APPENDIX B

Project Quality Assurance Summary

THIS PAGE INTENTIONALLY LEFT BLANK.

TABLE OF CONTENTS

LIST OF ATTACHMENTS

ACRONYMS AND ABBREVIATIONS

DoD	U.S. Department of Defense
FCR	Field Change Request
FWSAP	Facility-wide Sampling and Analysis Plan
M&TE	Measuring & Testing Equipment
MEC	Munitions and Explosives of Concern
NCR	Nonconformance Report
Ohio EPA	Ohio Environmental Protection Agency
PBA08 SAP	Performance-Based Acquisition 2008 Sampling and Analysis Plan
QA	Quality Assurance
QC	Quality Control
QSM	Quality Systems Manual
RI	Remedial Investigation
RVAAP	Ravenna Army Ammunition Plant
TAR	Training Assignment Record
TestAmerica	TestAmerica Laboratories, Inc.
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

B.0 PROJECT QUALITY ASSURANCE SUMMARY

This summary presents the actions and methodologies undertaken to meet the quality assurance/quality control (QA/QC) goals and objectives during the remedial investigation (RI) at Load Line 6 (designated as Area of Concern RVAAP-33) within the former Ravenna Army Ammunition Plant (RVAAP). These goals and objectives were established in the following:

- Facility-wide Sampling and Analysis Plan for Environmental Investigations (USACE 2001), herein referred to as the FWSAP;
- Performance-Based Acquisition 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1 (USACE 2009), herein referred to as the PBA08 SAP;
- Leidos, formerly Science Applications International Corporation, QA Program; and
- U.S. Army Corps of Engineers (USACE) Louisville District QA requirements.

The RI was conducted under one mobilization. The QA/QC objectives were implemented through project-specific procedures and requirements, focusing on field and analytical laboratory activities and project administration.

B.1 FIELD QUALITY ASSURANCE

B.1.1 Readiness Review

Leidos conducted an internal readiness review on January 28, 2010. The purpose of the readiness review was to ensure the following:

- Project documents [e.g., sampling and analysis plans and field change requests (FCRs)] and procedures were approved, controlled, and properly distributed;
- Assigned personnel were trained prior to field activities;
- Mobilization and site logistics were established;
- Laboratories were ready to accept samples;
- Subcontractors were ready to begin work; and
- QA systems were implemented.

All elements of the readiness review were completed prior to initiating field activities and were approved by the Leidos QA/QC Officer. Readiness review and project kickoff checklists provide documentation of this QA element and are maintained in the project file.

B.1.2 Procedures

Standard operating methods for field activities are incorporated into the governing documents for the project. The FWSAP describes the overall approach and methodologies to be used for projects at RVAAP, and the PBA08 SAP details project-specific requirements for field implementation. USACE

and the Ohio Environmental Protection Agency (Ohio EPA) reviewed and approved these documents prior to implementing field activities.

Clarifications and/or planned deviations from either plan were documented as FCRs. Prior to executing a field change, each FCR was reviewed and approved by USACE and Ohio EPA. A description of each FCR is presented in Section B.3.1, and copies of the FCRs are included in Attachment 1 to this appendix.

Any variances from the approved plans or FCRs were documented as Nonconformance Reports (NCRs). There were no variances identified during the implementation of the RI at Load Line 6.

B.1.3 Training

Field team personnel were trained in all procedures applicable to assigned tasks. Training was accomplished through a combination of project kickoff meetings, reading assignments, and on-the-job training. Training was documented by completing Training Assignment Records (TARs); completion was verified by the Leidos Field Operations Manager. Copies of TARs and training certificates are in the project file. Copies of training records required for Occupational Safety and Health Administration and U.S. Department of Transportation compliance were on site during field activities.

B.1.4 Equipment Calibration

Various types of measuring and testing equipment (M&TE) were used during the field investigation. All M&TE were categorized and assigned unique identifiers. An inventory was maintained in an M&TE logbook.

