



DOE-RFFO Environmental Restoration Program

Monthly Report for October 1994



November 20, 1994

ADMINISTRATIVE

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REVIEW WAIVER PER
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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR OCTOBER 1994

The final confirmation sampling of the Operable Unit (OU) 1 hot spots was completed on October 3, 1994. On October 10, 1994, the last samples were shipped to the laboratory for analysis. Analytical results are due back in December 1994 and will be validated in January 1995.

DOE received authorization from the regulatory agencies to cease the collection and treatment of the 881 Footing Drain water in OU 1. A temporary diversion of the 881 Footing Drain to the South Interceptor Ditch was installed. A permanent way to divert the footing drain water is under design.

In OU 3, Site development approval for the two air and meteorological monitoring station sites was obtained from the Jefferson County Planning Commission on October 7, 1994.

In OU 4, procedures were developed and special fabricated equipment was designed to facilitate the pumping of sludge from the C Pond and the off loading of the trucks at the 750 Pad. All improvements have been completed, and the restart date for the C Pond material transfer was October 18, 1994, with a project completion date of January 5, 1995.

The OU 4 B-North pond was emptied of approximately 200,000 gallons of water. The water had accumulated as a result of precipitation and was sent to Building 374 for treatment. Only one of the five solar ponds remains to be emptied by the IAG milestone date of January 20, 1995.

The OU 7 Process Improvement Proposal was approved by the Colorado Department of Public Health and Environment (CDPHE) in a letter dated October 21, 1994. The milestone issues addressed in the letter include the deletion of ten milestones, the approval of extension dates for eight milestones, and the addition of three milestones. CDPHE agreed to delete the following IAG milestones from the OU 7 scope of work:

- Submit Draft Phase I RCRA Facilities Investigation/Remedial Investigation (RFI/RI) Report
- Submit Final Phase I RFI/RI Report
- Submit Draft Phase II RFI/RI Work Plan
- Submit Final Phase II RFI/RI Work Plan
- Submit Draft Phase II RFI/RI Report
- Submit Final Phase II RFI/RI Report
- Submit Draft Phase II Corrective Measures Study/Feasibility Study (CMS/FS) Report
- Submit Final Phase II CMS/FS Report
- Submit Draft Phase I IM/IRA Implementation Document
- Submit IM Design Work Plan

According to the letter, the remaining milestones proposed for deletion are contingent on the results of the Interim Measure/Interim Remedial Action (IM/IRA). Their elimination was deferred until completion of the IM/IRA. As clarification, the scope of the IM/IRA Decision Document should include: (1) selection of landfill closure alternatives, (2) selection of groundwater collection and treatment alternatives, (3) conceptual design of proposed alternatives, (4) post-closure care monitoring plan, and (5) wetlands mitigation. CDPHE approved the following revised milestone dates:

- Submit Draft Phase I IM/IRA Decision Document August 31, 1995
- Submit Draft Final Phase I Interim Measure/
Interim Remedial Action (IM/IRA) January 5, 1996

Submit IM/IRA Responsiveness Summary April 1, 1996
Submit Final Phase I IM/IRA Decision Document June 18, 1996
Submit Final IM Title II Design September 27, 1996
Begin Phase I IM/IRA Construction June 10, 1997
Submit Draft Phase II Corrective Action Decision/
Record of Decision (CAD/ROD) September 10, 1997
Submit Final Phase II CAD/ROD March 25, 1998

CDPHE approved the addition of the following milestones:

Submit Draft Revised Phase I Work Plan
Technical Memorandum (TM) May 23, 1994
(submitted May 23, 1994)
Submit Final Revised Phase I Work Plan TM September 8, 1994
(submitted September 8, 1994)
Submit Draft IM Title II Design May 30, 1996

Formal approval from the regulatory agencies on the OU 8, Phase I RFI/RI Work Plan was received on October 3, 1994, and field activities for OU 8 began on October 24, 1994.

The Final Corrective Action Decision/Record of Decision in OU 16 was signed by the regulatory agencies and DOE. Under terms of the Interagency Agreement (IAG), this marks the first completion of an OU at the Rocky Flats Environmental Technology Site.

The Industrial Area (IA) Interim Measure/Interim Remedial Action Plan (IM/IRAP) Draft Responsiveness Summary was submitted to the regulatory agencies on October 28, 1994, four days ahead of the IAG milestone schedule.

IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT

<u>Number of IAG Table Six Milestones To Date</u>	<u>Current Fiscal Year (FY 95) (10/1/94 - 9/30/95)</u>	<u>Since IAG Inception</u>
Scheduled (including approved extensions)	0	127
Met	0	97
Extensions Granted	3	49
Extensions Denied	0	8
Remaining this FY 94 (to 9/30/94)	42	n/a
Added	1	11
Deleted	0	4

<u>Deliverables in Review by Regulators</u>	<u>Project</u>	<u>Date Submitted</u>
	Revisions to OU 1 Phase III RFVRI Report	15 Jun 94
	OU 2 Draft Phase II RFVRI Report	16 Dec 93
	OU 4 Draft Proposed Phase I IM/IRA Decision Document	27 May 94
	OU 4 Draft Phase II RFVRI Work Plan	27 May 94
	OU 4 Final Phase II RFVRI Work Plan	02 Sep 94
	OU 15 Draft Phase I RFVRI Report	25 Jul 94

<u>IM/IRA Status</u>	<u>Gallons Treated</u>
OU 1 881 Hillside Treatment	2,631,616 gallons
OU 2 903 Pad Water Treatment	24,800,006 gallons
OU 2 Subsurface IM/IRA (Soil Vapor Extraction, Test Site I) Treatment	1, 106 gallons
OU 4 Water Management Tasks (Interceptor Trench System and Pond Water)	4,361,708 gallons

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 1 Corrective Design/Remedial Design Work Plan	01 Nov 94	21 Dec 95	Extension date to be determined
OU 1 Draft Proposed Plan	22 Nov 94	To be determined	On schedule
OU 1 Final CMS/FS Report	22 Nov 94	To be determined	On schedule
OU 1 Final Proposed Plan	24 Feb 95	To be determined	On schedule
OU 2 Draft Responsiveness Summary	13 Dec 94	16 May 97	See footnote 2
OU 2 Final Responsiveness Summary	16 Mar 95	02 Jul 97	See footnote 2
OU 2 Draft Corrective Action Decision/	16 Mar 95	02 Jul 97	See footnote 2

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 4 All Solar Ponds Emptied of Water and Sludge	20 Jan 95	18 Jan 95	On schedule
OU 4 Submit IM/IRA Responsiveness Summary	25 Jan 95	To be determined	See footnote 1
OU 4 Final IM Title II Design	10 Feb 95	To be determined	See footnote 1
OU 4 Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	25 Feb 95	To be determined	See footnote 1
OU 7 Final Leachate Collection Responsiveness Summary and Interim Measure/Interim Remedial Action	08 Mar 95	08 Mar 95	On schedule
OU 7 Release Final Leachate Collection Responsiveness Summary and Interim Measure/Interim Remedial Action	22 Mar 95	22 Mar 95	On schedule
OU 10 Final Phase I RFI/RI Report	30 Jan 95	19 Jul 16*	Delayed
OU 13 Final Phase I RFI/RI Report	11 Jan 95	19 Feb 99*	Delayed
OU 14 Draft Phase I RFI/RI Report	20 Dec 94	28 Apr 98*	Delayed
OU 15 Final Phase I RFI/RI Report	04 Jan 95	04 Jan 95	On Schedule
SW Industrial Area Draft Responsiveness Summary	02 Nov 94	02 Nov 94	On schedule
SW Industrial Area Final Responsiveness Summary	23 Nov 94	23 Nov 94	On schedule
SW Industrial Area Final Decision Document	23 Nov 94	23 Nov 94	On schedule

<u>Overdue Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 4 Final Phase I Proposed IM/IRA Document	06 Aug 94	To be determined	See footnote 1
OU 8 Draft Phase I RFI/RI Report	14 Feb 94	14 Nov 97*	Overdue
OU 8 Final Phase I RFI/RI Report	12 Jul 94	10 Feb 98*	Overdue
OU 9 Draft Phase I RFI/RI Report	11 Apr 94	07 Sep 04*	Overdue
OU 9 Final Phase I RFI/RI Report	06 Sep 94	18 Feb 05*	Overdue
OU 10 Draft Phase I RFI/RI Report	25 Aug 94	02 Nov 15*	Overdue
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	09 Apr 98*	Overdue
OU 12 Final Phase I RFI/RI Report	15 Sept 94	15 Sep 98*	Overdue
OU 13 Draft Phase I RFI/RI Report	08 Aug 94	09 Sep 98*	Overdue

<u>Extended Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 2 Draft CMS/FS Report	04 Nov 93	11 Apr 96	See footnote 2
OU 2 Final CMS/FS Report	10 May 94	30 Aug 96	See footnote 2
OU 2 Submit Draft Proposed Plan	10 May 94	30 Aug 96	See footnote 2
OU 2 Submit Final Proposed Plan	09 Aug 94	26 Nov 96	See footnote 2

*According to the Tolling Agreement, the OU 2 and the Industrial Area OUs have until January 31, 1995, to renegotiate new dates. According to the current schedule, the dates that are written in the Current Projected Completion Date column are the anticipated dates.

¹ New milestone dates have been proposed to the regulatory agencies, but acceptance has not been given. Responses from the regulatory agencies are expected in November 1994.

