



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

SEP 16 2011

MEMORANDUM

SUBJECT: Quality Assurance Project Plan for IA Flood Orphan Drum Staging Areas; Various areas, Iowa - Approved with Comment

FROM: Diane Harris *Diane Harris*
Regional Quality Assurance Manager
ENSV/IO

TO: Susan Fisher
EPA Project Manager
SUPR/ERNB

The review of the subject document prepared by EPA, dated September 6, 2011, has been completed according to "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations," EPA QA/R-5 March 2001.

Based on the comments below, the document is approved with comment. Although the document satisfactorily addresses most of the key issues, minor issues were noted. These issues do not have an impact on the approval of the document, but are noteworthy of pointing out for the record.

General Comments

1. **§Table 1: Sample Summary.** EPA SOP 4230.17 for surface water has been archived and can be replaced with 4232.2013 for Surface Water Sampling.
2. **§Table 1: Sample Summary.** It is stated in this table that a water trip blank will be collected for this project. However, it is not stated in 2.5, the quality assurance requirements or in Appendix A. Which is correct?

If you have any questions, please contact me at x7258, or the lead reviewer, Gabrielle Thompson at x7569.

R7QAO Document Number: 2011285



- 1.6 Special Training/Certification Requirements:**
- OSHA 1910
 - Special Equipment/Instrument Operator (describe below):
 - Other (describe below):

- 1.7 Documentation and Records:**
- Field Sheets
 - Chain of Custody
 - Site Log
 - Health and Safety Plan
 - Trip Report
 - Letter Report
 - Site Maps
 - Photos
 - Video
- Sample documentation will follow EPA Region 7 SOP 2420.5.
- Other: Analytical information will be handled according to procedures identified in Table 2.

2.0 Measurement and Data Acquisition:

- 2.1 Sampling Process Design:**
- Random Sampling
 - Search Sampling
 - Screening w/o Definitive Confirmation
 - Sample Map Attached
 - Transect Sampling
 - Systematic Grid
 - Biased/Judgmental Sampling
 - Systematic Random Sampling
 - Screening w/ Definitive Confirmation
 - Stratified Random Sampling
 - Definitive Sampling

The proposed sampling scheme for this project will include: biased/judgmental sampling, screen with and without definitive confirmation, and sampling for definitive analysis. All sampling activities will be conducted in accordance with procedures included in the Guidance for Performing Site Inspections Under CERCLA, OSWER Directive #9345.1-05, September 1992, and Removal Program Representative Sampling Guidance, Volume 1: Soil, OSWER Directive 9360.4-10, November 1991. All samples will be submitted for analysis by the EPA Region 7 laboratory and/or pre-approved START-contracted or ERRS-contracted laboratories.. See Appendices A and B for additional site-specific information and maps. The proposed number of samples is a balance between cost and coverage and represents a reasonable attempt to meet the study objectives while staying within the budget constraints of the emergency response tasks.

Sample Summary Location	Matrix	# of Samples*	Analysis
Soil sampling of staging areas before use	Soil	TBD	VOCs, SVOCs, metals (including mercury), Pesticides/PCBs, Herbicides, Dioxins/Furans, TPHs,
Soil sampling of staging areas where orphan drum have been stored and staged after demobilization	Soil	TBD	VOCs, SVOCs, metals (including mercury), Pesticides/PCBs, Herbicides, Dioxins/Furans, TPHs,
Individual containers for field screening and disposal	Product/Hazardous	TBD	HazCat, VOCs, SVOCs, metals (including mercury), Pesticides/PCBs, TPHs, Dioxins and furans, TCLP metals, VOCs and SVOCs, flashpoint
Surface water sampling of staging area during rain events	Water	TBD	VOCs, SVOCs, metals (including mercury), Pesticides/PCBs, Herbicides, Dioxins/Furans, TPHs,

*NOTE: Background/QC samples are not included with these totals. See Table 1 for a complete sample summary.

2.2 Sample Methods Requirements:

Matrix	Sampling Method	EPA SOP(s)/Methods
Soil samples -- staging areas before use	Soil samples will be collected from the upper 6 inches of the ground surface with dedicated sampling equipment (spoons and pie pans). Samples will be transferred to the appropriate sample containers.	SOP 4230.03/4231.2012
Soil samples -- staging areas after use	Soil samples will be collected from the upper 6 inches of the ground surface with dedicated sampling equipment (spoons and pie pans). Samples will be transferred to the appropriate sample containers.	SOP 4230.03/4231.2012
Product/Hazardous	Product/ Hazardous samples will be collected from orphan drums/containers found in the floodwaters and banks. Lab confirmation samples, if needed, will be transferred to the appropriate sample containers.	SOP 4231.2009, SOP 4231.2010