Only equipment with verifiable traceability to nationally recognized standards was used in the field. Instruments were calibrated in accordance with manufacturer's instructions and frequency. Calibration activities and results were documented in the M&TE logbook, as well as source information for all calibration standards and reagents.

Equipment that did not calibrate within manufacturer’s specifications or operate properly in the field was taken out of service and was promptly replaced. Replacement equipment was placed into service after calibration. The M&TE logbook maintains documentation of all replaced equipment.

B.1.5 Quality Control Samples

Field QC samples collected for this project included trip blanks, equipment rinsate blanks, source water, and field duplicates, as specified in the PBA08 SAP. Field QA split samples were also collected and sent to a USACE-contracted QA laboratory, RTI Laboratories, Inc., of Livonia, Michigan. The USACE QA laboratory performed an independent analysis and evaluation of analytical results by the contracted laboratory. Appendix C of the Load Line 6 RI Report evaluates

data quality and analytical performance with respect to field QC results; Appendix D presents field QC data and analyses of QC samples.

B.1.6 Field Records

Field data, observations, activities, and information were recorded on daily activity logs and sampling forms. These logs and forms were bound in three-ring binders. Each field team possessed a binder with applicable sampling forms and activity logs. This ensured that all necessary data were entered consistently. Logbook entries were checked for accuracy and completeness by independent reviewers. Field records were collected upon completion of the project and maintained by the Leidos Field Operations Manager.

B.2 ANALYTICAL LABORATORY QUALITY ASSURANCE

Leidos subcontracted White Water Associates, Inc., of Amasa, Michigan, who subcontracted TestAmerica Laboratories, Inc. (TestAmerica) of North Canton, Ohio, and West Sacramento, California, to perform chemical analysis of samples collected. The laboratories performing the analysis were certified by the National Environmental Laboratory Accreditation Conference and have submitted a Self Declaration Statement for compliance with U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories Version 3.0 requirements. QA split samples were collected and submitted to an independent USACE Louisville District QA laboratory (RTI Laboratories, Inc., located in Livonia, Michigan).

B.2.1 Readiness Review

Laboratory QA/QC activities were initiated during the readiness review, which verified the following:

- Governing documents and approved analytical methods were controlled and properly distributed,
- The laboratory was scheduled and ready to conduct the analysis,
- Logistical coordination was established between the laboratory and the field team, and
- Laboratory QA programs were consistent and compatible with the project requirements.

B.2.2 Procedures

Prior to initiating analytical support, Leidos outlined project-specific requirements for White Water Associates, Inc. and TestAmerica that included the following:

- Parameters to be measured.
- Analytical methods:
    - Adherence to U.S. Environmental Protection Agency (USEPA) SW-846 protocols;
    - USACE Shell for Analytical Chemistry Requirements, Appendix I EM 200-1-3, February 2001;
    - DoD QSM for Environmental Laboratories Version 3.0 requirements; and

    - Louisville QSM Supplement requirements.
- Project quantitation goals (sensitivity).
- Data deliverables requirements.

B.2.3 Laboratory Quality Control

To document laboratory data quality and measure the quality of the analytical process, laboratory QC samples (e.g., method blanks, laboratory control samples, laboratory duplicates, and matrix spike/matrix spike duplicates) and data verification/validation were employed. The results of laboratory QC are discussed in the Data QC Summary Report (Appendix C). Analytical results of laboratory QC samples are included in Appendix D and form the basis of the data verification and validation process (Section B.2.5).

B.2.4 Laboratory Documentation

White Water Associates, Inc. and TestAmerica maintain comprehensive information regarding the entire analytical process. The laboratory delivered summary data packages and electronic deliverables to Leidos consistent with those identified in the USEPA SW-846 protocol for validation and verification. Laboratory QC sample analyses were cross-referenced to the appropriate environmental field sample analyses in the laboratory deliverables.