² Revised dates based on the Human Health Risk Assessment schedules. IAG Table 6 needs to be updated.

PROBLEMS AND PROGRAMMATIC ISSUES

DOE has requested a stop work order from the regulatory agencies in OU 1. This stop work order will be required until the issue of approval of the revised RFI/RI Report and matters relating to the Colorado groundwater standards as Applicable or Relevant and Appropriate Requirements are fully resolved. DOE requested that the work stoppage be retroactive to September 7, 1994, which is the date of the CDPHE comments on the RFI/RI Report.

A Bald Eagle was observed in the OU 3 Standley Lake area on October 10, 1994. This eagle is likely to be one of the pair of Bald Eagles that has used the Standley Lake area for winter nesting since 1991. The arrival of the Bald Eagle has the potential to affect operation and/or completion of at least two of the four air monitoring stations. Arrangements were made to complete construction of the air monitoring station located north of 100th Avenue on October 13, 1994.

The regulatory agencies have not provided their comments to submitted OU 3 documents in a time frame consistent with the accelerated project schedule.

In OU 5, the start of the high purity germanium radiation surveys was delayed because of needed equipment repair. As required in TM #15, this activity is on the critical path for completing surface soil sampling.

The delay in the approval of the OU 9 TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, by the regulatory agencies has produced field activity delays for the outside tank investigation. This delay has accrued since April 1994 when approval was originally granted by CDPHE. The approval was later rescinded by CDPHE because of active issues.

Difficulties are being encountered in obtaining analytical results from the OU 11 1994 Field Program. The OU 11 schedule has been impacted, but the IAG milestone for the OU 11 Draft RFI/RI Report has not yet been affected.

During the abandonment of an OU 11 well, a small underground explosion occurred on October 7, 1994. The cause is under investigation, but it is believed it occurred because of a small amount of natural gas in the underlying formations.

EPA comments for the OU 15 Draft Phase I RFI/RI Report have not been received. The report was submitted to the regulatory agencies on July 25, 1994, and comments were requested by September 8, 1994. The CDPHE comments were received on August 1994. Work is proceeding on the Final Phase I RFI/RI Report and the document will be submitted to the regulatory agencies on schedule.

NEAR-TERM IAG TABLE SIX MILESTONES

<u>OU #</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDPHE</u>	<u>Status</u>
2	Submit Draft CMS/FS Report	04 Nov 93	Extension request submitted. Past due ¹
8	Submit Draft Phase I RFI/RI Report	14 Feb 94	Tolling Agreement - overdue*
9	Submit Draft Phase I RFI/RI Report	11 Apr 94	Tolling Agreement - overdue*
12	Submit Draft Phase I RFI/RI Report	20 Apr 94	Tolling Agreement - overdue*
2	Submit Final CMS/FS Report	10 May 94	Extension request submitted. Past due ¹
2	Submit Draft Proposed Plan	10 May 94	Extension request submitted. Past due ¹
8	Submit Final Phase I RFI/RI Report	12 Jul 94	Tolling Agreement - overdue*
8	Submit Industrial Area Draft Responsiveness Summary	02 Nov 94	10 Dec 94
4	Submit Final Phase I Proposed IM/IRA Decision Document	06 Aug 94	Delayed because of dispute resolution ²
13	Submit Draft Phase I RFI/RI Report	08 Aug 94	Tolling Agreement - overdue*
2	Submit Final Proposed Plan	09 Aug 94	Extension request submitted Past due ¹
8	Submit Industrial Area Final Responsiveness Summary	23 Nov 94	On schedule
8	Submit Industrial Area Final Decision Document	23 Nov 94	On schedule
10	Submit Draft Phase I RFI/RI Report	25 Aug 94	Tolling Agreement - overdue*
9	Submit Final Phase I RFI/RI Report	06 Sep 94	Tolling Agreement - overdue*
12	Submit Final Phase I RFI/RI Report	15 Sep 94	Tolling Agreement - overdue*
1	Submit Corrective Design/Remedial Design Work Plan	01 Nov 94	Extension date to be determined
1	Submit Draft Proposed Plan	22 Nov 94	Extended from 27 Sep 93
1	Submit Final CMS/FS Report	22 Nov 94	Extended from 27 Sep 93
2	Submit Draft Responsiveness Summary	13 Dec 94	23 Sep 97
4	Submit IM/IRA Responsiveness Summary	14 Dec 94	Delayed because of the dispute resolution ²
14	Submit Draft Phase I RFI/RI Report	20 Dec 94	Tolling Agreement - delayed*
15	Submit Final Phase I RFI/RI Report	04 Jan 95	On schedule
13	Submit Final Phase I RFI/RI Report	11 Jan 95	Tolling Agreement - delayed*

<u>OU #</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDPHE</u>	<u>Status</u>
4	All Solar Ponds Emptied of Water and Sludge	20 Jan 95	Ahead of schedule
10	Submit Final Phase I RFI/RI Report	30 Jan 95	Tolling Agreement - delayed*
4	Submit Final IM Title II Design	10 Feb 95	Delayed because of the dispute resolution ²
4	Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	25 Feb 95	Delayed because of the dispute resolution ²
1	Submit Final Proposed Plan	24 Feb 95	Extended from 04 Jan 94
7	Final Leachate Collection Responsive- ness Summary and Interim Measure/ Interim Remedial Action	08 Mar 95	On schedule
9	Submit Draft Phase II RFI/RI Work Plan	10 Mar 95	08 Dec 05
2	Submit Final Responsiveness Summary	16 Mar 95	05 Jan 98 ¹
2	Submit Draft Corrective Action Decision/ Record of Decision	16 Mar 95	05 Jan 98 ¹
7	Release Final Leachate Collection Responsiveness Summary and Interim Measure/Interim Remedial Action	22 Mar 95	On schedule
7	Submit Final Phase I Proposed Landfill Closure IM/IRA Decision Document	10 Jan 97	On schedule
9	Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95	Proposed elimination
14	Submit Final Phase I RFI/RI Report	23 May 95	Tolling Agreement - delayed*
10	Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	Proposed elimination
2	Submit Draft Phase II RFI/RI Report	30 May 95	Tolling Agreement*
2	Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95	15 Sep 97 ³
2	Submit Corrective Design/Remedial Design Work Plan	15 Jun 95	01 Jul 98 ³
6	Submit Draft Phase I RFI/RI Report	21 Jun 95	Extended from 04 Aug 93
1	Submit Draft Responsiveness Summary	23 Jun 95	Extended from 06 May 94
10	Submit Draft Phase II RFI/RI Work Plan	27 Jun 95	Tolling Agreement - delayed*
1	Submit Draft Title II Design	05 Jul 95	Extension date to be determined
11	Submit Draft Phases (combined) RFI/RI Report	20 Jul 95	20 Jul 95
5	Submit Draft RFI/RI Report	21 Jul 95	Extended from 30 Nov 93 ³
9	Submit Final Phase II RFI/RI Work Plan	07 Aug 95	Tolling Agreement - delayed*
11	Submit Draft Phase II RFI/RI Work Plan	21 Aug 95	21 Aug 95

<u>OU #</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDPHE</u>	<u>Status</u>
11	Submit Final Phases (combined) RFI/RI Report	19 Sep 95	19 Sep 95
2	Submit Final Phase II RFI/RI Report	21 Sep 95	Tolling Agreement*

*According to the Tolling Agreement, OU 2 and the Industrial Area OUs have until January 31, 1994 to renegotiate new dates.

1 Revised dates based on Human Health Risk Assessment schedules. IAG Table 6 needs updating.

2 New milestone dates have been proposed to the regulatory agencies, but acceptance has not been given. Responses from the regulatory agencies are expected in November 1994.

3 Revised dates based on the Human Health Risk Assessment schedules. IAG Table 6 needs to be updated.

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for October 1994. 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. 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. Section 3 contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG. Section 4 contains a list that identifies the subcontractors performing work on the program as required by Paragraph 13 of the IAG.

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 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 Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and 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) is continuing in parallel with the operation of the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work	None
Changes This Period	

Technical Approach	None
Changes This Period	

IAG Milestone	Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Accomplishments	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

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 CMS/FS Report	27 Sep 93	22 Nov 94	04 Jan 96
Submit Draft Proposed Plan	27 Sep 93	22 Nov 94	05 Apr 96
Submit Final Proposed Plan	04 Jan 94	24 Feb 95	02 Jul 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Corrective Design/Remedial Design Work Plan	01 Nov 94		12 Sep 97
Submit Draft Responsiveness Summary	06 May 94	23 Jun 95	03 Dec 96
Submit Final Responsiveness Summary	03 Aug 94	22 Sep 95	17 Mar 97
Submit Draft Corrective Action Decision/Record of Decision	03 Aug 94	22 Sep 95	17 Mar 97
Submit Final Corrective Action Decision/Record of Decision	01 Nov 94	22 Dec 95	28 May 97
Submit Draft Title II Design	05 Jul 95		20 Apr 97

October Work Activity Status

Formal comments on the Draft CMS/FS were received from the EPA on October 7, 1994. CDPHE comments were not received in October 1994. The EPA comments raise a major issue that must be resolved before finalization of the CMS/FS Report. The comments on the Draft CMS/FS cannot be resolved until approval is received on the revised Final RCRA Facility Investigation/Remedial Investigation Report (RFI/RI). Additionally, CDPHE issued comments on the revised Final RFI/RI Report on September 7, 1994, and the EPA has committed to submit comments.

