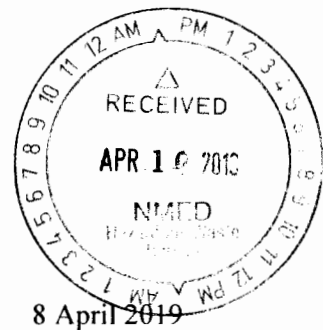




ENTERED

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 49TH WING (AETC)
HOLLOMAN AIR FORCE BASE NEW MEXICO



8 April 2019

ADAM M. KUSMAK, GS-13, USAF
Chief, Installation Management Flight (49 CES/CEI)
49th Civil Engineer Squadron (49 CES)
Holloman Air Force Base, NM

Attn: Mr. Chuck Hendrickson, Project Manager
RCRA Corrective Action Section (6MM-RC)
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

SUBJECT: Final Proposed Plan ML866 Former Bombing Range and SR867 Possible Firing Range Munitions Response Sites, Holloman Air Force Base, NM

Dear Mr. Hendrickson,

Holloman AFB is pleased to submit the Final Proposed Plan for the ML866 Former Bombing Range and SR867 Possible Firing Range Munitions Response Sites located at Holloman Air Force Base for your record.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions regarding this submittal, please contact me at (575) 572-6675.

Sincerely,

KUSMAK.ADA Digitally signed by
KUSMAK.ADAM.M.12
M.M.1263331 63331806
806 Date: 2019.04.09
09:36:12 -06'00'

ADAM M. KUSMAK, GS-13, USAF

Attachment: Final Proposed Plan ML866 Former Bombing Range and SR867 Possible Firing Range Munitions Response Sites, Holloman Air Force Base, NM. CD.

cc:
(w/Hard Copy and CD)
Mr. David Strasser
Hazardous Waste Bureau
121 Tijeras Dr. NE, Ste.1000
Albuquerque NM 87102-3400

(w/ Hard Copy and CD)
Mr. John Kieling, Chief
Hazardous Waste Bureau
2905 Rodeo Park Dr. East Bldg. 1
Santa Fe NM 87505-6303

(w/o Atch)
Mr. Cornelius Amindyas
Hazardous Waste Bureau
121 Tijeras Dr. NE, Ste. 1000
Albuquerque NM 87102-3400

FINAL PROPOSED PLAN

MILITARY MUNITIONS RESPONSE PROGRAM

**ML866 FORMER BOMBING RANGE AND
SR867 POSSIBLE FIRING RANGE
MUNITIONS RESPONSE SITES**

HOLLOMAN AIR FORCE BASE

NEW MEXICO

PERFORMANCE BASED REMEDIATION

Contract Number: FA8903-13-C-0008

Prepared for:



**AIR FORCE CIVIL ENGINEER CENTER
2261 Hughes Ave., Suite 163
Joint Base San Antonio Lackland, Texas 78236-9853**

Prepared by:

FPM Remediations, Inc.

An **Olgoonik** Company

**181 Kenwood Avenue
Oneida, NY 13421**

April 2019

PROPOSED PLAN
ML866 Former Bombing Range and SR867 Possible Firing Range MRSs
Holloman Air Force Base, New Mexico

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PROPOSED PLAN
ML866 Former Bombing Range and SR867 Possible Firing Range MRSs
Holloman Air Force Base, New Mexico

1.0 INTRODUCTION

This Proposed Plan (PP) concerning the ML866 Former Bombing Range and SR867 Possible Firing Range Munitions Response Sites (MRSs) located at Holloman Air Force Base (AFB), Otero County, New Mexico (**Figures 1 and 2**) is submitted for public review and comment. The PP recommends No Further Action (NFA) for both Munitions and Explosives of Concern (MEC) and Munitions Constituents (MC) following completion of a Remedial Investigation (RI) at both MRSs. The PP also provides reasons for NFA preference at the two sites.

This document has been prepared by the United States Air Force (USAF), the lead federal agency for site activities, with the concurrence of United States Environmental Protection Agency (USEPA), the support agency, and in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 117(a) and Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Under CERCLA and the NCP, it is appropriate for the lead agency to recommend NFA when no unacceptable risks exist under the residential use scenario.

