APPENDIX I

PROJECT QUALITY ASSURANCE SUMMARY
FIELD CHANGE ORDERS

PROJECT QUALITY ASSURANCE SUMMARY

This appendix presents the quality assurance/quality control (QA/QC) summary for the Fuze and Booster Quarry Landfill/Ponds area RI. The QA/QC goals for this project were established in the *Facility-wide Sampling and Analysis Plan (SAP) for the Ravenna Army Ammunition Plant* (RVAAP)(USACE, 2001) and the *Work Plan and Sampling and Analysis Plan Addenda (SAP Addenda) for the Phase I/Phase II Remedial Investigation of the Fuze and Booster Quarry Landfill/Ponds at the Ravenna Army Ammunition Plant* (USACE, 2003). The QA/QC procedures were implemented through project-specific procedures and requirements, SpecPro, Inc. QA program, and the U.S. Army Corps of Engineers (USACE) requirements. The focus of the project QA was mainly on field, analytical laboratory activities, and project administration.

1.0 FIELD QUALITY ASSURANCE

1.1 Procedures

Standard operating methods for the Fuze and Booster Quarry Landfill/Ponds field activities are contained in the SAP and SAP Addenda. The SAP describes the overall approach and methodologies to be used at RVAAP and the SAP Addenda details project-specific requirements for field activities. These documents were reviewed and approved by the USACE – Louisville District, the Ohio Environmental Protection Agency and other interested parties and agencies prior to the beginning of field activities. Clarifications and/or planned deviations from these methods were documented as field change orders (FCOs), and variances were documented as non-conformance reports (NCRs). Copies of the FCOs are attached to this Appendix.

1.2 Readiness Review

A project kickoff meeting was held on September 29, 2003 at SpecPro's Ravenna office. The kickoff meeting consisted in part of the following QA/QC items:

- A review of all QA/QC documents, requirements and procedures.
- Field training requirements and schedule.
- Field mobilization and logistics.
- Laboratory and Subcontractor readiness.

Details of the project kickoff meeting are maintained in the project file.

1.3 Training

Field personnel were trained on all project related tasks by the Project Manager. The Project Manager assessed the worker proficiency and training effectiveness by observing the workers in the field and retraining when necessary.

1.4 Equipment Calibration

Various types for monitoring and testing equipment were used during the field investigation. All equipment was calibrated prior to use and in accordance with the manufacturers recommendations. Field calibrations were recorded in the Quality Assurance/Quality Control logbook as appropriate.

1.5 Quality Control Samples

Field QA and QC samples were collected as specified in the SAP Addenda. These samples included trip blanks, equipment rinsate blanks, source water samples and field duplicates. Field QA splits were submitted to the USACE-designated laboratory, Severn Trent Laboratories Inc., for independent analysis. Field QC data and analysis of QC samples are presented in Appendix H.

1.6 Field Records

Pre-formatted and bound field logbooks were used to record field observations, data, activities and information. Logbook entries were checked for accuracy and completeness by the Project Manager. Field logbook pages are included in the Appendices of this RI report as follows:

- Appendix C – Groundwater Monitoring Well Installation, Development, Sampling, and Slug Test Logs
- Appendix D – Soil Sampling Logs
- Appendix F – Surface, Sediment, and Test Pits Sampling Logs

Other items recorded in the logbooks but not presented in the Phase I/Phase II report Appendices are maintained in the project files.

2.0 ANALYTICAL LABORATORY QUALITY ASSURANCE

GPL, Inc. of Frederick, MD was subcontracted by SpecPro, Inc. to perform chemical analysis for the Phase I/Phase II RI samples for the Fuze and Booster Quarry Landfill/Ponds. GPL, Inc. is certified by the U.S. Army Corps of Engineers (MRD) for Organic/Inorganic/Explosives analysis.

2.1 Procedures

A comprehensive Scope of Work (laboratory SOW) was the basis of the laboratory analytical services provided by GPL, Inc. for this project. The laboratory SOW provided project-specific requirements, including:

- Analytical methods to be used
- Parameters to be measured
- Adherence to USEPA SW-846 protocol
- Project quantitative goals
- Project data deliverables.

2.2 Laboratory Quality Control

Laboratory quality control samples and data verification/validation were used to document laboratory data quality. The laboratory QC results are discussed in the Data Quality Control Summary Report (Appendix J). Laboratory QC sample results are contained in the project files and were used in the data verification/validation procedures.

2.3 Laboratory Documentation and Data Verification/Validation

Summary data packages and electronic deliverables were submitted by GPL to SpecPro in accordance with the protocols contained in USEPA SW-846. The analytical data was then verified and validated by the Project Chemist. Appendix J contains the Data Quality Control Summary Report where the verification/validation procedures and criteria are explained. The analytical results were compared to these criteria and data was accepted, rejected, or qualified. Routine data changes were documented through data change forms. There were no data deficiencies or laboratory-related nonconformance issues.

