

ROCKY FLATS ENVIRONMENTAL
TECHNOLOGY SITE

EMD OPERATING
PROCEDURES MANUAL
VOL I: FIELD OPERATIONS

Manual No.:
New Manual No.:
Procedure No.:
Page:
Effective Date:
Organization:

INFORMATION ONLY
94-DMR-000-ER-OPS-FO
Table of Contents, Rev 80
1 of 4
02/14/95
Environmental Management

THIS IS ONE VOLUME OF A SIX VOLUME SET WHICH INCLUDES:

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94-DMR-001050	Procedural Clarifications	2	09/27/94
FO.09	Handling of Residual Samples	2	05/12/92

ADMIN RECORD

DOCUMENT CLASSIFICATION REVIEW WAIVER
PER R.B. HOFFMAN, CLASSIFICATION OFFICE
JUNE 11, 1991

A-SW-001310

**ROCKY FLATS ENVIRONMENTAL
TECHNOLOGY SITE****EMD OPERATING
PROCEDURES MANUAL
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94-DMR-000137	Training Requirements Clarification	0	01/28/94
94-DMR-000148	Section FO.23 Modifications	0	02/09/94
94-DMR-001108	Buried Instrumentation and Existing Soil	0	06/14/94
94-DMR-001350	Various Text Additions and Deletions Regarding Drums and Use of SOP FO.29	0	08/16/94
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94-DMR-001226	Allowance of Procedural Use for Waste Piles	0	07/15/94
94-DMR-001741	Permission of Use of Computer-Generated Forms and Other Minor Corrections	0	10/07/94
FO.30	4-I11-ER-OPS-FO.30 - Environmental Restoration Program Division Equipment Operation	0	10/07/94
FO.31	4-I49-ENV-OPS-FO.31 - Groundwater Recovery/Storage System Normal Operations OU1, Bldg 891	0	11/23/94
FO.32	4-I50-ENV-OPS-FO.32 - Treated Effluent Discharge OU1, Bldg 891	0	04/13/94
FO.33	4-I51-ENV-OPS-FO.33 - Treated Effluent Recirculation OU1, Bldg 891	0	12/22/94
FO.34	4-I52-ENV-OPS-FO.34 - Ion Exchange System - Normal Operations OU1, Bldg 891	0	11/23/94
-95-DMR-000061	Addition of OU1 Form	0	02/14/95
FO.35	4-I53-ENV-OPS-FO.35 - Ultraviolet/Hydrogen Peroxide Oxidation System - Normal Operations OU1, Bldg 891	0	11/15/94
-95-DMR-000062	Addition of OU1 Form	0	02/14/95
FO.37	4-I55-ENV-OPS-FO.37 - Neutralization Tank - Normal Operations OU1, Bldg 891	0	11/23/94
FO.38	4-I56-ENV-OPS-FO.38 - Bulk Chemical Handling, Transfer, and Storage, OU1, Bldg 891	0	12/02/94
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FO.47	4-J39-ENV-OPS-FO.47 - Disposal of Residual Accuvac™ Reagent Ampules	0	02/14/95

Refer to 1-A01-PPG-001 for Processing Instructions.
Print or Type All Information (Except Signatures).

1. Date 1/17/95 25. DMR No. 95-DMR-000062

2. Existing Document Number/Revision 4-153-ENV-OPS-FO.35
3. New Document Number or Document Number if it is changed with this Revision N/A
4. Originator's Name/Phone/Pager/Location Brigid Moore / X3185/ D4527/ T130H
5. Document Title Ultraviolet/Hydrogen Peroxide Oxidation System, Normal Ops, OU-1 Bldg 891

6. Document Type Procedure Other _____
7. Document Modification Type (Check only one) New Revision Intent Change Nonintent Change Editorial Correction Cancellation

