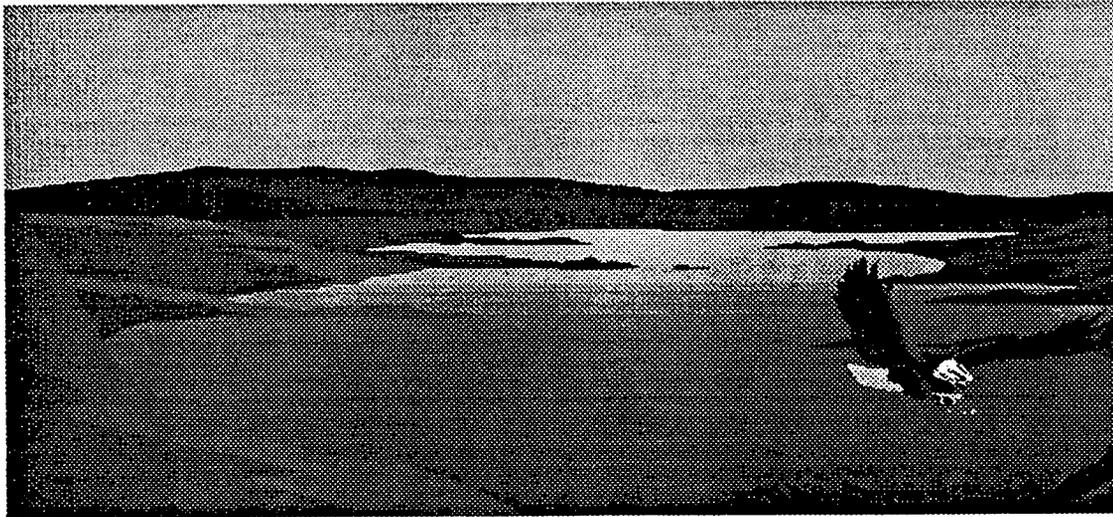


DEC 1991

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ENVIRONMENTAL RESTORATION PROGRAM

Monthly Report For December 1991



January 20, 1992

 **EG&G ROCKY FLATS**

**U.S. DEPARTMENT OF ENERGY
ROCKY FLATS PLANT**

**ENVIRONMENTAL RESTORATION
PROGRAM**

**MONTHLY REPORT FOR
DECEMBER 1991**

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1.0 INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for December 1991. This program implements the Interagency Agreement (IAG) between the U.S. Department of Energy, the U.S. Environmental Protection Agency, 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.

Section 2.1 of this report highlights significant achievements and summarizes the milestones completed during December. Section 2.2 presents any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit as well as other program activities are presented in Section 3.0. Operable Units will be reported on as work in them commences. Section 4.0 contains the schedules for routine environmental sampling as required by paragraph 210 of the Interagency Agreement. Section 5.0 contains a list which identifies the contractors and subcontractors performing work on the program as required by paragraph 13 of the IAG.

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2.0 EXECUTIVE SUMMARY

2.1 SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR DECEMBER 1991

Phase III Remedial Investigation (RI) field activities on Operable Unit No. 1 (OU 1) - 881 Hillside are nearing completion. This activity is scheduled to be completed in January 1992. Laboratory work, data validation, and preparation of the RI report is underway.

OU 1 Interim Remedial Action (IRA) work production increased in December with the warmer weather. Approximately 800 feet of the Phase II-B French drain have been excavated. 750 feet of geomembrane and geo-fabric is in place. Backfill of the trench is in progress in these areas. The ion exchange unit was released for shipment by the manufacturer on December 16, 1991, and delivered to the 891 Treatment Building the following week; installation is in progress. A contract modification to modify the electrical power supply, instrumentation, and controls in the 891 Treatment Building was awarded and work on these modifications is in progress. Arc welding on the three effluent tanks is in progress with one tank completely welded, the second 90% complete, and the third 75% complete.

OU 2 903 Pad Area assessment drilling operations continued during December with nine additional monitoring wells being completed, bringing the total number of monitoring wells to 46. All monitoring wells outside of the americium zone (43) are complete. Three boreholes were also completed bringing the total to 9. Linear drilling completed to date is 2129 feet.

The Walnut Creek Phase of the OU 2 granular activated carbon (GAC) IRA unit collected, treated, and discharged approximately 360,000 gallons of surface water during December. The system continues twenty-four hour manned operation.

EG&G has made a commitment to manage the procurement and installation of the OU 2 radionuclide removal system (Phase II IRA) as an exception to plant procedure. Extraordinary efforts are underway to accomplish DOE's schedule commitment.

The OU 3 Offsite Areas Final RFI/RI Work Plan was submitted to EPA and CDH on the milestone delivery date of December 6, 1991. EPA and CDH review of the Final Work Plan is scheduled to be completed by January 14, 1992. Conditional approval is expected which will require a comment resolution period before obtaining final EPA and CDH final approval of the Work Plan.

