

Final

Meeting Minutes Transmittal/Approval
Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
740 Stevens Center, Room 1200, Richland, Washington
April 28, 1993

FROM/APPROVAL: *Eric D. Goller* Date 5/26/93
Eric D. Goller, 100 Area Unit Manager, RL (A5-19)

APPROVAL: *Jack W. Donnelly* Date 5/26/93
Jack W. Donnelly, 100 Aggregate Area Unit Manager, WA Department of Ecology

APPROVAL: *Dennis Faulk* Date 5-26-93
Dennis Faulk, 100 Aggregate Area Unit Manager, EPA (B5-01)

Meeting Minutes are attached. Minutes are comprised of the following:

- Attachment #1 - Meeting Summary
- Attachment #2 - Attendance Sheet
- Attachment #3 - Agenda
- Attachment #4 - Action Item Status List
- Attachment #5 - DSIs Transmitting Validated Data
- Attachment #6 - 100 Area Operable Units Summary April 1993
- Attachment #7 - Proposal for Co-Disposal Treatability Test
- Attachment #8 - TPA Milestone M-30-05
- Attachment #9 - 100 Area Treatability Tests Summary and Schedule
- Attachment #10 - Focused Groundwater Sampling in the 100 Area

Prepared by: *Kay Kimmel* Date: 5/26/93
Suzanne Clarke, Kay Kimmel, GSSC (A4-35)

Concurrence by: *Bob Henckel* Date: 5/26/93
Bob Henckel, WHC Coordinator (H6-02)



93129410062

**Attachment #1
Meeting and Summary of Commitments and Agreements**

**Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
April 28, 1993**

- 9 3 1 2 9 1 1 0 0 3 5
1. **SIGNING OF THE MARCH 100 AREA UNIT MANAGER'S MEETING MINUTES** - Minutes were reviewed and approved with no changes.
 2. **ACTION ITEM UPDATE:** (See Attachment 4 for complete status, items listed below indicate the update to Action Items made during the meeting):
 - 1AAMS.9 No additional information.
 - 1AAMS.15 No additional information.
 - 1AAMS.16 No additional information.
 3. **NEW ACTION ITEMS:** No new action items were initiated this month.
 4. **INFORMAL TRANSMITTALS:** The following documents were informally transmitted to the Regulators:
 - Validated data (see attachment #5 for the transmittal letters):
 - *Data Validation Report for the 100-KR-1 Operable Unit Effluent Trench, rev. 0*
 - *Data Validation Report for the 100-KR-1 Operable Unit Effluent Crib, rev. 0*
 - *Data Validation Report for the 100-KR-1 Operable Unit Non-Intrusive Samples, rev. 0*
 - *Data Validation Report for the 100-KR-1 Operable Unit Retention Basin, rev. 0*
 - *Data Validation Report for the 100-DR-1 Operable Unit Sodium Dichromate Tanks, rev. 0*
 - *Data Validation Report for the 100-DR-1 Operable Unit Underwater Test Facility, rev. 0*
 - *Data Validation Report for the 100-DR-1 Operable Unit 108-D Office Building, rev. 0*
 - *Data Validation Report for the 100-NR-1 Operable Unit Soil Samples, rev. 0*
 - Sampling depth data on 100-KR-1 and 100-DR-1 were provided by Naik Naiknimbalkar.
 - Investigation Derived Waste logs.
 5. **100 AREA ACTIVITIES:**
 - Attachment #6 was provided for general information on the 100 Areas Operable Units.
 - Co-Disposal - Jim Fields presented the concept of co-disposal of wastes (see attachment #7) as a potential treatability test, with many possible applications, which could reduce or consolidate the amount of waste. Steve Phillips provided slides of some of the equipment currently available on the site as well as some equipment being purchased. He noted that this particular waste minimization concept is DOE complex wide.

- Milestone 30-05 - Robert E. Peterson presented an update of activities being performed to fulfill the M-30-05 Milestone (see attachment #8). A data acquisition plan has been completed and is currently in WHC review clearance process. Eric Goller agreed to a Regulator/RL concurrent review.
- Treatability Study Status: Joan Woolard discussed the status of the 100-Area Treatability Studies (see attachment #9).
- Preliminary Bench-Scale Treatability Test Results: Jim Field presented very preliminary results from bench-scale tests performed at PNL to support the treatability tests. A schedule of planned activities is included in Attachment #9.
- 100-HR-3 Groundwater Treatability Test: Jim Duncan presented the results of initial biodenitrification bench-scale treatability tests.
- Revised Sampling and Analysis Strategy for 100-HR-3 and 100-BC-5: Steve Vukelich provided the proposed reduced analyte list for the various 100 areas (see Attachment #10). Additional text will be provided to RL, EPA and Ecology concerning the flowchart provided in the handout. A meeting is tentatively scheduled for Thursday May 6, 1993 in the afternoon to discuss the reduced analyte lists.
- 100 Area Feasibility Study: Fred Roeck provided the status of the revised FS.

