

23601



DOE, RFO Environmental Restoration Program

Monthly Report for February 1994



March 20, 1994

ADMINISTRATIVE BOARD

DOCUMENT CLASSIFICATION
REVIEW/ WAIVER PER
CLASSIFICATION OFFICE

A-SW-001443

2 of 90

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EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR FEBRUARY 1994

The Environmental Protection Agency (EPA), Colorado Department of Health (CDH), and the Department of Energy (DOE) resolved the following issues that affect completion of the Operable Unit (OU) 1 Phase III Remedial Facilities Investigation/Remedial Investigation Report (RFI/RI): (1) Use of Monte Carlo Simulation in the Uncertainty Analysis, (2) requirements for numerous maps and figures to be added to the Remedial Investigation Report, and (3) inclusion of external radiation in the Human Health Risk Assessment (HHRA).

EPA and CDH received the OU 2 draft final Soil Gas Survey Report (SGS) on February 17, 1994. The final SGS Report is scheduled for delivery to the EPA and CDH by June 7, 1994.

Sludge reduction efforts continued at the OU 2 Surface Waste Interim Remedial Action facility. This continued reduction in sludge production can be attributed to the sludge reduction program that was implemented in December 1993. Further monitoring of the new caustic injection system (to adjust the pH in the second reaction tank) will continue.

The United States Fish and Wildlife Service (USFWS) has indicated that it would allow the installation in OU 3, Offsite Areas, of one air sampler south of the Standley Lake dam. DOE recommends proceeding with the installation of the one air sampler and waiting until the nesting eagles have left the area before proceeding with the remaining monitors. DOE's recommendation also stresses that the installation of the single monitor have no impact on the nesting eagles.

Results of the OU 3 Wind Tunnel Study were presented to the regulators. This study establishes the resuspension factors for OU 3 soils in disturbed and undisturbed terrestrial and sediment sites. The information generated from this report will be used for dispersion and exposure modeling for the risk assessment.

In OU 4, Solar Ponds, all seventy high-density polyethylene tank sets to be used for storage of pond sludge were delivered and installed in Tents Three, Four, and Six. Thirty-eight primary tanks were tested onsite with water; thirty-six have passed; two are being repaired.

Sludge removal operations in the OU 4 solar ponds began on February 7, 1994, in Pond 207B South. Approximately 48,000 gallons of sludge have been removed and transported to storage at the 750 Storage Pad. Concurrently, the second vacuum loader truck arrived on plantsite and began the various acceptance tests required prior to it beginning sludge removal operations.

A preliminary Responsiveness Summary (RS) to Public Comments on the Proposed Plan/Draft Modification (PP/DM) was completed in OU 16, Low Priority Sites, on February 18, 1994. The objective of a preliminary RS is to facilitate agreement between the agencies, DOE, and EG&G, as to what are the actual Public Comments. Preparation of the Record of Decision (ROD) to close OU 16 as an OU at RFP will begin during March 1994.

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A preliminary draft Industrial Area Interim Measure/Interim Remedial Action Plan (IA IMIRAP) document presentation was made on February 23, 1994, to DOE and EG&G. DOE completed its comment responses. The document is scheduled to be delivered to the agencies on March 14, 1994.

DOE received responses to their comments from EG&G on February 1, 1994, regarding the IA Integrated OUs (8, 9, 10, 12, 13, and 14) Environmental Evaluation (EE) documents. When DOE has completed its review of the responses, a meeting will be held among the regulatory agencies, DOE, and EG&G to establish review of the current format of the IA EE Reports.

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 FY94 Since IAG Inception</u>
Scheduled (including approved extensions)	10	108
Met	1	89
Extensions Granted	8	35
Extensions Denied	1	3
Remaining this FY94 (to 9/30/94)	23	n/a
Added	0	5
Deleted	2	5

<u>Deliverables in Review by Regulators</u>	<u>Project</u>	<u>Date Submitted</u>
	OU 2 draft Phase II RFI/RI Report	16 Dec 93

<u>Field Work Currently Under Way</u>	<u>Project</u>	<u>Scheduled Complete</u>
Please note: these dates reflect scheduled field work and completed field work.	OU 2	08 Oct 93
	OU 3	13 Jul 93
	OU 4	Jun 95 ^a
	OU 7	30 Apr 93
	OU 8	16 Sep 94
	OU 9	18 Aug 94
	OU 10	15 Aug 94
	OU 12	05 Sep 94
	OU 13	17 Feb 95
	OU 14	11 May 95
	OU 15	12 Nov 93

^a for field work Phases I and II

<u>IM/IRA Status</u>	<u>Gallons Treated</u>
OU 1 881 Hillside Treatment	1,927,195 gallons
OU 2 903 Pad Water Treatment	21,090,315 gallons
OU 4 Water Management Tasks (ITS and Pond Water)	3,008,964 gallons

<u>IAG Document Deliverables Due Next 6 months</u>	<u>Due Date</u>	<u>Expected Date</u>
OU 1 draft CMS/FS Report	25 Aug 94	25 Aug 94*
OU 2 draft Proposed Plan	10 May 94	26 Jun 97
OU 2 final CMS/FS Report	10 May 94	26 Jun 97*
OU 2 final Proposed Plan	09 Aug 94	13 Jan 98*
SW Submit Industrial Area draft DD	23 Mar 94	23 Mar 94
OU 4 draft Phase I Proposed IM/IRA DD	14 Apr 94	13 Apr 94
OU 4 draft Phase II RFI/RI Work Plan	22 Apr 94	13 Apr 94
OU 5 final Phase I RFI/RI Report	03 May 94	18 Oct 95
OU 6 draft Phase I RFI/RI Report	10 Jun 94	21 Oct 94*
OU 7 final Phase I RFI/RI Report	16 Mar 94	02 Sep 94*
OU 8 final Phase I RFI/RI Report	12 Jul 94	19 Jul 16
OU 9 draft Phase I RFI/RI Report	11 Apr 94	04 Jan 01
OU 10 draft Phase I RFI/RI Report	25 Aug 94	02 Nov 15
OU 12 draft Phase I RFI/RI Report	20 Apr 94	11 Mar 99
OU 15 draft Phase I RFI/RI Report	01 Aug 94	01 Aug 94
OU 13 draft Phase I RFI/RI Report	08 Aug 94	24 Mar 99
SW Submit Industrial Area draft Responsiveness Summary	02 Aug 94	02 Aug 94
SW Submit Industrial Area final Responsiveness Summary	23 Aug 94	23 Aug 94
SW Submit Industrial Area final Decision Document	23 Aug 94	23 Aug 94

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<u>Overdue Deliverables</u>	<u>Due Date</u>	<u>Expected Date</u>
OU 2 draft Phase II RFI/RI Report ^a	12 Mar 93	16 Dec 93*
OU 2 final Phase II RFI/RI Report	09 Aug 93	23 May 94*
OU 2 draft CMS/FS Report	04 Nov 93	17 Oct 96*
OU 3 draft Phase I RFI/RI Report	14 Feb 94	31 Oct 94*
OU 5 draft Phase I RFI/RI Report	30 Nov 93	09 Feb 95*
OU 7 draft Phase I RFI/RI Report	12 Oct 93	21 Jun 94*
OU 8 draft Phase I RFI/RI Report	14 Feb 94	02 Nov 15

* Completion date to be rescheduled because of HHRA issues work stoppage.

^a Partial delivery, because of the HHRA issues work stoppage.

PROBLEMS AND PROGRAMMATIC ISSUES

DOE received a letter from EPA and CDH dated February 25, 1994, granting the following extensions to the IAG on OU 1 milestones:

<u>Deliverables</u>	<u>Milestones</u>
Draft CMS/FS	August 25, 1994
Final CMS/FS	November 22, 1994
Draft Proposal Plan	November 22, 1994
Final PP	February 24, 1994
Responsiveness Summary	June 23, 1995
Final RS	September 22, 1995
Draft CAD/ROD	September 22, 1995
Final CAD/ROD	December 22, 1995

Installation of permanent plant power continues to be an urgent item for the OU 2 Field Treatment Unit (FTU). Without permanent power, the FTU will continue to experience shutdowns caused from generator failure. The engineering package for construction is complete.

In OU 4, DOE was informed by CDH and EPA that its application to separate removal of Building 788 from the IM/IRA Environmental Assessment (EA) Decision Document (DD) was denied. A strategy to incorporate the Building 788 scope into the DD without impacting IAG milestone commitments was developed. Implementation of the strategy must occur no later than March 1, 1994, if IAG milestone impacts are to be avoided.

The EPA denied the request from DOE for an extension to the amount of time allowed to invoke dispute resolution on the OU 6 Pond Water Management IM/IRA Plan. The subcontractor was instructed to discontinue work on the Pond Water Management IM/IRA Plan, and this order will remain in effect until the conclusion of the dispute resolution process. On February 25, 1994, EPA issued a Notice of Violation (NOV) to the DOE for failure to meet the non-IAG milestone attached to the DD for a Pond Water Management IM/IRA plan that is currently in dispute resolution.

DOE received a joint denial on February 15, 1994, from EPA and CDH concerning DOE's request to extend the OU 8 enforceable milestones for the draft Phase I RFI/RI Report due on February 14, 1994, and the final Phase I RFI/RI Report due on July 12, 1994. Under the IAG, an NOV was issued to the DOE in violation of the IAG, and potential penalties began accruing on February 15, 1994. The 14-day time period to determine if the dispute resolution process will be entered was observed. The outcome of the dispute with the agencies over OU 8 will have an effect on all of the IA OUs (8, 9, 10, 12, 13, and 14) that will also miss IAG milestones during FY94.

An extension was requested for the OU 9 draft and final RI/RFI Reports due April 11, 1994, and September 6, 1994, respectively. These milestones are in Table 6 of the IAG.

Characterization and assessment of Individual Hazardous Substance Sites (IHSS) in OUs 9, 10, and 15 face delays until materials stored in the IHSSs are removed and the IHSSs can be characterized. DOE has directed EG&G to delay Phase I RFI/RI

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assessment on active units (IHSSs 213 and 214 and 750 and 904 pads) until direction to proceed has been granted by DOE.

An approved data aggregation and comparisons of site-specific data to background - values methodology has not been finalized for the HHRA stop work order that continues to affect Operable Units 2, 3, 5, 6, and 7. Draft DOE proposals for data aggregation indicate potential cost and schedule impacts exist because of multiple risks assessments. The total number of risk assessments required for each OU will be negotiated with the regulatory agencies and will be based upon data aggregation criteria that may not be supported by current agency-approved Work Plans.

