

APPENDIX E
PROJECT QUALITY ASSURANCE SUMMARY

E. PROJECT QUALITY ASSURANCE SUMMARY

This appendix presents the actions and methodologies undertaken to meet the quality assurance (QA) goals for the project. These goals were established in Volume II of the Facility-Wide Sampling and Analysis Plan for the Ravenna Army Ammunition Plant (USACE, 4/96) and Volume II of the Phase 1 Remedial Investigation (RI) Sampling and Analysis Plan Addendum for High Priority Areas of Concern for the Ravenna Army Ammunition Plant (USACE, 7/96). These were implemented through project-specific procedures and requirements, the Science Applications International Corporation (SAIC) QA Program, and the U.S. Army Corps of Engineers - Nashville District QA requirements. Areas which provided the focus for a large proportion of project QA include field and analytical laboratory activities and project administration.

E.1 FIELD QUALITY ASSURANCE

E.1.1 Readiness Review

Field QA was initiated at the Ravenna Army Ammunition Plant (RVAAP) Phase 1 RI readiness review held at the SAIC Oak Ridge offices on July 16, 1996. The purpose of the readiness review was to ensure that (1) all project documents and procedures were approved, controlled, and properly distributed; (2) all assigned personnel were trained or a schedule was established to conduct training; (3) the mobilization and site logistics were established; (4) the laboratories were ready to accept samples; (5) all other subcontractors were ready to begin work; and (6) the QA system was implemented. All elements of the readiness review were completed prior to initiating field activities.

E.1.2 Procedures

Standard operating methods for field activities performed during the Phase 1 RI are incorporated into the governing documents for the project. Volume I of the Facility-Wide Sampling and Analysis Plan (USACE, 4/96) describes the overall approach and methodologies to be used for projects at RVAAP, and Volume I of the Phase 1 Remedial Investigation Sampling and Analysis Plan Addendum (USACE, 7/96) details project-specific requirements for field implementation. These documents were reviewed and approved by USACE - Nashville District, and reviewed and commented on by the Ohio EPA prior to implementation. Clarifications and/or planned deviations from these methods have been documented as field change orders (FCO), and variances have been documented as non-conformance reports (NCR).

E.1.3 Training

Field team personnel were trained in all procedures applicable to their assigned tasks. Training was accomplished by combinations of classroom lectures, reading assignments, and on-the-job training. Surveillances performed by an SAIC QA specialist provided assessments of worker proficiency and training effectiveness.

Training was documented by the completion of training records. Performance documentation was completed in the field by the QA specialist after observing successful implementation of a procedure by a field team member. Copies of training records and surveillance reports were maintained in the project file and/or in the SAIC Central Records Facility (CRF). Copies of training records required for OSHA and DOT compliance also were maintained in the field.

E.1.4 Equipment Calibration

Various types of Measuring and Test Equipment (M&TE) were used during the field investigation. All M&TE was categorized, assigned unique identifiers, and listed in an inventory in the M&TE logbook. Last and next calibration recall dates were also recorded. As appropriate, instruments were calibrated daily according to the manufacturer's instructions. Only equipment and standards having verifiable traceability to nationally recognized standards were used for calibration. Daily calibration activities and results were recorded in either the M&TE logbook as well as source information for all calibration standards and reagents.

E.1.5 Quality Control Samples

Field quality control (QC) samples, including trip blanks, equipment rinsate blanks, source water, field duplicates, and field QA splits were collected as specified in Volume I of the Phase 1 Remedial Investigation Sampling and Analysis Plan Addendum (USACE, 7/96) pertaining to contractor chemical quality control. Implementation of the Contractor Chemical Quality Control program was observed by the SAIC QA specialist. Field QC data and analysis of QC results are presented in Appendix F.

E.1.6 Field Records

Field data, observations, activities, and information were recorded in pre-formatted, bound field logbooks. The use of structured logbooks ensured that all necessary data were entered consistently. Logbook entries were checked for accuracy and completeness by independent reviewers. Critical and/or contract-required original records (e.g., sampling forms) were recorded in duplicate using carbonless paper. Other field records which were collected and likewise maintained included equipment/material certifications, boring logs, and air-bill forms.

E.1.7 Surveillances and Audits

Surveillance of operations at RVAAP during the Phase 1 RI was conducted by SAIC. This surveillance assessed technical and quality-related activities including surface soil/sediment and well point sampling, well point and monitoring well installation, equipment decontamination, training and health & safety practices, and field record review. The RVAAP Phase 1 RI was also the subject of an internal QA audit, which reviewed records management and conformance with project document review practices and personnel training/qualification. The results of the surveillance and audit are documented as a QA Surveillance Report and QA Audit Report, copies of which are included in the project file. Discrepancies identified during these reviews are documented as NCRs.

E.2 ANALYTICAL LABORATORY QUALITY ASSURANCE

SAIC subcontracted an analytical laboratory, Southwest Laboratories of Oklahoma, to perform chemical analyses for the RVAAP Phase 1 RI. The selected laboratory was qualified by the USACE - Missouri River Division (MRD). In addition, this laboratory was technically audited by SAIC prior to contract award.

E.2.1 Readiness Review

Laboratory QA activities were initiated during the readiness review. The readiness review ensured that (1) governing documents and approved analytical methods were controlled and properly distributed; (2) the laboratory was scheduled and ready to conduct the analysis; (3) logistical coordination was established between the laboratory and the field team; and (4) laboratory QA programs were consistent and compatible with the project requirements.

E.2.2 Procedures

Prior to initiation of analytical support for the RVAAP Phase 1 RI, Southwest Laboratories of Oklahoma and SAIC reviewed and negotiated a contract based on a comprehensive Statement of Work (laboratory SOW). The laboratory SOW represented and referenced project-specific requirements, including the parameters to be measured, the analytical methods to implement, adherence to USEPA SW-846 protocol, project quantitation goals (sensitivity), and data deliverables required. All laboratory comments and questions were resolved before analytical work proceeded.

