Draft Phase I RI Work Plan Addenda for the Erie Burning Grounds
Ravenna Army Ammunition Plant
Comment Resolutions

July 1999

Draft Phase I RI Work Plan Addenda for the Erie Burning Grounds, Ravenna Army Ammunition Plant
Comment Resolutions

Comment No.	Comment	Response
USACE Louisville District *(J. Jent)*		
1.	Figure 1-2; Please change Sub-Area 14 sample stations to Sub-Area 14; Sample Stations	The figure has been modified as requested.
2.	Figures 1-3, 1-5, 4-1, 4-2; A. Please remove "OFF POST" designations. B. Please move culvert beneath north road over to location of former drainage channel C. In legend, please change ASPHALT to GRAVEL.	The figure has been modified as requested.
3.	Page 1-6, 3rd para, 6th sentence; Please delete, "the RVAAP facility boundary."	The text (page 1-5) has been deleted as requested.
4.	Page 1-9, 2nd para, 2nd sentence; Please reword sentence to state that all surface drainage from Erie BG flows through PF 534.	The third sentence of paragraph 2 has been revised as requested to indicate that all surface drainage from EBG flows through PF534.
5.	Page 1-10, 1st para; A. 1st sentence; Please change to For surface water, only lead exceeded the RRSE standard concentration. B. 3rd sentence; Please change "moderate" to "high." C. 4th sentence; Please change --- "hazard" to "standard criteria." D. Last sentence; Please change "minimal" to "medium."	For comments 5A and 5C, the term "hazard" has been changed to "standard criteria" as requested. For comments 5B and 5D, the text has been revised to clarify: (1) For surface water, the <u>contaminant hazard factor</u> for lead was moderate, a potential migration pathway was identified, and a receptor pathway was identified. Thus, the surface water/human endpoint was assessed as a *high* relative risk. (2) For sediment, the <u>contaminant hazard factor</u> was minimal, a potential migration pathway was identified, and a receptor pathway was identified. Thus, the sediment/human endpoint was assessed as a *moderate* relative risk.
6.	Page 1-10, last para, 2nd sentence; Please underline, ---"however, UXO clearance --- effort."	The text has been underlined as requested.
7.	Figure 2-2; Please change Draft Meeting date to 9 June and make related changes. Please keep beginning of field investigation at 24 Jul if possible.	The schedule has been revised to indicate the Draft Work Plan Meeting dates from 14 Jun to 16 Jun 1999. The field effort start date will remain at 2 Aug 1999.
8.	Table 3-1; Please make Background Criteria for antimony 0.96 to match Facility-Wide Background.	The antimony background value has been corrected as requested.
9.	Page 3-10; Please underline "The residential and -------exposure pathways."	The text has been underlined as requested.

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10.	Table 3-5; Headings A. Please change to EPA Region IX PRGs / 10, and Soil Screening Guidance / 10, and B. Please add DAF = 1 to the Soil Screening Guidance label.	The table column headings have been changed as requested.
11.	Table 3-6; Please change heading to Tap Water PRG / 10.	The table column heading has been changed as requested.
12.	Page 3-37, 2nd bullet; Please add Metals only detected ---.	The text (page 3-38) has been modified as requested.
13.	Page 3-37, 4th bullet; Please add --- tap water PRG / 10 ---	The text (page 3-39) has been modified as requested.
14.	Table 4-3; A. Soils; Please provide reference to Figure 5-1 for Sample Location Identification. What is the ID of the 1-3' subsurface sample ? B. Sediment; Please provide reference to Figure 5-1 for Sample Location Identification. C. EBG-116; In location description, please change to; EBG Drainage Way, about 50' upstream of where the tributary from the Ore Piles flows into the EBG Drainage Way. D. EBG-117; In location description, please change to; Tributary draining the Ore Piles, about 50' upstream of where it flows into the EBG drainage way.	14A – A reference to Figure 4-1 has been added as requested for soils locations. The sample station IDs for surface (0 to 1 foot BGS) and subsurface soil samples (1 to 3 feet BGS) will be the same because it is assumed that both samples will be collected from the same point. However, the sample identification number will distinguish the two by using the sample location type code ("ss" for surface soil and "sb" for subsurface soil; Table 5-1). Table 5-1 will be modified to add the "sb" location type code. 14B – A reference to Figure 4-2 has been added. 14C and 14D – The descriptions have been modified as requested.
15.	Page 4-16, last para; Please change USACE Missouri River Division (MRD) laboratory to: Environmental Enterprises Inc. 10163 Cincinnati-Dayton Road Cincinnati, OH 45241 (513) 772-2818/ fax 782-8970.	The laboratory has been changed as requested.
16.	Page 4-19, Bullets 1 and 2; Please change Note that--- to Note that at each location, funding for collecting three samples, a loose surface material sample, a debris sample, and a sediment sample from 0 to 0.15 m (0 to 0.5 foot) are provided for. If conditions are different from those assumed, the sampling strategy will be adapted, but kept within the funding provided.	The text has been changed as requested.
17.	Figure 4-3; Please label EBG Drainage Way and put a flow arrow on it.	Figure 4-3 has been modified as requested.

