ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 1: LITERATURE REVIEW

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
1. ***Is there evidence that the site was used as an impact area (i.e., fired military munitions such as mortars, projectiles, rifle grenades or other launched ordnance)?***		No	

Sources reviewed and comments
There is no evidence to indicate that the site was used as an impact area. Training maps indicate that the site vicinity was used as a camouflage area in 1945 and for mines and booby trap training circa 1954. During sampling, no evidence of fired military munitions was found.
References:
HFA, 1994a; Army 1945, 1954.

2. ***Is there historical evidence that training involved use of High Explosive (HE) or Low Explosive (LE) items?***	Yes		

Sources reviewed and comments
The components of the smoke charges and/or fuzes associated with the practice mines and booby traps could be HE or LE. Site was used for mines and booby trap training and as a camouflage area.
References:
USAEDH, 1997.

3. ***Is there historical evidence that training involved use of pyrotechnic and/or smoke producing items (e.g., simulators, flares, smoke grenades) but not explosives?***	Yes		

Sources reviewed and comments
Booby trap simulators can contain pyrotechnic charges.
References:
HFA, 1994a; Army 1977.

DEVELOPMENT AND USE OF THE SURROUNDING AREA

4. ***Does subsequent development or use of the area indicate that military munitions would have been used at the site?***		No	

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 1: LITERATURE REVIEW

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive

Sources reviewed and comments

There is no evidence to indicate military munitions use.
Housing was built adjacent to training area beginning in 1962.
References:
USAEDH, 1997; HFA, 1994a; Army 1945, 1954.

5. *Does use of area surrounding the site indicate that military munitions would have been used at the site?*	Yes		

Sources reviewed and comments

The current site boundary is within 300 feet of the boundary of the City of Marina (farmland/residential) and overlaps a portion of the current footprint of Highway 1. The City of Marina and Hwy 1 were present prior use of the MRS-6 Expansion Area as a training area. Three former practice mortar squares and a flame thrower range were approximately 300 to 600 feet south of the current MRS-6 Expansion Area boundary. Information gathered to date indicates that the practice mortar squares were used for practice purposes only and would not have generated munitions and explosive of concern (MEC). Housing (Patton Park) was constructed adjacent to the site beginning in 1962.

References:
Topographic Map, Camp Ord and Vicinity 1933-34; Aerial photos, 5/14/1956; Circa 1954 map.

ESTABLISHMENT OF SITE BOUNDARIES

6. *Is there evidence of training areas on aerial photographs that could be used to establish boundaries?*		No	

Sources reviewed and comments
There is general evidence that the MRS-6 Expansion Area was in use (development of roads). However, aerial photographs are not helpful in delineating site boundaries.
References:
Aerial photographs dated 8/17/1949; 7/3/1951; 5/14/1956; and 5/2/1966.

7. *Is there evidence of training on historical training maps that could be used to establish boundaries?*	Yes		

Sources reviewed and comments
Boundaries of MRS-6 Expansion Area are identified on the circa 1954 map.
References:
Army, 1954.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 1: LITERATURE REVIEW

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
8. ***Should current boundaries be revised?***		No	

Sources reviewed and comments

The site boundary is coincident with the area delineated on the circa 1954 map. The area has been sampled and walked and only munitions debris (MD) was found.

References:

Army, 1954.

RESULTS OF LITERATURE EVALUATION

Does the literature review provide sufficient evidence to warrant further investigation?	Yes		

Comments

Based on area designated as "Mines and Booby Traps" on the circa 1954 map, there was sufficient evidence to warrant the sampling and site walk performed.

References:

USAEDH, 1993, 1997; Army 1954.

References

Army, 1945. Training Facilities, Fort Ord and Vicinity, California. Revised August 1945.

Army 1954. Training Areas That Cannot Be Used at the Same Time, Circa 1954.

Army, 1977. Technical Manual, Army Equipment Data Sheets for Land Mines. TM 43-001-36. February.

Human Factors Applications, Inc., (HFA) 1994a. OEW Sampling And OEW Removal Action, Ft. Ord Final Report. December 1.

USAEDH, 1993. Archives Search Report, Fort Ord, California, Monterey County, California. Prepared by U.S. Army Corps of Engineers, St. Louis District. December.