B.2.5 Data Verification/Validation

Analytical data generated were subjected to data verification by Leidos, as specified in the Facility-wide Quality Assurance Project Plan (USACE 2001) and PBA08 SAP. To verify data, analytical results were compared to established criteria to which judgment was rendered regarding the acceptability and qualification of the data (Appendix C). Upon receiving the data packages from the laboratory, the information was subjected to a systematic examination following standardized checklists and procedures to ensure content, presentation, administrative validity, and technical validity. Routine data changes were documented through data change forms. Data deficiencies or formal laboratory-related non-conformances were documented through an NCR process, as required.

In addition to the Leidos data review, a 10% validation of all data was performed by USACE to evaluate data usability. This review consisted of a comprehensive validation of 10% of the primary data set; comprehensive validation of the QA split sample data set; and a comparison of primary sample, field duplicate sample, and field QA split sample information (Appendix C).

B.3 QUALITY ASSURANCE DOCUMENTATION

Primary methods for documenting QA consisted of the following: (1) completing FCRs requiring and obtaining USACE and Ohio EPA concurrence, and (2) generating NCRs in accordance with Leidos QA procedures. Copies of FCRs completed during the investigation are included in Attachment 1 of this appendix. There were no NCRs generated for Load Line 6 during implementation of the RI.

B.3.1 Field Change Control

FCRs were submitted to present the rationale and document approval for any anticipated variances from protocols specified in the FWSAP and/or PBA08 SAP. The FCRs clarified the scope or refined the procedural approach for a specific field activity. All FCRs were reviewed and approved by designated technical representatives of USACE and Ohio EPA prior to implementation. None of the FCRs resulted in an adverse impact to project quality, schedule, or scope. Copies of the approved FCRs are included in Attachment 1 of this appendix. The following six FCRs were executed during RI activities at Load Line 6:

- FCR-RVAAP PBA08RI-002 documented the changes in sampling procedures and analytical methods presented in the approved PBA08 SAP;
- FCR-RVAAP PBA08RI-003 documented the use of sodium bentonite chips for backfilling surface and subsurface boreholes;
- FCR-RVAAP PBA08RI-004 documented that the Munitions and Explosives of Concern (MEC) Work Plan for the PBA08 SAP was not required and presented the MEC avoidance protocol for this project;
- FCR-RVAAP PBA08RI-006 revised the investigation-derived waste management procedure for this project;
- FCR-RVAAP PBA08RI-007 increased the survey accuracy for sampling locations from 0.2–3 ft; and
- FCR-RVAAP PBA08RI-008 reduced the number of surface water and sediment field duplicates and QA splits collected for this project.

B.3.2 Nonconformance Reports

NCRs and/or corrective action reports are generated to identify and correct conditions adverse to quality, as described in the field and laboratory QA plans. No NCRs were generated during the Load Line 6 RI.

B.4 REFERENCES

USACE (U.S. Army Corps of Engineers) 2001. *Facility-Wide Sampling and Analysis Plan for Environmental Investigations at the Ravenna Army Ammunition Plant, Ravenna, Ohio*. March 2001.

USACE 2009. *Performance-Based Acquisition 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1 at the Ravenna Army Ammunition Plant, Ravenna, Ohio*. December 2009.

THIS PAGE INTENTIONALLY LEFT BLANK.

ATTACHMENT 1

Field Change Requests

THIS PAGE INTENTIONALLY LEFT BLANK.

FIELD CHANGE REQUEST (FCR)

FCR NO. FCR-RVAAP PBA08RI-002 DATE INITIATED 02/17/10
PROJECT PBA 2008 Remedial Investigation
CONTRACT NO. GSA Contract No. W912QR-04-D-0028 Delivery Order No. 0001

REQUESTOR IDENTIFICATION
NAME Heather Miller ORGANIZATION SAIC PHONE 330-573-8571

TITLE SAIC Field Operations Manager SIGNATURE

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED ☐ Cost ☐ Scope ☐ Milestone ☒ Method of Accomplishment

AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)
PBA 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1.

