

ROCKY FLATS PLANT
EMD RFI/RI WORK PLAN OU-5
WOMAN CREEK PRIORITY
DRAINAGE

Manual No.: 21100-WP-OU 05.1
Procedure No.: Table of Contents, Rev 1
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ROCKY FLATS PLANT
ENVIRONMENTAL MANAGEMENT DEPARTMENT

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ATTACHMENT
for Work Plan OU-5 Woman Creek Priority Drainage

- Insert new cover pages for each volume, and insert new spines with your copy number on it.
- Insert new Table of contents, and detailed Table of Contents and destroy old TOC.
- Insert new Executive Summary and destroy old ES.
- Insert new pages and **destroy old corresponding page numbers.**
 - Insert page 1 of section 1.
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 - **Please insert new section 7 and discard all of the old section 7 EXCEPT for the following two color figures: Figure 5-7 (1 of 2 and 2 of 2). Insert the old figure 5-7 (1 of 2 and 2 of 2) in your new section.**
 - Insert page 1 of section 8.
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 - Insert new section 12.
- Note that volume II has no changes except for adding second copy of Table of Contents and cover/spine.

Any questions please call Carlotta Muheim at 966-3893.

EG&G ROCKY FLATS PLANT
RFI/RI Work Plan for OU5

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EG&G - ROCKY FLATS PLANT
ENVIRONMENTAL MANAGEMENT DEPARTMENT

4.0

DATA NEEDS AND DATA QUALITY OBJECTIVES

The primary objective of a RCRA Facility Investigation (RFI)/Remedial Investigation (RI) is to collect the data necessary to determine the nature, distribution, and migration pathways of contaminants. This information is used to support a baseline risk assessment and environmental assessment. These assessments determine the need for remediation and are used to evaluate remedial alternatives. Five general goals of an RFI/RI (U.S. EPA 1988a) are to

- Characterize site physical features
- Define contaminant sources
- Determine the nature and extent of contamination
- Describe contaminant fate and transport
- Provide a baseline risk assessment

Data quality objectives (DQOs) are qualitative and quantitative statements that describe the quality and quantity of data required by the RFI/RI (U.S. EPA 1987a). The DQO process is divided into three stages:

- Stage 1 - Identify decision types
- Stage 2 - Identify data uses/needs
- Stage 3 - Design data collection program

Through application of the DQO process, site-specific RFI/RI goals are established and data needs are identified for achieving those goals. This section of the RFI/RI work plan proceeds through the DQO process.

4.1 STAGE 1 - IDENTIFY DECISION TYPES

4.1.1 Identify and Involve Data Users

Data users are the decision makers and the primary and secondary data users. The decision makers for OU5 are the management and regulatory personnel for EG&G, the Department of Energy (DOE), the Environmental Protection Agency (EPA), and the Colorado Department of Health (CDH). EG&G's contractor will provide day-to-day management of the RI in accordance with this work plan. The decision makers have been and are involved in the OU5 DQO process through the Interagency Agreement (IAG), which specifies the minimum level of effort for the Phase I RI. The decision makers remain involved through the review and approval process specified in the IAG.

Primary data users are those individuals involved in ongoing RI activities. These are EG&G and EG&G's contractor technical staff. They will be involved in the collection and analysis of the data and in the preparation of the RI Report, including the Baseline Risk Assessment and the Environmental Assessment.

Secondary data users are those users who rely on RI outputs to support their activities. Secondary data users may include EG&G personnel working on other operable units or sitewide projects, EPA and CDH.

4.1.2 Evaluate Available Data

The historical and current conditions of each site are described in Section 2.0 of this work plan.

The following is a summary of the existing information based on the data presented in Section 2.0.

- Contamination by radioactive materials is known or suspected to exist at the Original Landfill (IHSS 115), Ash Pits (IHSS 13), C-Series Ponds (IHSS 142), in Woman Creek and in the South Interceptor Ditch.
- Metals contamination may also exist in these IHSSs, as well as in Woman Creek and the South Interceptor Ditch.
- Contamination at the IHSSs, if any, due to other substances is unknown at this time.
- The extent of contamination, if any, at the IHSSs in OU5 is unknown at this time.
- The presence of contamination is uncertain in the Surface Disturbance areas. Investigations should focus on confirmation of the presence or absence of contamination.
- There appears to be a potential for contamination from topographically or hydraulically upgradient sources (i.e., other operable units) to be present at the IHSSs.

4.1.3 Develop Conceptual Models

A generic conceptual model has been developed for the IHSSs in Subsection 2.7. This model includes description of potential sources, pathways and receptors. Since very few previous studies have been conducted, the model is basic. It is not known if the sources or pathways actually exist at the IHSSs.

