



ROCKY FLATS

U.S. DEPARTMENT OF ENERGY  
ROCKY FLATS ENVIRONMENTAL  
RESTORATION MANAGEMENT

**DOE-RFFO  
ENVIRONMENTAL  
RESTORATION  
PROGRAM**

**Monthly Report for  
January 1995**



**February 20, 1995**

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## EXECUTIVE SUMMARY

### SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR JANUARY 1995

On January 18, 1995, Operable Unit (OU) 1 received verbal notification from the Environmental Protection Agency (EPA) that a three-week schedule request will be granted on the Interagency Agreement (IAG) milestone for the delivery of the Final Corrective Measure Study/Feasibility Study (CMS/FS). Written verification of the three-week schedule extension was received on January 20, 1995.

In OU 3, the air sampling station on 86th Avenue became operational the week of January 23, 1995. The initial performance test showed that the station is performing above the expected cubic feet per minute.

On January 15, 1995, the bulk sludge removal was completed in the OU 4 Pond 207C. This activity completes the IAG milestone deliverable of All Solar Ponds Emptied of Water and Sludge. Hard salt deposits were discovered on nearly half of the pond's bottom in December 1994 and threatened the timely completion of this IAG deliverable. By utilizing multiple front end loaders to dislodge the deposits, the remaining salts and water were removed, and the sludge removal was completed ahead of schedule.

The final preparation of the OU 4 Final Phase I Proposed Interim Measure/Interim Remedial Action (IM/IRA) Proposed Decision Document for the public comment period is complete. On January 31, 1995, the Decision Document was delivered to the regulatory agencies ten days ahead of the scheduled IAG milestone date.

A schedule extension of approximately three months on the OU 5 and OU 6 Draft Phase I RFI/RI Report and approximately two months for the OU 5 and OU 6 Final Phase I RFI/RI Report was requested. A response from the regulatory agencies is pending.

The regulatory agencies have signed the Resolution Statement for the OU 9 tank dispute. This ends the dispute resolution process pertaining to the investigation of active tanks in OU 9 and approves the original Technical Memorandum (TM) #1, *Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks*, that addressed the tanks that were not in dispute.

On January 23, 1995, the regulatory agencies granted approval of the OU 15 Final Phase I RFI/RI Report and a schedule for a program leading to a Corrective Action Decision/Record of Decision (CAD/ROD).

On January 24, 1995, a verbal approval from the Colorado Department of Public Health and Environment (CDPHE) was given on the Final Industrial Area (IA) Surface Water and Sediment Field Sampling Plan TM. Field activities started on January 20, 1995.

## IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT

<u>Number of IAG Table Six Milestones To Date</u>	<u>Current Fiscal Year (FY) 95</u>	
	<u>(10/1/94 - 9/30/95)</u>	<u>Since IAG Inception</u>
Scheduled (including approved extensions)	11	138
Met	9	106
Extensions Granted	12	61
Extensions Denied	0	8
Remaining this FY 95 (to 9/30/95)	28	n/a
Added	1	11
Deleted	1	5

### IM/IRA Status

### Gallons Treated

OU 1 881 Hillside Treatment	2,697,981 gallons
OU 2 Surface Water IM/IRA Treatment	24,799,200 gallons
OU 4 Water Management Tasks (Interceptor Trench System and Pond Water)	4,900,694 gallons

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 1 Final Corrective Measure Study/ Feasibility Study (CMS/FS) Report	13 Feb 95	13 Feb 95	On schedule
OU 1 Revised Proposed Plan	13 Feb 95	13 Feb 95	On schedule
OU 1 Final Proposed Plan	18 May 95	18 May 95	On schedule
OU 1 Draft Title II Design	05 Jul 95	05 Jul 95	On schedule
OU 2 Draft Phase II RFI/RI Report	30 May 95	30 May 95	On schedule
OU 2 Corrective Design/Remedial Design Work Plan	15 Jun 95	15 Jun 95	On schedule
OU 2 Final Phase II RFI/RI Report	21 Sep 95	21 Sep 95	On schedule
OU 4 Final Phase I Proposed IM/IRA	10 Feb 95	10 Feb 95	On schedule
OU 4 IM/IRA Responsiveness Summary	09 Jun 95	09 Jun 95	On schedule
OU 4 904 Storage Compliance	31 Jul 95	31 Jul 95	On schedule
OU 5 Draft Phase I RFI/RI Report	21 Jul 95	21 Jul 95	Extension requested
OU 6 Draft Phase I RFI/RI Report	21 Jun 95	21 Jun 95	Extension requested
OU 7 Release Final Leachate Collection Responsiveness Summary and Interim Measure/Interim Remedial Action	22 Mar 95	22 Mar 95	On schedule
OU 9 Draft Phase II RFI/RI Work Plan	10 Mar 95	To be determined	See footnote 1
OU 9 Draft Phase I Proposed IM/IRA Decision Document	01 May 95	To be determined	See footnote 1
OU 10 Phase I Proposed IM/IRA Decision Document	26 May 95	To be determined	See footnote 1
OU 10 Draft Phase II RFI/RI Work Plan	27 Jun 95	To be determined	See footnote 1
OU 11 Draft Phase I RFI/RI Report	20 Jul 95	19 May 95	Ahead of schedule
OU 14 Final Phase I RFI/RI Report	23 May 95	To be determined	See footnote 1

### Overdue Deliverables

### IAG Approved Planned Date

### Current Projected Completion Date

### Comments

OU 8 Draft Phase I RFI/RI Report	14 Feb 94	22 Jul 03 <sup>2</sup>	Overdue
OU 8 Final Phase I RFI/RI Report	12 Jul 94	06 Apr 04 <sup>2</sup>	Overdue
OU 9 Draft Phase I RFI/RI Report	11 Apr 94		04 Apr 05 <sup>2</sup> Overdue

<u>Overdue Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 9 Final Phase I RFI/RI Report	06 Sep 94	08 Sep 05 <sup>2</sup>	Overdue
OU 10 Draft Phase I RFI/RI Report	25 Aug 94	09 Mar 00 <sup>2</sup>	Overdue
OU 10 Final Phase I RFI/RI Report	30 Jan 95	16 May 00 <sup>2</sup>	Overdue
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	11 May 99 <sup>2</sup>	Overdue
OU 12 Final Phase I RFI/RI Report	15 Sept 94	15 Oct 99 <sup>2</sup>	Overdue
OU 13 Draft Phase I RFI/RI Report	08 Aug 94	18 Dec 99 <sup>2</sup>	Overdue
OU 13 Final Phase I RFI/RI Report	11 Jan 95	02 Jun 99 <sup>2</sup>	Overdue
OU 14 Draft Phase I RFI/RI Report	20 Dec 94	02 Nov 98 <sup>2</sup>	Overdue

<u>Extended Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 1 Final Corrective Measure Study/Feasibility Study Report	13 Feb 95	13 Feb 95	See footnote <sup>3</sup>
OU 1 Final Proposed Plan	18 May 95	18 May 95	See footnote <sup>3</sup>
OU 1 Draft Responsiveness Summary	19 Sep 95	19 Sep 95	See footnote <sup>3</sup>

- <sup>1</sup> The milestones are incorporated into the proposed Industrial Area (IA) Operable Units (OUs) that are currently under review.
- <sup>2</sup> The dates written in the Current Projected Completion Date column are the anticipated dates. The proposed Industrial Area (IA) OU Reorganization and Reconfiguration Plan is being reviewed by the regulatory agencies. After the plan is approved, a new milestone schedule will be provided.
- <sup>3</sup> New milestone dates were accepted by the regulatory agencies and DOE on January 20, 1995 with an opportunity for future schedule extensions to be considered on a monthly basis. However, the regulatory agencies did not grant the latest 30-day extension requested.

## PROBLEMS AND PROGRAMMATIC ISSUES

The regulatory agencies, the DOE, and the Rocky Flats Environmental Technology Site staff continued to meet throughout January 1995 to resolve issues on the OU 1 Draft CMS/FS. Based on the regulatory agencies' decision to grant additional schedule extensions on the Final CMS/FS Report on a monthly basis, DOE and the Rocky Flats Environmental Technology Site staff had planned to submit the report in March 1995. Recently, the regulatory agencies changed their position and only granted a three-week extension on the Final CMS/FS Report which results in a delivery date of February 13, 1995. The new date will impact the quality of the deliverable because there may not be enough time to address the regulatory agencies' comments regarding the groundwater model sensitivity analysis and the resolution of the point-of-compliance. Currently, the point-of-compliance issue is unresolved, and the regulatory agencies have requested that this issue be incorporated into the Final CMS/FS Report. The Rocky Flats Environmental Technology Site staff will incorporate as many resolved comments as possible before the deadline; however, the expedited schedule will not allow for the report to undergo an adequate Quality Assurance review.

Comments from the regulatory agencies on the OU 2 Draft Final Exposure Scenario TM are late and may cause this document to become a critical path activity. The preparation of the Draft Final OU 2 RFI/RI Report, which is due to the regulatory agencies on May 30, 1995, may be impacted.

On January 26, 1995, an OU 3 dispute meeting was held between the regulatory agencies and DOE on the regulatory agencies' disapproval of the OU 3 TM #4. The topics under dispute are the inclusion of arsenic and beryllium as Contaminants of Concern and the Contaminants of Concern selection methodology. The dispute process has disrupted the OU 3 project schedule and will be revised pending the results of the dispute process.

On January 31, 1995, the Tolling Agreement, which covered milestone agreements within the Industrial Area (IA) OUs, lapsed. The proposed IA OU Reorganization and Reconfiguration Plan, which is presently being negotiated, provides a new milestone schedule that is intended to update the existing IAG milestones.

**NEAR-TERM IAG TABLE SIX MILESTONES**

<u>OU #</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
4	Submit Final Phase I Proposed IM/IRA Decision Document	10 Feb 95	On schedule
1	Submit Final CMS/FS Report	13 Feb 95	On schedule
1	Submit Revised Draft Proposed Plan	13 Feb 95	On schedule
9	Submit Draft Phase II RFI/RI Work Plan	10 Mar 95	IA/OU Reconfiguration Plan under review
7	Release Final Leachate Collection Responsiveness Summary and Interim Measure/Interim Remedial Action	22 Mar 95	On schedule
9	Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95	IA/OU Reconfiguration Plan under review
1	Submit Final Proposed Plan	18 May 95	On schedule
14	Submit Final Phase I RFI/RI Report	23 May 95	IA/OU Reconfiguration Plan under review
10	Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	IA/OU Reconfiguration Plan under review
2	Submit Draft Phase II RFI/RI Report	30 May 95	On schedule
4	Submit IM/IRA Responsiveness Summary	09 Jun 95	On schedule
2	Submit Corrective Design/Remedial Design Work Plan	15 Jun 95	Extension requested
6	Submit Draft Phase I RFI/RI Report	21 Jun 95	Extension requested
10	Submit Draft Phase II RFI/RI Work Plan	27 Jun 95	IA/OU Reconfiguration Plan under review
1	Submit Draft Title II Design	05 Jul 95	Under review pending Proposed Plan
11	Submit Draft Phases (combined) RFI/RI Report	20 Jul 95	Ahead of schedule
5	Submit Draft Phase I RFI/RI Report	21 Jul 95	Extension requested
4	Submit 904 Pad Compliance	31 Jul 95	On Schedule
9	Submit Final Phase II RFI/RI Work Plan	07 Aug 95	IA/OU Reconfiguration Plan under review
11	Submit Draft Phase II RFI/RI Work Plan	21 Aug 95	On schedule
4	Submit Phase I Final IM/IRA Decision Document and Final Responsiveness Summary	29 Aug 95	On schedule
7	Submit Draft Phase I Proposed IM/IRA Decision Document	31 Aug 95	On schedule
1	Submit Draft Responsiveness Summary	19 Sep 95	On schedule
11	Submit Final Phases (combined) RFI/RI Report	19 Sep 95	On schedule
2	Submit Final Phase II RFI/RI Report	21 Sep 95	On schedule

<u>OU #</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
9	Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	IA/OU Reconfiguration Plan under review
1	Submit Final Title II Design	03 Oct 95	Under review pending Proposed Plan
11	Submit Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95	Proposed elimination
10	Submit Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	IA/OU Reconfiguration Plan under review
3	Submit Draft Phase I RFI/RI Report	30 Oct 95	Behind schedule
10	Submit Final Phase II RFI/RI Work Plan	21 Nov 9	IA/OU Reconfiguration Plan under review
4	Submit Final TM Title Design	18 Dec 95	On schedule
6	Submit Final Phase I RFI/RI Report	21 Dec 95	Extension requested
1	Submit Final Responsiveness Summary	22 Dec 95	On schedule
1	Submit Draft Corrective Action Decision/ Record of Decision	22 Dec 95	On schedule
7	Submit Draft Final Phase I IM/IRA Decision Document	05 Jan 96	On schedule
5	Submit Final Phase I RFI/RI Report	17 Jan 96	Extension requested
11	Submit Final Phase II RFI/RI Work Plan	24 Jan 96	On schedule

## **SECTION 1. INTRODUCTION**

**This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for January 1995. This program implements the Interagency Agreement (IAG) among the U. S. Department of Energy (DOE), the U. S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Environmental Technology Site near Golden, Colorado. This agreement was signed on January 22, 1991, and the work is being performed for DOE by EG&G Rocky Flats, Inc.**

**The Executive Summary of the report contains highlights of significant achievements, milestone information, and any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU), as well as other program activities, are presented in Section 2. As required by Paragraph 210 of the IAG, Section 3 contains the schedules for routine environmental sampling. As required by Paragraph 13 of the IAG, Section 4 contains a list that identifies the subcontractors performing work on the program.**

## SECTION 2. PROJECT STATUS

### 2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of the Rocky Flats Environmental Technology Site, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the site's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up Operable Unit (OU 1) were investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Measure (IM)/Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater that flows from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and is released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. A Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/Remedial Investigation (RI) Report was completed in November 1993. To determine the final remedial action, the Feasibility Study (FS) continues to be developed in parallel with the operation of the IM/IRA.

