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EG&G - ROCKY FLATS PLANT  
ENVIRONMENTAL MANAGEMENT

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**ROCKY FLATS PLANT  
EMD OPERATING  
PROCEDURES MANUAL**

**Manual No.: 5-21000-OPS-FO  
Procedure No.: Table of Contents, Rev 13  
Page: 1 of 2  
Effective Date: 05/12/92  
Organization: Environmental Management**

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

- VOLUME I: FIELD OPERATIONS (FO)**
- VOLUME II: GROUNDWATER (GW)**
- VOLUME III: GEOTECHNICAL (GT)**
- VOLUME IV: SURFACE WATER (SW)**
- VOLUME V: ECOLOGY (EE)**
- VOLUME VI: AIR (AP)**

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FO.02	Transmittal of Field QA Records	2	09/23/91
FO.03	General Equipment Decontamination	2	05/12/92
FO.04	Heavy Equipment Decontamination	2	05/12/92
DCN 92.01	Clarification of Work Area	1	01/31/92
DCN 92.02	Clarification of Center Bit Decontamination	1	03/12/92
FO.05	Handling of Purge and Development Water	2	05/12/92
FO.06	Handling of Personal Protective Equipment	2	05/12/92
FO.07	Handling of Decontamination Water and Wash Water	2	05/12/92
FO.08	Handling of Drilling Fluids and Cuttings	2	05/12/92
FO.09	Handling of Residual Samples	1	08/30/91
FO.10	Receiving, Labeling, and Handling Environmental Materials Containers	2	05/12/92

**ADMIN RECORD**

A-SW-001020

REVIEWED FOR CLASSIFICATION/UCM

By [Signature]  
Date 10/18/92

[Signature] 4/2/92

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DCN 92.04	Clarification of Seismic Lines	1	04/13/92
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ENVIRONMENTAL MANAGEMENT

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**HANDLING OF PURGE AND DEVELOPMENT WATER**

**EG&G ROCKY FLATS PLANT  
EMD MANUAL OPERATION SOP**

**Manual:  
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Page:  
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Organization:**

**5-21000-OPS  
FO.5, Rev. 2  
1 of 8  
March 1, 1992  
Environmental Management**

Category 2

**TITLE:  
HANDLING OF PURGE AND  
DEVELOPMENT WATER**

Approved By:

*[Signature]*  
(Name of Approver)

**MAY 12 1992**

\_\_\_\_\_  
(Date)

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REVIEWED FOR CLASSIFICATION/UCNI

By *[Signature]*  
Date March 11, 1992

## HANDLING OF PURGE AND DEVELOPMENT WATER

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### 2.0 PURPOSE AND SCOPE

This standard operating procedure (SOP) describes the procedures that will be used for containing, moving, and emptying wastewater generated during well development at the Rocky Flats Plant (RFP).

### 3.0 RESPONSIBILITIES AND QUALIFICATIONS

Personnel using light or heavy equipment, scientific monitoring devices, or operating company vehicles must have appropriate training and/or licenses.

The subcontractor's site manager is responsible for coordinating the removal and transfer of all environmental materials from the project work area.

The subcontractor is also responsible for moving purge and development water to holding tanks located at the central EG&G decontamination facility.

It is the subcontractor's site manager's responsibility to report as soon as possible to the EG&G project manager or a designated EG&G representative any damage incurred to a drum. Types of damage include holes, damage to the lid seal, or any other problem that may compromise drum integrity. Damaged drums must have their contents transferred to an undamaged drum.

The subcontractor's site manager will assign personnel to conduct weekly inspections of all the drums issued to the subcontractor until relinquished to EG&G. These inspections will ensure that drum integrity is maintained.

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Radiological Engineering-approved subcontractor Health and Safety Specialists are responsible for conducting radiation screenings of equipment, samples, and personnel before they leave the work area.

EG&G's Waste Operations personnel are responsible for the collection, movement, storage, treatment, and disposal of environmental liquids from the main decontamination facility.