CONTENTS

<u>Section/Table</u>	<u>Page</u>
QUALITY ASSURANCE PROJECT PLAN FORM.....	1
TABLE 1: SAMPLE SUMMARY.....	6
TABLE 2: DATA QUALITY OBJECTIVE SUMMARY.....	7
 <u>Appendix</u>	
A SITE-SPECIFIC INFORMATION OF ACTIVITIES AT THE ORPHAN CONTAINER STAGING AREAS FOR THE IA FLOOD	

2.9 Data Acquisition Requirements:

- Not Applicable
- In accordance with the *Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (Updated: July 2007)*.
- Previous data/information pertaining to the site (including other analytical data, reports, photos, maps, etc., which are referenced in this QAPP) have been compiled by EPA and/or its contractor(s) from other sources. Some of that data has not been verified by EPA and/or its contractor(s); however, the information will not be used for decision-making purposes by EPA without verification by an independent professional qualified to verify such data/information.
- Other (Describe): Hazard characterization (field screening) will not be subject to QA requirements.

2.10 Data Management:

- All laboratory data acquired will be managed in accordance with Region 7 EPA SOP 2410.1.
- Other (Describe): Laboratory data acquired will be managed in accordance with procedures established by START-contracted or ERRS-contracted laboratories.

3.0 Assessment and Oversight:

3.1 Assessment and Response Actions:

- Peer Review Management Review Field Audit Lab Audit
- Assessment and response actions pertaining to analytical phases of the project are addressed in Region 7 EPA SOPs 2430.5 and 2430.12.
- Other (Describe):

3.1A Corrective Action:

- Corrective actions will be taken at the discretion of the EPA project manager, whenever there appear to be problems that could adversely affect data quality and/or resulting decisions affecting future response actions pertaining to the site.
- Other (Describe):

3.2 Reports to Management:

- Audit Report Data Validation Report Project Status Report None required
- A letter report describing the sampling techniques, locations, problems encountered (with resolutions to those problems), and interpretation of analytical results will be prepared by START and submitted to the EPA.
- Reports will be prepared in accordance with the *Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (Updated: July 2007)*.
- Other (Describe):

4.0 Data Validation and Usability:

4.1 Data Review, Validation, and Verification Requirements:

- Identified in attached table.
 - Data review and verification will be performed in accordance with the *Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (Updated: July 2007)*.
 - Data review and verification will be performed by a qualified analyst and the laboratory's section manager as described in Region 7 EPA SOPs 2430.5 and 2430.12.
- Other (Describe): Data review and verification will be performed in accordance with procedures established by START-contracted or ERRS-contracted laboratories.

Surface water of staging areas	Surface water samples will be collected by dipper or directly into preserved sample containers for the appropriate analyses. VOC sample containers will be sealed without headspace.	SOP 4230.17
2.3 Sample Handling and Custody Requirements: <ul style="list-style-type: none"> x Samples will be packaged and preserved in accordance with procedures defined in Region 7 EPA SOP 2420.6. x COC will be maintained as directed by Region 7 EPA SOP 2420.4. x Samples will be accepted according to Region 7 EPA SOP 2420.1. x Other (Describe): 		
2.4 Analytical Methods Requirements: <ul style="list-style-type: none"> x Identified in attached table. x Rationale: The requested analyses have been selected based on potential hazards and/or releases. x Other (Describe): Hazard characterization (field screening) 		
2.5 Quality Control Requirements: <ul style="list-style-type: none"> <input type="checkbox"/> Not Applicable x Identified in attached table. x In accordance with the <i>Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (Updated: July 2007)</i>. Describe Field QC Samples to be collected: For this investigation, soil trip blanks will be submitted for the laboratory analyses indicated in Table 1. Analytical results of the blank samples will be evaluated on a qualitative basis by the EPA Project Manager and EPA contractor(s) to determine a general indication of transportation-related, field-related, and laboratory-related contamination. Determination of total method precision is not required for this event; therefore, field duplicates will not be collected. <input type="checkbox"/> Other (Describe): 		
2.6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements : <ul style="list-style-type: none"> <input type="checkbox"/> Not Applicable x In accordance with the <i>Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (Updated: July 2007)</i>. s Other (Describe): Testing, inspection, and maintenance of field instruments (field screening equipment, etc.) will be performed in accordance with manufacturer's recommendations. Testing, inspection, and maintenance of analytical instrumentation will be performed in accordance with the previously referenced SOPs and/or manufacturers' recommendations. 		
2.7 Instrument Calibration and Frequency: <ul style="list-style-type: none"> <input type="checkbox"/> Not Applicable x Inspection/acceptance requirements are in accordance with the <i>Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (Updated: July 2007)</i>. x Calibration of laboratory equipment will be performed as described in the previously referenced SOPs and/or manufacturers' recommendations. x Other (Describe): Calibration of field instruments (field screening equipment, etc.) will be performed daily, as described in the manufacturers' recommendations. 		
2.8 Inspection/Acceptance Requirements for Supplies and Consumables: <ul style="list-style-type: none"> <input type="checkbox"/> Not Applicable x In accordance with the <i>Generic Quality Assurance Project Plan for Superfund Integrated Assessment and Targeted Brownfields Assessment Program (Updated: July 2007)</i>. x All sample containers will meet EPA criteria for cleaning procedures for low-level chemical analysis. Sample containers will have Level II certifications provided by the manufacturer in accordance with pre-cleaning criteria established by EPA in <i>Specifications and Guidelines for Obtaining Contaminant-Free Containers</i>. <input type="checkbox"/> Other (Describe): 		