The subcontract award to revise the OU 4 Solar Evaporation Ponds Proposed Interim Measures/ Interim Remedial Action (IM/IRA) Decision Document and prepare a Responsiveness Summary (RS) to address public, EPA, and CDH comments was awarded on December 19, and finalized on December 23, 1991. A draft IM/IRA is expected to be complete and submitted to DOE for review and comment by January 15, 1992.

Revisions in the form of a Technical Memorandum were written for the OU 5 Woman Creek Final Phase I RFI/RI Work Plan. The Technical Memorandum for the resubmitted Work Plan was delivered to EPA and CDH on the negotiated date of December 9, 1991.

2.1 SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR DECEMBER 1991 (CONT.)

A meeting was held December 2, 1991, with the OU 6 Walnut Creek Final Phase I RFI/RI Work Plan subcontractor to finalize incorporation of the comments from EPA and CDH. Revisions in the form of a Technical Memorandum were written for the Work Plan. These revisions were resubmitted to EPA and CDH on the negotiated date of December 15, 1991, for the regulatory agencies' review and approval.

All comments from CDH and EPA were addressed and incorporated into the OU 7 Present Landfill Final Phase 1 RFI/RI Work Plan. The Work Plan was delivered to EPA and CDH on December 6, 1991. DOE is awaiting final approval of the Work Plan from EPA and CDH.

Preparation began on the Statement of Work for partial implementation of the OU 9 Original Process Waste Lines (OPWL) Final Phase I RFI/RI Work Plan which was submitted to the regulatory agencies in November. A meeting was held with EPA and CDH to resolve comments on the Work Plan. A number of issues were resolved and the indication from EPA and CDH was that "conditional approval" of the Work Plan was likely. EPA and CDH were informed at the meeting that FY92 funds were sufficient to cover field activities outside the Protected Area (PA).

A revised submittal date of February 21, 1992, was agreed to by CDH for the Final Plan for Prevention of Contaminant Dispersion (PPCD) and Responsiveness Summary (RS). A meeting was held December 5, 1991, with EPA and CDH to discuss the PPCD and the RS that were delivered to the regulatory agencies on the original revised milestone date of November 25, 1991. Results of the meeting indicated revisions to the plans were necessary. Modifications to the RS are in progress.

Final Field Sampling Plans for the Environmental Evaluations (EEs) for OUs 1 and 2 were transmitted to the regulatory agencies. These may serve as technical memoranda for the EEs on OUs 1 and 2. Data analysis for vegetation surveys continued as did preparation of specimens for tissue samples to be sent to analytical labs.

The technical evaluation of the proposal to conduct radiological and inorganic analyses of biological samples was completed on a priority basis in order to secure a contract that could meet the 1991 analytical needs of the EE program. Approximately 200 biological samples collected this fall for OU 1, OU 2, and OU 5 EEs are ready to be shipped pending contract award.

2.2 PROBLEMS AND PROGRAMMATIC ISSUES

None to report for the month of December 1991.

2.3 NEAR-TERM IAG MILESTONES

<u>OU#</u>	<u>Milestone Description</u>	<u>Scheduled Completion</u>	<u>Actual Completion</u>
SW	Submit Responsiveness Summary for PPCD	25 Nov 91*	25 Nov 91
04	Submit Final Phase I RFI/RI Work Plan	26 Nov 91	26 Nov 91
09	Submit Final Phase I RFI/RI Work Plan	26 Nov 91	26 Nov 91
10	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91	26 Nov 91
03	Submit Final Phase I RFI/RI Work Plan	06 Dec 91*	06 Dec 91
11	Submit Final Phase I RFI/RI Work Plan	02 Jan 92	
SW	Submit Draft Historical Release Report	08 Jan 92	
SW	Submit Responsiveness Summary RDLP	30 Jan 92	

* indicates a revised date

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3.0 PROJECT STATUS

3.1 OU 1 - 881 HILLSIDE AREA

DESCRIPTION:

The soil and alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP, were contaminated in the 1960s and 1970s with solvents and radionuclides. The area is almost two miles from the eastern outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up OU 1 are being investigated and treated as high-priority sites because of elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected IRA at OU 1 involves construction of an underground drainage collection system called a French drain that will intercept and contain contaminated groundwater flowing from the OU 1 area. The contaminated water will be treated at the 891 Treatment building, designed for this purpose, and released on plantsite into the South Interceptor Ditch alongside Woman Creek. IRA construction is scheduled to be complete by March 2, 1992. The remedial investigation and feasibility study (RI/FS) to determine final remedial action continuing in parallel with the IRA.

3.1.1 OU 1 ASSESSMENT

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Begin Phase III RI Field Work	06 Mar 91

DECEMBER WORK ACTIVITY STATUS:

Remedial Investigation (RI) field activities are almost complete on OU 1. A total of 95 holes have been drilled on this Phase III project. With an average of five samples per hole, this totals 475 down hole samples taken. The breakdown of the holes includes 56 boreholes, 23 monitoring wells and piezometers, and 16 monitoring wells which were abandoned due to geologic conditions.

