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PROJECT MANAGEMENT PLAN

DRAFT PROJECT MANAGEMENT PLAN FOR THE PHASE II TIME CRITICAL REMOVAL ACTION (TCRA) AT THE ROCKET RIDGE AREA (RRA) WITHIN RVAAP-004-R-01 OPEN DEMOLITION AREA #2 MRS

Ravenna Army Ammunition Plant (RVAAP)
Ravenna, Ohio

Contract No. W912QR-09-P-0213

Submitted to



U.S. Army Corps of Engineers, Louisville
600 Dr. Martin Luther King, Jr. Place
Louisville, KY 40202

Submitted by



PIKA International, Inc
12723 Capricorn Drive, Suite 500
Stafford, TX 77477

January 29, 2010

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

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PIKA – PIKA International Inc.		

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

- 1 REIMS – Ravenna Environmental Information Management System
- 2 RVAAP – Ravenna Army Ammunition Plant
- 3 USACHPPM – United States Army Center for Health Promotion and Preventative
4 Medicine
- 5 USACE – United States Army Corps of Engineers – Louisville District
- 6 USACE – United States Army Corps of Engineers – Baltimore District
- 7 USAEC – United States Army Environmental Command
- 8

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

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2

ACRONYMS AND ABBREVIATIONS

ADR-EDMS	Automated Data Review - Electronic Data Management System
APP	Accident Prevention Plan
BD	Base Detonating
BIP	Blow-In-Place
BRACO	Base Realignment and Closure Technical Support Office
CD	Compact Disc
CEHNC	U.S. Army Engineering Support Center, Huntsville
CELRL	U.S. Army Engineers, Louisville District
CIH	Certified Industrial Hygienist
COR	Contracting Officer's Representative
CY	Cubic Yard(S)
DDESB	Department of Defense Explosives Safety Board
DDFO	Directors Final Findings and Orders
DoD	Department Of Defense
ECM	Earth Covered Magazine
EM	Engineering Manual
EMM	Earth Moving Machinery
EOD	Explosive Ordnance Disposal
EP	Engineering Pamphlet
ERIS	Environmental Restoration Information System
ES&H	Environmental, Safety And Health
ESS	Explosives Safety Submission
FFP	Firm Fixed Price
GIS	Geographic Information System
GOCO	Government-Owned, Contractor-Operated
GP	General Purpose
GPS	Global Positioning System
HAZWOPER	Hazardous Waste Operations and Emergency Response
HE	High Explosive
HMX	Cyclotetramethylenetetranitramine
HTRW	Hazardous, Toxic, and Radioactive Waste
IED	Improvised Explosive Devise
IOC	Industrial Operations Command

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
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KO	Contracting Officer
lb	Pound
MC	Munitions Constituents
MD	Munitions Debris
MEC	Munitions And Explosives of Concern
MGFD	Munitions With The Greatest Fragmentation Distance
MI	Multi-Increment
mm	Millimeter
MMRP	Military Munitions Response Program
MOA	Memorandum of Agreement
MPPEH	Material Potentially Presenting an Explosive Hazard
MRS	Munitions Response Site
msl	Mean Sea Level
NELAP	National Environmental Laboratory Accreditation Program
ODA2	Open Demolition Area #2
OE	Ordnance Explosives
Ohio EPA	Ohio Environmental Protection Agency
OHARNG	Ohio Army National Guard
OSHA	Occupational Safety and Health Administration
PAO	Public Affairs Office
P.E.	Professional Engineer
PETN	Pentaerythritol Tetranitrate
PIBD	Point Initiation Base Detonating
PIKA	Pika International, Inc.
PIP	Public Involvement Plan
PjM	Project Manager
PM	Program Manager
PMP	Project Management Plan
PPE	Personal Protective Equipment
QAPP	Quality Assurance Project Plan
QA	Quality Assurance
QC	Quality Control
QSM	Quality Systems Manual
RAB	Restoration Advisory Board

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
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RAR	Removal Action Report
RDX	Royal Demolition Explosive (Cyclotrimethylene-Trinitramine)
REIMS	Ravenna Environmental Information Management System
RFP	Request For Proposal
RRA	Rocket Ridge Area
RVAAP	Ravenna Army Ammunition Plant
SOW	Scope of Work
sq	Square Feet/Foot
SSHO	Site Safety And Health Officer
SSHP	Site-Specific Safety and Health Plan
SUXOS	Senior UXO Supervisor
SWDO	Southwest District Office
SWPPP	Storm Water Pollution Prevention Plan
TCRA	Time Critical Removal Action
TNT	Trinitrotoluene
USACHPPM	United States Army Center For Health Promotion and Preventive Medicine
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Command
USP&FO	United States Property and Fiscal Officer
UXO	Unexploded Ordnance
UXOSO	Senior UXO Safety Officer
UXOQCS	UXO Quality Control Specialist
WMM	Waste Military Munitions
WP	Work Plan
WSA	Wet Storage Area
yd	Yard(S)

1

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

1 **1.0 INTRODUCTION**

2 This Project Management Plan (PMP) is was prepared under Contract W912QR-09-P-
3 0213, for the Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area
4 (RRA) within RVAAP-004-R-01 Open Demolition Area #2 (ODA2) at the Ravenna
5 Army Ammunition Plant (RVAAP) in Ravenna, Ohio. This PMP was prepared to
6 satisfy the requirements listed in the Scope of Work (SOW) dated 30 July (revised
7 on 18 August 2009) and the PIKA International, Inc. (PIKA) proposal dated 24
8 August 2009. This PMP is designed to be the general project guidance document for
9 the Phase II TCRA at RRA, describing the project approach, schedule, deliverables,
10 and resource organization required to execute the project and meet project
11 performance objectives.

12 The purpose of this PMP is to:

- 13 • Document PIKA's technical approach for conducting the Phase II TCRA;
- 14 • Identify the project deliverables and distribution lists;
- 15 • Present a detailed base-line schedule that includes milestones and cost; and
- 16 • Identify the project organization, members of the project team, and their
17 roles and responsibilities.

18 The baseline project schedule included in this PMP (Appendix A) will be updated
19 regularly and other sections of the document will be updated as needed. Separate
20 documents will be developed and submitted for project specific activities.

21 **1.1 Project Objective**

22 The objective of this project is to remove all the munitions and explosives of concern
23 (MEC), white phosphorus contaminated debris, and munitions debris (MD)
24 contamination from the RRA at ODA2 at the RVAAP. For the purpose of this project,
25 if soil is found to contain greater than 10% explosives by weight, it shall be
26 considered MEC and removed as part of this Phase II TCRA. In addition, PIKA will
27 perform the following tasks:

- 28 • Conduct a geotechnical evaluation and slope stability analysis of RRA;

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
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- 1 • Divert Sand Creek;
- 2 • Remove and containerize white phosphorus;
- 3 • Process excavated soil to remove MEC and MD;
- 4 • Conduct confirmation sampling;
- 5 • Dispose of investigation-derived waste;
- 6 • Repair Earth Covered Magazine(s) (ECM) (Optional Task); and
- 7 • Restore the site to surrounding site conditions.

8 PIKA understands that residual munitions constituents (MC) associated with the MEC
9 will be addressed as part of ODA2 under the recently awarded PBA09 Military
10 Munitions Response Program (MMRP) contract action.

11 PIKA will complete these tasks in a manner that promotes:

- 12 • Safety – PIKA will execute all work in a manner that ensures the health and
13 safety of the workforce and the public at large. All work will be completed in
14 accordance with the Request for Proposal (RFP), SOW, Phase II TCRA
15 Explosives Safety Submission (ESS), U.S. Army Corps of Engineers (USACE)
16 Safety Manual (Engineering Manual [EM] 385-1-1), 29 CFR1910.120, Site-
17 Specific Work Plan (WP) with its integral Site Specific Safety and Health Plan
18 (SSHP), USACE EM 385-1-97, Explosives Safety and Health Requirements,
19 dated 15 September 2008 to include all four Errata Sheets, RVAAP Plant
20 Protection Plan and other U.S. Army Engineering Support Center, Huntsville
21 (CEHNC)/USACE guidance to include all compliance documents listed in the
22 RFP;
- 23 • Environmental Sensitivity – PIKA will execute the project in a manner that
24 minimizes the environmental impact to the site and its surroundings. PIKA
25 will use all possible caution to avoid actions that could disturb these features;
- 26 • Schedule and Budget Performance – The project is a firm fixed price (FFP)
27 contract and will be executed in accordance with the schedule outlined in the
28 SOW. PIKA will execute the project in a cost-effective and schedule-certain
29 manner; and

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
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- 1 • Regulatory Acceptability – PIKA will conduct the project in accordance with all
2 applicable federal, state, and local laws, regulations, and guidance to include
3 the compliance document listed in the RFP.

4 **1.2 Document Organization**

5 The PMP is organized following the requirements stated in the SOW and includes the
6 following sections:

- 7 • Section 1.0 – Introduction
8 • Section 2.0 – Site Background
9 • Section 3.0 – Summary of Work and Proposed Approach
10 • Section 4.0 – Project Execution and Coordination
11 • Section 5.0 – Resources and Organization
12 • Section 6.0 – Project Reporting and Deliverables
13 • Section 7.0 – Detailed Work Schedule
14 • Section 8.0 – References

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

1 2.0 SITE BACKGROUND**2 2.1 RVAAP Site History**

3 RVAAP is located in east-central Portage County and southwestern Trumbull County,
4 Ohio, approximately 3 miles east-northeast of Ravenna and approximately 1 mile
5 northwest of the town of Newton Falls (Figure 2-1). The location of the RRA within
6 the RVAAP is presented as Figure 2-2. A site map showing the location the RRA at
7 ODA2 is presented as Figure 2-3. The Army Environmental Database Restoration
8 Number for RVAAP is RVAAP-004-R-01.

9 Until 1999, the RVAAP was identified as a 21,419 acre installation. The Ohio Army
10 National Guard (OHARNG) resurveyed the property boundary, finishing in 2003, and
11 the actual total acreage was 21,683.289 acres. As of February 2006, 20,403 acres
12 had been transferred to the U. S. Property and Fiscal Office (USP&FO) for Ohio for
13 use as an OHARNG training site. Currently, RVAAP consists of 1,280 acres scattered
14 in several distinct parcels throughout the confines of the OHARNG's Camp Ravenna.
15 RVAAP's remaining parcels of land are located within Camp Ravenna, and are
16 completely enclosed by the Camp Ravenna perimeter fence.

17 Camp Ravenna did not exist when the RVAAP was operational, and the entire
18 21,683 acre parcel was a government-owned, contractor-operated (GOCO) industrial
19 installation. References to the RVAAP in this document consider the historical extent
20 of the installation (inclusive of the combined acreage of the current Camp Ravenna
21 and RVAAP) unless specifically stated.