#### 2.1.1 OU 1 ASSESSMENT

**Scope of Work**  
Changes This Period

None

**Technical Approach**  
Changes This Period

None

**IAG Milestone**  
**Accomplishments**

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92
Submit Final Phase III RFI/RI Report	05 Nov 93
Submit Revised Phase III RFI/RI Report	15 Jun 94
Submit Draft Corrective Measures Study (CMS)/FS	25 Aug 94
Submit Draft Remedial Action Plan/Proposed Plan	22 Nov 94

**Future IAG Milestones**  
**Through FY 95**

<u>Milestone Name</u>	<u>Planned</u> <u>Date</u>	<u>Approved</u> <u>Extension</u> <u>Status</u>	<u>Forecast</u> <u>Date</u>
Submit Final CMS/FS Report	27 Sep 93	13 Feb 95	22 Nov 94*
Submit Revised Proposed Plan		13 Feb 95	13 Feb 95
Submit Final Proposed Plan	04 Jan 94	18 May 95	24 Feb 95*
Submit Draft Responsiveness Summary	06 May 94	19 Sep 95	23 Jun 95*
Submit Final Responsiveness Summary	03 Aug 94	22 Nov 95	22 Sep 95*

- \* A Baseline Change Proposal will be submitted to officially change the baseline when programmatic issues are resolved and milestone dates stabilize.

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Corrective Action Decision/ Record of Decision	03 Aug 94	22 Dec 95	22 Sep 95*
Submit Final Corrective Action Decision/ Record of Decision	01 Nov 94	29 Mar 96	22 Dec 95*
Submit Draft Title II Design	05 Jul 95		21 Nov 96*

- A Baseline Change Proposal will be submitted to officially change the baseline when programmatic issues are resolved and milestone dates stabilize.

#### **January Work Activity Status**

The EPA, CDPHE, DOE, and the Rocky Flats Environmental Technology Site staff continued to meet throughout January 1995 to resolve issues on the Draft Corrective Measures Study/Feasibility Study (CMS/FS). Based on the regulatory agencies' decision to grant additional schedule extensions on the Final CMS/FS Report on a monthly basis, DOE and the Rocky Flats Environmental Technology Site staff had planned to submit the report in March 1995. Recently, the regulatory agencies changed their position and only granted a three-week extension on the Final CMS/FS Report. This action by the regulatory agencies caused the DOE to announce that the report will be submitted on February 13, 1995. The new date may impact the quality of the deliverable because there may not be enough time to address the regulatory agencies' comments regarding the groundwater model sensitivity analysis and the resolution of the point-of-compliance. Currently, the point-of-compliance issue is unresolved, and the regulatory agencies have requested that this issue be incorporated into the Final CMS/FS Report. The Rocky Flats Environmental Technology Site staff will incorporate as many resolved comments as possible before the deadline; however, the expedited schedule will not allow for the report to undergo an adequate Quality Assurance review.

Based on conversations and agreements between DOE and the Rocky Flats Environmental Technology Site staff on January 23, 1995, the following approach will be used in preparing the Final CMS/FS document:

- The point-of-compliance will not be discussed in the CMS/FS. This approach is based on DOE's position that the point-of-compliance should not be included in the Final CMS/FS Report.
- The preferred remedy will not be included into the Final CMS/FS Report. In the Proposed Plan, as suggested by DOE, the point-of-compliance will be labeled in the vicinity of Woman Creek.
- The current schedule may not provide sufficient time to incorporate the results of the sensitivity analysis into the Final CMS/FS Report. On January 9, 1995, a meeting was held with

the regulatory agencies that clarified the issues that the regulatory agencies want to have included into the sensitivity analysis. The position of the Rocky Flats Environmental Technology site staff is that four to six weeks will be required to adequately incorporate the sensitivity analysis results. The current schedule does not allow for this; therefore, the results may not be adequately documented. At the direction of DOE, the results of the sensitivity analysis may be provided one week after the Final CMS/FS milestone date in order to submit a quality analysis report.

- The responses to general comments will be delivered with the Final CMS/FS Report, and the responses to specific comments will be provided after the Final CMS/FS Report is delivered. Under the current schedule, not all the specific comments will be incorporated in this report, but as many comments as possible will be incorporated.

**Technical Memoranda (TM)**

**Project**

OU 1 - 881 Hillside

**TM #10**

**TM Title**

**TM Status**

Preliminary Remediation Goals

Submitted Final TM to DOE: 03 May 94

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date comments were received: EPA 01 June 94, CDPHE

26 Jul 94

**TM #11**

**TM Title**

**TM Status**

Alternative Array

Submitted Draft TM to DOE: 03 May 94

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date comments were received: EPA 24 May 94, CDPHE 06 Jun 94

**Planned Work for February**

- On February 9, 1995, DOE and the Rocky Flats Environmental Technology Site staff will have a final round table review that will focus on last minute issues and possible corrections or changes

to the Final CMS/FS document that is currently scheduled for submittal on February 13, 1995.

**Problems**

None

**Open Items**

None

## **2.1.2 OU 1 REMEDIATION**

**Scope of Work  
Changes This Period**

None

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

Submit Draft Proposed Interim Measure (IM)/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (891 Treatment Building)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

**Future IAG Milestones  
Through FY 95**

None

**January Work Activity Status**

**Interim Measure/Interim Remedial Action (IM/IRA)  
Treatment Facility - Normal water treatment continues.**

Treated groundwater this period: 16,403 gallons  
Total treated to date: (through 24 Jan 95) 2,697,981 gallons

**Accelerated Cleanup - OU 1 Hot spot Removal -**  
All uranium isotopics, gross a/B, and metal samples have been analyzed and validated. The plutonium and americium-isotopics have been analyzed; the data are undergoing validation. Because of laboratory delays, the Draft Hot Spot Removal Report and the Final Hot Spot Removal Report will be delayed until April 25, 1995, and May 25, 1995, respectively.

**Planned Work for February**

**Interim Measure/Interim Remedial Action (IM/IRA)  
Treatment Facility**

- Normal operations will be continued.
- The development of alternate methods of transporting collection well water to the Water Treatment Facility, Building 891, continues.

- The plutonium and americium-isotopics data will continue to be validated.

**Problems**

None

**Open Items**

None

## 2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage of waste drums in the 1950s and 1960s that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent, and these areas may have contaminants that were not removed by the treatment system. The concentrations of chemicals in surface water was less than Applicable Relevant and Appropriate Requirements.

Originally, the Surface Water IM/IRA collected seep and surface water contamination sources and then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because of a small amount of contamination.

A second IM/IRA was established in late 1991. This Subsurface IM/IRA Plan/Environmental Assessment encompasses the east Trenches Area of OU 2 and contains a description of the process to evaluate a remediation technology for removal of residual vapor-phase volatile organic compound contamination at OU 2. The volatile organic compound removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial action will provide information to aid in the selection and design of final remedial actions that address subsurface, residual vapor-phase volatile organic compound contamination at OU 2.

### 2.2.1 OU 2 ASSESSMENT

#### Scope of Work

Changes This Period                      None

#### Technical Approach

Changes This Period                      None

#### IAG Milestone Accomplishments

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
Submit Field Report for Detailed Soil Vapor Survey	15 Dec 93
Submit Preliminary Draft Phase II RFI/RI Report	16 Dec 93

#### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RFI/RI Report	12 Mar 93	30 May 95	17 Apr 95
Submit Final Phase II RFI/RI Report	09 Aug 93	21 Sep 95	21 Sep 95
Submit Draft CMS/FS Report	04 Nov 93	19 Jul 96	11 Apr 96
Submit Final CMS/FS Report	10 May 94	19 Dec 96	30 Aug 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Proposed Plan	10 May 94	10 Jan 97	13 Sep 96
Submit Final Proposed Plan	09 Aug 94	25 Mar 97	26 Nov 96
Submit Draft Responsiveness Summary	13 Dec 94	25 Aug 97	06 May 97
Submit Final Responsiveness Summary	16 Mar 95	05 Dec 97	08 Aug 97
Submit Draft Corrective Action Decision/ Record of Decision	16 Mar 95	05 Dec 97	08 Aug 97
Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95	03 Mar 98	04 Nov 97
Submit Corrective Design/ Remedial Design Work Plan	15 Jun 95		17 Apr 98*

- \* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

**January Work Activity Status**

**Remedial Investigation** - Comments on the Draft Final OU 2 Exposure Scenario Technical Memorandum (TM) are late and may cause this document to become a critical path activity. The preparation of the Draft Final OU 2 RFI/RI Report, which is due to the regulatory agencies on May 30, 1995, will be impacted.

**Trenches Characterization** - On January 4, 1995, the Draft Trenches and Mound Site Characterization Health and Safety Plan was distributed to the Rocky Flats Environmental Technology Site staff for review. The Final Health and Safety Plan is anticipated to be issued in February 1995. Additionally, DOE received the Draft Trenches and Mound Site Characterization Work Plan for review and comment. The Draft Final Plan will undergo additional review to ensure all requirements and objectives are met in the characterization program. Intrusive field work is anticipated to begin in March 1995.

**Feasibility Study** - The preparation of the Corrective/Remedial Action Objectives TM is approximately one month behind schedule. On January 27, 1995, the review process of the Draft Final Corrective/Remedial Action Objectives TM, Revision 2, by the Rocky Flats Environmental Technology Site staff began. Upon completion of the review, this document will be submitted to the regulatory agencies for review. The Draft Final Corrective/Remedial Action Objectives TM, Revision 2, must be stable before the development of the Screening of Remedial Alternatives TM, which is a critical path activity, will proceed.

On January 27, 1995, a technical review of the current progress on the evaluation of remedial technologies and the development of remedial alternatives of the Preliminary Draft Screening of Remedial Alternatives TM was started by DOE. This technical review constitutes a change in the original schedule.

**Detailed Analysis of Remedial Alternatives** - The redesign of the groundwater flow model is complete. Work on the model calibration has begun. Additionally, the technical evaluation of a proposal to perform the second phase of the CMS/FS is in progress.

