

ROCKY FLATS PLANT
EMD ADMINISTRATION
MANUAL

Manual No.: 3-21000-ADM
Procedure No.: Table of Contents, Rev 1
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Organization: Environmental Management

CATEGORY 1

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ENVIRONMENTAL MANAGEMENT DEPARTMENT
Procedure

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ADMIN RECORD

REVIEWED FOR CLASSIFICATION/UCM

By

Date

11/21/91
A-SW-001032

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CONTROL OF QAA DEVELOPMENT

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ENVIRONMENTAL MANAGEMENT DEPARTMENT
DEVELOPMENT

Approved By:

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[Signature]

Director, Environmental Management

9/23/91
Date

1.0 PURPOSE

The following procedure describes required contents of a Quality Assurance Addenda (QAA) and the relationship of the QAA to other higher level programmatic Quality Assurance documents.

2.0 SCOPE

This procedure applies to the preparation of QAAs for all Work Plans (WP), and to other work at the discretion of the Responsible Division Manager. The procedure describes the method for planning and controlling deviations from the QAPD or QAPjP.

3.0 TERMS/DEFINITIONS

3.1 Quality Assurance Addenda (QAA) - A Quality Assurance Addenda is a functional document which serves to supplement the QA Project Plan for CERCLA Remedial Investigation/Feasibility Studies (RI/FS) and RCRA Facility Investigation/Corrective Measure Study (RFI/CMS) activities and other EMD activities. It provides the project specific requirements and elaborates on the particular activities to which the QAPD and/or QAPjP applies. The organizations that will be performing the work are identified as well as the applicable EM Department Standard operating procedures. Any deviations from the QAPD and/or QAPjP are also discussed along with a justification for the deviation. Project specific data quality objectives identified in the WP are summarized in the Quality Assurance Addenda. The Quality Assurance Addenda for remediation programs is prepared by the Remediation Programs Division of the EM Department or preparation may be delegated to a subcontractor. Responsible managers may also prepare QAAs for their activities, as needed.

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- 3.2 Work Plan** - The WP describes in detail the technical approach for performing the proposed investigation and/or remedial actions (including interim actions and treatability studies). Typically a phased approach is used for such investigations with a separate WP being developed for each phase. A Quality Assurance Addenda is developed for each unique WP. Work plan as used in this document is a functional description and does not require the words "work plan" appear in the title.
- 3.3 Quality Assurance Program Plan (QAPD)** - QAPD refers to the EMD Quality Assurance Project Plan prepared by the EG&G Environmental Management Department for its activities. It applies to all activities performed by the Department. The QAPD is further supplemented by the QAPjP for CERCLA RI/FS and RCRA RFI/CMS activities.
- 3.4 Quality Assurance Project Plan (QAPjP)** - QAPjP refers to the Site-Wide Quality Assurance Project Plan for CERCLA RI/FS and RCRA RFI/CMS activities prepared by the EG&G Environmental Management Department for Interagency Agreement work. It applies to all RI/FS and RFI/CMS activities performed by the Department.

4.0 RESPONSIBILITIES

Individuals with specific responsibilities for implementing this procedure are identified below and their responsibilities discussed. Unless prohibited by other requirements, responsibilities stated herein may be delegated in writing to other individuals or organizations. However, responsibility for the adequacy and effectiveness of the activities remain the responsibility as stated herein.

- 4.1 Responsible Division Manager:** The Responsible Division Manager is responsible for ensuring the preparation of and assigning an author for Quality Assurance Addenda activities governed by a WP before field work is initiated. The Responsible Division Manager is responsible for reviewing the QAA to ensure it addresses the requirements contained in this procedure and approving it for use.
- 4.2 Environmental Management Department Quality Assurance Program Manager:** The EM Department QA Program Manager (QAPM) is responsible for providing guidance in

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developing QAAs and for reviewing QAAs to ensure that applicable quality assurance/quality control requirements have been addressed. The QAPM shall concur on all QAAs.