22 Past Department of Defense (DoD) activities at RVAAP began in 1940 and included
23 manufacturing, loading, handling, storage and disposition of military ammunition
24 and explosives. The industrial operations at RVAAP consisted of 12 munitions
25 assembly facilities referred to as "load lines". Load Lines 5 through 11 were used to
26 manufacture fuzes, primers, and boosters. Complete 40 millimeter (mm) rounds
27 were also assembled at Load Line 7. Load Line 12 was used to produce ammonium
28 nitrate for explosives and fertilizers before use as a renovation and demilitarization
29 facility. In addition, RVAAP also had several areas used for burning, demolition, and
30 testing of munitions. These burning grounds and demolition (or test areas)
31 consisted of large parcels of open space or abandoned quarries. Potential
32 contaminants in these load lines may include, but are not limited to, lead azide, lead

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

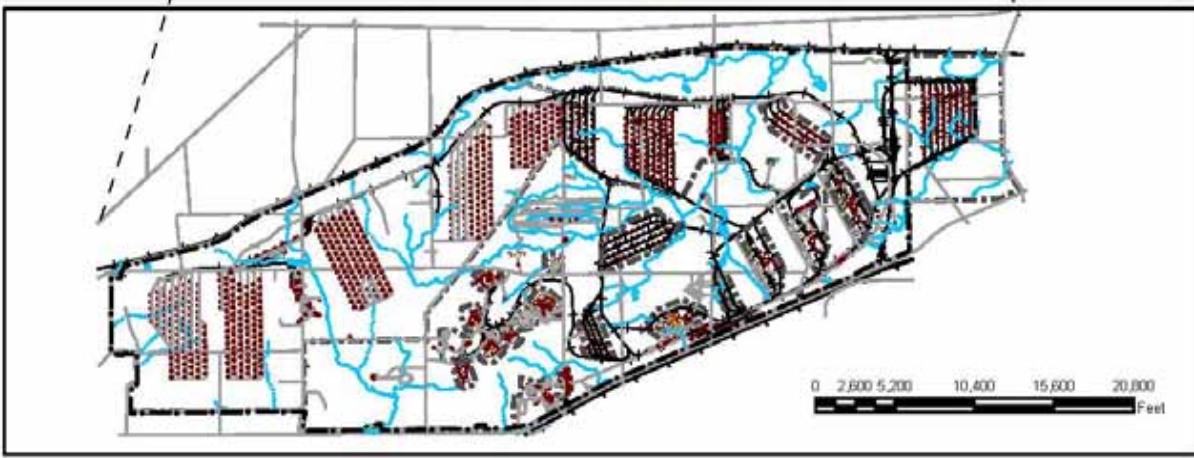
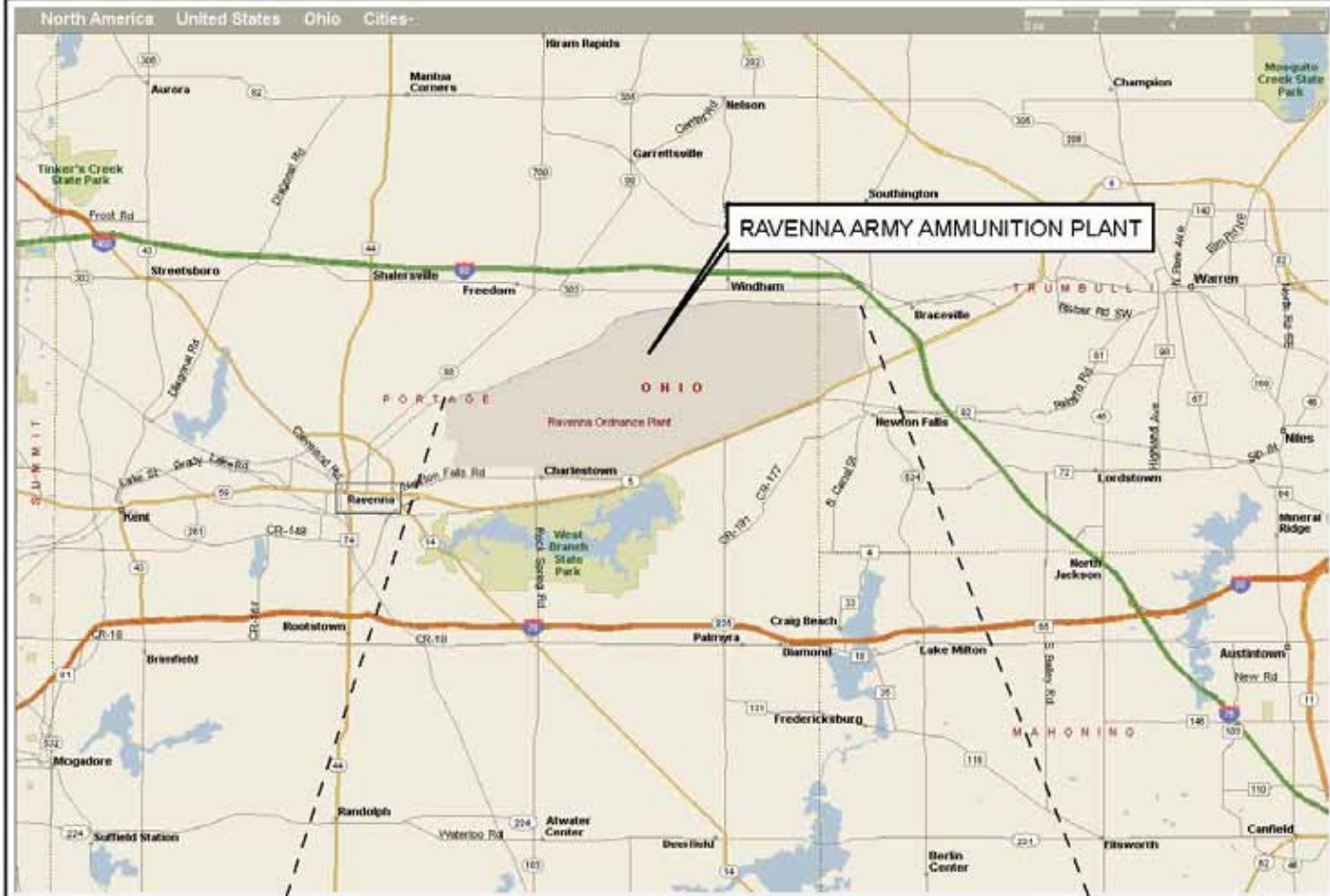
1 styphnate, lead thiocyanate, antimony sulfide, potassium chlorate, mercury
2 fulminate, black powder, TNT (trinitrotoluene), RDX (royal demolition explosive
3 [cyclotrimethylene-trinitramine]), HMX (cyclotetramethylenetetranitramine), PETN
4 (pentaerythritol tetranitrate), Composition B (a mixture of 63% HMX, 36% TNT and
5 1% wax), Octol (a mixture of 70-75% HMX and 25-30% TNT), nitrocellulose,
6 nitroguandine, and nitroglycerin.

7 **2.2 Rocket Ridge**

8 Rocket Ridge is a steep escarpment approximately 500-feet long and 25-feet high
9 located adjacent to Sand Creek within the ODA2 (Army Environmental Database-
10 Restoration Number RVAAP-004-R-01). Sand Creek flows in an eastward direction
11 along the northern boundary of Rocket Ridge, at the toe of the slope. Figure 2-2
12 shows the location of Rocket Ridge at RVAAP. Figure 2-3 shows the location of
13 Rocket Ridge at ODA2.

14 The Rocket Ridge slope was likely used for the disposal of demilitarized munitions,
15 although not all munitions appear to have been completely demilitarized. It appears
16 that the munitions were transported from the demolition site to Rocket Ridge of
17 ODA2 and dumped at the top of the slope.

18 On 18 June 2007, a rifle grenade containing white phosphorus functioned on the
19 slope of the RRA of ODA2. The Incident Report attributed the cause of the explosion
20 to a corroded white phosphorus grenade that might have been overturned by an
21 animal, exposing the white phosphorus to air, resulting in its auto-igniting, which
22 heated the grenade until the internal burster exploded. No injuries resulted from
23 the incident. During the follow-on white phosphorus incident inspection a variety of
24 munitions related items were identified at the RRA site including 75-mm and 105-
25 mm projectiles (of which one was a fuzed and fired 105-mm High Explosive (HE)
26 projectile), three 500-pound (lb) General Purpose (GP) bombs, booster cups, white
27 phosphorus rifle grenades, various fuzes and burster tubes.

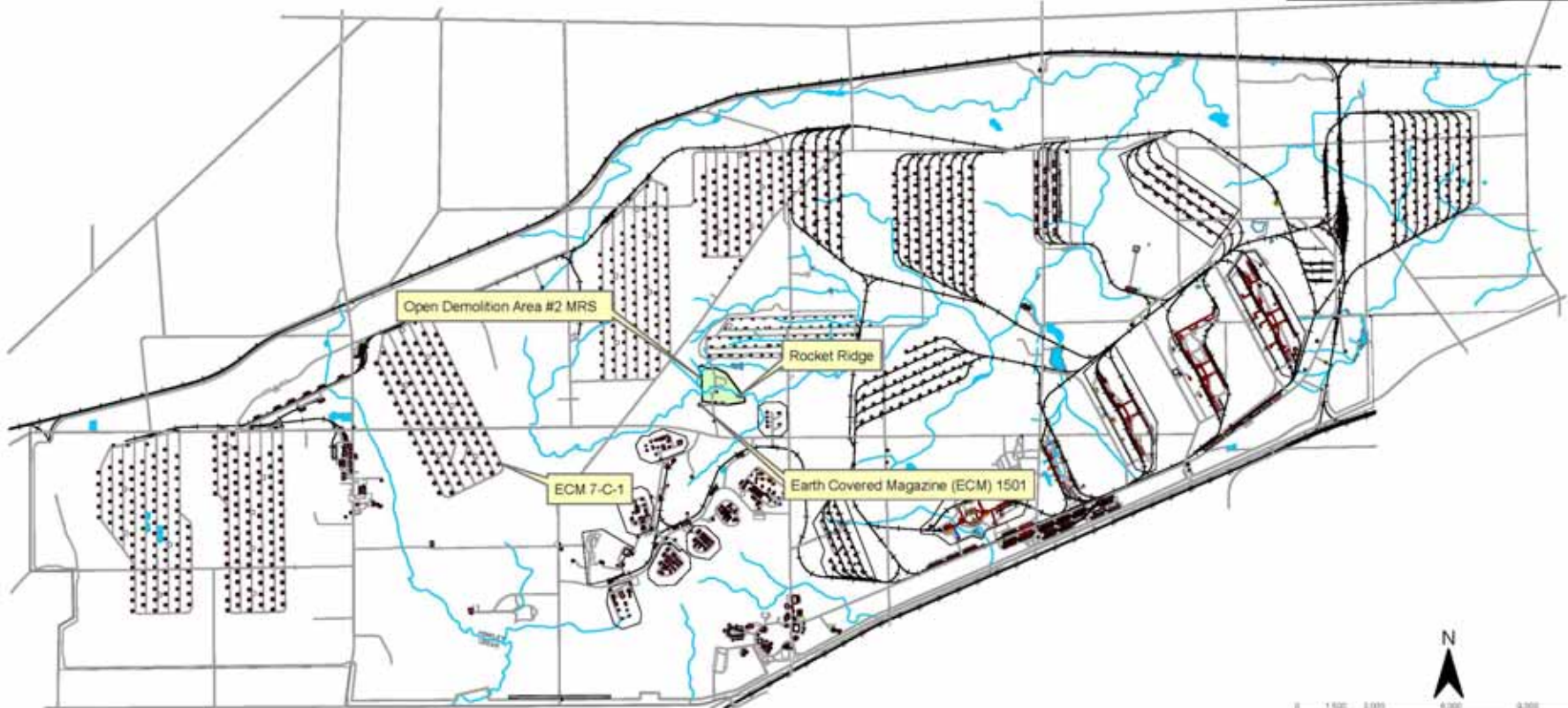


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Ravenna Army Ammunition Plant
 Ravenna, OH
 Figure 2-1 GENERAL LOCATION AND
 ORIENTATION OF RVAAP

Drawn On: 10/30/2007 Drawn By: QX Reviewed By: SAK

- Legend**
-  Water Bodies
 -  Buildings
 -  Walkways
 -  Railroads
 -  Berms
 -  Rocket Ridge
 -  Open Demolition Area #2 MRS