**Technical Memoranda**

<b>Project</b>	<u>OU 2 - 903 Pad, Mound, and East Trenches</u>
<b>TM #1</b>	
<b>TM Title</b>	Development of Corrective/Remedial Action Objectives (Draft Submittal in-process)
<b>TM Status</b>	When preparation was concluded: 27 Jan 95 Projected date of Draft submittal to EPA/CDPHE: 01 Feb 95 Actual date of Draft submittal: To be determined Date comments were received: To be determined
<b>TM #2</b>	
<b>TM Title</b>	Screening of Alternatives (Draft Submittal in-process)
<b>TM Status</b>	When preparation was concluded: 27 Jan 95 Projected date of Draft submittal to EPA/CDPHE: 01 Mar 95 Actual date of Draft submittal EPA/CDPHE: To be determined Date comments were received EPA/CDPHE: To be determined (Anticipated 15 Feb 95)
<b>TM #4</b>	
<b>TM Title</b>	OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test Site 1 (Draft Submittal)
<b>TM Status</b>	When Draft preparation was concluded: 08 Sep 94 Projected date of Draft submittal to DOE: 30 Jul 94 Actual date of Draft submittal: 24 Oct 94 Date comments were received: 10 Nov 94
<b>TM #5</b>	
<b>TM Title</b>	Exposure Scenarios (Draft Final submittal)
<b>TM Status</b>	When preparation was concluded: 06 Dec 94 Projected date of Draft Final submittal to EPA/CDPHE: 31 Oct 94 Actual date of Draft Final submittal: 07 Dec 94 Date comments were received from EPA/CDPHE: To be determined
<b>TM #6</b>	
<b>TM Title</b>	Modeling
<b>TM Status</b>	When preparation was concluded: 15 Jan 93 Projected date of submittal to EPA/CDPHE: 15 Jan 93 Actual date of submittal: 15 Jan 93 Date comments were received: 01 Apr 93 EPA, 31 Mar 93 CDPHE TM approved

<p><b>TM #7</b>  <b>TM Title</b>  <b>TM Status</b></p>	<p><b>Surficial Soils</b>  When preparation was concluded: 07 Jan 93  Projected date of submittal to EPA/CDPHE: 07 Jan 93  Actual date of submittal: 12 Jan 93  Date comments were received: 21 Jan 93  <b>TM approved</b></p>
<p><b>TM #8</b>  <b>TM Title</b>  <b>TM Status</b></p>	<p><b>Bedrock</b>  When preparation was concluded: 15 Mar 93  Projected date of submittal to EPA/CDPHE: 01 Mar 93  Actual date of submittal: 15 Mar 93  Date comments were received: 14 Apr 93 EPA, 14 Apr 93 CDPHE  <b>TM approved</b></p>
<p><b>TM #8 Addendum</b>  <b>TM Title</b>  <b>TM Status</b></p>	<p><b>Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)</b>  When preparation was concluded: Jun 93  Projected date of submittal to EPA/CDPHE: Jun 93  Actual date of submittal: Jun 93  Date comments were received: FY 93  <b>TM addendum approved</b></p>
<p><b>TM #9</b>  <b>TM Title</b>  <b>TM Status</b></p>	<p><b>Chemicals of Concern</b>  When preparation was concluded: 08 Aug 94  Projected date of submittal to EPA/CDPHE: 03 Oct 94  Actual date of Draft submittal: 02 Sep 94  Date comments were received: 05 Oct 94  <b>TM approved</b></p>
<p><b>TM #10</b>  <b>TM Title</b>  <b>TM Status</b></p>	<p><b>Toxicity Assessment</b>  When preparation was concluded: 09 Aug 94  Projected date of submittal to EPA/CDPHE: 30 Aug 94  Actual date of Draft submittal: 02 Sep 94  Date comments were received: 05 Oct 94  <b>TM approved</b></p>
<p><b>Planned Work for February</b></p>	<p>Work on the Treatability Studies and the FS continues. The IM/IRA will continue operations.</p>
<p><b>Problems</b></p>	<p>None</p>
<p><b>Open Items</b></p>	<p>None</p>
<p><b><u>2.2.2 OU 2 REMEDIATION</u></b></p>	
<p><b>Scope of Work Changes This Period</b></p>	<p>None</p>

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	03 May 91
Submit Draft Treatability Test Report (Phase I Granular Activated Carbon)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I Granular Activated Carbon)	02 Jun 92
Submit Subsurface Site I Draft Test Plan	29 Oct 92
Submit Subsurface Site I Final Test Plan	12 Jan 93
Submit Draft Surface Water Field Treatability Report	13 Jul 93
Submit Subsurface Site 2 Draft Test Plan	06 July 94
Submit Final Phase II Treatability Study Report	26 Jan 94
Begin Subsurface IM/IRA Test I	14 Feb 94
Submit Draft Pilot Test Plan Site 2	06 Jul 94
Submit Draft Pilot Test Report Site 1	10 Nov 94
Submit Final Pilot Test Report Site 1	10 Nov 94

**Future IAG Milestones  
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Pilot Test Report Site 1	06 Jul 94*	13 Jan 95	13 Jan 95**
Start-up Soil Vapor Extraction Test Site 2	31 May 95*	25 Apr 95	25 Apr 95**
Submit Final Pilot Test Report Site 2	30 Apr 96*	01 Sep 95	03 Sep 95**
Submit Draft Pilot Test Plan Site 3	31 Mar 95*	24 Jan 95	24 Jan 95**
Submit Final Pilot Test Plan Site 3	30 Jun 95*	12 May 95	12 May 95**
Complete Pilot Unit 3 Installation	31 Oct 96*	15 Sep 95	15 Sep 95**
Submit Draft Pilot Test Report Site 3	30 Sep 97*	01 Mar 96	01 Mar 96**
Submit Final Pilot Test Report Site 3	31 Oct 97*	23 Apr 96	23 Apr 96**

\* Based on proposed/actual schedule dates and subsurface IM/IRA durations.

\*\* The Soil Vapor Extraction Test Sites 2 and 3 activities are on hold until the scope of work is modified.

## January Work Activity Status

### Subsurface IM/IRA Operations

Soil Vapor Extraction - The spent Granular Activated Carbon from the Soil Vapor Extraction System Extended Operations has been transferred into 55-gallon drums for regeneration. Until approval to regenerate this material is obtained, the spent Granular Activated Carbon will be stored onsite as hazardous waste.

The Soil Vapor Extraction System has been shutdown and prepared for storage (lockout/tagout) until it is needed for treatment of a new area. The transfer of ownership of the equipment from the subcontractor to the Rocky Flats Environmental Technology Site staff should be completed in February 1995.

Work on the Final TM #4 is being advanced by the subcontractor and is scheduled to be completed by February 24, 1995.

Trench T-3 Accelerated Action - The scoping of the accelerated action continues. The Proposed Action Memorandum will be developed to extract nonaqueous phase liquids from the trench. The Proposed Action Memorandum is due to the regulatory agencies on March 1, 1995.

### Surface Water IM/IRA Operations

The Sitewide Treatment Facility - The Sitewide Treatment Facility project has begun engineering activities. On January 18 and 26, 1995, two meetings with representatives from DOE, the Los Alamos National Laboratory, Oak Ridge, and the Rocky Flats Environmental Technology Site were conducted. On January 20, 1995, a walkdown of Building 891 was performed to verify field locations of piping and equipment. On January 27, 1995, a Davis-Bacon request for a determination on funding for construction of the Sitewide Treatment Facility was submitted. Additionally, on January 27, 1995, DOE received modifications to the IM/IRA for OU 1 and OU 2 (one week ahead of schedule).

Offsite Disposal of Field Treatability Unit Sludge - On January 21, 1995, filter cake sampling was conducted. The sampling analysis is being performed to fulfill Waste Acceptance Criteria requirements mandated by the subcontractor laboratory.

Surface Water SW-59 - On January 13, 1995, the Rocky Flats Environmental Technology Site staff conducted a meeting to investigate the feasibility of treating SW-59 at the Sewage Treatment Plant under the headworks exemption as outlined in RCRA [40CF261.3 (a)(2)(iv)(A) and (B)]. At this meeting, the verification of regulation compliance and the CDPHE approval prior to waste stream acceptance at the Sewage Treatment Plant were identified as requirements. Additionally, the Rocky Flats Environmental Technology Site staff have begun to develop a cost comparison

between the Consolidated Wastewater Treatment Unit and the Sewage Treatment Plant.

OU 2 Field Treatability Unit Water Treatment Facility - Daily tank and pipe inspections, along with water collection, surveillance, inspections, and preventive maintenance activities were performed as scheduled. Additionally, on January 31, 1995, the 1994 Fourth Quarterly Report for the OU 2 Field Treatability Unit was completed.

The consolidation of the OU 1 and OU 2 Field Treatability Unit water treatment facilities continues. By the consolidation of the OU 1 and OU 2 water treatment equipment, significant cost savings have been achieved. On January 27, 1995, these savings were detailed in a process improvement.

On January 19, 1995, one 55-gallon drum of sludge was packaged. Additionally, the Surface Water IM/IRA treatment activities included the following:

Treated surface water this month:	0	gallons
Total treated to date:	24,799,200	gallons

**Planned Work for February**

- The IM/IRA operation will continue.

**Problems**

None

**Open Items**

None

### 2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG-directed activities, according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), involve assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U. S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

#### Scope of Work

Changes This Period                      None

#### Technical Approach

Changes This Period                      None

#### IAG Milestone Accomplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

#### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	30 Oct 95	30 Oct 95
Submit Final Phase I RFI/RI Report	13 Dec 93	11 Jul 96	11 Jul 96

#### January Work Activity Status

The Standley Lake Bald Eagles are no longer leaving the nesting area after dark for the Eldorado Canyon night roost. In January 1995, this information was verified by the Rocky Flats Environmental Technology Site staff. The Public Service Company's work on the installation of electrical power at the 100th Avenue air monitoring station site will likely be postponed until later in the year when the nesting activities of the Bald Eagles have been completed.

On January 5, 1995, a meeting to present OU 3 soil sampling results to the Health Advisory Panel was held. The Health Advisory Panel will use the OU 3 sample results for comparison with results for soil samples collected within OU 3 as part of a separate study conducted by the Health Advisory Panel.

On January 9 and 10, 1995, the regulatory agencies transmitted formal comments on TM #4, *Chemicals of Concern Identification*, and on the CDPHE Conservative Screen Letter Report. Both documents were disapproved.

On January 26, 1995, a dispute meeting was held between the regulatory agencies and DOE. The topics under dispute are the inclusion of arsenic and beryllium as Contaminants of Concern and the Contaminants of Concern selection methodology.

A response from the regulatory agencies on the TM #5, *Toxicity Assessment*, is still pending.

DOE received the Semi-Annual (January 1995) Jefferson County Remedy Acreage Report on January 11, 1995, approximately three weeks ahead of schedule.

The preparation of the Response to Comments to address the regulatory agencies' comments has begun for TM #2, *Exposure Scenarios*.

The air sampling station on 86th Avenue became operational the week of January 23, 1995. Initial performance testing has shown that the station is performing above the expectation of 500 to 600 cubic feet per minute and is currently operating at approximately 1,000 cubic feet per minute.

## Technical Memoranda

### Project

### OU 3 - Offsite Areas

TM #1  
TM Title  
TM Status

Field Changes to RF/RI Work Plan  
When preparation was concluded: 10 May 93  
Projected date of submittal to EPA/CDPHE: 10 May 93  
Actual date of submittal: 23 Apr 93  
Date comments were received: 05 Jan 94

TM #2  
TM Title  
TM Status

Exposure Scenarios for the Human Health Risk Assessment  
When preparation was concluded: 12 May 93  
Projected date of submittal to EPA/CDPHE: 12 May 93  
Actual date of submittal: 03 May 93  
Date comments were received: 15 Jul 93

TM #3  
TM Title Modeling  
TM Status

When preparation was concluded: Jan 95  
Projected date of submittal to EPA/CDPHE: 02 Mar 95  
Actual date of submittal: To be determined  
Date comments were received: To be determined

TM #4  
TM Title  
TM Status

Contaminants of Concern  
When preparation was concluded: Aug 94  
Projected date of submittal to EPA/CDPHE: 20 Sep 94  
Actual date of submittal: 26 Sep 94  
Date comments were received: To be determined

TM #5  
TM Title  
TM Status

Toxicity  
When preparation was concluded: Sep 94  
Projected date of submittal to EPA/CDPHE: 10 Nov 94  
Actual date of submittal: 11 Oct 94  
Date comments were received: To be determined

**Planned Work for February**

- A dispute resolution meeting for TM #4, *Contaminants of Concern*, is scheduled for February 1, 1995. All Contaminants of Concern issues are anticipated to be resolved in February 1995.
- The TM #2, *Exposure Scenarios for the Human Health Risk Assessment*, will be resubmitted to the regulatory agencies.
- When the results of the dispute resolution for Contaminants of Concern are received, the schedule will be revised.

**Problems**

The dispute process has disrupted the project schedule. Due to the effect of the dispute on future deliverables, DOE has asked that the submittal of TM #2, *Exposure Scenarios*, be delayed until the dispute has been decided. The schedule will be revised pending the results of the dispute process.

**Open Items**

None



**IAG Milestone  
Accomplishments**

Submit Draft Phase II RF/RI Work Plan  
Submit Final Phase II RF/RI Work Plan

27 May 94  
02 Sep 94

**Future IAG Milestones  
Through FY 95**

None

**January Work Activity Status**

On January 13, 1995, a Categorical Exclusion by the National Environmental Policy Act Committee was completed but still needed to be signed. Once the Categorical Exclusion is signed, the Readiness Review will be complete, and the authorization to commence work will be given. The Target completion date is February 3, 1995. The Rocky Flats Environmental Technology Site staff are onsite to prepare for the start of the geophysical surveys.