E.2.3 Laboratory Quality Control

To document laboratory data quality and to measure the quality of the analytical process, laboratory quality control samples and data verification/validation were employed. The results of laboratory QC are discussed in the project data quality assessment (Appendix F). Analytical results of laboratory QC samples are included in the project file and form the basis of the data validation and verification process.

E.2.4 Laboratory Documentation

The laboratory maintains comprehensive information regarding the entire analytical process. The laboratory delivered summary data packages and electronic deliverables consistent with those identified in the EPA SW-846 protocol to SAIC for validation and verification. Laboratory QC sample analyses were cross-referenced to the appropriate environmental field sample analyses in the laboratory deliverables.

E.2.5 Data Verification/Validation

Analytical data generated during this project have been subjected to a rigorous process of data validation and verification. Criteria were established against which the analytical data were compared and from which a judgment was rendered regarding the acceptability and qualification of the data. Upon receipt of data packages from each laboratory the information was subjected to a systematic examination following standardized checklists and procedures to ensure content,

presentation, administrative validity, and technical validity. All deficiencies in the data were documented through the Analytical Data Nonconformance Report (ADNCR) program.

E.2.6 Laboratory Audits

SAIC performed an on-site laboratory audit of Southwest Laboratories of Oklahoma in July, 1995. The SAIC audit was conducted to assess laboratory implementation of the QA program by inspection of the following: (1) management systems, (2) personnel training systems, (3) sample receipt and handling procedures, (4) performance evaluation results, (5) analytical equipment capabilities and facilities, (6) implementation of project-specific methodologies, (7) implementation of QC, (8) logbooks and analytical records, (9) data management and review practices, and (10) waste policies and procedures.

The laboratory performance was found to be adequate during the audit. Technical information and analytical data were considered acceptable, however, deficiencies were identified and noted as findings in the audit report. The laboratory initiated corrective actions approved by SAIC for both findings.

E.3 QUALITY ASSURANCE DOCUMENTATION

Primary methods for documenting QA during the RVAAP Phase 1 RI included the completion of Field Change Orders (FCOs) and Nonconformance Reports (NCRs). Copies of FCOs completed during the investigation are included at the back of this appendix. Copies of NCRs are on record in the SAIC RVAAP project file.

E.3.1 Field Change Control

Field changes were implemented during the RI to address changes to the approved Facility-Wide Sampling and Analysis Plan for the Ravenna Army Ammunition Plant (USACE, 4/96) and the Phase 1 Remedial Investigation (RI) Sampling and Analysis Plan Addendum for High Priority Areas of Concern for the Ravenna Army Ammunition Plant (USACE, 7/96) necessitated by field conditions. Field changes implemented were all minor in scope, providing clarification or refinement in the procedural approach to a specific field activity. All FCOs were reviewed and approved by designated representatives of USACE - Nashville District prior to implementation. None of the FCOs resulted in an adverse impact to project quality, schedule, or scope. Copies of the eighteen approved FCOs are included in Attachment E.1.

The purpose of most of the FCOs was to request and document changes to the approved plans. There were a total of eighteen issues not anticipated or not identified during project planning, of which: three were clarifications to planned methodologies, for example FCO-007 provides clarification of the Facility Wide SAP requirement, section 4.3.8, for acid rinse of sampling equipment to include metal equipment only; and fifteen FCOs represented a revision to a planned method, for example FCO-004 amended the Facility-Wide SAP, section 4.3.2.3, to allow a minimum of 1-hr rather than 24-hr for the borehole to accumulate groundwater due to the presence of heaving sands.

E.3.2 Nonconformance Reports

To identify and correct conditions adverse to quality as described in the field and laboratory QA plans, NCRs, ADNCRs, and corrective action reports (CARs) were completed, as necessary. Between project initiation and October 25, 1996 6 NCRs, 0 ADNCRs, and 0 CARs were completed. During the RVAAP Phase 1 RI, NCRs were initiated both during the QA surveillance and by the Field Manager when a nonconformance occurred. All NCRs initiated during the project have been corrected and/or closed.

A summary of the actions or items that warranted the initiation of NCRs included:

- an initial water level reading was omitted during groundwater sampling (oversight, subsequently corrected), and groundwater sampling was performed through tubing rather than with a bailer (subsequent FCO);
- stored drums of IDW were not covered immediately after being filled (oversight, subsequently corrected);
- sample type and preservation technique not recorded on chain-of-custody form as required in the SAP (amended since information is redundant with sample labels);
- requested laboratory analysis for four samples did not include the expanded suite of metals specified in the SAP Addendum (oversight);
- the sample interval for some surface soil samples varies due to field conditions (subsequent FCO); and
- original and carbonless copy pages in some pre-printed logbooks were mis-collated (resulting errors corrected by hand).

**ATTACHMENT E.1
FIELD CHANGE ORDERS**

Field Change Order (FCO)

MODIFICATION NO. 0DATE 7/22/96

WORK AUTHORIZATION

SS7/22/96

TYPE OF CHANGE

Technical

PRIORITY

 EMERGENCY URGENT ROUTINE

OAS NO.

SS

CYWP NO.

SS

CWBS NO.

SS7/22/96 MINOR MAJOR OTHER

REQUESTER IDENTIFICATION

NAME Steve Schuman

ORGANIZATION

SAILPHONE (423) 481-8761TITLE Project Manager

SIGNATURE

[Signature]

BASELINE IDENTIFICATION

BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE

SS

ORDER NO.

7/22/96

REVISION NO.

SS7/22/96

CAM SIGNATURE

SS7/22/96

DESCRIPTION OF CHANGE

Sediment sample waste & decontamination IDW from drainage ditches and settling ponds known to have contained "Pink Water" effluent will be segregated and contained separately. The potential exists for these wastes to be classified as a RCRA listed waste exists if contamination from "Pink Water" is detected. They will be managed as CERCLA IDW until such time as they may be characterized as RCRA Wastes.

JUSTIFICATION

I observed contamination (e.g., red or pink discoloration) in drainage ditches transporting effluent, contaminated media may be considered a listed hazardous waste (K047). Any sludge not previously removed from settling units (tanks or impounds) may meet the criteria for a listed hazardous waste (K044 & K046).