8. Item	9. Page	10. Step	11. Proposed Modifications
1.	12	New	Add New Step 37. "Log daily water processed on OU-1, Processed Water Tracking Form (see Appendix 5)."
2.	new	N/A	Add new page 23 ^B which will be new Appendix 5 (see Attached). <i>bmm 1/27/95</i>
3.	3	N/A	Add Appendix 5 to the Table of Contents.
4.	2	N/A	Update the LOEP.
5.	N/A	N/A	Update the table of contents for the Manual 5-21000-OPS-FO <i>bmm 1/27/95</i>

12. Justification (Reason for Modification, EJO #, TP #, etc.)

The additional form is included in the procedure to assist in processed water tracking efforts.

If modification is for a new procedure or a revision, list concerning disciplines in Block 13, and enter N/A in Blocks 14 and 15. If modification is for any type of change or a cancellation, organizations are listed in Block 13, then Concurror prints, and signs in Block 14, and dates in Block 15.

13. Organization	14. Print, Sign (if applicable)	15. Date (if applicable)
E. O. M.	M. Broussard <i>/S/</i>	2/5/95
SME	J. R. Cirillo <i>/S/</i>	2/1/95
<i>DA</i>	<i>Y. LUKER</i> <i>Y. Juh</i>	2.9.95

18. Originator's Supervisor (print/sign/date) *G. B. Jones* HARRY E SMITH *Staine E Smith* 1-17-95

17. Assigned SME/Phone/Pager/Location J. R. Cirillo / X5876 / D5477 / T891B
18. Cost Center 0488
19. Charge Number 98902200
20. Requested Completion Date 2/1/95
21. Effective Date 2/14/95

22. Accelerated Review? Yes No
23. ORC Review N/A

24. Responsible Manager (print/sign/date) J. R. Cirillo */S/* 2/1/95

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REVIEWED FOR CLASSIFICATION / UCNI
BY *[Signature]*
DATE 1-26-95

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4-11	11/15/94	
12-13	02/07/95 ¹⁴	95-DMR-000062
14-23	11/15/94	
23A	02/07/95 ¹⁴	95-DMR-000062

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7. INSTRUCTIONS (continued)

Operator (continued)

[36] Close the following valves:

- HVB-201 or HVB 202
- V-75
- HVA-301 or HVA-302
- HVA-203
- V-91
- V-111
- V-112
- V-113
- V-114
- V-115
- V-116

[37] Log daily water processed on OU-1, Processed Water Tracking Form (Appendix 5).

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8. RECORDS

Management of all records is consistent with 1-77000-RM-001, Records Management Guidance for Records Sources.

The log generated as a result of this procedure is considered a quality record, and is managed in accordance with 2-G18-ER-ADM-17.01, Quality Assurance Records Management.

This record is part of the Administrative Record, and is managed in accordance with 3-21000-ADM-17.02, Administrative Records Screening and Processing in addition to 2-G18-ER-ADM-17.01.

There are no nonquality records generated by this procedure.

Project Manager

[1] Submit the Building 891 UV/H₂O₂ Treatment Log for management in accordance with 3-21000-ADM-17.02 and 2-G18-ER-ADM-17.01.

9. REFERENCES

LMI Metering Pump Manual

Peroxidation Systems, Inc. Operation and Instruction Manual

Rocky Flats Plant Operable Unit 1 Groundwater Treatment Facility Health and Safety Plan

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9. References (continued)

1-77000-RM-001, Records Management Guidance for Records Sources

3-21000-ADM-02.01, Personnel Training

2-G18-ER-ADM-17.01, Quality Assurance Records Management

3-21000-ADM-17.02, Administrative Records Screening and Processing

4-I51-ENV-OPS-FO.33, Treated Effluent Recirculation, Operable Unit 1, Building 891

APPENDIX 5

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OU-1 Processed Water Tracking

Month _____

Day	Ion Exchange			U. V. System			Operator
	Daily Gallons	Monthly Total	Running Total	Daily Gallons	Monthly Total	Running Total	
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
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95-DMR-000062