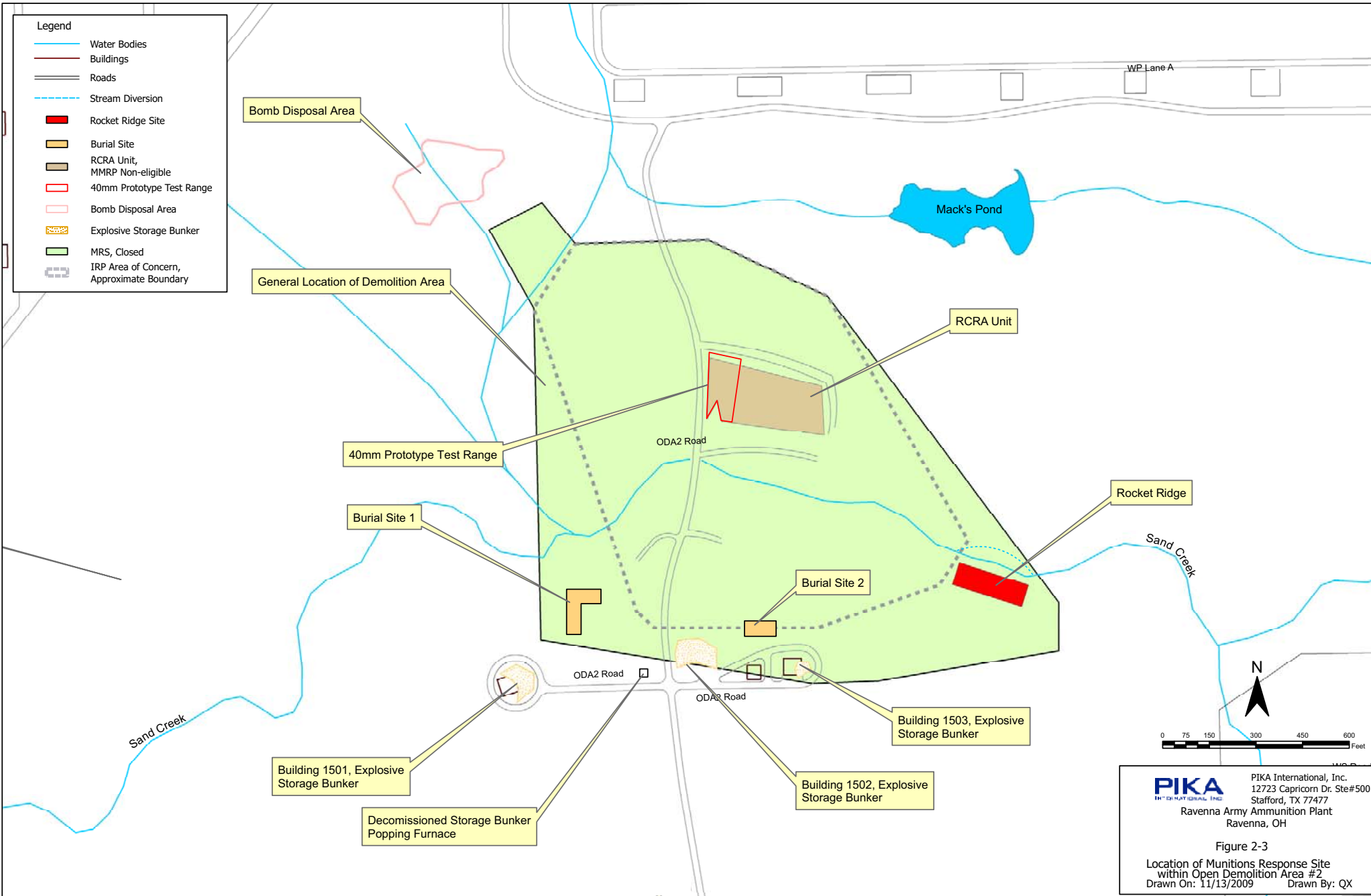
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Ravenna Army Ammunition Plant
Ravenna, OH

Figure 2-2
Location of the Munitions Response Site within RVAAP

Drawn On: 1/14/2009 Drawn By: QX



Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

1 PIKA conducted a Time Critical Removal Action (TCRA) at the RRA in July through
2 August 2009 to mitigate immediate explosive hazards (i.e., three 500-lb HE GP
3 bombs and one 105-mm HE projectile) identified at the RRA. In addition, the
4 approximate nature, extent, and volume of the MEC and MD present within the RRA
5 was evaluated to aid in the scoping of future removal actions. During the TCRA at
6 RRA it was verified that the RRA is comprised of two distinct areas. The first area is
7 the main dump portion and the second area is the white phosphorus contaminated
8 area. The main dump portion resides along the sloped portion of the RRA while the
9 white phosphorus area is located at the bottom of the slope within a fairly flat area
10 immediately adjacent to and proceeding into Sand Creek.

11 The main dump area is approximately 40 feet wide and 45 feet long and contains
12 fragments and pieces of various sized projectiles, fuzes, black stained soils, a
13 littering of burster tubes, booster cups, deteriorated wooden crates and mixing pots
14 as well as two heavily concentrated areas of munitions primers and Point Initiating
15 Base Detonating (PIBD) fuzes. Various MEC are also present along the slope that
16 includes various sizes of HE projectiles and numerous types of fuzes (i.e., T-Bar,
17 PIBD and Base Detonating (BD)). More detailed information relative to the main
18 dump area of the RRA can be found in the *Final Removal Action Report for Time
19 Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-
20 01 Open Demolition Area #2 MRS*, dated December 17, 2009.

21 The white phosphorus contaminated area is roughly oval in shape and is
22 approximately 56 feet long and 36 feet wide at its extremes and is an area
23 immediately adjacent to the main dump area that appears to have been used
24 exclusively for the dumping and disposal of discarded components from the M19
25 white phosphorus grenades. Debris from the area, including visible white
26 phosphorus, extends approximately 15 feet into Sand Creek from the shore
27 line. This area is primarily comprised of tail fin assemblies and fragments from the
28 M19 white phosphorus rifle grenades; however based upon the white phosphorus
29 rifle grenade incident reported on June 18, 2007, it is very likely that intact M19
30 white phosphorus grenades are co-mingled with the debris within this portion of the
31 RRA. More detailed information relative to the white phosphorus area of the RRA
32 can be found in the *Final Removal Action Report for Time Critical Removal Action
33 (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01 Open Demolition
34 Area #2 MRS* (PIKA, 2009).

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

1 **2.3 RVAAP Site Climate**

2 The site lies at approximately 41° 11' 42.19" north latitude and 81° 05' 36.73" west
3 longitude at an elevation of 1,043 feet above mean sea level (msl). The site has hot
4 humid summers and cold damp winters with a maximum yearly mean temperature
5 of 80° Fahrenheit in July and a minimum yearly mean temperature of 16°
6 Fahrenheit in January. The yearly average mean temperature is approximately 50°
7 Fahrenheit with rainfall averages of 35 inches per year and snowfall averages of 25
8 inches per year.

9 **2.4 RVAAP Geology**

10 The RVAAP consists of glacial materials and developed soils. The glacially deposited
11 parent material contains a high percentage of clay materials. The glacial material
12 varies in thickness and character across the RVAAP and is presumed to be tens of
13 feet thick. The dominant soils are silts or clay loams. The glacial material lies over
14 bedrock consisting of an upper hard fissile shale unit and a lower, highly porous and
15 permeable, cross-bedded and, in some locations, highly fractured and weathered
16 sandstone unit. The shale unit has been eroded and is absent in many locations.
17 Bedrock has been encountered from 5.5 to 13 meters (18 to 43 feet) below ground
18 surface (SAIC, 2007).

19 **2.5 Regulatory Considerations**

20 All regulatory coordination shall be approved by the Army through the USACE
21 Louisville District Contracting Officer's Representative (COR) and the RVAAP Facility
22 Manager. PIKA will provide the necessary support to initiate, schedule, and address
23 all regulatory aspects of the project (e.g., organizing discussions with regulators
24 concerning Phase II TCRA objectives and completion requirements, obtaining
25 regulator comments on site documents and addressing them, and obtaining written
26 documentation of completion from the regulators for Rocket Ridge). The COR, or
27 designee, and the Facility Manager will attend and represent the Army at all
28 meetings with the regulators. With approval of the COR or Facility Manager, the
29 contractor may also informally discuss remediation issues with regulators and
30 provide an after-action report back to the Facility Manager and COR. The Army will
31 be the signature authority for all regulatory agreements and remediation
32 documentation.

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
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1 **3.0 SUMMARY OF WORK AND PROPOSED APPROACH**

2 The tasks at Rocket Ridge are organized as follows:

- 3 • Document Preparation – TASK 1
- 4 • Divert Sand Creek - TASK 2
- 5 • MEC and MD Removal - TASK 3
- 6 • Remove and Containerize White Phosphorous and White Phosphorous
7 contaminated Soil - TASK 4
- 8 • Confirmation Sampling - TASK 5
- 9 • MEC and MD Survey of Sand Creek - TASK 6
- 10 • Restore Sand Creek - TASK 7
- 11 • Process Excavated Soil to Remove MEC and MPPEH Items - TASK 8
- 12 • Site Restoration - TASK 9
- 13 • Prepare a Removal Action Report - TASK 10
- 14 • (Optional) Blow in Place One Unacceptable-to-Move MEC Item - TASK 11
- 15 • (Optional) Disposal of Containerized White Phosphorous and White
16 Phosphorous Contaminated Soil - TASK 12
- 17 • (Optional) Repair of Earth Covered Magazines (ECM's) - TASK 13
- 18 • (Optional) MEC and MD Removal in Excess of 500 Cubic Yards - TASK 14
- 19 • (Optional) Remove and Containerize White Phosphorous and White
20 Phosphorous Contaminated Soil in Excess of 270 Cubic Yards - TASK 15

21 **3.1 Document Preparation – TASK 1**

22 Tasks in TASK 1 include the preparation of this PMP; the Phase II TCRA WP
23 (including a SSHP, Accident Prevention Plan (APP), Public Involvement Plan (PIP),
24 and an investigation-specific Quality Assurance Project Plan Addendum (QAPP);
25 Storm Water Pollution Prevention Plan (SWPPP); an Phase II TCRA ESS; and
26 Geotechnical Report. All plans and schedules will be submitted for approval by the
27 stakeholders.

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Demolition Area #2 MRS

1 This PMP specifies the schedule, technical approach, and resources required for the
2 planning, execution, and completion of all of the performance objectives specified.
3 This PMP includes a detailed work schedule (Appendix A) that lists the proposed
4 milestones and due dates necessary to meet the performance objectives and
5 contract requirements through the contract period. The work schedule will be tied
6 to a payment plan that allows for payments due upon attainment of agreed interim
7 milestones. Each milestone or bill point will be based on the delivery of an
8 identifiable increment of work. PIKA plans to have this schedule coordination made
9 a routine part of the stakeholder coordination meetings.

10 The Phase II TCRA WP will describe all aspects of the site activities associated with
11 the implementation of the SOW and will be written to allow for the inclusion of
12 additional tasks, if added work is necessary. The Phase II TCRA WP for the current
13 SOW will be developed to address project-specific requirements. The Phase II TCRA
14 WP will contain a SSHP and APP that will address the identification, assessment and
15 control of the hazards associated with site operations. The investigation specific
16 QAPP addendum, SAP addendum, and Storm Water Pollution Prevention Plan
17 (SWPPP), are also included in the Phase II TCRA WP.

18 The Phase II TCRA ESS will address the explosives safety specifications and
19 procedures for execution of this munitions response. The Phase II TCRA ESS will be
20 prepared for MEC and MD investigation, removal and blow-in-place (BIP) procedures
21 based on the concept of the Munition with Greatest Fragmentation Distance
22 (MGFD). In the event that a more hazardous situation is encountered in the field
23 than is identified in the approved Phase II TCRA ESS, then an Amendment will be
24 prepared that covers the newly identified hazard.

25 PIKA will conduct a geotechnical evaluation and slope stability analysis of RRA under
26 the direction of a Professional Engineer (P.E.), registered in the State of Ohio. This
27 analysis will evaluate current conditions as well as anticipated future conditions that
28 may result from remediation activities. Upon completion of the analysis PIKA will
29 submit a geotechnical engineering report with the findings and recommendation of
30 the investigation and analysis. The geotechnical engineering report will include
31 guidance and recommendations to ensure that the slope remains stable during and
32 after all remediation activities.

