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Project No.: 122788.50001000

TRANSMITTAL LETTER:

To: Ms. Cynthia Ries

Address: US Army Corps of Engineers - Louisville

CELRL-PM

600 Martin Luther King, Jr, Place

Louisville, Kentucky 40201

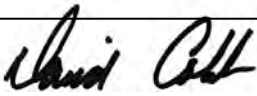
Re: Final Propellant Removal Summary Report

Contract No. W912QR-04-D-0027

For: Review As Requested Approval Corrections Submittal Other

| Item No: | No. of Copies | Date: | Document Title |
|----------|---------------|----------|---|
| 1 | 1 | Jan 2008 | Final Propellant Removal Summary Report for MEC Support for RVAAP-08 (Load Line 1), Ravenna Army Ammunition Plant |

Enclosed please find the final version of the Propellant Removal Summary Report for MEC Support for RVAAP-08 (Load Line 1). Please call if you have any questions or comments.

Sincerely: 
David P. Cobb
Project Manager

DOCUMENT SUBMISSION FORM

Form Approved
10/29/2007

1. REPORT DATE (DD-MM-YYYY)

January 24, 2008

2. REPORT STAGE

Final

3. REPORT TYPE

Summary report for UXO activities

4. REPORT TITLE AND SUBTITLE

Final Propellant Removal Summary Report for MEC Support
at RVAAP-08 (Load Line 1)

5a. CONTRACT NUMBER

W912QR-04-D-0027

5b. PROJECT NUMBER

122788.50001000

5c. TASK NUMBER

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6. AUTHOR(S)

Dave Cobb, David Crispo

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Shaw Environmental, Inc.
100 Technology Center Drive
Stoughton, MA 02072

8. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U.S. Army Corps of Engineers
600 Martin Luther King, Jr. Place
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10. ABSTRACT

This document summarizes Shaw's MEC oversight for the removal of propellant nodules at RVAAP-08 (Load Line 1), sampling and analysis performed at the areas where propellants were previously identified and final results following the MEC oversight activities.

11. SUBJECT TERMS / KEYWORDS

Propellant removal at Load Line 1

**Final Propellant Removal Summary Report for MEC Support for
RVAAP 08 Load Line 1**

Volume One – Main Report and Attachment A

Ravenna Army Ammunition Plant
Ravenna, Ohio

Contract No. W912QR-04-D-0027
Delivery Order 0001

Prepared for:

United States Army Corps of Engineers
600 Martin Luther King, Jr. Place
Louisville, Kentucky 40202

Prepared by:

Shaw Environmental, Inc.
100 Technology Center Drive
Stoughton, MA 02072

January 24, 2008

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| Ohio EPA | 1 | 1 |
| RVAAP Facility Manager | 2 | 2 |
| Shaw Project Manager | 2 | 2 |
| USACE Program Manager | 1 | 1 |

OHARNG – Ohio Army National Guard

Ohio EPA – Ohio Environmental Protection Agency

RTLS – Ravenna Training and Logistics Site

RVAAP – Ravenna Army Ammunition Plant

Shaw – Shaw Environmental, Inc.

USACE – U.S. Army Corps of Engineers – Louisville District



Introduction

Shaw Environmental, Inc. (Shaw) was contracted by the United States Army Corps of Engineers (USACE) Louisville District under USACE Contract No. W912QR-04-D-0027/DO-0001 to perform the removal of smokeless powder propellant nodules observed prior to and during the remediation of soils in Area of Concern (AOC) RVAAP-08, otherwise referred to as Load Line 1. The remediation of soils in Load Line 1 is to be performed by Shaw under Task Order 1 under USACE-Omaha District's Fixed-Price Remediation Insured (FPRI) Indefinite Delivery/Indefinite Quantity Contract No. DACA45-03-D-0026. The propellant nodules to be addressed were observed by USACE personnel in two locations in Load Line 1 where soil excavation activities were expected to take place. These areas were the soils adjacent to buildings CB-13B and CB-14 at Load Line 1 as described in Table 1.

Table 1
Location of Propellants at Load Line 1

| Building | Propellant Location |
|----------|---|
| CA-14 | <ul style="list-style-type: none"> • Along east side of building on the surface • Proximate to slag pile on the surface |
| CB-13B | <ul style="list-style-type: none"> • Asphalt parking area along east side of the building |

As part of the proposed remediation activities at the two Load Line 1 areas, Shaw was also tasked with preparing required project plans and providing personnel specially trained in MEC handling, removal and disposal during excavation activities.

MEC Removal Oversight

Prior to performing remediation activities at the Load Line 1 areas identified in Table 1, Shaw munitions and explosives of concern (MEC) trained personnel performed an initial walkover of the areas previously found to contain propellant nodules on the ground surface. Areas found to have propellant on the surface were to be flagged for further inspection and propellant removal either during or just prior to excavation activities; however, no surface propellant nodules were identified as part of the initial walkover activities.

As part of the remediation activities in Load Line 1, Shaw MEC personnel were assigned to observe the preparation of the work areas and soil excavation. The MEC personnel were responsible for inspecting excavated soils for the presence of propellants, identifying items suspected of being propellant nodules, and instructing Shaw field crew personnel as to how excavation activities would proceed so as to ensure the propellant material could be readily segregated for disposal. If propellants were encountered, direction of the excavation was to be guided by the MEC personnel until it was apparent that propellant material has been adequately removed. Similar to the initial walkover results of the Load Line 1 area, no propellant nodules were identified during excavation activities. Photographs presenting the initial and post excavation conditions at the two Load Line 1 areas are included in Attachment A.

Sampling and Analysis

Following the completion of excavation activities at the Load Line 1 areas identified in Table 1, Shaw collected confirmatory samples as part of its work under the FPRI contract. In addition to the chemical contaminants of concern at these locations, the samples were submitted for laboratory analyses that included the propellants;

nitroglycerine, nitroguanidine, and nitrocellulose using EPA methods 8330 and 353.2, as specified in the RVAAP Remedial Action Work Plan (Shaw, 2007). Although no cleanup goals were established for the propellants as part of the remediation of soils at Load Lines 1, 2, 3 and 4, propellant results for the confirmatory samples are considered to be very low. The maximum concentration detected was nitrocellulose at approximately 17.5 milligrams per kilogram along the east side of Bldg CB-13B. This concentration translates to less than two thousandths of a percent in the soils; whereas, soils with concentrations greater than 10% are characterized as explosive soils. Table 2 presents a summary of the propellant results for soil areas identified in Table 1.

**Table 2
Propellant Results at Load Line 1**

| Building | Propellant Results (mg/kg) | | |
|----------|----------------------------|----------------|----------------|
| | Nitroglycerine | Nitroguanidine | Nitrocellulose |
| CA-14 | 2.3 | <0.25 | 17.5 |
| CB-13B | <0.5 | <0.25 | 1.9B |

Notes:

B – Estimated Result. Result is less than the reporting limit

Conclusion

Shaw was contracted to perform oversight and removal of smokeless propellant nodules at two areas identified at Load Line 1. Ultimately, no propellants were found and confirmatory testing performed in conjunction with the remediation of soil under the FPRI indicated no potential hazards or presence of explosives are present at these locations based on field observations and laboratory data.

ATTACHMENT A

PHOTOGRAPHS



Excavation area to the east of Building CA-14 identified as containing smokeless propellant nodules prior to excavation.



Post excavation area to the east of Building CA-14.



Excavation area to the east of Building CB-13B identified as containing smokeless propellant nodules prior to excavation.



Post excavation area to the east of Building CB-13B.