

**Watkins Gate Burn Area Mortar Pits
MEC Remedial Action
Technical Information Paper
Former Fort Ord, California**

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Prepared For:



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List of Acronyms

Army	United States Department of the Army
BLM	Bureau of Land Management
DGM	Digital Geophysical Mapping
KEMRON	KEMRON Environmental Services, Inc.
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MRA	Munitions Response Area
MRS	Munitions Response Site
TM	Technical Memorandum
UXO	Unexploded Ordnance
WGBA	Watkins Gate Burn Area

1 INTRODUCTION

1.1 Site Location

The Watkins Gate Burn Area (WGBA) is located in the northwestern section of the Impact Area Munitions Response Area (MRA). The WGBA is bounded by Blue Line Road to the west and north, Evolution Road to the east, and Watkins Gate Road to the south.

The Mortar Pits site encompasses approximately 1.5 acres of former military infrastructure (berms, pits, mounds, roads) that are intended to be returned to a natural landscape. The portions of the site identified for remediation consist of separate earth mounds, each approximately 8 feet high and ranging from 75 to 200 feet long.

WGBA and the WGBA Mortar Pits site location are shown on [Figure 1](#).

1.2 Background and Purpose

Surface Munitions and Explosives of Concern (MEC) removal and digital geophysical mapping (DGM) were conducted previously in the WGBA. Further detail is included in the *MRS-BLM Watkins Gate Burn Area MEC Remedial Action, Technical Memorandum, Former Fort Ord, California* [WGBA TM; KEMRON Environmental Services, Inc. (KEMRON), 2015].

The "Mortar Pits" site was identified through a joint inspection of the WGBA by the United States Department of the Army (Army) and the Bureau of Land Management (BLM). This joint inspection was conducted in 2014 and documented in the WGBA TM (KEMRON, 2015). The joint inspection summary stated that the "Mortar Pits" area contained "10 mortar pits constructed with a frontal berm and asphalt surface." The work described in this Technical Information Paper addressed the entire "Mortar Pits" area that was identified during the joint inspection for future BLM recontouring.

The intent of the field work at the Mortar Pits site was to provide subsurface MEC remediation of the mounds and to remove any asphalt covering, so that the mounds can be graded to a more natural topography by the BLM at a later date. Minor modifications to Stinger Road and Austin Road were completed in order to access the mounds. Previously collected DGM data was evaluated to determine if the mounds would be remediated by investigating DGM targets, through analog (mag

and dig) methods, or a combination of the two. A survey team was employed to establish the extent of the remediation area to aid in the clearance effort.

2 SCOPE OF WORK

2.1 *Vegetation Clearance*

Vegetation coverage at this site was minimal and did not pose a significant obstacle to the planned operations. Where needed, field teams employed manual vegetation clearance equipment to conduct planned MEC remediation activities effectively.

2.2 *Analog MEC Remediation (Mag and Dig)*

Following an evaluation of previously collected DGM data within the WGBA Mortar Pits site, a determination was made that the mounds would be remediated through analog (mag and dig) methods. This field work was conducted in November and December of 2018. [Tables 1](#) and [2](#) detail the results of the analog MEC remediation. Standard procedures and quality control processes outlined in the *Final Quality Assurance Project Plan, Former Fort Ord, California, Volume II Appendix A, Munitions and Explosives of Concern Remedial Action* (KEMRON, 2016) were followed.

2.3 *Site Restoration Activities*

After the analog MEC remediation was completed, asphalt from the WGBA Mortar Pits was broken into small pieces and used to repair sections of Austin Road between Stinger Road and the Blue Line Road. Unexploded Ordnance (UXO) personnel were present during this phase of work to ensure no MEC items were present in the asphalt removed from the WGBA Mortar Pits. Site restoration was completed using a combination of barley seed, blown straw, and installation of wattle and silt fencing.

3 SUMMARY OF MEC/MD REMOVED

No MEC items were encountered during the field operations described above. A total of 26 pounds of munitions debris (MD) was removed during field operations. MD weights are shown on [Figure 2](#) and are further detailed in [Table 3](#).