3.0 QUALITY ASSURANCE DOCUMENTATION

The primary methods of documenting QA for RVAAP environmental projects include the completing Field Change Orders (FCOs) and Nonconformance Reports (NCRs). Copies of FCOs completed for this project are included in this Appendix. No NCRs were needed for this project.

The purpose of a FCO is to request and document changes to the SAP, SAP addenda, or QA Project Plans. Two FCOs were completed for this project

- 10/2/03 was a request for guidance for sampling the 1-3 subsurface soil intervals. Due to many locations being so close to the bedrock, it was impossible to collect the samples. Logbooks were to be carefully documented when refusal happened.

- 10/6/03 was a request to not take the proposed ten sediment samples in the southern most pond since the Louisville COE was conducting a biological study at the same time. We requested to take only 5 samples in that pond and use the remaining five samples to take sediment samples in the basin ponds instead to help characterize the area more completely.

All FCOs were reviewed and approved by USACE project personnel and Ohio EPA prior to implementation.

FCO NO. ___

FIELD CHANGE ORDER

PROJECT NAME: Phase I/II Fuze & Booster Landfill Quarry/Pond DELIVERY ORDER NO: 0012

Date: 10-2-03 Type of Change: field technical Priority: _____

Requestor Identification:

Name: Chantelle Cavell Organization: Spec Pro Inc Phone: 336-358-7753

Title: Program Manager Signature: Chantelle Cavell

Baseline Affected: ___ Cost X Scope ___ Milestones X Method of Accomplishment

Description of Change: First day of hand augering, continued to hit rock and unable to sample to the 1-3 foot sampling interval - see soil logbook #1 for more details

Justification: Physically unable to sample at the 1-3 ft interval by hand, so will document each location carefully to show when sampling can not occur as per EPA instructions

Impact of Not Implementing Request: Use machine methods to go past the rock which is not costed into the time and expenses of current scope of work

Participants Affected by Implementing Request: Spec Pro,

Cost Estimate: $ 0 Estimator Signature: _____

Phone: _____ Date: _____

Previous FCO Affected ___ Yes ✓ No

Client Approval: _____ Title: _____

Date: _____

Time From Initiation to Action : _____

FCO Okayed - Ellen T McCue, OH EPA

38

FCO NO. ___

FIELD CHANGE ORDER

PROJECT NAME: Phase I/II Fuze & Booster Landfill Quarry/Pond DELIVERY ORDER NO: 0012

Date: 10-6-03 Type of Change: technical Priority: ___

Requestor Identification:

Name: Chantelle Carroll Organization: Spec Pro Phone: 336 358-7753

Title: Program Manager Signature: Chantelle Carroll

Baseline Affected: ___ Cost X Scope ___ Milestones X Method of Accomplishment

Description of Change: Spoke w/OH EPA to only take 5 sediment samples in the southern most pond instead of 10 sediment samples due to Louisville COE taking water; sediment; bioassay samples in July 2003. The 5 samples will be mixed into the 10 not 8 as documented small settling basins in the field

Justification: Through field investigations more ponds were discovered and should be sampled to get a better outlook of contamination if it is present

Impact of Not Implementing Request: Not as complete analysis as could be

Participants Affected by Implementing Request: Army, COE, OhioEPA

Cost Estimate: $ 0 Estimator Signature: ___

Phone: ___ Date: ___

Previous FCO Affected ___ Yes ✓ No

Client Approval: ___ Title: ___

Date: ___

Time From Initiation to Action: ___

FCO signed: EL York, Ohio EPA

TECHNICAL CHANGE NOTIFICATION FORM

Completion of this form does not authorize the performance of out-of-scope work.

Delivery Order Title: Phase I/Phase II RI Fuze & Booster Quarry Landfill Ponds, Ravenna AAP

Change No. 001

Delivery Order No.: DAAA09-01-G-009, Delivery Order No. 12

Date: 06/16/2005

Submitted by: Chantelle Carroll, SpecPro, Inc

Delivery Order Manager: Chantelle Carroll

Contract Representative: John David Baugher

Description of Technical Change.

Original SOW:
Under Section 4.3.2.5 "Sampling for Geotechnical Analysis" in the Final Work Plan and Sampling and Analysis Plan for the Phase I/Phase II RI of the Fuze and Booster Quarry Landfill/Ponds at the Ravenna AAP (October 2003), it is specified that grain size distribution analysis will be performed on every sediment sample collected.

Requested Change to SOW:
Grain size distribution analyses were not performed on the sediment samples collected from the ponds and some of the ditches due to the apparent high organic content of the samples. Grain size distribution analyses were not performed on sediment samples collected from the ditches due to oversight.

.

Potential Impacts.

Cost: None

Disposition:

US Army COR: Mark Patterson Program Manager : Chantelle Carroll 6-16-05

OH EPA COR :

Distribution:
US Army COR : Mark Patterson
OH EPA COR: Eileen Mohr
Program Manager: Chantelle Carroll
Contract Number : DAAA09-01-G-009