**Technical Memoranda**

**Project**

**QU 4 - Solar Evaporation Ponds**

**TM #1  
TM Title  
TM Status**

Vadose Zone Investigation  
Draft submitted to EPA/CDPHE: 16 Nov 92  
Comments received: 30 Nov 92  
Conditional approval: 30 Nov 92  
Projected submittal of Final TM to EPA/CDPHE: 15 Dec 92  
Actual submittal date of Final TM: 15 Dec 92  
Submittal of TM #1 Vadose Zone Schedule: 19 May 93  
EPA/CDPHE final approval of TM #1: 17 Jun 93

**TM #2  
TM Title  
TM Status**

Modification to Field Activities  
Draft submitted to EPA/CDPHE: 18 Mar 93  
Comments received: 07 May 93  
Projected submittal of Final TM to EPA/CDPHE: 07 Jun 93  
Actual submittal date of Final TM: 09 Jun 93  
EPA/CDPHE final approval of TM #2: 30 Jun 93

**TM #3  
TM Title  
TM Status**

Environmental Evaluation  
Draft submitted to EPA/CDPHE: 19 Mar 93  
Comments received: EPA 21 Apr 93, CDPHE 02 Jun 93  
Projected submittal of Final TM to EPA/CDPHE: 30 Apr 93  
Actual submittal date of Final TM: 02 Jul 93  
EPA/CDPHE final approval of TM #3: 30 Jul 93

**TM #4  
TM Title  
TM Status**

Human Health Risk Assessment Exposure Scenarios  
Draft submitted to EPA/CDPHE: 19 Mar 93  
Comments received: EPA 21 Apr 93, CDPHE 23 Apr 93  
Projected submittal of Final TM to EPA/CDPHE: 11 Jun 93  
Actual submittal date of Final TM: 11 Jun 93  
EPA/CDPHE final approval of TM #4: 25 Jun 93

**Planned Work for February**

- The field activities for the Phase II RFI/RI program are scheduled to begin.

**Problems**

The authorization of the Rocky Flats Environmental Technology Site staff to begin activities that support the Phase II RFI/RI process have been delayed because of difficulties related to Procurement. Apparently, conflicting Statements of Work overlapped the technical scope and are being reviewed and modified.

The final National Environmental Policy Act Categorical Exclusion is pending.

**Open Items**

None

**2.4.2 OU 4 REMEDIATION**

**Scope of Work Changes This Period**

None

**Technical Approach Changes This Period**

None

**IAG Milestone Accomplishments**

Submit Draft Phase I Proposed IM/IRA Decision Document	27 May 94
All Solar Ponds Emptied of Water and Sludge	15 Jan 95

**Future IAG Milestones Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase I Proposed IM/IRA Decision Document	12 Sep 94	10 Feb 95*	On schedule
Submit IM/IRA Responsiveness Summary	25 Jan 95	09 Jun 95*	On schedule
Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Apr 95	29 Aug 95*	On schedule
Submit IM Title II Design Work Plan	24 Jun 96	18 Dec 95*	On schedule
Begin Phase I IM/IRA Construction	28 Jan 95	28 Oct 96*	On schedule

\* Extension approved by the regulatory agencies on November 23, 1994.

**January Work Activity Status**

**Treatability - Sludge** - The OU 4 Phase I remediation Temporary Unit permit information for Pondcrete/Pond sludges has been drafted. The language was submitted on schedule for inclusion in the IM/IRA Decision Document. Discussion of the Temporary Units was opened with the regulatory agencies in December 1994 and continued throughout January 1995.

The review process for the sludge and pondcrete treatment units required under the National Environmental Policy Act will be performed in parallel with the Public Comment period on the Solar Ponds Projects IM/IRA Decision Document. The Decision Document incorporates an Environmental Assessment that will be the basis of the DOE's National Environmental Policy Act decision. The schedule logic will be revised to reflect the link to the Public Comment period. Following the review, a decision will be made on whether a commitment management summary or a mitigation action plan will be needed for future tracking purposes.

The Statement of Work for additional modeling support and the development of the waste recipe has been reviewed by Procurement. By February 1, 1995, a solicitation to the subcontractor will occur. The pondcrete "White Paper" has completed review; no comments were generated. At the subcontractor laboratories, all waste treatability samples have been received, and all containers are going through initial characterization. Also, the development of a cementation recipe began in January 1995.

#### **Waste Storage and Disposal**

As of January 20, 1995, a total of 168 containers were repacked. Following the review of the installed equipment on the 904 pad, the air compressors and the eye wash stations were moved to regain some of the storage area lost when the containers were adjusted to clear the tent fabric. The revised layout will still be capable of storing in excess of 4,100 containers and will adhere to the RCRA regulation that requires an aisle space of ten feet, fire aisles at 36 inches, and the Occupational Safety and Health Association work aisles at 28 inches. DOE's compliance strategy continues to be implemented despite the CDPHE's reversal in policy and the subsequent disagreement over the use of absorbent material in the repacked crates. DOE believes the need to take action on long standing pad compliance issues balances the risk that a second repack effort may ultimately be required.

#### **Interim Remedial Action**

**Water Management** - The modular tanks have a remaining usable volume of about 719,000 gallons. RCRA inspections and compressor rotations were satisfactorily completed in Building 910. Also, RCRA inspections of the Modular Storage Tanks were completed.

#### **Interim Measure Remediation**

**IM/IRA Decision Document** - Parts I and III of the IM/IRA have been reviewed, and comments have been incorporated into the document. Part IV is awaiting additional information from the subcontractor. A new appendix is being added to Part II that includes the data from IHSS 176. The final preparation of the Proposed Decision Document for Public Comment is proceeding. The

document may be ready ahead of the February 10, 1995, IAG commitment date.

On January 25, 1995, a public meeting was held that featured a video presentation that described in an informative and balanced manner the issues, solutions, and opinions of the Phase I remediation alternatives. Also, workshops were included that were designed to provide members of the public with the opportunity to have an one-on-one discussion of issues with knowledgeable personnel. The meeting concluded with a panel of representatives from the regulatory agencies and DOE conducting a question and answer period. This first public awareness meeting was extremely positive and the public appeared supportive of the panel's proposed remedy.

**Preconstruction** - As of December 22, 1994, the Site Strip-out activity was placed on hold. Since November 1994, the Property Utilization and Disposal Yard no longer accepts excess material because a moratorium was placed on the Property Utilization and Disposal Yard. Previously, the Property Utilization and Disposal Yard was accepting some materials from this activity on a case-by-case basis, and the Yard has issued a correspondence that states that material from this project will be accepted once a detailed schedule of the equipment is received. A new Property Utilization and Disposal Yard schedule was negotiated, and shipments of excess equipment resumed on January 16, 1995. Chain conveyors, structural steel, petroleum hose, and electrical cable were moved. The disposition of the Frac Tanks located near Building 910 was delayed because the Rocky Flats Environmental Technology Site staff were asked to leave the Frac Tanks as contingency containment for the sludge tanks located on the 750 Pad. Some costs may be incurred related to commitments that were made by the subcontractor for truck rental.

On January 13, 1995, a Request for Proposal for the site preparation of the cargo container relocation activity was submitted to Procurement. On January 24, 1995, a pre-job walkdown attended by the Rocky Flats Environmental Technology Site staff occurred. Site grading and preparation are expected to begin February 2, 1995.

The Rocky Flats Environmental Technology Site Design team has completed its incorporation of comments received from the Title II review meeting for the General Site Improvements Project. The package is undergoing final review and approval. The revised package is expected to be completed by February 1, 1995.

Under the Title II Remedial Design Project, the Rocky Flats Environmental Technology Site staff has requested that the subcontractor delay the start of the 90 percent Title II design until a different subcontractor completes the 60 percent design for the post closure care and monitoring. This delay will allow comments from the cap 60 percent design review to be received and incorporated as part

of the 90 percent design effort and will prevent the duplication of effort and potential cost overruns for the 90 percent design activity. This delay will not have an impact on the IAG milestone.

**Interim Measure Sludge** - The sludge removal was completed in Pond 207C on January 15, 1995. The CDPHE and DOE verified the completion of the IAG deliverable of All Solar Ponds Emptied of Water and Sludge. Hard salt deposits were discovered on nearly half of the pond's bottom in December 1994, and the deposits threatened timely completion of the IAG deliverable. By utilizing multiple front-end loaders to dislodge the deposits, the remaining salts and water were removed, and the sludge removal was completed ahead the milestone date.

After the completion of the milestone, activities to remove equipment in the Pond 207C continued. While the salt milling vehicle and both of the front-end loaders were being decontaminated, the construction cranes lifted the access docks out of the ponds. Miscellaneous equipment on the berms of the ponds were removed, and in anticipation of the final sealing, the berms and pond bottoms were rinsed with water. To stop any surface contamination from becoming airborne, a pine tar coating will then be applied to the pond bottom.

Also, preparations to empty the clarifier were started. The vacuum piping at the pond was rinsed and disassembled in anticipation of its use for the clarifier. The Readiness Assessment Team has reconvened, the Operations Order reviewed, and the clarifier inspected.

The kickoff meeting for the Special Assessment of clarifier sludge removal was held on January 17, 1995. Preliminary activities that include vacuum transfer hose placement and training are in progress. Clarifier sludge removal is expected to begin in February 1995.

The feasibility of providing secondary containment for the crates used to hold the salt deposits from Pond 207C versus transferring material from the crates into sludge holding tanks is being studied. Key issues in this decision are to determine how much water must be added to the crates to produce a slurry capable of being transferred and corrosion concerns over the metal containers. A limited amount of tank storage capacity remains, and if this option is chosen, additional 10,000 gallon tanks may be required.

#### **Planned Work for February**

- Sludge removal operations in the clarifier are planned.
- The IM/IRA Title II Design effort, which encompasses the effects of including minimally treated sludge and pondcrete under the barrier, is planned.

- The removal process at the silos located near Building 788 is planned.
- The site stripout activity is planned.
- The site cleanup in support of the relocation of the cargo containers currently located near Building 964 is planned.
- The 904 repack will continue.
- The Treatability Studies on minimally treated pond sludge, pondcrete, and the conceptual design will continue.

**Problems**

None

**Open Items**

The OU 4 engineered barrier issues that initiated a dispute resolution in July 1994 continue. Although the dispute formally ended on July 27, 1994, full regulatory support was not achieved. Both the EPA and the DOE support the plan that calls for the placement of minimally treated sludge and pondcrete under the engineered barrier in lieu of an offsite disposal, but the CDPHE has opted to reserve comment until after the Public Comment period on the Phase I IM/IRA Decision Document. An extension was granted in November 1994 for all related Phase I milestones, but the regulatory concurrence for a planned technical scope is still not known. At the January 15, 1995, meeting, the public response was positive.

There is uncertainty regarding the implementation of the State of Colorado's Corrective Action Management Unit Temporary Unit regulation. The State of Colorado ratified legislation that is more restrictive than the Environmental Protection Agency's legislation, but wording in the law is not expected to interrupt planned remediation activities at OU 4.

A key OU 4 assumption is the use of the Corrective Action Management Unit Temporary Unit for treating certain remediation wastes during Phase I Remediation. DOE plans to use the Corrective Action Management Unit Temporary Unit regulations to promote significant cost savings and schedule acceleration while fully protecting human health and the environment. However, the applicability of the law on OU 4 remediation has been questioned by the State of Colorado, and the State has not communicated whether additional requirements will be imposed. Therefore, this regulatory uncertainty poses increased risk to the Phase I remediation project schedule.

Tent 12 and the pad area south on the 750 Pad (for pondcrete) and Tent 11 on the 904 Pad (pondcrete) are required to treat the sludge and pondcrete. These areas need to be made available by either moving wastes to another location or preferably by shipping all saltcrete that complies with the Landfill Disposal Restrictions to an

offsite location. Neither option is currently funded, although partial funding for saltcrete disposal does exist. A substantial increase in the funding for saltcrete disposal is needed to execute this option.

**2.5 OU 5 - WOMAN CREEK**

OU 5, the Woman Creek Priority Drainage, comprises assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSSs 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSSs 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified: one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been assigned to this OU. Possible contamination in this OU was caused by landfill operations, stormwater runoff into holding ponds, and Ash Pit operations. Constituents in OU 5 include depleted uranium, metals, solvents, pesticides, polychlorinated biphenyl, and Volatile Organic Compounds. Media affected include soils, sediments, surface water, groundwater, and air.

**Scope of Work  
Changes This Period**

The presumptive remedy of the Original Landfill (IHSSs 115 and 196) at OU 5 is no longer being pursued. These IHSSs will be covered under the FS that is currently underway.

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Submit Final Phase I RFI/RI Work Plan	30 Aug 91

**Future IAG Milestones  
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93	21 Jul 95	11 May 95
Submit Final Phase I RFI/RI Report	03 May 94	17 Jan 96	14 Nov 95

**January Work Activity Status**

On December 19, 1994, a meeting was held among the regulatory agencies and DOE to discuss the Presumptive Remedy approach for the Original Landfill. The CDPHE requested a justification for the use of this guidance for the original landfill and to document the justification in the Presumptive Remedy Report. During the meeting, a qualitative Detailed Analysis of Alternatives, which is normally conducted in the traditional CMS/FS process, was presented and discussed in detail. Overall, the Presumptive Remedy approach was agreed upon; however, the CDPHE requested approximately three weeks to study the meeting notes prior to giving approval to proceed with this approach. On January 26, 1995, a follow-up meeting was held among the regulatory agencies and the DOE to discuss the Presumptive Remedy approach for the Original Landfill and the results of the CDPHE's review of the qualitative analysis of alternatives that were prepared and discussed at the December 1994 meeting. The CDPHE's position is that the Presumptive Remedy approach is not the most defensible position and that a FS should be conducted to select the best alternative.