4 CONCLUSIONS/RECOMMENDATIONS

Analog MEC remediation operations have been completed within the footprint of the WGBA Mortar Pits site. The mounds can be graded to a more natural topography by the BLM at a later time when equipment and personnel are available. Construction support is not required for this planned grading operation within the footprint of the WGBA Mortar Pits site.

5 REFERENCES

KEMRON Environmental Services, Inc. (KEMRON), 2015. *MRS-BLM Watkins Gate Burn Area MEC Remedial Action, Technical Memorandum, Former Fort Ord, California*. [Administrative Record (AR)# OE-0832A]

KEMRON, 2016. *Final Quality Assurance Project Plan, Former Fort Ord, California, Volume II Appendix A, Munitions and Explosives of Concern Remedial Action*. (AR# OE-0884A)

Tables

Table 1
Cumulative Results

Parameter	WGBA Mortar Pits Totals
Surface removal acreage	0
Analog subsurface removal acreage	1.49
Digital Subsurface removal acreage	0
DGM survey acreage	0
MEC items	0
Total Estimated MD Weight (lbs)	26
Total Estimated RRD and OD (lbs)	2,209

DGM - Digital Geophysical Mapping

MEC - Munitions and Explosives of Concern

MD - Munitions Debris

RRD - Range Related Debris

OD - Other Debris

Table 2
Summary of Removal Methods

Activity	WGBA Mortar Pits Grids
Surface Removal	0
Analog Subsurface Removal	7
Digital Subsurface Removal	0
DGM Survey	0