This PP may be modified based on any new information acquired during the 30-day public comment period. The USAF, as lead agency, will make a final decision on the need for additional action following consultation with the USEPA. This decision will be made after reviewing and considering all information submitted during the designated public comment period. Therefore, the public is encouraged to review and comment on all information presented in this document.

Information presented in this document can be found in greater detail in the Comprehensive Site Evaluation (CSE) Phases I and II, RI, and other documents

contained in the Administrative Record file for this site.

MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:

3 February 2019 – 4 March 2019

The Proposed Plan is available for public review during the 30-day public comment period at the following location:

**Alamogordo Public Library,
920 Oregon Ave.
Alamogordo, N.M. 88310
Phone: (575) 439-4140**

The USAF will accept written comments on the Proposed Plan during the public comment period. Comment Letters must be postmarked by **4 March 2019** and should be submitted to:

49th Wing Public Affairs
490 First Street, Building 29, Suite 1500
Holloman AFB, NM 88330

Comments can also be submitted via email to:

49wg.paoffice@us.af.mil

For additional questions, comments or concerns please call (575)-572-7381.

PUBLIC MEETING:

Based on the level of interest, the USAF may hold a public meeting to explain the PP and the reasons for the NFA recommendation for the ML866 Former Bombing Range and SR867 Possible Firing Range MRSs and accept oral and written comments. The public meeting will be announced in the Alamogordo Daily News, a newspaper of daily circulation in the city of Alamogordo area and includes Holloman AFB. If scheduled, the meeting will be held at the Alamogordo Public Library.

ADMINISTRATIVE RECORD FILE:

For more information on the ML866 Former Bombing Range and SR867 Possible Firing Range, please see the Administrative Record at the following web address:

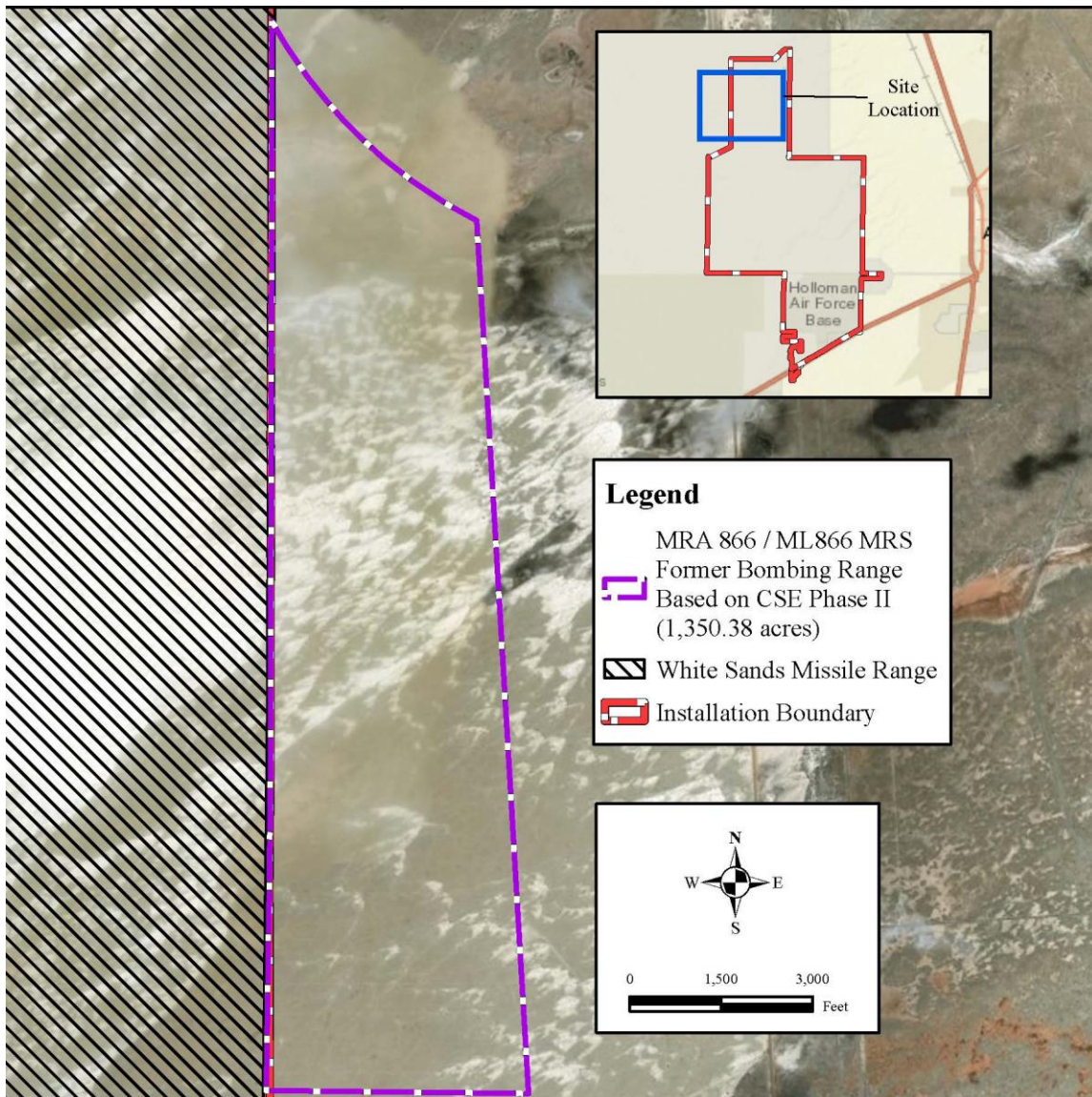
<http://afcec.publicadmin-record.us.af.mil>

