

1.0 Introduction

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) is responsible for implementing the final response action selected in the *Final Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit* (CAD/ROD) (DOE 2006a) issued September 29, 2006, for the Rocky Flats Site (Site). Prior to the CAD/ROD, cleanup and closure activities were completed in accordance with the requirements of the *Rocky Flats Cleanup Agreement* (RFCA) (CDPHE et al. 1996). Under the CAD/ROD, two Operable Units (OUs) were established within the boundaries of the Rocky Flats property: the Peripheral OU (POU) and the Central OU (COU). The COU consolidates all areas of the Site that require additional remedial or corrective actions, while also considering practicalities of future land management. The POU includes the remaining, generally unimpacted portions of the Site and surrounds the COU. The response action in the Final CAD/ROD is no action for the POU, and institutional and physical controls with continued monitoring for the COU. The Off-Site Areas at Rocky Flats, known as OU 3, were addressed under a separate no-action CAD/ROD dated June 3, 1997.

The CAD/RODs for OU 3 and the POU determined that conditions in those OUs were suitable for unrestricted use. As such, the U.S. Environmental Protection Agency (EPA) published a Notice of Intent for Partial Deletion (NOID) of the Rocky Flats Site (Plant) from the National Priorities List (NPL) on March 13, 2007 (*72 Federal Register* [FR] 11313, March 13, 2007) to delete the POU and OU 3 from the NPL. The NOID was based on the results of the remedial investigations leading to the CAD/ROD no-action remedies being selected for these OUs. The NOID states that because no hazardous substances occur in the OUs above levels that allow for unlimited use and unrestricted exposure, no 5-year review was required for these OUs. EPA subsequently published a Notice of Partial Deletion from the NPL for the POU and OU 3 on May 25, 2007 (*72 FR* 29276, May 25, 2007).

On July 12, 2007, most of the property outside the COU was transferred to the U.S. Department of the Interior for establishment of a National Wildlife Refuge managed by the U.S. Fish and Wildlife Service (USFWS). EPA certified that cleanup and closure of Rocky Flats was complete and that the COU remedy was operating properly and successfully, in accordance with requirements for DOE to transfer land to USFWS for establishing the Refuge. DOE retained the COU and is responsible for implementing the CAD/ROD final response action and ensuring that it remains protective of human health and the environment. The monitoring, surveillance, and maintenance activities for which quarterly, annual, and 5-year review reports are issued are included in the *Rocky Flats Legacy Management Agreement* (RFLMA) (DOE 2007a).

RFLMA, signed March 14, 2007, superseded RFCA. RFLMA is a Federal Facility Agreement and Consent Order under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and the Colorado Hazardous Waste Act, between DOE, EPA Region 8, and the Colorado Department of Public Health and Environment (CDPHE). The purpose of RFLMA is to establish the regulatory framework for Attachment 2, “Legacy Management Requirements.”

RFLMA Attachment 2, Section 7.0, requires DOE to provide reports pertaining to the surveillance and maintenance of the remedy prescribed in the CAD/ROD on a calendar quarter and annual basis. The fourth quarterly report information is to be included in the annual report.

RFLMA Attachment 2, Section 7.2, specifies that the annual reports may include a summary for the previous quarter and that the following will be included in annual reports:

- A discussion of surface-water monitoring data;
- A discussion of groundwater monitoring data;
- A discussion of groundwater treatment system monitoring data;
- A discussion of ecological sampling data;
- Adverse biological conditions;
- A summary of actions taken in response to reportable conditions;
- A summary of maintenance and repairs;
- Inspection reports;
- Verification of the Environmental Covenant and evaluation of the effectiveness of institutional controls (ICs);
- The Original Landfill (OLF) Monitoring Report (see Table 3 and Section 6.1 of the *Final Landfill Monitoring and Maintenance Plan, Rocky Flats Environmental Technology Site, Original Landfill* [OLF M&M Plan] [DOE 2006b]);
- The Present Landfill (PLF) Monitoring Report (see Table 3 and Section 6.1 of the *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan, U.S. Department of Energy Rocky Flats Site* (PLF M&M Plan) [DOE 2008a]);
- Assessments of analytical data, including laboratory audits; and
- Other conditions or actions taken that are pertinent to the continued effectiveness of the remedy.

This Calendar Year (CY) 2008 annual report contains the summary for the fourth quarter of CY 2008.

The *Rocky Flats Site Operations Guide* (RFSOG) (DOE 2009a) was prepared by LM as a document to guide work at the Site. The RFSOG provides details on the surveillance and maintenance needed to satisfy the requirements of the CAD/ROD as well as best management practices (BMPs) at the Site. As a “desktop procedure,” the RFSOG explains how DOE will fulfill its long-term surveillance and maintenance obligations at the Site.

While the specific BMPs are not subject to regulation under RFLMA, this annual report includes a discussion of activities related to implementing BMPs to document the information for future reference and for a perspective of the work conducted over the year.

1.1 Purpose and Scope

The purpose of this report is to inform the regulatory agencies and stakeholders of the surveillance, monitoring, and maintenance activities being conducted at the Site. LM provides periodic communications such as this report and through other means such as Web-based tools and public meetings.

This annual report focuses on routine surveillance, maintenance, and monitoring activities that were conducted during CY 2008 and, as stated previously, also includes information for the fourth quarter of CY 2008. Topics covered include Site operations and maintenance (Section 2.0) and environmental monitoring, including water, air, and ecological monitoring (Section 3.0). Data management, data validation, and an assessment of data quality are also included in Section 3.0. References cited in this report are included in Section 4.0.