DGM - Digital Geophysical Mapping

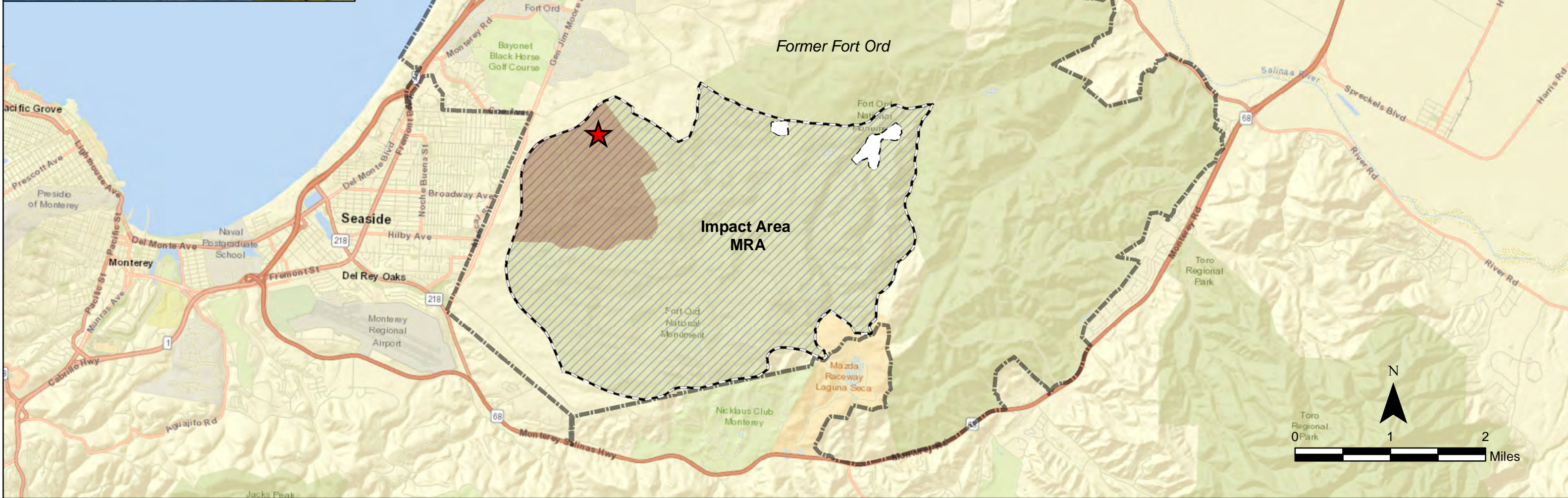
Table 3





Summary of Survey and Removal Methods by Grids

Operation Type	Date Completed	Grid ID	MD Weight (lbs)
Mag and Dig	11/27/2018	MP01A	4
Mag and Dig	11/29/2018	MP01B	2
Mag and Dig	12/4/2018	MP02A	8
Mag and Dig	12/10/2018	MP02B	3
Mag and Dig	12/11/2018	MP03	0
Mag and Dig	12/17/2018	MP04	0
Mag and Dig	12/26/2018	MP05	9

Total = 26

Figures



-  WGBA Mortar Pits
-  Watkins Gate Burn Area
-  Impact Area MRA
-  Former Fort Ord Boundary

