Marie Esten, Project Manager Programs/Project Management Division U.S. Army Corps of Engineers, New England Division 696 Virginia Road Concord, MA 01742-2751

September 24, 2024

RE: Explanation of Significant Differences Former Cape Poge Little Neck Bomb Target MRSs, Edgartown, MA D01MA0595

Dear Ms. Esten,

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed the proposed Explanation of Significant Differences (ESD) prepared by the U.S. Army Corps of Engineers (USACE), dated July 11, 2024, for the Formerly Used Defense Site (FUDS) Former Cape Poge Little Neck Bomb Target Land and Inland Water Munitions Response Sites (MRS). The primary purposes of the ESD are to: (1) modify Remedial Action Objectives (RAOs) to reflect the fact that Unlimited Use/Unrestricted Exposure (UU/UE) has not been achieved; and (2) modify the existing remedy from interim Land Use Controls (LUCs) to permanent LUCs.

As you are aware, the remedy selected in the 2015 Decision Document (DD) included subsurface removal of all munition items to a depth of three feet below ground surface (bgs). The depth of removal, three feet bgs, was based on the maximum depth at which items were identified during the Remedial Investigation (RI) as well as the limit of detection of the geophysical equipment used in the RI to detect munitions. This remedy included interim LUCs until such time that Unlimited Use/Unrestricted Exposure (UU/UE) was achieved. However, upon completion of the remedial action and the subsequent Five-Year Review, the determination was made that UU/UE was not met and that the interim LUCs should be made permanent. This determination was made due to numerous munition items being recovered at greater than the three feet bgs limit of detection of the geophysics equipment. For the land portion of the MRS, munitions of explosive concern (MEC) and unexploded ordnance (UXO) items were recovered at depths ranging from the surface to five feet below bathymetric surface (bbs). Since items were recovered below the consistent detection depth, it cannot be stated with certainty that additional deeper items do not remain. Also, due to the dynamic site conditions resulting in significant ocean

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282. TTY# MassRelay Service 1-800-439-2370 MassDEP Website: www.mass.gov/dep MassDEP Concurrence Letter Former Cape Poge Little Neck Bomb Target Land and Inland Water Munitions Response Sites Edgartown, Massachusetts September 24, 2024 Page 2 of 2

and shoreline erosion and accretion, these deeper items could potentially become shallower or be exposed over time.

Since munitions have been recovered below the anticipated detection depth, USACE has determined that potential residual risks from MEC remain and an ESD is necessary in order to revise the RAOs and remedy for both the Land and Inland Water MRSs. MassDEP has reviewed the Remedial Investigation Report, Remedial Action Report, Annual Long Term Monitoring (LTM) Inspection Reports, and the First Five-Year Review. MassDEP concurs with USACE's decision to revise the RAOs and remedy through the proposed ESD.

If you have any questions concerning this letter, please contact the MassDEP project manager at joanne.dearden@mass.gov.

Sincerely,

Millie Gard'a-serreno

Millie Garcia-Serrano, MPH Assistant Commissioner, Bureau of Waste Site Cleanup Massachusetts Department of Environmental Protection

cc: Gerard Martin, SERO Regional Director John Handrahan, SERO Deputy Regional Director