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
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1 3.2 Divert Sand Creek – TASK 2

2 To prevent additional contamination from entering the Sand Creek during remedial
3 activities conducted on the Rocket Ridge embankment and the actual creek bank,
4 PIKA will install a temporary barrier to divert the creek. All activities will be
5 conducted in accordance with all applicable State and Federal regulations and will be
6 coordinated through USACE, RVAAP Facility Manager, Ohio Environmental Protection
7 Agency (Ohio EPA) and any other required agencies. The temporary diversion of
8 sand Creek will generally include the following tasks:

- 9 • PIKA's unexploded ordnance (UXO) Technicians will conduct MEC clearance
10 on the embankment of Sand Creek, as required to provide temporary access
11 to the subcontractor crew to the stream diversion working area. UXO
12 Technicians will also provide MEC construction oversight during all activities
13 of this task.
- 14 • Site Clearing – This task includes the removal of trees and brush to establish
15 a temporary access right of way within ODA2 to the stream diversion work
16 area. A temporary 100 foot working right of way will then be cleared in the
17 area of the new stream diversion. This working right of way and new stream
18 diversion area will be approximately 500 feet in length running adjacent to
19 the existing stream. The actual locations of the stream diversion work areas
20 will be coordinated with and pre-approved by the USACE, RVAAP Facility
21 Manager, Ohio Environmental Protection Agency (Ohio EPA), and OHARNG.
- 22 • Engineering and Stakeout: Following site clearing operations, the following
23 areas will be surveyed for layout as per the final USACE - Pittsburgh District
24 approved stream diversion design:
 - 25 ○ Temporary stream diversion location
 - 26 ○ Materials staging area;
 - 27 ○ Temporary 60 foot right of way;
 - 28 ○ Temporary 100 foot stream excavation area; and
 - 29 ○ Elevation points of the temporary stream diversion.
- 30 • Erosion and Sedimentation Control Measures – This task includes the
31 installation of silt fencing (approximately 2,000 linear feet (LF)) prior to and
32 during stream diversion excavation operations. One silt fence barrier run will

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1 be established at the outside perimeter of the temporary right of way and the
2 other silt fence barrier run will be installed adjacent to the temporary stream
3 excavation. Re-seeding of the entire area of disturbance (approximately
4 10,000 square yards (yds²)) will be conducted with the site restoration task
5 described below.

6 • Excavation of the Temporary Stream Diversion – This task involves
7 excavation of the designated temporary stream diversion location/line. The
8 influent and effluent ends of the excavation will be removed last in
9 coordination with placement of the temporary concrete barriers before
10 allowing the water to flow into the temporary stream line. All the excavated
11 soils will be stockpiled adjacent to the stream diversion line for re-use during
12 installation of the stream reinforcement barriers and site restoration as
13 described below.

14 • Temporary Stream Reinforcement Barrier/Liner – This task includes
15 installation of the temporary stream reinforcement barriers (54-inches height
16 x 10-foot length) and liner material. The barriers will be installed to form a
17 solid embankment that will prevent erosion during high water events. The
18 barriers will be reinforced with an erosion proof polyurethane blanket liner.
19 The liner will be secured in place from behind the barriers using the
20 stockpiled soils generated during the diversion excavation operations.

21 **3.3 MEC and MD Removal – TASK 3**

22 PIKA has evaluated the SOW, regulations, site conditions, and site history and
23 strongly believes that our technical approach to the MEC and MD Removal not only
24 accomplishes the MEC and MD Removal safely and efficiently, but also cost-effective
25 to the Government. PIKA will conduct a MEC Surface Removal of all visual items at
26 the surface followed by excavation of the RRA using earth moving machinery (e.g.,
27 excavator) shielded/hardened in accordance with the requirements of DoD 6055.09-
28 STD and the Department of Defense Explosive Safety Board (DDESB) Fragmentation
29 Database for the MGF, which is the M1, 105 mm HE projectile for the RRA. Based
30 upon the results of the MEC density surveys conducted during the RRA TCRA, PIKA
31 estimates that 8,000 cubic yards (CY) of “clean” soil from the top of RRA will need
32 to be excavated and stockpiled to facilitate bench step downs to safely excavate
33 the RRA down to the water line of Sand Creek. Additionally in accordance with the
34 SOW and based on the survey of the RRA boundaries and test pits conducted as

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1 part of RRA TCRA, PIKA estimates approximately 500 CY of soils will need to be
2 excavated from RRA for sifting/magnetic sorting (e.g., MEC and MD) at the staging
3 and processing area. PIKA understands that if additional material in excess of 500
4 CY is found, it will be removed under optional Task 14.

5 To ensure complete coverage of the RRA during the MEC Surface Removal, PIKA's
6 UXO Technicians will use ropes along the north and south grid boundaries to help
7 establish five-foot search lanes. The search lanes will then be created by running a
8 line from corresponding marks on the north and south boundary lines. Once the
9 search lanes have been established, a UXO Technician III (Team Leader) will align
10 the team in such a manner as to ensure that they do not interfere with the search of
11 the technician(s) in the adjacent lane(s). UXO Technicians will advance in a slow,
12 continuous pace, visually inspecting the surface for MEC/UXO until the assigned
13 search lane is completed. All material potentially presenting an explosive hazard
14 (MPPEH) and MD will be twice inspected by PIKA UXO qualified personnel prior to
15 being removed from RRA to ensure no explosive hazards remain in or on the item.
16 Once inspected and certified as presenting no explosive hazard, MPPEH will be
17 reclassified as MD and will be containerized in an onsite storage container and
18 safeguarded until proper disposition can be arranged. PIKA will use the procedures
19 in Chapter 14, EM 1110-1-4009, Military Munitions Response Actions, dated June
20 2007, for MPPEH procedures. Should MEC be encountered during this removal,
21 UXO-qualified personnel will evaluate the explosive hazard and move it to the
22 approved ECM for disposal under a separate contract (if acceptable to move) or BIP
23 if the item is fuzed or unacceptable to move in accordance with the optional Task
24 11.

25 Upon completion of the surface removal, PIKA will begin excavating RRA using
26 shielded/hardened earth moving machinery (EMM) in one-foot lifts. These lifts will
27 be loaded directly into a dump truck with the driver of the dump truck being staged
28 at the appropriate safety distance in accordance with the ESS. Once loading is
29 completed the driver can ingress the truck and transport the soils to the stockpile at
30 the staging area to be processed in accordance with the procedures in Task 8, and
31 the EMM can return to excavation being worked. PIKA will continue excavation of
32 RRA to depth. Excavation will be monitored continuously by the UXO Technicians
33 and EMM operators and at any given point, if any items of concern are observed,
34 excavation will halt and the hazard will be removed by UXO Technicians and stored

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1 in the ESS-sited ECM for future disposal under a separate contract. Once the hazard
2 is removed, excavation will restart and continue. PIKA intends to complete the
3 excavation of RRA before soil processing per Task 8 begins. PIKA understands that
4 the white phosphorus rifle grenades and white phosphorus contaminated
5 soils/debris will be removed under Task 4.

6 **3.4 Remove and Containerize White Phosphorus and White Phosphorus**
7 **Contaminated Soil – TASK 4**

8 PIKA will remove and containerize all white phosphorus located in the bank of Sand
9 Creek, or any other location where white phosphorus is discovered including the
10 creek itself, and thereafter stage the containerized waste in a temporary open-
11 storage area at the RVAAP Wet Storage Area (WSA), for future disposal under
12 separate contract. To accomplish this task, PIKA's UXO Technicians will hand
13 excavate the bank of Sand Creek and the area of the creek bed known to contain
14 white phosphorus. During the hand excavation, PIKA will utilize a sprinkler system to
15 provide a fine mist to wet down the area as the excavation progress. As the White
16 Phosphorous contaminated material is excavated, it will be segregated based upon
17 shipping compatibility and containerized in 55-gallon drums. PIKA will have a water
18 truck on site, full-time, for fire mitigation and emergency evacuation. Additionally
19 PIKA will also have up to three 2,000-gallon poly tanks to provide for water to be
20 used during containerization of the white phosphorus waste. The 55-gallon drums
21 will be topped off with water, labeled appropriately as "RQ, UN3191, Waste Self-
22 heating solid, toxic, inorganic, n.o.s. (white phosphorus soils under water), 4.2
23 (6.1), PGII" and moved to the pre-determined temporary open storage area at
24 RVAAP for future disposal under a separate contract. Any white phosphorus (bulk or
25 pure) will be containerized under water in 30-gallon drums and labeled as "RQ,
26 UN1381, Waste Phosphorus, White, Under Water, 4.2 (6.1), PGI" and stored for
27 future disposal under a separate contract. Based upon the SOW and Survey of the
28 RRA boundaries and test pits conducted as part of the RRA TCRA, PIKA estimates
29 that 270 CY of white phosphorus and white phosphorus contaminated soil will need
30 to be removed and containerized under the Phase II TCRA activities. If additional
31 material is found, it will be removed under the Optional Task 15. Additionally if any
32 white phosphorus containing MEC item that is unacceptable to move is found, the
33 COR will be notified and PIKA will await further direction. Such items will be BIP in

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1 accordance with the optional Task 11, prior to containerizing them for offsite
2 disposal.

3 To confirm that the white phosphorus contamination was removed from the area
4 where the white phosphorus rifle grenades were located (i.e., white phosphorus
5 contaminated area) PIKA will analyze the soils and sediment for white phosphorus
6 using EPA Method 7580 as described below in Section 3.5. If white phosphorus
7 contamination is present in the sample, then excavation will proceed in 3 to 6-inch
8 lifts until sample results indicate that white phosphorus contamination was removed.
9 All white phosphorus contaminated material will be containerized in 55-gallon and
10 30-gallon and stored in the temporary open-storage area at the RVAAP Wet Storage
11 Area for future disposal under a separate contract. The temporary staging area will
12 be prepared and/or repaired with gravel, as well as any gate repairs. PIKA is not
13 responsible for any costs associated with obtaining permits, or complying with
14 inspection/reporting requirements for the 90-day hazardous waste accumulation
15 area after completion of the Phase II TCRA efforts at RRA.

16 **3.5 Confirmation Sampling – TASK 5**

17 Following the RRA Phase II TCRA operations, two multi-increment (MI[®]) samples
18 will be collected in the RRA removal area to verify that the contamination
19 concentrations in surface soils are less than 10 percent explosives by weight and
20 also to provide information to aid in scoping future remedial actions. Additionally,
21 two composite soil samples will be collected to verify removal of the white
22 phosphorus contamination. For both the MI[®] and composite samples, one sample
23 will be collected from the main dump area and one sample will be collected from the
24 white phosphorus contaminated area. All MI[®] samples will be collected using the
25 MI[®] soil sampling technique as described in Section 4.0 of the QAAP. All MI[®]
26 samples will be analyzed for the RVAAP full suite (excluding VOCs) plus perchlorates
27 and total phosphorus. The VOC component of the RVAAP full suite will be collected
28 using an En Core[®] sampler (one sample from each sampling area).

29
30 For the white phosphorus composite samples, at least 30 soil aliquots will be
31 collected at random locations to characterize the surface of each excavation area
32 (i.e., main dump and white phosphorus contaminated area). Each random aliquot
33 will consist of 1 to 2 ounces of soil collected at a depth of 3 inches or less. The
34 aliquots will be placed in a plastic lined container and mixed in the field. An aliquot

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1 of the composite sample will be placed in an approved sampling container and sent
2 to the lab for white phosphorus analysis by EPA Method 7580.

3
4 If confirmation soil samples indicate that explosives (i.e., greater than 10 percent by
5 volume) and/or white phosphorus contamination is present, then additional
6 excavation will proceed in 3 to 6-inch lifts, containerized staged at the temporary
7 open storage area for future disposal under a separate contract and/or processed to
8 remove MEC and MPPEH items as described in Section 3.8 – Task 8 until sample
9 results indicate contamination concentrations in surface soils are less than 10
10 percent explosives by weight and/or white phosphorus contamination was removed.