Phase III laboratory work and data validation is in progress, and preparation of the RI report is underway. Packer tests were conducted during December in the deeper boreholes and down-hole geophysics was used to support the packer tests. Additional "unique" sampling was conducted, as called for in the Work Plan. This included some manhole sampling and sump sampling around the 881 building and sampling of some drums on the 881 Hillside containing the product Coherex. The hydraulic testing, a step drawdown test, and evaluation of tracer dyes under field conditions were done in December.

PLANNED WORK FOR JANUARY:

The Phase III RI field activities will be completed in January on OU 1.

PROBLEMS: None

OPEN ITEMS: None

3.1.2 OU 1 REMEDIATION

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

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

DECEMBER WORK ACTIVITY STATUS:

Work production increased in December with the warmer weather. The ion exchange unit was released for shipment by the manufacturer on December 16, 1991 and delivered to the 891 Treatment Building the following week; installation is in progress. A contract modification to modify the electrical power supply and instrumentation and controls in the 891 Treatment Building was awarded. Work on these modifications is in progress.

Approximately 800 feet of the OU 1 Phase II-B French drain has been excavated. Over 750 feet of geomembrane and geo-fabric is in place. Backfill of the trench is in progress in these areas.

A slump block slid into the French drain excavation from the north wall of the trench on the morning of December 18, 1991. No workers were endangered at any time, as the slump feature had been identified the day before and was blocked off to access while being watched by construction management personnel. This type of feature was identified as a potential problem by the geotechnical investigation done in 1991. This slump block, and two others previously encountered in the excavation, were purposely pushed by the backhoe in attempts to get them to slide. The two blocks encountered previously did slide and were removed to a safe degree. The block encountered on December 18 did not move while being pushed, but did move after a short period, due to a condition commonly referred to as "air-lagging." DOE considered the slump as an administrative occurrence that can be alleviated in the future by excavating all slump block features before they have a chance to slide. The contractor project team met shortly after the slump and discussed revisions to the excavation plan to prevent slumping, enhance slump predication, and create better communications between all parties involved.

The revisions to the excavation plan will provide for additional geotechnical monitoring. A subcontractor is providing a geotechnical engineer on site for geologic mapping and geotechnical support during excavation of the french drain. DOE stopped work at the excavation at 1:30 p.m., December 18, as an administrative shutdown. This allowed time to formalize changes to the project excavation plan, which would also prevent future delays.

Once the Rocky Flats safety group reviewed these changes and discussed aspects of the excavation design with EG&G design engineers, approval to continue was granted.

An outline of the IRA operation and maintenance plan and a draft copy of the health and safety plan for systems operations test, startup and operation of the IRA is under review.

Preparation is underway to modify existing plumbing and utilities for installation of the gamma detection unit which will be placed on the effluent line of the ion exchange unit. The gamma detection unit was added to the original ion exchange unit design and is tentatively scheduled to be operational by the end of March 1992.

PLANNED WORK FOR JANUARY:

Excavation of the western end of the French drain will continue during January.

Arc welding on the three effluent tanks is scheduled to be complete by January 17, 1992. Effluent tank painting and coating is scheduled to start January 6, 1992, and be complete by January 31, 1992.

Effluent tank mechanical work will be complete January 31, 1992.

Influent and effluent piping from Building 891 to its intersection at the French drain will be complete by January 31, 1992.

Ion exchange unit system installation will be complete by January 31, 1992.

PROBLEMS: None

OPEN ITEMS: None

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

DESCRIPTION:

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 underlying soils. 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, some of which may have contaminants that were not removed by the treatment system.

An IM/IRA provides for surface water seeps in source areas of contamination to be collected, treated, and discharged to the surface water system. Operation of a field-scale treatability unit began for the Walnut Creek drainage in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance 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. Bench-scale testing of surface water in the Woman Creek drainage is now being conducted, after which a separate IRA Plan for this drainage will be developed and implemented. The RI and FS to determine the final remedial action are continuing in parallel with the IRA.

3.2.1 OU 2 ASSESSMENT

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

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
Begin Phase II-B RFI/RI Field Work	03 Sep 91

DECEMBER WORK ACTIVITY STATUS:

Drilling operations continued during December with nine additional monitoring wells being completed, bringing the total number of monitoring wells to 46. All monitoring wells outside of the americium zone (43) are complete. Three boreholes were also completed, bringing the total to 9. Linear drilling completed to date is 2129 feet. Work is in progress to install monitoring wells for sites 12391, 12491, 12591, and 06091 in the northeast trenches area.

PLANNED WORK FOR JANUARY:

Drilling activities will begin in the americium zone and will include the 903 Pad Area.