Because of these events, DOE has requested a stop work order from the regulatory agencies. This stop work order will be required until the issue of approval of the revised RFI/RI Report and matters relating to the Colorado groundwater standards as Applicable or Relevant and Appropriate Requirements are fully resolved. DOE requested that the work stoppage be retroactive to September 7, 1994, which is the date the CDPHE issued comments on the RFI/RI Report.

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

Planned Work for November • **Final Revised Remedial Investigation (RI) / Draft Corrective Measures Study/Feasibility Study (CMS/FS) -**
Efforts continue on a resolution to the unexpected CDPHE comments regarding the Final Revised RI and the EPA comments regarding the Draft CMS/FS.

Problems The CDPHE Draft CMS/FS comments were due on October 7, 1994, and these comments have not been received.

Open Items The Draft CMS/FS comments have not been received from the CDPHE.

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

October Work Activity Status

Accelerated Cleanup - The final confirmation sampling of the Operable Unit (OU) 1 hot spots was completed on October 3, 1994. On October 10, 1994, the last samples were shipped to the laboratory for analysis. Analytical results are due back in December 1994 and will be validated in January 1995. The waste drums are anticipated to be shipped offsite in March 1995. The Final Removal Report is expected to be transmitted to the regulatory agencies in February 1995.

**Interim Measure/Interim Remedial Action (IM/IRA)
Treatment Facility - Normal Operations.**

Treated groundwater this month: 19,466 gallons
Total treated to date: 2,651,082 gallons

Planned Work for November

- **Accelerated Cleanup** - Laboratory analysis of the hot spot field samples will continue throughout the month, and the analysis is expected to be complete in December 1994.
- The Building 891 infrastructure replacement work will continue through November 1994. This modernization work is scheduled to be complete by November 1994.
- Alternate methods of transporting collection well water to the Water Treatment Facility, Building 891, will be developed.

Problems

DOE has directed that the collection well pumping to the French drain be stopped. Since the DOE direction to stop pumping collection well water into the French drain was issued, water has been transferred via tanker truck to the Building 891 Treatment Facility. Alternate methods of transporting collection well water are being evaluated, and a report that outlines these methods will be prepared by December 1994.

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; these areas may have contaminants that were not removed by the treatment system.

Originally, the Surface Water IM/IRA collected seep and surface water contamination sources, 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 all of OU 2 and describes the process to evaluate a remediation technology for removal of residual free-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 free-phase volatile organic compound contamination at OU 2.

2.2.1 OU 2 ASSESSMENT

Scope of Work None
Changes This Period

Technical Approach None
Changes This Period

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 ¹	30 May 95		18 Nov 94*
Submit Final Phase II RFI/RI Report ¹	21 Sep 95		31 Mar 95*
Submit Draft CMS/FS Report	04 Nov 93		11 Jan 96*
Submit Final CMS/FS Report	10 May 94		31 May 96*
Submit Draft Proposed Plan	10 May 94		23 Jul 96*
Submit Final Proposed Plan	09 Aug 94		17 Oct 97*
Submit Draft Corrective Action Decision/ Record of Decision	16 Mar 95		02 Jul 97*
Submit Draft Responsiveness Summary	13 Dec 94		26 Mar 97*
Submit Final Responsiveness Summary	16 Mar 95		02 Jul 97*
Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95		15 Sep 97*
Submit Corrective Design/ Remedial Design Work Plan	15 Jun 95		07 Jan 98*

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

¹ Tolling Agreement

October Work Activity Status

Remedial Assessment - Comments from the preliminary review of the Draft Technical Memorandum (TM) #11, *Exposures Scenario*, have been incorporated into the document. Reasonable Maximum Exposure and Central Tendency parameters for each exposure scenario will be an appendix to TM #11. DOE began review of this TM on October 31, 1994.

Comments from the regulatory agencies on the OU 2 TM #9, *Chemicals of Concern*, and TM #10, *Toxicity Assessment*, were received late. Comment responses are being prepared.

Feasibility Study - Revision of TM #1, *Development of Corrective/Remedial Action Objectives*, is pending resolution of Risk Assessment methodology issues. The CMS/FS schedule delays reflect the relationship and the necessary strategic coordination between the CMS/FS and the RFI/RI activities. TM #1 will not be updated until approximately three weeks after receipt of the Risk Assessment methodology guidance.

Technical Memoranda

Project OU 2 - 903 Pad, Mound, and East Trenches

TM #5
TM Title Exposure Scenarios
TM Status 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: 11 Feb 93 EPA,
12 Mar 93 CDPHE

TM #6
TM Title Modeling
TM Status 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 #7
TM Title Surficial Soils
TM Status 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
TM Approved

TM #8
TM Title Bedrock
TM Status 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
TM Approved

TM #8 Addendum
TM Title Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)
TM Status 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
TM approved

TM #9
TM Title
TM Status

Chemicals of Concern (second submittal)
When preparation was concluded: 24 Aug 93
Projected date of submittal to EPA/CDPHE: 30 Aug 94
Actual date of submittal: To be determined
Date comments were received: 10 May 94 EPA, 10 May 94
CDPHE
TM approved

TM #10
TM Title
TM Status

Toxicity Assessment
When preparation was concluded: 24 Aug 93
Projected date of submittal to EPA/CDPHE: 30 Aug 94
Actual date of submittal: To be determined
Date comments were received: EPA submitted no comments,
CDPHE 30 Sep 94

TM #11
TM Title
TM Status

Exposures Scenario
When preparation was concluded: 31 Oct 94
Projected date of submittal of Draft to EPA/CDPHE: 01 Dec 94
Actual date of submittal of Draft to EPA/CDPHE: To be determined
Date comments were received: To be determined

Planned Work for November

- Work will continue on the Risk Assessment, the Treatability Studies, and the Feasibility Study. The IM/IRA's will continue operation.

Problems

None

Open Items

None

2.2.2 QU 2 REMEDIATION

**Scope of Work
Changes This Period**

The Soil Vapor Extraction Project under went a Senior Technical Review that resulted in a recommendation to delay Test Site No. 2 and No. 3 until further characterization of the Trench and the Optimization of Test Site No. 1 are accomplished. DOE has received documentation on these scope changes, and when a new direction has been determined, the changes will go to the Change Control Board for review.

**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

**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 Plan Site II	13 Jan 95		13 Jan 95
Submit Final Pilot Test Report Site I	27 Oct 94		08 Nov 94
Submit Draft Final Pilot Test Report	28 Oct 94		28 Oct 94
Submit Final Pilot Test Report	20 Dec 94		20 Dec 94
Submit Final Pilot Test Report Site II	01 Sep 95		01 Sep 95
Submit Final Pilot Test Report Site III	23 Apr 96		23 Apr 96

October Work Activity Status

Subsurface IM/IRA Operations Report - Test Site No. 1
- Comments generated by DOE and EG&G on the Draft Pilot Test Report are being incorporated. The document is on schedule for delivery to the regulatory agencies on November 11, 1994.

Test Site No. 2 - DOE received the draft of TM #4, OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test, on October 25, 1994, for review and comment.

A review of the Soil Vapor Extraction and Six-Phase Soil Heating was conducted. The optimization of the Soil Vapor Extraction system and the performance of further characterization of Trench No. 3 (T-3) before proceeding with the Six-Phase Soil Heating project were recommended. Pending results of the optimization, activities pertaining to the Six-Phase Soil Heating project will be deferred.

Test Site No. 3 - Work on Test Site No. 3 is pending until the results of the recommendation concerning the Soil Vapor Extraction and the Six-Phase Soil Heating projects to further characterize the Trench and to optimize Test Site No. 1 is received.

Surface Water IM/IRA Operations - To date, 318 drums of OU 2 Field Treatability Unit sludge have been generated. Attempts are being made to ship this low-level mixed waste to a permitted disposal facility in Utah. The Operation and Maintenance Manuals and the Standard Operating Procedures, along with the Sampling and Analysis Plan, were submitted to EG&G on October 10, 1994.

On October 19 and 26, 1994, a schedule for shipping OU 2 Field Treatability Unit waste offsite to a permitted disposal facility was discussed.

A Sampling and Analysis Plan modification to cover nine recent samples taken for analysis by a permitted disposal facility and the Standard Proctor Samples to be taken prior to shipment of waste to

the permitted disposal facility is being developed. This revision to the Sampling and Analysis Plan will be completed no later than November 15, 1994.

The Sampling and Analysis Plan was modified to reduce sampling frequency for the OU 2 Field Treatability Unit operations; this modification was completed in October 1994.

Treated surface water this month:	8,200 gallons
Total treated to date:	24,800,006 gallons

Planned Work for November

- Normal operations will continue.

Problems

None

Open Items

None

impact on continued construction and operational activities of the monitoring stations that resulted from the early arrival of the Bald Eagles. A site walk was conducted at the proposed monitoring station locations on Jefferson County Open Space property. The purpose of the site walk was to provide the United States Fish and Wildlife Service personnel with a better understanding of the location of both sites relative to the Bald Eagle nesting area. This will allow the United States Fish and Wildlife Service to make a more informed decision regarding continued work at the sites while the eagles are in residence.

Site development approval for the two air/meteorological monitoring station sites was obtained from the Jefferson County Planning Commission on October 7, 1994. Only two conditions for approval were listed: (1) That the perimeter chain link fence for both sites be painted with a flat black or dark green color and, (2) That the two facilities should not be permitted to exist beyond one year. If the applicant can establish that a longer life span is warranted, another review by the Planning Commission will be required. Preparations for the final electrical hookup of two of the air monitoring stations are being developed. This activity will be done early in the morning or later in the evening to accommodate the Bald Eagles as required in the United States Fish and Wildlife Service guidance.