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18.	Figure 4-4; Please label EBG Drainage Way and Ore Pile Tributary and place flow arrows on them.	Figure 4-4 has been modified as requested.
19.	Figure 5-1; What is the label for the 1-3' subsurface sample ?	Figure 5-1 has been modified to add "sb" as the sample location type code for subsurface soil samples collected from the 1 to 3 feet BGS interval at each soil sampling station.
20.	Please provide discussion of surveying of sample locations.	A Section 4.4 was added to provide a discussion of surveying activities. It was noted in the comment resolution meeting of 16 June 1999 that a temporary monument is available at the EBG outlet at Track 10.
USACE Louisville District *(B. Whelove)*		
1.	Figure 1-2; Please upgrade facility map to show current 51 environmental areas of concern. (J. Jent will provide a map)	Figure 1-2 was revised upon receipt of the additional information from Mr. John Jent.
2.	Figure 1-5; Please provide explanation of 48"-D RCP on figure.	A definition for RCP (reinforced concrete pipe) has been provided on Figure 1-5 and others showing this feature.
3.	Page 1-10, 3rd para, 2nd sentence; Please add ---UXO clearance (avoidance) ---. Comment applies several other places as well.	The text has been added as requested.
4.	Page 3-1, 3rd bullet; Good explanation of screening process.	Comment noted.
5.	Page 3-3, Para 3.2.6; Good explanation.	Comment noted.
6.	Page 3-4, 2nd bullet; Please provide explanation for 5% rationale.	The use of the frequency of detection screen is consistent with Section 5.9.3 of RAGS Part A, which states that FOD may be used to screen COCs with the approval of the EPA Risk Project Manager. In the case of the Phase I RI for 11 High Priority AOCs, this screen was included as part of the risk screening section. Because the process is actually employed to eliminate constituents prior to comparison to risk-based criteria, it was included as a general data screening tool (to identify SRCs) in the EBG work plan rather than in the risk screening section (i.e., determine which SRCs pose a potential risk). No text changes required.
7.	Page 3-36, last para before 3.4.2.2; Good explanation.	Comment noted.
8.	Page 4-1, Para 4.1.1.1; Please provide for 2 samples of slag along gravel access road.	No text changes required. Two railroad slag/ballast samples are currently planned along Track 49. In addition, slag characterization has been conducted as part of previous investigations at RVAAP. Slag samples specific to the EBG access road may be comprised of soil contingency samples if USACE determines that these samples are necessary.