A detailed work plan for conducting four pump aquifer tests in OU 2 will be ready by the end of January. The pump tests will commence in March. All completed wells to date will be "surveyed in" and added to the base maps.

Final resolution of modifications to the OU 2 field work contract will be completed.

PROBLEMS: None

OPEN ITEMS: None

3.2.2 OU 2 REMEDIATION

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

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)	13 May 91
Complete IM/IRA Construction	*
Begin Field Treatability Testing (Entire System)	*

*Scheduled completion dates September 30, 1991, for the construction milestone and October 30, 1991, for the testing milestone were changed. With the conclusion of dispute resolution proceedings, EPA and CDH authorized the extension of the construction milestone to April 24, 1992, and the "Begin Field Treatability Testing" (Radionuclides Removal System) milestone to April 27, 1992. These new milestones are for the Walnut Creek phase of the OU 2 IRA.

DECEMBER WORK ACTIVITY STATUS:

The Walnut Creek Phase of OU 2 granular activated carbon (GAC) IRA unit collected, treated, and discharged approximately 360,000 gallons of surface water during December. The system continues twenty-four hour manned operation. The contract modification to extend 24-hour GAC operation through June 2, 1992 was awarded to the subcontractor on December 20, 1991. Installation of the field office trailer at the GAC site was completed, inspected, and is ready to be occupied by the subcontractor. The main generator set is in place and is ready for inspection.

EG&G has made a commitment to manage the procurement and installation of the radionuclides removal system (Phase II IRA) as an exception to plant procedure. Extraordinary efforts are underway to accomplish DOE's schedule commitment to the regulators.

The radionuclide removal system contract for design/fabrication was awarded on December 12, 1991. Deliverables (non-IAG) for the submittal schedule and the project plan are due on January 2, 1992. The vendor was authorized to initiate procurement of long-lead items on December 13, 1991, and is scheduled to deliver the chemical treatment and microfiltration system to RFP on April 12, 1992.

The Draft Subsurface (Woman Creek) IM/IRA Plan was delivered to DOE for formal review and comment on December 24, 1991. Final comments are due to DOE Project Management by January 16, 1992.

Residual materials from the bench-scale treatability study in support of the OU 2 South Walnut Creek IM/IRA have been put in the Rocky Flats landfill. Prior to disposal, the residuals were screened by Rocky Flats Radiological Protection.

A draft of the OU 2 South Walnut Creek Bench-Scale Treatability Study Report was received on December 9, 1991 and is under review by contractor personnel.

PLANNED WORK FOR JANUARY:

The GAC treatment unit will continue operation. Reconfiguration of the lead/polish vessels is expected to occur in mid-January followed by carbon sampling of the spent GAC vessel.

Final comments on the OU 2 Draft Subsurface (Woman Creek) IM/IRA Plan are due to DOE Project Management by January 16, 1992, and will be revised for submittal to DOE/HQ for approval.

Deliverables (non-IAG) for the submittal schedule and the project plan for the radionuclide removal system design/fabrication contract are due on January 2, 1992. The vendor was authorized to initiate procurement of long-lead items on December 13, 1991, and is scheduled to deliver the chemical treatment and microfiltration system to RFP on April 12, 1992.

The skirting and a fence around an adjacent IHSS 110 and 111.1 will be completed in January 1992.

PROBLEMS: None

OPEN ITEMS: None

3.3 OU 3 - OFFSITE AREAS

DESCRIPTION:

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as IHSSs: 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 v. 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 land owners.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES:

The large number of sediment core samples and the resulting large cost for sample analysis required by the Draft Phase I RFI/RI Work Plan is being reviewed. The revised plan is to obtain sufficient samples to validate older studies rather than conduct a new study. A statistical evaluation of the older data is needed to determine the number of samples needed to validate this older data.

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

DECEMBER WORK ACTIVITY STATUS:

The Final RFI/RI Work Plan was submitted to the EPA and CDH on the milestone delivery date of December 6, 1991. EPA and CDH review of the Final Work Plan is scheduled to be completed by January 14, 1992. Conditional approval is expected which will require a comment resolution period before obtaining final EPA and CDH approval of the Work Plan.

A meeting was held December 6, 1991, with EPA and CDH on the Environmental Evaluation Section of the OU 3 Final RFI/RI Work Plan. The EE section was updated after submittal of the Draft Work Plan to mirror the format of the OU 5 EE Work Plan. This Work Plan is unique in that it covers an area with very low levels of contamination and a large area with varied vegetation and land use history which is outside the RFP Buffer Zone. The briefing was designed to help the agencies review the Work Plan during this final review period.

PLANNED WORK FOR JANUARY:

A meeting was held with the subcontractors implementing the RI Work Plan to provide information for their development of the contract proposal. The proposal is expected from the subcontractors by January 15, 1992, with contract award and field work to begin March 1, 1992

PROBLEMS:

Remedial actions required under the 1985 McKay v. U.S. Settlement Agreement may be in conflict with CERCLA. Tilling of the land surface to mix plutonium contaminated surface soil, as required under the Settlement Agreement, prior to completion of the RI/FS will probably not be allowed by EPA. The remedial action as determined by the RI/FS process, if any, will probably not include plutonium soil mixing through tilling.

OPEN ITEMS: None

3.4 OU 4 - SOLAR EVAPORATION PONDS

DESCRIPTION:

OU 4 is made-up of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C. Beginning in the late 1950s, the ponds were used to store and evaporate low-level radioactive process water containing high concentrations of nitrates and treated acidic wastes. The sludge and sediments that resulted from the process were periodically removed and disposed of at the Nevada Test Site.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and groundwater was detected. Interceptor trenches were installed in 1971 to collect and recycle groundwater contaminated by the ponds and to prevent natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger, interceptor trench system which recycles approximately four million gallons of groundwater a year back into the solar evaporation ponds.

No additional process water has been pumped into the ponds since 1983. The interceptor trench system collects and recycles groundwater into the solar evaporation ponds continuously. Presently, only the 207B north solar evaporation pond receives contaminated groundwater collected by the interceptor system. The ponds are RCRA interim status regulated units that are currently under closure. In order to proceed and characterize the level of contamination at the site, approximately eight million gallons of excess liquid in the ponds must be removed. The removal of this liquid and the redirection and treatment of the groundwater by the interceptor trench system are the focus of the IRA which is scheduled to begin field work in early 1992.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

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

DECEMBER WORK ACTIVITY STATUS:

The subcontract award to revise the proposed IM/IRA Decision Document and prepare a Responsiveness Summary (RS) to address public, EPA, and CDH comments was awarded on December 19, and finalized on December 23, 1991. A draft IM/IRA is expected to be submitted to DOE for review and comment on January 20, 1992.

CDH is withholding approval of the OU 4 Final Phase I RFI/RI Work Plan pending resolution of comments that were received on December 20, 1991. Comments are expected from EPA and the agency's contractor in early January, 1992.

PLANNED WORK FOR JANUARY:

A draft IM/IRA is expected to be submitted to DOE for review and comment on January 20, 1992.

The Phase I RFI/RI Work Plan is being reviewed by EPA and CDH. Regulatory agency comments are scheduled to be received by January 6, 1992.

PROBLEMS: None

OPEN ITEMS: None

3.5 OU 5 - WOMAN CREEK

DESCRIPTION:

This activity encompasses assessment and remediation in the Woman Creek drainage of ten IHSSs.

These are:

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.

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.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

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

DECEMBER WORK ACTIVITY STATUS:

A meeting was held December 2, 1991 with the OU 5 Final Phase I RFI/RI Work Plan subcontractor to finalize incorporation of the comments from EPA and CDH. Additional rationale and clarification of the work to be performed was discussed in order to satisfy the agencies' concerns. Revisions in the form of a Technical Memorandum were written for the Work Plan. The Technical Memorandum for the resubmitted Work Plan was delivered to EPA and CDH on the negotiated date of December 9, 1991. The regulatory agencies review and approval period is undetermined at this time.

PLANNED WORK FOR JANUARY:

DOE and EG&G are waiting for EPA and CDH approval of the Work Plan in order to finalize the statement of work (SOW) for the RI fieldwork.

The SOW is being developed for the EE Work Plan, air monitoring work, and the Field Sampling Plan (FSP).

PROBLEMS: None

OPEN ITEMS: None

3.6 OU 6 - WALNUT CREEK

DESCRIPTION:

This activity encompasses assessment and remediation in the Walnut Creek Drainage of twenty-one IHSSs. They are:

A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4) and 142.12

B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9)

North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2 and 167.3)

East Area Spray Field (IHSS 216.1)

Trenches A, B and C (IHSS 166.1, 166.2 and 166.3)

Sludge Dispersal Area (IHSS 141)

Triangle Area (IHSS 165)

Old Outfall Area (IHSS 143)

Soil Dump Area (IHSS 156.2), was moved from OU 14 to OU 6 in 1991.

Surface and subsurface soil samples will be taken on a 150-foot grid across IHSS 115 instead of the 50-foot grid around the perimeter as proposed in the IAG. In addition, one monitoring well will be drilled 20 feet into bedrock within the IHSS and will be completed in bedrock if a sandstone zone is encountered. Five bedrock groundwater monitoring wells will be installed in the vicinity of North Walnut Creek during the OU 6 remedial investigation. The purpose of these wells is to characterize the bedrock in the vicinity of the A-series ponds. Two IHSSs, Property Utilization And Disposal Yard (PU&D Yard) (IHSS 170) and Property Utilization and Disposal Container Storage Facilities (IHSS 174) have been moved from OU 6 to OU 10.

Sediment samples will be collected from the drainage in OU 6 to characterize areas where existing data is currently lacking. Proposed sediment sample locations have been located along each stream segment on North and South Walnut creeks where additional characterization is needed. Based on a review of the data collected at the 17 existing locations along the OU 6 drainage, there exists a significant amount of information about the sediments in many parts of OU 6; therefore, the sampling locations specified in the RFI/RI Work Plan have been reduced.

The Field Sampling Plan was modified for the Triangle Area (IHSS 165) and the Old Outfall Area (IHSS 143) so that the surface soil sampling specified in the IAG can be taken from the original surface of these units. This will entail using borings to drill down to the original land surface and collecting samples at and below this surface.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase I RFI/RI Work Plan

19 Apr 91

Submit Final Phase I RFI/RI Work Plan

16 Sep 91

DECEMBER WORK ACTIVITY STATUS:

A meeting was held December 2, 1991 with the Work Plan subcontractor to finalize incorporation of the comments from EPA and CDH. Revisions in the form of a Technical Memorandum were written for the Final Phase I RFI/RI Work Plan for OU 6. These revisions were resubmitted to EPA and CDH on the negotiated date of December 15, 1991, for the regulatory agencies' review and approval. The agencies have not made a determination of how long their review period will take.

PLANNED WORK FOR JANUARY:

DOE and EG&G are waiting for EPA and CDH approval of the Work Plan in order to finalize the SOW for the RI fieldwork.

SOW is being developed for the EE Work Plan, air monitoring work, and the FSP.

PROBLEMS: None

OPEN ITEMS: None

3.7 OU 7 - PRESENT LANDFILL

DESCRIPTION:

The Present Landfill - Operable Unit (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. 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 being disposed into the landfill, and 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: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91

DECEMBER WORK ACTIVITY STATUS:

All comments from CDH and EPA were addressed and incorporated into the OU 7 Final Phase 1 RFI/RI Work Plan. The Work Plan was delivered to EPA and CDH on December 6, 1991. DOE is awaiting final approval of the Work Plan from EPA and CDH.

PLANNED WORK FOR JANUARY: None

PROBLEMS: None

OPEN ITEMS: None

3.9 OU 9 - ORIGINAL PROCESS WASTE LINES

DESCRIPTION:

This activity involves characterizing a series of tanks and associated process waste lines. The Original Process Waste Lines (OPWL) consist of a system of 57 designated pipe sections extending between 73 tanks and 24 buildings, connected by 35,000 feet of buried pipeline that transferred process wastes from point of origin to on-site treatment plants. 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 have been 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 into the system, including pickling liquor from foundry operations, medical decontamination fluids, miscellaneous laboratory liquids from Building 123, and laundry effluent from Buildings 730 and 778.

The RFI/RI plan includes inspection and sampling of the OPWL tanks and pipelines which are accessible, and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by test pits and borings at approximately 300-foot intervals along the pipelines and by borings around the tanks which are outdoors. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the RFI/RI will determine the need for interim and/or final remediation action.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

MILESTONE ACCOMPLISHMENTS:

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

DECEMBER WORK ACTIVITY STATUS:

Preparation began on the SOW for partial implementation of the Phase I RFI/RI Work Plan. The OU 9 Final Phase I RFI/RI Work Plan was submitted to the regulatory agencies on the IAG milestone date of November 26, 1991.

A meeting was held with EPA and CDH to resolve comments on the Work Plan. A number of issues were resolved and the indication from EPA and CDH was that "conditional approval" of the Work Plan was likely. EPA and CDH were informed at the meeting that FY92 funds were sufficient to cover field activities outside the Protected Area (PA).

PLANNED WORK FOR JANUARY:

Regulatory agency comment resolution and revision of the Final Phase I RFI/RI Work Plan

PROBLEMS: None

OPEN ITEMS: None

3.12 SITEWIDE ACTIVITIES

DESCRIPTION:

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP environmental restoration activities in general. The activities include, but are not limited to, the Health and Safety Plan, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, Contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and groundwater monitoring.

SCOPE OF WORK CHANGES: None

TECHNICAL APPROACH CHANGES: None

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(1st submittal)	25 Nov 91

DECEMBER WORK ACTIVITY STATUS:

Plan for Prevention of Contaminant Dispersion (PPCD)

The Final PPCD and the RS was originally scheduled to be submitted November 21, 1991, the IAG milestone date. Upon agreement among the parties, the date was revised to November 25, 1991. The PPCD and RS were delivered to the regulatory agencies on November 25, 1991. A meeting was held December 5, 1991, with EPA and CDH to review the PPCD and the RS. Results of the meeting indicated revisions to the plans were necessary. Modifications to the RS are in progress. A revised submittal date of February 21, 1992, was agreed to by CDH for the Final PPCD and RS.

