APPENDIX E

Munitions Response Activity Evaluation Checklists

Appendix E
Munitions Response Activity Evaluation Checklists
Part 1: Literature Review

	Yes	No	Inconclusive
TYPE OF TRAINING AND MILITARY MUNITIONS EXPECTED			
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)?			
Sources reviewed and comments:			
2. Is there historical evidence that training involved use of High Explosive (HE) or Low Explosive (LE) items?			
Sources reviewed and comments:			
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?			
Sources reviewed and comments:			
DEVELOPMENT AND USE OF SURROUNDING AREA			
4. Does subsequent development or use of the area indicate that military munitions would have been used at the site?			
Sources reviewed and comments:			
5. Does use of area surrounding the site indicate that military munitions would have been used at the site?			
Sources reviewed and comments:			

Appendix E
Munitions Response Activity Evaluation Checklists
Part 1: Literature Review

	Yes	No	Inconclusive
ESTABLISHMENT OF SITE BOUNDARIES			
6. Is there evidence of training areas on aerial photographs that could be used to establish site boundaries?			
Sources reviewed and comments:			
7. Is there evidence of training on historical training maps that could be used to establish boundaries?			
Sources reviewed and comments:			
8. Should current boundaries be revised?			
Sources reviewed and comments:			
RESULTS OF LITERATURE EVALUATION			
9. Does the literature review provide sufficient evidence to warrant further investigation?			
Sources reviewed and comments:			

Appendix E
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
HISTORICAL INFORMATION			
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)?			
Sources reviewed and comments:			
References:			
2. Is there evidence that training involved use of explosive items?			
Sources reviewed and comments:			
References:			
3. Is there evidence that training involved use of pyrotechnic and/or smoke-producing items (e.g., simulators, flares, smoke grenades) but not explosives?			
Sources reviewed and comments:			
References:			
REMOVAL RESULTS			
4. Was removal performed within the appropriate area?			
Sources reviewed and comments:			
References:			

Appendix E
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

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

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

7. Was High Explosive (HE) fragmentation found?			

Sources reviewed and comments:

References:

8. Were HEs found?			

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
9. Were Low Explosives (LEs) found?			

Sources reviewed and comments:

References:

10. Were pyrotechnics found?			

Sources reviewed and comments:

References:

11. Were smoke-producing items found?			

Sources reviewed and comments:

References:

12. Were explosive items found (e.g., rocket motors with explosive components, fuzes with explosive components)?			

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
13. Do items found in the area indicate training would have included use of training items with other energetic components?			

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

SITE INVESTIGATION DESIGN

15. Was the site divided into subareas to focus on areas of common usage, similar topography and vegetation, and/or other unique site features?			

Sources reviewed and comments:

References:

16. Should the site be divided into subareas based on the above features?			

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
17. Should current site boundaries be revised based on sampling results?			

Sources reviewed and comments:

References:

EQUIPMENT REVIEW

18. Was equipment used capable of detecting items suspected at the site at the maximum expected depth?			

Sources reviewed and comments:

References:

19. Was equipment used capable of detecting the types of items (e.g., non-ferrous) suspected at the site?			

Sources reviewed and comments:

References:

20. Do the results of the Ordnance Detection and Discrimination Study (ODDS) indicate that items suspected at the site would have been detected by the instrument used at the time of investigation?			

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	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?			

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

DATA PROCESSING AND DATA MANAGEMENT

23. Was the appropriate data processing scheme used for the site, and how were the data processed?			

Sources reviewed and comments:

References:

24. Have the field data been collected and managed in accordance with quality control standards established for the project?			

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 2: Removal Evaluation

	Yes	No	Inconclusive
RESULTS OF REMOVAL EVALUATION			
A. Can the data be used to perform a risk assessment?			

Comments:

References:

B. Can the data be used to perform a feasability study?			

Comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 3: Sampling Evaluation

	Yes	No	Inconclusive
HISTORICAL INFORMATION			
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)?			

Sources reviewed and comments:

References:

2. Is there evidence that training involved use of explosive items?			

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 3: Sampling Evaluation

	Yes	No	Inconclusive
SAMPLING RESULTS			
4. Was sampling performed within the appropriate area?			

Sources reviewed and comments:

References:

5. Does sampling indicate that MEC or munitions debris are present at the site?			

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 3: Sampling Evaluation

	Yes	No	Inconclusive
8. Was High Explosive (HE) fragmentation found?			

Sources reviewed and comments:

References:

9. Was HE found?			

Sources reviewed and comments:

References:

10. Were Low Explosives (LEs) found?			

Sources reviewed and comments:

References:

11. Were pyrotechnics found?			

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 3: Sampling Evaluation

	Yes	No	Inconclusive
12. Were smoke-producing items found?			

Sources reviewed and comments:

References:

13. Were explosive items found (e.g., rocket motors with explosive components, fuzes with explosive components)?			

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 3: Sampling Evaluation

	Yes	No	Inconclusive
SITE INVESTIGATION DESIGN			
16. Was the site divided into subareas to focus on areas of common usage, similar topography and vegetation, and/or other unique site features?			
Sources reviewed and comments:			
References:			
17. Should current site boundaries be revised based on sampling results?			
Sources reviewed and comments:			
References:			
EQUIPMENT REVIEW			
18. Was equipment used capable of detecting items suspected at the site at the maximum expected depth?			
Sources reviewed and comments:			
References:			

Appendix E
Munitions Response Activity Evaluation Checklists
Part 3: Sampling Evaluation

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

Sources reviewed and comments:

References:

20. Do the results of the Ordnance Detection and Discrimination Study (ODDS) indicate that items suspected at the site would have been detected by the instrument used at the time of investigation?			

Sources reviewed and comments:

References:

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?			

Sources reviewed and comments:

References:

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

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 3: Sampling Evaluation

	Yes	No	Inconclusive
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 plan?			

Sources reviewed and comments:

References:

24. Based on the 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 estimates?			

Sources reviewed and comments:

References:

25. What percentage of the anomalies were intrusively investigated?			

Sources reviewed and comments:

References:

Appendix E
Munitions Response Activity Evaluation Checklists
Part 3: Sampling Evaluation

	Yes	No	Inconclusive
DATA PROCESSING AND DATA MANAGEMENT			
26. Was the appropriate data processing scheme used for the site, and how were the data processed?			

Sources reviewed and comments:

References:

27. Have the field data been collected and managed in accordance with quality control standards established for the project?			

Sources reviewed and comments:

References:

RESULTS OF REMOVAL EVALUATION			
28. Does the sampling evaluation provide sufficient evidence to warrant further investigation?			

Comments:

References: