

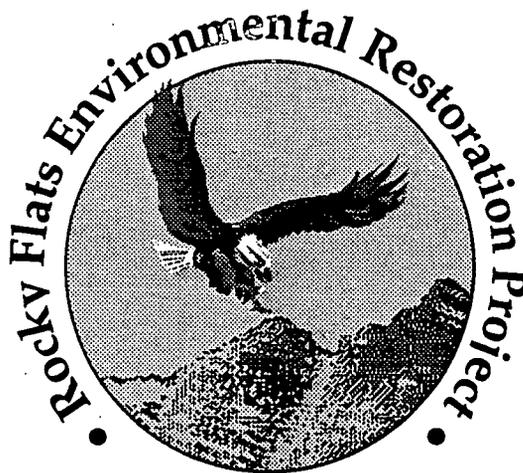
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DOE-RFFO Environmental Restoration Program

Monthly Report for August 1994



September 20, 1994

ADMINISTRATIVE

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

A-SW-001458

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR AUGUST 1994

Operable Unit (OU) 1 completed the Draft Corrective Measures Study (CMS)/Feasibility Study on August 25, 1994, and the study was delivered to the regulatory agencies. The review of the Draft CMS/Feasibility Study by the regulatory agencies is scheduled to be completed on October 7, 1994.

The regulatory agencies have approved the May 30, 1995, Interagency Agreement (IAG) date for submittal of the OU 2 Draft Phase II Resource Conservation and Recovery Act (RCRA) Facilities Investigation (FI)/Remedial Investigation (RI) Report to the regulatory agencies and the OU 2 Final Phase II RFI/RI Report submittal on September 21, 1995.

On August 22, 1994, the new regulatory agency-approved IAG milestones for submittal of the Draft and Final OU 5 Phase I RFI/RI Reports to the regulatory agencies were approved. The new dates are: the Draft RI Report is due on July 21, 1995, and the Final RI Report is due on January 17, 1996.

On August 22, 1994, the new IAG milestone dates for the submittal of the OU 6 Phase I Draft and Final RFI/RI Reports to the regulatory agencies were approved. The new dates for OU 6 are: the Draft RI Report is due June 21, 1995, and the Final RI Report is due December 21, 1995. These dates were approved by the regulatory agencies with the understanding that all impacts of the risk assessment stop work order were incorporated.

DOE granted an extension on the delivery of the Pond Water Management Draft Interim Measure/Interim Remedial Action (IM/IRA) Decision Document from September 2, 1994, to September 30, 1994. Six Pond Water Management system alternatives were identified and are being described in detail, and hydrology studies are being developed that will form the basis of the evaluation of those alternatives. The hydrology and statistical water quality comparisons are near completion. The Draft IM/IRA Decision Document will include and compare data evaluations from surface water, event-related, background geochemical, and OU discharges to provide a strong technical basis for decision-making. Information from the November 1993 Draft IM/IRA Decision Document was identified and placed into the new document in a similar but more concise format. Electronic water quality and risk data are being incorporated into the document.

The Draft Final Industrial Area (IA) IM/IRA Decision Document was submitted to the regulatory agencies on August 18, 1994. The public comment period for the IA IM/IRA will be held from August 29, 1994, through October 19, 1994, to allow sufficient review time for stakeholder review of the responsiveness summary. The preparation has begun for a presentation at the September 21, 1994, Rocky Flats Quarterly Environmental Restoration Public Information Meeting. The hearing will be held on October 19, 1994.

The Draft Ion Exchange and Adsorption Treatability Study Reports have been finalized and submitted to the regulatory agencies.

IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT

| <u>Number of IAG Table Six Milestones to Date</u> | <u>(10/1/93 - 9/30/94)</u> | <u>Current FY 94 since IAG Inception</u> |
|---|----------------------------|--|
| Scheduled (including approved extensions) | 20 | 117 |
| Met | 6 | 4 |
| Extensions Granted | 20 | 47 |
| Extensions Denied | 6 | 8 |
| Remaining this FY 94 (to 9/30/94) | 15 | n/a |
| Added | 1 | 8 |
| Deleted | 1 | 4 |

| <u>Deliverables in Review by Regulators</u> | <u>Project</u> | <u>Date Submitted</u> |
|---|--|-----------------------|
| | Revisions to OU 1 Phase III RFI/RI | 15 Jun 94 |
| | OU 2 Draft Phase II RFI/RI Report | 16 Dec 93 |
| | OU 4 Draft Proposed Phase I IM/IRA Decision Document | 27 May 94 |
| | OU 4 Draft Phase II RFI/RI Work Plan | 27 May 94 |
| | OU 4 Final Phase II RFI/RI Work Plan | 02 Sep 94 |
| | Final OU 7 Technical Memorandum, Revised Work Plan | 23 May 94 |

IM/IRA Status

OU 1 881 Hillside Treatment
 OU 2 903 Pad Water Treatment
 OU 4 Water Management Tasks (Interceptor Trench System and Pond Water)

Gallons Treated

2,586,563 gallons
 24,783,906 gallons
 4,161,708 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 Draft CMS/FS Report | 25 Aug 94 | 25 Aug 94 | |
| OU 1 Corrective design/Remedial Design Work Plan | 01 Nov 94 | 20 Dec 96 | |
| OU 1 Draft Proposed Plan | 22 Nov 94 | 05 Jan 95 | |
| OU 1 Final CMS/FS Report | 22 Nov 94 | 22 Nov 94 | |
| OU 1 Final Proposed Plan | 24 Feb 95 | 31 Mar 95 | |
| OU 2 Draft Responsiveness Summary | 13 Dec 94 | 25 Aug 97 | |
| OU 3 Final Phase I RFI/RI Report | 13 Dec 93 | 11 Jul 96 ¹ | |
| OU 4 Final Phase I Proposed IM/IRA Decision Document | 06 Aug 94 | To be determined | In dispute resolution |
| OU 4 Final Phase II RFI/RI Work Plan | 07 Sep 94 | 02 Sep 94 | Extension granted comments |
| OU 4 Final Phase I IM/IRA Decision Document and Final Responsiveness Summary | 24 Jan 95 | 25 Feb 95 | |
| OU 4 All Solar Ponds Emptied of Water and Sludge | 20 Jan 95 | 14 Dec 94 | |
| OU 4 IM/IRA Responsiveness Summary | 25 Jan 95 | To be determined | In dispute resolution |

| <u>IAG Document Deliverables Due Next Six Months</u> | <u>IAG Approved Date</u> | <u>Current Projected Completion Date</u> | <u>Comments</u> |
|--|--------------------------|--|------------------|
| OU 7 Draft Phase I Proposed IM/IRA Decision Document | 01 Nov 94 ² | 03 May 95 | |
| OU 7 Landfill Leachate Collection IM/IRA | 13 Oct 94 ² | 13 Oct 94 | |
| OU 9 Final Phase I RFI/RI Report | 06 Sep 94 | 16 Sep 03 | Extension denied |

| <u>IAG Document Deliverables Due Next Six Months</u> | <u>IAG Approved Date</u> | <u>Current Projected Completion Date</u> | <u>Comments</u> |
|--|--------------------------|--|-----------------|
| OU 10 Draft Phase I RFI/RI Report | 25 Aug 94 | 02 Nov 15 ³ | |
| OU 10 Final Phase I RFI/RI Report | 30 Jan 95 | 19 Jul 16 ³ | |
| OU 11 Draft Phase I RFI/RI | 20 Sep 94 ⁴ | 20 Jul 95 | |
| OU 11 Final Phase I RFI/RI Report | 22 Feb 95 ⁴ | 19 Sep 95 | |
| OU 12 Final Phase I RFI/RI Report | 15 Sep 94 | 17 Nov 99 ³ | |
| OU 13 Draft Phase I RFI/RI Report | 08 Aug 94 | 24 Mar 99 ³ | |
| OU 13 Final Phase I RFI/RI Report | 11 Jan 95 | 02 Dec 99 ³ | |
| OU 14 Draft Phase I RFI/RI Report | 20 Dec 94 | 13 Feb 01 ³ | |
| OU 15 Final Phase I RFI/RI Report | 04 Jan 95 | 04 Jan 95 | |
| SW Industrial Area Draft Responsiveness Summary | 02 Nov 94 | 02 Nov 94 | |
| SW Industrial Area Final Responsiveness Summary | 23 Aug 94 | 23 Aug 94 | |
| SW Industrial Area Final Decision Document | 23 Aug 94 | 23 Aug 94 | |

| <u>Overdue Deliverables</u> | <u>IAG Approved Date</u> | <u>Current Projected Completion Date</u> |
|--|--------------------------|--|
| OU 2 Final Proposed Plan | 09 Aug 94 | 25 Mar 97 |
| OU 2 Draft Proposed Plan | 10 May 94 | 10 Jan 97 |
| OU 2 Final CMS/FS Report | 10 May 94 | 19 Dec 96 |
| OU 2 Draft CMS/FS Report | 04 Nov 93 | 19 Jul 96 |
| OU 4 Final Phase I Proposed IM/IRA Decision Document | 06 Aug 94 | To be determined |
| OU 8 Draft Phase I RFI/RI Report | 14 Feb 94 | 15 Aug 02 ³ |
| OU 8 Final Phase I RFI/RI Report | 12 Jul 94 | 26 Aug 03 |
| OU 9 Draft Phase I RFI/RI Report | 11 Apr 94 | 20 Mar 01 ³ |
| OU 12 Draft Phase I RFI/RI Report | 20 Apr 94 | 11 Mar 99 ³ |

¹ Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

² Revision per the process improvement proposals.

³ The Tolling Agreement resolves the issue of any milestones that are missed in OU 2 and the Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) between July 1994 and January 31, 1995.

⁴ Revised per the Process Improvement Proposal.

PROBLEMS AND PROGRAMMATIC ISSUES

The start of the OU 7 Phase II Field Investigation was delayed because of additional review time required by the regulatory agencies and changes in the scope of work.

Performance of the OU 8 Stage II field work is dependent upon the successful resolution of the Risk Assessment activities and the delay in the receipt of the formal Work Plan approval.

The delay in the approval of the OU 9 Technical Memorandum (TM) #1, *Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks*, by the regulatory agencies could delay field activities.

Some wells in OU 11 have not developed as quickly as anticipated because of a high variation in Total Dissolved Solids.

NEAR-TERM IAG TABLE SIX MILESTONES

| <u>OU #</u> | <u>IAG</u> <u>Milestone Description</u> | <u>Date Scheduled</u> <u>to EPA/CDPHE</u> | <u>Status</u> |
|----------------|---|--|---|
| 2 ¹ | Submit Draft Phase II RF/RI Report | 12 Mar 93 | Tolling Agreement ³ |
| 2 ¹ | Submit Final Phase II RF/RI Report | 09 Aug 93 | Tolling Agreement ³ |
| 2 ¹ | Submit Draft CMS/FS Report | 04 Nov 93 | Extension request submitted. Past due |
| 8 | Submit Draft Phase I RF/RI Report | 14 Feb 94 | Tolling Agreement ³ |
| 9 | Submit Draft Phase I RF/RI Report | 11 Apr 94 | Extension request denied. Past due |
| 12 | Submit Draft Phase I RF/RI Report | 20 Apr 94 | Tolling Agreement ³ |
| 2 ¹ | Submit Final CMS/FS Report | 10 May 94 | Extension request submitted Past due |
| 2 ¹ | Submit Draft Proposed Plan | 10 May 94 | Extension request submitted. Past due |
| 8 | Submit Final Phase I RF/RI Report | 12 Jul 94 | Tolling Agreement ³ |
| SW | Submit Industrial Area Draft Responsiveness Summary | 02 Aug 94 | 10 Dec 94 |
| 4 | Submit Final Phase I Proposed IM/IRA Decision Document | 06 Aug 94 | Delayed because of dispute resolution |
| 13 | Submit Draft Phase I RF/RI Report | 08 Aug 94 | Tolling Agreement ³ |
| 2 ¹ | Submit Final Proposed Plan | 09 Aug 94 | Extension request submitted |
| SW | Submit Industrial Area Final Responsiveness Summary | 23 Aug 94 | 09 Jan 95 |
| SW | Submit Industrial Area Final Decision Document | 23 Aug 94 | 09 Jan 95 |
| 10 | Submit Draft Phase I RF/RI Report | 25 Aug 94 | Tolling Agreement ³ |
| 1 | Submit Draft CMS/FS Report | 25 Aug 94 | Extended from 11 Feb 94 |
| 4 | Submit Final Phase II RF/RI Work Plan | 02 Sep 94 | On schedule |
| 9 | Submit Final Phase I RF/RI Report | 06 Sep 94 | Tolling Agreement ³ |
| 12 | Submit Final Phase I RF/RI Report | 15 Sep 94 | Tolling Agreement ³ |
| 11 | Submit Draft Phase I RF/RI Report | 20 Sep 94 ⁴ | 20 Jul 95 |
| 7 | Submit Preliminary Draft IM/IRA | 14 Oct 94 ² | 03 May 94 |
| 1 | Submit Corrective Design/Remedial Design Work Plan | 01 Nov 94 | 12 Jun 96 |
| 7 | Submit Draft Phase I Proposed IM/IRA Decision Document | 01 Nov 94 ² | On schedule |
| 1 | Submit Draft Proposed Plan | 22 Nov 94 | Extended from 05 Jan 95 |
| 1 | Submit Final CMS/FS Report | 22 Nov 94 | Extended from 27 Sep 93 |
| 2 ¹ | 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 |
| 14 | Submit Draft Phase I RF/RI Report | 20 Dec 94 | Tolling Agreement ³ |
| 15 | Submit Final Phase I RF/RI Report | 04 Jan 95 | On schedule |
| 13 | Submit Final Phase I RF/RI Report | 11 Jan 95 | 02 Dec 99 |
| 4 | All Solar Ponds Emptied of Water and Sludge | 20 Jan 95 | Ahead of schedule |
| 10 | Submit Final Phase I RF/RI Report | 30 Jan 95 | Tolling Agreement ³ |
| 4 | Submit IM Title II Design | 10 Feb 95 | Delayed because of dispute resolution |
| 4 | Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary | 25 Feb 95 | Delayed because of the dispute resolution |
| 11 | Submit Final Phase I RF/RI Report | 22 Feb 95 ⁴ | 19 Sep 95 |
| 1 | Submit Final Proposed Plan | 24 Feb 95 | Extended from 04 Jan 94 |
| 9 | Submit Draft Phase II RF/RI Work Plan | 10 Mar 95 | 10 Sep 98 |
| 2 | Submit Final Responsiveness Summary | 16 Mar 95 | 05 Jan 98 |
| 2 | Submit Draft Corrective Action Decision/ Record of Decision | 16 Mar 95 | 05 Jan 98 |

| <u>OU#</u> | <u>IAG</u> <u>Milestone Description</u> | <u>Date Scheduled</u> <u>to PA/CDPHE</u> | <u>Status</u> |
|----------------|---|---|-------------------------|
| 7 | Submit Final Phase I Proposed Landfill Closure IM/IRA Decision Document | 06 Apr 95 ² | 03 Jul 95 |
| 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 | 22 Sep 98 |
| 10 | Submit Draft Phase I Proposed IM/IRA Decision Document | 26 May 95 | Proposed elimination |
| 2 ¹ | Submit Final Corrective Action Decision/ Record of Decision | 15 Jun 95 | 15 Sep 97 |
| 2 ¹ | Submit Corrective Design/Remedial Design Work Plan | 15 Jun 95 | 01 Jul 98 |
| 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 | 27 Jun 95 |
| 5 ¹ | Submit Draft Phase I RFI/RI Report | 21 Jul 95 | Extended from 30 Nov 93 |
| 7 | Submit Landfill Closure IM/IRA Responsiveness Summary | 14 Aug 95 ² | 04 Oct 95 |
| 9 | Submit Final Phase II RFI/RI Work Plan | 07 Aug 95 | 07 Aug 95 |
| 11 | Submit Draft Phase II RFI/RI Work Plan | 21 Aug 95 | 21 Aug 95 |

¹ OUs 2 and 3 will request additional extensions because of the Human Health Risk Assessment stop work order.

² Revision is pending per the process improvement proposals.

³ The Tolling Agreement resolves the issue of any milestones that are missed in OU 2 and the Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) between July 1994 and January 31, 1995.

⁴ Revised per the Process Improvement Proposal.

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for August 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 highlights significant achievements, summarizes milestone information, and presents 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 onsite 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 Remedial 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 Changes This Period None

Technical Approach Changes This Period None

| | | |
|--------------------------------------|---|-----------|
| IAG Milestone Accomplishments | Submit Draft Phase III RFI/RI Work Plan | 06 Feb 90 |
| | Submit Final Phase III RFI/RI Work Plan | 31 Oct 90 |
| | Submit Draft Phase III RFI/RI Report | 28 Oct 92 |
| | Submit Final Phase III RFI/RI Report | 05 Nov 93 |
| | Submit Revised Phase III RFI/RI Report | 15 Jun 94 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|--|------------------------------------|----------------------------------|--|
| Submit Draft CMS/FS Report | 31 Mar 93 | 25 Aug 94 | 30 Mar 94 |
| Submit Final CMS/FS Report | 27 Sep 93 | 22 Nov 94 | 30 Sep 94 |
| Submit Draft Proposed Plan | 27 Sep 93 | 22 Nov 94 | 30 Sep 94 |
| Submit Final Proposed Plan | 04 Jan 94 | 24 Feb 95 | 17 May 95 |
| Submit Corrective Design/Remedial Design Work Plan | 01 Nov 94 | | 13 Dec 96 |

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|--|------------------------------------|----------------------------------|--|
| Submit Draft Responsiveness Summary | 06 May 94 | 23 Jun 95 | 31 Aug 95 |
| Submit Final Responsiveness Summary | 03 Aug 94 | 22 Sep 95 | 12 Apr 96 |
| Submit Draft Corrective Action Decision/Record of Decision | 03 Aug 94 | 22 Sep 95 | 12 Apr 96 |
| Submit Final Corrective Action Decision/Record of Decision | 01 Nov 94 | 22 Dec 95 | 13 Dec 96 |
| Submit Draft Title II Design | 05 Jul 95 | | 14 Aug 97 |

August Work Activity Status

Work continued throughout the month on the Draft Corrective Measures Study (CMS)/Feasibility Study (FS). The report was completed on August 25, 1994, and delivered to the regulatory agencies. The review of the Draft CMS/Feasibility Study by the regulatory agencies is scheduled to be completed on October 7, 1994.

Technical Memoranda

Project

OU 1 881 Hillside

TM #10
TM Title
TM Status

Preliminary Remediation Goals
Submitted Final TM to DOE: 03 May 1994
When preparation was concluded: 03 May 1994
Projected date of submittal to EPA/CDPHE: Submitted
Actual date of submittal: 03 May 1994
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 1994
When preparation was concluded: 03 May 1994
Projected date of submittal to EPA/CDPHE: Submitted
Actual date of submittal: 03 May 1994
Date when comments were received: EPA 24 May 94, CDPHE 06 Jun 94

Planned Work for September

- Develop strategies for preparation of the Final CMS/Feasibility Study Report.

Problems

None

Open Items

None

2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period None

Technical Approach Changes This Period None

| | | |
|--------------------------------------|---|-----------|
| IAG Milestone Accomplishments | Submit Draft Proposed 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

August Work Activity Status **Accelerated Cleanup** - A radiological survey was conducted on July 26, 1994, to locate two additional uranium hot spots identified in the Operable Unit (OU) 1 Remedial Investigation (RI) /Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI). Hot Spot 881-18/19 was located north of the other hot spots in Individual Hazardous Substance Site (IHSS) 119.1 by using a Field Instrument for the Detection of Low-Energy Radiation. The presumed location of Hot Spot 881-16/17 was surveyed; however, no elevated activities were detected at that time. A follow-up detailed survey to locate Hot Spot 881-16/17 was conducted on August 4, 1994. The hot spot was located approximately three feet south of sample location SS100293 in IHSS 119.1. The two

additional hot spots will be added to the OU 1 Hot Spot Removal Project for removal.

On August 11, 1994, the DOE completed the review of the Hot Spot Removal Project schedule and the comments from the regulatory agencies on the Proposed Action Memorandum.

The official closing date for the public comment period on the Proposed Action Memorandum was August 17, 1994. No public comments were received; however, comments from the regulatory agencies were received in August 1994.

Pending EPA's approval of the Sampling and Analysis Plan, this action could result in a start date of September 21, 1994.

Interim Measure/Interim Remedial Action (IM/IRA) Treatment Facility - DOE received the Final Treatment System Quarterly Report on August 26, 1994.

Treated groundwater this month: 86,250 gallons
Total treated to date: 2,586,563 gallons

Planned Work for September

- **Accelerated Cleanup** - Comments from the regulatory agencies on the Proposed Action Memorandum will be reviewed and resolved and the Sampling and Analysis Plan will be finalized for approval by the regulatory agencies.
- Progress will continue towards commencement of the hot spot cleanup removal on September 21, 1994.
- **IM/IRA Treatment Facility** - Normal operations

Problems

None

Open Items

None

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

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums 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 Interim Measure (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 the water met the standards established. Collection of the last source is also being reevaluated.

A second IM/IRA was established in late 1991. This Subsurface IM/IRA Plan/Environmental Assessment encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRA 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 Changes This Period None

Technical Approach Changes This Period None

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

Submit Preliminary Draft Phase II RFI/RI Report 16 Dec 93

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|---|------------------------------------|----------------------------------|--|
| Submit Draft Phase II RFI/RI Report ¹ | 12 Mar 93 | 30 May 95 | 16 Dec 93* |
| Submit Final Phase II RFI/RI Report ¹ | 09 Aug 93 | 21 Sep 95 | 23 May 94* |
| Submit Draft CMS/FS Report | 04 Nov 93 | | 71 Oct 96* |
| Submit Final CMS/FS Report | 10 May 94 | | 26 Jun 97* |
| Submit Draft Proposed Plan | 10 May 94 | | 27 Jan 97* |
| Submit Final Proposed Plan | 09 Aug 94 | | 13 Jan 98* |
| Submit Draft Corrective Action Decision/ Record of Decision | 16 Mar 95 | | 02 Dec 98* |
| Submit Responsiveness Summary | 13 Dec 94 | | 30 Jun 98* |
| Submit Final Responsive Summary | 16 Mar 95 | | 05 Jan 98* |
| Submit Final Corrective Action Decision/ Record of Decision | 15 Jun 95 | | 10 Aug 99* |
| Submit Corrective Design/ Remedial Design Work Plan | 15 Jun 95 | | 10 Aug 99* |

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

¹ Tolling Agreement

August Work Activity Status

Remedial Assessment - The regulatory agencies have approved the May 30, 1995, IAG date for submittal of the Draft Phase II RFI/RI Report to the regulatory agencies and the Final Phase II RFI/RI Report submittal on September 21, 1995.

Feasibility Study - A schedule reflecting the interaction of projected major activities for the Fiscal Year (FY) 1995 OU 2 Feasibility Study within the integrated environmental remediation schedule was generated to delineate the scope for work package development.

Treatability Studies - Chemically Enhanced Steam Stripping - The Los Alamos National Laboratory personnel have completed all of the batch desorption experiments scheduled to be performed in Phase I testing (FY 94 testing). The analytical data on the experimental results are pending. The batch column experiments are set up and will commence after additional soil from the Rocky Flats Environmental Technology Site is received. The soil was sampled on August 23, 1994, and after the completion of the

radiological screen, analytical results will be shipped to the Los Alamos National Laboratory.

Final data from the batch desorption experiments and the preliminary data from Phase I batch column experiments are anticipated to be included in the draft results presented to the regulatory agencies on November 12, 1994.

Solvent Extraction - A tour to familiarize the CDPHE with the Solvent Extraction process was held on August 24, 1994. DOE was available to answer questions from CDPHE.

Technical Memoranda

Project

OU 2 - 903 Pad, Mound, and East Trenches

TM #5
TM Title
TM Status

Exposure Scenarios
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
TM Status

Modeling
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
TM Status

Surficial Soils
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
TM Status

Bedrock
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 #9
TM Title Chemicals of Concern (second submittal)
TM Status When preparation was concluded: 24 Aug 93
Projected date of submittal to EPA/CDPHE: 30 Aug 94
Actual date of submittal: 30 Aug 94
Date comments were received: To be determined

TM #10
TM Title Toxicity Assessment
TM Status 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: To be determined

Planned Work for September • Continue work on Risk Assessment, the Treatability Studies, and the FS.

Problems None

Open Items None

2.2.2 OU 2 REMEDIATION

Scope of Work Changes This Period None

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 |

Project Status

| | |
|---|------------|
| 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

| Milestone Name | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|---|---|---|---|
| Submit Final Pilot Test Plan Site II | 30 Aug 94 | | 30 Aug 94 |
| 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 |

August Work Activity Status

Subsurface Interim Measure/Interim Remedial Action Operations Report - Test Site No. 1 - On August 20, 1994, in preparation for the additional pilot testing in IHSS 110, all five shallow geoprobes were installed, but only one deep probe was installed. While the probes were being installed, three sleeves came back with "product" or Non-Aqueous Phase Liquid material on the outside. Probe installation was suspended.

Because the deep probes will be installed in Non-Aqueous Phase Liquid material, additional probes were

not installed. Only two of the three pilot tests can be performed with the probes that are in place.

Test Site No. 2 - Comments on the Site 2 Test Plan were received from the CDPHE, EPA, and the Technical Review Group. The comments will be incorporated; however, several comments that involve the scope and the scale of the IM/IRA questioned the demonstration of multiple arrays. The Test Plan is being modified by DOE and EG&G to provide adequate technical and administrative justification for a demonstration that involves multiple heating arrays. More time than originally scheduled will be required to resolve these comments and finalize the document.

Test Site No. 3 - In order to meet the schedule for the OU 2 Feasibility Study, Test Site 3, which is required under the Subsurface IM/IRA Pilot Test Program, tests will be performed concurrently with Test Site 2. The most applicable site for this test is IHSS 113 (The Mound Area).

Test Site 3 is currently in the preliminary planning stages. Initial plans utilize the current Soil Vapor Extraction system and the current OU 2 documentation. No work will begin on this project until the beginning of FY 95.

Field Treatment Unit Surface Water Treatment Facility - Personnel for the Field Treatability Unit have been reduced. Additional reductions in personnel will occur after upgrades to the leak detection in the influent line have been installed in two to three weeks.

Because of extremely low influent to the Field Treatability Unit, normal sampling events have been curtailed. Effluent samples are being taken when the facility does process water (approximately every two weeks). However, sampling of the three surface water locations (SW-59, SW-61, SW-132) continues.

The 3,300-gallon storage tank that is to be used at SW-59 to eliminate night and weekend shift coverage was delivered to the site on August 12, 1994. Installation is pending.

| | |
|-----------------------------------|--------------------|
| Treated surface water this month: | 19,823 gallons |
| Total treated to date: | 24,783,906 gallons |

Project Status

**Planned Work for
September**

- Normal operations will be continued.

Problems

None

Open Items

None

2.3 OU 3 - OFFSITE AREAS

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

Scope of Work Changes This Period None

Technical Approach Changes This Period None

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

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|------------------------------------|------------------------------------|----------------------------------|--|
| Submit Draft Phase I RFI/RI Report | 16 Jul 93 | 30 Oct 95 | 02 Nov 93* |
| Submit Final Phase I RFI/RI Report | 13 Dec 93 | 11 Jul 96 | 20 Jul 94* |

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

August Work Activity Status Landowner Notifications of sampling results have been received by DOE for approval and released to the landowners.

The CDPHE Conservative Screen Letter Report is being finalized. The Conservative Screen Letter Report will be used in addition to the OU 3 Technical Memorandum (TM) #4 to present the weight of evidence analysis for the OU 3 Contaminants of Concern selection process to the regulatory agencies.

The Draft TM # 4, *Human Health Risk Assessment, Chemicals of Concern Identification for OU 3*, is being finalized.

The OU 3 toxicity assessment TM #5 is being completed. The toxicity assessment TM will present relevant toxicity data for the chemicals of concern identified in the OU 3 TM #4.

Construction has begun on one of four air and meteorological monitoring station sites on August 24, 1994. Construction has begun on a second monitoring station site in August 1994. Construction operations will not commence at the remaining two sites until a Jefferson County Site Approval Application is processed by the County. The application process is expected to be completed by September 28, 1994.

Technical Memoranda

Project

OU 3 - Offsite Areas

TM #1
TM Title
TM Status

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

TM #2
TM Title
TM Status

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

TM #3
TM Title Modeling
TM Status When preparation was concluded: Jan 95
Projected date of submittal to EPA/CDPHE: 02 Mar 95
Actual date of submittal: To be determined
Date comments were received: To be determined

TM #4
TM Title 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 September

- The Contaminants of Concern TM, the CDPHE Conservative Screen Letter Report, and the Toxicity TM will be submitted to the regulatory agencies.

Problems None

Open Items None

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is comprised of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger Interceptor Trench System, which returned approximately 4 million gallons of groundwater back into the solar evaporation ponds each year.

Process water has not been pumped into the ponds since 1986, and with the diversion of the Interceptor Trench System water to storage tanks in April 1993, groundwater is no longer returned to the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of RCRA. A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building supplements the plant's waste treatment facility in Building 374 to process the water stored in the modular tanks. Because upgrades were installed in Building 374 and since other plant waste streams decreased in volume, Interceptor Trench System water is now preferentially treated in Building 374 rather than Building 910.

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) remix of noncertified pondcrete and saltcrete and pond sludge processing as required by the Federal Facilities Compliance Act; (2) water management/treatment by means of the IM/IRA Decision Document signed by EPA, CDPHE, and DOE; (3) the OU 4 assessment and remedial action, per the IAG which identified the ponds as one of the 16 OUs to be remediated at the Rocky Flats Environmental Technology Site and superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the plant's RCRA interim status and permit requirements for storage of pond wastes. The water and pond sludge management are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the noncertified pondcrete is processed and disposed.

Work in these four areas was planned to close the ponds and remediate OU 4. The work was scoped to (1) remove water from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated groundwater, (3) remove and dispose of pond wastes in compliance with all applicable regulations such as RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, (6) remediate the ponds (source and soils) as needed, and (7) remediate the groundwater as needed.

2.4.1 OU 4 ASSESSMENT

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 Jun 90 |
| | Submit Final Phase I RFI/RI Work Plan | 26 Nov 90 |
| | Submit Draft Phase II RFI/RI Work Plan | 27 May 94 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|--|------------------------------------|----------------------------------|--|
| Submit Final Phase II RFI/RI Work Plan | 19 Sep 94 | 07 Sep 94* | 02 Sep 94 |

* Revised date provided by the CDPHE because of the late receipt of EPA comments.

August Work Activity Status

Phase II RFI - Comments from the regulatory agencies were incorporated into the Final Phase II RFI Work Plan.

Further assessment/characterization under the remaining two ponds (207B South and 207C) will not be known until samples are available. The contents of the remaining pond (207C) must be removed to allow sampling under both ponds to commence.

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 to EPA/CDPHE: 15 Dec 92
Actual submittal date of Final: 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 Modification to Field Activities
TM Status Draft submitted to EPA/CDPHE: 18 Mar 93
Comments received: 07 May 93
Projected submittal of Final to EPA/CDPHE: 07 Jun 93
Actual submittal date of Final: 09 Jun 93
EPA/CDPHE Final Approval of TM #2: 30 Jun 93

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

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

Planned Work for September • Continue efforts to streamline the Phase II assessment and remediation program.

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 only minimal treatment of the sludge prior to the disposal in the Phase I Remediation.

IAG Milestone Accomplishments The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA Decision Document that was delivered to the regulatory agencies on May 27, 1994.

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due 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 | 12 Oct 94 |
| 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 Jan 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 | 27 Sep 95 | 27 Sep 95 | To be determined* |

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

August Work Activity Status

Treatment, Storage, and Disposal

Conceptual Design - A Letter Task Order was awarded to the pondsludge processing subcontractor on August 18, 1994.

Treatability - Sludge - The scope change to minimum treatment for sludge under the cap has created a procurement delay. The delay could impact support to IAG milestones.

Waste Storage - A contract has not been awarded for the procurement of containers. Vendors have submitted additional information to aid in the resolution of technical issues concerning size and testing of the containers. After all required procurement reviews are complete, contract award is expected.

Interim Remedial Action

Water Management - A Baseline Change Proposal was approved that provides adequate funds to complete the FY 94 scope of work activities. Selected activities are being reauthorized for work.

Interim Measure Remediation

RCRA Facility Investigation - As agreed to during the dispute resolution, the comment response document is being prepared to include the comments on the Draft IM/IRA Environmental Assessment Decision Document received from the EPA. Comments have been completed, and modifications to the document have begun.

Interim Measure Design - EG&G has begun the design basis reevaluation that resulted from a dispute resolution, and as a result, documentation is being prepared to include sludge as a component of the IM/IRA. The schedule will be revised, and new IAG dates will be proposed.

Preconstruction - Preparation of the Integrated Work Control Program has been completed for the removal of the two cement silos. A prebid walkdown of the two silos was conducted with the subcontractor on August 16, 1994.

Removal of cement silos may be impacted because of delays in C Pond and clarifier sludge removal. This impact could move construction into the winter season. This activity is not on the critical path; however, execution of the work in the winter season will result in higher costs, and a delay of work increases the possibility of this activity becoming critical path. In either event, variances will be experienced. This activity will be monitored closely to identify "windows of opportunity" to perform work as required prior to the arrival of the winter season.

The final engineering design package for OU 4 Stripout has been completed, and distribution was made. This package was completed approximately 20 days ahead of schedule.

Development of scope and estimate for relocation of cargo containers near Building 964 was completed approximately one month ahead of schedule. While there is no impact to the critical path, the early commencement of field activities will control the schedule risk on the critical path.

The geotechnical drilling activities were completed on August 12, 1994. Surficial soil samples have been sent to the laboratory for California Bearing Ratio analysis. To obtain additional data for the RFI/RI for that location, a piezometer was installed in the boring located north of C Pond to obtain additional data for the RFI/RI for that location.

The Title II Design efforts for the installation of a Vehicle Access Gate at Portal #3 are complete. The review package was configured and was distributed on August 23, 1994. After the package was distributed, Key Decision Three for the Vehicle Access Gate was requested.

An ecological walkdown of the OU 4 site was conducted to address possible ecological concerns that may impact Phase I Remediation Construction. Concerns include seed mixtures for the final barrier and hillside, plant and animal species that may be encountered, and nesting times. Prior to installation of the Vehicle Access Gate at Portal #3, a Migratory Bird Survey will be conducted.

Interim Measure Sludge

Construction - Dismantling of dated pondcrete production equipment in the area around C Pond continued. These removals facilitate vacuum truck operations in this area but are not on the critical path.

The secondary containment south of C Pond continues to await disassembly. There remains potential for contamination, but that possibility is considered remote. Modifications to the vacuum truck loading dock were completed.

Testing & Operations - Rainwater was pumped from B South Pond to B North Pond and was subsequently used to perform the final rinse down in Pond 207B South. Final rinsing of Pond 207B South was completed and vacuum sludge removal operations in Pond 207C commenced.

Planned Work for September

- Sludge removal operations in Pond 207C will continue.
- Title II Design of site stripout and vehicle access at Portal Three will continue.
- Responses to comments from the regulatory agencies on the Phase I RFI/RI Report and the Post Closure Performance and Monitoring Plan will be finalized.
- Modified IAG milestone deliverable dates as a result of the dispute resolution will be proposed.

Problems

None

Open Items

Incorporation of treated pond sludge into the IM/IRA and conclusion of the dispute resolution.

There is uncertainty regarding the State of Colorado's Corrective Action Management Unit regulation. The State of Colorado ratified the Corrective Action Management Unit legislation that is more restrictive than

the EPA's legislation. A key OU 4 assumption is the use of the Corrective Action Management Unit and the Temporary Unit for the Phase I Remediation.

2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, encompasses assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 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 administratively 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 None

IAG Milestone Accomplishments

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

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|------------------------------------|------------------------------------|----------------------------------|--|
| Submit Draft Phase I RFI/RI Report | 30 Nov 93 | 21 Jul 95 | 09 Feb 95 |
| Submit Final Phase I RFI/RI Report | 03 May 94 | 17 Jan 96 | 18 Oct 95 |

August Work Activity Status

On August 22, 1994, revised regulatory agency-approved IAG milestones for submittal of the Draft and Final Phase I RFI/RI Reports to the regulatory agencies were approved. The new dates for OU 5 are as follows: the Draft RI Report is due on July 21, 1995, and the Final RI Report is due on January 17, 1996.

TM #15, *Addendum to the Field Sampling Plan*, was completed. EPA has provided written approval of the TM to DOE. Field work started in August 1994.

As part of the RFI/RI Risk Assessment, the background comparison was completed on August 1, 1994.

Preparations of graphical presentations of the OU 5 data (e.g., histograms and box plots) were also completed. Both of these tasks are being reviewed to determine Potential Contaminants of Concern.

Air dispersion modeling continues on the Fugitive Dust Model.

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
Projected date of submittal to EPA/CDPHE: 30 Nov 92
Actual date of submittal: 13 Oct 92

TM #3
TM Title
TM Status

Soil Sampling at IHSS 115
When preparation was concluded: 07 May 93
Projected date of submittal to EPA/CDPHE: 07 May 93
Actual date of submittal: 26 Jan 93

TM #4
TM Title
TM Status

Soil Sampling at IHSS 133
When preparation was concluded: 07 Jun 93
Projected date of submittal to EPA/CDPHE: 07 Jun 93
Actual date of submittal: 12 Apr 93

TM #5
TM Title
TM Status

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

TM #6
TM Title
TM Status

Cone Penetrometer at IHSS 115
When preparation was concluded: 14 Apr 93
Projected date of submittal to EPA/CDPHE: 14 Apr 93
Actual date of submittal: 25 Mar 93

Projected date of Draft Final submittal to EPA/CDPHE:
20 Dec 94

TM #15
TM Title
TM Status

Addendum to the Field Sampling Plan
When the Final is estimated to be concluded: 31 Aug 94
Projected date of Final submittal to EPA/CDPHE:
16 Jul 94
Actual date of submittal: 31 Aug 94

**Planned Work for
September**

- TM #15, *The Addendum to the Field Sampling Plan*, will be completed to provide the additional sampling and analysis to the Work Plan for the Phase I RFI/RI.
- The Human Health Risk Assessment will continue as follows: complete the Nature and Extent activities along with the identification of Potential Contaminants of Concern. These results will be used to perform the Concentration Toxicity Screens. After these activities are completed, start the CDPHE Conservative Screen and the Data Aggregation activities.
- The Final Modeling TM to the regulatory agencies will be submitted with all of the review comments addressed.
- Groundwater, surface water, and air modeling will continue.
- The contract for OU 5 Feasibility Study will be awarded.

Problems

None

Open Items

None

2.6 OU 6 - WALNUT CREEK

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

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

The regulatory agencies have proposed a new IM/IRA on the operation of the Rocky Flats Environmental Technology Site Ponds. On April 15, 1994, the regulatory agencies and DOE agreed that the ponds will be managed by the Pond Water Management IM/IRA. The Pond Water IM/IRA has been transferred to the onsite Surface Water Management Major Activity Document.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

| | | |
|--------------------------------------|---------------------------------------|-----------|
| IAG Milestone Accomplishments | Submit Draft Phase I RFI/RI Work Plan | 19 Apr 91 |
| | Submit Final Phase I RFI/RI Work Plan | 16 Sep 91 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|------------------------------------|------------------------------------|----------------------------------|--|
| Submit Draft Phase I RFI/RI Report | 04 Aug 93 | 21 Jun 95 | 21 Oct 94 |
| Submit Final Phase I RFI/RI Report | 07 Jan 94 | 21 Dec 95 | 10 Jul 95 |

August Work Activity Status

On August 22, 1994, revised regulatory agency-approved IAG milestone dates for submittal of the Draft and Final Phase I RFI/RI Reports to the regulatory agencies were received from the EPA. The new dates for OU 6 are as follows: the Draft RI Report is due June 21, 1995, and the Final RI Report is due December 21, 1995. These dates were approved by the regulatory agencies with the understanding that all impacts of the stop work order were incorporated.

Preliminary analytical results were returned by the laboratory on the polychlorinated biphenyls tissue analysis. These results show slightly elevated levels of polychlorinated biphenyls in the tissues of fat head minnows from B-4 pond. Sampling results from the bass in A-3 and fat head minnows in A-4 and B-5 were considerably less. The preliminary sediment polychlorinated biphenyls data have not revealed any significant levels of contamination though B-3 pond results are slightly elevated.

Surface water, groundwater, and air modeling are continuing as scheduled.

Preliminary work continues on developing the CDPHE Source Areas and the corresponding Areas of Concern maps. TM #4, *Chemicals of Concern*, was delivered to the regulatory agencies for review on August 24, 1994. Work continues on the Final TM #2, *Exposure Scenarios*, and the final revisions to TM #3, *Model Description*.

Chapter 4 of the RI Report, *Nature and Extent*, is at a standstill until work on the Risk Assessment TMs is finished. This chapter is scheduled to be completed in September 1994. Work has begun on creating Source Area and Area of Concern maps. A meeting is scheduled with the regulatory agencies to present these maps on September 2, 1994.

Pond Water Management IM/IRA - Completion of the revised Draft IM/IRA Decision Document was extended to September 30, 1994. Six pond water management system alternatives were identified and are being described in detail, and hydrology studies are being developed that will form the basis of the evaluation of those alternatives. The hydrology and statistical water quality comparisons are near completion. The Draft IM/IRA Decision Document will include and compare data evaluations from surface water, event-related, background geochemical, and OU discharges to provide a strong technical basis for decision-making. Information from the November 1993 Draft IM/IRA Decision Document was identified and placed into the new document in a similar but more concise format. Electronic water quality and risk data are being incorporated into the document.

Technical Memoranda

Project

OU 6 - Walnut Creek

TM #1

TM Title

Work Plan Modifications

TM Status

Approved by EPA: 08 Jan 93

TM #2

TM Title

Exposure Scenarios

TM Status

When preparation was concluded: 07 July 93
Projected date of submittal to EPA/CDPHE: 07 Jul 93
Actual date of submittal: 07 Jul 93
Date EPA/CDPHE comments were received: 23 Oct 93
Date Final submitted to EPA/CDPHE: 29 Sep 94

TM #3

TM Title

Modeling Description

TM Status

When preparation was concluded: 10 Nov 93
Projected date of submittal to EPA/CDPHE: 10 Nov 93
Actual date of submittal: 10 Nov 93
Date EPA/CDPHE comments were received: 23 Dec 93
Date Final submitted to EPA/CDPHE: 14 Jan 94

TM #4

TM Title

Contaminants of Concern

TM Status

When preparation was concluded: 29 Aug 94
Projected date of submittal to EPA/CDPHE: 29 Aug 94
Actual date of submittal: 23 Aug 94

TM #5

TM Title

Toxicity Factors

TM Status

When preparation was estimated to be concluded:
09 Sep 94
Projected date of submittal to EPA/CDPHE: 09 Sep 94
Actual date of submittal: 23 Aug 94
Date Final submitted to EPA/CDPHE: To be determined

**Planned Work for
September**

- Draft Data Aggregation Letter Report will be prepared.
- Meetings will be held with the regulatory agencies to present Source Areas and Areas of Concern maps.
- Final TM #2, *Exposure Scenarios*, will be submitted.
- Final TM #4, *Contaminants of Concern*, will be submitted.

- Draft and Final TM #5, *Toxicity*, will be submitted.
- Groundwater, surface water, and air modeling will continue.
- The Pond Water IM/IRA Decision Document will be submitted.

Problems

None

Open Items

None

2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of 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>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|---|--|--|--|
| <u>Landfill Closure IM/IRA</u> | | | |
| Submit Draft Phase I Proposed IM/IRA Decision Document | 01 Nov 94* | | 14 Feb 97 |
| Submit Final Phase I Proposed IM/IRA Decision Document | 06 Apr 95* | | 16 Oct 97 |
| Submit IM/IRA Responsiveness Summary | 14 Aug 95* | | 14 May 98 |

* Still under negotiation. The regulatory agencies have asked for longer time periods to review the documents and this request will impact document deliverable dates.

Landfill Leachate Collection IM/IRA

| | | | |
|---|------------|--|-----------|
| Submit Preliminary Draft Proposed Action Memorandum to CDPHE/EPA | 13 Oct 94 | | 13 Oct 94 |
| Release Final Draft Proposed Action Memorandum for Public Comment | 25 Nov 94* | | 25 Nov 94 |
| Submit Final Responsiveness Summary and Proposed Action Memorandum to CDPHE/EPA | 08 Mar 95* | | 12 Aug 98 |
| Release Final Responsiveness Summary and IM/IRA | 22 Mar 95* | | 22 Mar 95 |

August Work Activity Status

The Landfill Leachate Collection Proposed Action Memorandum will require a Title II Design.

Meetings were held among the regulatory agencies and DOE in August 1994. The following issues were discussed at the August 15, 1994, meeting: the landfill closure and leachate accelerated action schedules; the comment responsiveness summary to expedite approval of the TM, *Revised Work Plan*; and the regulatory issues concerning the construction of the leachate collection system.

The following issues were resolved:

- Excavated soils produced during the construction of the Leachate Collection System can be placed in the IHSS without triggering a Land Disposal Restriction.
- Wetland mitigation for the Leachate Collection System is not required to be separate from the wetland mitigation for landfill closure.
- The engineering design for the landfill closure does not have to meet Colorado Code of Regulations

Health/Title 6 1007-2 Part 2 siting requirements for a hazardous waste disposal site.

At the August 25, 1994, meeting, the following issues were discussed: the comment responsiveness summary to expedite approval of the TM, *Revised Work Plan*; the management strategy for performing the Risk Assessment for the IM/IRA Decision Document and the Action Memorandum to review the conceptual design; and the data requirements for landfill closure (migration barrier and groundwater intercept/diversion system).

The tentative area for placement of the leachate storage tanks was staked on August 23, 1994, and surveyed topographically on August 26, 1994. Risk assessments will be completed post-closure.

Technical Memoranda

Project

OU 7 - Present Landfill

TM #
TM Title
TM Status

Exposure Scenarios
Initial reviews were completed by DOE/HQ and DOE/RFFO. The review was completed by EPA and CDPHE. The response summary was developed and submitted to all parties for review. Reviews were completed. A revised response summary was completed on May 25, 1993, with a final review under way prior to transmittal to the regulatory agencies.

TM #2
TM Title
TM Status

Model Description
Transmitted to EPA and CDPHE for review: 08 Jan 93
Initial review by EPA, CDPHE, and DOE completed: 30 April 93
Draft response summary complete: 25 May 93
Because of the adoption of the EPA's presumptive remedy for municipal landfill closure, these TMs are no longer required.

TM #3
TM Title

Addendum to Final Phase I RFI/RI Work Plan. Surface Soil and Asbestos Pit Disposal Area Characterization Plan

TM Status

Transmitted to the EPA and CDPHE for review: 08 Feb 93
Comments received: 26 Apr 93

Conditional approval by the EPA and CDPHE received:
22 Feb 93
Clarification of outstanding comments from EPA and
CDPHE received: 03 May 93
Because of the adoption of the EPA's presumptive
remedy for municipal landfill closure, these TMs are no
longer required.

TM
TM Title
TM Status

Revised Work Plan
Transmitted to EPA and CDPHE for review: 23 May 94
Comments received: 01 July 94
Final transmitted to EPA/CDPHE: 09 Sep 94

**Planned Work for
September**

- The Phase II field investigation in support of landfill closure will be initiated.

Problems

- The start of the Phase II Field Investigation was delayed because of additional review time required by the regulatory agencies and changes in the scope of work.

Open Items

EPA and CDPHE approval and the rebaseline of the schedule is presented in the Process Improvement Proposal.

2.8 OU 8 - 700 AREA

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

OU 8 is within the 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 RFI/RI Work Plan | 01 May 92 |
| | Submit Final Phase I RFI/RI Work Plan | 01 Dec 92 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|------------------------------------|------------------------------------|----------------------------------|--|
| Submit Draft Phase I RFI/RI Report | 14 Feb 94 | Tolling Agreement | 02 Nov 15 |
| Submit Final Phase I RFI/RI Report | 12 Jul 94 | Tolling Agreement | 19 Jul 16 |

August Work Activity Status

Industrial Area (IA) Operable Units (8, 9, 10, 12, 13, and 14) - Work to begin the Environmental Evaluation for the summer sampling continues. Comments received on the plans continue to be addressed. Field activities are planned for the fall of 1994. Preparations for this field work continues.

The review period for the Preliminary Draft TM #1, *Data Compilation for Foundation and Building Under Drains*,

ended in May 1994. Comments received to date are being incorporated into the revised TM #1. Comments from EPA are pending. In addition, comments from CDPHE concerning the integrated approach taken in the preparation of the TM need clarification. After CDPHE comments and preliminary responses have been compiled, a meeting among the regulatory agencies, DOE, and EG&G will be held to resolve these issues.

Attempts to locate the video tape of the direct inspections of the building footing drains were unsuccessful. This tape was to be reviewed as part of the finalization of TM #1. The report that accompanied the tape was located and will be reviewed for inclusion in the revised TM.

Early removal actions consisting of removal of two steam condensate tanks and a sodium hydroxide tank from north of Building 774 continued.

Contract modification to allow continuation of the remaining nonintrusive field work has been awarded.

Preparations continue for the Operational Readiness Review in anticipation of the start of the nonintrusive field investigation. At this time, most readiness related issues have been satisfactorily resolved except for the issue of the formal Work Plan approval. To complete the Operational Readiness Review, formal approval of the OU 8 Phase I RFI/RI Work Plan by the regulatory agencies must be granted. CDPHE has informally approved the Work Plan, but formal approval is pending. CDPHE has indicated that the Risk Assessment approach developed during the OU 2 through OU 7 dispute resolution is also applicable to OU 8. After this approach is formally accepted by all parties and the Work Plan is formally approved, planning for Stage II field investigations will continue. The remaining issue involves which mechanism (i.e., Work Plan addendum or another approach) the regulatory agencies and DOE will agree to that will formally document this approach. If this issue cannot be resolved, DOE will enter into another formal dispute resolution under the IAG to resolve the issue. Field investigation schedules could be impacted by another dispute resolution.

Technical Memoranda

Project

OU 8 - 700 Area

TM #1

TM Title

Footing/Under Drains Data Compilation and Field Sampling Plan

TM Status

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 September

- Response to CDPHE comments on TM #1 will continue.
- Response to CDPHE comments on initial Stage II RFI/RI field investigation activities, which include the IA Environment Evaluation activities (e.g., habitat surveys, threatened and endangered species surveys, rodent/small mammal population census, and high purity Germanium survey data evaluation will continue.

Problems

Performance of the OU 8 Stage II field work is dependent on the successful resolution of the Risk Assessment activities and the delay in the receipt of the formal Work Plan approval.

Open Items

Work Plan formal approval is pending.

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

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

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

OU 9 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g. surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). 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 Jun 90 |
| | Submit Final Phase I RFI/RI Work Plan | 26 Nov 91 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|------------------------------------|--|--|--|
| Submit Draft Phase I RFI/RI Report | 11 Apr 94 | Tolling Agreement | 04 Jan 01 |

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|---|--|--|--|
| Submit Final Phase I RFI/RI Report | 06 Sep 94 | Tolling Agreement | 16 Sep 03 |
| Submit Draft Phase II RFI/RI Work Plan | 10 Mar 95 | | 23 Jul 04 |
| Submit Draft Phase I Proposed IM/IRA Decision Document | 01 May 95 | | 31 Oct 03 |
| Submit Final Phase II RFI/RI Work Plan | 07 Aug 95 | | 01 Apr 05 |
| Submit Final Phase I Proposed IM/IRA Decision Document | 27 Sep 95 | | 12 Jul 04 |

August Work Activity Status

The Preliminary Draft TM #1, *Volume II, Part A - Field Sampling Plan for Outside Pipelines*, was completed in August 1994.

DOE transmitted a plan to the CDPHE concerning the resolution of the issue of active tanks. As part of this plan, Tank Sites T-11 and T-30 would be added to the outside tank investigation by adding an addendum to the TM #1, *Volume I, Part A*. The CDPHE verbally disapproved this approach. DOE has requested that the CDPHE approve the work contained in the Field Sampling Plan that had already been submitted. Since the active tanks continue to be a major issue between CDPHE and DOE, this issue may require a dispute resolution. In spite of this setback, efforts continue on the addendum for the two additional tank sites, T-11 and T-30. A preliminary draft was completed and reviewed; a second draft is currently being prepared.

Efforts are ongoing to status the tanks in Building 828. Four new Original Process Waste Line pipelines have been tentatively identified in the area of Building 886. During field activities, further information on tanks will be gathered.

Negotiations were completed on a subcontract modification for training for the Outside Tank Investigation and changes to the IA Health and Safety Plan. Because of the potential hazards associated with the Outside Tank Investigation, additional health and safety requirements are needed beyond those for other investigations. Efforts will be made to accelerate training of personnel. Review of the Health and Safety Plan modifications will be conducted concurrently.

DOE has received a draft plan for streamlining the RFI/RI at OU 9. The regulatory agencies will be approached on some of these activities because major IAG milestones

such as the elimination of the Phase II RFI/RI and the IM/IRA are involved.

Provisions currently under consideration in the Rocky Flats Cleanup Agreement will allow for removal actions; however, because efforts towards early actions have been expedited, some of these efforts might be ready for implementation prior to the effective date for the Rocky Flats Cleanup Agreement.

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: Sep 94
Actual date of submittal: To be determined
Date EPA/CDPHE comments received: To be determined

Planned Work for September

- Review and comments on the Draft *Field Sampling Plan - Volume II, Part A, Outside Pipelines* will be completed.
- Preparation of the Draft Final *Field Sampling Plan - Volume II, Part A, Outside Pipelines* for submittal to EPA/CDPHE will be initiated.
- The addendum to the Final TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, for Tanks T-11 and T-30 will be completed.
- The OU 9 modification to the IA Health and Safety Plan will be completed.

- Training for the Outside Tank Investigation will be completed.
- The OU 9 Outside Tank Investigation field work will be subcontracted.

Problems

The delay in the approval of the TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks*, by the regulatory agencies could delay field activities.

Open Items

TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks*, is not yet approved.