Site-related documents are also stored at the following location:

49 CES/CEA
550 Tabosa Avenue
Holloman AFB, NM, 88330

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ML866 Former Bombing Range and SR867 Possible Firing Range MRSs
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Figure 1 ML866 Former Bombing Range MRS



The USAF and USEPA encourage the public to review these documents to gain a better understanding of investigations conducted at this site.

2.0 HISTORY AND BACKGROUND OF ML866 AND SR867 MRSs

Holloman AFB is located in south-central New Mexico, seven miles west of the city of Alamogordo in Otero County. Holloman

AFB occupies approximately 50,763 acres of land and is adjacent to the much larger (2.2 million acre) White Sands Missile Range (WSMR). The southern portion of Holloman AFB contains the flight line, composed of a series of runways running north-south, east-west, and northeast southwest. The Main Base is located in the southeast corner of the installation, where Route 70 borders the site. The Main Base contains housing and administrative buildings. The High Speed

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The **SR867 Possible Firing Range MRS** consists of two discontinuous parcels totaling 449.23 acres in size (**Figure 2**). The largest parcel is located east of the HSTT and north of the HSTT support buildings and comprises 447.42 acres. The second smaller parcel (1.81 acres) is located south of the HSTT support buildings and north of the Lost River Basin. Initially, the Possible Firing Range was identified as the 28.42-acre Munitions Response Area (MRA) 867; however, due to MD presence well beyond the originally proposed boundary, the size of the MRA was increased to 449.23 acres and the entire MRA was identified as the SR867 MRS at the conclusion of the CSE Phase II (HDR Environmental, Operations and Construction, Inc. [HDR], 2013). MD items were identified in both north and south parcels of SR867.

Based on the 1999 North Main Base Cultural Resources Survey and the Laboratory of Anthropology Site Record, the MRA 867 features include five wooden target stands, a 450-foot (ft) trench, and a 175-ft trench. The Laboratory of Anthropology Site Record also lists “bullets and cartridges” among the site assemblage. No further details regarding the number or type of bullets and cartridges were reported in the cultural resources survey. Based on the presence of the wooden target stands, bullets, and cartridges, the MRA was believed to have been used as a small arms range.

A *Modified CSE Phase I* was completed at both ML866 and SR867 MRSs in 2010 (Shaw Environmental, Inc., 2010). Prior to the start of the CSE Phase I, no MRAs had been discovered at Holloman AFB and it was believed that there was a low probability of a significant number of MRAs being found at the Base. Therefore, the USAF modified the CSE Phase I process by deferring some actions typically performed in a Phase I, to the CSE Phase II, if a Phase II was required.