4.1.4 Specify Phase I RFI/RI Objectives and Data Needs

Based on existing data and the IHSS conceptual models, site-specific Phase I RFI/RI objectives/data needs associated with identifying contaminant sources and the nature and extent of contamination are shown in Table 4-1. Identification of contaminant plumes will be used at several sites to assist in identification and characterization of contaminant sources.

The objectives of the Phase I RFI/RI are:

- To characterize the physical and hydrogeologic setting of the IHSSs
- To assess the presence or absence of contamination at each site
- To characterize the nature and extent of contamination at the sites, if present
- To support the Phase I Baseline Risk Assessment and Environmental Evaluation

That additional phases of investigation and risk assessment may be required at some IHSSs, particularly IHSS 115 (see Section 7.0).

4.2 STAGE 2 - IDENTIFY DATA USES/NEEDS

Stage 2 of the DQO process defines data uses and specifies the types of data needed to meet the project objectives. The summary of Stage 2 of the DQO process is presented as Table 4-1.

4.2.1 Identify Data Uses

RI/FS data uses can be described in general purpose categories:

- Site characterization
- Health and safety
- Risk assessment

- Evaluation of alternatives
- Engineering design of alternatives
- Monitoring during remedial action
- PRP determination

Since this work plan describes a Phase I RI, data uses such as engineering design and monitoring during remediation (both remedial action activities) will not be considered. The data use for PRP determination is also not appropriate to this work plan. The remaining four data uses will be important in meeting the objectives identified in Subsection 4.1.4.

4.2.2 Identify Data Types

Data types can be specified in broad groups initially and then divided into more specific components. For the Phase I investigation, soil, sediment, groundwater and surface water samples will be collected. In addition, radiation surveys will be conducted over most of the units. These data types will provide broad Phase I information regarding the presence or absence of contamination at the units. Selection of chemical analyses and physical testing will be based on the objectives of the Phase I program and on the past activities at the units. Data types are listed in Table 4-1 as sample/analysis methods.

4.2.3 Identify Data Quality Needs

EPA defines five levels of analytical data as follows (U.S. EPA 1987a):

- Level I - field screening or analysis using portable instruments. Results are often not compound-specific and not quantitative but results are available in real-time. It is the least costly of the analytical options.
- Level II - field analyses using more sophisticated portable analytical instruments: in some cases, the instruments may be set up in a mobile laboratory on site. There is a wide range in the quality of data that can be generated. The quality depends on the use of suitable calibration standards, reference materials, and sample preparation equipment; and the training of the operator. Results are available in real-time or several hours.
- Level III - all analyses performed in an off-site analytical laboratory. Level III analyses may or may not use Contract Laboratory Program (CLP) procedures, but do not usually utilize the validation or documentation procedures required of CLP Level IV analysis. The laboratory may or may not be a CLP laboratory.

- Level IV - CLP routine analytical services (RAS). All analyses are performed in an off-site CLP analytical laboratory following CLP protocols. Level IV is characterized by rigorous QA/QC protocols and documentation.
- Level V - analysis by non-standard methods. All analyses are performed in an off-site analytical laboratory which may or may not be a CLP laboratory. Method development or method modification may be required for specific constituents or detection limits. CLP special analytical services (SAS) are Level V.

The levels appropriate to the data need and data use have been specified in Table 4-1 for each data need. The levels as they apply to this work plan and specific analyses are presented in Table 4-2.

4.2.4 Identify Data Quantity Needs

Data quantity needs are based primarily on the quantities specified in the IAG. Additional data points have been added, where appropriate, to fill a data need. The Phase I data will be evaluated to determine the appropriate number of samples to be obtained in subsequent phases of the RI, as appropriate.

4.2.5 Evaluate Sampling/Analysis Options

The sampling/analysis approach for this Phase I work plan is based on a staged approach. Screening level sampling and analysis is followed by sampling of areas of anomalous radiation readings or other areas identified during screening. Where no data are available, a grid system will be used.

4.2.6 Review PARCC Parameter Information

PARCC (precision, accuracy representativeness, completeness and comparability) parameters are indicators of data quality. Precision, accuracy and completeness goals are established for this work plan based on the analyses being performed and the analytical levels. PARCC goals are specified in the Quality Assurance Addendum (QAA) in Section 10.0 of this work plan.

4.3 STAGE 3 - DESIGN DATA COLLECTION PROGRAM

The purpose of Stage 3 of the DQO process is to design the specific data program for the Phase I Woman Creek drainage RI. To accomplish this, the elements identified in Stages 1 and 2 and the IAG are assembled, and the Sampling and Analysis Plan (SAP) is prepared. The SAP consists of a Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPJP). These two components are addressed in Sections 7.0 and 10.0 of this work plan.