#### 4.0 REFERENCES

#### 4.1 SOURCE REFERENCES

The following is a list of references reviewed prior to the writing of this procedure:

EG&G. Policies: Rocky Flats Plant. Use and Color Coding of Drums. RFFPM MAT 20-005. November 3, 1989.

Environmental Protection Agency (EPA). A Compendium of Superfund Field Operations Methods. EPA/540/P-87/001. December 1987.

RCRA Facility Investigation Guidance. Interim Final. May 1989.

#### 4.2 INTERNAL REFERENCES

Related SOPs cross-referenced in this SOP are:

- SOP FO.3, General Equipment Decontamination
- SOP FO.7, Handling of Decontamination Water and Wash Water
- SOP FO.8, Handling of Drilling Fluids and Cuttings

## HANDLING OF PURGE AND DEVELOPMENT WATER

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- SOP FO.10, Receiving, Labeling, and Handling Environmental Materials Containers
- SOP FO.12, Decontamination Facility Operations
- SOP FO.15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs)
- SOP FO.16, Field Radiological Measurements

### 5.0 EQUIPMENT

#### 5.1 EQUIPMENT NEEDED TO HANDLE PURGE AND DEVELOPMENT WATER

The following is a list of equipment needed for the proper handling of purge and development water:

- 55-gallon, open top (removable top), gray drums or liquid containers appropriately sized for the task
- Hand, electric, or gas powered pumps
- An organic vapor detector (OVD)
- A field radiation monitor
- Shovel (scoop type)
- Clear plastic sheeting for placing around the well head to prevent cross contamination of the surface

## HANDLING OF PURGE AND DEVELOPMENT WATER

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- Splash protective and personal protective equipment as required by the site-specific Health and Safety Plan

### 6.0 HANDLING OF PURGE AND DEVELOPMENT WATER

Water used during the development of an environmental monitoring well is considered purge and development water. Monitoring well development is the process by which the drilling fluids and mobile particulates are removed from within and adjacent to newly installed wells. This process can also be used to remove sediment or other built-up materials from older wells.

Each project work area will be characterized by EG&G prior to any field activity. Work area characterizations will be based on the historical background of the work area and include the chemical results of previous soil and groundwater analyses and the results of field radiological surveys conducted by Radiological Engineering-approved subcontractor Environmental Health and Safety Specialists. Work areas associated with the Environmental Management (EM) program field operations fall into two characterizations: potentially contaminated and not potentially contaminated. Work areas currently characterized as potentially contaminated include the following:

- Individual Hazardous Substance Sites (IHSSs)
- Identified Groundwater Plume Areas
- Americium Zone at OU No. 2
- Protected Areas (PA)

See SOP FO.10, Receiving, Labeling, and Handling Environmental Materials Containers for specific work areas currently characterized as potentially contaminated. Appendix A (SOP FO.10) is a list of the IHSSs at RFP.

## HANDLING OF PURGE AND DEVELOPMENT WATER

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Solid environmental materials generated during EM field operations will be containerized as they are generated in 55-gallon or 30-gallon gray drums until associated samples are characterized. Environmental liquids will be moved to holding tanks located at the main decontamination facility (see SOP FO.12, Decontamination Facility Operations). The use of field monitors, including an OVD and radiation monitor, for the detection of volatile organics and radionuclides is discussed in SOPs FO.8, Handling of Drilling Fluids and Cuttings; FO.15, Photoionization Detectors (PIDs) and Flame Ionization Detectors (FIDs); and FO.16, Field Radiological Measurements.