A meeting was held with the City of Broomfield on October 6, 1994, to present the preliminary results of the OU 3 Remedial Investigation. A similar meeting is being arranged for the cities of Westminster and Arvada, as well as with Jefferson County.

TM #5, *Toxicity Assessment*, was submitted to the regulatory agencies for review on October 11, 1994. This submittal was delivered ahead of the agency approved project schedule.

Preliminary plutonium isotope laboratory results for two surface soil plot samples were received on October 17, 1994. Americium results were available in October 1994. This laboratory analysis of radionuclides was repeated on the two samples to verify if the initial analytical results for the samples are valid. The latest test results indicate that the two samples contain negligible concentrations of plutonium.

During October 1994, surface soils nature and extent analysis were presented at three presentations attended by representatives from the regulatory agencies, the cities, and the public interest groups.

Technical Memoranda

Project OU 3 - Offsite Areas

- TM #1
TM Title Field Changes to RFI/RI Work Plan
TM Status 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 Exposure Scenarios for the Human Health Risk Assessment
TM Status 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 Contaminants of Concern
TM Status When preparation was concluded: Aug 94
Projected date of submittal to EPA/CDPHE: 20 Sep 94
Actual date of submittal: To be determined
Date comments were received: To be determined
- TM #5
TM Title Toxicity
TM Status When preparation was concluded: Sep 94
Projected date of submittal to EPA/CDPHE: 11 Oct 94
Actual date of submittal: To be determined
Date when comments were received: To be determined

Planned Work for November

- Comment responses for the TM #2, *Exposure Scenario*, will be developed and submitted to the regulatory agencies. A follow-up meeting will be held to determine required revisions for TM #2.
- Work on TM #3, *Model Selection*, is expected to begin.
- Comments for the regulatory agencies are expected for the TM

#4, *Contaminants of Concern*. Comment resolution and discussions should begin in November 1994.

Problems

The arrival of the Bald Eagle in the Standley Lake area on October 10, 1994, has the potential to affect the operation and/or completion of at least two of the four air monitoring stations.

The regulatory agencies have not provided comments on submitted documents in a time frame consistent with the accelerated project schedule.

Open Items

None

**IAG Milestone
Accomplishments**

: Submit Draft Phase I RFI/RI Work Plan 08 Jun 90
: Submit Final Phase I RFI/RI Work Plan 26 Nov 90
: Submit Draft Phase II RFI/RI Work Plan 27 May 94
: Submit Final Phase II RFI/RI Work Plan 02 Sep 94

**Future IAG Milestones
Through FY 95**

None

October Work Activity Status

Phase II RFI - In accordance with the Environmental Restoration 2000 Initiative, progress continues on developing the OU 4 Phase II RFI/RI logic network, cost estimates, and detailed field schedule to accelerate the Phase II RFI program.

Applicable personnel associated with the phase II field program are receiving training. In addition, various pre-field mobilization activities are being conducted, such as radiological instrumentation calibration, equipment and supplies procurement, permits development, subcontracts for waste management, escorting support, and readiness assessment.

Technical Memoranda

Project

OU 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 November

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

Problems

None

Open Items

None

2.4.2 OU 4 REMEDIATION

**Scope of Work
Changes This Period**

None

**Technical Approach
Changes This Period**

DOE has directed EG&G to pursue minimal treatment of the sludge and inventoried pondcrete prior to the disposal in the Phase I Remediation (engineered barrier).

**IAG Milestone
Accomplishments**

Submit Draft Phase I Proposed IM/IRA
Decision Document

27 May 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 Phase I Proposed IM/IRA Decision Document	12 Sep 94	06 Aug 94*	To be determined*
All Solar Ponds Emptied of Water and Sludge	new	20 Jan 95	18 Jan 95
Submit IM/IRA Responsiveness Summary	25 Jan 95	14 Dec 94*	To be determined*
Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Apr 95	25 Feb 95*	To be determined*
Submit IM Title II Design Work Plan	24 Jun 96	10 Feb 95*	To be determined*
Begin Phase I IM/IRA Construction	28 Jan 95	27 Sep 95	To be determined*

* Delayed because of the initiation of the dispute resolution. Modified dates have yet to be determined.

October Work Activity Status

Treatment, Storage, and Disposal

Treatability - Sludge - Samples are being prepared to be sent to the laboratory. Investigative Derived Material soils are now suspect as soil samples because of the absorbent additions to the drums. Guidelines are being developed to identify appropriate new soil samples for analysis and shipment. A/B Pond water and sludges will presumably be deemed Department of Transportation nonradioactive. Clarifier sludges will presumably be Department of Transportation radioactive. Homogenized C Pond slurries are still being defined. The subcontractor is anticipated to be under a Letter Task Order by November 1994.

Waste Storage - Door and vent upgrades on the 750 and 904 Pads were completed. A Final walkdown was completed October 10, 1994. All engineering work associated with pad drainage piping is complete. A Davis-Bacon determination was also performed, and it was concluded that the work was covered by this determination.

Container Procurement - The final drawing review was completed and deficiencies that were identified were provided to the vendor on October 6, 1994. Correction of the deficiencies by the vendor has been completed and approved. Release to start the production run was given to the vendor on October 27, 1994. The first production container is expected on plantsite in November 1994.

Interim Remedial Action

Water Management - Work commenced on the Building 779 storm drain extension on October 24, 1994, and is expected to be

complete in November 1994. This project will significantly reduce the amount of water captured by the Interceptor Trench System, transferred to the Modular Storage Tanks, and ultimately processed by Building 374.

Steam system Pressure Relief Valves in Building 910 were removed and shipped to the vendor for calibration and rebuilding. Once returned and installed, Building 910 will meet all Pressure Safety Program requirements. The modular tanks have a remaining usable volume of about 468,000 gallons.

Interim Measure Remediation

RFI - Progress continues on the preparation of the OU 4 Phase I RFI/RI Report (Section 2 of the OU 4 IM/IRA Decision Document). Completion of the revisions to the subject document is expected in November 1994.

IM/IRA Decision Document - The revision to include placement of minimally treated pond sludge as part of the phase I remediation is nearly complete. Contract modifications to the current subcontract that will address incorporation of failed pondcrete is being placed under the engineered barrier; inclusion of IHSS 176 in Phase I remediation activities; and inclusion of *Decontamination and Decommissioning activities for Building 964* are ongoing. Once completed, detailed planning for these proposed activities will be added to the Decision Document. Draft schedules were prepared for the major elements of the project. These schedules have been merged into an integrated program schedule that provides schedule reserve durations and proposed IAG commitment dates. Schedule and milestone acceptance by the regulatory agencies is anticipated by November 1994. Impacts of several months should be expected on all related IAG milestones. The most challenging unresolved issue is to acquire the real estate for the two processing trains.

Preconstruction - The Title II Remedial Design Revision Five of the Statement of Work, the Basis of Estimate, and the Justification for Noncompetitive Procurement have been completed for the incorporation of pondcrete under the engineered barrier and the closure of Building 964. These documents have been reviewed and submitted to Procurement.

The Ground Penetration Radar utilities verification effort was completed ahead of schedule. This activity was the first task to verify the locations of existing utilities shown on current site drawings and to identify any utilities not shown.

Closure activities concerning removals cannot be started until after the IM/IRA Decision Document is approved. RCRA Regulatory Programs have identified the shelving inside of Building 788 as closure equipment. An option of the submittal of a letter to the

CDPHE that requests the relocation of this shelving to another RCRA unit prior to closure activities is being investigated.

Mobilization for the removal of the cement silos located near Building 788 has begun. However, work was halted because of a concern that the Occupation Safety and Health Administration requirements

had not been satisfied. All issues were resolved, and mobilization was completed on October 25, 1994.

Interim Measure Sludge - All preparations were completed for resumption of sludge vacuuming operations in C Pond. Operations commenced on October 19, 1994, and continued throughout the remainder of the month. A third vacuum truck was procured, and a fourth was considered. The new unloading technique works so well that a second manned unloading station is not necessary. Therefore, the fourth truck was canceled; the third truck will be the standby truck. The current forecast completion date is January 18, 1995. This schedule could be impacted by a reduction in the available labor force.

Planned Work for November

- Sludge removal operations in Pond 207C will continue.
- The IM/IRA Title II Design effort, which encompasses the effects of including minimally treated sludge and pondcrete under the barrier, will continue.
- The removal process at the silos located near Building 788 will continue.
- The contract will be awarded, and the construction for the site stripout activity will commence.
- Site cleanup in support of the relocation of the cargo containers currently located near Building 964 will commence.
- The first shipment of containers for the 904 Pad restack will be received. The 904 repack will start.
- Treatability Studies on minimally treated pond sludge, pondcrete and the conceptual design will begin.

Problems

Radiological Control Technician support for sludge movement was a problem but appears to have been resolved. Additional hourly staff is still being acquired to support both sludge movement and the 904 Pad restack. Subcontractor support for the vacuum trucks has been problematic, and the problem has been brought to the attention of the subcontractor. On October 28, 1994, a Corrective Action Plan was put in place to prevent future problems.