SS
7/22/96

IMPACT OF NOT IMPLEMENTING REQUEST

Comingled potential RCRA listed hazardous waste with non-RCRA wastes.

SS
7/22/96

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST

SAILSS
7/22/96

COST ESTIMATE \$

N/A

ESTIMATOR SIGNATURE

SS7/22/96

PHONE

SS7/22/96

DATE

SS7/22/96PREVIOUS FC AFFECTED YES NO

APPROVAL

PROJECT MANAGER SIGNATURE

DATE

OAS REVIEW

DATE

TIME FROM INITIATION TO ACTION

N/AJ. G. C. K CORNER-H 23 JUL 96

002 **Field Change Order (FCO)** SS

IFICATION NO. 82 DATE 7/22/96 WORK AUTHORIZATION 7/22/96

OF CHANGE 7/22/96 PRIORITY EMERGENCY URGENT ROUTINE

NO. _____ CYWZ NO. SS CWBS NO. _____ MINOR MAJOR OTHER

ESTER IDENTIFICATION 7/22/96

E. Steve Sebecman ORGANIZATION SAIC PHONE (423) 491-8761

Project Manager SIGNATURE [Signature]

LINE IDENTIFICATION

LINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

GRAM SERVICE _____ REVISION NO. SS CAM SIGNATURE _____

ER NO. _____

RIPTION OF CHANGE

Decontamination procedure for hand auger bucket and geoprobe tools may be either steam cleaned or washed with approved water and phosphate free detergent as the initial step. No other decontamination steps are modified.

PHONE _____

IFICATION

Steam cleaning smaller sampling equipment is difficult using high pressure. Smaller sampling equipment can be more effectively cleaned by hand washing.

SS
7/22/96

CT OF NOT IMPLEMENTING REQUEST

Decontamination efficiency will be slowed.

SS
7/22/96

RTICIPANTS AFFECTED BY IMPLEMENTING REQUEST SAIC field team.

SS
7/22/96

EST ESTIMATE \$ N/A ESTIMATOR SIGNATURE [Signature] PHONE [Signature] DATE _____

PREVIOUS FC AFFECTED YES NO

PROVAL

JECT MANAGER SIGNATURE _____ DATE _____

MS REVIEW _____ DATE _____

ME FROM INITIATION TO ACTION N/A SAIC SEAMAN 23 Jul 96

FCO NO 005 **Field Change Order (FCO)**
 MODIFICATION NO. SS DATE 7/22/96 WORK AUTHORIZATION _____
 TYPE OF CHANGE 7/22/96 PRIORITY ROUTINE URGENT EMERGENCY
 NO. _____ CYWP NO. 7/22/96 CWBS NO. _____ MINOR MAJOR OTHER

REQUESTER IDENTIFICATION
 NAME Steve Selzman ORGANIZATION SAIC PHONE (423) 481-8761
 TITLE Project Manager SIGNATURE [Signature]

BASELINE IDENTIFICATION
 BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE _____ REVISION NO. SS 7/22/96 CAM SIGNATURE _____

DESCRIPTION OF CHANGE
 Hand auger soil borings from 0 to 2 feet in depth will be abandoned using SS coarse grade bentonite (hole plug) instead of a cement 7/22/96 bentonite grout. PHONE 7/22/96

JUSTIFICATION
 Bentonite will provide a more SS 7/22/96 effective seal for shallow holes because of its swelling capacity that will expand onto the surface. Mixing of cement/grout will be difficult at these very sparse/remote located shallow holes.
SS
7/22/96

IMPACT OF NOT IMPLEMENTING REQUEST
 Sampling efficiency will be slowed due to the logistics of mixing small quantities of grout at the shallow locations.
SS
7/22/96

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST SAIC field team
SS
7/22/96

COST ESTIMATES N/A ESTIMATOR SIGNATURE _____
 PHONE SS 7/22/96 DATE _____

PREVIOUS FC AFFECTED YES NO

APPROVAL
 PROJECT MANAGER SIGNATURE _____ DATE _____

OAS REVIEW _____ DATE _____

TIME FROM INITIATION TO ACTION N/A
J. G. C. C. CORNER-H 23 Jul 96

FCO NO 004

Field Change Order (FCO)

MODIFICATION NO 0

DATE 7/23/96

WORK AUTHORIZATION N/A

TYPE OF CHANGE Technical

PRIORITY EMERGENCY URGENT ROUTINE

ADS NO N/A

CYWP NO N/A

CWBS NO N/A

MINOR MAJOR OTHER

REQUESTER IDENTIFICATION

NAME Steve Scherman

ORGANIZATION SAIC

PHONE (423) 481-8761

TITLE Project Manager

SIGNATURE [Signature]

BASILINE IDENTIFICATION

BASILINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE

ORDER NO N/A

REVISION NO N/A

CAM SIGNATURE N/A

DESCRIPTION OF CHANGE

PHONE N/A

Amend Sect. 4.3.2.3 of the Facility-wide SAA to allow borehole to stabilize for a minimum of 1-hour. After this period, the accumulated groundwater will be measured. If sufficient groundwater is present, the monitoring well may be constructed. Additional time may be used, if necessary, to allow the groundwater level to stabilize. SS 7/23/96

JUSTIFICATION

Shallow water table wells/boreholes will/should achieve a static level in a borehole in much less time than 24-hours. The water level can be monitored such that a good indication of static water level can be obtained in 1-4 hours. In addition, heavy sands (as are present in SA LLNW-064) prevent leaving a borehole open for this period. SS 7/23/96

IMPACT OF NOT IMPLEMENTING REQUEST

Significant (1 day) schedule delays will result from the install of each borehole (4 days total). Any equipment may likely become stuck down hole and un-retrievable. SS 7/23/96

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST

SAIC/AEI Monitoring Well Team.