NEAR-TERM IAG TABLE SIX MILESTONES

<u>OU#</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDH</u>	<u>Status</u>
2 ^a	Submit draft Phase II RFI/RI Report	12 Mar 93	Extension denied (delinquent)
2 ^a	Submit final Phase II RFI/RI Report	9 Aug 93	Extension denied (delinquent)
7 ^a	Submit draft Phase I RFI/RI Report	12 Oct 93	*
2 ^a	Submit draft CMS/FS Report	04 Nov 93	*
1	Submit final Phase III RFI/RI Report	30 Mar 94	Extended from 04 Jan 93
5 ^a	Submit draft Phase I RFI/RI Report	30 Nov 93	*
3 ^a	Submit draft Phase I RFI/RI Report	14 Feb 94	Extended from 16 Jul 93
8	Submit draft Phase I RFI/RI Report	14 Feb 94	Extension denied (NOV submitted)
7 ^a	Submit final Phase I RFI/RI Report	16 Mar 94	*
SW	Submit draft Decision Document	23 Mar 94	23 Mar 94
9	Submit draft Phase I RFI/RI Report	11 Apr 94	Extension request submitted
4	Submit draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	On schedule
12	Submit draft Phase I RFI/RI Report	20 Apr 94	Extension request submitted
4	Submit draft Phase II Work Plan	22 Apr 94	On schedule
5 ^a	Submit final Phase I RFI/RI Report	03 May 94	Extension request submitted
1	Submit draft Responsiveness Summary	06 May 94	*
2 ^a	Submit final CMS/FS Report	10 May 94	*
2 ^a	Submit draft Proposed Plan	10 May 94	*
6 ^a	Submit draft Phase I RFI/RI Report	10 Jun 94	Extended from 4 Aug 93
4	Submit final Phase I Proposed IM/IRA Decision Document	24 Jun 94	On schedule
8	Submit final Phase I RFI/RI Report	12 Jul 94	Extension request submitted
15	Submit draft Phase I RFI/RI Report	01 Aug 94	On schedule
SW	Submit Industrial Area draft Responsiveness Summary	02 Aug 94	02 Aug 94
1	Submit final CMS/FS Report	03 Aug 94	*
1	Submit final Responsiveness Summary	03 Aug 94	*
1	Submit draft CAD/ROD	03 Aug 94	*
13	Submit draft Phase I RFI/RI Report	08 Aug 94	*
2 ^a	Submit final Proposed Plan	09 Aug 94	*
SW	Submit Industrial Area final Responsiveness Summary	23 Aug 94	23 Aug 94
SW	Submit Industrial Area final Decision Document	23 Aug 94	Extension request submitted
10	Submit draft Phase I RFI/RI Report	25 Aug 94	Extension request submitted
1	Submit draft CMS/FS Report	25 Aug 94	Extended from 11 Feb 94
9	Submit final Phase I RFI/RI Report	06 Sep 94	Extension request submitted
7 ^a	Submit draft Phase II RFI/RI Work Plan	13 Sep 94	*
12	Submit final Phase I RFI/RI Report	15 Sep 94	Extension request submitted
4	Submit final Phase II RFI/RI Work Plan	19 Sep 94	On schedule
11	Submit draft Phase I RFI/RI Report	20 Sep 94	*
3 ^a	Submit final Phase I RFI/RI Report	21 Oct 94	Extended from 13 Dec 93
1	Submit final CAD/ROD	01 Nov 94	*
1	Submit CD/RD Work Plan	01 Nov 94	*
7 ^a	Submit draft Phase I Proposed IM/IRA DD	01 Nov 94	*
1	Submit draft Proposed Plan	22 Nov 94	Extended from 27 Sep 93
6 ^a	Submit final Phase I RFI/RI Report	18 Nov 94	Extended from 07 Jan 94

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<u>OU#</u>	<u>IAG Milestone Description</u>	<u>Date Scheduled to EPA/CDH</u>	<u>Status</u>
2 ^a	Submit Responsiveness Summary	13 Dec 94	
14	Submit draft Phase I RFI/RI Report	20 Dec 94	•
15	Final Phase I RFI/RI Report	04 Jan 95	On schedule
13	Final Phase I RFI/RI Report	11 Jan 95	02 Dec 99
4	All Solar Ponds Emptied of Water and Sludge	20 Jan 95	Ahead of schedule
4	IM/IRA Responsiveness Summary	25 Jan 95	01 Nov 94
10	Final Phase I RFI/RI Report	30 Jan 95	Extension Request Submitted
11	Final Phase I RFI/RI Report	22 Feb 95	03 Jan 96
13	Final Phase I RFI/RI Report	11 Jan 95	02 Dec 99
7	Final Phase II RFI/RI Work Plan	15 Feb 95	•
1	Submit final Proposed Plan	24 Feb 95	Extended from 04 Jan 94

• Behind original IAG schedule; extension required.

^a OU 2 through OU 7 may require additional extensions because of HHFA issued work stoppage.

SECTION I. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for February 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 Plant in 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 Interagency Agreement. Section 4. contains a list that identifies the contractors and 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 ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of Rocky Flats Plant (RFP), was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSS) that make up OU 1 are being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water 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 (SID) along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with 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

Future IAG Milestones Through FY95

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit final Phase III RFI/RI Report	04 Jan 93	15 Nov 93	Pending
Submit draft CMS/FS Report	25 Aug 94	25 Aug 94	14 Nov 94
Submit final CMS/FS Report	27 Sep 93	22 Nov 94	31 Mar 95
Submit draft PP	27 Sep 93	22 Nov 94	14 Sep 95
Submit final PP	04 Jan 94	24 Feb 95	04 Jan 96
Submit draft Responsiveness Summary	06 May 94	23 Jun 95	17 Sep 96
Submit final Responsiveness Summary	03 Aug 94	22 Sep 95	25 Feb 97
Submit draft CAD/ROD	03 Aug 94	22 Sep 95	24 Feb 97
Submit final CAD/ROD	01 Nov 94	22 Dec 95	27 Oct 97
Submit draft Title. II Design	05 Jul 95		17 Oct 97

February Work Activity Status

Remedial Investigation (RI) - The EPA and the CDH transmitted their comments on the Phase III RFI/RI Report on February 1, 1994, and requested that these comments be incorporated into the report by March 1, 1994. Comments on the EE were not received in February 1994, and there is no clear strategy for addressing EE comments. A meeting will be held with EG&G in March 1994 to discuss a strategy.

EPA's comments on the use of a Monte Carlo simulation in the Quantitative Uncertainty Analysis were elevated to EPA Headquarters. Therefore, DOE might request that the regulatory agencies approve all of the RI Report except the Human Health Risk Assessment (HHRA) portions of the Uncertainty Analysis.

The addition of antimony and manganese as site contaminants by EPA's toxicologist may require an IAG dispute resolution to resolve.

Feasibility Study/Corrective Measures Study (FS/CMS) - Two meetings were held on February 2, 1994, concerning topics that directly impact the OU 2 Feasibility Study. These meetings included a Treatability Study meeting among the agencies, DOE/RFO, and EG&G and an ARARs scoping meeting for the sitewide ARARs strategy document.

CDH comments on Technical Memorandum (TM) #10, *Remedial Action Objectives*, have disagreed with the identification of potential ARARs, and CDH is withholding approval of Technical Memorandum #10 until the comments are addressed. All CDH comments will be incorporated into the TM except those dealing with the ARARs issues. DOE will state in a cover letter with the response to comments that it does not concur on the ARARs issues. These ARARs questions will also impact other OUs.

Technical Memoranda

Project

OU 1 881 Hillside

TM #10
TM Title
TM Status

Preliminary Remediation Goals
Submitted draft TM to DOE: Feb 93
EPA has submitted comments on TM #10. CDH is withholding comments until the issue of identification of potential ARARs is addressed.

When preparation was concluded or is estimated to be concluded:

Projected date of submittal to EPA/CDH: Upon receipt of CDH comments.

Actual date of submittal: N/A

Date when comments were received: N/A

TM #11

TM Title

TM Status

Alternative Array

Submitted draft TM to DOE: 21 Oct 93 - Delayed by stop work order.

When preparation is concluded or is estimated to be concluded:

Projected date of submittal to EPA/CDH: TBD

Actual date of submittal: N/A

Date when comments were received: N/A

Planned Work for March

- Resolve the issue of EPA's request to add manganese and antimony to the list of site contaminants.
- Submit draft TM #11, *Alternatives Array*, to the agencies.

Problems

Addition of antimony and manganese as site contaminants by EPA's toxicologist may require an IAG dispute resolution to resolve.

Open Items

Many portions of the FS/CMS, such as TM #10, *Preliminary Remediation Goals (PRG)*, and TM #11, *Alternatives Array*, are contingent upon the final results of the final Phase III RFI/RI Report.

2.1.2

OU 1 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

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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 FY95

None

February Work Activity Status

Interim Measure/Interim Remedial Action Treatment Facility - On February 3, 1994, DOE received a Warning Letter from CDH concerning the release of untested effluent water from the 891 Water Treatment Building to the South Interceptor Ditch (SID). The letter requires that within 30 days of receipt of this letter DOE must submit documentation of compliance with the regulations. To comply with CDH's instructions, the following will be submitted:

1. A procedure on treating effluent discharge in Building 891, which is currently being reviewed for approval.
2. Sample Effluent Discharge Data Sheets that demonstrate that work is following the procedure.

The proposal to discontinue treating the 881 footing drain water will follow the precedence of the OU 2 proposal and will focus on Applicable or Relevant and Appropriate Requirements (ARARs) as the primary concern. A detailed outline and related schedule is being developed.

Effluent Tanks T-205 and T-206 were discharged (approximately 220,000 gallons) on February 15, 1994. Tank T-207 is currently being filled.

Approximately 7,000 gallons of decontamination pad water that were being held in Tank-207 were treated.

Work on the installation of two new magnetic flow meters in Building 891 was completed. The flow meters were installed on the influent and effluent lines and will be utilized in performing a mass water balance on the system.

The Los Alamos Technology Office (LATO) continues work on the OU 1 database system, which will contain all of the sampling and operational data from Building 891. Development of the system architecture is well underway, and comments on the draft "plant log sheets" have been returned to LATO for revision.

In-line sampling chassis and gas chromatograph were received on February 25, 1994. It will be installed in March 1994.

The forthcoming 881 Footing Drain Report will follow the precedence of the OU 2 proposal and will focus on ARARs as the primary concern. A previous version of this report consisted of a risk assessment. This earlier document may be reborn as a separate supporting document to accompany the next report, but risk assessment will not be the driving consideration. A contract was issued to prepare the 881 Footing Drain Report to recommend discontinuation.

Treated ground water this month: 19,378 gallons
Total treated water: 1,823,080 gallons

Planned Work for March

- Complete installation of the gas chromatograph in the Ground Water IRA system in Building 891.

Problems

Waiting for parts to complete flow meter installation

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, allowing 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.

An Interim Measure/Interim Remedial Action (IM/IRA) provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process is evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The RI and FS are continuing in parallel with the IRA.