Open Items

Issues that initiated a dispute resolution on July 7, 1994, concerning the OU 4 engineered barrier continue. Although the dispute formally ended on July 27, 1994, full regulatory support was not achieved. EPA and DOE both support the plan that calls for placement of minimally treated sludge and pondcrete under the engineered barrier in lieu of offsite disposal. All IM milestones are affected.

The CDPHE has opted to reserve comment on whether it supports the new plan that calls for minimally treated sludge and pondcrete being placed under the cap until after the public comment period has ended. Before future remediation scope can be determined, a commitment must be agreed to by all involved parties. Definitive new milestone dates are yet to be finalized.

A key OU 4 assumption is the use of the Corrective Action Management Unit with Temporary Units for treating certain remediation wastes during Phase I Remediation. DOE plans to use the Corrective Action Management Unit and the Temporary Units regulations to generate significant cost savings and schedule acceleration and to completely protect human health and the environment. The breadth of difference in the State Temporary Units from the Federal version has not been fully assessed.

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 None

Technical Approach Changes This Period

The Presumptive Remedy approach will be used for evaluating and selecting remedial options for the Original Landfill (IHSS 115) and the Filter Backwash Pond (IHSS 196). This "focused Feasibility Study" will be conducted in accordance with EPA's Presumptive Remedy guidance for CERCLA Municipal Landfills (EPA 540-F-93-035) and related guidance. Per this guidance, a streamlined or limited risk assessment that is focused on OU 5 groundwater will be conducted.

IAG Milestone Accomplishments

Submit Draft Phase I RF/RI Work Plan	05 Apr 91
Submit Final Phase I RF/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 RF/RI Report	30 Nov 93	21 Jul 95	11 May 95
Submit Final Phase I RF/RI Report	03 May 94	17 Jan 96	14 Nov 95

October Work Activity Status

Human Health Risk Assessment activities for the RF/RI include internal review of the TM #11, *Contaminants of Concern*, and Identification of the Source Areas for the CDPHE Conservative Screen that was presented to the regulatory agencies on October 21, 1994. Based on the results of the screen, an agreement was reached on how to group the source areas. The maps will be

finalized, and the Risk Assessment activities will continue with the risk ratio summation and with the preparation of the Area of Concern maps.

The TM #12, *Exposure Assessment*, will be revised. Regulatory agency review comments were received at the time the Human Health Risk Assessment stop work order was invoked, but the document was not finalized pending the outcome of the stop work order. The exposure scenarios will be revised, and the TM will be re-reviewed by the regulatory agencies prior to finalization.

The implementation of the TM #15, *Addendum to the Field Sampling Plan*, will not be impacted at this time by the habitat of the Preble's Meadow Jumping Mouse. The Preble's Meadow Jumping Mouse is not on the Federal Threatened and Endangered species list but is a candidate species submitted under petition to the United States Fish and Wildlife Department. Eight of the proposed well points located along Woman Creek are in the proximity of the mouse habitat, and these wells are necessary to obtain groundwater data and to assess the seasonal flow conditions for the hydrogeologic characterization of the site along Woman Creek and down gradient from OU 5 IHSSs. These sites were cleared for drilling because the impact at each site was minimized by the drilling method or relocated out of prime habitat to further minimize the potential impact of the drilling on the Preble's Meadow Jumping Mice.

As specified in TM #15, *Addendum to the Field Sampling Plan*, approximately three bedrock groundwater monitoring wells are to be installed in the area of IHSS 115, the Original Landfill, to characterize the potential hydraulic interconnection between the alluvial aquifer and bedrock aquifers. Well locations were proposed to the regulatory agencies. Two wells have been completed.

As part of the implementation of TM #15, *Addendum to the Field Sampling Plan*, a visual survey of Woman Creek was completed in order to assess the presence of outcropping bedrock. The results of these surveys showed no indication of outcropping bedrock. The creek bottom and the drainage sidewalls at all locations were observed to be covered with alluvial material.

The Intrinsic Air Permeability Test performed at IHSS 115 was evaluated. As discussed in TM #15, the intrinsic air permeability test indicated that short-circuiting may have occurred during the performance of the soil gas survey at IHSS 115. However, the final evaluation indicates that short-circuiting did not occur during the soil gas survey. The results of the soil gas survey appear to be valid, and no additional sampling is necessary.

The Environmental Evaluation for the Woman Creek drainage continues and integrates the Environmental Evaluation for OU 1,

part of OU 2, OU 5, and part of OU 11. Since the Potential Contaminants of Concern were completed, the selection of Contaminants of Concern for the Environmental Evaluation has started by evaluating potential ecotoxicity of the identified chemicals. Benchmark values will be identified using the methodology to be developed under the sitewide Environmental Evaluation.

Surface water modeling activities for the Human Health Risk Assessment continue.

Groundwater modeling activities continue. Establishment of calibration criteria and input of these criteria into the MODFLOW were completed, and calibration runs were initiated.

Air dispersion modeling activities continue and preparation of the Air Modeling Report has begun. The effect of varying roughness heights and threshold wind speed on the Fugitive Dust Model output results was evaluated.

On October 11, 1994, the Feasibility Study field work was begun with the inspection of the slumps and the general condition of the hillside with respect to slope stability was conducted. The evaluation of geotechnical data sufficiency was completed. The proposed geotechnical program in TM #15, *Addendum to the Field Sampling Plan*, against the data needs of the slope stability analysis required for the Original Landfill (IHSS 115) site was reviewed. An additional fourteen borings will be required to provide sufficient data. The fill materials available at the quarry was also inspected. Materials examined included Pierre Shale and "pit run" material, clay, and sand applicable for filling the voids at the landfill. Information gained by the visual inspection will supplement the property data that will be presented in the Borrow Source Suitability Study Report.

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	Soil Sampling at IHSS 115
TM Title	When preparation was concluded: 07 May 93
TM Status	Actual date of submittal: 26 Jan 93
TM #4	Soil Sampling at IHSS 133
TM Title	When preparation was concluded: 07 Jun 93
TM Status	Actual date of submittal: 12 Apr 93
TM #5	Soil Gas Sampling at IHSS 115
TM Title	When preparation was concluded: 07 May 93
TM Status	Actual date of submittal: 25 Mar 93
TM #6	Cone Penetrometer at IHSS 115
TM Title	When preparation was concluded: 14 Apr 93
TM Status	Actual date of submittal: 25 Mar 93
TM #7	Soil Borings at IHSS 133
TM Title	When preparation was concluded: 07 May 93
TM Status	Actual date of submittal: 19 Feb 93
TM #8	Monitoring Wells at IHSS 115
TM Title	TM #8 has been canceled and has been replaced by a letter
TM Status	outlining the justification for the location of the wells in IHSS 115.
TM #9	Monitoring Wells at IHSS 133, Ash Pits, Incinerator, and Concrete
TM Title	Wash Pad
TM Status	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	Soil Borings at IHSS 209
TM Title	When preparation was concluded: 06 Mar 93
TM Status	Actual date of the Final TM submittal to EPA/CDPHE: 06 Mar 93
TM #11	Contaminants of Concern
TM Title	Projected date of the Draft Final TM submitted to EPA/CDPHE: 15 Nov 94
TM Status	Submittal of TM #11 was delayed because of the Human Health Risk Assessment stop work order.

TM #12
TM Title
TM Status

Exposure Scenarios
When the Final TM is estimated to be concluded: 07 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

TM #14
TM Title
TM Status

Toxicity Assessment
Projected date of the Draft Final TM submittal to EPA/ CDPHE:
Jan 95
Submittal of TM #14 was delayed because of the Human Health Assessment stop work order.

Risk
TM #15
TM Title
TM Status

Addendum to the Field Sampling Plan
Actual date of the Final TM submittal to EPA/CDPHE:
31 Aug 94

Planned Work for November

- Field work activities will continue.
- Human Health Risk Assessment work that includes surface water, air, and groundwater modeling activities will continue.
- The Feasibility Study will continue with an emphasis on the Presumptive Remedy approach to the Original Landfill.
- The Environmental Evaluation of the Woman Creek Priority Drainage will continue.

Problems

The start of the High Purity Germanium Survey was delayed because of needed equipment repair. This activity is on the critical path for completing surface soil sampling as required in TM #15.

Open Items

None

All of the preliminary polychlorinated biphenyls tissue data from OU 5, OU 6, and the offsite reservoirs in OU 3 were received. An evaluation of the polychlorinated biphenyls sampling project was completed on October 31, 1994. Results from the recent surface sediment sampling reveal no detectable levels of polychlorinated biphenyl in terminal ponds A-4, B-5, or C-2, indicating that it is not likely that sediments derived from the Rocky Flats Environmental Technology Site are contributing polychlorinated biphenyl to any of the offsite reservoirs in downstream ecosystems. This sampling effort will be incorporated in the Addendum No. 1, Additional Pond Sediment Investigations for OU 6. The revised version will be added as an appendix to the OU 3 and OU 5 Work Plans.

Work continues on the Final TM #2, *Exposure Scenarios*, and the Final revisions to TM #3, *Model Description*.

Comments from the regulatory agencies on TM #4, *Chemicals of Concern*, were received on October 3, 1994. The comment response sheets are scheduled to be completed in November 1994.

The Draft TM #5, *Toxicity Assessment*, was delivered to EPA and CDPHE in September 1994, comments are pending.

Work continues on the air and surface water modeling. A ground water modeling meeting was held on October 21, 1994, with the subcontractor. The primary conclusion reached was that a full groundwater modeling effort is not necessary for addressing the groundwater in OU 6. The groundwater contamination that is impacting OU 6 has a source in other OUs.