COST ESTIMATE \$ 0

ESTIMATOR SIGNATURE N/A

PHONE N/A

DATE N/A

PREVIOUS FC AFFECTED YES NO

APPROVAL

PROJECT MANAGER SIGNATURE

[Signature]

DATE 7/24/96

QAS REVIEW

DATE

TIME FROM INITIATION TO ACTION Immediate

FCO NO 005

Field Change Order (FCO)

MODIFICATION NO 0

DATE 7/23/96

WORK AUTHORIZATION N/A

TYPE OF CHANGE Technical

PRIORITY EMERGENCY URGENT ROUTINE

NO. N/A

CYWP NO. N/A

CWBS NO. N/A

MINOR MAJOR OTHER

REQUESTER IDENTIFICATION

NAME Steve Seleckman

ORGANIZATION SAIC

PHONE (423) 481-9761

TITLE Project Manager

SIGNATURE [Signature]

BASELINE IDENTIFICATION

BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE

ORDER NO. N/A

REVISION NO. N/A

CAM SIGNATURE N/A

DESCRIPTION OF CHANGE

Amend Sect 4.3.2.7.6 of the Facility-wide SAP to allow the placement of bentonite pellets for well seals by pouring inside the augers and tamping with a weighted tamping to prevent bridging. The bentonite must be poured slowly (3-5 lbs/minute).
PHONE N/A

JUSTIFICATION

Bentonite pellets cannot be tremied in place using small diameter tremie pipe (~1-inch) without clogging the pipe. A more effective seal can be obtained by pouring slowly and tamping.

SS
7/23/96

IMPACT OF NOT IMPLEMENTING REQUEST

Proly placed bentonite seal.

SS
7/23/96

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST

SAIC Monitoring Well Team/USALE.

SS
7/23/96

ESTIMATE \$ N/A

ESTIMATOR SIGNATURE N/A

PHONE N/A

DATE N/A

PREVIOUS FCO AFFECTED YES NO

APPROVAL

PROJECT MANAGER SIGNATURE [Signature]

DATE 7/24/96

OAS REVIEW _____

DATE _____

FROM INITIATION TO ACTION Immediate

FCO NO 036 **Field Change Order (FCO)**
MODIFICATION NO 0 DATE 7/23/96 WORK AUTHORIZATION N/A
TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE
ADS NO. N/A CYWP NO. N/A CWBS NO. N/A MINOR MAJOR OTHER

REQUESTER IDENTIFICATION
NAME Steve Silberman ORGANIZATION SATIC PHONE (423)481-8761
TITLE Project Manager SIGNATURE [Signature]

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT
PROGRAM SERVICE N/A REVISION NO. N/A CAM SIGNATURE N/A

DESCRIPTION OF CHANGE
Clarify Sect. 4.3.2.2.2 of Facility-wide SAP that Global Supply No. 5 sand will be used instead of Global No. 7 sand.
SS
7/27/96

JUSTIFICATION
Global No. 7 sand contains a portion of sand that will ^{SS} 7/27/96 pass through a 10-slot size screen.
SS
7/23/96

IMPACT OF NOT IMPLEMENTING REQUEST
Excessive salting & fill will occur in the well.
SS
7/29/96

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST SATIC Field Team / USACE.
SS
7/23/96

COST ESTIMATE \$ N/A ESTIMATOR SIGNATURE N/A
PHONE N/A DATE N/A

PREVIOUS FC AFFECTED YES NO
APPROVAL
PROJECT MANAGER SIGNATURE [Signature] DATE 7/24/96
OAS REVIEW _____ DATE _____
TIME FROM INITIATION TO ACTION Immediate

Field Change Order (FCO)

FCO NO 007

MODIFICATION NO 0

DATE 7-23-96

WORK AUTHORIZATION N/A

TYPE OF CHANGE Technical

PRIORITY EMERGENCY URGENT ROUTINE

O N/A CYWP NO. N/A

CWBS NO. N/A

MINOR MAJOR OTHER

REQUESTER IDENTIFICATION

NAME KATHY DOMINIC ORGANIZATION SAIC

PHONE 513-429-2699

TITLE FIELD OPERATIONS MGR SIGNATURE Kathy L. Dominic

BASELINE IDENTIFICATION

BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE N/A REVISION NO. N/A CAM SIGNATURE N/A

DESCRIPTION OF CHANGE CLARIFICATION OF SECTION 4.3.8 OF FACILITY-WIDE SAP TO SPECIFY THAT HCl (2%) RINSE IN THE DE-CONTAMINATION PROCEDURE IS FOR METAL EQUIPMENT, PLASTIC AND GLASS EQUIPMENT NEED NOT BE ACID-RINSED. PHONE N/A

JUSTIFICATION THE ACID RINSE IS INTENDED TO REMOVE ANY POTENTIALLY MOBILE METALS FROM THE SURFACES OF EQUIPMENT USED TO COLLECT SAMPLES FOR METALS ANALYSES. SOME PLASTIC OBJECTS MAY BE ATTACKED BY THE ACID, WHICH SERVES NO ADDITIONAL CLEANING PURPOSE (AS WITH GLASS).

IMPACT OF NOT IMPLEMENTING REQUEST

POTENTIAL DAMAGE TO NALGENE WATER FILTERING KITS; UNNECESSARY CONSUMPTION OF METHANOL.

KL.Dominic 7-24-96

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST

'DECONTAMINATION' TEAM.

KL.Dominic 7-24-96

COST ESTIMATES NA ESTIMATOR SIGNATURE NA

PHONE NA

DATE NA

PREVIOUS FC AFFECTED YES NO

APPROVAL

PROJECT MANAGER SIGNATURE Jan C. L. Cron CROWN

DATE 25 Jul 96

OAS REVIEW _____ DATE _____

T FROM INITIATION TO ACTION IMMEDIATE

FCO NO 008 **Field Change Order (FCO)**
 MODIFICATION NO. 0 DATE 7/24/96 WORK AUTHORIZATION N/A
 TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE
 ADS NO. N/A CYWP NO. N/A CWBS NO. N/A MINOR MAJOR OTHER

REQUESTER IDENTIFICATION
 NAME Steve Selecman ORGANIZATION SAIC PHONE (473) 481-8701
 TITLE Project Manager SIGNATURE [Signature]

BASILINE IDENTIFICATION
 BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT
 PROGRAM SERVICE ORDER NO. N/A REVISION NO. N/A CAM SIGNATURE N/A

DESCRIPTION OF CHANGE
 Amend Sect. 4.4.2.8 of ^{SS 7/24/96} Amendment No. 1 to the Facility-wide SAP to use a 2% HCL rinse instead of 10% HCL. Sect. 4.4.2.8 of the Final Facility-wide SAP need not be amended as it specifies a 2% HCL rinse in the decontamination process.