This change in direction does not significantly impact the cost or schedule.

A schedule extension of approximately three months on the OU 5 Draft Phase I RFI/RI Report and approximately two months for the OU 5 Final Phase I RFI/RI Report was requested. A response from the regulatory agencies is pending.

On January 9, 1995, a meeting was held among the regulatory agencies and DOE to discuss comments on the TM #11, *Contaminants of Concern*. Overall, the regulatory agencies agreed with the presentation of data and the results but requested four days to review the revised text on the professional judgement. On January 25, 1995, one of the two remaining issues on whether nickel is a carcinogenic was resolved. One issue remains to be resolved and that is whether arsenic is at background levels or is a Contaminants of Concern.

The Draft Final TM #11, *Contaminants of Concern*, for the Human Health Risk Assessment was reviewed by the regulatory agencies, and comments were received in December 1994. The regulatory agencies have requested additional review time. Specifically, this request has impacted the modeling and risk assessment calculations for the RFI/RI Reports, and in general, the critical path schedule for the IAG milestones will be impacted.

On January 10, 1995, the Draft Final, Revision 1, TM # 12, *Exposure Assessment*, was submitted to the regulatory agencies for review and comments.

On January 17, 1995, the High Purity Germanium survey, which is a task in the Field Sampling Plan of the TM #15, *Addendum to the Field Sampling Plan*, was completed. The results of the High Purity Germanium survey were used by the field crews to begin the Field Instrument for the Detection of Low-Energy Radiation survey of areas indicated to be above background. The Field Instrument for the Detection of Low-Energy Radiation survey was completed in January 1995. The results were summarized in a letter report that recommended surface soil sampling, and sampling began in January 1995. This series of activities is behind on the critical path schedule for the RFI/RI report. In order to bring these activities back on schedule, the laboratory analysis work will be expedited.

Under the implementation of TM #15, *Addendum to the Field Sampling Plan*, the drilling activities at IHSS 115 and the groundwater sample collection continue. As a result of the Draft Site-wide Geological Characterization Report, which inferred a potential fault line under the landfill, a fourth deep borehole was added to the scope to further characterize the area. The drilling of the third bedrock monitoring well was completed on January 9, 1995. A temporary fill road at IHSS 115 was constructed, along with the silt fence below the

road for erosion control. The fill road allows access to two of the geotechnical boring locations.

On January 17, 1995, a meeting was held with the regulatory agencies that considered the question of long-term management of the buffer zone IHSSs, primarily the pond IHSSs. The meeting allowed DOE to gain further understanding of the long-term concerns of the agencies.

Air dispersion modeling activities for the Human Health Risk Assessment were completed. The air modeling report is essentially complete but will not be finalized until after the Contaminates of Concern TM is finalized.

Groundwater modeling activities and Surface water modeling activities for the Human Health Risk Assessment continue. Delays associated with the Contaminates of Concern TM have caused the schedule to slip.

## Technical Memoranda

### Project

OU 5 - Woman Creek Priority Drainage Remedial Investigation

#### TM #1

TM Title  
TM Status

Surface Water and Sediments  
When preparation was concluded: 30 Nov 92  
Projected date of submittal to EPA/CDPHE: 30 Nov 92  
Actual date of submittal: 13 Oct 92

#### TM #2

TM Title  
TM Status

Surface Geophysics  
When preparation was concluded: 30 Nov 92  
Actual date of submittal: 13 Oct 92

#### TM #3

TM Title  
TM Status

Soil Sampling at IHSS 115  
When preparation was concluded: 07 May 93  
Actual date of submittal: 26 Jan 93

#### TM #4

TM Title  
TM Status

Soil Sampling at IHSS 133  
When preparation was concluded: 07 Jun 93  
Actual date of submittal: 12 Apr 93

#### TM #5

TM Title  
TM Status

Soil Gas Sampling at IHSS 115  
When preparation was concluded: 07 May 93  
Actual date of submittal: 25 Mar 93

#### TM #6

TM Title

Cone Penetrometer at IHSS 115

TM Status	When preparation was concluded: 14 Apr 93 Actual date of submittal: 25 Mar 93
TM #7 TM Title TM Status	Soil Borings at IHSS 133 When preparation was concluded: 07 May 93 Actual date of submittal: 19 Feb 93
TM #8 TM Title TM Status	Monitoring Wells at IHSS 115 TM #8 has been canceled and has been replaced by a letter outlining the justification for the location of the wells in IHSS 115.
TM #9 TM Title TM Status	Monitoring Wells at IHSS 133, Ash Pits, Incinerator, and Concrete Wash Pad Actual date of the Draft TM submittal to EPA/CDPHE: 06 May 93 Actual date of the Final TM submittal to EPA/CDPHE: 28 Jun 93
TM #10 TM Title TM Status	Soil Borings at IHSS 209 When preparation was concluded: 06 Mar 93 Actual date of the Final TM submittal to EPA/CDPHE: 06 Mar 93
TM #11 TM Title TM Status	Contaminants of Concern Actual date of the Draft Final TM submitted to EPA/CDPHE: 08 Nov 94 Received comments from CDPHE: 13 Dec 94 Submittal of TM #11 was delayed because of the Human Health Risk Assessment stop work order.
TM #12 TM Title TM Status	Exposure Scenarios Actual date of the submittal of the Final TM to EPA/CDPHE: 10 Jan 95 Submittal of TM #12 was delayed because of the Human Health Risk Assessment stop work order.
TM #13 TM Title TM Status	Modeling Actual date of submittal of the Draft Final TM to EPA/CDPHE: Dec 93 Actual date of submittal of the Final to EPA/CDPHE: 29 Nov 94
TM #14 TM Title TM Status	Toxicity Assessment Actual date of submittal of the Final to EPA/CDPHE: 14 Nov 94
TM #15 TM Title	Addendum to the Field Sampling Plan

**TM Status**

Actual date of the Final TM submittal to EPA/CDPHE: 31 Aug 94

**Planned Work for February**

- The field activities will be completed. The monthly water level measurements and the quarterly groundwater sampling will continue.
- The Human Health Risk Assessment work, which includes the surface water, air, and groundwater modeling activities, continues.
- The FS with an emphasis on the TM #1 will continue.
- The Environmental Evaluation of the Woman Creek Priority Drainage will continue.

**Problems**

The Ecological Risk Assessment is behind schedule. If the milestone extension request is not approved, this activity will be difficult to bring back on schedule.

**Open Items**

The approval for the extension of the IAG Table 6 milestones is pending.

Approval of the TM #14, *Toxicity Assessment*, is pending.

The regulatory agencies' comments on TM #12 are pending.

The resolution of arsenic in the Contaminants of Concern TM is pending.

**2.6 OU 6 - WALNUT CREEK**

OU 6, the Walnut Creek Priority Drainage, comprises assessment and remediation of 19 IHSSs: the A-series Detention Ponds, Ponds A-1 through A-4 (IHSSs 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSSs 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater.

**Scope of Work  
Changes This Period**

None

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

Submit Draft Phase I RFI/RI Work Plan  
Submit Final Phase I RFI/RI Work Plan

19 Apr 91  
16 Sep 91

**Future IAG Milestones  
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	21 Jun 95	19 Apr 95
Submit Final Phase I RFI/RI Report	07 Jan 94	21 Dec 95	20 Nov 95

**January Work Activity Status**

Work on the Final, *Exposure Scenarios*, continues. Since the Draft TM #2 was submitted in June 1993, some of the technical issues in the TM #2 have changed. The Final TM #2 along with the response to comments on the Draft TM #2 will be delivered to the regulatory agencies.

On January 17, 1995, DOE sent a letter to the regulatory agencies that described the updates to TM #3, *Model Description*. This letter also requested a final approval of the TM. This TM was originally transmitted as a Final TM on January 11, 1994, but it never received final approval. The EPA requested that changes be made to the TM to make it consistent with the Exposure Assessment TM.

On January 18, 1995, a meeting was held with the regulatory agencies that covered the review comments on the Ecological Risk Assessment Methodology Sitewide Conceptual Model. Early feedback from the regulatory agencies will shorten the official agency review cycle.

Work on the Draft Final versions of the Ecological Risk Assessment Methodology Sitewide Conceptual Model and the Contaminates of Concern Screening Methodology TM continues.

A schedule extension of approximately three months on the OU 6 Draft Phase I RFI/RI Report and approximately two months on the OU 6 Final Phase I RFI/RI Report was requested. A response from the regulatory agencies is pending.

Currently, a review of existing onsite and offsite treatability study data is being conducted. The purpose of this review is to ensure that all treatability study data that may be required to complete the Detailed Analysis of Alternatives in the next fiscal year will be available. This review is approximately 50 percent complete.

Work on Section 5, Contaminant Fate and Transport of the RFI/RI Report, continues.

Work continues on the Human Health Risk Assessment.

Sprinkler Pipe Cleanup And B-3 Pond Cleanup

On January 23, 1995, the radiological control technicians became available to work on this project; they started to take surveys on the sprinkler pipe in the North Spray Field. Other activities with a higher priority have required so much support from the radiological control technicians that the Sprinkler Pipe Cleanup activity is behind schedule.

**Technical Memoranda**

Project

OU 6 - Walnut Creek

TM #1  
TM Title  
TM Status

Work Plan Modifications  
Approved by EPA: 08 Jan 93

TM #2  
TM Title  
TM Status

Exposure Scenarios  
When preparation of the Draft TM was concluded: 07 July 93  
Date the Draft TM was submitted to EPA/CDPHE: 07 Jul 93  
Projected date the Final TM will be submitted to EPA/CDPHE: To be determined

TM #3  
TM Title  
TM Status

Modeling Description  
When preparation of draft was concluded: 10 Nov 93  
Date the Draft TM was submitted to EPA/CDPHE: 10 Nov 93  
Date EPA/CDPHE comments were received: 23 Dec 93  
Date the Final TM was submitted to EPA/CDPHE: 14 Jan 94  
Actual date of submittal of the Second Final TM to EPA/CDPHE: 30 Jan 95

TM #4  
TM Title  
TM Status

Contaminants of Concern  
Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94  
Date EPA/CDPHE comments were received: 03 Oct 94  
Approved on 28 Dec 94

TM #5  
TM Title  
TM Status

Toxicity Factors  
Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94  
Date EPA/CDPHE comments were received: To be determined  
Approved on 28 Dec 94

**Planned Work for February**

- Efforts on the preparation and submittal process for the TM #2, *Exposure Assessment*, will continue.
- The preparation of the Assessment Endpoint TM, *Conceptual Model TM*, and the Chemicals of Concern Screen Methodology TM for the environmental evaluation continues.
- Efforts on the FS TM #1 will continue.

**Problems**

The Ecological Risk Assessment is behind schedule. If the milestone extension request is not approved, the Ecological Risk Assessment will be difficult to bring back on schedule.

**Open Items**

The approval for the extension of the IAG Table 6 milestones is pending.

The approval from the regulatory agencies of the TM #3 is pending.

The resolution of arsenic in the Contaminants of Concern TM is pending.



<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase I Proposed IM/IRA Decision Document		05 Jan 96	03 Jul 95
Submit IM/IRA Responsiveness Summary	14 Aug 95	04 Oct 95	04 Oct 95
<b><u>Landfill Leachate Collection Proposed Action Memorandum</u></b>			
Release Final Responsiveness Summary and Proposed Action Memorandum		22 Mar 95	22 Mar 95

**January Work Activity Status**

The completion date of the Sitewide OU 1 and 2 Treatment Facility is scheduled for July 27, 1995. The approved Proposed Action Memorandum milestone for collection of seep water is August 16, 1995. The preferred treatment option may not meet the implementation schedule for the Proposed Action Memorandum. The OU 1 and OU 2 treatment acceptance criteria, applicable or relevant and appropriate requirements, capacity, and other onsite treatment systems are being investigated. If the Sitewide treatment facility is not operational, OU 1 will be modified with a temporary pretreatment system to accommodate the water.

Efforts regarding the arsenic at background concentrations continue.

On January 20, 1995, the revised Final Title II Design and specifications were completed.

The hazardous waste determination for the excavated soils was completed. A site walkdown for February 1995 to assess the potential impacts to migratory and nesting birds was planned.

**Technical Memoranda**

Project

OU 7 - Present Landfill

TM

TM Title

TM Status

Revised Work Plan

Submitted the Draft TM to EPA/CDPHE for review: 23 May 94

Comments received: 01 July 94

Submitted the Final TM transmitted to EPA/CDPHE: 09 Sep 94

Approved by the regulatory agencies: 30 Sep 94

**Planned Work for February**

- The options analysis and conceptual design of the landfill closure will continue.