A second IM/IRA was established in late 1991. This Subsurface IM/IRA Plan/Environmental Assessment (IM/IRA/EA) encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRA will evaluate a remediation technology for removal of residual free-phase Volatile Organic Compound (VOC) contamination at OU 2. The VOC-removal actions involve in situ vacuum-enhanced vapor extraction technology. The interim remedial actions will provide information to aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC 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

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**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase II RFI/RI Report	12 Mar 93	Denied	16 Dec 93*
Submit final Phase II RFI/RI Report	09 Aug 93	Denied	23 May 94*
Submit draft CMS/FS Report	04 Nov 93		17 Oct 96*
Submit final CMS/FS Report	10 May 94		26 Jun 97*
Submit draft PP	10 May 94		26 Jun 97*
Submit final PP	09 Aug 94		13 Jan 98*
Submit Responsiveness Summary	13 Dec 94		30 Jun 98*
Submit draft CAD/ROD	16 Mar 95		02 Dec 98*
Submit final Responsive Summary	16 Mar 95		02 Dec 98*
Submit final CAD/ROD	15 Jun 95		10 Aug 99*

* TBD due to Human Health Risk Assessment (HHRA) issues work stoppage.

**February Work Activity
Status**

Remedial Investigation Report - EPA comments were received for the preliminary draft of the Phase II RFI/RI Report on February 14, 1994. CDH comments for this report are still pending.

Comments on TM #9, *Contaminants of Concern*, were received from CDH; EPA comments are still pending.

A Statement of Work (SOW) is being prepared for continuation of Environmental Evaluation (EE) work and preparation of EE Report.

Treatability Study/Feasibility Study (TS/FS)-ARARs.. work is continuing with review and evaluation of regulations and orders. Programmatic Preliminary Remediation Goals (PRGs) will be completed during March 1994.

Technical Memoranda

Project

OU 2-903 Pad, Mound, and East Trenches

TM #5
TM Title
TM Status

Exposure Scenarios
When preparation is concluded or is estimated to be concluded: 15 Jan 93
Projected date of submittal to EPA/CDH: 15 Jan 93
Actual date of submittal: 15 Jan 93
Date when comments were received: 11 Feb 93 EPA,
12 Mar 93 CDH

TM #6
TM Title Modeling
TM Status When preparation is concluded or is estimated to be concluded: 15 Jan 93
Projected date of submittal to EPA/CDH: 15 Jan 93
Actual date of submittal: 15 Jan 93
Date when comments were received: 01 Apr 93 EPA,
31 Mar 93 CDH

TM #7
TM Title Surficial Soils
TM Status When preparation is concluded or is estimated to be concluded: 07 Jan 93
Projected date of submittal to EPA/CDH: 07 Jan 93
Actual date of submittal: 12 Jan 93
Date when comments were received: 21 Jan 93
TM Approved

TM #8
TM Title Bedrock
TM Status When preparation is concluded or is estimated to be concluded: 15 Mar 93
Projected date of submittal to EPA/CDH: 01 Mar 93
Actual date of submittal: 15 Mar 93
Date when comments were received: 14 Apr 93 EPA,
14 Apr 93 CDH

TM #8 Addendum
TM Title Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)
TM Status When preparation is concluded or is estimated to be concluded:
Projected date of submittal to EPA/CDH: None
Actual date of submittal:
Date when comments are received:

TM #9
TM Title Chemicals of Concern
TM Status When preparation is concluded or is estimate to be concluded: 24 Aug 93
Projected date of submittal to EPA/CDH: 08 Dec 93
Actual date of submittal: December 8, 1993
Date when comments are received: January 14, 1994

TM #10
TM Title
TM Status

Toxicity Assessment
When preparation is concluded or is estimated to be concluded: 24 Aug 93
Projected date of submittal to EPA/CDH: Unknown due to work stoppage
Actual date of submittal:
Date when comments are received:

Planned Work for March

- Expedite action plan/proposal to the agencies
- Obtain resolution on the Contaminants of Concern (COC) TM from the agencies and begin to finalize.
- Work to resolve the Baseline Risk Assessment (BRA) and start work on the BRA.

Problems

None

Open Items

The regulatory agencies have yet to arrive at a compromise approach to data aggregation for the HHRA and the stop work order is still in effect.

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
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 GAC)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92

Project Status

Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit final Treatability Test Report (Phase I GAC)	02 Jun 92
Submit Subsurface Site I draft Test Plan	29 Oct 92
Submit Subsurface Site I final Test Plan	12 Jan 93
Submit Subsurface Site 2 draft Test Report	24 Jun 93
Submit draft Surface Water Field Treatability Report	13 Jul 93

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit final Phase II Treatability Study Report	13 Jul 93	08 Sep 93	08 Sep 93*

**February Work Activity
Status**

Subsurface Interim Measure/Interim Remedial (IM/IRA) Action - The draft final Soil Vapor Survey (SVS) Report was received by EPA and CDH on February 17, 1994.

A modification to the draft final SVS Report is planned for April 1994 and will include comprehensive SVS work at five 'high level' contamination areas. The results of the comprehensive survey will be included in the OU 2 SVS Report as an amendment. The additional data will be used for the six-phase heating design. The final SVS Report is scheduled for delivery to the EPA and CDH by June 7, 1994.

The proposed Expedited Action for excavation of non-aqueous phase liquids (NAPLs) free product from OU 2 Individual Hazardous Substance Site (IHSS) 110, Trench T-3, was completed and received by DOE for review on February 11, 1994. DOE held a meeting with EG&G to discuss the proposed removal action, which resulted in some modifications being made to the proposal.

The SVE unit began a series of nine pilot tests. Results of the first few tests show successful removal of Volatile Organic Compounds (VOC) from the subsurface.

Surface Water Treatability Study - The Surface Water Treatment Study was submitted to the agencies and comment responses are pending.

Field Treatment Unit Surface Water Treatment Facility - Four 55-gallon drums of sludge from the Field Treatment Unit (FTU) were packaged in February 1994. This significant reduction in sludge production can be attributed to the sludge reduction program that was implemented in December 1993. Further monitoring of the new caustic injection system (to adjust the pH in the second reaction tank) will continue.

Installation of permanent plant power continues to be an urgent item for the OU 2 FTU. Without permanent power, the FTU will continue to experience shutdowns caused from generator failure. The engineering package for construction is complete.

The design of the modifications to the Sampling and Analysis Plan that will be required to accept and treat contaminated water from the SVE Unit was completed, and the equipment is scheduled to be installed. The changes will allow the sampling at the FTU to be characteristic of the treatment facilities effectiveness, as well as more cost effective.

Treated surface water this month: 762,730 gallons
Total treated water: 21,657,330 gallons

Planned Work for March

Subsurface IRA Program

Test the Soil Vapor Extraction (SVE) unit.

Surface IRA Program

Normal operations

Problems

Unknown source of soapy water is reducing flow capabilities of the FTU. Spring flows are expected soon and may create problems if the soapy water cannot be controlled.

Installation of permanent plant power continues to be an urgent item for the OU 2 FTU.

Open Items

None.

2.3 OU 3 OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves 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 FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	16 Jul 93	14 Feb 94	14 Feb 94*
Submit final Phase I RFI/RI Report	13 Dec 93	21 Oct 94	21 Oct 94*

* TBD due to HHRA issue work stoppage.

February Work Activity Status

The subcontract for the installation of the Ultra High Volume Air Samplers was awarded. The subcontractor will begin development of an installation schedule and a Health and Safety Plan (HSP). The United States Fish and Wildlife Service (USFWS) has indicated that it would

allow the installation of one air sampler south of the Standley Lake dam. DOE will recommend proceeding with the installation of the one air sampler and waiting until the eagles have left the area before proceeding with the remaining monitors.

The regulators have indicated that they will not accept the Rock Creek Background Data for comparison to the OU 3 data. DOE has requested a letter from the regulators stating this. However, it was agreed that this letter will be withheld until discussions are scheduled concerning the alternatives that are available for resolution of this issue.

Results of the Wind Tunnel Study were presented to the regulators. This study establishes the resuspension factors for OU 3 soils in disturbed and undisturbed terrestrial and reservoir sediment sites. The information generated from this report will be used for dispersion and exposure modeling for the risk assessment.

Comment responses for TM #1, *Final RFI/RI Work Plan*, were presented to the regulators; they agreed with the responses. The comment responses are to be transmitted to the agencies for approval of TM #1.

Technical Memoranda

Project

TM #1
TM Title
TM Status

OU 3-Offsite Areas

Field Changes to RFI/RI Work Plan
When preparation is concluded or is estimated to be concluded: 10 May 93
Projected date of submittal to EPA/CDH: 10 May 93
Actual date of submittal: 23 Apr 93
Date when comments were received:

TM #2
TM Title
TM Status

Exposure Scenarios for the HHRA
When preparation is concluded or is estimated to be concluded: 12 May 93
Projected date of submittal to EPA/CDH: 12 May 93
Actual date of submittal : 03 May 93
Date when comments were received: 15 Jul 93

TM #3
TM Title
TM Status

Modeling
When preparation is concluded or is estimated to be concluded: 29 Sep 93
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when comments were received: N/A

TM #4
TM Title
TM Status

Contaminants of Concern (currently under a work stoppage)
When preparation is concluded or is estimated to be concluded: 18 Oct 93
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when comments were received: N/A
Currently under a work stoppage

Planned Work for March

- Present alternatives for background comparison data sets to the regulators. If this proposal is accepted, the COC selection process will continue.

Problems

COC selection process cannot continue until the alternatives for background comparison data sets are presented to regulators

The regulators have indicated that they will not accept the Rock Creek Background Data for comparison to the OU 3 data.

Open Items

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation.

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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 ground water was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated ground water 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 (ITS), which returned approximately 4 million gallons of ground water back into the solar evaporation ponds each year.

No additional process water has been pumped into the ponds since 1986 and with the diversion of the ITS water to storage tanks in April 1993, ground water 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 Resource Conservation and Recovery Act (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. As various upgrades are installed in Building 374 and as other plant waste streams decrease in volume, ITS water will be preferentially treated in Building 374 rather than Building 910.

The Solar Evaporation Ponds Subproject has been comprised of four technical areas: (1) remix of non-certified pondcrete and saltcrete, and pond sludge processing by means of the Agreement in Principle between DOE, CDH, and the Federal Facility Compliance Agreement; (2) a water management/treatment by means of the IM/IRA DD signed by EPA, CDH and DOE; (3) the OU 4 assessment and remedial action, per the IAG which identified the ponds as one of the sixteen OUs to be remediated at the RFP 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 with regards to storage of pond wastes. The water management and pond sludge clean-out are necessary precursors to OU 4 assessment and remediation, and pad operations are necessary support activities at least until the pond sludge waste is processed and disposed. Revisions to scope in these areas are being implemented in accordance with the recent dispute resolution for OU 4.