- 4.3 Division Quality Coordinator: The Division Quality Coordinator is responsible for supporting the development of Quality Assurance Addenda and reviewing them to verify that they address the requirements contained in this procedure. The Division Quality Coordinator shall concur on QAAs.
- 4.4 Project Manager: The Project Manager is the EG&G EM Department staff member responsible for overseeing the preparation and implementation of the individual WP and the accompanying QAA. The Project Manager has the responsibility for reviewing the QAA for compliance with the content of the work plan. The Project Manager shall concur on all the QAAs developed for the WP for which they are responsible.
- 4.5 QAA Author: The QAA author is responsible for preparing the QAA in accordance with the format and content requirements contained in this procedure and submitting the QAA for appropriate review and approval.

5.0 PROCEDURE

- 5.1 Planned deviations, including omissions and additions, to the controls specified in the QAPD and/or QAPjP shall be documented, reviewed, approved, and issued as QAAs for specific projects, such as OU WPs.
- 5.2 A QAA shall be prepared for each WP generated for RI/FS and RFI/CMS activities related to the Interagency Agreement between the U.S. DOE, EPA, and CDH. QAAs may be prepared for other, non-IAG activities as necessary. QAAs shall be developed, reviewed, and approved in accordance with this procedure prior to work progressing past the planning stage. QAAs shall also be prepared for other EMD activities, where the responsible manager determines they are necessary.

NOTE

The QAA development is typically initiated once the final technical draft of the WP has been developed.

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5.3 When a phased approach will be used or multiple subcontractors will be utilized, and the specific assignments, responsibilities, and requirements are not known at the time of the QAA preparation, the QAA shall be revised with this information as it becomes available prior to the initiation of the said activity.

5.4 The organization and format requirements of a QAA are discussed in the following subsections. In many instances, examples are shown to help the QAA author in understanding the intent.

5.4.1 Page Headers and Format

5.4.1.1 Each page of the QAA shall contain a header at the top (See Attachment 1, however the Title and Approval section is not part of the Header.)

5.4.1.2 The QAA should be prepared to appear as part of the relevant WP (e.g., same OU or treatability study title, same font, similar cover, etc.).

5.4.2 Title Page/Approvals

The QAA title page shall be in the format shown in Attachment 2.

5.4.3 Table of Contents

5.4.3.1 At the top of the first page of the Table of Contents a signature block for the Responsible Division Manager shall be provided (see Attachment 1).

5.4.4.1 A table of contents, figures, and tables shall be included in the QAA to aid the reader in finding applicable information.

5.4.4 List of Acronyms

Acronyms used in the QAA shall be identified in an alphabetical listing.

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5.5 Organization and Content

The QAA shall be broken down into the same 19 sections as the QAPjP, preceded by an introduction and scope statement. These sections are:

1. Organization and Responsibilities
2. Quality Assurance Program
3. Design Control and Control of Scientific Investigations
4. Procurement Document Control
5. Instructions, Procedures, and Drawings
6. Document Control
7. Control of Purchased Items and Services
8. Identification and Control of Items, Samples, and Data
9. Control of Process
10. Inspection
11. Test Control
12. Control of Measuring and Test Equipment
13. Handling, Storage, and Shipping
14. Status of Inspection, Test and Operations
15. Control of Nonconformances
16. Corrective Actions
17. Quality Assurance Records
18. Quality Verification
19. Software

Appendix A - Analytical Methods, Detection Limits, and Data Quality Objectives

Redundant inclusion of text already specified in the QAPD and/or QAPjP is prohibited in the QAA unless it is identified below. Justification shall accompany each deviation from the QAPD and/or QAPjP. If no information is needed in a section then indicate "No Change to QAPjP" or similar wording. If this QAA is not related to the QAPjP then reference the QAPD rather than the QAPjP.

5.5.1 Introduction and Scope Statement

- 5.5.5.1 The QAA shall accompany the WP so the introduction and scope may be very brief.