USAEDH, 1997. Revised Archives Search Report, Former Fort Ord, California, Monterey County, California. Prepared by US Army Corps of Engineers St. Louis District.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
1. ***Is there evidence that the site was used as an impact area (i.e., fired military munitions such as mortars, projectiles, rifle grenades and other launched military munitions)?***		No	

Sources reviewed and comments
There is no evidence to suggest that the area was an impact area. No launched MEC or munitions debris were identified during sampling activities.
References:

2. ***Is there evidence that training involved use of High Explosive (HE) or Low Explosive (LE) items?***	Yes		

Sources reviewed and comments
Inert training and practice mines (munitions debris) have been found at the site. Practice mines can include smoke charges (LE).
References:
HFA, 1994a.

3. ***Is there evidence that training involved use of pyrotechnic and/or smoke producing items (e.g., simulators, flares, smoke grenades) but not explosives?***	Yes		

Sources reviewed and comments
Booby trap simulators can contain a pyrotechnic charge.
References:
HFA, 1994a; USAEDH, 1997; Army, 1977.

4. ***Was sampling and/or reconnaissance performed within the appropriate area?***	Yes		

Sources reviewed and comments
Sampling performed by HFA in five of eight grids identified as "MPUSD" grids were partially or completely within the boundary delineated on the "circa 1954" map.
References:
HFA, 1994a; Army 1954; MACTEC, 2004.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
5. ***Does sampling indicate MEC and/or munitions debris are present at the site?***	Yes		

Sources reviewed and comments

Five inert practice mines were found in or just south of the site during grid sampling.

References:

HFA, 1994a; USAEDH, 1997; MACTEC, 2004.

	Yes	No	Inconclusive
6. ***Were the type(s) of items found consistent with the type of training identified for the site?***	Yes		

Sources reviewed and comments

Five inert practice mines (in or just south of the site) were found. These items are consistent with use of the area as a practice mine and booby trap area.

References:

HFA, 1994a; USAEDH, 1997; Sease, 2002; MACTEC, 2004.

	Yes	No	Inconclusive
7. ***Were the type(s) of items found consistent with the era(s) in which training was identified?***	Yes		

Sources reviewed and comments

Items found are consistent with training in the 1940s and 1950s.

References:

Hogg, 2000; Army, 1954.

	Yes	No	Inconclusive
8. ***Was HE fragmentation found?***		No	

Sources reviewed and comments

No HE fragmentation was found. Only four inert training antitank (M80) mines, one practice antipersonnel (M8 series) mine, a hand grenade safety lever, and an expended firing device (M1-type) were found within and south of the site boundaries.

References:

HFA, 1994a; USAEDH, 1997; MACTEC, 2004.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
9. ***Was HE found?***		No	

Sources reviewed and comments

No HE fragmentation was found. Only four inert training antitank (M80) mines, one practice antipersonnel (M8 series) mine, a hand grenade safety lever, and an expended firing device (M1-type) were found within and south of the site boundaries.

References:

HFA, 1994a; USAEDH, 1997; MACTEC, 2004.

10. ***Were LE found?***		No	

Sources reviewed and comments

No. Only munitions debris was found within or just south of the MRS-6 Expansion Area.

References:

HFA, 1994a; USAEDH, 1997; MACTEC, 2004.

11. ***Were pyrotechnics found?***		No	

Sources reviewed and comments

Only inert or expended practice or training mines, an expended firing device, and hand grenade safety lever (munitions debris) have been found at the MRS-6 Expansion Area.

References:

HFA 1994a.

12. ***Were smoke producing items found?***		No	

Sources reviewed and comments

Only four inert or expended training antitank (M80) mines, one inert or expended practice antipersonnel (M8 series) mine, a hand grenade safety lever, and an expended firing device (M1-type) were found within and south of the site boundaries.

References:

HFA, 1994a; USAEDH, 1997; Army, 1977, MACTEC, 2004.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
13. ***Were explosive items found (e.g. rocket motors with explosive components, fuzes with explosive components)?***		No	

Sources reviewed and comments
No explosive items were found. Only four inert or expended training antitank (M80) mines, one inert or expended practice antipersonnel (M8 series) mine, a hand grenade safety lever, and an expended firing device (M1-type), all of which were munitions debris, were found within and south of the site boundaries.
References:
HFA, 1994a; USAEDH, 1997, MACTEC,2004.