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9.	Figure 4-1; Please add two surface sample locations 54 and 55 adjacent to two UXO sitings located about 20' north of Track HA (approximately where "C" of Track is labeled on figure).	Soil sampling stations 52 and 53 were designated as "to be determined" based on field observations within the wooded area south of the T-Area. These sample stations have been moved to target the area having the UXO sitings rather than adding two additional stations. If additional characterization is needed, contingency samples may be employed.
Ohio EPA *(DERR and DDAGW)*		
Volume I – Sampling and Analysis Plan General Comments		
1	Throughout the draft workplan, it is indicated that potential impacts on the groundwater as a result of historical activities at the Erie Burning Grounds (EBG) Area of Concern (AOC) and the determination of groundwater as a potential migration pathway will be evaluated based upon the soil screening guidance values for leaching to groundwater. The OEPA does not agree with this approach (as a solely utilized technique) and had previously conveyed, during scoping meetings, the necessity for installing monitoring wells at the EBG, either in this phase of work or during future investigative activities. The evaluation of the importance of the groundwater pathway as an exposure route will not be complete without AOC-specific data. Although monitoring wells have been installed and the AOC-specific geology at other portions of the installation have been described, such information which is specific to the EBG is also required. The minimum geologic information necessary to use leaching values should include, but not necessarily be limited to: depth to groundwater, composition of the aquifer (clay, sand, gravel, bedrock, etc.), and whether the aquifer is confined or unconfined. In calculating soil leaching values, AOC-specific information such as soil pH, soil organic carbon content, oxidation-reduction conditions, iron oxide content, cation exchange capacity, and major ion chemistry are necessary. This is particularly true for metals, which is one of the installation-specific classes of potential contaminants of concern (PCOCs). The OEPA agrees that a hydrogeologic investigation at the EBG can be deferred until AOC-specific data regarding the concentration of	RVAAP recognizes the OEPA position on the need for groundwater characterization at EBG. It is also agreed that the use of generic leaching values alone cannot define groundwater as a migration pathway. However, the use of the screen as presented is to provide useful information as to whether a potential exists for groundwater to be impacted by soil source contaminants at levels that may present a human health risk. In addition, the screen is consistent with that employed for the Phase I RI for High Priority AOCs at RVAPP, which included WBG. The present leaching screen is based on extremely conservative hydrologic assumptions (dilution/attenuation factor of 1, contamination extends to the top of the water table, the aquifer is unconfined, and risk criteria are set at 10^{-7} and HI =0.1). Because of these conservative assumptions, the leaching screen is believed to represent the worst-case scenario for potential impacts to groundwater; thus, to serve as an appropriate Phase I RI tool to help determine if soil contamination may impact groundwater. As noted in Section 3.2.1, should source contamination be identified during the Phase I RI, then groundwater will be investigated during a subsequent phase of the RI. If source contaminants are present, but less than Phase I RI screening criteria, the Phase II RI may involve collection of only the data necessary for verification of the absence of groundwater contamination.

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	contaminants in soil is available. However, if soil contamination is documented, the determination as to whether a hydrogeologic investigation is to be conducted, or whether groundwater is an exposure pathway, will not be made on the basis of generic leaching values alone. If the intent is to utilize leaching information in the decisions concerning the potential for groundwater contamination at this AOC, then it is recommended that the workplan be modified to include provisions for the collection of the AOC-specific data. Any groundwater discussions in the text of the draft workplan should be modified to reflect this position.	
2.	Throughout the course of the text, it is indicated that the distribution of PCOCs will be evaluated with respect to the facility-wide background criteria for all significant media. This is an acceptable approach, subsequent to the resolution of outstanding comments/issues related to background that were detailed in 04/19/99 correspondence from the OEPA. Any background/PCOC discussions in the text of the draft workplan should be modified to reflect this position.	Comment noted. Resolution of outstanding issues related to background criteria will be done in conjunction with the Winklepeck Phase II RI Report. A reference to the final WBG Phase II RI Report containing the background criteria development process has been included in the EBG work plan (Section 3.3.1).
Volume I – Sampling and Analysis Plan Specific Comments		
1.	Please revise the text on page 1-1 to indicate that currently, the Ohio National Guard (ONG) does not utilize much of the facility for training purposes. Alternatively, this sentence could be stricken from the text.	The sentence has been eliminated as requested.
2.	As a point of information, at some point in time, the installation map will need to be revised to indicated that there are currently 51 AOCs. (Figure 1-2)	The figure has been revised as requested.
3.	The symbol used to define the AOC boundary should be added to the legend of Figure 1-3.	This figure is intended to highlight the extent of the Phase I RI characterization area for the EBG and does not display or imply a compliance boundary. The text and figure have been revised accordingly to provide clarification.