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- 5.6.3 Review period shall not be less than 3 working days.
- 5.6.4 Following internal review (step 5.6.2 and 5.6.3) the QAA (related to the QAPjP) will be revised, as necessary, and shall be submitted (typically with the final draft of the work plan) to the DOE/RFO, EPA, and CDH for review and comment. If the QAA is related to the QAPD agency review is typically not required.
- 5.6.5 Following any agency review (Step 5.6.4) the QAA will be revised as necessary to address agency concerns and comments, and then submitted for concurrence and approval.
- 5.6.6 At a minimum, the Project Manager, the QAPM, and the responsible Quality Coordinator shall concur on QAAs.
- 5.6.7 Following concurrence the QAA shall be approved by the Responsible Division Manager.
- 5.6.8 Approval of the Responsible Division Manager is required prior to initiation of the activity.
- 5.6.9 The approved QAA shall be submitted to the EMD Document Custodian for release as a Controlled Document per 3-21000-ADM-06.01, "Document Control".
- 5.6.10 Copies of all drafts of the QAA released for formal review, all document review sheets, and other relevant documents shall be sent to the EMD records center per 3-21000-ADM-17.01, "Quality Assurance Records", unless the document already exists in the records system.

6.0 REFERENCES

- 6.1 Rocky Flats Plant Site-Wide Quality Assurance Project Plan for CERCLA Remedial Investigations/Feasibility Studies and RCRA Facility Investigations/Corrective Measures Studies Activities.

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6.2 Final Environmental Restoration Inter-Agency Agreement, August 17, 1990.

6.3 3-21000-ADM-05.05, Document Review.

6.4 3-21000-ADM-06.01, Document Control.

6.5 3-21000-ADM-17.01, Quality Assurance Records.

7.0 ATTACHMENTS

Attachment 1 - QAA Page Header

Attachment 2 - QAA Title Page

Attachment 3 - Example Organization Chart

Attachment 4 - Example Analytical Methods and DQO's

Attachment 5 - Example Procedure Matrix Format

Attachment 6 - Example QC Sample Collection/Check Frequency

Attachment 7 - Example Format for Sample Containers, Sample Preservation, and Holding Times

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ATTACHMENT 1

QAA PAGE HEADER

EG&G ROCKY FLATS PLANT Manual: 21100-QAA-1.1
ENVIRONMENTAL RESTORATION PROGRAM Issue No.: Rev. 0
Quality Assurance Addendum to the Rocky Flats Plant Page: 1 of 38
Quality Assurance Project Plan Effective Date: July 16, 1991

Approved by:

TITLE:
Quality Assurance Addendum for Operable Unit No. 1,
881 Hillside Area, Phase III RFI/RI

(For T.C. Anderson)
Sam Anderson 7/16/91
Manager, Remediation Programs

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ATTACHMENT 2

QAA TITLE PAGE

QUALITY ASSURANCE ADDENDUM

QAA 1.1
Revision 0

to the

ROCKY FLATS SITE-WIDE QA PROJECT PLAN

FOR CERCLA RI/FS AND RCRA RFI/CMS
ACTIVITIES

for

OPERABLE UNIT NO. 1, 881 HILLSIDE AREA

PHASE III RFI/RI

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

Revision 0

FEBRUARY, 1991

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By George H. Setlock
Date 3/2/91 UNU