DESCRIPTION OF CHANGE:
SAIC would like to request the approval of a field change to the following sample procedures and analytical methods presented in the approved RI SAP. This request includes all changes discussed on the 2/8/2010 call with USACE, SAIC and RTI. Table 1 presents the requested changes, the justification and concurrence with RTI (USACE split lab) and the impact of not implementing request.

JUSTIFICATION:

These items are being requested to clarify, adjust, and revise the implementation of the PBA08 RI given new information since its "final" submittal and approval. The attached Table 1 presents the additional information on the justification of each requested change.

IMPACT OF NOT IMPLEMENTING REQUEST:

Please see Table 1 for the impact of each requested change.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:
SAIC Field Manager, SAIC Field Teams, Laboratory and USACE Split Laboratory

COST ESTIMATE ($) 0 ESTIMATOR SIGNATURE No cost impact to USACE
PHONE NA DATE NA

PREVIOUS FCR AFFECTED ☐ YES ☒ NO; IF YES, FCR NO. ___

USACE COTR DATE: 18 FEB 2010

OHIO EPA PROJECT MANAGER DATE: 18 Feb 2010

SAIC H&S MANGER SIGNATURE: Not Applicable DATE:

FIELD CHANGE REQUEST (FCR-RVAAP PBA08 RI-002)

Table 1

Item Number	Description of Requested Change	Justification of Change	Impact of Not Implementing	Cost of Not Implementing
1	Nitrate Sampling at Load Line 12 SAIC would like to have surface water and wet sediment samples at Load Line 12 analyzed for nitrates to support assessments presented in the Load Line 12 Groundwater Feasibility Study. Wet sediment and Surface Water samples for nitrate will be analyzed by SW-846, 9056A.	Although nitrates were not identified above screening criteria CUGs in surface water and wet sediments samples, SAIC would like to add nitrates to the list of analytes to support the groundwater FS and verify there are no groundwater impacts to surface waters. These methods will also be consistent with methods used by the USACE split laboratory	At this point, it is assumed there is no groundwater and surface water interface of potential nitrate contamination. The additional samples will confirm or deny this assumption.	No cost impact to USACE.
2	Part II QAPP Table 2-1. Sampling and Analytical Requirements SAIC would like to remove cyanide from the list of parameters for all media.	Cyanide was inadvertently not removed from Table 2-1 after USACE and Ohio EPA provided guidance (in September 2009) that cyanide was not part of the RVAAP full suite of parameters. These methods will also be consistent with methods used by the USACE split laboratory	No documentation that cyanide was not included during the implementation of the RI SAP.	No cost impact to USACE.
3	Part II QAPP Table 2-1. Sampling and Analytical Requirements SAIC would like clarify that 43 of the soil samples and one wet sediment sample presented on Table 2-1 as Metals TAL should have been included as a separate analysis for only total chromium (only). Analysis for total chromium by SW-846, 6020 will be added.	Table 2-1 in the QAAP presented total chromium samples within the Metal TAL samples for wet sediment and soil. Only total chromium and hexavalent chromium are required for chromium speciation samples. As in Section 4.1.3 on page 4-4 of the PBA08 RI Work Plan, field duplicates (and associated splits) samples will not be collected for chromium speciation samples.	Total chromium and all other metals in the TAL metals suite would be reported.	No cost impact to USACE.
4	Part II QAPP Table 2-1. Sampling and Analytical Requirements SAIC would like to: - Add method 3541 to pesticides and PCBs to soil and wet sediment. - Replace method 8310 to 8270C for PAHs	Analytical methods were revised to achieve low detection limits for comparisons to CUGs and/or to meet the requirements of the DOD QSM 3.0.. These methods will also be consistent with methods	Actual analytical methods used not documented during implementation of RI SAP	No cost impact to USACE.