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 ground water, (3) remove and dispose of pond sludge in compliance with all regulations such as the Land Disposal Restrictions of RCRA, (4) assess the nature and extent of contamination at the ponds; (5) complete a RCRA closure of the impoundments; and (6) remediate the ponds 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

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status*</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	21 May 93	Deleted	Deleted
Submit final Phase I RFI/RI Report	18 Oct 93	Deleted	Deleted
Submit draft Phase II RFI/RI Work Plan	22 Apr 94		13 Apr 94
Submit final Phase II RFI/RI Work Plan	19 Sep 94		02 Jun 94

* Established revised dates in dispute resolution

February Work Activity Status

The RCRA/CERCLA Investigation field work will continue through approval of a Record of Decision and subsequent construction of the final Corrective/Remedial action in FY00 (if required). Further Assessment/Characterization under the remaining two ponds still containing sludge will not be known until vacuum sludge removal operations are complete.

Technical Memoranda

Project

OU 4-Solar Evaporation Ponds

TM #1

TM Title
TM Status

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

TM #2

TM Title
TM Status

Modification to Field Activities
Draft submitted to EPA/CDH: 18 Mar 93
Comments received: 07 May 93
Projected submittal of final to EPA/CDH: 07 Jun 93

TM #3	Actual submittal date of final: 09 Jun 93
TM Title	EPA/CDH final Approval of TM #2: 30 Jun 93
TM Status	Environmental Evaluation
	Draft submitted to EPA/CDH: 19 Mar 93
	Comments received: EPA 21 Apr 93
	CDH 02 Jun 93
	Projected submittal of final to EPA/CDH: 30 Apr 93
	Actual submittal date of final: 02 Jul 93
	EPA/CDH final Approval of TM #3: 30 Jul 93
TM #4-	
TM Title	Human Health Risk Assessment Exposure Scenarios
TM Status	Draft submitted to EPA/CDH: 19 Mar 93
	Comments received: EPA 21 Apr 93, CDH 23 Apr 93
	Projected submittal of final to EPA/CDH: 11 Jun 93
	Actual submittal date of final: 11 Jun 93
	EPA/CDH final Approval of TM #4: 25 Jun 93
TM #5	
TM Title	Exposure Models
TM Status	Projected submittal of draft to EPA/CDH: 01 Aug 93
	Actual submittal of draft : 24 Jun 93
	Projected submittal of final to EPA/CDH: 15 Oct 93
	Received stop work order: 24 Aug 93
TM #6	
TM Title	Contaminants of Concern
TM Status	Projected submittal of draft to EPA/CDH: 09 Nov 93
	Projected submittal of final to EPA/CDH: 22 Dec 93
	Received stop work order: 24 Aug 93
TM #7	
TM Title	Toxicity Assessment
TM Status	Projected submittal of draft to EPA/CDH: 04 Nov 93
	Projected submittal of final to EPA/CDH: 22 Dec 93
	Received stop work order: 24 Aug 93
Planned Work for March	<ul style="list-style-type: none">• Continuing Phase II Work Plan• Completion of Phase I RFI/RI Work Plan. Data collection is awaiting emptying of ponds.
Problems	None
Open Items	Investigation of the floors of Ponds 207 C and 207 B South remains to be completed. The field work will be performed after these ponds are emptied and cleaned.

2.4.2 OU 4 REMEDIATION

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments None. The first IAG remediation milestone for this OU is the draft Phase I Proposed IM/IRA DD scheduled for April 14, 1994.

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status *</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	No Change	13 Apr 94
Submit final Phase I Proposed IM/IRA Decision Document	12 Sep 94	24 June 94	02 Jun 94
All Solar Ponds Emptied of Water and Sludge IM/IRA Responsiveness Summary	new 25 Jan 95	20 Jan 95	Summer 01 Nov 94

* Established revised dates in dispute resolution; schedule accelerated

February Work Activity Status

Phase I Interim Measures/Interim Remedial Action Plan (IM/IRA) Program - The IM/IRA Environmental Assessment (EA) Decision Document (DD), Parts I, II, and III were received by the regulatory agencies and DOE on February 14, 1994. Because of late changes in decisions concerning clean closure of areas of the site, portions of the document that describe the Conceptual Design, the Phase II Resource Conservation and Recovery Act Facility Investigation/Remedial Investigation (RFI/RI) Work Plan, and the Post-Closure Monitoring and Assessment Plan were not included in the original deliverable, but will be delivered to the reviewers prior to the period currently scheduled for their review. Because of the magnitude of the material scheduled for review in the first review period, only Part I was discussed on February 22, 1994; Parts II and III will be discussed at the March 2, 1994, meeting.

At the Joint Working Session on February 1, 1994, the CDH specified several issues associated with the establishment of a Corrective Action Management Unit (CAMU) that needed to be addressed prior to issuing the IM/IRA DD.

- A) The establishment of a CAMU could require treatment of the contaminated waste (i.e. liners) prior to consolidation beneath the engineered barrier.

The IM/IRA will contain sufficient justification as to why the current stabilization technology (a 1,000-year protective barrier) is an adequate and acceptable form of treatment.

- B) The placement of soils contaminated above the PRGs beneath the subsurface drainage layer will be contingent upon a demonstration that the closure will not adversely affect ground water quality.

Modeling data and analysis will be shown to the regulators to demonstrate that current design does not impact the ground water. Therefore, it is expected that soils contaminated above the PRGs will be placed below the subsurface drainage layer.

A meeting of the Colorado Hazardous Waste Commission was held on February 15, 1994. A portion of the meeting was devoted to public comment concerning proposed promulgation of the Colorado version of the CAMU rule. Adoption of the rule is a key element in the successful implementation of the OU 4 remediation plans. Discussions of this subject will continue at the next monthly meeting. DOE is developing specific and hypothetical examples of the impact of CAMU at the RFP and in establishing communication with local industry groups also affected by this regulation. Since this will likely be the first application of the state's yet-to-be-enacted version of the CAMU regulation, close cooperation between all parties is essential to gain confidence in this new law and to its successful application to OU 4.

Significant time was spent at the Joint Working Session on February 15, 1994, to capture and discuss the regulatory agencies' position on contaminated soils in the vadose zone hypothetically subject to influence by rise of ground water elevations over geologic time. A presentation was made concerning methods available to demonstrate that leachability of these soils is not of concern. A portion of the presentation discussed the difficulties associated with application of the methods and the likelihood that unassailable conclusions cannot be drawn from them. On February 16, 1994, the CDH communicated relaxed standards that must be met to

resolve this issue. In view of the new standards, demonstration that the soils are not of concern is now possible with the simple, but conclusive, models applied unsuccessfully during our earlier efforts to quantify this problem. New results from these models and a worst-case cost estimate for removal of all suspect soils was available on February 24, 1994.

The regulatory agencies informed DOE that its application to separate removal of Building 788 from the IM/IRA AE DD was denied. A strategy to incorporate the Building 788 scope into the DD without impacting IAG milestone commitments was developed. Implementation of the strategy must occur no later than March 1, 1994, if the IAG milestone impacts are to be avoided.

A meeting was held to discuss preparations for the public comment of the IM/IRA AE DD and to identify methods of assessing public concerns with the plans sufficiently early that modifications can be made, if appropriate. An overall strategy for this effort was due on February 23, 1994.

Regulatory - DOE has been proceeding with a plan to achieve compliance on the 904 container storage issues. The preferred option of reclassifying the pad as a waste pile was rejected by the CDH; DOE is now proceeding to the alternate plan to restack and repackage the waste. The document that provides a foundation for the restacking plan was revised to incorporate the recent change to sludge storage in tanks. Several informal meetings were held with DOE and EG&G to discuss the revisions. DOE will review details on the path forward.

DOE completed its NEPA determination for the OU 4 pond closure. An EA is required. This determination confirms the planning baseline, and NEPA process activities are on schedule. Development continues on a strategy to mitigate impacts of NEPA on the program. A meeting to further address this issue is scheduled for March 4, 1994.

Pondsludge Status and Issues - Deliveries of high-density polyethylene tanks were completed in February 1994. All seventy tank sets have been received. Thirty-eight primary tanks have been tested onsite with water and thirty-six have passed. The tank coupons were also delivered. Current planning requires coupons in one polyethylene tank containing clarifier material, two tanks

containing B Pond material, and three tanks containing C Pond material.

The first vacuum truck was repaired and returned to the plantsite. It passed its safety inspection as well as the smear test. The second vacuum truck failed its safety inspection because of a hydraulic leak. It was returned to the vendor's shop, repaired, and subsequently returned to the plantsite. Both trucks completed their cold runs with water and were readied for hot operation. The cold run demonstrated all vacuuming and pumping operations of both trucks.

DOE granted approval for hot operations on February 3, 1994, and final preparations for start up were completed on February 4, 1994. Included in these preparations was a final dress rehearsal using all required operating equipment and Personal Protective Equipment (PPE).

Sludge removal operations began on February 7, 1994, in Pond 207B South. Vacuuming operations in Pond 207B South continued throughout February 1994. At times, cold weather, snow, or wind hindered operations, but progress continued and approximately 48,000 gallons of sludge were removed and transferred to storage tanks. Based on initial operations, Pond 207B South sludge removal should be complete by April 1994.

Water Management Status and Issues - A Process Improvement Team (PIT) was formed to determine the most efficient way to utilize Building 910. The findings show that Building 910 has significantly increased processing costs than does Building 374 because of personnel staffing levels required to operate the plant being higher than anticipated. Upgrades in Building 374 have also improved its reliability and water processing efficiency. Thus, current planning methodologies call for Building 910 to be placed in a wet layup condition where it can be easily activated if necessary, but will no longer process modular storage tank water or require a full operations staff thereby creating a substantial cost savings in the remainder of this fiscal year and in out-years.

Planned Work for March

- Continued sludge removal operations of Pond 207B.
- The conceptual design and other IM/IRA DD components for pond closure will continue.

DOE, Rocky Flats Plant

- Continued maintenance on Building 910 in preparation for placement into wet layup.
- Continue validation of data from drilling samples - and vadose zone samples.
- Initiate roundtable review cycle for IM/IRA DD, which is the final working group before the next IAG deliverable.

Problems

None

Open Items

None

2.5 OU 5 - WOMAN CREEK

This activity 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 and are located, 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 Operable Unit. Possible contamination in this operable unit was caused by landfill operations, storm-water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, depleted uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Media affected include soils, sediments, surface water, ground water, and air resuspension.

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 FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	30 Nov 93		11 May 95*
Submit final Phase I RFI/RI Report	03 May 94		14 Nov 95*

* Completion date to be rescheduled due to HHRA issues work stoppage.

February Work Activity Status The Rocky Flats Environmental Database System (RFEDS) analytical database is 94 percent complete, and the validated database is 90 percent complete. Missing radiochemistry data is being tracked. The majority of the missing data was located at one of the laboratories. This data is expected to be in the RFEDS by March 11, 1994.

Background comparison activities began; however, the issue with data aggregation has not been resolved. Work on the HHRA has not resumed.

Comments from EPA and CDH on the draft TM #13, *Modeling*, are being addressed.

The maps and draft report of the EM61 geophysical survey were made available on February 28, 1994.

Work continues on TM #15, *Addendum to the Field Sampling Plan*. Additional field sampling will, in part, be based on using upper tolerance limits exceedances as an indicator for additional field sampling.