964 East Yard Cleanup (OU-6)

The test run with the CO₂ Blaster was completed. Preliminary indications reveal this test run was successful. Two steel saw-horses were decontaminated and will probably be free-released. Once a suitable location is identified, most of the other materials from the 964 Yard can be decontaminated using the CO₂ Blaster.

Technical Memoranda

Project

OU 6 - Walnut Creek

TM #1

TM Title

TM Status

Work Plan Modifications

Approved by EPA: 08 Jan 93

<p>TM #2 TM Title TM Status</p>	<p>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: 30 Nov 94</p>
<p>TM #3 TM Title TM Status</p>	<p>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 : 04 Jan 94 Projected date the Second Final TM will be submitted to EPA/CDPHE: To be determined</p>
<p>TM #4 TM Title TM Status</p>	<p>Contaminants of Concern Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94 Date EPA/CDPHE comments were received: 03 Oct 94 Projected date the Final TM will be submitted to EPA/ CDPHE: 30 Nov 94</p>
<p>TM #5 TM Title TM Status</p>	<p>Toxicity Factors Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94 Date EPA/CDPHE comments were received: To be determined Projected date the Final TM will be submitted to EPA/ CDPHE: To be determined</p>

Planned Work for November

- The preparation and submittal process for the TM #2, *Exposure Assessment*, will continue.
- Receive approval from the regulatory agencies on the Draft TM #5, *Toxicity Factors*.
- Receive approval from the regulatory agencies on Final TM #4, *Chemicals of Concern*.
- The preparation of the Assessment Endpoint TM, Conceptual Design TM, and the Contaminant of Concern Screen Methodology TM for the Environmental Evaluation will continue.
- Air and surface water modeling efforts will be completed.
- Work on TM #1, *Feasibility Study* will continue.

Problems

None

Open Items

The Draft TM #5, *Toxicity Assessment*, was delivered to EPA and CDPHE in September 1994; comments are pending.

2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the site complex on the western edge of an unnamed tributary of North Walnut Creek and comprises four IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of the Rocky Flats Environmental Technology Site nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively. The practice of spray evaporation was discontinued in 1993.

Scope of Work Changes This Period

As a result of the Senior Executive Committee Dispute Resolution, four new milestones concerning the Landfill Leachate Collection IM/IRA were added to the OU 7 work scope. As directed by the regulatory agencies, the Landfill Leachate Collection Project will be completed as an accelerated action using the Proposed Action Memorandum approach.

Technical Approach Changes This Period

As a result of the Senior Executive Committee Dispute Resolution, a separate IM/IRA is required for the landfill leachate. As directed by the regulatory agencies, the Landfill Leachate Collection Project will be completed as an accelerated action. A Proposed Action Memorandum rather than an IM/IRA will be used.

IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91
Submit Draft Phase I RFI/RI Report	23 May 94
Submit Draft Phase II RFI/RI Work Plan	23 May 94

Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
<u>Landfill Closure IM/IRA</u>			
Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94	31 Aug 95	03 May 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
<u>Landfill Closure IM/IRA (continued)</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
<u>Landfill Leachate Collection IM/IRA*</u>			
Release Final Draft IM/IRA for Public Comment		25 Nov 94	25 Nov 94
Submit Final Responsiveness Summary and IM/IRA to CDPHE/EPA		08 Mar 95	12 Aug 98
Release Final Responsiveness Summary and IM/IRA		22 Mar 95	22 Mar 95

* Negotiated as a Proposed Action Memorandum not an IM/IRA.

October Work Activity Status

The OU 7 Process Improvement Proposal was approved by CDPHE in a letter dated October 21, 1994. The milestone issues addressed in the letter include the deletion of ten milestones, the approval of extension dates for eight milestones, and the addition of three milestones. CDPHE agreed to delete the following IAG milestones from the OU 7 scope of work :

- Submit Draft Phase I RF/RI Report
- Submit Final Phase I RF/RI Report
- Submit Draft Phase II RF/RI Work Plan
- Submit Final Phase II RF/RI Work Plan
- Submit Draft Phase II RF/RI Report
- Submit Final Phase II RF/RI Report
- Submit Draft Phase II CMS/FS Report
- Submit Final Phase II CMS/FS Report
- Submit Draft Phase I IM/IRA Implementation Document
- Submit IM Design Work Plan

According to the letter, the remaining milestones proposed for deletion are contingent on the results of the IM/IRA. Their elimination was deferred until completion of the IM/IRA. As clarification, the scope of the IM/IRA Decision Document should include: (1) selection of landfill closure alternatives, (2) selection of groundwater collection and treatment alternatives, (3) conceptual design of proposed alternatives, (4) post-closure care monitoring plan, and (5) wetlands mitigation. CDPHE approved the following revised milestone dates:

Submit Draft Phase I IM/IRA DD	August 31, 1995
Submit Draft Final Phase I IM/IRA	January 5, 1996

Submit IM/IRA Responsiveness Summary	April 1, 1996
Submit Final Phase I IM/IRA DD	June 18, 1996
Submit Final IM Title II Design	September 27, 1996
Begin Phase I IM/IRA Construction	June 10, 1997
Submit Draft Phase II CAD/ROD	September 10, 1997
Submit Final Phase II CAD/ROD	March 25, 1998

CDPHE approved the addition of the following milestones:

Submit Draft Revised Phase I Work Plan TM (submitted May 23, 1994)	May 23, 1994
Submit Final Revised Phase I Work Plan TM (submitted September 8, 1994)	September 8, 1994
Submit Draft IM Title II Design	May 30, 1996

The Title II design was completed September 28, 1994, but is undergoing modifications because of a change in scope.

The TM/Revised Work Plan was approved by the regulatory agencies on September 30, 1994. National Environmental Policy Act Categorical Exclusion for Phase II field work was approved by DOE on October 3, 1994, and Phase II field investigation began on October 5, 1994. In the month of October 1994, the following field activities were completed:

- soil sampling locations were surveyed and three borings completed,
- the surficial and subsurface soils sampling was completed,
- all boring was completed and plugged around the perimeter of OU 7.

A meeting was held with the regulatory agencies on October 13, 1994, to discuss wetlands mitigation, schedule extensions, and final comment disposition.

The Preliminary Draft Proposed Action Memorandum was submitted to the regulatory agencies and for public comment on October 13, 1994.

The waste determination was performed for the landfill seep water by researching historical data that included a report from 1986 identifying waste streams disposed in the landfill. The information indicated 96 hazardous waste streams disposed of in the landfill after 1980. The seep water consists of surface water and groundwater that infiltrates the landfill and is mixed with listed hazardous waste material, including leachate from the wastes. From a RCRA perspective, the surface water that contains hazardous waste constituents is a "contained-in" waste. Since the seep water

contains listed hazardous waste (FO39), the design of the seep collection system will be changed from a single wall pipe to a double contained pipe so as to be in compliance with RCRA.

DOE held a public meeting on October 19, 1994, to present the Seep Water Collection and Treatment System to the public. The EPA, the United States Department of Fish and Wildlife, and DOE met October 24, 1994, to discuss the sitewide Wetlands Mitigation Plan. DOE will write a scope of work for the United States Department of Fish and Wildlife for the mitigation of offsite wetlands areas. The EPA was in favor of the offsite mitigation strategy and will be responsible for the determination the ratio at which DOE will need to mitigate wetland areas.

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 November

- The option analysis and conceptual design of the landfill closure will begin.

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 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** None

**IAG Milestone
Accomplishments** This information is listed in the IA OUs.

**Future IAG Milestones
Through FY 95** Deliver reorganization proposal to regulatory agencies 04 Nov 94

October Work Activity Status

The Draft Industrial Area (IA) Surface Water and Sediment Field Sampling Plan TM was delivered to the regulatory agencies on October 26, 1994. The TM assesses the current information available on the Surface Water and Sediments within the IA and presents a Field Sampling Plan to fill in data gaps. In order to maintain the current schedule, comments are expected to be received by November 16, 1994,

It was determined that the data collected in the fall of 1993 by the IA Environmental Evaluation is sufficient to meet the Data Quality Objectives, and the intent of the IA Environmental Evaluation and resampling should not be necessary. An in-depth formal review of all the information is being coordinated with the EG&G Ecology and Watershed Division before making a final determination whether the data are sufficient to meet the Data Quality Objectives.

A proposal is being prepared for an approach to reorganize the IA OUs. The proposal will be the baseline document for the Rocky Flats Cleanup Agreement negotiations and will also provide the basis for negotiating milestones with the regulatory agencies prior to the expiration of the Tolling Agreement on January 31, 1994.

Industrial Area Interim Measure/Interim Remedial Action Plan - The Draft Responsiveness Summary was submitted to the regulatory agencies on October 28, 1994, ahead of the IAG schedule.

Planned Work for November

- A reorganization proposal will be delivered to the regulatory agencies.

Problems

None

Open Items

None

2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 comprise 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, 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 Industrial Area (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). Combining 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 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

October Work Activity Status

Formal regulatory agency approval of the OU 8 Phase I RF/RI Work Plan was received on October 3, 1994. Work to obtain the issuance of the Work Plan as a controlled document proceeded. Field activities started the week of October 24, 1994. In anticipation of the start of the nonintrusive field investigation of OU 8, the Readiness Review was completed with the closure of the remaining prestart items. Following the start of the field work, several follow-up items will need to be closed.