**Problems**

None

**Open Items**

None

**2.1A INDUSTRIAL AREA (IA) OPERABLE UNITS (8, 9, 10, 12, 13, and 14)**

The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of a close proximity to each other and similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

**Scope of Work  
Changes This Period**

None

**Technical Approach  
Changes This Period**

The renegotiation with the regulatory agencies to reorganize and reconfigure the current OU definitions continues.

**IAG Milestone  
Accomplishments**

This information is listed in the Industrial Area (IA) OUs.

**Future IAG Milestones  
Through FY 95**

Deliver reorganization proposal to regulatory agencies 04 Nov 94

**January Work Activity Status**

The IA OU Reorganization and Reconfiguration Plan was submitted to the regulatory agencies on November 4, 1994. To date, comments on the Proposed Plan have not been received.

On January 31, 1995, the Tolling Agreement, which covers milestone fines and penalties within the IA OUs, lapsed. The proposed IA OU Reorganization and Reconfiguration Plan provides new milestone schedules that are intended to replace the Tolling Agreement.

The in-depth formal review of all the information submitted by the Environmental Evaluation subcontractor for the IA is being submitted for peer review and is planned to be completed in February 1995.

On January 25, 1995, the Statement of Work for the intrusive portion of the IA OUs RFI/RI was submitted to Procurement.

On January 5, 1995, the Final IA Surface Water and Sediment Field Sampling Plan TM was delivered to the regulatory agencies. On January 24, 1995, verbal approval from CDPHE was received. DOE sent a letter to CDPHE stating the intent to start field activities on January 30, 1995, and requested a formal letter of approval to start field work activities.

**IA OUs Quality Assurance**

Responses to the Environmental Quality Support group that concerned findings of the OU 10 Site Commitments Management Program were provided.

A review of the Statement of Work for the intrusive investigations of the IA OUs was conducted.

Work on the development of a Scientific Notebook instruction for the Tank and Pipeline Investigations continues.

Efforts on the preparation of the Self Evaluation for January 1995 continue.

**Technical Memoranda**

On October 26, 1994, the Draft IA Surface Water and Sediment Field Sampling Plan was submitted to the regulatory agencies.

**Planned Work for February**

- Under the IA Surface Water and Sediment Field Sampling Plan, field activities will be implemented.
- A peer review of the IA Environmental Evaluation will be conducted.

**Problems**

None

**Open Items**

The formal approval on the Surface Water and Sediment Field Sampling Plan is pending.

**2.8 OU 8 - 700 AREA**

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Environmental Technology Site. Contamination sources within the various IHSSs include above-ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affect areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and, in some cases, through precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs, and ranges from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

**Scope of Work**

**Changes This Period** None

**Technical Approach**

**Changes This Period** None

**IAG Milestone Accomplishments**

Submit Draft Phase I RF/RI Work Plan	01 May 92
Submit Final Phase I RF/RI Work Plan	01 Dec 92

**Future IAG Milestones Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RF/RI Report	14 Feb 94	Tolling Agreement	04 Nov 97
Submit Final Phase I RF/RI Report	12 Jul 94	Tolling Agreement	10 Feb 98

**January Work Activity Status**

On January 18, 1995, the CDPHE, the DOE, and the Rocky Flats Environmental Technology Site staff held a meeting to discuss and plan responses to the CDPHE comments on the Draft Final TM #1, *Investigation of Foundation Drains and Other Data Compilation Addendum to the OU 8 Work Plan*. The CDPHE outlined TM concerns, and the CDPHE, the DOE, and the Rocky Flats Environmental Technology Site staff agreed to changes in the TM that address those concerns. These changes will be incorporated in the TM, and these changes will be approved by CDPHE before the Final TM #1 is produced and formally submitted to the CDPHE.

Field work for the OU 8 RF/RI Stage 2 investigation, which began on October 26, 1994, was completed except for the seven remaining soil gas samples. Approximate percentages of samples collected as part of Stage 2 nonintrusive investigation are as follows: surficial soil samples, 100 percent; vertical profile samples, 100 percent; asphalt/concrete samples, 100 percent; soil gas samples, 90

percent; sediment samples, 100 percent; and NaI radiation measurements, 100 percent.

In January 1995 during the analysis of some soil gas samples, a problem with a laboratory procedure was discovered. As a result, a number of soil gas samples will need to be resampled and analyzed at no cost to DOE. Resampling and analysis of the affected samples are expected to take approximately one to two months to complete. Because the soil gas analyses are being performed in parallel with laboratory analyses, which typically take a minimum of 90 working days to complete, this problem is not expected to impact the critical path for OU 8. Therefore, corrective actions to ensure that this problem does not recur are being taken.

Overall, sampling activities remain ahead of schedule. The remaining soil gas sampling is being delayed by weather-related constraints and re-prioritization of work among several OUs. However, as the remaining soil gas work involves onsite measurement without the need for offsite laboratory analysis and validation, the current schedule (i.e., critical path) is not being impacted. The soil gas sampling is anticipated to be completed in February 1995.

Initial data evaluation and preparation of draft sections of TM #2 are underway. This effort is focusing on the onsite generated data (e.g., NaI radiation surveys, High Purity Germanium radiation surveys, and soil gas analysis). Receipt of the results of the laboratory analyses is not anticipated for several months. Validation will require several additional months.

**Industrial Area (IA) Interim Measure/Interim Remedial Action Plan (IRAP)** - An initial schedule from the Decontamination and Decommissioning group, which outlines the Decontamination and Decommissioning of Building 889, was received. This Decontamination and Decommissioning pilot project will be used to test and develop the efficiency and effectiveness of the verification monitoring.

The outlines for the specific media monitoring requirements for the Groundwater, Surface Water, Air Quality, and Incidental Water Divisions to develop a preliminary design of the Decontamination and Decommissioning Verification Monitoring Program were received.

A meeting was held on January 24, 1995, with the Center for Advanced Decision Support for Water and Environmental Systems personnel to discuss the development of a Decision Support System for the Decontamination and Decommissioning Verification Monitoring Program. At this meeting, a needs analysis for the Decision Support System was begun, and a contract with the Center for Advanced Decision Support for Water and Environmental Systems was initiated.

**Technical Memoranda**

**Project**

OU 8 - 700 Area

**TM #1**

**TM Title**

Investigation of Foundation Drains and Other Data Compilation  
Addendum to the OU 8 Work Plan, Draft Final

**TM Status**

Projected date of submittal to EPA/CDPHE: 01 Dec 94

Actual date of submittal: 23 Nov 94

Date when EPA/CDPHE comments received: Pending

**Planned Work for February**

- The final soil gas samples for the Stage 2 field activities will be completed.
- The regulatory agency comments on the Draft Final TM #1 will be received and addressed.
- Work will begin on the Final TM #1.

**Problems**

None

**Open Items**

None

## 2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This project involves the investigation and remediation of a series of tanks and associated process waste lines. The original process waste lines consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe sections, 40 single and multiple storage tank sites, and three other areas of suspected process waste leakage is included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced between 1975 and 1984 by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred near pipe joints and valves, at approximately 100- to 200-foot intervals along the pipelines and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of the work has resulted in improved oversight, coordination, and reduced costs.

### Scope of Work

Changes This Period                      None

### Technical Approach

Changes This Period                      Based on the EPA and the CDPHE review of the Field Sampling Plan for Pipelines, the technical approach for pipeline investigation will be modified to reduce scope and schedule. This will include scaling back the investigation on certain lines and replacing test pits with less intrusive sampling methods.

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 91

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94	Tolling Agreement	04 Jan 01
Submit Final Phase I RFI/RI Report	06 Sep 94	Tolling Agreement	16 Sep 03
Submit Draft Phase II RFI/RI Work Plan	10 Mar 95		23 Jul 04
Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95		31 Oct 03

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase II RFI/RI Work Plan	07 Aug 95		01 Apr 05
Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95		12 Jul 04

**January Work Activity Status**

A draft addendum to TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks*, which addresses Tanks T-8, T-9, T-24, and T-32 was completed and is being reviewed. The draft addendum will allow additional field preparation activities to begin. The field work preparations that include data evaluation activities, an evaluation of field equipment needs, and site walks were initiated. Also, contact with building managers and shift managers was initiated.

A meeting to discuss the TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*, with the regulatory agencies, DOE, and the Rocky Flats Environmental Technology Site staff was held the week of January 9, 1995. This TM has been in review by the regulatory agencies since November 1994. The regulatory agencies requested modifications to the overall approach to the pipelines that included alternatives to the use of test pits. A verbal agreement among all parties was reached on the following:

- Pipeline segments will be categorized, and the investigation of each segment will be based on the results of the categorization.
- Geoprobes will be utilized instead of pipelines, and surficial samples will not be taken.
- Closure of the lines by rinsing the lines that have less hazardous constituents will be pursued.
- The possibility of performing work as a pilot project geared toward the closure of the lines will be evaluated.
- The regulatory agencies will develop performance and closure standards.

The emphasis of the meeting was the reduction of the scope and schedule. This is a major scope change for the pipeline investigation which will require a baseline change control as well as a written concurrence from the regulatory agencies. Written concurrence from the regulatory agencies is needed as these changes are major deviations from the approved RFI/RI Work Plan.

Also, written concurrence is needed for issues concerning OU 9 tanks and the Economic Conversion Project tanks as these tanks will be reused to handle low-level radioactive materials. Similar

concurrence could be required for tanks in Building 889 as they will be removed as part of Decontamination and Decommissioning activities.

In Building 528, the Tanks in T-7 will be used to store low-level radionuclides. As part of the Stage I Outside Tank Field Investigation, the T-7 tanks will be investigated. Also, as part of the Economic Conversion Project tanks, Buildings 883 and 444 will become active again. The CDPHE requested that the regulatory agencies address the OU 9 IAG issues in writing so that it is clear that RCRA closure can be performed on the tanks and that the tanks can continue to be used to accept low-level waste.

The regulatory agencies have signed the Resolution Statement for the OU 9 tank dispute. This ends the dispute resolution process pertaining to the investigation of active tanks in OU 9 and approves the original TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks*, that addressed the tanks that were not in dispute. In accordance to the resolution, a draft addendum to TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks*, to address Tanks T-8, T-9, T-24, and T-32 has been completed and is being reviewed. In order to accelerate the review process, DOE and the Rocky Flats Environmental Technology Site staff will concurrently review the addendum. Some efforts to prepare for field work have been initiated including some data evaluation activities, an evaluation of field equipment needs, and site walks.

Only a few requirements need to be completed to get the tank investigation started. These include a few training courses, a review of the Scientific Notebook Plan, and procurement of some of the equipment. On January 26, 1995, a draft copy of the As Low As Reasonably Achievable plan was reviewed and finalized. The Radiation Work Permits are still being prepared. These documents are also necessary to perform the tank inspection, boreholes, and other sampling activities. Soil Disturbance Permits were issued on January 18, 1995, and borehole locations are being marked to begin the utility clearance process. Contact with building managers and shift managers including the preparation of tank specific notebooks is still in progress. Presently, no additional requirements by the building managers have been requested.

An addendum to the IA Health and Safety Plan to address Tanks T-8, T-9, T-24, and T-32 has been prepared and is being reviewed.

Comments from the regulatory agencies have not been received on the addendum to the OU 9 Field Sampling Plan for Outside Tanks for Tanks T-11 and T-30. Also, comments from the regulatory agencies on the OU 9 Field Sampling Plan for Pipelines have not been received.

Additional safety requirements to address Tanks T-8, T-9, and T-24 are being investigated. The additional requirements could be necessary, as the tanks will probably be active during the field sampling activities. Precautions such as lockout/tagout to ensure that plenum deluge or other hazardous fluids cannot enter the tank during sampling will have to be taken. Preparations should be made in advance to ensure that operations or the safety system are not disturbed.

New requirements for training continue to delay the OU 9 Outside Tank Investigation. Specifically, two additional courses are now required for waste generator training. Waste generator training is still needed for the Rocky Flats Environmental Technology Site staff. A separate class for Waste Stream and Residue identification and Classification for OU 9 field personnel was arranged and completed. This class is a prerequisite for Waste Generator Training. Also, classes in asbestos awareness, Quality Assurance overview, and core logging are required.

A Draft Scientific Notebook Plan was prepared for the OU 9 tank investigation. This plan provides instructions for tank inspection and sampling as well as how pertinent information will be recorded. Ultimately, some of this information will be incorporated into newer existing procedures.

## Technical Memoranda

### Project

### OU 9 - Original Process Waste Lines

TM #1

TM Title

Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks

TM Status

When preparation was concluded: Jan 94

Projected date of submittal to EPA/CDPHE: Mar 94

Actual date of submittal: 15 Mar 94

Date EPA/CDPHE comments received: 11 Apr 94

TM #1

TM Title

TM Status

Field Sampling Plan - Volume II, Part A, Outside Pipelines

When preparation was concluded: Aug 94

Projected date of submittal to EPA/CDPHE: Nov 94

Actual date of submittal: Nov 94

Date EPA/CDPHE comments received: To be determined

## Planned Work for February

The following activities for the Stage I Outside Tank Investigation will continue: train field personnel, subcontract field work, continue with field work preparations that include permitting, and finalize the Health and Safety Plan.