Supporting information is provided in a series of appendixes. Appendix A provides the hydrologic data; Appendix B provides the water-quality data. The fourth quarter of CY 2008 landfill inspection forms for the PLF and OLF are included in Appendix C. RFLMA and RFSOG data evaluation flowcharts that were used are provided in Appendix D. Appendix E contains the Los Alamos National Laboratory (LANL) reports titled *Thermal Ionization Mass Spectrometry Uranium Results for September 2008 RFETS Waters* and *Thermal Ionization Mass Spectrometry Uranium Results for November 2008 RFETS Waters*. The report *SPPTS Phase III: Pilot-Scale Optimization of Nitrate Treatment* is included in Appendix F. Appendix G contains the RFLMA contact records issued during CY 2008.

1.2 Background

Surveillance, maintenance, and monitoring activities are conducted according to RFLMA. RFLMA incorporates the following plans:

- The OLF O&M Plan (DOE 2006b); and
- The PLF M&M (DOE 2008a).

RFLMA Attachment 2 stipulates that DOE employ administrative procedures to control activities in accordance with the ICs and to meet quality assurance and control program requirements. Other Site procedures are established to guide work and implement BMPs. These procedures are referenced in the RFSOG and include:

- *The Operations and Maintenance Plan for Rocky Flats Surface Water Control Project* (DOE 2008b);
- *The Operations and Maintenance Manual for the Rocky Flats Groundwater Plume Treatment Systems* (DOE 2009b);
- *The Rocky Flats, Colorado, Site Revegetation Plan* (DOE 2009c);
- *The Erosion Control Plan for the Rocky Flats Property Central Operable Unit* (DOE 2007b);
- *The Rocky Flats, Colorado, Site Vegetation Management Plan* (DOE 2009d);
- *The Ecological Monitoring Methods Handbook for the Rocky Flats, Colorado, Site* (DOE 2008c); and
- *The Legacy Management CERCLA Sites Quality Assurance Project Plan* (LMS/PLN/S04353).

1.3 RFLMA Contact Records

This section provides a summary of the status of activities addressed by RFLMA contact records issued during 2008. RFLMA references the use of contact records to document CDPHE oral approvals of field modifications to implement approved response actions (see RFLMA paragraph 34). RFLMA Attachment 2 also references the use of contact records to document the outcome of consultation related to addressing any reportable conditions (see RFLMA Attachment 2, Section 6.0). Finally, the Rocky Flats Site Legacy Management Public Involvement Plan (PIP), in RFLMA Appendix 2, also provides that a contact record of consultative process discussions between the RFLMA parties will be made available to the Rocky Flats Stewardship Council and other interested stakeholders as early in the process as is practicable following signature approval by the parties. The PIP process to make contact records available is implemented by posting contact records on the Rocky Flats public website and by promptly notifying stakeholders (by e-mail) that the contact record is posted.

The RFLMA parties agreed, as documented in RFLMA Contact Record 2007-08, that the status of actions or activities in RFLMA contact records will be documented by DOE from time to time, and will be included in RFLMA quarterly and annual surveillance and maintenance reports for tracking purposes. The RFLMA parties also agreed that to facilitate the status reporting, contact records should include a short discussion of the anticipated actions or activities to close out the RFLMA contact record. Thus, RFLMA Contact Record 2007-08 and subsequent contact records will include the closeout discussion.

Table 1–1 lists the RFLMA contact records issued in 2008 and their status as of December 31, 2008. The table also includes contact records that were issued in 2007, were discussed in the 2007 Annual Report, and were not closed by the end of 2007. Appendix G contains copies of the these contact records.

Table 1–1. Status of RFLMA Contact Records

Contact Record No.	Purpose	Date Posted on Rocky Flats LM Website	Status as of December 31, 2008
2008-01	Completion of additional ecological sampling in accordance with RFLMA Attachment 2, Table 5	4/28/08	Actions completed—closed
2008-02	Discussion and approval of excavation greater than 3 feet below grade to breach Dams A-1, A-2, B-1, B-2, B-3, and B-4	6/25/08	Under construction—closed out when the as-built drawings are completed for the construction work, the Central OU topography maps have been updated with the final elevations, and the two monitoring locations are reestablished.
2008-03	Exploratory excavations to greater than 3 feet below grade generally between the former Interceptor Trench Pump House and Solar Ponds Plume Treatment System	5/20/08	Actions completed—closed
2008-04	Notification of well replacement (well 45605) and well identification change (to 45608)	7/9/08	To be closed out when the RFLMA Attachment 2 modification incorporating the well number change is approved.
2008-05	Boron and uranium in groundwater downgradient of the Original Landfill	7/9/08	To be closed out when sufficient RFLMA samples show the trend calculations are completed and a determination of increasing, indeterminate, or decreasing trends is made.
2008-06	Management of intercepted groundwater during SPPTS repair or maintenance activities	7/9/08	Actions continuing
2008-07	Path forward for OLF Seep 7 drain extension, berm maintenance and repair, perimeter channel slope cut and fill, and modification of the OLF M&M Plan	9/3/08	Construction completed—closed out when conforming modifications to OLF M&M Plan and RFLMA are approved.
2008-08	Construction of collection sump for SPPTS	9/9/08	Actions completed—closed
2008-09	Revision of sampling locations to reflect Site reconfiguration (Sentinel well TH046992 not needed in light of nearby location of Sentinel well 95099 and SPPMM01 replaced by SPOUT)	9/20/08	Actions completed—closed (the next RFLMA Attachment 2 modification will incorporate the well number change).
2007-06	Evaluation of elevated nitrate in groundwater samples from Area of Concern well B206989	10/16/07	Continuing monitoring and evaluation
2007-07	Replacement of monitoring well 45605 (B991 slump)	12/10/07	Actions completed—closed
2007-08	Changes to PLF inspection and monitoring frequencies and modification of the PLF M&M Plan	12/26/07	Actions completed—closed

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