Technical Memoranda

Project

OU 5 - Woman Creek Priority Drainage Remedial Investigation

TM #1

TM Title

TM Status

Surface Water and Sediments

When preparation is concluded or is estimated to be concluded: 30 Nov 92

Projected date of submittal to EPA/CDH: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #2

TM Title

TM Status

Surface Geophysics

When preparation is concluded or is estimated to be concluded: 30 Nov 92

Projected date of submittal to EPA/CDH: 30 Nov 92

Actual date of submittal: 13 Oct 92

TM #3

TM Title

TM Status

Soil Sampling at IHSS 115

When preparation is concluded or is estimated to be concluded: 07 May 93

Projected date of submittal to EPA/CDH: 07 May 93

Actual date of submittal: 26 Jan 93

TM #4

TM Title

TM Status

Soil Sampling at IHSS 133

When preparation is concluded or is estimated to be concluded: 07 Jun 93

Projected date of submittal to EPA/CDH: 07 Jun 93

Actual date of submittal: 12 Apr 93

TM #5
TM Title Soil Gas Sampling at IHSS 115
TM Status When preparation is concluded or is estimated to be concluded: 07 May 93
Projected date of submittal to EPA/CDH: 07 May 93
Actual date of submittal: 25 Mar 93

TM #6
TM Title Cone Penetrometer at IHSS 115
TM Status When preparation is concluded or is estimated to be concluded: 14 Apr 93
Projected date of submittal to EPA/CDH: 14 Apr 93
Actual date of submittal: 25 Mar 93

TM #7
TM Title Soil Borings at IHSS 133
TM Status When preparation is concluded or is estimated to be concluded: 07 May 93
Projected date of submittal to EPA/CDH: 07 May 93
Actual date of submittal: 19 Feb 93

TM #8
TM Title Monitoring Wells at IHSS 115
TM Status TM 8 has been canceled, and has been replaced by a letter outlining the justification behind the location of the wells in IHSS 115

TM #9
TM Title Monitoring Wells at IHSS 133, Ash Pits, Incinerator and Concrete Wash Pad
TM Status When preparation is concluded or is estimated to be concluded: 14 May 93
Projected date of submittal to EPA/CDH: 06 May 93
Actual date of submittal: 06 May 93
EPA/CDH comments scheduled: 11 Jun 93
Actual date of submittal: 28 Jun 93

TM #10
TM Title Soil Borings at IHSS 209
TM Status When preparation is concluded or is estimated to be concluded: 06 Mar 93
Projected date of submittal to EPA/CDH: 06 Mar 93
Actual date of submittal: 06 Mar 93

TM #11
TM Title Contaminants of Concern
TM Status When preparation is concluded or is estimated to be concluded: 17 Aug 94
(Assuming the Stop Work Order is rescinded April 1, 1994.)

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TM #12
TM Title
TM Status

Exposure Scenarios
When preparation is concluded or is estimated to be concluded: 24 Nov 93
Projected date of submittal to EPA/CDH: 24 Nov 93
Actual date of submittal: N/A

TM #13
TM Title
TM Status

Modeling
When preparation is concluded or is estimated to be concluded: 12 Jan 94
Projected date of submittal to EPA/CDH: 12 Jan 94
Actual date of submittal: N/A

TM #14
TM Title
TM Status

Toxicity Assessment
When preparation is concluded or is estimated to be concluded: 17 Aug 94
Projected date of submittal to EPA/CDH: 17 Aug 94
Actual date of submittal: N/A

TM #15
TM Title
TM Status

Addendum to the Field Sampling Plan
When preparation is concluded or is estimated to be concluded: 22 Jul 94
Projected date of submittal to EPA/CDH: 22 Jul 94
Actual date of submittal: N/A

Planned Work for March

- Respond to the agencies' comments on the draft TM #13, *Modeling*. If the HHRA stop work order is rescinded, OU 5 will respond to the regulatory agencies' comments on TM #12, *Exposure Scenarios*.
- Continue work on sections of the draft Phase I RFI/RI Report.
- Continue to organize, clean up, and manage the OU 5 unvalidated analytical database.

Problems

The HHRA stop work order has resulted in a 50 percent reduction in the work being completed and continues to have a major impact on the project schedule.

Open Items

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation.

2.6 OU 6 - WALNUT CREEK

This activity encompasses assessment and remediation in the Walnut Creek Drainage 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, Pond, and South Area Spray Fields (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, surface and ground water.

Eleven new ground water monitoring wells, installed in OU 6 to supplement five existing wells, are being sampled each quarter for a minimum of 1 year. Geophysical surveys and radiation surveys were performed in selected areas to supplement the sampling activities.

The regulatory agencies have proposed a new IM/IRA on the operation of the RFP Ponds. If approved, this IM/IRA would affect the RFP pond water management, including OU 6, placing the water under CERCLA rather than the National Pollution Discharge Elimination System (NPDES).

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 FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	04 Aug 93	10 Jun 94	21 Oct 94*
Submit final Phase I RFI/RI Report	07 Jan 94	18 Nov 94	10 Jul 95*

* Completion date to be rescheduled due to HHRA issues work stoppage.

February Work Activity Status

Work continues on the background comparison; other parts of the HHRA are still being delayed by the stop work order. A meeting was held among the regulatory agencies, DOE, and EG&G on February 10, 1994, to discuss progress -to-date and to review the background databases that will be used for background comparisons.

A TM to support additional biota (and potentially pond sediment) sampling requirement for polychlorinated biphenyls (PCBs) in the A and B series of ponds is currently being reviewed. A meeting was held on February 28, 1994, with the regulatory agencies to review the plans for additional sampling of PCBs at the A and B series of ponds.

Pond Water Management IM/IRA - On January 24, 1994, DOE requested a 60-day extension to invoke the dispute resolution process to work in good faith to respond to the Pond Water Management IM/IRA issue and consider the policy implications of the IM/IRA. DOE believes the IM/IRA is not the proper vehicle to accommodate competing demands among various water programs under the Clean Water Act, CERCLA, and RCRA. Pond water discharges are currently controlled under an extended National Pollution Discharge Elimination System (NPDES) discharge permit, and discharges from the terminal ponds are tested before release. These waters do not pose a risk to human health or the environment, although the unlined ponds have contaminated sediments that must be cleaned up. EPA and CDH consider the water ponds on the RFP site to be "waters of the U.S.," which has not been agreed to by DOE.

The EG&G subcontractor was given a stop work order on the Pond Water Management IM/IRA until further notice. In order to resolve this issue, DOE is conducting research and collecting information on various issues related to the Pond Water Management IM/IRA. The subcontractor stop work order will remain in effect until the conclusion of the dispute resolution process.

On February 25, 1994, EPA issued a Notice of Violation (NOV) to the DOE for failure to meet the non-IAG milestone attached to the decision document for a Pond Water Management Interim Measure/Interim Remedial Action (IM/IRA) that is currently in dispute resolution.

Work continues on the scoping and drafting of specifications for a mobile water treatment unit with the capability to respond and treat credible spills and water contamination problems resulting from off-normal occurrences. The Radionuclide Removal System specification of OU 2 was used as a technical reference for developing and improving the specification.

Technical Memoranda

Project

OU 6 - Walnut Creek

TM #1
TM Title
TM Status

Work Plan Modifications
Approved by EPA: 08 Jan 93

TM #2
TM Title
TM Status

Exposure Scenarios
When preparation is concluded or estimated to be concluded: 04 Aug 94
Projected date of submittal to EPA/CDH: 04 Aug 94
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

TM #3
TM Title
TM Status

Modeling Description
When preparation is concluded or is estimated to be concluded: 10 Nov 93
Projected date of submittal to EPA/CDH: 10 Nov 93
Actual date of submittal: 10 Nov 93
Date when EPA/CDH comments received: 23 Dec 93

TM #4
TM Title
TM Status

Contaminants of Concern
When preparation is concluded or is estimated to be concluded: 06 Jul 94
Projected date of submittal to EPA/CDH: 06 Jul 94
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

TM #5
TM Title
TM Status

Toxicity Factors
When preparation is concluded or is estimated to be concluded: 06 Jul 94
Projected date of submittal to EPA/CDH: 06 Jul 94
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

Planned Work for March

- Continue work on the EE; modifying the Sampling Analytical Plan for PCB sampling.
- Continue work on the FS.
- Continue to validate analytical data.
- Modify subcontract to collect additional PCB samples

(biota and sediment) at the A and B series of ponds.

- Continue finalization of TMs #2 and #3.
- Continue research and the collection of information on various issues related to the Pond Water Management IM/IRA.

Problems

Stop work order has prevented continued work to be accomplished on TM #4, *COC*, and delayed TM #2, *Exposure Scenarios*, and TM #3, *Modeling*.

Open Items

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation.

2.7 OU 7 - PRESENT LANDFILL

The Present Landfill - OU 7 is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. 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 of 1968 and was originally constructed to provide for disposal of RFP's 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.

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	28 Aug 91

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	12 Oct 93		20 Dec 93*
Submit final Phase I RFI/RI Report	16 Mar 94		02 Sep 94*
Submit draft Phase II RFI/RI Work Plan	13 Sep 94		07 Aug 95*
Submit draft Phase I Proposed IM/IRA DD	01 Nov 94		14 Feb 97*
Submit final Phase II RFI/RI Work Plan	15 Feb 95		15 Apr 96*
Submit final Phase I Proposed IM/IRA DD	06 Apr 95		16 Oct 97*
Submit IM/IRA Responsiveness Summary	14 Aug 95		14 May 98* ...

* Completion date to be rescheduled due to HHRA issues work stoppage.

February Work Activity Status

A draft Data Quality Objectives (DQO) document was developed incorporating the new EPA guidance on DQOs through Step Five. Steps One through Five were completed and are ready for transmittal to the regulatory agencies. Steps Six and Seven will not be completed until the Phase I data evaluation section of the TM has been completed. Upon concurrence with Steps One

through Five and the process is defined for Steps Six and Seven, a Plant Change Control Board (PCCB) action to rebaseline the OU 7 effort will be initiated. CDH agreed that submittal of the TM revising the Phase I Field Sampling Plan (FSP) would include a data evaluation section for Phase I data that would satisfy the Phase I RFI/RI Report and Phase II RFI/RI Work Plan milestones. The design team is currently providing input into the DQOs process in order to ensure the objectives of this project are clearly defined.

Technical Memoranda

Project

OU 7 - Present Landfill

TM #1

TM Title

TM Status

Exposure Scenarios

Initial reviews completed by DOE/HQ and DOE. Review completed by EPA and CDH. Response summary developed and submitted to all parties for review. Reviews complete. Revised response summary - completed 25 May 93. Further work is impacted by stop work order and renegotiations.

TM #2

TM Title

TM Status

Model Description.