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4.	On page 1-9, please make a notation in the text that indicates that the historical data that is referenced may be of limited usefulness due to quality assurance/quality control (QA/QC) issues, elevated detection limits, etc.	The text has been revised as requested.
5.	Please revise the sentence on page 1-10 to read: "For surface water, only the maximum concentration of lead exceeded the hazard criteria, *as defined by the RRSE.*"	See response to Comment 5 from John Jent – USACE.
6.	In section 3.1, please insert a bullet into this portion of the text that clearly indicates that the groundwater pathway will be evaluated using AOC-specific data and, if soil contamination is documented, will be addressed during a second phase of investigatory work at the AOC.	See response to OEPA General Comment 1. Section 3.2.1, Groundwater, has been revised to indicate that groundwater will be investigated in a second phase of the RI if source contamination is identified.
7.	Provide assurance that the data screening approach presented in this draft workplan is consistent with the approach utilized at the Winklepeck Burning Grounds (WBG).	The data screening approach is consistent with that used for the Phase I RI for 11 High Priority AOCs, which included WBG. A text reference indicating such has been added to the work plan (Section 3.3).
8.	The text on page 3-9 indicates that chloride is considered to be an essential nutrient. Please provide additional documentation to support this position. It is this Agency's experience that elevated chloride may also be indicative of a contaminant source.	Reference to EPA 1989, *Risk Assessment Guidance for Superfund, Vol. 1: Human Health Evaluation Manual (Part A), EPA/540/1-89/002*, was included as the basis for the position that chloride is a recognized essential nutrient. An additional, more recent reference will be added to the text to provide additional supporting basis: EPA 1995, *Supplemental Guidance to RAGS: Region IV Bulletins, Human Health Risk Assessment*. It is agreed that grossly elevated essential nutrients may indicate contamination. As noted in the work plan, any essential element may be included as an SRC if it is grossly elevated relative to background.

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9.	The last bullet on page 3-9 indicates that concentrations will be compared to action levels to determine if AOC conditions warrant additional characterization or action. Please define what the "action levels" are that are referenced. The purpose of a remedial investigation/ feasibility study (RI/FS) is to determine the nature and extent of contamination. If contamination is detected during this Phase 1 RI, please be advised that additional investigative activities/action will be required.	Refer to the response for General Comment 1. The term "action levels" has been changed to "risk-based and ARAR-based screening criteria." It is agreed that the purpose of an RI is to characterize nature and extent of contamination. However, the use of risk-based or ARAR-based screening criteria is consistent with the process employed for previous Phase I RI efforts as RVAAP, including WBG. In the event soil, sediment, and surface water contaminants are less than risk and/or ARAR-based criteria, then a follow-on phase of work may involve only verification of the absence of groundwater contamination. If detection limits are to be employed as the decision criteria for follow-on phases of the RI, then the Phase I RI data screening process beyond the frequency of detection screen is not relevant. It was agreed in the 16 June 1999 comment resolution meeting to withdraw the last sentence of the comment.
10.	As detailed in comment # 1, the generic soil leaching values included on Table 3-5 in section 3.4.2.1 cannot be used without AOC-specific hydrogeologic information, to either eliminate the groundwater pathway of exposure or to eliminate the need for a hydrogeologic investigation in future phases of work at this AOC. This is especially pertinent in the event that soil contamination is documented at this AOC.	Refer to the response for General Comment 1. Consistent with the screening methods used for previous Phase I RIs, including WBG, generic soil screening values are employed in conjunction with conservative assumptions regarding DAF, depth to water, chemical retardation, etc. AOC-specific data will be collected in a subsequent phase of the RI, if source contaminants exceed risk and/or ARAR-based criteria or if necessary to verify the absence of groundwater contamination in the event that source contaminants are less than Phase I RI risk or ARAR-based screening criteria.
11.	In section 3.4.2.2, please revise the text to indicate that the USEPA Region IV preliminary remediation goals (PRGs) for tap water will be utilized. (page 3-36)	The Table 3-6 title has been revised consistent with the text in Section 3.4.2.2 to indicate that the values are Region IX tap water PRGs.
12.	In section 3.4.3 (screening level comparisons), please refer to previous OEPA comments regarding background determination (comment # 2) and what is considered an essential human nutrient (comment # 10). (page 3-38)	Refer to responses to General Comment 2 and Specific Comment 10.