A visual survey was not performed within the boundary of the **Former Bombing Range**

MRA 866 because at the time of the Modified CSE Phase I site visit, the size of the HSTT active footprint was unknown. Additionally, the specific locations where sub-munitions have been discovered were not identified. One transect with an approximate length of 1,000 feet was performed through the area in which MD had been reported (northwest of the end of the HSTT). MD including various practice bomb fragments and a charred piece of rocket motor propellant were observed in the area surveyed. However, this location is within the safety arc defined for the HSTT and is therefore ineligible for the USAF MMRP.

The Former Bombing Range was recommended for further evaluation during the CSE Phase II based on sub-munition discoveries reported in unspecified locations west of the north end of the HSTT. Sampling to assess if MC has been released to the environment at the Former Bombing Range was also recommended.

A visual survey was performed at the **Possible Firing Range MRA 867** during the Modified CSE Phase I. Wooden target stands and numerous .50-caliber projectiles, rocket parts, various metallic debris, and a pistol cartridge casing were found during the visual survey. No MEC was observed and no range features, including firing point or impact area, were found. No MC (metals and explosives constituents) sampling was conducted at the MRA during the CSE Phase I.

The Possible Firing Range was recommended for further evaluation during the CSE Phase II based on observations of surface small arms debris and MD. Sampling to assess if MC has been released to the environment at the Possible Firing Range was also recommended.

A *CSE Phase II* investigation (HDR, 2013) was performed at both Former Bombing Range and Possible Firing Range MRAs. The field activities included detector-aided (i.e., White’s Electromagnetic DFX 300

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metal detector) visual surveys to identify MEC or MEC-related items and/or features as well as soil sampling for lead analysis at Possible Firing Range MRA.

Both sites were prioritized for further munitions response actions, based on relative risk, using the Munitions Response Site Prioritization Protocol (MRSPP) scoring system. The MRS Priority is determined by selecting the highest rating from the Explosives Hazard Evaluation (EHE), Chemical Hazard Evaluation (CHE), and Human Health Hazard Evaluation (HHE) modules and ranges from 1 to 8. Priority 1 and 8 indicate the highest and the lowest potential hazards, respectively. Only a site with a chemical warfare hazard can receive an MRS Priority of 1.

During the CSE Phase II visual survey at **Former Bombing Range MRA 866** no structures or target features were identified. Small arms debris was occasionally observed, consisting of .50 caliber debris. One intact .50 caliber round was observed; this was collected and delivered to Holloman EOD per their instructions. MD largely consisted of various missile debris scattered over the MRA. Much of the missile debris was unidentifiable, but multiple instances of GAR-1 Falcon missile debris were observed. One M38 practice bomb tail fin and one expended aircraft countermeasure device was observed toward the northern end of the MRA. No MEC was encountered in the MRA during the visual survey. As a result, no samples were collected at the Former Bombing Range for MC (metals and explosives constituents) analysis. Therefore, no human health or ecological screening was conducted for this area. The CSE Phase II concluded that any risk at this site associated with the presence of MC (metals and explosives constituents) is expected to be similar to background conditions.

Based on the presence of surface MD within the MRA, the entire Former Bombing Range MRA (1,350.38 acres) was identified as the

ML866 MRS at the conclusion of the CSE Phase II (**Figure 1**). This MRS obtained an MRSPP score of 7 (low risk) and was recommended for further munitions response action.

During the CSE Phase II visual survey at **Possible Firing Range MRA 867** the wooden structures in the northern portion of the MRA as described in the CSE Phase I report were identified. Small arms debris associated with shotgun, 7.62mm, and .50-caliber was observed during the visual survey. Due to the abundance of .50-caliber debris, the visual survey was extended well beyond the MRA boundary in an attempt to delineate the lateral extent of the .50 caliber debris. The debris was observed to extend as far south as the 1000 Inch Range (SR863), east to Tula Peak Road/Range Road 9, west to the HSTT, and north to the southernmost HSTT spectator viewing area. The spread of the projectiles and relative lack of casings suggests that the site may have been an aerial gunnery or strafing range. MD items observed at the MRA consist of 5-inch rocket motors, rocket motor venturi plates and tail fins, and one expended M74A1 projectile airburst simulator. No MEC was encountered in the MRA during the visual survey. As a result no sampling for analysis of MC (metals and explosive constituents) was performed at this site during the CSE Phase II.