- Initiate the following OU 9 Outside Tank Investigation field activities: High Purity Germanium survey, sodium iodide survey,

equipment procurement, soil boreholes, groundwater sampling, and tank inspection/sampling.

- The final controlled OU 9 modification to the IA Health and Safety Plan will be released.
- The regulatory agencies' comments on TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*, will be incorporated.
- The Scientific Notebook Plan comments will be incorporated.

**Problems**

Comments from the regulatory agencies have not been received on the addendum to the OU 9 Field Sampling Plan for Outside Tanks for Tanks T-11 and T-30. Comments are also due from the regulatory agencies on the OU 9 Field Sampling Plan for Pipelines.

**Open Items**

None

## 2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is composed of 15 IHSSs scattered throughout the Rocky Flats Environmental Technology Site. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the Rocky Flats Environmental Technology Site. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY 94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of the similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

### Scope of Work

Changes This Period                      None

### Technical Approach

Changes This Period                      None

### IAG Milestone Accomplishments

Submit Draft Phase I RF/RI Work Plan	27 Nov 91
Submit Final Phase I RF/RI Work Plan	01 May 92

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RF/RI Report	25 Aug 94	Tolling Agreement	09 Nov 20
Submit Final Phase I RF/RI Report	30 Jan 95	Tolling Agreement	27 Jul 21
Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95		26 Feb 18
Submit Draft Phase II RF/RI Work Plan	27 Jun 95		25 May 17
Submit Final Phase II RF/RI Work Plan	21 Nov 95	Tolling Agreement	02 Feb 18

### January Work Activity Status

On January 13, 1995, a meeting to resolve regulatory agency comments on the OU 10 Proposed Action Memorandum and to discuss possible strategies that could be negotiated in order to obtain final regulatory agency approval was held. The regulatory agencies were unwilling to approve the last iteration of this document. Before any regulatory agencies approval was granted, the CDPHE requested that DOE not only develop and implement a predecisional Sampling and Analysis Plan to further characterize the nature and extent of contamination in the soil and groundwater surrounding the tanks but also to include the clean up methodology and to meet the clean closure performance standards in this project. The closure standards will have to be risk-based determinations that incorporate residential use risk levels. DOE made a decision that the Building 443 tanks do leak, and they represent a source term that

introduces contaminants into the environment. DOE has the responsibility to remove the source terms in a timely manner. The delays to this project are now specifically the responsibility of the CDPHE and not the DOE. DOE had been attempting to remove these tanks under the auspices of an accelerated clean-up action, but because of the significant amount of additional time that will be required to develop and implement the Sampling and Analysis Plan, this project is no longer considered an accelerated clean-up action.

On January 20, 1995, the DOE decided to stop work on implementation of the OU 10 Proposed Action Memorandum. This decision was based on the inability of DOE to come to an agreement with the regulatory agencies on the specific details of the scope for the Proposed Action Memorandum. The Rocky Flats Environmental Technology Site staff will not commit any resources to this project until further guidance is provided for implementation of the OU 10 Proposed Action Memorandum. This issue has been elevated to DOE management for resolution.

On January 17, 1995, the Draft OU 10 nonintrusive TM #1 was delivered to the regulatory agencies. The Draft TM #1 comments are scheduled to be received from the regulatory agencies on February 6, 1995.

An evaluation of the OU 10 soil gas analytical results was performed. Based on chemical screening criteria, 20 OU 10 samples were unacceptable. After further analysis, it was determined that only four locations needed to be resampled in IHSS 170.

## Technical Memoranda

### Project

### OU 10 - Other Outside Closures

TM #1  
TM Title  
TM Status

Draft Final Phase I Nonintrusive TM #1  
When preparation was concluded: 17 Jan 95  
Projected date of submittal to EPA/CDPHE: 17 Jan 95  
Actual date of submittal: 17 Jan 95  
Date EPA/CDPHE comments received:

TM #1  
TM Title  
TM Status

Final Phase I Nonintrusive TM #1  
When preparation was concluded:  
Projected date of submittal to EPA/CDPHE: 24 Mar 95  
Actual date of submittal:  
Date EPA/CDPHE comments received:

**Planned Work for February**

- The TM #1 comments will be received from the regulatory agencies and incorporated into the Final TM.
- Four locations will be resampled in IHSS 170.
- The validation of the remainder of the sample analytical data will be completed.
- The sodium iodide surveys will be completed.

**Problems**

None

**Open Items**

The regulatory agencies and the DOE have been unable to reach an agreement on the specific details of the scope for the Proposed Action Memorandum.

**2.11 OU 11 - WEST SPRAY FIELD**

The West Spray Field is located within the Rocky Flats Environmental Technology Site buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from Solar Evaporation Ponds 207B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 38 of which received direct application of solar pond water. The RF/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

**Scope of Work** None  
**Changes This Period**

**Technical Approach** None  
**Changes this Period**

**IAG Milestone Accomplishments** Submit Draft Phase I RF/RI Work Plan 08 Jun 90  
 Submit Final Phase I RF/RI Work Plan 02 Jan 92

**Future IAG Milestones Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phases (combined) RF/RI Report	20 Sep 94	20 Jul 95*	19 May 95
Submit Final Phases (combined) RF/RI Report	22 Feb 95	19 Sep 95*	21 Jul 95

\* Revised according to the Process Improvement Proposal.

**January Work Activity Status** Statistical tests on the data from the 1994 summer's field work were performed. The Risk Assessment portion of the RF/RI Report was started. The subcontract for the Proposed Plan, the Responsiveness Summary, and the Record of Decision was awarded.

**Technical Memoranda**

**Project** OU 11 - West Spray Field

**TM**  
**TM Title** Revised Field Sampling Plan and Data Quality Objectives  
**TM Status** Submitted to EPA/CDPHE: 31 Mar 94  
 TM approved.

**TM #1**  
**TM Title** Exposure Scenarios  
**TM Status** When preparation was concluded: Mar 94 (late)  
 Projected date of submittal to EPA/CDPHE: 14 Dec 94

Actual date of submittal: To be determined  
Date EPA/CDPHE comments received: To be determined

TM #2  
TM Title  
TM Status

Modeling  
When preparation was concluded: 22 Mar 94 (late)  
Projected date of submittal to EPA/CDPHE: 14 Dec 94  
Actual date of submittal: To be determined  
Date EPA/CDPHE comments received: To be determined

TM #3  
TM Title  
TM Status

Contaminants of Concern  
When preparation is concluded or estimated to be concluded:  
20 Sep 94  
Projected date of submittal to EPA/CDPHE: 09 Nov 94  
Actual date of submittal: To be determined  
Date EPA/CDPHE comments received: To be determined

TM #4  
TM Title  
TM Status

Toxicity  
When preparation is concluded or estimated to be concluded:  
10 Oct 94  
Projected date of submittal to EPA/CDPHE: 12 Dec 94  
Actual date of submittal: To be determined  
Date EPA/CDPHE comments received: To be determined

Planned Work for February

- The CDPHE letter report will be completed and presented to the regulatory agencies.

Problems

The turn-around time for the analytical data exceeded what was planned for in the schedule.

Open Items

None

## 2.12 OU 12 - 400/800 AREA

The 400/800 Area comprises assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

The Phase I RFI/RI Work Plan, which includes both an Environmental Evaluation and a Human Health Risk Assessment, has been completed. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. A FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Based on results obtained during the assessment phase of the project, remediation may consist of the development and execution of a Remedial Action Plan. This process includes review and approval by the regulatory agencies followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, in situ radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work

Changes This Period                      None

### Technical Approach

Changes This Period                      None

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 May 92
Submit Final Phase I RFI/RI Work Plan	05 Oct 92

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94	Tolling Agreement	11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94	Tolling Agreement	17 Nov 99

### January Work Activity Status

On January 24, 1995, work on the Tripod High Purity Germanium Survey began; this survey is expected to be completed in February 1995. Originally, this work was scheduled to be completed by January 10, 1995, but the work was not accomplished by this date. The development of the preliminary Draft TM has begun without this information, and the assumption that was made is that the Tripod High Purity Germanium Survey will not generate data significantly different

than the truck mounted High Purity Germanium Survey. The tripod results will be included in the Draft TM that will be submitted to the regulatory agencies.

Asphalt sample results were received on January 11, 1995. The contracting laboratory used its own internal method for quality assurance and validation. Therefore, the results from the asphalt samples are not data that can be validated. This information will be used as screening level data the same as the soil gas information.

Work on the TM #2 that summarizes the data gathered from the nonintrusive field activities for OU 12 continues. Data have been gathered, and the extractions of information from the Rocky Flats Environmental Database continue. Data are being assessed and compared to preliminary remediation goals and background levels. DOE will receive the nonintrusive Summary TM in February 1995 for concurrent preliminary review with the Rocky Flats Environmental Technology Site staff.

OU 12 points were surveyed where sampling occurred. The Global Positioning system began surveying in November 1994, and this activity is anticipated to be completed in February 1995.

**Technical Memoranda**

The Draft IA Surface Water and Sediment Field Sampling Plan was submitted to the regulatory agencies on October 26, 1994.

**Planned Work for February**

- The preparation of the Preliminary Draft TM #2 continues.
- The Tripod High Purity Germanium surveys will be completed.
- The Global Positioning System surveying will be completed.

**Problems**

None

**Open Items**

None



and 186 (46 percent complete). To date, the overall soil gas program has collected 459 samples. This figure includes approximately 100 sites that were abandoned because of conflicts with the underground utilities or other obstacles and approximately 47 resamples. Approximately 240 new sites remain to be sampled. Soil gas investigations for the entire IHSS 117.1 (48 samples) must be resampled because of a calibration problem with the analytic equipment. An additional eight samples in other IHSSs may also need to be resampled. The subcontractor will conduct this sampling at its own cost. The completion of the soil gas investigation is anticipated to be delayed.

The costs of analysis of all the analytic work performed to date has resulted in cost variances for this project. Problems with the accounting system have been acknowledged and support will be provided to define the exact budget and accounting status of all recent sampling efforts.

## **Technical Memoranda**

### **Project**

### **OU 13 - 100 Area**

**TM #1**  
**TM Title**  
**TM Status**

**Addendum to Field Sampling Plan**  
**When preparation was concluded: Feb 94**  
**Projected date of submittal to EPA/CDPHE: Feb 94**  
**Actual date of submittal: 03 Mar 94**  
**Date EPA/CDPHE comments were received: 16 May 94**

**TM #2**  
**TM Title**  
**TM Status**

**Results of the NonIntrusive Field Investigations**  
**Projected date of submittal to EPA/CDPHE: 07 Feb 96**  
**Actual date of submittal: To be determined**  
**Date EPA/CDPHE comments were received: To be determined**

### **Planned Work for February**

- The soil gas investigations will continue.
- The TM #2 preparation will continue.

### **Problems**

The soil gas resampling efforts in IHSS 117.1 should not affect either cost or schedule but will be reported as a problem until the corrective action is completed by the subcontractor.

### **Open Items**

OU 9 investigations using the Scientific Notebook Plan instead of Operating Procedure FO.28 will be conducted. This item is now closed for OU 13. See progress reports in OU 9.

## 2.14 OU 14 - RADIOACTIVE SITES

Work at the Radioactive Sites comprises the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills; and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will proceed in three steps. The first step, which has been completed is preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and FS of the project. This process includes review and approval by EPA and CDPHE followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work

Changes This Period                      None

### Technical Approach

Changes This Period                      None

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
Submit Final Phase I RFI/RI Work Plan	19 Oct 92

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Dec 94	Tolling Agreement	23 Apr 97
Submit Final Phase I RFI/RI Report	23 May 95		29 Sep 97

### January Work Activity Status

On January 19, 1995, the soil gas data were plotted and evaluated to identify hot spots that may require further investigation. One potential hot spot was identified in IHSS 160. The sampling grid in the vicinity of the hot spot will be tightened to better define the area.

A letter dated January 23, 1995, that identifies and describes Work Plan discrepancies in the nonintrusive sampling of OU 14 was received and is being reviewed by DOE. The Work Plan did not

clarify whether the sampling grids should be tightened in Stage 1 or Stage 2. This letter recommends that sampling grids be tightened in Stage 1 for the soil gas and sodium iodide surveys and in Stage 2 for the surficial soil samples.

On January 6, 1994, sodium iodide (radiation) surveys that are required in the OU 14 Work Plan were completed.

A controlled procedure for the use of a pushed type soil sampler is being prepared. The pushed type sampler will be used in place of a conventional drill rig and will reduce drill cuttings and costs. This procedure will facilitate sample collection and significantly reduce costs.

Efforts on reviewing results for inclusion in the OU 14 TM #1, *Results of Nonintrusive Field Investigations*, continue.