A contract modification was awarded to allow continuation of Stage 2 field investigation work. The subcontractor is ready to proceed with this work.

Early removal actions consisting of removal of two steam condensate tanks and a sodium hydroxide tank from the area north of Building 774 continued. In order to proceed, soil samples from around the tanks needed to be collected and analyzed. Approval of the sample was obtained; however, because of several complicating factors, it was decided that work would be performed by the Site Surface Water and Sediment Sampling Program and was separated from the OU 8 investigation. The sampling effort was performed independently of the OU 8 RFI/RI investigation.

CDPHE indicated that the Risk Assessment approach that came out of the OU 2 through 7 dispute resolution was applicable to OU 8. DOE agreed that this approach will be incorporated into the OU 8 RFI/RI Report.

Work continued on TM #1, *Footing/Under Drains Data Compilation and Field Sampling Plan*. Responses to comments from CDPHE were prepared. The completion of the next draft of OU 8 TM #1 is presently scheduled for November 21, 1994.

An onsite meeting among CDPHE, DOE, and EG&G was held on October 13, 1994, to select the type and locations of samples for IHSS 172. It was decided among the participants to drop one proposed vertical soil profile sample and add an under-asphalt superficial soil sample by the west dock of Building 774. The modified sampling plan was accepted by all the participants and will be incorporated into the next draft of TM #1.

Technical Memoranda

Project

OU 8 - 700 Area

TM #1

TM Title

TM Status

Footing/Under Drains Data Compilation and Field Sampling Plan

Projected date of submittal to EPA/CDPHE: 22 Apr 94

Actual date of submittal: 05 May 94

Date when EPA/CDPHE comments received: Pending

Planned Work for November

- Continue Stage 2 field activities.
- Complete TM #1.

Problems

None

Open Items

None

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95		31 Oct 03
Submit Final Phase II RF/RI Work Plan	07 Aug 95		01 Apr 05
Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95		12 Jul 04

October Work Activity Status

DOE comments on the Draft TM #1, *Volume II, Part A - the Field Sampling Plan for Outside Pipelines*, continued to be incorporated. Once comments have been incorporated, a draft final will be submitted to the regulatory agencies for review. Efforts to obtain RCRA permit information on the pipelines have met with success.

The training of field personnel for the Stage I Outside Tank Investigation is in progress. The schedule has been extended because of the limited availability for Waste Generator Training. New requirements for prerequisite training for the waste generator course are going to further delay the training schedule.

Active tanks in OU 9 continued to be a major issue between CDPHE and DOE. DOE continues to work towards a resolution to this problem and to CDPHE approval of work contained in the Field Sampling Plan that was already submitted without going to dispute resolution. DOE efforts to resolve issues that concern Tanks T-8, T-9, T-24, and T-32 continued.

Discussions concerning tank closures in Buildings 444 and 883 are pending until it is clear whether this project will proceed. If funding is approved, then the conversion project prefers to use OU 9 tanks in these buildings for rinse water from cleaning activities and after decontamination and decommissioning for storage. These tanks will have to undergo RCRA closure for 90-day storage as they are interim status tanks.

In order to reduce schedule delays, efforts are in progress to subcontract the portion of the OU 9 Outside Tank Investigation that CDPHE approved. A proposal for the implementation of the Stage I Outside Tank Investigation was submitted and is under review. If the approval of TM #1, *Volume I, Part A, The Field Sampling Plan for Outside Tanks*, does not occur in approximately five months, the subcontractor's proposal will be withdrawn and a new proposal will be needed. Even if approval is granted in the next five months, delays may occur because of conflicts with scheduling.

OU 9 tanks in Building 883 may undergo closure because the building is slated for economic conversion. Also, tanks in Building 444 may be transferred to the economic conversion project. The

tank sites, T-5, T-25, and T-26, are all active RCRA permitted units that were part of the Original Process Waste System. It has not been determined how this will impact OU 9 investigation activities; however, this issue will be actively pursued by DOE and involved parties at the Rocky Flats Environmental Technology Site.

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: To be determined

TM #1

TM Title

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

TM Status

When preparation was concluded: Aug 94

Projected date of submittal to EPA/CDPHE: Nov 94

Actual date of submittal: To be determined

Date EPA/CDPHE comments received: To be determined

Planned Work for November

- Training for the Stage I Outside Tank Investigation will continue.
- The Draft Modification to the IA Health and Safety Plan will be finalized.
- DOE comments on TM #1, *Volume II, Part A*, will be incorporated.
- Field work for Stage I Outside Tank Investigation will be subcontracted.
- The operating procedure FO.28, Tank and Pipeline Investigation, will be finalized.

Problems

The delay in the approval of the TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, by the regulatory agencies has produced field activity delays for the outside tank investigation. This delay has accrued since April 1994 when approval was originally granted by CDPHE. The approval was later rescinded by CDPHE because of active issues.

Open Items

TM #1 has not been approved by the regulatory agencies.

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). Combining 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 RFV/RI Work Plan	27 Nov 91
Submit Final Phase I RFV/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 RFV/RI Report	25 Aug 94	Tolling Agreement	09 Nov 20
Submit Final Phase I RFV/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 RFV/RI Work Plan	27 Jun 95		25 May 17

October Work Activity Status

Work continued towards completion of the Preliminary Draft TM #1 for OU 10. The major issues that affected the TM, which included figures, data tables, and Risk Assessment, have all been resolved. DOE received the Preliminary Draft on October 12, 1994. Any problems related to the Draft TM will be resolved prior to the December 1994 submittal.

Approximately 30 percent of the remaining analytical sample data require data validation. These analytical results were not available

for inclusion in the Preliminary Draft TM #1. According to the EG&G Sample Management Office, the remaining sample analytical data were received and will be uploaded into the Rocky Flats Environmental Database System as soon as the final data validation process has been completed. The remaining OU 10 analytical data will receive validation priority. It is anticipated that the final validation will be completed in time for inclusion into the OU 10 Draft Phase I Nonintrusive TM.

Technical Memoranda

The OU 10 Preliminary Draft Phase I Nonintrusive TM was completed on its scheduled date of October 7, 1994. A new revised schedule has been developed for preparation and delivery of the Draft and Final OU 10 Phase I Nonintrusive TM. The new dates for delivery of the Draft and Final TMs are December 6, 1994, and February 10, 1995, respectively.

Planned Work for November

- The remainder of the sample analytical data will be validated.
- Efforts on responses to comments on the Preliminary OU 10 TM will continue.

Problems

None

Open Items

None

Technical Memoranda

Project

OU 11 - West Spray Field

TM

TM Title
TM Status

Revised Field Sampling Plan and Data Quality Objectives
Submitted to EPA/CDPHE: 31 Mar 94
Approved.

TM #1

TM Title
TM Status

Exposure Scenarios
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 November

- Efforts on the development of a Statement of Work for the Proposed Plan will continue.

Problems

Difficulties are being encountered in obtaining analytical results from the 1994 Field Program. The schedule has been impacted, but the IAG milestone for the Draft RFI/RI Report has not been affected.

During the abandonment of an OU 11 well, a small underground explosion occurred on October 7, 1994. The cause is under investigation, but it is believed it occurred because of a small amount of natural gas in the underlying formations.

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. An 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 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). Combining 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

October Work Activity Status Analysis of field data has begun for TM #2, *Summary of Nonintrusive Field Activities and Intrusive Field Sampling Plan.*

Soil gas sampling in OU 12 was completed in October 1994.

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 November

- Comments are expected from the regulatory agencies on the Surface Water and Sediment Field Sampling Plan. Once the comments are received, responses will be formulated and changes will be made.
- Work will continue on the Summary of Nonintrusive Field Activities TM #2
- Data analysis on the high purity Germanium laboratory samples will continue.
- Laboratory analysis on the asphalt samples for OU 12 will continue.

Problems

None

Open Items

Comments on the Surface Water and Sediment Field Sampling Plan

October Work Activity Status

Revisions to the Draft OU 13 TM #1, *Addendum to the Field Sampling Plan*, have been made and accepted by DOE. TM #1 is in final production and will be issued as a controlled document.

Revisions to the Operating Procedure FO. 28, Tank and Pipeline Investigation, were completed on October 17, 1994. The procedure is being reviewed before being issued as a controlled document.

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

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

Planned Work for November

- If there are delays in gaining utility clearances in OU 8, some soil gas investigations may be performed in IHSS 117.2
- As results from this summer's field work becomes available, data analysis will begin.
- Work will begin on TM #2, *Results of Nonintrusive Field Activities in OU 13*.
- A Statement of Work for the next phases of investigation will be prepared.
- Operating Procedure FO.28, Tank and Pipeline Investigations, will be issued.
- The contract with the subcontractor to complete field investigations including sediment and surface water sampling will be modified.

Problems

None

Open Items

The completion and issuance of the TM #1, *Addendum to the Field Sampling Plan*.

The issuance of Operating Procedure FO.28, Tank and Pipeline Investigations.

October Work Activity Status

Soil gas sampling was completed in OU 14. Surficial soil sampling continues. The surficial soils sampling program is approximately 80 percent complete. One of the field crews will be assigned to OU 8 as soon as the OU 8 Field Sampling Plan is released as a controlled document. In addition, soil gas investigations have also been reprioritized in order to complete as many tasks as possible before the expiration of the Tolling Agreement on January 31, 1995. Soil gas investigations in OUs 14 and 8 will be scheduled ahead of OU 13 because they are of a short duration and will have minimal impact on the OU 13 schedule while allowing two additional investigations to be completed by January 31, 1995.