Transmitted to EPA and CDH for review: 08 Jan 93
Initial review by EPA, CDH, and DOE completed:
30 April 93
Draft response summary complete: 25 May 93

TM #3

TM Title

TM Status

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

Transmitted to DOE for review: 05 Feb 93
Transmitted to the EPA and CDH for review: 08 Feb 93
Comments received: 26 Apr 93
Conditional approval by the EPA and CDH received:
22 Feb 93
Clarification of outstanding comments from EPA and CDH received: 03 May 93

TM #4

TM Title

TM Status

Contaminants of Concern

When preparation is concluded or is estimated to be concluded: TBD

Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: TBD

Planned Work for March

- Continue to work with the regulators to streamline the current IAG scope and schedule for OU 7.
- Continue work on the draft DQOs document.
- Continue revising the FSP to integrate full pathways assessment.
- Continue chemical and location specific ARARs development.

Problems

An approved data aggregation methodology has not been finalized. Draft DOE proposals for data aggregation indicate potential cost and schedule impacts exist because of multiple risk assessments. The total number of risk assessments required for each OU will be negotiated with the regulatory agencies and based upon data aggregation criteria that may not be supported by current agency approved Work Plans.

Open Items

The regulatory agencies are working to arrive at a compromise approach to the HHRA work stop order issue of data aggregation and a methodology for comparisons of site-specific data to background values.

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2.8 OU 8 - 700 AREA

The 24 Individual Hazardous Substance Sites (IHSSs) that constitute Operable Unit (OU) 8 encompass separate sites inside and around the production area of the Rocky Flats Plant. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings which 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 also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the Industrial Area (IA) at the Rocky Flats Plant (RFP) and is being managed collectively with the other Operable Units that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is 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 FY95

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit draft Phase I RFI/RI Report	14 Feb 94	Denied/NOV submitted	02 Nov 15
Submit final Phase I RFI/RI Report	12 Jul 94	Denied	19 Jul 16

February Work Activity Status

DOE sent an extension request to the agencies on January 31, 1994, for the OU 8 draft Phase I RFI/RI Report due on February 14, 1994, and the final Phase I RFI/RI Report due on July 12, 1994. The CDH and EPA submitted a joint denial of the request on February 15, 1994, and have placed DOE in violation of the IAG. Under the IAG, stipulated penalties began accruing on February 15, 1994, of up to \$5,000 for the first week and \$10,000 for each week thereafter, until the RFI/RI Report is submitted. Technical issues and reprioritization of

DOE projects in prior fiscal years were the basis for the extension request. DOE is working to implement a dispute strategy with the agencies regarding the IAG violation. Specific issues that affect the dispute are as follows: (1) the RFI/RI Work Plan remains unapproved by both EPA and CDH; (2) an initial OU 8 Notice of Violation (NOV) was issued for the draft Phase I RFI/RI Work Plan in May 1992 and is still unresolved, although it has gone to dispute resolution; and, (3) the outstanding issue between DOE and the regulatory agencies on whether to use the residential use scenario for the OU 8 baseline risk assessment. The outcome of the dispute with the agencies will have an affect on all of the Industrial Area (IA) OUs (8, 9, 10, 12, 13, and 14) that will also miss IAG milestones during FY94.

Work continues on the preliminary draft TM #1, *Footing/Under Drains Data Compilation*. Field confirmation tasks began on January 31, 1994, and mainly included site walks and interviews with building personnel to confirm specific locations of building drain outfalls and manhole connections. These field activities were used to confirm the data compilation and collection tasks completed to date in support of the draft TM #1. The areas to be visited during the site walks are Buildings 111, 124, 371, 440, 444, 460, 707, 771, 774, 779, 881, 865, and 991. Additionally, the final data compilation task that also supports the development of TM #1 will include chemical data summaries from the 1993 sampling events. These data summaries are being compiled and incorporated into the TM #1.

Technical Memoranda

Project

OU 8-700 Area

TM #1

TM Title

Footing/Under Drains Data Compilation and Field Sampling Plan

TM Status

When preparation is concluded or is estimated to be concluded:

Projected date of submittal to EPA/CDH: March 31, 1994

Actual date of submittal: N/A

Date when EPA/CDH comments received: N/A

Planned Work for March

- Complete the format resolution for the IA EE. Set up meetings with the regulatory agencies, DOE, and EG&G to present the findings of the IA EE field work.
- Complete TM #1.

Problems

DOE sent an extension request to the agencies on January 31, 1994, for the OU 8 draft Phase I RFI/RI Report due on February 14, 1994, and the final Phase I RFI/RI Report due on July 12, 1994. The CDH and EPA submitted a joint denial of the request on February 15, 1994, and have placed DOE in violation of the IAG. Under the IAG, penalties began accruing on February 15, 1994.

Open Items

The outstanding issue over the use of a residential use scenario for OU 8 baseline risk assessment.

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This activity involves characterizing a series of tanks and associated process waste lines. The original process waste lines (OPWL) 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 section, 46 storage tank sites, and 3 other areas of suspected process waste leakage are 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 over the 1975-1983 period 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 OPWL 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 - 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 Industrial Area (IA) at the Rocky Flats Plant 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 IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is 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 FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	11 Apr 94		04 Jan 01
Submit final Phase I RFI/RI Report	06 Sep 94		16 Sep 03
Submit draft Phase II RFI/RI Work Plan	10 Mar 95		23 Jul 04
Submit draft Phase I Proposed IM/IRA DD	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 DD	27 Sep 95		12 Jul 04

DOE, Rocky Flats Plant

February Work Activity Status

DOE and EG&G comments were addressed on the TM #1, *Volume I - A, Outside Tanks*. After this task is completed, the draft final will be submitted for EPA and CDH review. Upon EPA and CDH approval, the field work will be initiated on OU 9 outside tanks that are inactive.

Site walks around the 700 Area were conducted as part of the additional data compilation for the draft TM #1, *Volume II - A, Field Sampling Plan - Outside Pipelines*. A decision tree for conducting outside pipeline investigations was prepared and is currently being reviewed by DOE for incorporation into the TM. This work is part of the first stage of the RFI/RI for OU 9. Once field activities are completed, then the data collected will be used for the second stage of the RFI/RI and to identify areas for potential early action or no further action.

An extension has been requested on the OU 9 draft and final RI/RFI Reports due April 11, 1994, and September 6, 1994, respectively. These milestones are in Table 6 of the IAG.

Work continued on a historical leak report for OU 9. This report will be incorporated into the TM #1, *Volume II - A, Field Sampling Plan - Outside Pipelines*.

Technical Memoranda

Project

OU 9-Original Process Waste Lines

TM #1
TM Title
TM Status

Field Sampling Plan - OPWL - Volume IA - Tanks
When preparation is concluded or is estimated to be concluded: Jan 94
Projected date of submittal to EPA/CDH: March 94
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

TM #1
TM Title
TM Status

Field Sampling Plan - Volume 2A - Outside Pipelines
When preparation is concluded or is estimated to be concluded:
Projected date of submittal to EPA/CDH: April 94
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

Planned Work for March

- Complete TM #1.
- Continue work on TM #2.

Problems

None

Open Items

An extension has been requested on the OU 9 draft and final RI/RFI Reports due April 11, 1994, and September 6, 1994, respectively. These milestones are in Table 6 of the IAG.

2.10 OU 10 - OTHER OUTSIDE CLOSURES

Operable Unit (OU) 10 is composed of 15 Individual Hazardous Substance Sites (IHSSs) scattered throughout plantsite. Six of the IHSSs are located in the Protected Area (PA), two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout plantsite. 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 Technical Memorandum will be developed which will summarize the non-intrusive portion of the OU 10 fieldwork. Other IHSS specific intrusive activities are scheduled for FY94.

OU 10 is currently being managed collectively with the other Industrial Area Operable Units (IA OUs: OUs 8, 9, 12, 13, 14). All of these OUs are being investigated collectively due to similarities in the field work for these OUs: eg. g. surficial soil sampling, in-situ radiation surveys, soil gas sampling, etc. 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 FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	25 Aug 94		02 Nov 15
Submit final Phase I RFI/RI Report	30 Jan 95		19 Jul 16
Submit draft Phase I Proposed IM/IRA DD	26 May 95		26 Feb 18
Submit draft Phase II RFI/RI Work Plan	27 Jun 95		25 May 17

February Work Activity Status Surficial soil sampling in IHSSs 170/174 was completed and all nonradiological chemistry samples were shipped to the analytical laboratories. A laboratory for performing the required field parameter studies for OU 10 is being selected.

All high purity germanium (HPGe) detector Gamma survey data has been collected. Additional radiation survey data was collected to characterize background gamma radiation near the windsite, along Indiana Street, and in the southern portion of the buffer zone. Initial background data indicated the presence of extremely low levels of americium in the

extreme southern portion of the buffer zone. Additional data points were collected to confirm the presence of americium but failed to show any activity above expected background levels. The Gamma survey group used the associated Global Positioning System (GPS) equipment of the Gamma system to survey the surficial soil sampling locations. One detector for the HPGe Gamma survey system failed and curtailed the collection of gamma data until a new detector was assembled and characterized. Gamma survey data still needs to be collected in OU 10, 13, 14 and portions of OU 8.

Technical Memoranda

No TMs have been developed for OU 10. The first TM for OU 10 will be for the nonintrusive field work, tentatively scheduled to be completed in April 1994.

Planned Work for March

- Continue spectral analysis of HPGe data.
- Collect additional HPGe data.
- Begin nonintrusive TM for OU 10.
- Begin soil gas surveys on IHSS 170/174

Problems

Characterization and assessment of IHSSs in OUs 9, 10, and 15 represent significant problems until materials stored in the IHSSs are removed and the IHSSs can be assessed. New guidance requires that Phase I RFI/RI assessment on active units be delayed. Therefore, no work will be conducted on IHSSs 213 and 214 and 750 and 904 pads until direction to proceed has been granted.

Open Items

None

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Plant buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

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	02 Jan 92

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	20 Sep 94		18 Apr 95
Submit final Phase I RFI/RI Report	22 Feb 95		03 Jan 96
Submit draft Phase II RFI/RI Work Plan	21 Aug 95		25 Nov 96

February Work Activity Status

The Revised FSP and DQOs TM to combine the two phases of the RFI/RI activities is undergoing major revisions in accordance with preliminary regulatory agency guidance.

In a revised schedule and budget, the assumption was made that OU 11 will go into No Further Action Justification (NFAJ) after the RFI/RI Report is prepared. This option is being investigated to determine if a Corrective Measures Study/(CMS) FS is needed.

Work began on the Work Plan Implementation Plan, HSP, and HHRA TMs for exposure scenarios and modeling.

Preparations to begin field work are underway. The readiness review is being scheduled. A Site-Specific HSP is being written.