FIELD CHANGE REQUEST (FCR-RVAAP PBA08 RI-002)

Item Number	Description of Requested Change	Justification of Change	Impact of Not Implementing	Cost of Not Implementing
	for soil and wet sediment. - Add the following analytical methods to liquid and solid IDW samples: TCLP VOC: 8260B and 5030B TCLP SVOC: 8270C/3620C/3510C TCLP Pesticides: 8081A/3520C/3510C TCLP Herbicides:8151A/3520C/3510C TCLP Metals: 6010B/7470A Total Cyanide: 9010B	used by the USACE split laboratory.		
5	Part II QAPP Table 2-1, Sampling and Analytical Requirements SAIC would like to clarify that our VOC method of analysis is 8260B/5021.	Analytical method 8260B/5035 requires the use of EnCore or TerraCore samplers which is not consistent with the sampling procedures or containers presented in the PBA08 SAP and QAPP (Table 5-1). These methods will also be consistent with methods used by the USACE split laboratory.	Actual analytical methods used not documented during implementation of RI SAP	No cost impact to USACE.

THIS PAGE INTENTIONALLY LEFT BLANK.

FCR NO. FCR-RVAAP PBA08RI-003 DATE INITIATED 02/17/10
PROJECT PBA 2008 Remedial Investigation
CONTRACT NO. GSA Contract No. W912QR-04-D-0028 Delivery Order No. 0001

REQUESTOR IDENTIFICATION
NAME Heather Miller ORGANIZATION SAIC PHONE 330-573-8571

TITLE SAIC Field Operations Manager SIGNATURE H. Miller

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED ☐ Cost ☐ Scope ☐ Milestone ☒ Method of Accomplishment

AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)
PBA 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1.

DESCRIPTION OF CHANGE:
SAIC requests approval of the following borehole backfilling procedure to supplement guidance presented in the approved PBA 2008 RI SAP.

All discrete surface locations collected with a bucket hand auger, all subsurface boreholes completed using direct push technology, and all geotechnical samples drilled using 4 ¼" hollow stem augers will be backfilled with USACE approved sodium bentonite chips at the completion of sampling activities. Sodium bentonite chips will be added through the augers as they are removed to prevent bridging within the borehole. Care will be taken to ensure that bridging does not occur in any soil boreholes by tamping and thoroughly hydrating the chips with an USACE approved water source every 5 feet until the boring is filled. Each location will be covered lightly with surrounding soil.

JUSTIFICATION:
The PBA 2008 RI SAP and FW SAP do not provide guidance on the abandonment process with respect to surface soil and subsurface direct push boreholes. SAIC requests using abandonment guidance presented in the current Ohio EPA Technical Guidance Manual for Ground Water Investigations, Chapter 9 (February 2009). This document provides guidance that sodium bentonite chips or pellets should be utilized for boreholes completed above the water table, as the use of a cement or cement-bentonite mixture may shrink when installed above the water table.

All geotechnical borings will be completed above the water table. In addition, all surface soil and subsurface direct push borings are anticipated to be completed above the water table. However, if the water table is encountered in surface soil and subsurface direct push borings, sodium-bentonite chips are still the preferred abandonment method, as they will sink through water. This text clarifies SAICs abandonment approach.

IMPACT OF NOT IMPLEMENTING REQUEST:
Surface and subsurface soil borehole (direct push) backfilling activities will not be formally documented/approved.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:
SAIC Field Manager, SAIC Field Teams and Drilling Subcontractor.

COST ESTIMATE ($) 0 ESTIMATOR SIGNATURE No cost impact to USACE
PHONE NA DATE NA

PREVIOUS FCR AFFECTED ☐ YES, ☒ NO; IF YES, FCR NO. ___

USACE COR Nathaniel Peters DATE: 2/17/2010

OHIO EPA PROJECT MANAGER [signature] DATE: 02/18/2010

SAIC H&S MANAGER SIGNATURE Not applicable DATE: ___

THIS PAGE INTENTIONALLY LEFT BLANK.