Discharge Limits for Radionuclides

The Discharge Limits for Radionuclides Work Plan completed the public comment period on November 21, 1991. DOE received public comments from the public, EPA, CDH, the City of Boulder, Colorado, the City of Westminster, the City of Broomfield, and the Rocky Flats Cleanup Commission on the Work Plan. A meeting was held December 20, 1991 among EPA, CDH, DOE and EG&G to review the public comments, and agree on appropriate comment responses that were received during the public comment period of September 24 to November 21, 1991. The next milestone date is January 30, 1992 for completion of the public response to comments and to submit the RS document.

Environmental Evaluations (EE)

Final Field Sampling Plans for OUs 1 and 2 were received for review and transmittal to the regulatory agencies. These may serve as technical memoranda for the EEs on OUs 1 and 2. Data analysis for vegetation surveys continued, as did preparation of specimens for tissue samples to be sent to analytical labs.

EG&G personnel participated in training in the Natural Resource Damage Assessment regulations put on by the Department of Interior at DOE's invitation. EG&G will be implementing these regulations (as an optional rule under CERCLA) in the course of work on the EEs for each OU.

The contractor's Technical Support Group met with representatives from Los Alamos National Laboratories (LANL) on December 10, 1991, to discuss Rocky Flats activities to date in completing CERCLA-regulated EEs. LANL was provided with guidance on the EE approach written into EE Work Plans, Field Sampling Plans and Ecology Standard Operating Procedures. Correspondence will be continued in the future.

A proposal to conduct radiological and inorganic analyses of biological samples was received. The technical evaluation of the proposal was completed immediately in order to secure a contract that could meet the 1991 analytical needs of the EE program. Approximately 200 biological samples collected this fall for OU 1, OU 2, and OU 5 EEs are ready to be shipped pending this contract.

The EE technical group has begun planning for 1992 and are working closely with OU managers to coordinate field activities on adjacent operable units scheduled to start fieldwork in 1992. IAG schedules for OU fieldwork will be examined to determine when budgets will be available. These schedules will then be compared to the ecological field activities that must begin in accordance to seasonal constraints.

Sitewide Treatability Study Program

Plutonium in Soils Treatability Studies Work Plans were delivered to EPA and CDH on December 2, 1991. The two Work Plans included in this document address Magnetic Separation and the TruClean process, two technologies selected for the treatability studies in the final Treatability Study Plan dated August 26, 1991.

Field Activities Drum Usage

Six hundred, 55-gallon, type 17C drums filled with drill cuttings from the current drilling projects are located in the buffer zone. Field drilling activities have been utilizing drums at the rate of approximately 60 drums per week.

Administrative Record File Delivery

Microfilming of the Sitewide Program and OU 4 files started November 12, 1991 and was completed on November 25, 1991. Verification of the microfiche for accuracy began and will continue through December. Delivery of the microfiche to the four repositories is scheduled for December 12, 1991.

Historical Release Report

A preliminary draft Historical Release Report (HRR) was reviewed by DOE and EG&G staff, and comments were completed on November 22, 1991. The comments are being incorporated into the HRR and the draft report is scheduled for delivery to EPA and CDH on January 8, 1992, the IAG milestone date.

Community Relations Meeting with Local Technical Review Group

The Technical Review Group (TRG) met with DOE staff and Contractor representatives on December 5, 1991 to receive information on DOE national prioritization. This meeting will lead to in-depth training for the TRG on the National Priorities List (NPL) weighing system and how Rocky Flats compares with other sites in the DOE complex.

Environmental Restoration Community Relations Plan Completed

DOE has completed the Final Community Relations Plan (CRP) for the Rocky Flats Plant Environmental Restoration Program. The CRP incorporates comments received during a public comment period on the document held in early 1991. An RS based on this public comment and describing how DOE responded to the full range of comments has also been completed. Both documents are available at the reading rooms.

In addition to integrating public comments into the CRP, DOE introduced a toll-free information line which provides meeting times and dates, in order to further assist in expanding public participation opportunities.

The CRP will be revised at least every two years or whenever a final remedial action is selected for an OU. This revision option enables the CRP to be tailored to the concerns of the communities surrounding RFP.

PLANNED WORK FOR JANUARY:

The Draft Historical Release Report, an IAG deliverable, will be completed and submitted to the regulatory agencies by January 8, 1992.

The Discharge Limits for Radionuclides Work Plan response to public comments and the Responsiveness Summary document, an IAG deliverable, will be completed and submitted to the regulatory agencies by January 30, 1992.

Work will continue on modifications to the PPCD and RS to meet the revised submittal date of February 21, 1992.

PROBLEMS: None

OPEN ITEMS: None

4.0 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 Monitoring and Assessment Division, 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.

SURFACE WATER AND SEDIMENTS:

Each of the Surface Water Stations (approximately 120 stations) are sampled monthly.

Each of the Sediment Stations (approximately 40 stations) are sampled quarterly.