4.2 Validation and Verification Methods:

- Identified in attached table.
- The data will be validated in accordance with Region 7 EPA SOPs 2430.5 and 2430.12.
- The EPA site manager will inspect the data to provide a final review. The EPA site manager will review the data, if applicable, for laboratory spikes and duplicates, laboratory blanks, and the field blank to ensure that they are acceptable. The EPA site manager will also compare the sample descriptions with the field sheets for consistency and will ensure that any anomalies in the data are appropriately documented.
- Other (Describe): Data provided by START-contracted and ERS-contracted laboratories will be validated by START and/or ERRS personnel in accordance with EPA-approved procedures.

4.3 Reconciliation with User Requirements:

- Identified in attached table
- If data quality indicators do not meet the project's requirements as outlined in this QAPP, the data may be discarded and re-sampling or re-analysis of the subject samples may be required by the EPA site manager.
- Other (Describe):

Table I: Sample Summary

Site Name: IA Flood Response Staging Areas				Location: Multiple			
START Project Manager:				Activity/ASR #: To be determined		Date: 3-24-08	
No. of Samples	Matrix	Location	Purpose	Depth or other Descriptor	Requested Analysis	Sampling Method	Analytical Method/SOP
TBD	Soil	Staging area prior to use	Assess any pre-existing contamination	0-6 inches, and/or deeper intervals as conditions warrant	VOCs, SVOCs, metals, mercury, Pesticides/PCBs, Herbicides, TPHs, Dioxins and Furans	EPA SOPs 4230.03/4231.2012,	SW846 Methods 8270, 8260A, 6010B, 7141/7473, 8081/8082, 8151A, TPH-OA2, TPH OA-1, 8290
TBD	Soil	Staging area where hazardous products were potentially released to soil	Assess nature and extent of contamination	0-6 inches, and/or deeper intervals as conditions warrant	VOCs, SVOCs, metals, mercury, Pesticides/PCBs, Herbicides, TPHs, Dioxins and Furans	EPA SOPs 4230.03/4231.2012, HAZCAT, TPH OA-2 and immunoassay field kits	SW846 Methods 8270, 8260A, 6010B, 7141/7473, 8081/8082, 8151A, TPH-OA2, TPH OA-1, 8290
TBD	Product/Hazardous	Various containers from flood waters and banks	Hazard characterization	n/a	HAZCAT, VOCs, SVOCs, metals, mercury, Pesticides/PCBs, TPHs, Dioxins and Furans, TCLP VOC, SVOC, metals, flashpoint	EPA SOPs 4231.2009, 4231.2010	HAZCAT waste characterization, SW846 Methods 8270, 8260A, 6010B, 7141/7473, 8081/8082, TPH-OA2, TPH OA-1, 8290, 1311, 1010/1020A
TBD	Water	Surface water in staging area	To assess any contamination during rain events	Surface	VOCs, SVOCs, metals, mercury, Pesticides/PCBs, Herbicides, TPHs, Dioxins and Furans	EPA SOP 4230.17	SW846 Methods 8270, 8260A, 6010B, 7141/7473, 8081/8082, 8151A, TPH-OA2, TPH OA-1, 8290
QC Samples							
1/cooler	Soil	Trip blank	To assess transportation-related contamination	n/a	VOCs and TPHs	n/a	SW846 Method 8270 and Methods OA-1 and OA-2
1/cooler	Water	Trip blank	To assess transportation-related contamination	n/a	VOCs and TPHs	n/a	SW846 Method 8270 and Methods OA-1 and OA-2