FIELD CHANGE REQUEST

FCR NO. FCR-RVAAP PBA08RI-004 DATE INITIATED 02/18/10
PROJECT PBA 2008 Remedial Investigation
CONTRACT NO. GSA Contract No. W912QR-04-D-0028 Delivery Order No. 0001

REQUESTOR IDENTIFICATION
NAME Heather Miller ORGANIZATION SAIC PHONE 330-573-8571

TITLE SAIC Field Operations Manager SIGNATURE

BASELINE IDENTIFICATION

BASELINE(S) AFFECTED ☐ Cost ☐ Scope ☐ Milestone ☒ Method of Accomplishment
AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)
PBA 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1.
DESCRIPTION OF CHANGE:
The PBA2008 Remedial Investigation is being performed in support of the Installation Restoration Program (IRP). In support of this IRP field work, MEC avoidance will be conducted given that there is potential to encounter UXO or MEC at specific AOCs within this remedial investigation. This field change request is being issued to outline Munitions and Explosives of Concern (MEC) Avoidance protocol for the PBA 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1. When performing sampling within a munitions response site (MRS), the MEC Avoidance Protocol will follow the requirements in Chapter 5 of USACE Engineering Pamphlet EP 75-1-2 and previously agreed to protocols at the Ravenna Army Ammunition Plant. In general, MEC Avoidance Protocol will be conducted as follows:

As required with all field sampling crew members, the UXO technician will be required to read and understand the objectives and protocols associated with the PBA 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1 and approved field change requests. The SAP presents the maps showing locations that will be sampled and require escort. In addition, these locations will be discussed and highlighted during the daily tailgate briefing. Prior to the start of field operations, SAIC sampling crews will be provided MEC/UXO awareness, identification, safety, and avoidance procedures.

SAIC field crews will be escorted by the UXO Technician at all times until the UXO Technician has completed a visual and magnetometer survey of access routes, work areas, and sampling locations and all cleared areas are marked. Whites XLT magnetometers or Schonstedt Model MG-220/230 Magnetic Gradiometer (or equivalent) will normally be used as the unit is designed to detect the presence of buried iron or steel objects. The unit responds when the magnetic field strength at the two sensors located in the sensor assembly is different.

Escorted personnel will follow behind the UXO Technician. If anomalies or MEC/UXO are detected, the UXO Technician will halt escorted personnel in place, mark the item(s), select a course around the item, and instruct escorted personnel to follow. The anomaly will be reported to the on-site SAIC Field Operations Manger, who will initiate the appropriate response actions.

Cleared access routes will be at least twice as wide as the widest vehicle entering the MRS. At minimum, the cleared work area will be a square, with a side dimension equal to twice the length of the largest vehicle or piece of equipment for use on site.

The UXO Technician will use a handheld magnetometer to clear an area prior to soil sampling/well drilling operations commencing. At not more than a 2-foot depth, a Forster Ferex, MK 26 ordnance locator or Schonstedt-down-hole instrument will be lowered into the soil-sampling hole. This procedure will be used to ensure that smaller items of UXO, undetectable from the surface, can be detected. If no magnetic anomalies are located, the procedure will be repeated at 2-foot intervals to the maximum depth of the sample to be taken. Anomaly avoidance for groundwater monitoring wells and test pits will be conducted in 2-foot intervals to a depth of 10 feet or encountering bedrock, whichever occurs first.

JUSTIFICATION:

FIELD CHANGE REQUEST

During teleconference with SAIC, USACE Louisville, and USACE Baltimore on 1/26/10, SAIC was advised there was no requirement to have a MEC Work Plan or Explosive Site Plan to conduct the RI SAP field work and work within an MRS boundary could be performed under the Site Safety and Health Plan. The Final SAP defers to the MEC Work Plan. This change request provides documented guidance to all field team members and will be followed if MEC avoidance is employed.