DOE, Rocky Flats Plant

Technical Memoranda

Project

OU 11 - West Spray Field

TM

TM Title

TM Status

Revised Field Sampling Plan and Data Quality Objectives
Informally submitted to EPA/CDH: 2 Feb 94
Currently, undergoing revisions and addressing
comments
Awaiting CDH comments

TM #1

TM Title

TM Status

Exposure Scenarios
When preparation is concluded or is estimated to be
concluded: TBD
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

TM #2

TM Title

TM Status

Modeling
When preparation is concluded or is estimated to be
concluded: TBD
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

TM #3

TM Title

TM Status

Contaminants of Concern
When preparation is concluded or is estimated to be
concluded: TBD
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

TM Status

TM Title

TM Status

Toxicity
When preparation is concluded or is estimated to be
concluded: TBD
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when EPA/CDH comments received: N/A

Planned Work for March

- Begin obtaining permits for mobilization into the field.
- Receive final concurrence from CDH and EPA on the integrated field investigation for OU 11.

- Complete document modification request for sonic drilling.
- Begin TMs #1 and #2 for risk assessment.

Problems

None

Open Items

The TM to revise the FSP requires agency review before field work can begin.

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the 10 Individual Hazardous Substance Sites (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 - north, east, south, and west 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).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation (EE) and a Human Health Risk Assessment (HHRA). After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A Phase II Investigation may be performed as necessary. A Feasibility Study (FS) to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation may consist of development and execution of a Remedial Action Plan (RAP) 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 (ROD), release to the public, and implementation of the plan.

OU 12 is within the Industrial Area (IA) at the Rocky Flats Plant 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 IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is 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 FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	20 Apr 94		11 Mar 99
Submit final Phase I RFI/RI Report	15 Sep 94		17 Nov 99

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DOE, Rocky Flats Plant

February Work Activity Status

The Operational Readiness Review (ORR) for OU 12 is approximately 98 percent complete. The only outstanding issues are document controlled copies of the Work Plan, pre-evolution attendance list, a final list of subcontractor required reading lists, and one or two minor clarifications. The pre-evolution meeting was held on February 23, 1994. Staking activities began on February 18, 1994. Surficial soil sampling will begin on March 1, 1994.

DOE received final comment responses to the draft IA EE on February 1, 1994. While many of the technical issues regarding the EE were resolved, it is still unclear whether or not the EE field work will have to be repeated.

Technical Memoranda

The first TM scheduled for OU 12 is the nonintrusive TM due in April 1994.

Planned Work for March

- Begin soil sampling for OU 12.
- Begin nonintrusive TM for OU 12.

Problems

Waste storage may affect certain field activities in OU 12.

Open Items

None

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 Individual Hazardous Substance Sites (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 consist of preparing a Phase I RFI/RI Work plan, which will include both an Environmental Evaluation (EE) and an Human Health Risk Assessment (HHRA). After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A Feasibility Study (FS) to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan (RAP) 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 (ROD), release to the public, and implementation of the plan.

OU 13 is within the Industrial Area (IA) at the Rocky Flats Plant (RFP) 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 IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is 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 FY95

Milestone Name	IAG Date Scheduled	Extension Status	Planned Accomplishment Date
Submit draft Phase I RFI/RI Report	08 Aug 94		24 Mar 99
Submit final Phase I RFI/RI Report	11 Jan 95		02 Dec 99

DOE, Rocky Flats Plant

**February Work Activity
Status**

Revision of a draft letter report/sampling plan for CDH and EPA approval was completed. The letter report will be called OU 13 TM #1, *Addendum to the Field Sampling Plan*. It makes slight changes to the FSP and needs to be a controlled document. There is no milestone associated with its delivery; however, surficial soil sampling cannot begin until agency concurrence with the proposed sample locations has been received. Significant alteration of the Computer Aided Design/Geographical Information System (CAD/GIS) figures are required to meet DOE's expectations. Additional NaI Field Instrument for Detection of Low-Energy Radiation (FIDLER) surveys of the portion of IHSSs 117.1 and 197 between the Protected Area (PA) fences are being added based on HPGe survey results.

Work continued on completing the tasks necessary for the OU 13 ORR. There has also been progress on the rebaselining of the OU 13 schedule. This effort includes the substitution of geostatistical data analysis of all existing data for the entire IA instead of preparation of the first two TMs that are present in the OU 13 and 14 Work Plans. Details of the scope of this effort are being developed.

DOE requested a further modification of the procedure FO.28 Tank and Pipeline Investigation. A revision reflecting DOE's concerns is being prepared.

Technical Memoranda

Project

OU 13-100 Area

TM #1
TM Title
TM Status

Addendum to Field Sampling Plan
When preparation is concluded or is estimated to be concluded: Feb 94
Projected date of submittal to EPA/CDH: Feb 94
Actual date of submittal: March 3, 1994
Date when EPA/CDH comments received: N/A

A nonintrusive TM will be prepared in FY95 summarizing the nonintrusive field work and recommending Stage II activities for the remedial investigation intrusive field work.

Planned Work for March

- Present proposal for the development of a TM that summarizes all the data collected in the past in the entire IA.
- Continue work on ensuring that all of the SOPs are issued as controlled documents.
- Begin field activities/surficial soils sampling.

Problems

Significant problems surfaced with the integration of activities between the IA OUs that will delay the completion of an integrated schedule.

Open Items

SOPs need to be issued as controlled documents.
Integration of schedule with OU 8.

2.14. OU 14 - RADIOACTIVE SITES

Work at the "Radioactive Sites" involves the assessment and remediation of eight Individual Hazardous Substance Sites (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 consist of preparing a Phase I RFI/RI Work Plan, which will include both an Environmental Evaluation (EE) and an Human Health Risk Assessment (HHRA). After implementation of this work plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. A Feasibility Study (FS) to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

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

OU 14 is within the Industrial Area (IA) at the Rocky Flats Plant (RFP) 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 IA OUs are being investigated together because of similar field investigation techniques: e.g., surface soil sampling, radiation survey, etc. The main benefit from managing the IA OUs is 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 FY95 None

February Work Activity Status Plans to substitute geostatistical data analysis of all existing data for the entire IA instead of preparation of the first two TMs that are present in the OU 13 and 14 Work Plans are being developed. Some of the limited (nonintrusive) studies for this OU may need to be moved into FY95. In order to complete as much of the planned FY94 work as possible in FY94, more sampling crews

may be put in the field. In addition, new equipment may allow the soil gas collection and analysis to proceed much faster than originally planned.

Work continued on the tasks necessary for the OU 14 ORR. Indoctrinations for Building 885-6 was scheduled.

Technical Memoranda

The current FYP indicates that two TMs, *Human Health Risk Assessment-Exposure Assessment* and *Human Health Risk Assessment-Modeling*, are scheduled for completion in March 1994. These tasks will require rescheduling because of the integration of OUs 8, 9, 10, 12, 13, and 14. Currently, only nonintrusive/limited RI field work is scheduled for OU 14 in FY94.

A nonintrusive TM will be prepared in FY95 summarizing the nonintrusive field work and recommending Stage II activities for the RI intrusive field work.

Planned Work for March

- Present proposal for the development of a TM that summarizes all the data collected in the past in the entire IA.

Problems

Low-Level (not RCRA regulated) waste is stored in the cargo containers in OU 14. This material needs to be relocated during the RIs.

Open Items

None

2.15 OU 15 - INSIDE BUILDING CLOSURES

Operable Unit 15 is composed of seven 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 - Original Uranium Chip Roaster; IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area; IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area; and IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment. The seven IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG to undergo a RCRA Facility Investigation/Remedial Investigation (RFI/RI). During scoping meetings for preparation of the Phase I RFI/RI Work Plan for Operable Unit 15 conducted between EPA, CDH and DOE during April 1992, the Closure Plan and RFI/RI Processes were combined. In affect, 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 and Closure Plans will no longer be prepared. The public comment period required for the Closure Plan process will be fulfilled through the IM/IRA process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste stored in drums included oils, coolants and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes) and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. Since only one release has been documented in an OU 15 IHSS, the effort is to determine if contamination is present. The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings and, if applicable, decontamination of the concrete floors at the indoor facilities and remediation of contamination outside buildings.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of a IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Similarly, IHSS 212, RCRA Unit 63 was removed from the OU 15 RFI/RI process since it is currently active as a Drum Storage Area and has been included in the Rocky Flats Plant RCRA Part B TRU Mixed Waste permit application.

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

**Future IAG Milestones
Through FY95**

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit draft Phase I RFI/RI Report	01 Aug 94		01 Aug 94
Submit final Phase I RFI/RI Report	04 Jan 95		04 Jan 95

**February Work Activity
Status**

A walk through with EPA and CDH of OU 15, Building 881 IHSS, was conducted on February 10, 1994. IHSS 211, Room 266B, within Building 881, was visited specifically to discuss the need for further work outside Building 881. As a result of the OU 15 walk through, it can be assumed that additional historical data regarding IHSS 211, OU 1 RFI/RI data, and Building 881 footing drain outfall sampling data can be used versus proposing field work outside Building 881 to justify no further action for IHSS 211.

TM #1, *Draft Field Sampling Plan*, was delivered to EPA and CDH for review and comment. The first two TMs for the HHRA were included within TM #1 for OU 15. COCs and PRGs were the topics of these two HHRA TMs. DOE recommended that no further action be taken on OU 15 IHSS based on the results of OU 15 field work inside buildings presented within TM #1. In addition, it was recommended that the draft and final Phase I RFI/RI Reports be changed to meet the requirements of draft and final NFAJ Documents to facilitate and accelerate closure of OU 15 as an OU at RFP in an expedited manner.

Technical Memoranda

Project

OU 15-Inside Building Closures

TM #1
TM Title
TM Status

Field Sampling Plan (FSP)
When preparation is concluded or is estimated to be concluded:
Projected date of submittal to EPA/CDH: 28 Feb 94
Actual date of submittal: 28 Feb 94
Date when comments were received:

TM #2
TM Title
TM Status

Human Health and Risk Assessment (HHRA)
When preparation is concluded or is estimated to be concluded:

Projected date of submittal to EPA/CDH: TBD - may not be necessary unless Stage III field work is performed.

Actual date of submittal: 28 Feb 94

Date when comments were received:

Planned Work for March

- Address comments from the agencies on TM #1.
- Hold meeting among the agencies, DOE, and EG&G to discuss TM #1.

Problems

None

Open Items

None

2.16 OU 16 - LOW PRIORITY SITES

This assessment activity consists of preparing a No Further Action Justification Document (NFAJD) for seven IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks (400 and 700 Areas), Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. The NFAJD was approved by the regulatory agencies and the Record of Decision (ROD) process was initiated to close OU 16 as an operable unit (OU) at Rocky Flats Plant.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit draft No Further Action Justification Document	04 Mar 92
	Submit final No Further Action Justification Document	30 July 92
	Submit Revised final NFAJ Document	16 Oct 92

Future IAG Milestones Through FY95 None

February Work Activity Status The preliminary Responsiveness Summary (RS) to Public Comments was completed on February 18, 1994. The objective of a preliminary Responsiveness Summary to Public Comments on the Operable Unit 16 Proposed Plan/Draft Modification (PP/DM) of Colorado Hazardous Waste Permit for RFP OU 16: Low Priority Sites is to facilitate agreement among EPA, CDH, DOE, EG&G as to what are the actual Public Comments. A meeting among EPA, CDH, DOE, EG&G will be scheduled for discussion of the preliminary Public Comment RS.