**WGBA Mortar Pits
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Figure 1
Location

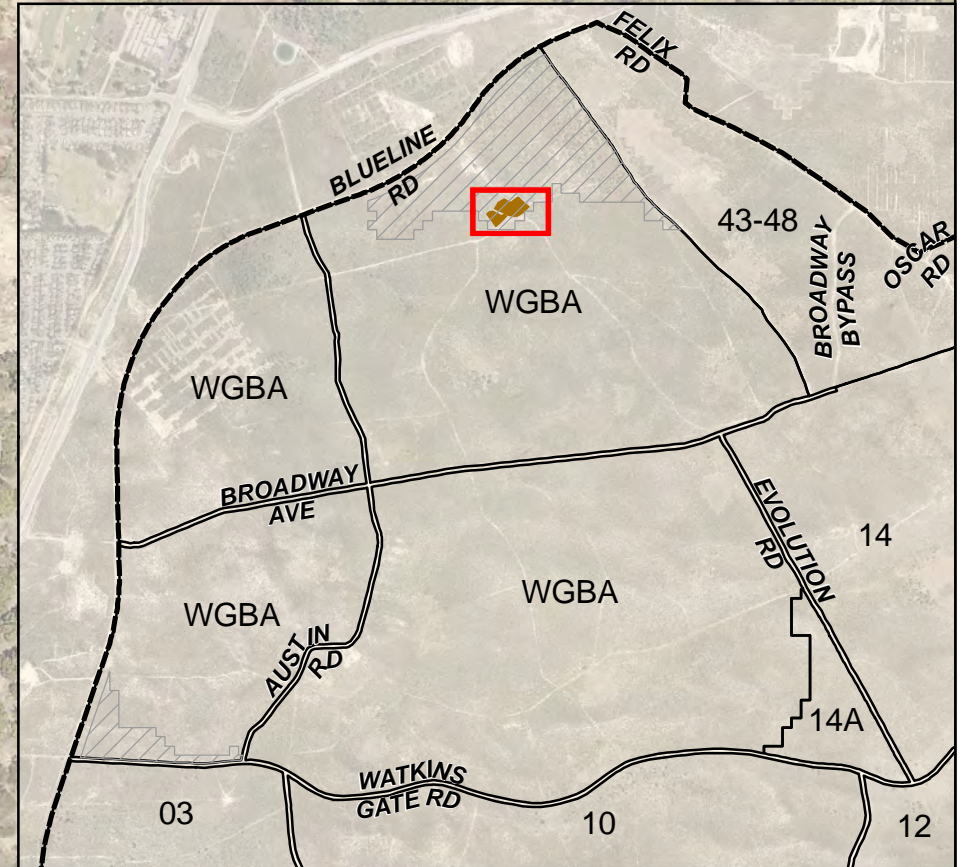
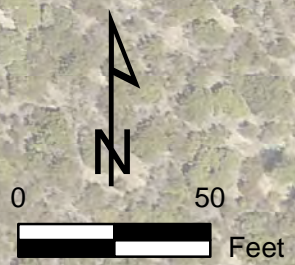
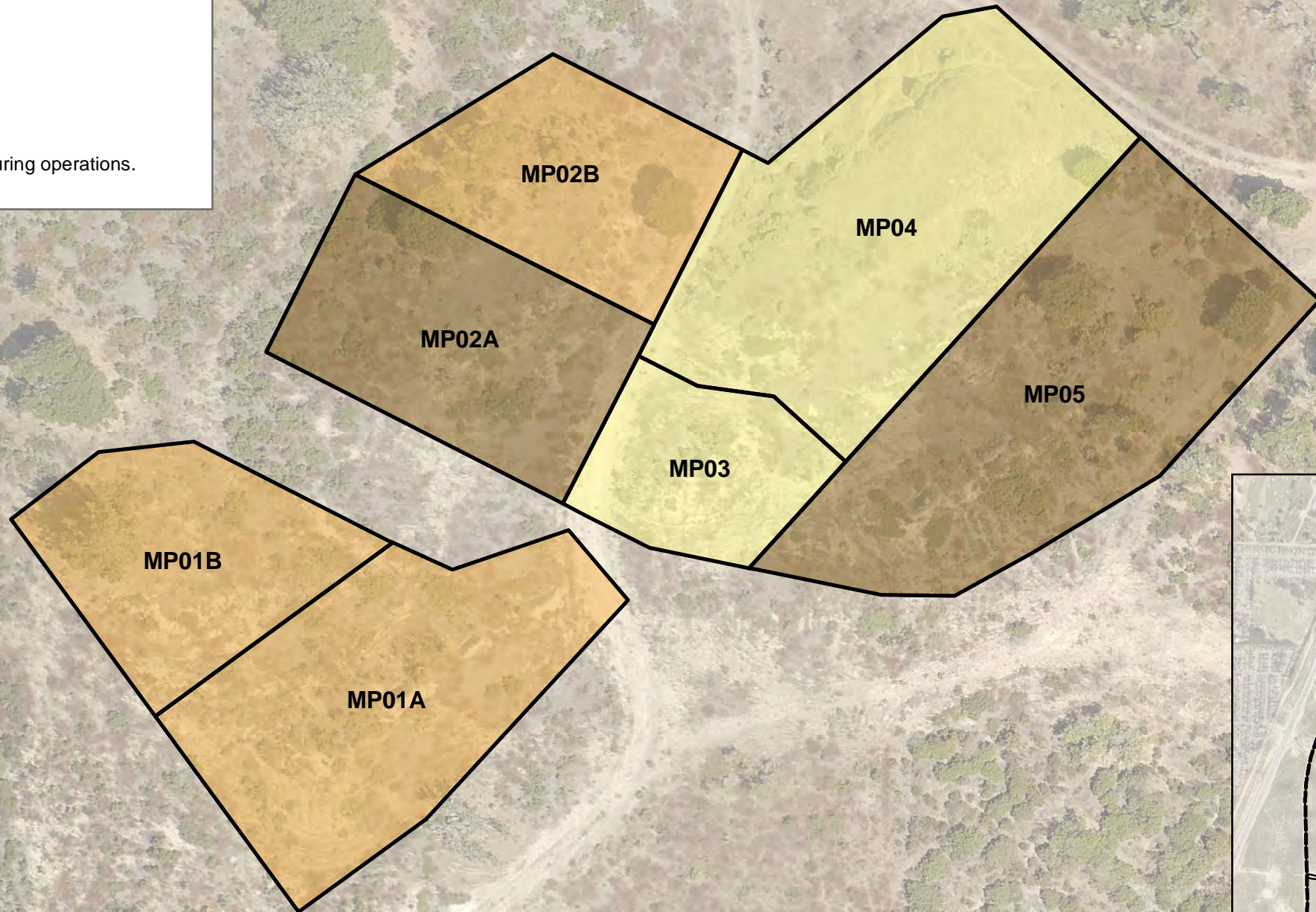


MP04 WGBA Mortar Pits Work Grids (~1.5 acres)

MD weight per grid

- No MD
- 1 - 5 lbs
- 6 - 10 lbs

No MEC items were encountered during operations.



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Figure 2
WGBA Mortar Pits