14. ***Do items found in the area indicate training would have included use of training items with energetic components?***	Yes		

Sources reviewed and comments
No energetic devices were found. However, firing devices, activators/detonators and smoke charges associated with the practice mines and booby traps may contain energetic components.
References:
HFA, 1994a; Army, 1977.

15. ***Were items found in a localized area (possibly the remnants of a cleanup action)?***			Inconclusive

Sources reviewed and comments
The specific location of where the inert practice mines discovered during grid sampling were found is unknown.
References:
HFA, 1994a.

16. ***Has the site been divided into sectors to focus on areas of common usage, similar topography and vegetation, and/other unique site features?***		No	

Sources reviewed and comments
The site was not divided into sectors based on site usage or site features.
References:
HFA, 1994a.

17. ***Should current site boundaries be revised?***		No	

Sources reviewed and comments
Current site boundaries are coinsident with the area identified as "Mines & Booby Traps" as delineated on the "circa 1954" map.
References:
Army, 1954.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
18. ***Was equipment used capable of detecting items suspected at the site at the maximum expected depth?***	Yes		

Sources reviewed and comments

Mines and would be expected at or near the ground surface. The site grids were sampled to a depth of 4 feet bgs. Schonstedt GA-52/C or GA-72/Cv magnetometers were used by HFA during previous investigations. Results of the ODDS study indicate that these instruments are capable of detecting the ferrous MEC if it were present at this site. Schonstedt tools would not be able to detect plastic practice mines.
References:
HFA, 1994a; USA, 2000; USAESCH, 1997; Parsons, 2001.

19. ***Was equipment used capable of detecting the types of items (e.g., non-ferrous) suspected at the site?***		No	

Sources reviewed and comments
Equipment used was capable of detecting metallic objects. Many of the practice mines have steel bodies, so these items are likely to have been detected. However, some inert practice mines are nonmetallic.
References:
USAESCH, 1997; Parsons, 2001.

20. ***Do the results of the ODDS indicate that items suspected at the site would have been detected by the instrument used at the time of investigation?***	Yes		

Sources reviewed and comments

Land mines were not listed as items of study in the ODDS but would probably be categorized as Type I or Type II. Schonstedt GA-52/C or GA-72/Cv magnetometers were used by HFA during previous investigations. Although not directly comparable to the MRS-6 Expansion Area, the results of the ODDS indicate that these magnetometers are capable of detecting the ferrous MEC if it were present at this site. It should be noted that plastic practice mines could not be detected by the equipment used because they are non-ferrous.
References:
HFA, 1994a; USA, 2000; Parsons, 2001.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
21. ***Do results of the investigation indicate that suspected items could be detected with a high level of confidence at observed and expected depth ranges?***			Inconclusive

Sources reviewed and comments

Although not directly comparable to MRS-6 Expansion Area, results of the ODDS suggest that the equipment used should be able to detect ferrous MEC to a depth of 2 feet bgs.
References:
HFA, 1994; USA, 2000; Parsons, 2001.

22. ***Were all the instruments used to evaluate the site maintained and calibrated in accordance with associated work plan and manufacturer's specifications?***	Yes		

Sources reviewed and comments
As stated in the HFA Final Report, "Each magnetometer was tested each morning and field tested after lunch to determine that it was operating correctly".
References:
HFA, 1994a.

23. ***Based on the anticipated target density (MEC items per acre) has the minimal amount of sampling acreage been completed in accordance with the scope of work or contractor work plan?***			Inconclusive

Sources reviewed and comments
There is no anticipated density of items. The practice mines, hand grenade lever, and expended firing device were probably inadvertently left at the site and generally were considered as "munitions debris".