IMPACT OF NOT IMPLEMENTING REQUEST:

MEC Avoidance protocols for which the field crews will follow will not be documented.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:
SAIC Field Manager, SAIC Field Teams, and MEC Subcontractor

COST ESTIMATE ($) 0 ESTIMATOR SIGNATURE No cost impact to USACE
PHONE NA DATE NA

PREVIOUS FCR AFFECTED ☐ YES ☒ NO; IF YES, FCR NO. __

USACE COTR Glen McGhan, Nat Peters DATE 3/5/10

OHIO EPA PROJECT MANAGER Todd R Surbaugh DATE 03/10/2010

SAIC H&S MANGER SIGNATURE Stephen L Davis DATE 3/5/2010

FIELD CHANGE REQUEST (FCR)

FCR NO. FCR-RVAAP PBA08RI-006 DATE INITIATED 02/22/10
PROJECT PBA 2008 Remedial Investigation
CONTRACT NO. GSA Contract No. W912QR-04-D-0028 Delivery Order No. 0001

REQUESTOR IDENTIFICATION
NAME Heather Miller ORGANIZATION SAIC PHONE 330-573-8571

TITLE SAIC Field Operations Manager SIGNATURE

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED ☐ Cost ☐ Scope ☐ Milestone ☒ Method of Accomplishment

AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)
PBA 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1.

DESCRIPTION OF CHANGE:

SAIC would like to request the approval of a field change to the following IDW procedures and analytical methods presented in the approved RI SAP. Table 1 presents the requested changes, the justification and the impact of not implementing request.

JUSTIFICATION:

These items are being requested to clarify, adjust, and revise the implementation of the PBA08 RI given new information since its "final" submittal and approval. The attached Table 1 presents the additional information on the justification of each requested change.

IMPACT OF NOT IMPLEMENTING REQUEST:

Please see Table 1 for the impact of each requested change.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:
SAIC Field Manager, SAIC Field Teams, Laboratory and USACE Split Laboratory

COST ESTIMATE ($) 0 ESTIMATOR SIGNATURE No cost impact to USACE
PHONE NA DATE NA

PREVIOUS FCR AFFECTED ☐ YES ☒ NO; IF YES, FCR NO. ___

USACE COTR Mark W. Nutter DATE: 2/23/2010

OHIO EPA PROJECT MANAGER DATE: 2/23/2010

SAIC H&S MANGER SIGNATURE NA DATE: 02/22/2010

FIELD CHANGE REQUEST (FCR-RV AAP PBA08 RI-006)

Table 1

Item Number	Description of Requested Change	Justification of Change	Impact of Not Implementing	Cost of Not Implementing
1	IDW- PPE and Expendable Sampling Equipment SAIC would like to request that only potentially contaminated PPE and expendable sampling equipment be drummed and disposed as non-hazardous waste. These items would be field screened and segregated as specified in Section 7.1 of the FWSAP. Non-contaminated PPE and expendable sampling equipment will be disposed of in sanitary trash.	The PBA 08 RI SAP does not distinguish between potentially contaminated and non-contaminated expendables/solid waste.	Non-contaminated wastes would have to tracked, labeled, sampled, and disposed of as potentially contaminated material.	No cost impact to USACE.
2	IDW - Soil Cuttings SAIC would like to request combining soil cutting from the various AOCs as a best management practice to reduce the number of partially filled soil IDW drums. One composite IDW sample from all drums containing soil cuttings will be collected in accordance with Section 7.4.1 of the FWSAP and characterized for waste disposal at the end of the field cycle.	SAIC does not anticipate large quantities of soil IDW being generated during the investigation given soil borings will be accomplished using direct push technology. Combining the soil cuttings will maximize the use of each drum and minimize the potential for partially filled drums. Based on the sampling results of the previous investigations at the 17 AOCs, the concentrations of potential COCs in soil would not be classified as hazardous waste.	Many of the drums of IDW soil would contain as little as five gallons of soil.	No cost impact to USACE.

FCR NO. FCR-RVAAP PBA08RI-007 DATE INITIATED 02/22/10
PROJECT PBA 2008 Remedial Investigation
CONTRACT NO. GSA Contract No. W912QR-04-D-0028 Delivery Order No. 0001

REQUESTOR IDENTIFICATION
NAME Heather Miller ORGANIZATION SAIC PHONE 330-573-8571

TITLE SAIC Field Operations Manager SIGNATURE

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED ☐ Cost ☐ Scope ☐ Milestone ☒ Method of Accomplishment

AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)
PBA 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1.