Since the site was potentially used as an aerial gunnery or strafing range and small arms debris were observed at the surface of the site, seventy-one (71) surface soil samples were collected and analyzed for lead using X-Ray Fluorescence (XRF). Lead analysis results for surface soil ranged from below the Limit of Detection (LOD) (12 milligrams/kilogram [mg/kg]) to 17 mg/kg. Of the 71 samples analyzed, 69 returned lead concentrations below LOD (12 mg/kg). No surface soil lead levels exceeded residential human health screening level of 400 mg/kg. Maximum and mean detected lead concentrations exceeded the ecological soil

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screening level of 11 mg/kg for only the most sensitive ecological receptor category. The maximum and mean lead concentrations at Possible Firing Range MRA were within the typical New Mexico lead background range.

In addition, at the conclusion of the XRF sampling at MMRP sites during the CSE Phase II, twelve correlation samples were selected and sent to the analytical laboratory to determine whether XRF results can be considered definitive and can be used for decision making purposes. The results of the linear regression analysis for Holloman AFB yield a correlation coefficient of 0.99, indicating that the XRF data may be considered to be definitive and as a result may be used for remedial decision-making. Therefore, XRF analysis have shown that lead was not a concern for human health or the environment at the SR867 MRS.

Based on the presence of surface MD outside the original MRA boundary, the overall acreage of the MRA increased from 28.42 acres to 449.23 acres and was identified as the SR867 Possible Firing Range MRS at the conclusion of the CSE Phase II (**Figure 2**). This MRS obtained an MRSP score of 5 (medium risk) and was recommended for further munitions response action. The score of 5 for this site was obtained by assuming the confirmed surface MEC presence at the MRS based on one MEC (i.e., M583A1 40mm White Star Illumination Parachute Flare) that was found outside of the site boundary along Tula Peak Road. That particular location (which is more than 0.5 miles away from the original MRA boundary) or the surrounding area were not included in the newly established SR867 MRS at the conclusion of the CSE Phase II.

An **RI** (FPM Remediations, Inc., 2018) was conducted at the ML866 Former Bombing Range and SR867 Possible Firing Range MRSs to characterize the nature and extent of hazards associated with MEC and MC contamination. The RI field activities included performing instrument-aided (i.e.,

Schonstedt GA-52Cx Magnetometers at ML866 and White's Electromagnetic DFX 300 metal detector at SR867) surface clearance along transects and across grids, conducting Digital Geophysical Mapping (DGM) using a Geometrics G-858 cesium vapor magnetometer (G-858) at the ML866 MRS and an electromagnetic induction sensor EM61-MK2 (EM61) at the SR867 MRS, and excavating all anomalies with responses above the site-specific thresholds established at the ML866 and SR867 MRSs. DGM surveys create images of underground objects and can be used to determine which objects are likely to be munitions items.

Since the **ML866 MRS** was a suspected bombing range, FPM utilized the Visual Sample Plan (VSP) software to determine the initial design of DGM transects for this site. The DGM transects were designed to be able to traverse and detect a target area of the smallest munitions encountered at the site (M38A2 100-lb practice bomb) with a 95% probability of detection.

During the RI surface clearance at the ML866 MRS, no MEC and approximately 15 pounds of MD were removed from the MRS. MD items found on the surface included 10 GAR-1 Falcon guided missile pieces. No evidence suggesting the area was used as a bombing range (e.g., target debris, craters, etc.) was observed during the RI. A total of 53 DGM anomalies exceeding the site-specific threshold (20 nanoTeslas per meter) were identified during the geophysical investigation. All subsurface anomalies were intrusively investigated, meaning they were excavated (no utility lines were present at the site). No MEC was found and a total of 107.7 lbs of MD was removed from the MRS during the intrusive investigations. Six MD items found during the subsurface investigation consisted of: (2) Zuni 5 inch rocket motors (expended), (1) Zuni 5 inch rocket motor piece, (1) AIM-4 Falcon rocket motor (expended), and (2) undifferentiated fragments.