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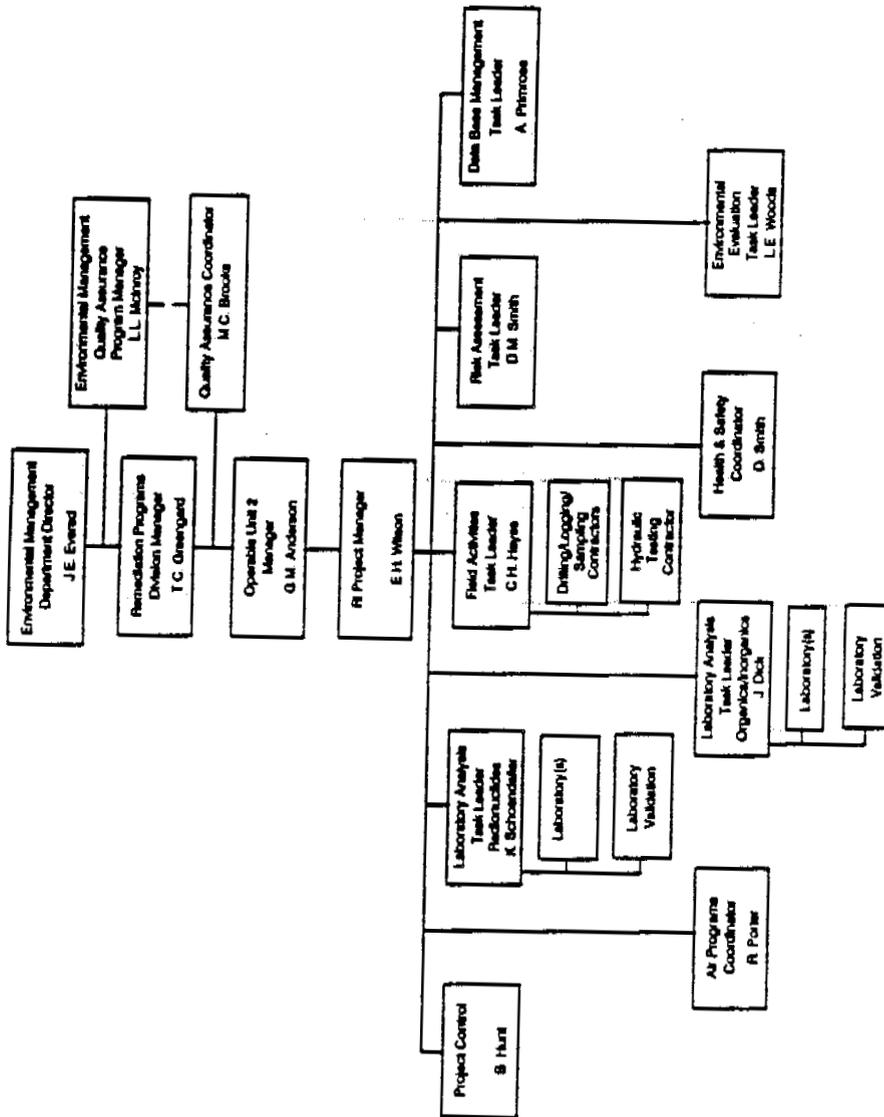
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**ATTACHMENT 3
EXAMPLE ORGANIZATION CHART**

**FIGURE 1. PROJECT MANAGEMENT FOR OPERABLE UNIT 2 (Alluvial),
903 PAD, MOUND, EAST TRENCHES, PHASE II RFI/RI**



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ATTACHMENT 4
EXAMPLE ANALYTICAL METHODS AND DQO'S

QAA for OU-2 (Alluvial) Phase II RFI/RI

Manual: 21100-PH-Q102.1
Issue No.: QAA 2.1 Rev. 0
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ENVIRONMENTAL MANAGEMENT
Quality Assurance Addendum to the Rocky Flats Plant
Quality Assurance Project Plan