11 As part of the RRA confirmation sampling operations described above, two MI[®]
12 surface soil samples will also be collected in the area where excavated soils are
13 stockpiled for processing (i.e., sifting/magnetic separation area described in Section
14 3.8). One sample will be collected before soils are stockpiled and one sample will be
15 collected after stockpiled soils are removed to ensure that stockpiled soils did not
16 impact in-situ soils. These samples will be collected analyzed in the same manner
17 as the RRA excavation MI[®] confirmation samples described above.

18 During RRA confirmation sampling operations PIKA will collect Chemical Quality
19 Control samples whenever analysis for chemical constituents is required. PIKA uses
20 Environmental laboratory services performed by laboratories compliant with the
21 most recently published DoD Quality Systems Manual (QSM), and holding a current
22 National Environmental Laboratory Accreditation Program (NELAP) accreditation for
23 all appropriate fields of testing.

24 For data management and validation PIKA's laboratory will provide Level IV data
25 packages in hard and electronic versions to support data validation. PIKA will sub-
26 contract data validation for 10% of analytical results to an independent third-party
27 contractor in addition to performing the 100% verification or automated data review
28 (ADR). The review shall ensure data to be error free and ADR results consistent with
29 the project library/limits. All data validation will be performed in accordance with the
30 process identified in the Louisville QSM Supplement, using the DoD QSM to provide
31 laboratory guidance requirements. PIKA will include the completed validation report
32 and summary tables as presented by the validator to support findings of the
33 Removal Action Report (RAR), including all applicable checklists and assessments.

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1 3.6 MEC and MD Survey of Sand Creek – TASK 6

2 PIKA will execute an instrument-assisted MEC and MD survey of Sand Creek for any
3 surface MEC or MD items that may be present or may have washed downstream
4 during the Phase II TCRA. The portion of the creek that PIKA will inspect is the area
5 between RRA and the location of the munitions barrier. Any MEC or MD items, if
6 found and determined acceptable-to-move will be removed in accordance with the
7 requirement of Task 3 of the SOW. If the item discovered is fused or unacceptable
8 to move, PIKA will notify the COR and wait for further direction; upon approval by
9 the COR, the item will be BIP in accordance with the optional Task 11. PIKA will
10 include the results of the MEC and MD Survey and removal actions in the RAR.

11 3.7 Restore Sand Creek – TASK 7

12 Upon completion of Tasks 3 – 6, the portion of Sand Creek that was temporarily
13 diverted in Task 2 to facilitate the Phase II TCRA at RRA, will be restored to the
14 original condition. During restoration the concrete barriers and liner will be removed
15 and the stream diversion excavation will be backfilled (using original soils) to pre-
16 existing conditions. The material staging area (crushed limestone and gravel) will be
17 left in place. All disturbed areas will be re-graded, seeded and mulched using
18 RVAAP approved seed mixtures. All restoration activities will be conducted in
19 accordance with all applicable State and Federal rules, laws, and regulations and
20 coordinated with the USACE, Ohio EPA and any other required agencies.

21 Any water that may have been contained at or near the base of the slope will be
22 containerized in poly tanks and used for wetting the white phosphorus debris/wastes
23 during the packaging of the drums. Unused water will be characterized and
24 disposed off-site at an approved facility.

25 3.8 Process Excavated Soil to Remove MEC and MPPEH Items – TASK 8

26 PIKA will utilize selected components of its proprietary magnetic separation process
27 used during previous operations at the RVAAP, in modified form, curtailed to the
28 operations at the RRA site. The primary goal of the separator conveyor process is to
29 safely and effectively remove all MEC, MD and MPPEH from the excavated soils so
30 that the final piles of soil and other materials can be certified as free of explosive
31 hazards and MEC. To enhance safety, personnel manning the conveyor lines will

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1 have an emergency cut-off switch located at the conveyor/inspection area. This
2 switch will be used to immediately shut-down all conveyors and metal separators in
3 the event that the conveyor lines need to be evacuated due to MEC. All conveyor
4 personnel will be made aware of the switch's location. A generalized overview of
5 each element of the process is presented below:

- 6 • Soils excavated from RRA will be safely loaded and transported to the
7 trommel or grizzly screen. The initial sizing and dewatering will separate the
8 2-inch and greater material that will be sent down a side conveyor for manual
9 inspection and certification by UXO Technicians. The remaining soils will be
10 feed onto a conveyor that will transport the material to a ferrous metal
11 separator. Ferrous items will be magnetically removed from the conveyor
12 using an overhead suspended magnet and conveyed off the side of the main
13 conveyor at a 90- degree angle to another conveyor that will then pass
14 through a blast shield and transport the ferrous objects past a series of UXO
15 Technicians. These personnel will inspect the ferrous objects on the conveyor
16 and remove those MEC items that contain explosive hazards.
- 17 • Material that passes the ferrous magnet will then be transported on the
18 conveyor to a non-ferrous metal separator (eddy current separator) that will
19 remove non-ferrous material from the remaining material. Non-ferrous metal
20 will be conveyed away at a 90-degree angle from the primary conveyor to a
21 stockpile location at the end of the belt. This material will be periodically
22 removed and stockpiled for later inspection and classification.
- 23 • Materials that pass through the eddy current separator will pass through a
24 blast wall and under the metal detector where UXO Technicians will remove
25 any metal objects not previously captured, any MEC items remaining in the
26 material.
- 27 • Recovered MPPEH and MEC items will be stored in the approved ECMs for
28 later disposal under a separate contract.
- 29 • The remaining soils will then be conveyed to a pile to be collected by a front
30 end loader and staged for waste characterization sampling and analysis.
- 31 • Based on the analytical results of a preliminary composite sample collected
32 during the RRA TCRA, PIKA has assumed that only 10% of the soils
33 (maximum of 50 CY) will be hazardous and the remaining soils will be

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1 disposed as non-hazardous wastes. PIKA is still awaiting the results of the
2 two discrete samples that were collected from the top and the bottom test
3 pits during the RRA TCRA effort.

4 **3.9 Site Restoration – TASK 9**

5 Upon completion of all field-work, PIKA will commence the backfilling and site
6 restoration of the 8,000 CY of clean soils that were stockpiled during the preparation
7 of the bench step downs. PIKA will grade and seed the RRA and any associated
8 areas impacted by the removal activities. All grading and seeding will be conducted
9 in accordance with applicable Ohio rules, laws, and regulations preventing material
10 from eroding and entering Sand Creek. PIKA will follow the seed mix specifications
11 of the Ohio Army National Guard approved grass seed mix presented in the SOW.
12 PIKA is not responsible for any offsite backfill or topsoil. PIKA will remove all
13 materials and equipment acquired and used in support of the contract task order
14 and will be responsible for cleaning the site and removing all project generated
15 wastes (in accordance with the SOW) and general trash for proper disposal. All
16 project personnel will be demobilized at the end of the project.

17 **3.10 Prepare Removal Action Report – TASK 10**

18 PIKA will prepare and submit a Pre-Draft, Draft and Final RAR for this project with
19 the Pre-Draft being submitted approximately 630 days from the Notice to Proceed.
20 The RAR will contain at a minimum but is not limited to:

- 21 • Detailed description of the removal action taken to remove the MEC, MD, and
22 white phosphorus contamination at RRA;
- 23 • Detailed description, of all analytical data from the confirmation sampling to
24 aid in the MMRP remedial investigation of ODA2; and
- 25 • Geographic Information System (GIS) data to include maps, and drawings
26 used or created during the project.

27 PIKA will ensure that all GIS data and information are presented on electronic
28 formatted maps that will be provided to the RVAAP Information Manager. All
29 drawings will be submitted in PDF format, maps in ArcView compatible format (e.g.,

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1 ESRI shape, ArcInfo coverages or Autocad [.DWG]) and all electronic map/drawing
2 files are submitted on Compact Discs (CD)s.

3 **3.11 (Optional) Blow-in-Place One Unacceptable to Move MEC Item –**
4 **TASK 11**

5 PIKA will perform BIP operations for items found that are considered unacceptable-
6 to-move, at the direction of the COR. PIKA understands and assumes that this
7 optional task will involve BIP of one 105-mm projectile or similar sized munitions.

8 **3.12 (Optional) Repair of Earth Covered Magazines (ECM)s – TASK 13**

9 PIKA will upon direction of the COR, repair existing ECMs at RVAAP. The repair will
10 comply with the standards and specifications contained in DoD 6055.09-STD so that
11 Waste Military Munitions (WMM) can be stored during the execution of MEC
12 investigations and MEC removal activities. The repairs will address any minor
13 structural repairs, electrical standards, and lighting protection. PIKA is not
14 responsible for obtaining permits, and complying with inspection/reporting
15 requirements for the WMM stored in the ECMs after completion of the Phase II
16 TCRA efforts at RRA.

17 **3.13 (Optional) MEC and MD Removal in Excess of 500 cubic yards –**
18 **TASK 14**

19 PIKA will upon direction of the COR, remove and dispose of MEC and MD in excess
20 of the 500 CY removed in Task 3. The removal will follow the procedures outlined in
21 Task 3.

22 **3.14 (Optional) Remove and Containerize White Phosphorus and White**
23 **Phosphorus Soil in Excess of 270 cubic Yards – TASK 15**

24 PIKA will upon direction of the COR, remove and containerize white phosphorus and
25 white phosphorus contaminated soil in excess of the 270 CY removed in Task 4. The
26 removal and containerization will follow the procedures outlined in Task 4.

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1 **4.0 PROJECT EXECUTION AND COORDINATION**

2 **4.1 Project Execution**

3 This PMP will be updated as necessary to address any significant changes to the
4 overall technical and/or management approach. The updated PMP will be distributed
5 to all RVAAP stakeholders. Updates to the PMP will be identified as revisions and
6 sequentially numbered. Activities to be performed and deliverables to be submitted
7 in support of this project are as follows:

- 8 • Project Kick-Off Meeting and Meeting Minutes;
- 9 • Monthly Progress Reports (including schedule updates);
- 10 • Teleconference Progress Updates (agenda and meeting minutes);
- 11 • Schedule Updates (coordinated by USACE, updates provided by PIKA);
- 12 • PMP;
- 13 • Work Plans (includes SSHP, APP, PIP, and QAPP);
- 14 • Geotechnical Report;
- 15 • ESS; and
- 16 • RAR.

17 All work performed at the RRA shall follow this PMP and will be performed in
18 accordance with the following documents:

- 19 • Ohio Environmental Protection Agency (Ohio EPA) Director's Final Findings
20 and Orders (DFFO) for RVAAP, dated June 10, 2004 (Ohio EPA 2004);
- 21 • DOD Ammunition and Explosives Safety Standards DOD 6055.9-STD;
- 22 • Ohio Standard's for Stormwater Management and Land Development and
23 Urban Stream Protection 2006;
- 24 • 1998 Memorandum of Agreement (MOA) for the Ravenna Army Ammunition
25 Plant (RVAAP) Army Headquarters, U.S. Army Industrial Operations Command
26 (IOC), The United States Property and Fiscal Officer (USP&FO) for Ohio, and
27 the Ohio Army National Guard (OHARNG);

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- 1 • 2001 Amendment 1 to the Memorandum of Agreement (MOA) for the
2 Ravenna Army Ammunition Plant (RVAAP) Among Headquarters, U.S. Army
3 Industrial Operations Command (IOC);
- 4 • The United States Property and Fiscal Officer (USP&FO) for Ohio, and the
5 Ohio Army National Guard (OHARNG);
- 6 • IOC Pamphlet 385-1 Classification and Remediation of Explosive
7 Contamination;
- 8 • 01 AUGUST 2004 Pamphlet No. 75-1-2 - Munitions and Explosives of Concern
9 (MEC) Support during Hazardous, Toxic, and Radioactive Waste (HTRW) and
10 Construction Activities, Department of the Army, U.S. Army Corps of
11 Engineers;
- 12 • December 3, 2004 Number 4140.62 - Department of Defense Instruction -
13 Management and Disposition of Material Potentially Presenting an Explosive
14 Hazard (MPPEH);
- 15 • March 2001 Facility-Wide Sampling and Analysis Plan for Environmental
16 Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio;
- 17 • 2005 Munitions and Explosives of Concern (MEC) at the Ravenna Army
18 Ammunition Plant (RVAAP) – Notification Procedures (Ohio EPA);
- 19 • February 1996 Facility-Wide Safety and Health Plan (SAIC);
- 20 • April 9, 2004 Engineering Pamphlet (EP)110-3-8 (USACE);
- 21 • USACE EM 385-1-97, Explosives Safety and Health Requirements, dated 15
22 September 2008 to include all four Errata Sheets;
- 23 • EM 1110-1-4009, Military Munitions Response Actions, June 2007, with Errata
24 Sheets 1, 2, and 3;
- 25 • EP 1110-1-18, Military Munitions Response Process, 3 April 2006, and Interim
26 Guidance Document 06-04 which implements this document; and
- 27 • Approved Explosive Safety Submission.