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 November

- The surficial soils survey will be completed.
- Data analysis will begin on data collected this field season.
- A Statement of Work for the next phases of investigation will be prepared.

Problems

None

Open Items

None

During a meeting on October 5, 1994, with the regulatory agencies, the EPA requested that a "Strategy Paper" be developed to communicate the various alternatives available for OU 15 closure. This document will be completed prior to submission of a Proposed Plan to the regulatory agencies and will examine all the alternatives and recommend the action for the Proposed Plan.

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)

TM #2

TM Title

TM Status

Human Health and Risk Assessment

When preparation is estimated to be concluded:

Actual date the Final TM submitted to EPA/CDPHE: 28 Feb 94

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

Planned Work for November

- EPA comments for the Draft Phase I RFI/RI Report are due to be received. Revision of the report has begun without the EPA comments.
- Continue work on the development of the Strategy Paper and the Proposed Plan.

Problems

The Draft Phase I RFI/RI Report was submitted to the regulatory agencies on July 25, 1994. It was requested that comments be returned by September 8, 1994. CDPHE comments were received on August 29, 1994, and EPA comments have not been received.

Open Items

None

2.16 OU 16 - LOW-PRIORITY SITES

This assessment activity consists of preparing a No Action Justification Document for the following five IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), Nickel Carbonyl Disposal. The No Action Justification Document was approved by the regulatory agencies, and the Record of Decision process was initiated to close OU 16 as an OU at the Rocky Flats Environmental Technology Site.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft No Action Justification Document	04 Mar 92
	Submit Final No Action Justification Document	30 July 92
	Submit Revised Final No Action Justification Document	16 Oct 92
	Submit Draft Record of Decision	29 Apr 94

Future IAG Milestones Through FY 95 None

October Work Activity Status The Final Corrective Action Decision/Record of Decision has been signed by the EPA and DOE. On October 28, 1994, the document was signed by CDPHE. This document officially closes OU 16, and under the terms of the IAG, marks the first completion of an OU at the Rocky Flats Environmental Technology Site.

Technical Memoranda None

Planned Work for November None

Problems None

Open Items None

2.17 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 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	25 Nov 91

Contaminant Dispersion and Responsiveness Summary	
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	14 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

October Work Activity Status

Sitewide Activities

Sitewide Treatability Studies

Annual Treatability Study - Some inconsistencies were discovered in the Rocky Flats Environmental Database System data. The Rocky Flats Environmental Data System Group has been requested to review the data and verify information prior to the utilization of it in the draft report. The data verification may affect the quality of the first draft of the Annual Treatability Study Report and, if not verified in time, may delay the EG&G external milestone.

A Sitewide Treatability status meeting was conducted on October 24, 1994. During this meeting, presentations that concerned the completion of the milestones for the November 12, 1994, deliverables were conducted, and a November 7, 1994, meeting was scheduled to cover the remaining issues.

Bioremediation - A Draft Bioremediation Report was received by DOE for review in October 1994.

Potassium Ferrate Process (Tru-Clear®) - Regarding the Potassium Ferrate Groundwater Treatment Treatability Study, Phase III test samples are scheduled to be shipped to the laboratory on October 28, 1994. Arrangements have been previously made with the laboratory to expedite the sample analyses on a two-week

: turnaround time frame. A draft report on all phases of the Bench-Scale Treatability Study is being prepared. The delivery of this draft report is expected prior to November 12, 1994.

CURE Treatability Study - Partial results for Phase II of the CURE process test work conducted at the laboratory were received the week of October 10, 1994. The results indicated that this technology is capable of removing selenium from the tested groundwaters. The radiological results are still pending. This concludes the test work for the bench scale portion of the program. A meeting among EPA, DOE, and EG&G is being planned to discuss the possible demonstration of this technology at the Rocky Flats Environmental Technology Site under the EPA Site Demonstration Program.

Removal of Actinides from the Soil Treatability Study - The Removal of the Actinides Preliminary Draft Treatability Study Report is being prepared for inclusion with the November 12, 1994, deliverable Treatability Study Reports.

High Gradient Magnetic Separation - On October 7, 1994, the laboratory received the last lot of samples from the Los Alamos National Laboratory. Results were received October 17, 1994. Preparation of the Final Treatability Studies Report continues and is anticipated to be completed in November 1994.

Physical Separation - Comments on the Final Physical Separation Treatability Study Report have been incorporated. DOE received the Final Report on October 20, 1994.

Chemically Enhanced Steam Stripping - After room temperature column experiments by total alpha counting were conducted, the Los Alamos National Laboratory's personnel analyzed the soils collected.

Additionally, the Los Alamos National Laboratory's personnel initiated experiments on these leachates to ensure reproducibility of the data from the first set of preliminary column experiments. Also, the Los Alamos National Laboratory's personnel received data on the batch desorption experiments and have begun to draft the Phase I Report to DOE.

Annual Treatability Study - The review of all citations from different databased literature searches has been completed. The review of site characterization data obtained from the Rocky Flats Environmental Database System continues. Some inconsistencies were discovered in the Rocky Flats Environmental Database System data. Prior to the utilization of the data in the draft of the Annual Treatability Study Report, the Rocky Flats Environmental Database System Group has been requested to review the data and verify information.

Other Sitewide Operations

Community Relations - The Draft Community Relations Plan update was completed by October 17, 1994, and has been sent to the regulatory agencies, DOE, and EG&G for review. Comments are scheduled to be submitted by November 14, 1994.

The monthly public meeting was held on October 19, 1994, and the two Environmental Restoration topics that were discussed were the IA IM/IRA Decision Document comments and the Proposed Action Memorandum for OU 7.

Surface Water Management - Onsite Water Control Drainage Repairs & Improvements - Engineering has completed a project scope description for one of the five South Walnut Creek Flood Prevention project alternatives. This information was given to a representative from Cost Estimating for development of a formal cost estimate.

Dam Upgrades - A meeting was held by EG&G to review all comments on the Draft Geotechnical Analysis Report for Dam Upgrades (Dams A-4, B-5, and C-2). This meeting brought out the fact that all three dams will need structural improvements to allow safe and continued storage even at pool levels as low as 10 percent. These improvements will address safety concerns that relate more to steady state seepage problems versus dam stability problems.

South Interceptor Ditch Repair Project - Project description preparations have begun for all new projects within the Surface Water Drainage Systems Environmental Assessment.

DOE and EG&G personnel met to discuss wetland mitigation strategies in preparation for an upcoming meeting among the EPA, the United States Fish and Wildlife Service, and DOE to discuss offsite wetland mitigation requirements and potential projects. This effort supports the need to mitigate for an estimated 0.2 acres of wetland that will be damaged by the South Interceptor Ditch Repair Project in addition to supporting wetland mitigation requirements for numerous other Rocky Flats Environmental Technology Site projects and remedial actions.

Affected wetland area information for Onsite Water Management projects was organized for inclusion in an overall summary of potential wetland impacts at Rocky Flats Environmental Technology Site. In addition, a map was prepared to show potential wetland impact areas for all estimated future work at Rocky Flats Environmental Technology Site. This effort supported offsite wetland mitigation pursuit efforts and was used for a meeting among EPA, the United States Fish and Wildlife Service, and DOE to discuss offsite wetland mitigation.

Building 991 Flood Protection - the work is being initiated to obtain a soil disturbance permit for Building 991 Flood Protection work. Soil sample data will be obtained to help determine if there are any special project requirements.

Planned Work for November

- Normal Community Relations activities will continue.
- Normal Surface Water management activities 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, 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

A total of 395 groundwater stations was sampled in the third quarter of 1994. Including RCRA, CERCLA, site protection, and boundary wells. As of September 30, 1994, 395 of these stations have been completed. A total of approximately 390 groundwater stations will be sampled in the fourth quarter of 1994. Approximately 557 water level measurements were monitored quarterly for water levels, and approximately one-third of the wells are monitored monthly for water levels. Each groundwater sample is analyzed for the following parameters:

Radiochemical Parameters

Gross Alpha
Gross Beta
Plutonium
Americium

Inorganic Parameters

Nitrate/Nitrite
Total Phosphorous
Ortho-Phosphate
Ammonia

Field Parameters

Specific Conductivity
Temperature
Turbidity
pH

Radiochemical Parameters

Strontium
Tritium
Uranium Fluorine
Cesium

Inorganic Parameters

Total Dissolved Solids
Chlorine

Sulfate
Carbonate
Bicarbonate
Total Suspended Solids
Dissolved Contract Laboratory Program and additional metals
Cyanide
Contract Laboratory Program Volatile Organic Constituents

Field Parameters

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		OU 3 Field Work and RI Report	Apr 92
4	Remediation	HNUS	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	HNUS		Develop Treatability Study for Pondcrete	Aug 94

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
4	Remediation	HNUS		Develop Treatability Study and Conceptual Design for Pond Sludge Processing	Aug 94
5	Assessment	ASI Blackhawk Geo Walsh & Assoc. Layne Envir. Service S. M. Stoller Adv. Terra Testing	Dames & Moore Utility Mgmt. Service	Implementation of OU 5 Work Plan (excluding EE)	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
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	Jan 94

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
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
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	SAIC/Wright Water		Jan 93

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul 90
	SWQA 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 QA/QC 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