JUSTIFICATION
 10% HCL seriously ^{corroded} eroded the metal surface of the soil/sediment stainless sampling equipment. 5% HCL slightly tarnished these surfaces as well. Corrosion of these pieces could falsely contaminate environmental samples processed (compounded) with these.
^{SS 7/24/96}

IMPACT OF NOT IMPLEMENTING REQUEST
 Potential for false contamination from corroded metals in soil/sediment samples.
^{SS 7/24/96}

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST SAIC/USACE
^{SS 7/24/96}

COST ESTIMATE \$ ~700⁰⁰ ESTIMATOR SIGNATURE [Signature]
 Cost to replace corroded bowls/sponges As Above DATE 7/24/96
 (HAZCO)

PREVIOUS FC AFFECTED YES NO
 APPROVAL PROJECT MANAGER SIGNATURE [Signature] * CEORN DATE 25 Jul 96

QAS REVIEW _____ DATE _____
 TIME FROM INITIATION TO ACTION Immediate * Approved by OSPA

FCO NO 009 **Field Change Order (FCO)**

MODIFICATION NO. N/A DATE _____ WORK AUTHORIZATION N/A

TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE

ALNO N/A CYWP NO. N/A CWBS NO. N/A MINOR MAJOR OTHER

REQUESTER IDENTIFICATION
NAME Steve Selerman ORGANIZATION SAIL PHONE (423) 491-9761
TITLE Project Manager SIGNATURE [Signature]

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE ORDER NO. N/A REVISION NO. N/A CAM SIGNATURE N/A

DESCRIPTION OF CHANGE
Amend Sect. 4.3.2.1.2 of the Phase I RI SAP Addendum to allow determination of groundwater in geoprobe holes ^{SS} using either the vacuum method described or by using a ^{7/24/96} electronic water level probe. PHONE N/A

JUSTIFICATION
Determining if groundwater is present can be effectively accomplished using either method, especially in shallow water table conditions. During the first day of operations, the occurrence of groundwater is indicated by changes in pore pressure followed by water level measurements.

IMPACT OF NOT IMPLEMENTING REQUEST
Unnecessary time may be encountered when using the vacuum method where groundwater is readily detectable using the water level method.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST SAIL Geoprobe Team.
SS
7/24/96

COST ESTIMATE \$ 0 ESTIMATOR SIGNATURE N/A PHONE N/A DATE N/A

PREVIOUS FC AFFECTED YES NO

APPROVAL
PROJECT MANAGER SIGNATURE [Signature] CBORN DATE 25 Jul 96

OAS REVIEW _____ DATE _____

FROM INITIATION TO ACTION Immediate

FCO) PIP

Field Change Order (FCO)

MODIFICATION NO. _____ DATE 7-25-96 WORK AUTHORIZATION N4

TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE

ADS NO. N/A CYWP NO. N/A CWBS NO. N/A MINOR MAJOR OTHER

REQUESTER IDENTIFICATION

NAME KATHRYN DOMINIK ORGANIZATION SAIL PHONE 513 429 2699

TITLE FIELD OPERATIONS MGR. SIGNATURE Kathy L. Dominik

BASELINE IDENTIFICATION

BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE N/A ORDER NO. _____ REVISION NO. N/A CAM SIGNATURE N/A

DESCRIPTION OF CHANGE MODIFY SECTION 4.3.4 of PHASE I PHONE SAMPLING AND ANALYSIS PLAN TO ACCOMMODATE THE USE OF A POLYETHYLENE TUBE W/ STAINLESS-STEEL CHECK VALVE, INSTEAD OF THE STAINLESS STEEL GEOPROBE BAILER, FOR THE COLLECTION OF VOLCS, WHEN FINE SUSPENDED SEDIMENT

JUSTIFICATION STAINLESS GEOPROBE BAILER WAS BINDING INSIDE THE ROD BECAUSE OF FRICTION IN THE RODS CAUSED BY SUSPENDED SEDIMENT. THE USE OF THE TUBING ALLOWS EASIER, FASTER PLACEMENT AND REMOVAL AND SPEEDS UP SAMPLING, W/NO IMPACT ON DATA QUALITY.

IMPACT OF NOT IMPLEMENTING REQUEST

POTENTIAL LOSS OF WELL POINT IF BAILER GETS STUCK IN THE PROBE.

K. Dominik 7-26-96

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST

GEOPROBE SAMPLING TEAM, SUBCONTRACTORS.

K. Dominik 7-26-96

COST ESTIMATE \$ N/A ESTIMATOR SIGNATURE K. Dominik

PHONE 513 429 2699 DATE 7-25-96

PREVIOUS FC AFFECTED YES NO

APPROVAL PROJECT MANAGER SIGNATURE J. G. Cook DATE 26 Jul 96

QAS REVIEW _____ DATE _____

TIME FROM INITIATION TO ACTION immediate

411

Field Change Order (FCO)

LOCATION NO. N/A DATE 7-27-96 WORK AUTHORIZATION NA

CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE

N/A CYWIP NO. NA CWBS NO. NA MINOR MAJOR OTHER

OPERATOR IDENTIFICATION
KATHY DOMINIC ORGANIZATION SAIL PHONE 513-429-2697

FIELD OPERATIONS MGR. SIGNATURE Kathy L. Dominic

IDENTIFICATION
 (S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

FORM SERVICE NA REVISION NO. NA CAM SIGNATURE NA

DESCRIPTION OF CHANGE WHERE GEOPROBE WELL POINT GROUND WATER SAMPLES CONTAIN A SIGNIFICANT AMOUNT OF SILT, COLLECT VOC SAMPLES IN UNPRESERVED VOA VIALS PREPARED BY RINSING HCL-PRESERVED VOC VIALS W/ D.I. WATER, THEN WITH A SMALL AMOUNT OF GROUNDWATER. CHANGE IN PRESERVATION

EXPLANATION REACTION OF CALCIUM-CARBONATE SILT W/ ACID RELEASES CO2 WHICH MAY AFFECT VOC ANALYSIS RESULTS. HCL IS USED AS PRESERVATIVE IN THE VOC VIALS. USING A VIAL W/ NO PRESERVATIVE WILL ALLOW ANALYSIS OF A MORE REPRESENTATIVE SAMPLE.