28 A rigorous quality assurance (QA) program will be implemented in conjunction with
29 this PMP and the *Facility Wide Quality Assurance Project Plan* (located in the Facility
30 Wide Sampling and Analysis Plan [USACE 2001b]). Systematic review and approval

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1 of documents will be conducted to ensure that adequate QA procedures and
2 guidelines are established to successfully perform the intended activities.

3 The Phase II TCRA WP will be prepared and approved before the start of field work.
4 Previously approved facility documents will be cited where appropriate to facilitate
5 and expedite document review. All Plans will be submitted to the Army, USACE,
6 United States Army Environmental Command (USAEC), Ohio EPA and OHARNG for
7 review and approval before the initiation of field activities and at a minimum will
8 address the following elements, as appropriate:

- 9 • Detailed description of activities;
- 10 • Operational sequence;
- 11 • Health and safety;
- 12 • QA/quality control (QC); and
- 13 • Waste management.

14 Additional details describing the elements of the Phase II TCRA WP are provided in
15 the following sections.

16 **4.1.1 Site Safety and Health Plan**

17 PIKA will develop a SSHP for the Phase II TCRA at Rocket Ridge in conjunction with
18 the Facility Wide Health and Safety Plan. The SSHP will include emergency response,
19 contingency plans, and emergency contacts. The SSHP will meet the requirements
20 of federal, state, and local regulations and will identify safety and health regulations
21 applicable to the work. All employees, subcontractors, and on-site suppliers will
22 follow the provisions established in the approved SSHP. The Army and Ohio EPA
23 retain Stop Work Authority for any observed violations or non-compliance with the
24 SSHP pending corrective action. The SSHP will include:

- 25 • Site description and contaminant characterization;
- 26 • Safety and health hazard assessment and risk analysis;
- 27 • Safety and health staff organization and responsibilities;
- 28 • Site specific training;

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- 1 • Medical surveillance parameters;
- 2 • Personal protective equipment (PPE);
- 3 • Monitoring and sampling requirements;
- 4 • Safety and health work precautions and procedures;
- 5 • Site control measures;
- 6 • On-site first aid and emergency equipment;
- 7 • Emergency response plans and contingency procedures (both on-site and off-
- 8 site);
- 9 • Documentation and record keeping; and
- 10 • Gives authorization to all workers to stop work for non-compliance with safety
- 11 standards.

12 **4.1.2 Accident Prevention Plan**

13 The APP will document requirements outlined in the USACE Safety Manual presented
14 in EM 385-1-1, and will act as the overall controlling environmental, safety and
15 health (ES&H) document for this project. However, since this project is also being
16 conducted under the requirements of the Occupational Safety and Health
17 Administration (OSHA) regulation governing hazardous waste operations (29 CFR
18 1910.120), the APP will be included as an addendum to the SSHP to meet both
19 USACE and OSHA requirements.

20 **4.1.3 Quality Control Project Plan**

21 Before the start of field activities, a QAPP will be prepared as an amendment to the
22 existing *RVAAP Facility Wide QAPP* (located in the Facility Wide SAP [USACE 2001])
23 to ensure field sampling activities are implemented in accordance with established
24 procedures.

25 **4.2 Site Logistics and Coordination**

26 **Subcontractor Coordination:** A representative from each company performing
27 site work at Rocket Ridge will attend the Monday morning contractor meeting (8:30
28 AM). These meetings are designed to facilitate coordination of various contractor

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1 activities occurring at RVAAP/Camp Ravenna. The contractor and its
2 subcontractor(s) will coordinate to the best of their ability with other subcontractors
3 performing work at RVAAP/Camp Ravenna.

4 **Fall Deer Hunting:** No site work will be conducted during the weekends Camp
5 Ravenna allows deer hunting.

6 **Clearances:** In order to ensure the security and orderly running of RVAAP/Camp
7 Ravenna, any contractors, consultants, or visitors who wish to gain access to the
8 facility will follow procedures established by RVAAP/Camp Ravenna and the facility
9 caretaker contractor.

10 **Deliveries:** The facility management will be notified 24-hours in advance of any
11 deliveries to RVAAP/Camp Ravenna. All trucks are subject to search by Camp
12 Ravenna security at any time. All personnel associated with this project will observe
13 and obey posted speed limits at RVAAP/Camp Ravenna or default to 35 miles per
14 hour during daylight hours and 25 miles per hour during nighttime hours.

15 **Smoking:** Smoking is allowed only in designated areas of RVAAP/Camp Ravenna.

16 **Communication:** The use of two-way radios and cell phones are permitted at
17 RVAAP/Camp Ravenna; however, personnel will have a backup form of
18 communication in the event service is not provided in the work area.

19 **Hazardous and Non-Hazardous Waste:** Contractors are required to remove
20 non-hazardous trash brought to or generated at RVAAP/Camp Ravenna during work.
21 Hazardous materials require a manifest prior to removal from RVAAP/Camp
22 Ravenna. The Army facility representative will prepare manifests for all wastes
23 generated under this project.

24 **Food:** Food shall only be consumed in designated areas of RVAAP/Camp Ravenna.

25 **4.3 Government Furnished Resources**

26 The contractor will coordinate with the Army, OHARNG and the site operating
27 contractor to gain access to the facility and to available infrastructure and utilities as
28 required for execution of this project. The Government will provide the following
29 resources to the contractor, if available: pertinent records, reports, data, analysis

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- 1 and information, in their current format (e.g. hardcopy, electronic, tape, disks, CDs)
- 2 to facilitate development of a complete and accurate assessment of current, former
- 3 and historical site activities and operations; waste generation and contaminant
- 4 characteristics; parameters of interest; and, site environmental conditions; access to
- 5 appropriate personnel to conduct interviews on facility operations and activities;
- 6 access to all applicable DoD and Army policy and guidance documents.

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1 PIKA's President, Mr. Terry Kasnavia, will serve as the corporate sponsor and
2 provide the ultimate level of guidance and support on behalf of the PIKA Team.
3 Benefits of his authority include rapidly making decisions, committing corporate
4 resources, and resolving issues. Dr. Srinu Neralla, PIKA's Vice President of
5 Operations will provide guidance regarding all operational issues. Ms. Kathleen
6 Anthony, will serve as the Program Manager (PM) for this project. Their
7 involvement and oversight assure the USACE-Louisville District that this important
8 contract will receive PIKA's highest level of attention and commitment.

9 **5.2 Lines of Communication**

10 As shown in Figure 5-1, the primary line of communication between the Army and
11 PIKA is between the COR and the PjM, Brian Stockwell (primary point of contact).
12 This is also the primary contractual reporting for the task order. The primary
13 communication and reporting for contractual issues is between the Army Contracting
14 Officer (KO) and PIKA's PM Kathleen Anthony.

15 Mr. Brian Stockwell, the PjM for PIKA will be an alternative point of contact and the
16 point of contact for day-to-day coordination of activities on site. Mr. Lew Kovaric, a
17 Senior UXO Supervisor (SUXOS) will manage the UXO activities. The PjM and SUXOS
18 will keep the PM informed of all communications with the Army and other site
19 personnel while performing their tasks.

20 **5.3 Key PIKA Personnel**

21 Our proposed management and technical staff have project management, regulatory
22 interaction, UXO investigation, and UXO verification experience on similar projects.
23 The following text summarizes the lines of authority among key personnel.

24 **Srinu Neralla, Ph.D. – Vice President Technical Services**

25 **Background:** Responsible for all project operations. All program and project
26 managers report to Dr. Neralla for issues concerning project execution matters.

27 **Qualifications/Specialized Training:** B.S., Agriculture, M.S., Agricultural
28 Microbiology, M.S., Soil Science, and Ph.D., Soil Science. Specialized training in
29 OSHA 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER)

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1 Training with an annual 8-hour Refresher Training and OSHA Site Supervisor
2 Training.

3 **Licenses:** Licensed to use X-Ray Fluorescence Spectrometer for Metals Detection

4 **Kathleen Anthony – Program Manager**

5 **Background:** Responsible for the overall safety, quality and cost effectiveness
6 execution of investigations, remediation, and long-term monitoring projects
7 performed under PIKA's Federal Program.

8 **Qualifications/Specialized Training:** B.S. Environmental and Resource Science,
9 Minor in Chemistry, 16 years of relevant environmental work and four years as a
10 project manager. HAZWOPER Health & Safety Training 40-hr Course per OSHA 29
11 CFR 1910-120, HAZWOPER Health & Safety Refresher Training Annual 8-hr Course
12 per OSHA 29 CFR 1910.120.

13 **Licenses:** None

14 **Brian Stockwell – Project Manager**

15 **Background:** Responsible for site investigations, remediation, and building
16 decontamination and demolition projects.

17 **Responsibilities:** Coordinates field activities; assists in site health and safety.

18 **Qualifications/Specialized Training:** B.S. Geography with emphasis on
19 Environmental Planning, 16 years of relevant environmental work and five years as
20 project manager, 3 years with PIKA. HAZWOPER Health & Safety Training 40-hr
21 Course per OSHA 29 CFR 1910-120, HAZWOPER Health & Safety Refresher Training
22 Annual 8-hr Course per OSHA 29 CFR 1910.120.

23 **Licenses:** None

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1 **Melvin Lau – Senior UXO Supervisor (SUXOS)**

2 **Background:** Mr. Lau served in the United States Army for 20 years, where he
3 performed as a UXO Technician through Senior UXO Supervisor and Team Leader
4 for various operations. During his tenure with the Army, Mr. Lau was an Explosive
5 Ordnance Disposal (EOD) Team Leader and instructor at the Army/Navy Joint EOD
6 School, as well as an instructor at the Ground Ordnance, Improvised Explosives
7 Device (IED) Division, and Nuclear Weapons Division. His primary task and focus
8 during his Army career was to render safe chemical, biological, nuclear, and high
9 explosives munitions at a wide range of sites worldwide. Much of his work history
10 for the Army was under his Top Secret Security Clearance and the sites are,
11 therefore, classified. His experience also includes over 10 years of commercial UXO
12 experience, and developed the unique skills and techniques to remediate large Army
13 Ammunition Plants.

14 **Responsibilities:** On-site management of all PIKA field operations, and will:

- 15 • Manage the on-site project resources needed to safely perform site
16 operations.
- 17 • Understand the Phase II TCRA WP, this SSHP, and any other relevant
18 documents.
- 19 • Assure that project personnel and subcontractors review the WP.
- 20 • Ensure the safety and health issues have been addressed in the SOW.
- 21 • Consult and coordinate with the PM for the implementation of site tasks and
22 coordinate with subcontractors regarding schedule and contract
23 requirements.
- 24 • Schedule and present the operational portion of the daily safety briefing.
- 25 • Enforce compliance with this SSHP and the WP.
- 26 • Maintain copies (onsite) of current training certificates and respirator fit test
27 records.
- 28 • Act as the lead technical consultant for all on-site MEC related matters.