The types of contamination which may be encountered within potentially contaminated work areas include the following:

- Low-level radioactively contaminated substances
- Nonradioactive RCRA-regulated hazardous (hazardous) substances
- Mixed (low-level radioactive and hazardous substances)

Regardless of the work area characterization, all purge and development water will be placed in the liquid holding tanks at the main decontamination facility. In the field, the purge and development water will be temporarily stored in 55-gallon, open top, gray drums or appropriately sized containers. Liquid containers will be marked with the words "NONPOTABLE PENDING ANALYSIS" as described in SOP FO.10, Receiving, Labeling, and Handling Environmental Materials Containers. Field personnel will decant the environmental liquids from one drum (or container) to another (or from a trough to a drum or transfer container) prior to moving if the amount of sludge or sediment within the environmental liquids is substantial. The residual sediment will be drummed as solid environmental materials (see SOP FO.8, Handling of Drilling Fluids and Cuttings). Characterization will be based on analytical results of the samples corresponding to the cuttings associated with the drill site.

## HANDLING OF PURGE AND DEVELOPMENT WATER

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The liquid containers will be moved to EG&G's main decontamination facility by the subcontractor. The decontamination facility will have an area specifically designed for environmental liquids. The environmental liquids area includes a process for separating solids from the liquids. The subcontractor will empty the entire container's contents into this environmental liquids area. (See SOP FO.12, Decontamination Facility Operations, for details pertaining to the environmental liquids area.)

The liquid containers will be decontaminated between each use. If gray drums are used, pertinent information regarding the use of gray drums will be documented on the Drum Field Log Form (Form FO.10A, see Section 8.0 - Documentation).

The drums containing residual sediment will be brought to the drum transfer area at the main decontamination facility and transferred to the custody of EG&G Waste Operations personnel.

Environmental liquid containers will be decontaminated between each use.

### 7.0 DECONTAMINATION

Equipment used for the development of a monitoring well located within a potentially contaminated work area will be decontaminated according to SOP FO.3, General Equipment Decontamination. If positive readings above background were detected during field monitoring within not potentially contaminated work areas, equipment will be decontaminated according to SOP FO.3.

In not potentially contaminated work areas, where no verified detections were encountered during field monitoring, the equipment used will be power sprayed and rinsed in the field in accordance with SOP FO.3, General Equipment Decontamination.

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Decontamination and wash water will be disposed according to SOP FO.7, Handling of Decontamination Water and Wash Water.

### 8.0 DOCUMENTATION

#### 8.1 DRUM FIELD LOG FORM

A Drum Field Log Form (Form FO.10A) will be kept on each gray drum used to move environmental liquids. The Drum Field Log Form will be used as a "cradle to grave" record. The following information will be documented on the form:

- Drum ID Number
- Date of issuance
- Location in field
- Contents
- Fill date
- Date of decontamination and location
- Date returned to EG&G

Entries made on the Drum Field Log Form may be supported with entries in a field logbook.

**DRUM FIELD LOG FORM**

NAME OF THE SUBCONTRACTOR \_\_\_\_\_  
DRUM ID NUMBER WITH SUB. ID \_\_\_\_\_

DRUM ISSUE DATE \_\_\_\_\_  
LOCATION OF ISSUANCE \_\_\_\_\_  
PROJECT NAME & NUMBER \_\_\_\_\_  
LOCATION OF FIELD ACTIVITY \_\_\_\_\_  
ASSOCIATED WELL, BORING, OR \_\_\_\_\_

CONTENTS OF DRUM \_\_\_\_\_  
SUBSURFACE INTERVALS (IF SOILS) \_\_\_\_\_  
\_\_\_\_\_

ASSOCIATED SAMPLE ID NUMBERS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE DRUM WAS FILLED \_\_\_\_\_  
SIG. OF PERSON FILLING THE DRUM \_\_\_\_\_

**IF SOLID ENVIRONMENTAL MATERIALS**  
LOCATION OF TEMP. STORAGE AREA \_\_\_\_\_  
DATE DRUM RETURNED TO EG&G \_\_\_\_\_  
SIG. OF EG&G REPRESENTATIVE \_\_\_\_\_

**IF ENVIRONMENTAL LIQUIDS**  
DATE & LOCATION WHERE CONTENTS WERE EMPTIED AND DECONNED \_\_\_\_\_  
(e.g. 2/18/91 DECON PAD # \_\_\_\_\_) \_\_\_\_\_  
\_\_\_\_\_