24. ***Based on sampling procedure (e.g., grids, transects, and/or random walks) was a percentage of the site completed to provide 95% confidence in a MEC density estimate, and if so, provide total area investigated and the MEC density estimate.***			Inconclusive

Sources reviewed and comments
Based on a map in the HFA Final Report (*HFA, 1994*), a total of eight grids were sampled as part of the MPUSD sampling effort. Three full grids and part of two grids sampled were within the MRS-6 Expansion Area. This represents an area of approximately 35,000 square feet or 0.8 acres (based on 100 x 100-foot grids). One practice antipersonnel mine and four inert anti-tank land mines and one inert antipersonnel mine were found during this sampling effort. Although records indicating which grids contained the found items are not available, no MEC was found. Therefore, MEC densities were not calculated.

Total Area: Approx. 35,000 sq. ft		
MEC Density:	Not calculated	

References:
HFA, 1994b and 1994a.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
25. ***What percentage of the anomalies were intrusively investigated?***			
Sources reviewed and comments HFA sampling consisted of 100% sampling. (The number of anomalies identified is unknown). **References:** HFA, 1993 and 1994a.	Total % of anomalies investigated:		100%
26. ***Was the appropriate data processing scheme used for the site, how was the data processed?***			Not Applicable
Sources reviewed and comments All data collected using the Schonstedt, no data processing required. **References:** HFA, 1994a.			
27. ***Has the field data been collected and managed in accordance with quality control standards established for the project?***			Inconclusive
Sources reviewed and comments "The project was completed without QC discrepancy," (Final Report - HFA, 1994a). HFA field data are not available for review. It is not possible to perform a 10% check of reported results and field/grid records. **References:** HFA, 1994a.			
Result of Sampling Evaluation			
Does the sampling evaluation provide sufficient evidence to warrant further investigation?		No	

Comments

Sampling was performed within the digitized boundaries of the site. The sampling effort provides sufficient information regarding the type, presence, and density of MEC items in the site vicinity if they were present.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 2: SAMPLING EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive

References

Army 1954. Training Areas That Cannot Be Used at the Same Time, Circa 1954.

Army, 1977. Department of the Army Headquarters, Technical Manual, Army Ammunition Data Sheets for Land Mines (FSC 1345), TM 43-0001-36. February 14. HLA# 62040

Human Factors Applications, Inc., (HFA) 1994a. OEW Sampling And OEW Removal Action, Ft. Ord Final Report. December 1.

HFA, 1994b. Human Factors Applications, Inc. Explosive Ordnance Disposal Division, OEW Site Operations Fort Ord-Phase III Work Plan and Site Specific safety and Health Plan. February 22.

Hogg, Ian V., 2001. The American Arsenal. Greenhill Books. London.

Parsons, 2001. Draft Ordnance Detection and Discrimination Study (ODDS), Former Fort Ord, Monterey, California. August.

USA Environmental, Inc., (USA) 2000. Ordnance Detection And Discrimination Study, Seeded Test Technical Memorandum, Former Fort Ord, California, Presidio of Monterey, California. In Cooperation with US Army Corps of Engineers Sacramento District and Parsons Engineering Science, Inc. October 23.

USAEDH, 1997. Revised Archives Search Report, Former Fort Ord, California, Monterey County, California. Prepared by US Army Corps of Engineers St. Louis District. HLA#33006

USAEDH, 1998. Engineering Evaluation/Cost Analysis – Phase 2 Former Fort Ord Monterey County, California. Appendix F. April.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 3: SITE WALK EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
1. ***Is there evidence that the site was used as an impact area (i.e., fired military munitions such as mortars, projectiles, rifle grenades or other launched ordnance)***		No	

Sources reviewed and comments
There is no evidence to suggest that the area was an impact area. No launched MEC or munitions debris were identified during site walk activities.
References: MACTEC, 2004

2. ***Is there evidence that training involved use of High Explosive (HE) or Low Explosive (LE) items?***	Yes		

Sources reviewed and comments
HE was used in the form of a coupling base, which is part of the M1 firing device. Approximately 0.05 grams of explosive is contained in a coupling base.
References: Army, 1964a; USADAC, 2004

3. ***Is there evidence that training involved use of pyrotechnic and/or smoke producing items (e.g., simulators, flares, smoke grenades) but not explosives?***			Inconclusive

Sources reviewed and comments

The origin of a single grenade safety lever discovered within the site not be determined. It is possible that it came from a smoke grenade used for general signaling purposes.