ANALYTICAL METHODS, DETECTION LIMITS, AND DATA QUALITY OBJECTIVES

ANALYTES	Method	SW	GW	BIOELEMENT	SED	Required Detection Limits		Precision Objective	Accuracy Objective	
						Water	Soil/Sed.			
INDICATORS	Total Suspended Solids	EPA 160.2 ^a	X ^b			10 mg/L	MA	20%RPD ^c	80-120X LCS Recovery	
	Total Dissolved Solids	EPA 160.1 ^a	X ^b	X ^d		5 mg/L	MA	20%RPD ^c	80-120X LCS Recovery	
	pH	EPA 150.1 ^a	X ^b	X ^d		0.1 pH units	0.1 pH units	MA	±0.05 pH units	
INORGANICS	Target Analyte List - Metals									
	Aluminum	EPA CLP SOW ^e	X			200 ug/L ^f	40 mg/kg ^g	
	Antimony	EPA CLP SOW ^e				40	12			
	Arsenic (GFAA)	EPA CLP SOW ^e				10	2			
	Barium	EPA CLP SOW ^e				200	40			
	Beryllium	EPA CLP SOW ^e				5	1.0			
	Cadmium	EPA CLP SOW ^e				5	1.0			
	Calcium	EPA CLP SOW ^e				5000	2000			
	Chromium	EPA CLP SOW ^e				10	2.0			
	Chromium	EPA CLP SOW ^e				50	10			
	Cobalt	EPA CLP SOW ^e				25	5.0			
	Copper	EPA CLP SOW ^e				5	10			
	Cyanide	EPA CLP SOW ^e				5	10			
	Iron	EPA 335.3 (modified for CLP) ^h				100 ug/L ^f	20 mg/kg ^g	
	Lead (GFAA)	EPA CLP SOW ^e				3	1.0			
	Magnesium	EPA CLP SOW ^e				5000	2000			
	Manganese	EPA CLP SOW ^e				15	3.0			
	Mercury (CVAA)	EPA CLP SOW ^e				0.2	0.2			
	Mercury (CVAA)	EPA CLP SOW ^e				40	8.0			
	Nickel	EPA CLP SOW ^e				5000	2000			
	Potassium	EPA CLP SOW ^e				5	1.0			
	Selenium (GFAA)	EPA CLP SOW ^e				10	2.0			
	Silver	EPA CLP SOW ^e				5000	2000			
Sodium	EPA CLP SOW ^e				10	2.0				
Thallium (GFAA)	EPA CLP SOW ^e				50	10				
Vanadium	EPA CLP SOW ^e				50	10				

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ATTACHMENT 6
EXAMPLE QC SAMPLE COLLECTION/CHECK FREQUENCY

TABLE 2
FIELD QC SAMPLE COLLECTION FREQUENCY

<u>Activity</u>	<u>Frequency</u>
Field Duplicate	1 in 20 ¹
Field Preservation Blanks ²	1 sample per shipping container (or a minimum of 1 per 20 samples)
Trip Blank ³	1 in 20
Equipment Rinsate Blank	1 in 20 ⁴ , or 1 per day
Drilling and Decontamination Fluids	Sample source and analyze for all analytes of interest prior to use.
Triplicate Samples (benthic samples)	For each sampling site.

SAMPLE

1. Or per sampling event, whichever is more frequent.
2. For groundwater samples to be analyzed for inorganics.
3. For groundwater samples to be analyzed for volatile organics only.
4. One equipment rinsate blank in twenty samples, or one per day, whichever is more frequent for each specific sample matrix being collected when non-dedicated equipment is being used.

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ATTACHMENT 7
EXAMPLE FORMAT FOR SAMPLE CONTAINERS,
SAMPLE PRESERVATION, AND HOLDING TIMES

TABLE 3

HOLDING TIMES, PRESERVATION METHODS, AND SAMPLE CONTAINERS FOR BIOTA SAMPLES

	Holding Time From Date Collected	Preservation Method	Container	Approximate Sample Size*
SAMPLES FOR METALS ANALYSES				
TERRESTRIAL VEGETATION				
- Metals Determined by ICP**	8 mos.	Freeze & ship w/dry ice	Paper bag inserted into plastic bag and sealed	25 g
- Metals Determined by GFAA***	6 mos.	Freeze & ship w/dry ice	Paper bag inserted into plastic bag and sealed	25 g
- Hexavalent Chromium	24 hours	Freeze & ship w/dry ice	Paper bag inserted into plastic bag and sealed	25 g
- Mercury	28 days	Freeze & ship w/dry ice	Paper bag inserted into plastic bag and sealed	5 g
Periphyton and Benthic Macroinvertebrates				
- Metals Determined by ICP	8 mos.	Freeze & ship w/dry ice	Plastic	25 g
- Metals Determined by GFAA	6 mos.	Freeze & ship w/dry ice	Plastic	25 g
- Hexavalent Chromium	24 hours	Freeze & ship w/dry ice	Plastic	25 g
- Mercury	28 days	Freeze & ship w/dry ice	Plastic	5 g

SAMPLE