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is composed of 15 IHSSs scattered throughout Rocky Flats. 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 Rocky Flats. 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 RFI/RI Work Plan | 27 Nov 91 |
| Submit Final Phase I RFI/RI Work Plan | 01 May 92 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|--|------------------------------------|----------------------------------|--|
| Submit Draft Phase I RFI/RI Report | 25 Aug 94 | Tolling Agreement | 02 Nov 15 |
| Submit Final Phase I RFI/RI Report | 30 Jan 95 | Tolling Agreement | 19 Jul 16 |
| Submit Draft Phase I Proposed IM/IRA Decision Document | 26 May 95 | | 26 Feb 18 |
| Submit Draft Phase II RFI/RI Work Plan | 27 Jun 95 | | 25 May 17 |

August Work Activity Status

A meeting was held between DOE and EG&G on August 2, 1994, to discuss the current status of the OU 10 IHSS 129 accelerated action tank removal. Concerns were discussed, and a consensus was reached on the requirements of the regulatory agencies for the removal of these tanks. The presence of certain F-listed RCRA wastes discovered during previous sampling events require the rescoping of the original project. It was agreed that these tanks could not be pulled out under existing RCRA or CERCLA regulations

because of the presence of the RCRA wastes in the subsurface. However, a rescoping of the project and performance as part of a Proposed Action Memorandum will provide the regulatory basis for removing the IHSS 129 tanks. The funds allocated for this project will be used for the rescoping effort and for development and initial implementation of the Proposed Action Memorandum. The specific scope of work that is outlined in the Proposed Action Memorandum will require a public comment period and approval by the regulatory agencies before any work can be completed on this tank removal action. A Statement of Work for development of the Proposed Action Memorandum was submitted.

On August 22, 1994, a meeting was held among CDPHE, DOE, and EG&G to discuss the scope for the 443 Underground Tank Removal Action. Specific scope was agreed to by all parties involved, and DOE received a preliminary schedule. A draft document will be prepared by September 1994.

All OU 10 surficial soil sampling as part of the nonintrusive sampling activities was completed.

Soil gas sampling was completed at IHSSs 177, 181, and 182. Approximately half of the remaining Global Positioning System survey locations must be surveyed. This task started on August 22, 1994, and is anticipated to be completed in September 1994. A partial list of physical parameter samples was collected. These samples were shipped to the offsite analytical laboratory on August 19, 1994. These sample results are anticipated to be available when the Preliminary Draft TM is due in October 1994.

After reviewing all of the requirements for collecting the physical parameter samples, a decision was made by EG&G to collect as many physical parameter samples as possible that require one kilogram of material or less. Collection of samples that require larger sample volumes will be collected as part of a later phase of work.

Work continued on the preparation of the OU 10 Preliminary Draft TM. The scheduled date for the delivery of this draft is anticipated to be met.

Technical Memoranda

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 TM's are October 7, 1994, and February 10, 1995, respectively.

Planned Work for September

- The Draft Proposed Action Memorandum document will be delivered.
- Preparation of the OU 10 Preliminary Draft 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
September**

- Preparation of the RFI/RI Report will begin.

Problems

Some wells have not developed as quickly as anticipated because of the high variation in the Total Dissolved Solids.

Open Items

The approval of a two-week review period by the regulatory agencies and an abbreviated RFI/RI Report continue to be unresolved issues.

The Process Improvement Proposal was only approved through the Final RFI/RI Report. The remaining sections of the proposal will be further reviewed at that time.

The Process Improvement Proposal schedules the Proposed as the next deliverable. This deliverable has not been accepted by EPA/CDPHE.

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves 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 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 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>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due 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 |

August Work Activity Status

Soil gas sampling has begun in OU 12 on August 24, 1994.

Work continues on the IA Surface Water and Sediment Field Sampling Plan TM. The TM will assess the current information available on the Surface Water and Sediments within the IA and present a Field Sampling Plan to fill in data gaps. A draft annotated outline and table of contents is planned to be submitted for review in September 1994.

Coordination with the 123 Laboratories to complete laboratory high purity Germanium sampling has been ongoing. All laboratory high purity Germanium sample analysis are currently estimated to be completed in November 1994.

Asphalt sampling in anomalous locations in OU 12 was completed August 31, 1994.

Technical Memoranda

The Draft IA Surface Water and Sediment Field Sampling Plan is planned to be submitted to the regulatory agencies in November 1994.

Planned Work for September

- Efforts on the tripod high purity Germanium surveys will continue.
- Efforts on the laboratory high purity Germanium sample analysis will continue.
- The Preliminary Draft Surface Water and Sediment Field Sampling Plan TM will be developed.
- Soil gas sampling will be completed.

Problems

None

Open Items

None

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

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

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. 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 13 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). 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 | 15 May 92 |
| | Submit Final Phase I RFI/ RI Work Plan | 12 Oct 92 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|------------------------------------|------------------------------------|----------------------------------|--|
| Submit Draft Phase I RFI/RI Report | 08 Aug 94 | Tolling Agreement | 24 Mar 99 |
| Submit Final Phase I RFI/RI Report | 11 Jan 95 | Tolling Agreement | 02 Dec 99 |

August Work Activity Status

Soil gas sampling has begun in IHSS 134 (North).

Work continues to redraft the TM #1, *Addendum to the Field Sampling Plan*, by the incorporation of the comments from CDPHE. After DOE accepts this TM, the TM #1 will be produced and issued as a controlled document.

The sodium iodide surveys were completed in August 1994.

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 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

Planned Work for September

- Soil gas investigations will continue and review of data for the preparation of the TM #2, *Report of Nonintrusive Field Investigations* will begin.

Problems

None

Open Items

None

2.14 OU 14 - RADIOACTIVE SITES

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

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

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

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is 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 RFI/RI Work Plan | 26 Jun 92 |
| | Submit Final Phase I RFI/RI Work Plan | 19 Oct 92 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|------------------------------------|------------------------------------|----------------------------------|--|
| Submit Draft Phase I RFI/RI Report | 20 Dec 94 | Tolling Agreement | 13 Feb 01 |
| Submit Final Phase I RFI/RI Report | 23 May 95 | | 22 Oct 01 |

August Work Activity Status

The Readiness Review for OU 14 is complete. Field activities began on August 1, 1994, with the sampling locations being staked and cleared with EG&G Construction Management. Surficial Soil Sampling began in August 1994

The preparation of a Statement of Work for Geographic Information System support is under way. A modification to the subcontractor contract is also being prepared to allow Stage I activities to be completed and Stage II activities to be initiated.

To be consistent with GT.08 sampling techniques and work in the other IA OUs, a Draft Document Modification Request was prepared to change the 2-inch soil scrapes specified in the OU 14 Work Plan. DOE approved this request, and as part of the IAG, the regulatory agencies were requested to concur on the request. The Document Modification Request was returned to DOE unapproved and with comments that need to be addressed before the Document Modification Request can be resubmitted. The field work cannot begin until this issue is resolved.

Technical Memoranda

The current Five-Year Plan indicates that two TMs, *Human Health Risk Assessment-Exposure Assessment* and *Human Health Risk Assessment-Modeling*, were scheduled for completion in March 1994. These tasks require rescheduling because of the integration of OUs 8, 9, 10, 12, 13, and 14. A new schedule has been developed. Currently, only nonintrusive/limited RI field work is scheduled for OU 14 in FY 94.

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

Planned Work for September

- Surficial soil sampling will continue.

Problems

None

Open Items

None

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is comprised of the following six IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

Closure Plans for the IHSSs were submitted to CDPHE during 1988 and 1989. The IHSSs were also included within the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, EPA, CDPHE, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (6 CCR 1007-3 Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings for hazardous materials, and 29 CFR 1000.46 will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings for radionuclides.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. No known spills or releases occurred. The current focus is characterization of contamination associated with the OU 15 IHSSs inside buildings, and if applicable, decontamination of the concrete floors and other facilities at the indoor RCRA units.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

| | | |
|--------------------------------------|---------------------------------------|-----------|
| IAG Milestone Accomplishments | Submit Draft Phase I RFI/RI Work Plan | 01 Jun 92 |
| | Submit Final Phase I RFI/RI Work Plan | 26 Oct 92 |
| | Submit Draft Phase I RFI/RI Report | 25 Jul 94 |

Future IAG Milestones Through FY 95

| <u>Milestone Name</u> | <u>Original IAG Date Scheduled</u> | <u>Approved Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|------------------------------------|------------------------------------|----------------------------------|--|
| Submit Final Phase I RFI/RI Report | 04 Jan 95 | | 04 Jan 95 |

August Work Activity Status

The proposal for the contract modification, which began with the Proposed Plan/Draft RCRA Permit Modification, was received and completed. A technical evaluation of the proposal is technically acceptable.

Informal comments were received from the CDPHE on the Draft Phase I RFI/RI Report.

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:
Projected date of Final submittal to EPA/CDPHE: To be determined - may not be necessary unless Stage III field work is performed.
Actual date of Draft submittal: 28 Feb 94
Date comments were received: Preliminary 17 Mar 94
(formal 04 May 94, EPA, 07 Apr 94 CDPHE)

Planned Work for September

- All comments for Draft Phase I RFI/RI Report are due to be received.
- Final revision of RFI/RI Report and Draft Proposed Plan/Modification of Colorado Hazardous Waste Permit for the Rocky Flats Environmental Technology Site will begin.