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

CLP TCL VOAs	Major Anions
CLP TAL Metals	Radionuclides
plus Cesium	Field Parameters
Lithium	pH
Molybdenum	Temperature
Strontium	Specific Conductivity
Tin	Dissolved Oxygen (DO)
	Turbidity

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.

GROUNDWATER:

A total of 259 of the 371 total 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 groundwater sample is analyzed for CLP, TCL, VOAs, CLP, TAL, Metals, as well as the following parameters:

<u>Radiochemical Parameters</u>		<u>Inorganic Parameters</u>	<u>Field Parameters</u>
Gross Alpha	Tritium	Nitrate/Nitrite	Dissolved Oxygen (DO)
Gross Beta	Lithium	Total Phosphorous	Specific Conductivity
Plutonium	Uranium	Ortho-Phosphate	Temperature
Americium	Cesium	Ammonia	Turbidity
Strontium	Tin		pH
Molybdenum			

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5.0 CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the Rocky Flats Plant Environmental Restoration Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

OU	PROJECT	SUBCONTRACTOR	SUB-SUBCONTRACTOR	WORK DESCRIPTION	START DATE
1	Assessment	Ebasco	Dames & Moore Stoller Corp.	OU1 RFI/RI fieldwork (drilling, well development/ completion, sampling) and RI report	Apr-91
1	Remediation	Advance Tanks		Fabricate/Install effluent storage tanks for OU1 IRA	Oct-91
1	Remediation	Bruner		OU1 IRA ion exchange system	Feb-91
1	Remediation	E.T. LaFore		Installation of Phase II-A treatment system equipment for OU1 IRA	Jun-91
1	Remediation	Eng Sciences		Design Phase II-B French drain for OU1 881 Hillside IRA	Sep-90
1	Remediation	Jennison		Construct Phase II-B French drain at OU1 IRA	Aug-91
1	Remediation	P.S.I.		UV bench scale testing for volatile organics	Aug-91
2	Assessment	Woodward-Clyde		OU2 RFI/RI Work Plan (alluvial & bedrock) and RI fieldwork (drilling, well completion/development)	Sep-90
2	Assessment	Weston		OU2 RFI/RI Alluvial Work Plan	Nov-90
2	Remediation	Riedel Env. Svcs.		Fabricate/install/operate GAC/FTU system for South Walnut Creek Phase of OU2 IRA.	Apr-91
2	Remediation	Stearns Rogers		Performance Specification for chemical precipitation/ membrane/filtration system for South Walnut Creek Phase of OU2 IRA	Jun-91
2	Remediation	Weston		IRAP, EA, Risk Assessment, and Historical Assessment for Women Creek	Jun-91
2	Remediation	Woodward-Clyde		Conduct bench-scale tests on surface water	May-91
2	Remediation	TBD		Mfg/Install chemical precipitation/filtration unit for South Walnut Creek Phase of OU 2 IRA	Dec-91
3	Assessment	IT Corporation	CH2M Hill	OU3 RI Work Plan	Mar-91
3	Assessment	IT Corporation	CH2M Hill	Revegetate offsite lands	Jun-91
4	Assessment	IT Corporation	Applied Environ.	OU4 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Sep-91
4	Remediation	IT Corporation		Prepare OU4 IM/IRA Action Plan	Jul-90
5	Assessment	Woodward-Clyde		OU5 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Feb-90
6	Assessment	Woodward-Clyde		OU6 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Feb-90

OU	PROJECT	SUBCONTRACTOR	SUB- SUBCONTRACTOR	WORK DESCRIPTION	START DATE
7	Assessment	IT Corporation	Stoller Corp.	OU7 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Apr-90
9	Assessment	IT Corporation		OU9 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	Mar-90
10	Assessment	Ebasco		OU10 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	TBD
11	Assessment	IT Corporation		OU11 RFI/RI Work Plan including Environmental Evaluation Plan and Quality Assurance Addendum	TBD
SW	Hist. Rel. Rep.	IT Corporation	Doty & Assoc.	Prepare Historical Release Report	Feb-91
SW	PCB Assess.	Ebasco	Stoller Corp.	Prepare PCB Assessment Report	Jan-92
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct-90
SW	Geolog. Char.	ASI		Geologic Characterization, Data Base, and graphics	Feb-90
SW	Monitoring	Ebasco		Analytical Services for groundwater, surface water, and sediment	Dec-90
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul-90
SW	Fld. Oversight	Ebasco	Stoller Corp.	ER field operations oversight	Oct-90
SW	Treatability	Ebasco		Sitewide treatability studies - Pu contaminated soils	Apr-90
SW	Treatability	Woodward-Clyde		Technical evaluation of sitewide treatability studies	Jul-90
SW	PPCD	Ebasco		Plan for Prevention of Contaminant Dispersion	Jun-90
SW	QA	Ebasco	SAIC	Develop and implement quality assurance program and field operations oversight	Dec-90
PM	Support	Ebasco	Stoller Corp.	Program Management Support	Feb-90