Technical Memoranda None

Planned Work for March

- A meeting is planned for March 3, 1994, with the regulatory agencies to address public comments on the PP/DM of Colorado Hazardous Waste Permit for RFP OU 16: Low Priority Sites. Prepare responsiveness summary.
- Preparation of the ROD to close OU 16 as an OU at RFP will begin during March 1994.

Problems None

Open Items None

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by IAG and that apply to RFP environmental activities in general. Activities include, but not limited to: Health Safety Plan (HSP), Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, Industrial Area Interim Measure/Interim Remedial Action Plan (IA IM/IRA), hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, ground water monitoring, Decontamination & Decommission, 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 PPCD and Responsiveness Summary	25 Nov 91
Submit draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for DLRP	31 Jan 92
Submit final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93

Future IAG Milestones Through FY95

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Sitewide Annual Treatability Study	14 Mar 94		14 Mar 94
Sitewide Annual Treatability Study	14 Mar 95		14 Mar 95

February Work Activity Status

Sitewide Activities

Sitewide Treatability Studies

Bioremediation - Issues in the Quality Assurance Project Plan (QAPjP) and the EPA guidance documents for the Bioremediation Treatability Study Work Plan have been incorporated. DOE received the document for review .

DOE received a completed Bioremediation Technical Task Plan for FY95 from the contractor.

Annual Report - Comments on the final draft of the FY93 Annual Report will be incorporate and the final Annual Report will be issued on March 1, 1994.

Magnetic Separation - DOE Granted a National Environmental Policy Act (NEPA) categorical exclusion (CX) for the magnetic treatability test. This issue had delayed the initiation of the test program. The first series of tests on RFP soil started on February 17, 1994.

Other Sitewide Operations

Administrative Record - An Administrative Record Routine Document Type List was developed using the Interagency Agreement, OSWER Directive, Code of Federal Regulation, and Hanford Administrative Record, as a guidance. The list was reviewed by DOE and was submitted for approval. If approved, it will cut delays in

placing certain documents in the Administrative Record. On February 22, 1994, DOE sent agreement to EG&G on the letter of understanding regarding the Administrative Record's process for confidential/privileged documents and the use of a routine Administrative Record's document list.

Community Relations - Community Relations developed public involvement plans for OU 4, Accelerated Clean up, and IAG Renegotiation. It also worked with DOE IAG renegotiation, which includes public meetings, public involvement, and comment periods.

Interim Measure/Interim Remedial Action Plan for the Industrial Area (IA IM/IRAP)-A preliminary draft IA IM/IRAP document presentation meeting was held on February 23, 1994. DOE completed and provided comments to EG&G on February 25, 1994. The document is scheduled to be delivered to the agencies on March 14, 1994.

IA Integrated OUs 8, 9, 10, 12, 13, and 14. - DOE received responses to their comments from EG&G on February 1, 1994, regarding the IA EE documents. When DOE has completed its review of the responses, a meeting will be held between the regulatory agencies, DOE, and EG&G to establish review of the current format of the IA EE Reports. The IA EE corrective action plan was completed and submitted to DOE on February 15, 1994.

The Statement of Work (SOW) for the modification to the IA OU subcontract was prepared and submitted to EG&G in February 1994. The modification included confined space activities, Geographical Information Systems (GIS), Geostatistical Data Evaluations, computer usage costs, and other miscellaneous tasks.

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 CDH 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 fieldwork and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) are sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) are sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOA	Radionuclides
Metals CLP TAL & Non-TAL	Temperature
Field Parameters	TDS/TSS
Specific Conductivity	pH
Dissolved Oxygen (DO)	Nutrients
Major Anions	

- Additionally, sediment samples are analyzed for: CLP-Semi VOAs, CLP-Pesticides/ PCBs Herbicides-619

3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) are sampled annually.
- Each soil sample is analyzed for plutonium and americium.

3.3 GROUND WATER

A total of 410 Groundwater Stations are sampled quarterly; this includes alluvial wells, bedrock wells, and pre-1986 wells. Approximately one third of the wells are monitored monthly for water levels. Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, Metals, as well as the following parameters:

DOE, Rocky Flats Plant

Radiochemical Parameters

Gross Alpha
Gross Beta
Plutonium
Americium
Strontium
Tritium
Uranium
Cesium

Inorganic Parameters

Nitrate/Nitrite
Total Phosphorous
Ortho-Phosphate
Ammonia
TDS
Chlorine
Fluorine
Sulfate
Carbonate
Bicarbonate
TSS
Dissolved CLP & additional metals
Cyanide
CLP Volatile Organic Constituents

Field Parameters

Specific Conductivity
Temperature
Turbidity
pH

SECTION 4 - CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the RFP 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	Ebasco	Dames & Moore	CMS/FS Report	Jan 92
1	Assessment	Dames & Moore		Public Health Evaluation	Apr 93
1	Assessment	Roy F. Weston		Revise RI Report; respond to agency comments	Feb 93
1	Assessment	S.M. Stoller		Environmental Evaluation	Apr 93
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	Ebasco	S.M. Stoller	Environmental Evaluation	Feb 91
	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock), surficial soils	Mar 93
2	Remediation	RT6		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Remediation	HNUS	Halliburton Spec. Services	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 DD & conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-closure monitoring plan	Nov 93

840690

DOE, Rocky Flats Plant

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
5	Assessment	ASI Blackhawk Geo Walsh & Assoc. Layne Envir. Service S.M. Stoller Adv. Terra Testing	Dames & Moore	Implementation of OU 5 Work Plan (excluding EE) Utility Mgmt. Service	Jun 92
5	Assessment	S.M. Stoller		Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Environmental	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 RFI/RI Work Plan Implementation including EE Plan and QA Addendum	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs	Aug 93
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for non-intrusive field work for the IA OUs	Aug 93
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for non-intrusive 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 M.S. thesis of Structural Geology, of Front Range Area Near RFP	Nov 91

Contractor/Subcontractor Identification

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Subcontractor</u>	<u>Sub- 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 ES and Engineering	Aug 92
SW	Geo. Char.	Woodward-Clyde		Support for the SSWMS	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	April 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 ground water, 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

ADS	Activity Data Sheet
AIP	Agreement In Principi
ALARA	As Low As Reasonably Attainable
AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirements
ASRP	Accelerated Sludge Removal Project
BAT	Best Available Technology
BCP	Baseline Change Proposal
BIO	Basis for Interim Operations
BOA	Basic Ordering Agreement
BRAP	Baseline Risk Assessment Plan
CAD	Computer Aided Design
CAMU	Corrective Action Management Unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHWA	Colorado Hazardous Waste Act
CMS	Corrective Measures Study
COC	Contaminant Of Concern
CPT	Cone Penetrometer Testing
CRP	Community Relations Plan
CSU	Colorado State University
CX	Categorical Exclusion
DAC	Derived Air Concentration
DD	Decision Document
D&D	Decontamination & Decommissioning
DCN	Document Change Notice
DLRP	Discharge Limits Radionuclides Plan
DM	Draft Modification
DNAPL	Dense Non-Aqueous Phase Liquids
DOE	Department of Energy
DQO	Data Quality Objectives
DVP	Data Validation Plan
E&WM	Environmental and Waste Management
EA	Environmental Assessment
EE	Environmental Evaluation
EM	Environmental Management
END	Environmental NEPA Division
EPA	Environmental Protection Agency
EQS	Environmental Quality Support
ER	Environmental Restoration
ERA	Ecological Risk Assessment
ESE	Environmental Science and Engineering
FI	Facility Investigation
FIDLER	Field Instrument for Detection of Low Energy Radiation
FS	Feasibility Study

FSP	Field Sampling Plan
FTU	Field Treatability Unit
FYP	Five-Year Plan
GAC	Granular Activated Carbon
GIS	Geographic Information System
GPR	Ground Penetrating Radar
GPS	Global Positioning System
H&S	Health and Safety
HSP	Health and Safety Plan
HAP	Health Advisory Panel
HGMS	High Gradient Magnetic Separation
HHRA	Human Health Risk Assessment
HPGe	High Purity Germanium
HQ	Headquarters
HRR	Historical Release Report
IA	Industrial Area
IAG	Interagency Agreement
ICP-MS	Inductively Coupled Plasma Mass Spectrometer
IDM	Investigative Derived Material
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
ITS	Interceptor Trench System
IWCP	Integrated Work Control Package
IX	Ion Exchange
LANL	Los Alamos National Laboratory
LATO	Los Alamos Technology Office
LL	Low-level
LLMW	Low-level Mixed Waste
mg/l	milligrams per liter
MOU	Memorandum of Understanding
MTS	Master Task Subcontract
MSVEU	Mobile Soil Vapor Extraction Unit
NAPLs	Non-Aqueous Phase Liquids
NEPA	National Environmental Policy Act
NFAJ	No Further Action Justification
NOV	Notice of Violation
NTS	Nevada Test Site
NPDES	National Pollution Discharge Elimination System
O&M	Operations and Management
OPWL	Original Process Waste Line
ORR	Operational Readiness Review
OTD	Office of Technology Development
OU	Operable Unit
PA	Protected Area
PAC	Potential Area of Concern
ppb	Parts per billion
PCB	Polychlorinated biphenyl
PCCB	Plant Change Control Board

PCP	Process Control Plan
PIT	Process Improvement Team
PP	Proposed Plan
PPCD	Plan for Prevention of Contaminant Dispersion
PPE	Personal Protective Equipment
PRG	Preliminary Remediation Goals
PU&D	Property Utilization and Disposal
QA	Quality Assurance
QAPjP	Quality Assurance Project Plan
QAPP	Quality Assurance Project Plan
QP	Quality Plan
RAGS	Risk Assessment Guidance for Superfund
RCA	Radiological Control Area
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA Facilities Investigation
RFP	Rocky Flats Plant
RI	Remedial Investigation
ROD	Record of Decision
RPT	Radiological Protection Technician
RS	Responsiveness Summary
SAP	Sampling and Analysis Plan
SAR	Safety Analysis Report
SEP	Solar Evaporation Ponds
SID	South Interceptor Ditch
SMO	Sample Management Office
SOP	Standard Operating Procedure
SOW	Statement of Work
SPPO	Solar Ponds Program Office
STP	Sewage Treatment Plant
SVE	Soil Vapor Extraction
SVS	Soil Vapor Survey
SW	Surface Water
TA	Technical Area
TCE	Trichloroethene
TDS	Total Dissolved Solids
TIE	Technology Information in Exchange
TM	Technical Memorandum
TMST	Temporary Modular Storage Tanks
TRG	Technical Review Group
TSR	Treatability Study Report
TSS	Total Suspended Solids
UBC	Under Building Contaminations
USFWS	United States Fish and Wildlife Service
UV	Ultraviolet
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound
WBS	Work Breakdown Structure
WS	Waste Solidification