IF NOT IMPLEMENTING REQUEST
POSSIBLE CORRUPTION OF SAMPLE RESULTS FOR VOCs.

DEPARTMENTS AFFECTED BY IMPLEMENTING REQUEST
SAMPLING TEAM, SAMPLE MANAGER, ANALYTICAL LAB.

ESTIMATE \$ N/A ESTIMATOR SIGNATURE NA

PHONE NA DATE NA

IS FCO AFFECTED YES NO

APPROVAL
ACT MANAGER SIGNATURE J. G. C. L. DATE 26 Jul 96

REVIEW _____ DATE _____

TIME FROM INITIATION TO ACTION immediate

Field Change Order (FCO)

FCO NO. 012
MODIFICATION NO. NA DATE 7/29/96 WORK AUTHORIZATION NA
TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE
ADS NO. NA CYWP NO. NA CWBS NO. NA

MINOR MAJOR OTHER

REQUESTER IDENTIFICATION
NAME KATHY DOMINIC ORGANIZATION SAIL PHONE 513-429-2699
TITLE FIELD OPERATIONS MGR. SIGNATURE Kathy L. Dominic

BASILINE IDENTIFICATION
BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE ORDER NO. NA REVISION NO. NA CAM SIGNATURE NA

DESCRIPTION OF CHANGE CLARIFY PHASE 1 SAMPLING AND ANALYSIS PLAN SECTION 4.5.2.1 1 & A 4.5.2.1 2, WHICH CALL FOR SAMPLING OF SURFACE SOIL AND DRY SEDIMENT. SEC 4.5.2.1 1 CALLS FOR THE HAND AUGER TO BE ADVANCED TO 2', AND SECTION 4.5.2.1 2 SAYS THE TROWEL METHOD CAN BE USED TO 6" IN SURFACE SOIL + DRY DITCHES, THE HAND AUGER METHOD WILL BE THE PREFERRED METHOD, EVEN IF THE FULL 2' CANNOT BE COLLECTED. PHONE NA

JUSTIFICATION
CONSISTENCY AMONG SAMPLING POINTS IS FAVORED IF ONLY ONE TECHNIQUE IS USED. THE PLAN DOES NOT SPECIFY UNDER WHICH CONDITIONS THE TROWEL METHOD SHOULD BE USED.

IMPACT OF NOT IMPLEMENTING REQUEST
THE POSSIBILITY EXISTS THAT SAMPLES COULD BE COLLECTED BY EITHER METHOD AT ANY LOCATION.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST
SAMPLING TEAMS

COST ESTIMATE \$ NA ESTIMATOR SIGNATURE NA
PHONE NA DATE NA

PREVIOUS FC AFFECTED YES NO
APPROVAL
PROJECT MANAGER SIGNATURE [Signature] DATE 30 Jul 96
QAS REVIEW _____ DATE _____
TIME FROM INITIATION TO ACTION _____

FCO NO 913 **Field Change Order (FCO)**
 MODIFICATION NO. N/A DATE 7.29.96 WORK AUTHORIZATION N/A
 TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE
 A. J. N/A CYWP NO. N/A CWBS NO. N/A MINOR MAJOR OTHER

REQUESTER IDENTIFICATION
 NAME K. DOMINIC ORGANIZATION SAIL PHONE 513.429.2699
 TITLE FIELD OPERATIONS MGR. SIGNATURE Kelly L. Dominic

BASELINE IDENTIFICATION
 BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT
 PROGRAM SERVICE N/A REVISION NO. N/A CAM SIGNATURE N/A
 ORDER NO. _____

DESCRIPTION OF CHANGE Amend section 4.3.2.1.2 of Phase I PHONE SAP (Drilling Methods, Temporary Well Points). In addition to the method of installation described in the plan, well points at LL12WP-057, CPCWP-012, and LL1WP-067, -068, and -069 were installed as slotted 1-inch PVC risers w/sand pack. For abandonment, the PVC and sand pack were grouted in place to the surface. This change was discussed w/USACE representative Joe Meloyk on 7.27.96 as documented in contact log.

JUSTIFICATION
This construction allowed filtration of fine silt so that the well point screens would not become clogged. This permits better recharge in the well point and decreases the volume of fine materials in the collected groundwater samples.

IMPACT OF NOT IMPLEMENTING REQUEST
Potential for well points to be clogged and samples to be unrecoverable.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST
Well point installation subcontractor, field sampling team.

COST ESTIMATE \$ N/A ESTIMATOR SIGNATURE N/A
 PHONE N/A DATE N/A

PREVIOUS FC AFFECTED YES NO

APPROVAL
 PROJECT MANAGER SIGNATURE [Signature] DATE 7/31/96

QAS REVIEW _____ DATE _____

FROM INITIATION TO ACTION _____

Field Change Order (FCO)

FCO NO 014 MODIFICATION NO. N/A DATE 7.30.96 WORK AUTHORIZATION NA
TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE
ADS NO. NA CYWP NO. NA CWBS NO. NA

REQUESTER IDENTIFICATION MINOR MAJOR OTHER
NAME K. DOMINIC ORGANIZATION SAIL PHONE 513.429.2699

TITLE FIELD OPERATIONS MGR SIGNATURE Kelly L. Dominic

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE NA ORDER NO. NA REVISION NO. NA CAM SIGNATURE NA

DESCRIPTION OF CHANGE AMEND SECTION 4.3.2.3.11.2 OF PHONE NA
FACILITY-WIDE WORK PLAN TO CHANGE TURBIDITY CRITERION OF MONITORING WELL DEVELOPMENT (5 NTU) TO CONFORM W/US ARMY CORPS OF ENGINEERS GUIDANCE IN EM110-1-4000 (CHAPTER 6-4, WHICH CALLS FOR DEVELOPMENT TO PROCEED UNTIL 1) WELL WATER IS CLEAR TO THE EYE AND 2) SEDIMENT THICKNESS IS LESS THAN 1% OF SCREEN LENGTH.