Table 2: Data Quality Objective Summary

Site Name: IA Flood Response Staging Areas		Location: multiple						
START Project Manager:		Activity/ASR #: To be determined					Date: 3-24-08	
Analysis	Analytical Method	Data Quality Measurements					Sample Handling Procedures	Data Management Procedures
		Accuracy	Precision	Representativeness	Completeness	Comparability		
SOIL								
VOCs, TPHs, SVOCs, metals, mercury, Pesticides/ PCBs, Herbicides, Dioxins and Furans	see Table 1	per analytical method	per analytical method	Biased/judgemental sampling based on professional judgement of the sampling team	100%; All soil samples are critical samples.	Standardized procedures for sample collection and analysis will be used	See Section 2.3 of QAPP	See Section 2.10 of QAPP form
WATER								
VOCs, TPHs, SVOCs, metals, mercury, Pesticides/ PCBs, Herbicides, Dioxins and Furans	see Table 1	per analytical method	per analytical method	Biased/judgemental sampling based on professional judgement of the sampling team	100%; All water samples are critical samples.	Standardized procedures for sample collection and analysis will be used	See Section 2.3 of QAPP	See Section 2.10 of QAPP form

APPENDIX A

**SITE-SPECIFIC INFORMATION FOR EMERGENCY RESPONSE STAGING AREA ACTIVITIES FOR THE IA FLOOD
RESPONSE**

INTRODUCTION

During the last half of May 2011, the upper Missouri River basin received nearly a year's worth of rainfall. In addition, the estimated snow melt runoff was 212 percent of normal across the upper portion of the river system. These conditions resulted in Missouri basin reservoirs across eastern Montana and the Dakotas nearing their maximum levels. Record releases are ongoing at Gavin's Point dam located to the west of Yankton, South Dakota. Releases are currently at 160,000 cubic feet per second (cfs). At this time releases of this magnitude are expected to continue well into August. The previous high release at Gavin's Point was 70,000 cfs in 1997.

These releases have resulted in flooding of several rivers and creeks in Iowa. EPA has been tasked with collecting orphan drums and removing them to various staging areas in IA. This QAPP is a framework for conducting pre-staging and post-staging soil sampling at the sites selected to be used as staging areas for orphan drums. The proposed sampling is intended to determine any pre-existing contamination at the sites and to ensure that no contamination is left at the sites after closure.

SAMPLING STRATEGY AND METHODOLOGY

Surface Soil Samples

Surface soil samples will be collected at any selected staging sites before and after they are used to stage orphan containers. The sampling will determine the nature and type of contaminants in those areas. Soil samples will be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals including mercury, pesticides and PCBs, herbicides, total petroleum hydrocarbons, diesel and gasoline range (TPH-DRO and TPH-GRO) and dioxins and furans. This information will be used to help assess any impacts on those areas by their use during the response and drum recovery activities. Samples will be collected using disposable spoons, transferred to appropriate sample containers and placed in a cooler maintained at or below 4 degrees Celsius (°C).

Surface Water Samples

Surface water samples will be taken after rain events to determine any contamination that might be carried off-site. The surface water samples will be analyzed for VOCs, SVOCs, metals, including mercury, pesticides and PCBs, herbicides, TPH-DRO and TPH-GRO and dioxins and furans (if deemed necessary). Samples will be collected in properly preserved containers and placed in a cooler maintained at or below 4 degrees Celsius (°C).

Product/ Hazardous Samples

Product/Hazardous samples will be collected from various orphan containers. Initial sampling will be for hazard characterization by field screening (HazCat) methods. If further laboratory confirmation sampling is required to characterize the product, properly preserved samples will be obtained and submitted. Possible analyses include VOCs, SVOCs, metals and mercury, pesticides and PCBs, herbicides, all TPHs, dioxins and furans, all TCLPs and flashpoint.

QUALITY CONTROL SAMPLES

For this project, soil trip blanks will be submitted for analysis of VOCs and TPH-purgables to assess transportation-related contamination.

ANALYTICAL METHODS

All samples will be submitted to the EPA Region 7 laboratory in Kansas City, Kansas or to START-contracted laboratories or laboratories contracted by EPA's Emergency and Rapid Response Services (ERRS) contractor. Soil samples will be analyzed for VOCs, TPH-DRO, TPH-GRO, SVOCs, metals, mercury, pesticides and PCBs, herbicides and dioxin/furans. All samples will be analyzed according to methods referenced in the QAPP. Appropriate containers and physical/chemical preservation techniques will be employed during the field activities to help verify that representative analytical results are obtained. An Analytical Services Request form will be completed by an EPA on-Scene Coordinator for samples submitted to the EPA Region 7 laboratory.

**QUALITY ASSURANCE PROJECT PLAN
FOR ORPHAN CONTAINER STAGING AREAS FOR
IA FLOOD RESPONSE**

Prepared By:

**U.S. Environmental Protection Agency
Region 7
Superfund Division
901 North 5th Street
Kansas City, Kansas 66101**

September 6, 2011