**Technical Memoranda**

A nonintrusive TM that summarizes the nonintrusive field work and recommends Stage II activities for the RI intrusive field work will be prepared in FY 95.

**Planned Work for February**

- The draft copy of the controlled procedure for the pushed type soil sampler should be completed.
- The analysis of the surficial soil samples is ongoing and will continue throughout February 1995.
- The soil gas survey grid will be tightened in the vicinity of the hot spot identified in IHSS 160.

**Problems**

None

**Open Items**

None



**Technical Memoranda**

**Project**

OU 15 - Inside Building Closures

**TM #1**

**TM Title**

**TM Status**

Field Sampling Plan

When preparation is estimated to be concluded:

Projected date of submittal to EPA/CDPHE: 28 Feb 94

Actual date of submittal: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94 (Formal  
04 May 94, EPA, 07 Apr 94 CDPHE)

**Planned Work for February**

- A draft Proposed Plan will be developed and completed.
- A draft proposed remedy selection will be submitted to and reviewed by the regulatory agencies.

**Problems**

None

**Open Items**

None

## 2.16 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that comprise a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to the general Rocky Flats environmental restoration activities. Activities include, but are not limited to, the Health and Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

**Scope of Work  
Changes This Period**

None

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft Health and Safety Plan	15 Aug 90
Submit Draft Quality Assurance Project Plan	29 Aug 90
Submit Draft Standard Operating Procedures	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan	01 Nov 90
Submit Final Health and Safety Plan	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final Community Relations Plan	22 Jan 91
Submit Final Quality Assurance Project Plan	01 Mar 91
Submit Final Standard Operating Procedures	01 Mar 91
Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for Radionuclides Discharge Limits Plan	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93
Submit Sitewide Annual Treatability Study	04 Mar 94
Draft IA IM/IRA Decision Document	23 Mar 94
Submit Draft IA IM/IRA Responsiveness Summary	28 Oct 94

**Future Milestones  
Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Final IA IM/IRA Responsiveness Summary	23 Aug 94	23 Nov 94	02 Nov 94
Submit Final IA IM/IRA Decision Document	23 Aug 94	23 Nov 94	23 Nov 94
Submit Sitewide Annual Treatability Study	14 Mar 95		14 Mar 95

**January Work Activity Status**

**Sitewide Activities**

**Sitewide Treatability Studies**

**Potassium Ferrate Groundwater Treatment (TRU-Clear®)**

- On January 10, 1995, the DOE received the Final Potassium Ferrate Groundwater Treatment Report. The delivery of the Final Report concludes this project.

**Removal of Actinides from Soil - Test work for the Removal of Actinides from the Soil Treatability Study has been completed, and all samples obtained were submitted to the analytical laboratory for analytical work. Additionally, the experimental phase of the Work Plan for the Removal of Actinides from the Soil Treatability Study has been completed, and the Draft Final Removal of Actinides from the Soil Treatability Study Report is expected to be completed on or before April 17, 1995. This treatability study project is currently ahead of schedule.**

**Chemically Enhanced Steam Stripping - DOE received the Final Phase I Chemically Enhanced Steam Stripping Report on January 25, 1995.**

**Annual Treatability Study Report - On January 20, 1995, DOE received the Final Draft Annual Treatability Study Report for comment review.**

**Other Sitewide Operations**

**Community Relations - Prior to the release of the OU 4 IM/IRA Environmental Assessment Decision Document on February 10, 1995, a public workshop/ meeting was conducted. The objective of the workshop was to introduce the public to the Decision Document and to listen to the public concerns surrounding the Rocky Flats proposed remedy for OU 4. The workshop was attended by the regulatory agencies, the public, and the Rocky Flats Environmental Technology Site staff. The OU 4 workshop was the first of many public involvement activities to support the proposed remediation activities in the other OUs.**

**Community Relations (continued)** - An updated Community Relations Plan has been prepared and will be released in February 1995.

**Surface Water Management - Onsite Water Control Drainage Repair and Improvement Projects** - A preferred approach for the Woman Creek Bypass Upgrades Project for inclusion in the Surface Water Drainage System Environmental Assessment was selected. This approach involves the upgrade of two low spots along the bypass and the possible raising of the height of the diversion wall to prevent overflow of the Woman Creek water into Pond C-2 during a 25-year storm event. This approach still allows for future vegetation removal along the whole length of the bypass canal to reduce or eliminate overflows to Pond C-2 from the 100-year storm event. The advantages to this approach include low cost, a minimal amount of construction, and the potential to eliminate this effort as a separate project and place it under the South Interceptor Ditch Repair Project. A disadvantage to this approach is that Pond C-2 will need to be kept approximately at the 30 percent level to avoid overflow of the Dam C-2 spillway during the 100-year storm event because a significant amount of Woman Creek water will flow into Pond C-2.

An updated cost estimate for the South Walnut Creek Flood Prevention Project option that focuses on additional water storage upstream from Building 991 was completed.

**Dam Upgrades Project** - On January 5, 1995, the first scope development meeting was held. The upstream gate design specifics and the project schedules were discussed. The scope and cost estimate was divided into different project scenarios to assist with future planning. A draft engineering scope has been completed for the Upstream Outlet Controls Dams A-3, A-4, B-5, and C-2. Prior to pursuing a cost estimate for the work, this scope will be reviewed by the Rocky Flats Environmental Technology Site Ecology and Watershed Division and the Surface Water staff.

During a January 7, 1995, meeting that discussed the Dam Upgrades, DOE instructed the Rocky Flats Environmental Technology Site staff to pursue upstream outlet control installations for the terminal dams and installation of the downstream toe drains/butresses for the terminal dams as two separate projects and to not pursue the addition of upstream shells on Dams A-4 and B-5. Starting with Dam A-4, the goal is to expedite upstream outlet control installations. There will be meetings with the State Engineer to discuss downstream valve cycling that could result in increased focus on this scope development effort.

**Surface Water Drainage Systems Environmental Assessment** - A flow chart was developed to illustrate the programmatic approach of the Surface Water Drainage Systems

**Environmental Assessment, which covers five separate drainage projects and two drainage maintenance programs. Drafts have been developed for the appendices that focus on project options analysis and project and program descriptions and for appendices that define activities and tasks associated with each project and program and the associated environmental effects. A final appendix will define mitigatory measures for each environmental effect. These mitigatory measures, which tend to reflect standard Rocky Flats Environmental Technology Site construction requirements, will be included as part of the proposed action of the Environmental Assessment.**

**A second draft was completed for several sections of the Appendix A Options Analysis portion of the Surface Water Drainage Systems Environmental Assessment. Completed sections discuss the various drainage project options, how those options utilize a variety of approaches to develop a solution to a drainage deficiency, a discussion of the Woman Creek Upgrades Project options, and the process by which a particular option was chosen for inclusion as part of the preferred alternative.**

**Environmental Assessment - The Rocky Flats Environmental Technology Site staff discussed the ongoing wetland mitigation activities to help evaluate budget requirements and potential schedule impacts. Four ongoing wetland mitigation efforts were identified. It was determined that the wetlands mitigation requirements could impact the OU and the Onsite Water Management project schedules, but it is difficult to evaluate these potential schedule impacts because many uncertainties with the offsite wetland mitigation efforts are involved.**

**Project Management - Onsite Water Management Projects' schedules and cost estimates were updated for inclusion within the five-year Major Activity Descriptions, which cover the Onsite Water Management and the Pond Water IM/IRA work packages. An estimated wetland mitigation schedule was developed as part of the overall project schedule development effort for the Onsite Water Management Projects as wetland mitigation will likely be required before any project construction begins.**

## **Planned Work for February**

### **Sitewide Activities**

- **Removal of Actinides from the Soil - Efforts on the Draft Final Removal of Actinides from the Soil Treatability Study Report will continue.**

### **Other Sitewide Operations**

- **Community Relations - Normal operations will continue.**

- **Surface Water Drainage Systems Environmental Assessment -Efforts on the Appendix A Options Analysis portion of the Surface Water Drainage Systems Environmental Assessment will continue.**

**Problems**

**None**

**Open Items**

**None**

## **SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING**

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDPHE upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy, and, therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and obtain split or duplicate samples.

### **3.1 SURFACE WATER AND SEDIMENTS**

Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.

Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.

Each surface water and sediment sample is analyzed for the following parameters:

Contract Laboratory Program Target Compound List Volatile Organic Analysis  
Metals Contract Laboratory Program Target Analysis List and Non-Target Analysis List  
Field Parameters  
Specific Conductivity  
Dissolved Oxygen  
Major Anions  
Radionuclides  
Temperature  
Total Dissolved Solids/Total Suspended Solids  
pH  
Nutrients

Additionally, sediment samples are analyzed for Contract Laboratory Program-Semi Volatile Organic Analysis and Contract Laboratory Program-Pesticides/polychlorinated biphenyls Herbicides-619.

### **3.2 SOILS**

Each of the soil stations (located at 1- and 2-mile radii from the site center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

### **3.3 GROUNDWATER**

The regulatory agencies have agreed with the recommendation of the 1993 Well Evaluation Report to reduce the number of wells being sampled quarterly. As a result, 140 wells have been reduced from quarterly sampling to annual sampling for a total of 237 wells to be sampled in the first quarter of 1995.

During January 1995, 90 groundwater stations were sampled, and 217 monthly water measurements were completed. Eleven weekly water level measurements are ongoing.

Groundwater samples are routinely sampled for the following:

**Radiochemical Parameters**

Gross Alpha  
Gross Beta  
Plutonium  
Americium  
Strontium  
Tritium  
Uranium  
Cesium

**Inorganic Parameters**

Nitrate/Nitrite  
Phosphorous  
Ammonia  
Total Dissolved Solids  
Chlorine  
Fluorine  
Sulfate  
Carbonate  
Bicarbonate  
Total Suspended Solids  
Dissolved CLP<sup>1</sup> and additional metals  
Cyanide  
CLP<sup>1</sup> Volatile Organic Constituents

**Field Parameters**

Specific Conductivity  
Temperature  
Turbidity  
pH

*CLP = Contract Laboratory Program*

## SECTION 4. SUBCONTRACTOR IDENTIFICATION

Subcontractors being used on the Rocky Flats ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Dames & Moore		CMS/FS Report	Jan 92
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc. (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RF/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Feb 92
2	Assessment	Woodward-Clyde	Layne	OU 2 RF/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation	RTG		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
2	Soil Vapor Extraction	Woodward-Clyde		Operation of Soil Vapor Extraction	1993
3	Assessment	CH2M Hill		RI Report	Apr 92
4	Remediation	Halliburton	Halliburton	Demobilize	Sep 91
4	Assessment	Parsons/Eng Science	Rust I&E	Implement the Phase I RF/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Remediation	Parsons/ Eng Science		Development of IM/IRA Decision Document and conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-closure monitoring plan	Nov 93
4	Remediation	Halliburton		Develop Treatability Study for Pondcrete	Aug 94

<u>OU</u>	<u>Project</u>	<u>Sub-Subcontractor</u>	<u>Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
4	Remediation	Halliburton		Develop Treatability Study and Conceptual Design for Pond Sludge Processing	Aug 94
5	Assessment	ASI Blackhawk Geo Walsh & Assoc. Layne Envir. Serv. S. M. Stoller Adv. Terra Testing	Dames & Moore  Utility Mgmt. Service	Implementation of OU 5 Work Plan (excluding Environmental Evaluation)	Jun 92
5	Assessment	S. M. Stoller		Implementation of Environmental Evaluation section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Envir	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S. M. Stoller		Implementation of EE section of OU 6 Work Plan	Sep 92
7	Assessment	S. M. Stoller	Walsh & Assoc.	OU 7 revised Work Plan development and implementation. IM/IRA Decision Document development.	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	Jan 94
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
15	Assessment	ERM-Rocky Mtn.	G. S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	Jacobs Eng		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State University		Support master's thesis of Structural Geology, of Front Range Area near Rocky Flats	Nov 91
SW	Geo. Char.	S. M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado	School of Mines	Masters-level training program in Engineering Science and Engineering	Aug 92

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	Woodward-Clyde		Support for the Soil Water Monitoring System	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	Apr 92
SW	Geo. Char.	University of Colorado		Soil Monitoring Vadose Zone	Jun 92
SW	Geo. Char.	S. M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde Water	SAIC/Wright		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul 90
SWQA		Support	SAIC	Develop and implement QA program and field operations oversight	Dec 90
PM Support		S. M. Stoller		Program Management Support	Oct 92
PMQA Support		SAIC		Provide Quality Assurance /Quality Control support to ER Program	Nov 92

## ACRONYMS

CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
DOE	U. S. Department of Energy
EPA	U. S. Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FY	Fiscal Year
IA	Industrial Area
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
M	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
OU	Operable Unit
RCRA	Resource Conservation and Recovery Act
RFFO	Rocky Flats Field Office
RFI	RCRA Facilities Investigation
RI	Remedial Investigation
TM	Technical Memorandum