Totals

Rocky Flats Environmental Technology Site

4-J39-ENV-OPS-FO.47

REVISION 0

DISPOSAL OF RESIDUAL ACCUVAC™ REAGENT AMPULES

APPROVED BY:



Director,
Rocky Flats Environmental Restoration
Program Division

1 S.G. Stiger 11-25-95
Print Name Date



Quality Assurance Program Manager,
Data Management and Reporting Services

1 R.S. LUKER 11-24-95
Print Name Date

DOE RFFO/ER Concurrence on file: Yes No NA

Environmental Protection Agency Approval Received: Yes No NA

Responsible Organization: Environmental Restoration Program Division Effective Date: 02-14-95 *dqb*

CONCURRENCE BY THE FOLLOWING DISCIPLINES WILL BE DOCUMENTED IN
THE PROCEDURE HISTORY FILE:

ERPD Environmental Operations Management
Radiological and Health Engineering
Industrial Hygiene
Occupational Safety

Operable Unit 2 Closure
Group 1 Closure
Environmental Protection Management
Data Management and Reporting Services

USE CATEGORY 3

ORC review not required

Periodic review frequency: 3 years from the effective date

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1/16/95

1. PURPOSE

This procedure provides instructions for handling and disposing of AccuVac™ reagent ampules and residual reagents following measurement of aqueous samples for specific parameters (id. est., free chlorine, total chlorine, dissolved oxygen, and nitrate) at the Rocky Flats Environmental Technology Site (Rocky Flats).

2. SCOPE

This procedure applies to Rocky Flats employees and subcontractors involved in the handling and disposing of AccuVac™ reagent ampules and residual reagents.

This procedure addresses the following waste streams:

- Empty decontaminated AccuVac™ glass ampules
- Residual AccuVac™ reagents (id. est., dissolved oxygen, DPD total chlorine, DPD free chlorine, NitraVer™ 5 Nitrate, and NitraVer™ 3 Nitrate) from the original disposal/containment of the AccuVac™ ampules
- Decontamination rinse water
- One-gallon polyethylene containers
- Paper towels and/or "Kimwipes"

3. OVERVIEW

AccuVac™ reagent ampules contain powder chemicals (id est., potassium phosphate, sulfanilic acid) that react with an aqueous sample allowing measurement of specific parameters using a colorimetric spectrophotometer. This procedure describes the handling and disposal of the AccuVac™ residual reagents and ampules following their use.

4. RESPONSIBILITIES

4.1 Rocky Flats Project Manager

Manages the implementation of this procedure.

Ensures that all personnel, including subcontractors, are trained and qualified to perform the duties, tasks, and responsibilities described in this procedure.

Ensures that all core and Environmental Restoration Program Division (ERPD) specific training has been completed and documented, and that copies of all documentation have been forwarded to the ERPD training files.

4.2 ERPD Environmental Operations Management (EOM) Personnel

Directs the collection, transport, and storage of residual AccuVac™ reagents and decontaminated ampules and polyethylene containers generated by subcontractor field personnel.

4.3 Subcontractor Project Manager

Assigns field personnel to implement this procedure and ensures that the procedure is followed correctly, and reports any deviations or nonconformances to the Rocky Flats Project Manager.

4.4 Subcontractor Site Manager

Reports any spills or damage incurred to a polyethylene container as soon as possible to the Rocky Flats Project Manager or a designated Rocky Flats representative.

Performs periodic performance audits of field personnel according to established procedures referenced in the Quality Assurance Project Plan (QAPjP).

Ensures documentation of personnel qualifications performing this procedure are in the subcontractor's project Quality Assurance files.

4.5 Subcontractor Field Personnel

Handles and disposes the AccuVac™ reagent ampules and residual reagents.

Reports any deviations from this procedure to the subcontractor project manager.