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Since no potential source for MC contamination (e.g., no MEC finds or significant amounts of MD, and no high DGM anomaly density areas) was identified during the RI at the ML866 MRS, no MC (metals and explosives constituents) soil sampling was performed.

During the RI surface clearance at the **SR867 MRS**, no MEC and approximately 120 pounds of MD were removed from the MRS. MD items found included (3) Zuni 5-inch rocket motors (expended). A total of 192 anomalies were identified including 181 exceeding the EM61 5 milliVolts target threshold and 11 exceeding G-858 20 nanoTeslas per meter threshold (G-858 was used for data collection in the area near the overhead powerlines where EM61 data collection was not possible). All subsurface anomalies were intrusively investigated, meaning they were excavated, except for those anomalies that were determined to be utility lines, which were left in place. No MEC was discovered during this activity. The total MD removed was ~0.5 pounds and included only one MD item, M2 reefing line cutter (expended).

Since no potential source for MC contamination, (i.e., no MEC) was identified during the RI at the SR867 MRS, no MC (metals and explosives constituents) soil sampling was performed.

In addition, an analysis of the distribution of expended .50 caliber projectiles at the SR867 MRS was performed during the RI to estimate the total volume of the projectiles abandoned at the site at the request of New Mexico Environment Department (NMED). A total of 360 .50 caliber projectiles (surface and subsurface) were found and removed from the 10.09 acres investigated at SR867 during the RI. Assuming the RI findings are characteristic of the entire site, this distribution results in a density of ~36 projectiles per acre.

As described above in the CSE Phase II section for the SR867 MRS, the potential

contamination of soil due to presence of expended .50 caliber projectiles was addressed by collecting 71 surface soil samples which were analyzed for lead using an XRF. Since the results of correlation samples collected during the CSE Phase II confirmed that the XRF can be used for decision making purposes, it was concluded that the detected low concentrations of lead in soil were not a concern for human health or the environment at the SR867 MRS. As a result, an additional soil sampling for lead was not performed during the RI.

Unexploded Ordnance (UXO) Estimator, a software package developed by United States Army Corps of Engineers, was used as a statistical tool to determine the upper bound on the potential residual UXO remaining on both the ML866 and SR867 MRSs with a 95% confidence level. Based on available historical information (SR867 only) and the results of previous investigations (both MRSs), there is no evidence (i.e., firing points, impact craters, and areas with high density of surface/subsurface anomalies consistent with target areas) indicating that the sites were ever used as ranges where munitions such as projectiles, rockets and bombs was fired to designated target area. This is an underlying assumption for the use of UXO Estimator.

According to calculations performed using this software, if a total of 35.86 acres was investigated (area covered by transects and grids at ML866) within the 1350.23-acre site (size of the MRS), it may be claimed with the 95% confidence that there is no more than 0.082 UXO per acre at ML866. Similarly, if a total of 10.09 acres was investigated (area covered by transects and grids at SR867) within the 449.23-acre site (size of the MRS), then it can be claimed with a 95% confidence that there is no more than 0.29 UXO/acre at SR867. However, based on previous investigation results (no UXO identified at either of the two MRSs), the number of potential UXO is most likely closer to zero.

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Based on the RI results, both the ML866 and SR867 MRSs obtained an MRSPP score of 8 and were recommended for NFA for both MEC and MC. Both USEPA and NMED concurred with this recommendation.

3.0 SITE CHARACTERISTICS

The ML866 and SR867 MRSs are currently located on the active Base property. The terrain of the ML866 MRS is relatively flat in the south; however, the northern part of the site (~60 percent [%]) is within the active White Sands dune field and local topography can vary significantly. The topography of the northern portion of the SR867 MRS is relatively flat; however, the southern portion of the SR867 MRS is near the northern boundary of the Lost River Basin and topographic features associated with drainage into Lost River channel are present in the southeastern portion of the site. Soils associated with the ML866 MRS consist of the Firebee-Lark Association and the Yesum-Nasa Complex. Soils associated with the SR867 MRS consist of the Yesum Sandy Loam and Yesum-Nasa complex. There are no wetlands or surface water associated with two MRSs. Vegetation within both MRSs is consistent with desert scrubland.