4. ***Does subsequent development or use of the area indicate potential that military munitions would have been used at the site?***		No	

Sources reviewed and comments

There is no evidence to indicate military munitions use. Housing was built adjacent to training area beginning in 1962.

References: USAEDH, 1997; HFA, 1994a; Army 1945, 1954.

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 3: SITE WALK EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
5. ***Does use of area surrounding the site indicate that military munitions would have been used at the site?***	Yes		

Sources reviewed and comments

Three former practice mortar squares and a flame thrower range were approximately 300 to 600 feet south of the current MRS-6 Expansion Area boundary. Information gathered to date indicates that the practice mortar squares were used for practice purposes only and would not have generated munitions and explosive of concern (MEC). Site MRS-6, which is north of the site, was also identified as having been used for mine and boobytrap training.

References: Topographic Map, Camp Ord and Vicinity 1933-34; Aerial photos, 5/14/1956; Circa 1954 map, MACTEC, 2004.

6. ***Is there evidence of training areas on aerial photographs that could be used to establish site boundaries?***		No	

Sources reviewed and comments

There is general evidence that the MRS-6 Expansion Area was in use (development of roads). However, aerial photographs are not helpful in delineating site boundaries.

References: Aerial photographs dated 8/17/1949; 7/3/1951; 5/14/1956; and 5/2/1966.

7. ***Is there evidence of training on historical training maps that could be used to establish boundaries?***	Yes		

Sources reviewed and comments

Boundaries of MRS-6 Expansion Area are identified on the circa 1954 map.

References: Army, 1954

8. ***Was the site walk performed within appropriate area?***	Yes		

Sources reviewed and comments

The site walk was performed within the boundaries of the MRS-6 Expansion Area, which is coincident with the 1954 mine and boobytrap training area.

References: Army, 1954; MACTEC, 2004

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 3: SITE WALK EVALUATION

TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
9. ***Does reconnaissance (site walk) indicate MEC and/or munitions debris are present at the site?***	Yes		

Sources reviewed and comments

An expended firing device and hand grenade safety lever (munitions debris) were found during the site walk.

References: MACTEC, 2004

10. ***Were the type(s) of items found consistent with the type of training identified for the site?***	Yes		

Sources reviewed and comments

The expended firing device (munitions debris) found during the site walk is consistent with the use of the area as a practice mine and boobytrap training area. The grenade lever (munitions debris) may be related, but could also be a remnant of general signaling activities.

11. ***Were the type(s) of items found consistent with the era(s) in which training was identified?***	Yes		

Sources reviewed and comments

Items found are consistent with training in the 1940s and 1950s.

12. ***Was HE fragmentation found?***		No	

Sources reviewed and comments

No HE fragmentation were found during the 2004 site walk.
References: MACTEC, 2004

13. ***Was HE found?***		No	

Sources reviewed and comments

No HE were found during the 2004 site walk.
References: MACTEC, 2004

14. ***Was LE found?***		No	

Sources reviewed and comments

No LE were found during the 2004 site walk.
References: MACTEC, 2004

ATTACHMENT 1
EVALUATION OF PREVIOUS WORK: MRS-6 Expansion Area
EVALUATION CHECKLIST PART 3: SITE WALK EVALUATION

'PE OF TRAINING AND MILITARY MUNITIONS EXPECTED

	Yes	No	Inconclusive
. ***Were pyrotechnics found?***		No	

)urces reviewed and comments
pyrotechnics were found during the 2004 site walk.
ferences: MACTEC, 2004

. ***Were smoke-producing items found?***		No	

)urces reviewed and comments
smoke-producing items were found during the 2004 site lk.
ferences: MACTEC, 2004

. ***Were explosive items found (e.g. rocket motors with plosive components, fuzes with explosive mponents)?***		No	

)urces reviewed and comments
explosive items were found during the 2004 site walk.
ferences: MACTEC, 2004

. ***Do items found in the area indicate training would ve included use of training items with energetic mponents?***	Yes		

)urces reviewed and comments
e M1 firing device found (munitions debris) commonly :ludes a coupling base with a very small amount of energetic ıterial.

. ***Were items found in a localized area (possibly the mnants of a cleanup action)?***		No	

)urces reviewed and comments
e locations of the hand grenade safety lever and expended ng device discovered during the site walk appear to be ıdom.