Demonstrates a complete understanding of this procedure and receives on-the-job training regarding this procedure prior to initiation of work.

Reports any spills or damage incurred to a polyethylene container as soon as possible to the subcontractor site manager. Transfer damaged polyethylene containers to undamaged polyethylene containers.

5. LIMITATIONS AND PRECAUTIONS

- [1] AccuVac™ NitraVer™ 5 Nitrate and NitraVer™ 3 Nitrate residual reagents shall be handled as a Resource Conservation and Recovery Act (RCRA) hazardous waste and is described in detail in Subsection 7.2.
- [2] Other residual AccuVac™ reagent shall be handled as a non-RCRA waste. The Main Decontamination Facility (MDF) is the area where disposal activities will occur. The subcontractor performing this procedure shall coordinate with the designated MDF subcontractor in accordance with 5-21000-OPS-FO.12, Decontamination Facilities Operations.
- [3] Appropriate equipment (id est., Personal Protective Equipment as specified in the project-specific Health and Safety Plan (HASP) shall be worn at all times during disposal of residual AccuVac™ reagents and ampules and during decontamination procedures.

6. PREREQUISITES

6.1 Planning and Coordination

Subcontractor Site Manager

- [1] Ensure that a minimum of two subcontractor field personnel are qualified, trained, and available to perform this procedure.

6.2 Materials and Equipment

6.2.1 Special Tools and Equipment

ERPD EOM and/or subcontractor field personnel

[1] Ensure that the following equipment is available:

- AccuVac™ Drainer
- One-gallon polyethylene containers
- Indelible marker
- Spray bottle
- Decontamination tub or bucket
- Appropriate health and safety equipment/personnel as required by the project-specific HASP

6.2.2 Consumables

ERPD EOM and/or subcontractor field personnel

[1] Ensure that the following consumables are available:

- Deionized (DI) or distilled water
- Paper towels and/or "Kimwipes"

6.3 Field Preparation

Subcontractor Field Personnel

[1] Three 1-gallon polyethylene containers will be used for this procedure. Each of the polyethylene containers being labeled with one of the following formats:

- "Residual Reagents"
- "Empty Glass Ampules"
- "Residual NitraVer™ 5 Nitrate and NitraVer™ 3 Nitrate"

7. INSTRUCTIONS

7.1 Accuvac™ Reagent Vial Handling and Disposal Procedure

Subcontractor Field Personnel

Personnel will follow the project-specific HASP and procedure described below for AccuVac™ reagent and ampule disposal in the field.

WARNING

The AccuVac™ NitraVer™ 5 Nitrate and NitraVer™ 3 Nitrate residual reagent must be handled as a separate waste to comply with state and federal regulations, and to reduce contamination to personnel, equipment, and surrounding areas.

- [1] Place the bottom of the AccuVac™ ampule in the lid of the AccuVac™ Drainer.

The lid is the smaller of the two pieces with a scoring blade inside.

- [2] Carefully rotate the lid of the AccuVac™ Drainer at least once while applying sufficient pressure to score the bottom of the AccuVac™ ampule.

- [3] Remove the AccuVac™ ampule from the lid and place the bottom of the ampule in the base of the AccuVac™ Drainer.

The base is the larger of the two pieces with a plastic center piece for breaking the scored portion.

- [4] Cover the top of the AccuVac™ ampule with the lid of the AccuVac™ Drainer.
- [5] Press together the AccuVac™ Drainer lid and base.

The scored portion of the AccuVac™ ampule breaks and is retained inside the ampule. The liquid is retained in the AccuVac™ Drainer.

- [6] Remove the empty AccuVac™ ampule with the scored portion from the AccuVac™ Drainer.
- [7] Triple spray rinse the ampules with DI or distilled water and place the empty AccuVac™ ampule in the one-gallon polyethylene container labeled "Empty Glass Ampules".
- [8] Place the rinse solution in the "Residual Reagents" or the "Residual NitraVer™ 5 Nitrate and NitraVer™ 3 Nitrate" labeled polyethylene containers.