No buildings or structures are located within the ML866 MRS. There are 25 buildings located within a two-mile radius of the site. Operational mission support, recreational, and flight line support buildings are located to the south of the MRS within a 10-mile radius. No buildings are located within the SR867 MRS. There are 69 buildings located within two miles of the Possible Firing Range including HSTT support buildings located within 200 m of the MRS boundary. Operational mission support, recreational, and flight line support buildings are located to the south of the Possible Firing Range within a 10-mile radius.

The ML866 and SR867 MRSs are unused and according to Holloman AFB Installation Development and Design (Holloman AFB, 2011), there are no future land usage changes

for these two sites as they are classified as open space.

There is no fencing associated with the ML866 and SR867 MRSs. Access to Holloman AFB requires admittance through the security gate and there is a fence around the Installation. Therefore, access to the ML866 and SR867 MRSs is restricted for the general public, but is open to Base personnel, contractors, Base residents, and visitors.

4.0 SCOPE AND ROLE OF THE ACTION

The NFA response will involve no further investigation or cleanup at the ML866 and SR867 MRSs with respect to MEC and MC (metals and explosives constituents).

5.0 SUMMARY OF SITE RISKS

Based on historical information and the results from previous investigations (no MEC was found in the surface or subsurface of the ML866 and SR867 MRSs), there is no explosive hazard at the MRS associated with MEC. In addition, all contaminants of potential concern were either not detected or detected well below their respective residential human health and ecological screening levels. Therefore, there are no human health and ecological risks associated with MC (metals and explosives constituents) at both MRSs.

6.0 DESCRIPTION OF THE PREFERRED REMEDY

The USAF recommends NFA for the ML866 and SR867 MRSs based on the CSE Phase II and RI results. This NFA designation requires no land-use controls or restrictions, and no capital, operational, or maintenance costs and no Five-Year Review. An NFA recommendation for two MRSs is supported by the following facts:

ML866

- Based on the results from previous investigations (no MEC was found during the CSE Phase I or II, or the

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RI), which involved the intrusive investigation and excavation of metallic anomalies found at the site, there is no explosive hazard at the MRS associated with MEC.

- Since no potential source for MC contamination associated with MEC was found during the previous investigations, no MC soil sampling for analysis of analytes associated with MEC (i.e., metals and explosives constituents) was performed. As a result, there are no human health and ecological risks associated with MC (metals and explosives constituents) at the ML866 MRS.

SR867

- Based on both historical information (there are no records of historical use of explosives and no evidence of craters or other features observed in field data that would suggest the use of explosives) and results from previous investigations (no MEC was found during the CSE Phase I or II, or the RI), which involved the intrusive investigation and excavation of metallic anomalies found at the site, there is no explosive hazard at the MRS associated with MEC.
- Based on lead sampling results, there are no unacceptable risks to human health and the environment posed by the very low levels of lead contamination from possible usage of the site as an aerial gunnery or strafing range. In addition, since no potential source for MC contamination associated with MEC was found during the previous investigations, no MC soil sampling for analysis of analytes associated with MEC (i.e., metals and explosives constituents) was performed. As a result, there are no

human health and ecological risks associated with MC (metals and explosives constituents) at the SR867 MRS.

7.0 COMMUNITY PARTICIPATION

The USAF and USEPA will provide existing information regarding the hazard exposure reduction at ML866 and SR867 to the public through Restoration Advisory Board (RAB) meetings and a public meeting to discuss this Proposed Plan, if requested, the Administrative Record file for the site, and announcements published in the Alamogordo Daily News newspaper, City of Alamogordo, New Mexico. The USAF and the USEPA encourage the public to gain a more comprehensive understanding of the site and the remedial activities that have been conducted at the site.