29 **Qualifications/Specialized Training:**

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- 1 • OSHA 40-hour HAZWOPER Course
- 2 • OSHA 8-hour Refresher, Annual
- 3 • U.S. Army/Navy EOD School Certification
- 4 • EOD Supervisors Badge

5 **Licenses:**

6 Not Applicable

7 **Lew Kovarik –Senior UXO Safety Officer (UXOSO)/UXO Quality Control**
8 **Specialist (UXOQCS)**

9 **Background:** Mr. Kovarik holds the position of UXO Team Leader and Site Safety
10 and Health Officer (SSHO) at PIKA. With over nine years of EOD experience with the
11 U.S. Army and five years of civilian UXO experience, Mr. Kovarik’s expertise includes
12 extensive range clearance operations in Central America and the U.S. He is also
13 extremely skilled in the operations of heavy equipment in explosive contaminated
14 areas as well as contaminated soil sites involving ordnance explosives (OE), UXO,
15 and munitions and explosives of concern (MEC).

16 **Responsibilities:** On-site implementation of the safety and health requirements
17 presented in this SSHP. The UXOSO must have completed the OSHA 40-hour
18 HAZWOPER site worker and refresher training, and the 8-hour Supervisor/Manager
19 training requirements in accordance with 29 CFR 1910.120 and be trained and
20 certified in first aid and cardiopulmonary resuscitation. To ensure on-site safety and
21 health, the UXOSO will:

- 22 • Initiate and authorize a “Stop Work” order for any imminent safety or health
23 concerns.
- 24 • Implement and enforce the requirements outlined in this SSHP.
- 25 • Conduct the safety portion of the daily safety briefings.
- 26 • Conduct and document site training related to site-specific hazards.
- 27 • Specify proper levels of PPE in accordance with the requirements of this
28 SSHP.

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- 1 • Implement and enforce the PIKA Alcohol/Drug Abuse Policy.
- 2 • Investigate injuries, illnesses, accidents, incidents, and near misses.
- 3 • Conduct visitor orientation, daily safety inspections, and weekly safety audits.
- 4 • Ensure field implementation of the PIKA SSHP.

5 **Qualifications/Specialized Training:**

- 6 • US Naval EOD School, Indian Head, MD, 3/92-6/92
- 7 • US Naval EOD School, Eglin AFB, 11/91-2/92
- 8 • OSHA 40-Hour Course, 6/00
- 9 • OSHA 8-hour Refresher, 4/05
- 10 • Technical Transportation of Hazardous Materials, 3/03

11 **Licenses:**

12 Not Applicable

13 **5.4 Subcontracting and Procurement Procedures**

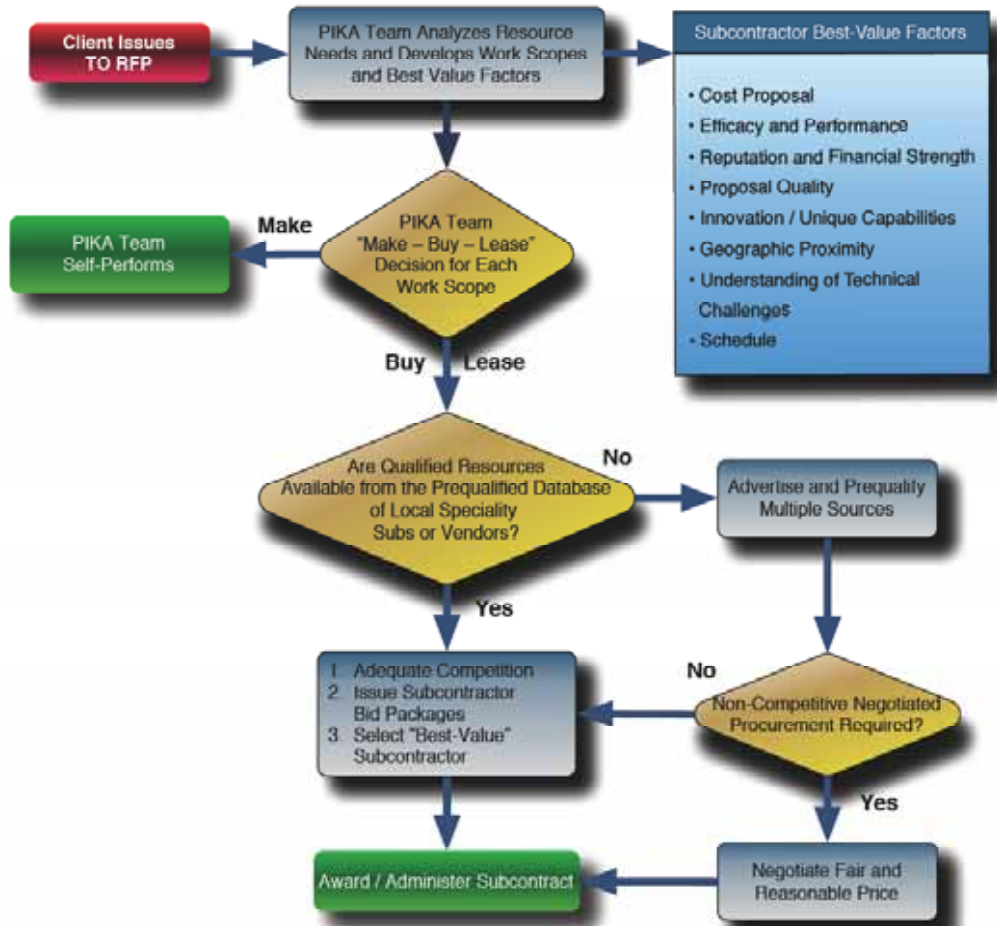
14 PIKA plans to self-perform the majority of this work. All other subcontracting and
15 equipment/ supply procurement will be performed following PIKA's standard
16 procurement procedures. These procedures utilize the "best value" process (Figure
17 5-2).

18 PIKA anticipates the use of subcontractors and vendors in the following areas:
19 Access road improvement, vegetation removal, public relations training, analytical
20 and geotechnical laboratories, surveying, equipment rental, trailer rental, janitorial,
21 and other supplies and services. Using a combination of in-house equipment and
22 agreements with national equipment rental/field supply vendors, PIKA can cost
23 effectively meet project equipment needs.

24 Subcontracts will be firm fixed price or fixed unit rate types to minimize cost risks.
25 Subcontract agreements will include a penalty clause if project specifications are not
26 met, as well as a termination clause for deficient performance. However, PIKA

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1 typically works with our subcontractors to improve their performance and correct
2 deficiencies.



3

4

Figure 5-2.

PIKA's "Best Value: Procurement Decision Process"

5

6 Communications during project execution also minimize subcontractor deficiencies.
7 All subcontractors participate in a kickoff/site orientation meeting when they first
8 arrive on-site. In addition, onsite subcontractors participate in the daily tailgate
9 meetings where the day's activities and goals are discussed along with strategies to
10 complete the work safely. When appropriate, the subcontractor's on-site
11 representative is included in the weekly status meeting where recently completed
12 and upcoming activities are reviewed. The subcontractor is encouraged to raise
13 concerns and develop solutions that further the overall project goals. The PIKA

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1 Team PM will interact with on-site subcontractors on a daily basis. If a deficiency is
2 identified, they will immediately discuss the issue with the subcontractor's on-site
3 representative. If the deficiency cannot be resolved at the site level, the PIKA PM
4 will elevate the issue to the subcontractor's responsible principal. If the issue still
5 remains unresolved, PIKA will replace the subcontractor.

6 Test America Laboratories has been identified as the primary analytical laboratory
7 for this contract. Test America is USACE and NELAP certified and can produce all
8 required electronic deliverables.

9 **5.5 RVAAP Stakeholders and Responsibilities**

10 PIKA will manage and coordinate this project to ensure all RVAAP stakeholders are
11 kept informed of the project status, existing or potential problems, and any changes
12 that may be required to prudently manage the project and meet the needs of these
13 stakeholders. These stakeholders include:

- 14 • USACE – Louisville District (CELRL);
- 15 • USACE – Baltimore District (NAB);
- 16 • RVAAP;
- 17 • USAEC;
- 18 • OHARNG/Camp Ravenna;
- 19 • National Guard Bureau;
- 20 • Ohio EPA;
- 21 • Base Realignment and Closure Technical Support (BRACO) Office; and
- 22 • United States Army Center for Health Promotion and Preventive Medicine
23 (USACHPPM).

24 Expected active stakeholder participants in the operations of the work under this
25 contract include PIKA, USACE, RVAAP, Ohio EPA, USAEC, and OHARNG.

26 The roles and responsibilities for the stakeholders are summarized as follows:

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1 **USACE CELRL**– The USACE Louisville District will provide project technical and
2 contractual oversight, maintenance of project schedules, review of project
3 documents and approval of payment milestones for invoicing.

4 **USACE NAB** – The USACE Baltimore District is responsible for providing technical
5 and field oversight for this project.

6 **USAEC** – The USAEC will provide environmental oversight to the project.

7 **RVAAP** – RVAAP staff will provide security and review and approval of project
8 documents.

9 **Ohio EPA** – The Ohio EPA will provide review, comment, and approval of project
10 documents, approve any decision documents, and maintain stop work authority
11 based upon any unapproved deviations (not approved by stakeholders) to the
12 Rocket Ridge work plans.

13 **OHARNG** – The OHARNG will provide review of project documents. PIKA will
14 coordinate investigation activities with OHARNG to reduce possible interference with
15 scheduled activities.

16 **5.6 Public Involvement**

17 PIKA will provide Public Affairs and Community Relations support for this project and
18 ensure that all Public Affairs and Community Relations activities are coordinated and
19 approved by the RVAAP facility manager and the USACE Public Affairs Office (PAO).
20 PIKA will prepare an addendum to the RVAAP Community Relations Plan. The PIP
21 addendum describes the procedures that will be used to notify the public about the
22 Phase II TCRA work being conducted at RRA of ODA2, RVAAP. Additional activities
23 covered in the addendum include the preparation of briefings, presentations, fact
24 sheets, newsletters, Restoration Advisory Board (RAB) tours, and articles to news
25 media, if needed. PIKA will prepare information for public review at the request of
26 the Army. Project descriptions and progress updates suitable for inclusion in the
27 RVAAP public website will be provided as requested by the COR and RVAAP.

28

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1 **6.0 PROJECT REPORTING/DELIVERABLES**

2 Deliverables include the work plans required by the contract and regulators,
3 completion reports, status reports, and other documentation that justifies the
4 payment of interim milestones. Listing of deliverables, the due date based upon the
5 schedule or frequency of reoccurring reports and the distribution of the deliverables
6 are found in the following sections. All reports (except the PMP and monthly reports)
7 and deliverables will be provided to the Administrative Record repositories for public
8 access.

9 **6.1 Biweekly Status Teleconferences**

10 Biweekly status meetings will be conducted with the appropriate stakeholders per
11 the SOW by means of a conference call. The purpose of these meetings is to
12 address the progress to date, summarize anticipated activities, address any
13 problems or issues with regards to the project, and discuss any corrective actions. A
14 standard agenda for this biweekly conference call will be issued at least two days
15 before each call for review and comment. Upon the incorporation of comments to
16 the agenda, a finalized agenda will be provided to the interested parties. The project
17 status includes, but is not limited to:

- 18 • Work completed;
- 19 • Work scheduled;
- 20 • Technical issues;
- 21 • Regulatory challenges/issues;
- 22 • Issues that may affect project schedule; and
- 23 • Any other project related issues raised by any of the stakeholders.

24 Meeting minutes of the biweekly status meeting will be provided to all interested
25 parties.

26 Key issues discussed during these meetings will be summarized in the monthly
27 report even if they had been previously discussed in separate technical memoranda
28 or other reports. Meeting minutes and other documentations of the issues will be
29 referenced in the status report.