Problems

None

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 |
| August Work Activity Status | The Final Corrective Action Decision/Record of Decision was completed and is in the DOE approval process. |
| Technical Memoranda | None |
| Planned Work for September | If necessary, presentations will be performed regarding the Corrective Action Decision/Record of Decision for OU 16. |
| Problems | DOE and EG&G have not agreed on the language for the Certification of Completeness of the Administrative Record for OU 16 and as a result, the Corrective Action Decision/Record of Decision for OU 16 has not been signed/adopted by DOE. |
| Open Items | The Corrective Action Decision/Record of Decision for OU 16 has not been signed and adopted by the regulatory agencies and DOE. |

2.17 SITEWIDE ACTIVITIES

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

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

| | |
|--|-----------|
| Submit Draft Background Study Report (Water) | 15 Dec 89 |
| Submit Draft Background Study Report (Soils) | 15 Dec 89 |
| Submit Draft Community Survey Plan | 23 Jan 90 |
| Submit Final Community Survey Plan | 22 Mar 90 |
| Submit Draft Health and Safety Plan | 15 Aug 90 |
| Submit Draft Quality Assurance Project Plan | 29 Aug 90 |
| Submit Draft Standard Operating Procedures | 29 Aug 90 |
| Submit Draft Plan for Prevention of Contaminant Dispersion | 19 Sep 90 |
| Submit Draft Treatability Study Plan | 21 Sep 90 |
| Submit Draft Community Relations Plan | 01 Nov 90 |
| Submit Final Health and Safety Plan | 12 Nov 90 |
| Submit Revised Background Study Report | 21 Dec 90 |
| Submit Final Community Relations Plan | 22 Jan 91 |
| Submit Final Quality Assurance Project Plan | 01 Mar 91 |
| Submit Final Standard Operating Procedures | 01 Mar 91 |
| Submit Draft Radionuclides Discharge Limits Plan | 05 Apr 91 |
| Submit Community Relations Plan Responsiveness Summary | 21 Jun 91 |
| Submit Final Treatability Study Plan | 03 Jun 91 |
| Submit Final Plan for Prevention of Contaminant Dispersion | 22 Jul 91 |

| | |
|---|-----------|
| Submit Final Plan Discharge Limits Radionuclides | 16 Sep 91 |
| Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary | 25 Nov 91 |
| Submit Draft Historical Release Report | 08 Jan 92 |
| Submit Responsiveness Summary for Radionuclides Discharge Limits Plan | 31 Jan 92 |
| Submit Final Historical Release Report | 03 Jun 92 |
| Submit Annual Treatability Study Report | 08 Mar 93 |
| Submit Sitewide Annual Treatability Study | 14 Mar 94 |
| Draft IA IM/IRA Decision Document | 23 Mar 94 |
| Submit Draft IA IM/IRA Responsiveness Summary | 18 Aug 94 |

Future Milestones Through FY 95

| <u>Milestone Name</u> | <u>IAG Date Scheduled</u> | <u>Extension Status</u> | <u>Approved ER Project Baseline Projected Due Date</u> |
|--|-------------------------------|-----------------------------|--|
| Submit Draft Final IA IM/IRA Responsiveness Summary | 23 Aug 94 | | 23 Aug 94 |
| Submit Final IA IM/IRA Decision Document | 23 Aug 94 | | 23 Aug 94 |
| Submit Sitewide Annual Treatability Study | 14 Mar 95 | | 14 Mar 95 |

August Work Activity Status

Sitewide Activities

Sitewide Treatability Studies

Plasma Melter - The Final Plutonium Volitization Report will be released to the regulatory agencies. The completion of this report will closeout the Plasma Melter Treatability Study project.

Potassium Ferrate Process (Tru-Clear®) - The Tru-Clear® Treatability Study Phase I (potassium ferrate treatment in groundwaters) is complete. Results are pending.

CURE Treatability Study - The CURE Treatability Study Phase I (electrocoagulation of radionuclides in groundwaters) is complete, and results are pending.

Bioremediation - Revisions to the Bioremediation Treatability Study Work Plan were completed in July 1994. The Work Plan was delivered to the regulatory agencies on August 1, 1994. The CDPHE approval was received on August 19, 1994.

Phase II enrichment culturing of methanotrophs, denitrifiers, sulfate reducers, and methanogens is continuing. Real-time headspace analysis is being performed on the cultures to evaluate growth of the key populations. Vigorous growth has been achieved in all the anaerobic cultures. The aerobic culturing requires a longer enrichment period. Transformation experiments will begin in September 1994.

A laboratory capable of analyzing soil samples from OU 2 for key microbial nutrients and physical parameters was identified. The sample was sent for analysis in August 1994. Data are expected in September 1994.

Other Sitewide Operations

Industrial Area Interim Measure/Interim Remedial Action Plan - A letter is being drafted regarding the estimated IA IM/IRA groundwater, incidental water, and air monitoring costs for FY 95 and the outyears.

A contract modification that allows the subcontractor to work to the new accelerated schedule which incorporates the new project milestones requested by the regulatory agencies was negotiated.

The Draft Final IM/IRA Decision Document was submitted to the regulatory agencies on August 18, 1994. The public comment period for the IA IM/IRA will be held from August 29, 1994, through October 19, 1994, to allow sufficient review time for the responsiveness summary. The preparation has begun for the September 21, 1994, Rocky Flats Quarterly Environmental Restoration Public Information Meeting. The hearing will be held on October 19, 1994.

Community Relations - Community Relations has scheduled appointments for Congressional, Headquarters, and regulatory agency personnel to be briefed on the ER 2000 project.

Work continues on the Rocky Flats Quarterly Environmental Restoration Public Information Meeting which will be held on September 21, 1994. Topics for the meeting include the Rocky Flats Cleanup Agreement Update, a presentation by the Citizens Advisory Board, a presentation on the IA/IM/IRA, and updates on OU 16, the Standley Lake Water Project, the OU 4 dispute resolution status, and the OU 1 Early Action status.

Surface Water Management - Onsite Water Control (Drainage Repairs and Improvements) - Drainage scope development efforts for the South Walnut Creek drainage repair options are being developed.

South Interceptor Ditch Repair - DOE met with EG&G to provide comments on the Draft Environmental Assessment that covers the South Interceptor Ditch Repair Project and to discuss the comments which are being incorporated into the Draft Environmental Assessment.

Pond C-2 Discharge Minimization Project - A study was completed that evaluates the Pond C-2 volumes under recycle conditions by using updated cooling tower water usage data. Four years of precipitation/ runoff data (1990 - 1993) were used to represent actual pond input conditions. It was concluded that recycling would significantly reduce, but not eliminate, the need to discharge or transfer Pond C-2 water. It was also concluded that the high initial and yearly operating costs may not justify continuation of this project because discharges and associated problems related to these discharges will not be eliminated.

A status report, which consists of the study evaluating Pond C-2 volumes under recycle conditions, was received on August 19, 1994.

Dam Upgrades - The piezometers and the inclinometers checkouts were performed. A list of concerns were documented and are being addressed.

Planned Work for September

- Preparations will be made for the IA IM/IRA public meeting to be held on September 21, 1994.
- Normal Surface Water Management activities will continue.
- Normal Community Relations activities will continue.
- Normal Decontamination and Decommissioning 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 to 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 plant center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

3.3 GROUNDWATER

A total of 355 groundwater stations was sampled in the second quarter of 1994. This includes RCRA, CERCLA, plant protection, and boundary wells. A total of 393 groundwater

stations will be sampled in the third quarter of 1994. As of August 31, 1994, 326 of these stations have been completed. Approximately 532 water level measurements were monitored quarterly for water levels, and approximately one-third of the wells is monitored monthly for water levels. Each groundwater sample is analyzed for the following parameters:

Radiochemical Parameters

Gross Alpha
Gross Beta
Plutonium
Americium
Strontium
Tritium
Uranium
Cesium

Inorganic Parameters

Nitrate/Nitrite
Total Phosphorous
Ortho-Phosphate
Ammonia
Total Dissolved Solids
Chlorine
Fluorine
Sulfate
Carbonate
Bicarbonate
Total Suspended Solids
Dissolved Contract Laboratory Program and additional metals
Cyanide
Contract Laboratory Program Volatile Organic Constituents

Field Parameters

Specific Conductivity
Temperature
Turbidity
pH

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 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development) | Sep 90 |
| 2 | Assessment | Woodward-Clyde | Layne | OU 2 RFI/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 RFI/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 |
| 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 |

DOE-RFFO

| <u>OU</u> | <u>Project</u> | <u>Subcontractor</u> | <u>Sub-Subcontractor</u> | <u>Work Description</u> | <u>Start Date</u> |
|-----------|----------------|---------------------------|--------------------------|--|-------------------|
| 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 |
| 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 |

Subcontractor Identification

| <u>OU</u> | <u>Project</u> | <u>Subcontractor</u> | <u>Sub-Subcontractor</u> | <u>Work Description</u> | <u>Start Date</u> |
|-----------|----------------|---------------------------|--------------------------|---|-------------------|
| 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 |
| SW | Monitoring | IT Corporation | | Analytical Services for groundwater, surface water, and sediment | Jul 90 |
| SW | QA | SAIC | | Develop and implement QA program and field operations oversight | Dec 90 |
| PM | Support | S. M. Stoller | | Program Management Support | Oct 92 |
| PM | QA 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 |
| FY | Fiscal Year |
| IA | Industrial Area |
| IAG | Interagency Agreement |
| IHSS | Individual Hazardous Substance Site |
| IM | 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 | Remedial Facilities Investigation |
| RI | Remedial Investigation |
| TM | Technical Memorandum |