The dates for the public comment period, details regarding the announcement and location of the public meeting, and the locations of the Administrative Record files, are provided on the front page of this PP.

8.0 REFERENCES

EPA 540-R-98-031, Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents; USEPA, July 1999.

FPM, Final Remedial Investigation Report, ML866 Former Bombing Range and SR867 Possible Firing Range Munitions Response Sites, Holloman AFB, New Mexico, 2018.

HDR, Final Comprehensive Site Evaluation Phase II Report, Holloman AFB, New Mexico, 2013. HDR for United States Army Corps of Engineers (USACE) - Omaha District.

Holloman AFB, Installation Development and Design Holloman AFB, New Mexico, 2011.

Shaw, Final Modified Comprehensive Site Evaluation Phase I Report, Holloman AFB,

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New Mexico, 2010. Shaw for USACE - Omaha District.

9.0 GLOSSARY AND TERMS

Administrative Record – The body of documents that “forms the basis” for the selection of a particular response at a site. Documents that are included are relevant documents that were relied upon in selecting the response action. Until the Administrative Record is certified, it shall be referred to as the “Administrative Record file.”

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Congress enacted CERCLA (42 USC § 9620 et seq.), commonly known as the Superfund act, on 11 December 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

Digital Geophysical Mapping (DGM) - Techniques that utilize electronic instruments to detect, measure, and map the physical characteristics of buried source items (i.e., anomalies).

Explosive Hazard – A condition where danger exists because explosives are present that may react (e.g., detonate, deflagrate) in a mishap with potential unacceptable effects (e.g., death, injury, damage) to people, property, operational capability, or the environment.

Intrusive Investigation - An activity that involves or results in the penetration of the ground surface, and in many cases the excavation of metallic anomalies located underground.

Military Munitions – Military munitions means all ammunition products and components produced for or used by the armed forces for national defense and security, including confined gaseous, liquid, and solid propellants; explosives,

pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives, and chemical warfare agents; chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges; and devices and components thereof.

Munitions Constituents (MC) – Any materials originating from unexploded ordnance, discarded military munitions, or other military munitions, including explosive and non-explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions.

Munitions and Explosives of Concern (MEC) – Specific categories of military munitions that may pose unique explosives safety risks, including unexploded ordnance, discarded military munitions, or munitions constituents present in high enough concentrations to pose an explosive hazard.

Munitions Debris (MD) – Remnants of munitions (e.g., fragments, penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization, or disposal.

Munitions Response – Response actions, including investigation, removal actions and remedial actions to address the explosives safety, human health, or environmental risks presented by unexploded ordnance, discarded military munitions, or munitions constituents, or to support a determination that no removal or remedial action is required.

Munitions Response Area (MRA) - Any area on a defense site that is known or suspected to contain unexploded ordnance, discarded military munitions or munitions constituents (e.g., former ranges or munitions burial areas).

Munitions Response Site (MRS) - A discrete location within a munitions response

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Holloman Air Force Base, New Mexico

area that is known to require a munitions response.

National Oil and Hazardous Substance Pollution Contingency Plan (NCP) - Revised in 1990, the NCP provides the regulatory framework for responses under Comprehensive Environmental Response, Compensation, and Liability Act.

Range – A designated land or water area that is set aside, managed, and used for range activities by the Department of Defense. The term includes firing lines and positions, maneuver areas, firing lanes, test pads, detonation pads, impact areas, electronic scoring sites, buffer zones with restricted access, and exclusionary areas. The term also includes airspace areas designated for military use.

Remedial Action - Those actions consistent with a permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health, welfare, or the environment.

Remedial Investigation (RI) - The RI process can be thought of as the site characterization phase in which the nature and extent of contamination is determined and potential risks posed to human health and the environment are evaluated. The RI gathers necessary information to develop and evaluate remedial alternatives for the site. Per 40 CFR 300.430(d), the purpose of the RI is to “collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives.”

Unexploded Ordnance (UXO) – Military munitions that: (a) have been primed, fuzed, armed, or otherwise prepared for action, (b) have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations,

installations, personnel, or material, and (c) remain unexploded whether by malfunction, design, or any other cause.