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1 6.2 Monthly Status Reports

2 Monthly status reports will be submitted on the 5th of every month. A sample
3 monthly status report is included as Appendix B. The monthly status report will
4 document the following:

- 5 • Activities completed during the month;
- 6 • Issues and problems encountered and their resolution;
- 7 • QC data and reports;
- 8 • Health and Safety reports;
- 9 • Activities planned for the next month;
- 10 • Schedule status showing actual versus planned activities; and
- 11 • Interim milestones completed and for which payment is requested.

12 In addition to the monthly status report, daily QC and weekly summaries of activities
13 will be maintained. These reports document daily activities and accomplishments
14 (including quantities), personnel on site, QC activities, health and safety activities,
15 and site conditions.

16 The monthly status report will be provided electronically by the 5th day of each
17 month with a hard copy mailed the following day. If the 5th falls on a weekend or
18 holiday, the reports will be provided on the next work day.

19 6.3 Schedule Update and Milestone Progress

20 The baseline schedule will be updated as needed or as requested by the COR. The
21 schedule will be modified to reflect actual authorizations and funds available.
22 Milestone progress will be documented in the monthly status report. The
23 presentation of the milestone progress schedule shows the planned activities
24 (baseline) versus actual activities and milestones accomplished. The monthly status
25 will be presented as a critical path presentation. Other types of schedule
26 presentation formats would be available as requested by the COR.

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1 6.4 Records and Information Management

2 Project records will be maintained on site and will ensure documentation is available
3 for project review and to maintain a clear record of the approach to the final site
4 remedy. In addition to a hard copy file of all the project-related records (with
5 exception of the PMP) maintained on-site, an electronic copy of all files will be
6 maintained at the project office and at the PIKA corporate office in Stafford, Texas.

7 All reports (except the PMP and monthly reports) and deliverables will be provided
8 to the Administrative Record repositories for public access. The files in the
9 Administrative Record will be inspected quarterly to ensure that all submitted reports
10 are present. All reports will be formatted following RVAAP Deliverable Document
11 Format Guidelines (Vista, 2009).

12 PIKA will participate in RAB meetings. Support for these meetings include meeting
13 notifications, a record of the meetings (minutes and transcript), and presentations
14 as requested on project activities.

15 If desired by the Army, critical decision documents, project presentations, and other
16 information the Army determines to be critical could also be made available on a
17 website via PIKA's intranet portal with varying levels of controlled web-based
18 access: one level will be for the PIKA Team and Army project management and will
19 include cost, schedule and contractual documentation; another will be for regulatory
20 agencies; and a third level will be for community groups. PIKA's program will allow
21 the Army, regulators and the community to access applicable project information
22 through a number of different sources while maintaining document integrity and
23 record completeness.

24 6.5 Data Management

25 Personnel who have completed the USACE Louisville's Data Management Training
26 course will ensure all data is collected and managed per USACE guidelines and will
27 comply with all applicable requirements of the Environmental Restoration
28 Information System (ERIS), Automated Data Review - Electronic Data Management
29 System (ADR-EDMS), and Ravenna Environmental Data Information Management
30 System (REIMS). Data management tasks will include:

- 31 • Establishing data standards for document metadata, tabular, and spatial data;

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- 1 • Defining procedures for data management and upload to the website; and
- 2 • Establishing a repository of documents and tabular and spatial data accessible
- 3 through a web interface (REIMS).

4 **6.6 Project Deliverables**

5 The project deliverables listed in the SOW are summarized in Table 6-1. The
6 deliverables are included in the baseline project schedule (Appendix A) and
7 distribution lists is included in Table 6-2.

8
9 **Table 6-1**
10 **Project Deliverables Schedule**

Title	Planned Revisions	Schedule
Project Management Plan	Preliminary Draft, Draft, Final	Begin upon Notice of Award
Project Work Plan	Preliminary Draft, Draft, Final	Begin upon Notice of Award
Site Specific Safety and Health Plan		
Accident Prevention Plan		
Quality Assurance Project Plan Addendum		
Public Involvement Plan		
Stormwater Pollution Prevention Plan		
Explosive Safety Submission	Preliminary Draft, Draft, Final	Begin upon Notice of Award
Geotechnical Report	Preliminary Draft, Draft, Final	Begin upon Notice of Award
Status Reports	Monthly	5th day of Month
Milestone Presentation	End of each Milestones	15 days after milestone
Removal Action Report	Preliminary Draft, Draft, Final	Begin upon Completion of Field Activities.

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1
2
3

Table 6-2
Document Distribution

Name/Organization	Hard Copies	Electronic Copies
Preliminary Draft		
USACE CELRL	2	1
USACE NAB	1	1
RVAAP	2	2
Draft		
USACE CELRL	2	1
USACE NAB	1	1
RVAAP	2	2
USAEC	1	1
Ohio EPA	2	1
OHARNG	1	1
BRACO	0	1
NGB	0	1
Final		
USACE CELRL	2	1
USACE NAB	1	1
USAEC	1	1
Ohio EPA	2	1
OHARNG	1	1
USACHPPM	1	1
REIMS	0	1
RVAAP	2	2
BRACO	0	1
NGB	0	1

BRACO – Base Realignment and Closure Technical Support Office
 NGB – National Guard Bureau
 OHARNG – Ohio Army National Guard – Camp Ravenna
 Ohio EPA-DERR - Ohio Environmental Protection Agency NE District-DERR
 REIMS – Ravenna Environmental Information Management System
 RVAAP – Ravenna Army Ammunition Plant
 USACHPPM – United States Army Center for Health Promotion and Preventative
 Medicine
 USACE CELRL – United States Army Corps of Engineers – Louisville District
 USACE NAB – United States Army Corps of Engineers – Baltimore District
 USAEC – United States Army Environmental Command

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1 **7.0 DETAILED WORK SCHEDULE**

2 A baseline schedule is included in Appendix A. The schedule shows major activities
3 leading to the milestones identified in the SOW as well as most interim milestones.

4 **7.1 Performance and Payment Interim Milestones**

5 The interim milestone performance and payment plan will be tracked in a schedule
6 table format. The table will be based upon the baseline schedule included in
7 Appendix C. One of the goals in developing this plan was to have interim milestones
8 associated with documents and measurable activities and to enable payment for
9 ongoing activities on approximately monthly basis.

10 **7.2 Cost, Performance, and Schedule Evaluation**

11 The PjM will review project status with the task managers on a weekly basis. The
12 review will include evaluation of daily reports and weekly summaries, evaluation of
13 cost data for the PIKA Management Information System. The analysis will include
14 planned versus actual performance measures and production rates and impacts to
15 schedule. If corrective actions are needed to mitigate schedule impacts these will
16 be developed and discussed with the COR. The performance analysis will be
17 discussed at the biweekly status meeting and be included in the monthly status
18 report.

19 **7.3 Schedule Update Process**

20 The project schedule will be maintained and updated as needed. Updates will be
21 made to the schedule on a monthly basis showing planned versus actual. The
22 schedule provided with the PMP will be the baseline schedule and the baseline
23 would only be changed as authorized by the COR.

24 **7.4 Milestone Presentations**

25 PIKA will define the type and content of milestone presentations to be made to the
26 Army through discussion and mutual agreement with the COR for each milestone or
27 type of milestone. A list of milestones and interim milestones is included with the
28 schedule. The content will include the necessary information to facilitate

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- 1 certification and approval. The requirements for obtaining Army certification and
- 2 approval will be defined for each milestone and interim milestone following
- 3 agreement on interim milestones and general requirements.

- 4

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1 **8.0 REFERENCES**

2 Ohio Environmental Protection Agency, 2004. Director's Final Findings and Orders.
3 June.

4 Ohio Environmental Protection Agency, 2005. Munitions and Explosives of Concern
5 (MEC) at Ravenna Army Ammunition Plant – Notification Procedures. April 8, 2005.

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10 Grounds. October.

11 SAIC, 2001. Facility Wide Sampling and Analysis Plan for Environmental
12 Investigations at the Ravenna Army Ammunition Plant. March.

13 United States Army Corps of Engineers, 2004. Draft Multi-Increment Sampling
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18 Notification Procedures. April 8, 2005.

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APPENDIX A
Baseline Schedule

Phase II Time Critical Removal Action (TCRA) at the Rocket Ridge Area (RRA) within RVAAP-004-R-01
Demolition Area #2 MRS

APPENDIX B

Sample Monthly Status Report

1 Company Name: PIKA International Inc. MONTHLY REPORT

2 Contract Number: W912QR-09-T-0059 Date:

3

4 Contractor: PIKA International Inc.

5 Location: Ravenna Army Ammunition Plant, Ravenna, OH

6 Project Name: Rocket Ridge Phase II TCRA

7

8 SUMMARY OF ACTIVITIES:

9

10 HEALTH AND SAFETY PERFORMANCE:

11

12 PROBLEMS ENCOUNTERED/RESOLUTION:

13

14 PLANNED ACTIVITIES (for following month):

15

16

17

ACTIVITY AND PROGRESS COMPLETION TABLES:

Target/Milestone Activity	Scheduled Completion Date	Actual Completion Date	Status

18

19 CHANGES IN KEY PERSONNEL:

20

21 DEVIATION IN SCHEDULE (with explanation):

22

23

24 INVESTIGATIVE DERIVED WASTE (IDW):

25

26

27 REMARKS:

28

29

30 PROJECT REPRESENTATIVE: SIGNATURE- _____

31

32 PROJECT MANAGER: SIGNATURE- _____

33

34

1
2
3

APPENDIX C
Interim Milestone Performance and Payment Schedule

Rocket Ridge Phase II TCRA Milestone Presentation

CLIN	Milestone Description	Milestone Payment	Contract Amount
1	Document Preparation (Work Plan, QAAP Addendum, ESS, SWPPP, Geotechnical Report, and PIP)		TBD
	Task 1a - PMP, Work Plan to include APP and SSHP and Quality Assurance Project Plan	TBD	
	Task 1b - Amendment to Explosives Safety Submission	TBD	
	Task 1c - Geotechnical Evaluation and Report	TBD	
2	Divert Sand Creek		TBD
	Task 2a - Mobilization and Demobilization	TBD	
	Task 2b - UXO Clearance to Provide Access to Sand Creek	TBD	
	Task 2c - Install Temporary Diversion	TBD	
3	MEC and MD Removal		TBD
	Task 3a - Vegetation Clearance and Site Preparation	TBD	
	Task 3b - MEC Surface Clearance	TBD	
	Task 3c - Excavation of Soils (8000 CYD of Clean Bench Soil + 500 CYD of Contaminated Soils)	TBD	
4	Remove and Containerize White Phosphorus and White Phosphorus Contaminated Soil		TBD
	Task 4a - Mobilization and Demobilization	TBD	
	Task 4b - Site Work	TBD	
5	Confirmation Sampling		TBD
6	MEC and MD Survey of Sand Creek		TBD
7	Restore Sand Creek		TBD
	Task 7a - Restore Sand Creek	TBD	
	Task 7b - UXO Oversight	TBD	
8	Process Excavated Soil to Remove MEC and MPPEH Items		TBD
	Task 8a - Mobilization and Demobilization	TBD	
	Task 8b - Setup and Disassembly of Equipment	TBD	
	Task 8c - Processing and Disposal of 500 CYD of Contaminated Soil	TBD	
9	Site Restoration		TBD
10	Prepare a Removal Action Report (RAR)		TBD
11	(Optional) Blow-In-Place Unacceptable-to-Move NEC Items (Price per Item)		TBD
13	(Optional) Repair of Earth Covered Magazines (EMCs) (Price per EMC)		TBD
14	(Optional) MEC and MD Removal in Excess of 500 Cubic Yards (Price per Cubic Yard)		TBD
15	(Optional) Remove and Containerize White Phosphorus (WP) and WP Contaminated Soil in Excess of 270 Cubic Yards (Price per Cubic Yard)		TBD
	Contract Total		TBD

TBD - To be determined