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13.	If non-dedicated sampling equipment is utilized during this investigation, the collection of rinsate blanks will be required at the appropriate frequency. (page 4-16)	One equipment rinsate or field blank for surface water sampling is planned (frequency of 5%). The text in Section 4.3.2.5 (page 4-30) and in Section 8.0 of the QAPP has been revised accordingly. However, no scope was provided by USACE for collection of equipment rinsates in conjunction with soils or sediments. Previous guidance from OEPA and USACE indicates that rinsate data for soil and sediment sampling equipment cannot be used to correlate potential cross contamination because sample devices are not numbered and indexed to sample IDs; hence, this type of QA/QC sample is not appropriate for these media.
14.	The text on page 4-18 indicates that the contingency soil samples will be utilized to evaluate the horizontal extent of contaminated areas based upon visual observation. Please be advised that the limited number of contingency samples may not be sufficient to determine the extent of horizontal contamination.	Comment noted. Additional sampling, as required to determine the nature and extent of any identified contamination, would constitute a data gap and would be identified as a DQO for a subsequent phase of the RI.
15.	On figures 1-4 and 4-3, please add to the legend the rectangular-shaped symbol that appears on these maps.	The figures have been revised as requested.
16.	The second bullet on page 4-25 reads "Below the 48-inch RCP west of EBG (surface water exit pathway." Please indicate in the text, the meaning of the acronym "RCP."	A definition for RCP (reinforced concrete pipe) has been provided in the text and on figures showing this feature.
17.	In section 4.2.1.4, the text indicates that surface soil samples collected from the borrow area north of Track 49 and the wooded area south of the "T-area" will not be submitted for propellant analysis. Please provide justification for this decision, as propellants may have been disposed of in these areas.	The statement of work provided by USACE does not specify collection of propellant samples from this area. A contingency sample(s) is planned for this area to collect the requested data. Should all available contingency samples be required for other areas, the additional analyses may be scoped in a subsequent phase of the RI.
18.	Please revise the text on page 4-27 to read as follows: "If field observations indicate evidence of contamination, then the collection depth for the VOC sample *will* be adjusted, *in order to obtain the observed contamination.*"	The text has been revised as requested.
19.	Please revise the text on page 4-29 to indicate that the sediments from the EBG may also represent a transport pathway off of this AOC.	The text has been revised as requested.

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20.	Please provide an explanation for the lack of monthly reports for the Phase 1 RI for EBG. (page 5-1)	Monthly reports were not part of the scope of work provided by USACE for this Phase I RI.
21.	The text of the field notes in Appendix B (page B-4) indicates that there is a "hard layer" present at EBG, and that samples of the "hard layer" as well as the sediments below the "hard layer" should be obtained. Please confirm that samples of the "hard layer" as well as the sediments beneath this layer will be obtained during this Phase 1 RI.	The sediment sampling protocol specified in the work plan encompasses the collection of up to three samples at each station (identified as loose material, debris material, and 0 to 0.5 foot below loose material or debris). Although not specific to sampling of hard layers, this protocol will allow for the collection of materials above, within, or below any identified hard layer as needed. Text has been added to Section 4.2.1.2 indicating this aspect.
Volume 2 – Site Safety and Health Plan		
1.	In section 1.1, the text should be revised to indicate that the RVAAP caretaker is R&R International, not Mason and Hanger. (page 1-1)	The text has been revised as requested.
2.	Revise Table 1-1 to indicate all PCOCs at EBG, including explosives, propellants, semi-volatile organic compounds etc. In addition please define what is meant by "minute quantities." (page 1-2)	Table 1-1 will be revised to eliminate the "quantities to be encountered" column. The maximum reported concentrations for potential contaminants derived from historical investigations will be retained; the maximum reported concentration represents the quantity to be expected in the field based on available data. "Explosives," "propellants," "VOCs," and "SVOCs" will be added as line items to the table; however, very limited or no historical data exist for these classes of compounds. Where no data exist, the maximum reported concentrations will be listed as "unknown."
U.S. Army Engineer Division – Huntsville *(William Veith)*		
1.	General. Change UXO to OE where it appears in the document. The term UXO refers to ammunition that has been fired, launched, projected or placed and failed to function as designed. The term OE refers to ordnance such as kick-outs from demolition shots, buried ordnance, and other items that were not employed as intended.	The text has been revised as appropriate to change the term "UXO" to "OE" (ordnance and explosives).
2.	Para 5.2. Change the definitions to the current accepted definitions in the new ER on OE. A copy of these definitions is provided.	The paragraph has been revised according the definitions provided in comment 1 above.

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3.	Para 5.6.3. This paragraph refers to the investigation of subsurface anomalies. This is an ordnance avoidance project. There is no provision for inspection of subsurface anomalies in the ordnance avoidance procedures.	As discussed in the 16 June 1999 comment resolution meeting, this comment applies to the Facility-wide SAP. Section 5.6.3 is not present in the FSP, QAPP, or HASP. Refer to the response for Whelove comment 3, which addresses the ordnance avoidance specific to the EBG Phase I RI.
4.	General. The UXO technician can feel under the water when an anomaly is encountered to check to see if it is metal trash. If it can not be determined that the item(s) is/are trash, change drilling locations.	Comment noted. Assessment of anomalies encountered under water will be performed by, and at the discretion of, the UXO support staff.