DESCRIPTION OF CHANGE:

Survey Precision
The horizontal coordinates of all sampling locations and the corners of MI sample areas presented in the site specific appendices will be marked in the field utilizing a GPS unit within 1 m (3 ft). Elevations of these locations will not be recorded.

For the installation of any future monitoring wells, the location and elevation will be surveyed to an accuracy of 0.06 m (0.2 ft).

JUSTIFICATION:

This change would be to clarify the intention of using a GPS unit to stake locations for the identified MI sampling areas.
A higher resolution survey of monitoring wells (if installed) would be used as presented in the approved PBA 08 RI SAP.

IMPACT OF NOT IMPLEMENTING REQUEST:

As presented, the level of accuracy for obtaining MI sample area corners could only be met utilizing a licensed surveyor. This change clarifies that a GPS unit would be acceptable to mark sample locations. Well installations would be surveyed by a licensed surveyor.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:

SAIC Field Manager and SAIC Field Teams.

COST ESTIMATE ($) 0 ESTIMATOR SIGNATURE No cost impact to USACE
PHONE NA DATE NA

PREVIOUS FCR AFFECTED ☐ YES ☒ NO; IF YES, FCR NO. ___

USACE COTR DATE: 2/24/10

OHIO EPA PROJECT MANAGER DATE: 2/25/10

SAIC H&S MANGER SIGNATURE NA DATE: 02/22/2010

THIS PAGE INTENTIONALLY LEFT BLANK.

FCR NO. FCR-RVAAP PBA08RI-008 DATE INITIATED 02/23/10
PROJECT PBA 2008 Remedial Investigation
CONTRACT NO. GSA Contract No. W912QR-04-D-0028 Delivery Order No. 0001

REQUESTOR IDENTIFICATION
NAME Heather Miller ORGANIZATION SAIC PHONE 330-573-8571

TITLE SAIC Field Operations Manager SIGNATURE

BASELINE IDENTIFICATION
BASELINE(S) AFFECTED ☐ Cost ☐ Scope ☐ Milestone ☒ Method of Accomplishment

AFFECTED DOCUMENT (TITLE, NUMBER AND SECTION)
PBA 2008 Supplemental Investigation Sampling and Analysis Plan Addendum No. 1.

DESCRIPTION OF CHANGE:

36 Surface Water (SW) and co-located Wet Sediment (WS) samples are to be collected at 10 AOCs as presented in the PBA 2008 RI SAP. The plan also states that duplicate and split QA samples will be collected at a frequency of 10% per AOC. For SW and WS only, duplicate and split QA samples will be collected at a frequency of 10% for samples collected at all the AOCs. (COMBINED). MWN

JUSTIFICATION:

The number of SW and WS samples to be collected at each of the 10 AOCs range from 1 to 5. Due to the small number of samples collected per AOC, duplicate and split QA samples would be collected at AOCs where only 1 or 2 Surface Water and Wet Sediment Sample are collected. By collecting the QA samples (for SW and WS only) at a frequency of 10% for all the AOCs, the total number of duplicate and split QA samples will ne reduced.

IMPACT OF NOT IMPLEMENTING REQUEST:

Excessive duplicate and split QA samples will be collected and analyzed at a frequency greater than 10% for Surface Water and Wet Sediment Samples.

PARTICIPANTS AFFECTED BY IMPLEMENTING REQUEST:

SAIC Field Manager and SAIC Field Teams. SAIC and USACE laboratories.

COST ESTIMATE ($) 0 ESTIMATOR SIGNATURE No cost impact to USACE
PHONE NA DATE NA

PREVIOUS FCR AFFECTED ☐ YES ☒ NO; IF YES, FCR NO. ___

USACE COTR Mark W. Kuhlen for DATE: 2/24/10

OHIO EPA PROJECT MANAGER DATE: 2/25/10

SAIC H&S MANGER SIGNATURE NA DATE: 02/23/2010

THIS PAGE INTENTIONALLY LEFT BLANK.