JUSTIFICATION
DEVELOPMENT TO 5 NTU IS NOT TECHNICALLY FEASIBLE BECAUSE OF VERY FINE SANDS IN SUBSURFACE. THE USACE'S REPRESENTATIVES CONCUR THAT VISUAL INSPECTION CRITERIA STATED ABOVE ARE SUFFICIENT FOR PROPER DEVELOPMENT.

IMPACT OF NOT IMPLEMENTING REQUEST
INCREASED VOLUME OF INVESTIGATION-DERIVED WASTE (WATER).

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST
RIG GEOLOGIST, DRILLING SUBCONTRACTOR.

COST ESTIMATE \$ NA ESTIMATOR SIGNATURE NA
PHONE NA DATE NA

PREVIOUS FC AFFECTED YES NO

APPROVAL
PROJECT MANAGER SIGNATURE [Signature] DATE 30 Jul 96

QAS REVIEW _____ DATE _____

TIME FROM INITIATION TO ACTION _____

FCO NO 015 **Field Change Order (FCO)**
MODIFICATION NO. NA DATE 7-30-96 WORK AUTHORIZATION NA
TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE
A 3 NA CYWP NO. NA CWBS NO. NA

REQUESTER IDENTIFICATION MINOR MAJOR OTHER
NAME KL DOMINIC ORGANIZATION SAIL PHONE 513-429-2699
TITLE FIELD OPERATIONS MGR SIGNATURE [Signature]

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT
PROGRAM SERVICE NA REVISION NO. NA CAM SIGNATURE NA

ORDER NO. NA 3 KD 7-30-96
DESCRIPTION OF CHANGE MODIFY SECTION 4.1.2.2 OF PHASE I SAP TO ELIMINATE THE 10% REPEAT MEASUREMENTS OF THE SURVEY GRID. PROJECT MANAGER CONCURS THAT THE PRELIMINARY TEST IN SECTION 4.1.2.2 IS SUFFICIENT QUALITY CONTROL FOR BOTH EM-31 AND EMU1, IN CONJUNCTION W/THE BASELINE TEST. PHONE NA

JUSTIFICATION
INSTRUMENT READINGS FOR BOTH TOOLS ARE SUFFICIENTLY STABLE OVER THE LENGTH OF A SURVEY EVENT AT LANDFILL NORTH OF WINKLEPECK BURNING GROUNDS (APPROX. HALF OF A DAY) THAT THE AREA OF THE GEOPHYSICAL SURVEY WAS SUBSTANTIALLY SMALLER THAN THE ESTIMATED 10 ACRES. THE TESTS IN SECTION 4.1.2.2. ENSURES PRECISION OVER AN AREA THIS SIZE, WHICH REQUIRES < 1 DAY TO SURVEY. RDominic

IMPACT OF NOT IMPLEMENTING REQUEST
IMPACT TO SCHEDULE

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST
GEOPHYSICAL SUBCONTRACTORS

COST ESTIMATE \$ NA ESTIMATOR SIGNATURE NA PHONE NA DATE NA

PREVIOUS FC AFFECTED YES NO

APPROVAL
PROJECT MANAGER SIGNATURE [Signature] DATE 7/31/96

QAS REVIEW _____ DATE _____
TIME FROM INITIATION TO ACTION _____

Field Change Request (FCR)

FCR NO. 016

DATE INITIATED 8/2/96

PROJECT RVAAP

CONTRACT NO. DA CA 62-94-D-01029

REQUESTOR IDENTIFICATION

NAME Susan L. Abston ORGANIZATION SAIC PHONE 423-481-8773
TITLE Geologist SIGNATURE Susan L. Abston

BASELINE IDENTIFICATION

BASELINE(S) AFFECTED Cost Scope Milestone Method of Accomplishment
AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)

DESCRIPTION OF CHANGE: Well installation is to be completed using #10 slot screen and Global #5 sand. Due to fine grain sands, completion needs to be with #6 slot screen and Global #7 sand

JUSTIFICATION: The fines (sand and silt) are able to come through the #5 Global sand and #10 slot screen causing the well to become turbid

IMPACT OF NOT IMPLEMENTING REQUEST:

Wells will never be developed completely

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:

Alliance, SAIC geologist

COST ESTIMATE (\$) 9/well ESTIMATOR SIGNATURE Susan L. Abston
PHONE 423-481-8773 DATE 8/2/96

PREVIOUS FCR AFFECTED YES NO: IF YES, FCR NO. _____

CLIENT PROJECT MANAGER _____ DATE _____

CLIENT QA SPECIALIST _____ DATE _____

SAIC H&S MANAGER SIGNATURE (IF APPLICABLE) _____ DATE _____

FCO NO 417

Field Change Order (FCO)

MODIFICATION NO. _____ DATE 5/15/96 WORK AUTHORIZATION _____

TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE

ADS NO. NA CYWP NO. NA CWBS NO. NA MINOR MAJOR OTHER

REQUESTER IDENTIFICATION

NAME Kathy Dominic ORGANIZATION SAIC PHONE 513-429-2699

TITLE Field Operating Mgr. SIGNATURE _____

BASELINE IDENTIFICATION

BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE

ORDER NO. NA REVISION NO. NA CAM SIGNATURE _____

DESCRIPTION OF CHANGE PHONE NA

Modify facility-wide work plan to omit determination of power auger flights between boreholes. Because the hand auger is always preceding the power auger to collect a sample, and is always decontaminated between borings, and because the likelihood of cross-contamination of soils in the area of concern is not likely, decontamination of power auger flights is not necessary.