NOTE *The AccuVac™ NitraVer™ 5 and NitraVer™ 3 residual reagent must be stored in a separate labeled polyethylene container.*

- [9] Pour the residual reagent from the AccuVac™ Drainer into a one-gallon polyethylene container labeled "Residual Reagents" or "Residual NitraVer™ 5 Nitrate and NitraVer™ 3 Nitrate".
- [10] Triple spray rinse the drainer and the decontamination tub or bucket with DI or distilled water and place the rinse solution in the "Residual Reagents" or the "Residual NitraVer™ 5 Nitrate and NitraVer™ 3 Nitrate" labeled one-gallon polyethylene containers.

WARNING

Contamination of personnel, equipment, and surrounding areas can result when aqueous samples are above background radiological levels prior to the disposition of the AccuVac™ waste.

[11] Transport the "Residual Reagents" one-gallon polyethylene container to the MDF for disposal when the container is 50% full and after the radiological screening results of the aqueous samples have been confirmed to be at or below background radiological levels.

[12] **IF** the radiological results are greater than the background radiological levels, **THEN** notify the Radiological and Health Engineering organization.

[13] Transport the "Empty Glass Ampules" one-gallon polyethylene container to the subcontractor's laboratory waste storage when the container is 50% full and after the radiological screening results of the aqueous samples have been confirmed to be at or below background radiological levels.

The decontaminated empty glass ampules do not require a Property Release Evaluation (PRE), but the entire laboratory waste collected by the subcontractor will be handled in accordance with the Hazardous Waste Requirements (HWR) for laboratory waste and will require a PRE.

[14] **IF** the radiological results are greater than the background radiological levels, **THEN** notify the Radiological and Health Engineering organization.

[15] Transport the "Residual NitraVer™ 5 Nitrate and NitraVer™ 3 Nitrate" one-gallon polyethylene container to Building 374 after the radiological screening results of the aqueous samples have been confirmed to be at or below background radiological levels.

[16] **IF** the radiological results are greater than the background radiological levels, **THEN** notify Radiological and Health Engineering organization.

7.2 Waste Management

Subcontractor Field Personnel

As noted in subsection 7.1, the following waste streams are generated:

- Empty decontaminated AccuVac™ glass ampules
- Residual AccuVac™ reagents (id. est., dissolved oxygen, DPD total chlorine, DPD free chlorine, NitraVer™ 5 Nitrate, and NitraVer™ 3 Nitrate) from the original disposal/containment of the AccuVac™ ampules
- Decontamination rinse water
- One-gallon polyethylene containers
- Paper towels and/or "Kimwipes"

[1] The residual AccuVac™ reagent and rinse solution will be transported from the field to the Decontamination Facility, Building 374, or labeled and stored.

[2] The residual NitraVer™ 5 Nitrate and NitraVer™ 3 Nitrate reagent will be containerized separate from other AccuVac™ reagents and transported to Building 374 for disposal. Handle decontaminated NitraVer™ 5 Nitrate glass ampules in accordance with subsection 7.1, step [13].

[3]. One-gallon polyethylene containers used to store and transport the liquids will be decontaminated at the Decontamination Facility in accordance with 5-21000-OPS-FO.3, General Equipment Decontamination and 5-21000-OPS-FO.12, Decontamination Facility Operations.

[4] The decontaminated AccuVac™ ampules, one-gallon polyethylene containers, and paper towels or "Kimwipes" will be handled as laboratory waste in accordance with HWR Manual by EOM.

8. RECORDS

Rocky Flats Project Manager and ERPD EOM Personnel

[1] There are no quality or nonquality records generated by this procedure.

9. REFERENCES

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

5-21000-OPS-FO.3, General Equipment Decontamination

5-21000-OPS-FO.12, Decontamination Facilities Operations