JUSTIFICATION

Decontamination of auger flights is not necessary and omitting it will not impact data quality objectives for this project. All non-dedicated equipment that contacts soil samples will be decontaminated per SAP.

IMPACT OF NOT IMPLEMENTING REQUEST

Significant impact to schedule.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST

Subsurface soil boring team; JXO clearing subcontractor.

COST ESTIMATE \$ NA ESTIMATOR SIGNATURE NA

PHONE NA DATE NA

PREVIOUS FC AFFECTED YES NO

APPROVAL

PROJECT MANAGER SIGNATURE _____ DATE 8/6/96

QAS REVIEW _____ DATE _____

TIME FROM INITIATION TO ACTION _____

Field Change Order (FCO)

LOCATION NO. _____ DATE 8/5/96 WORK AUTHORIZATION _____
TYPE OF CHANGE technical PRIORITY _____ EMERGENCY _____ URGENT _____ ROUTINE _____
NA CYWP NO. NA CWES NO. NA MINOR MAJOR OTHER

REQUESTER IDENTIFICATION
KATHY DOMINIC ORGANIZATION JALC PHONE 513.429.2677
Field Operations Mgr. SIGNATURE Kathy L. Dominic

LINE IDENTIFICATION
LINE(S) AFFECTED _____ COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT
PRIM SERVICE NA REVISION NO. NA CAM SIGNATURE JLD

DESCRIPTION OF CHANGE Modify Facility - will need plan to PHASE 1A
determination of power surge flights between bore holes. Because the hand
is always preceding the power surge to collect a sample, and is always re-
positioned between borings, will reduce the likelihood of cross-contamination of soils in
the Area of Concern is not likely. Determination of power surge flights is not necessary.

JUSTIFICATION Determination of surge flights is not necessary and will not impact
data quality objectives for this project. All non-dedicated equipment that contracts soil samples will be decontaminated per
Est. 8.5.96 SAP.

REASON FOR NOT IMPLEMENTING REQUEST
Significant impact to schedule.

STAKEHOLDERS AFFECTED BY IMPLEMENTING REQUEST
Subsurface soil boring team; JXD Machine Subcontractor.

ESTIMATE \$ NA ESTIMATOR SIGNATURE NA
PHONE NA DATE NA

IS THIS FCO AFFECTED YES NO
APPROVAL
PROJECT MANAGER SIGNATURE Scott H. B... DATE 8/6/96

APPROVAL
DATE _____
INITIATION TO ACTION _____

FCO NO 618

Field Change Order (FCO)

MODIFICATION NO. NA DATE 8/6/96 WORK AUTHORIZATION NA

TYPE OF CHANGE Technical PRIORITY EMERGENCY URGENT ROUTINE

ADS NO. NA CYWP NO. NA CWBS NO. NA

MINOR MAJOR OTHER

REQUESTER IDENTIFICATION

NAME Kathy Dominic ORGANIZATION SAIC PHONE 513-429-2699

TITLE Field Operating Mgr. SIGNATURE _____

BASELINE IDENTIFICATION

BASELINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT

PROGRAM SERVICE

ORDER NO. NA REVISION NO. NA CAM SIGNATURE _____

DESCRIPTION OF CHANGE PHONE NA

Clarify Section 4.4.1.2 of Phase I SAP to provide for contingency installation trenches (3' max) would not allow for base of refuse to be reached and beneath refuse to be sampled. Plan calls for one sample to be collected beneath buried waste.

JUSTIFICATION

Shallow trenches do not penetrate to base of refuse. Samples cannot be collected from this zone. The excavation could not be made deeper without risk of encountering groundwater.

IMPACT OF NOT IMPLEMENTING REQUEST

Not following SAP specifications to excavate to a maximum of 3'.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST

Sampling team.

COST ESTIMATE \$ NA ESTIMATOR SIGNATURE NA

PHONE NA DATE NA

PREVIOUS FC AFFECTED YES NO

APPROVAL

PROJECT MANAGER SIGNATURE _____ DATE 8/6/96

QAS REVIEW _____ DATE _____

TIME FROM INITIATION TO ACTION _____

Field Change Order (FCO)

PROJ NO. N/A DATE 6.16.96 WORK AUTHORIZATION N/A
CHANGE technical PRIORITY EMERGENCY URGENT ROUTINE
N/A CYWP NO. N/A CYBS NO. N/A MINOR MAJOR OTHER

ESTER IDENTIFICATION
KATHY DOMINIC ORGANIZATION: SAIC PHONE 513.429.2699

FIELD OPS. MANAGER SIGNATURE Kathy Dominic

LINE IDENTIFICATION
LINE(S) AFFECTED COST SCOPE MILESTONES METHOD OF ACCOMPLISHMENT
FROM SERVICE N/A REVISION NO. N/A CAM SIGNATURE N/A

DESCRIPTION OF CHANGE Clarify Section 4.4.1.2. of Phase 1 PHONE N/A
SAP to provide for contingency that shallow trenches (3' max) would not allow for
base of refuse to be reached in some areas beneath refuse to be sampled. Plan
calls for one sample to be collected beneath buried waste.

DESCRIPTION Shallow trenches do not penetrate to base of refuse. Samples cannot
be collected from this zone. The excavation could not be made deeper
due to risk of encountering groundwater.

REASON FOR NOT IMPLEMENTING REQUEST
Not following SAP specifications to excavate to a max. of 3'.

DEPARTMENTS AFFECTED BY IMPLEMENTING REQUEST
Sampling team.

ESTIMATE \$ N/A ESTIMATOR SIGNATURE N/A
PHONE N/A DATE N/A

IS THIS FCO AFFECTED YES NO

APPROVAL
FIELD MANAGER SIGNATURE Paul H. Best DATE 6/16

VIEW _____ DATE _____

COMMITMENT TO ACTION _____