6. AGREEMENTS:

- Verbal agreement was provided by Larry Gadbois of EPA that the waste container storage area be moved to a fenced area. The Waste Control Plan will be revised to reflect this change and available for signature by Unit Managers at the May UMM.

9 3 1 2 9 3 1 0 0 5 4

100 Aggregate Area Unit Manager's Meeting
 Official Attendance Record
 April 28, 1993

Please print clearly and use black ink

| PRINTED NAME | ORGANIZATION | O.U. ROLE | TELEPHONE |
|-----------------|-----------------|-------------------------------|----------------|
| KAY KIMMEL | DANES & MOORE | GSSC to RL | 376-1985 |
| Suzanne Clarke | Danes & Moore | GSSC to RL | 376-8189 |
| Eric Goller | RL | 100 Area Unit Mgr | 376-7326 |
| Ted Woolley | Ecology | UM | 736-3012 |
| JOAN WOOLARD | WHC | Treatability Studies | 376-2539 |
| Diana Sickle | WHC | ER Program | 376-3141 |
| Brian Foley | DOE-RL | 100-NR-1/100-NR-2 | 376-7087 |
| Chuck Cline | Ecology | O.U. Mgr. Hydrogen Support | (206) 438-7556 |
| Larry Gadbois | EPA | O.U. manager | 376-9884 |
| Pamela Innis | EPA | O.U. Manager | 376-4919 |
| Ellen Dagan | DOE-RL | Waste m ⁿ | 376-3811 |
| Brian Frost | USGS | EPA Support | 206-593-6510 |
| Alan D. Krug | WHC | 100NR-1 | 376-5634 |
| Sandra Stubecki | PRC | EPA Support | (206) 624-2692 |
| Jim Field | WHC | Treatability Studies | 376-3753 |
| STEVE VUKELICH | WHC | 100HR-3 | 376-5158 |
| Dennis Faulk | EPA | unit Manager | 6-8631 |
| Paul Beaver | EPA | UM | 6-8665 |
| Bob Peterson | WHC-GeoSciences | M-30-05/graduate | 376-5858 |
| DAVID MYERS | IT CORP | LF1 Support | 943-6728 |
| Tom Jones | PNL | RR program man | 375-2710 |
| RP HENCKEL | WHC | 100 AREA | 509 376-2091 |
| JB DUNCAN | WHC | 100 Area | 509-372-0896 |

**Attachment #3
Agenda**

**Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
April 28, 1993**

100 Area General Discussions

- **Co-disposal - Steve Phillips/Jim Field**
- **M-30-05 - Robert E. Peterson**
- **Treatability Studies**
 - **100-HR-1 Excavation Treatability Study - Joan Woolard**
 - **Soil Washing Treatability Study - Jim Field**
 - **100-HR-3 Treatability Study - Jim Duncan**
 - **GW Operable Unit Contaminants - Steve Vukelich**

**Operable Unit Status - Questions - Naiknimbalkar/Ayres/
Krug/Vukelich/Roberts/Kytola**

Action Item Status

9 3 1 2 9 4 1 0 0 6 6

Attachment #4

**Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
April 28, 1993**

Action Item Status List

| ITEM NO. | ACTION | STATUS |
|----------|---|---|
| 1AAMS.9 | DOE shall send a letter to Ecology, suggested from S. H. Wisness to D. Jansen with a cc. to EPA, explaining what is included in the ER Program for the N Reactor Area and how the multiple programs will be handled organizationally. Action to J. D. Goodenough (2/27/92). Action: E. D. Goller (5/27/92). | Open. Related to the N Areas Issues Papers. No answer 7/29/92. No additional information (8/26/92). On General Topics Agenda for October (9/23/92). No new information (4/28/93). |
| 1AAMS.15 | Provide response to April 2 EPA letter concerning river seeps. Action: Eric Goller (RL) 7/29/92. | Open (7/29/92). In DOE for transmittal (8/26/92). No additional information (4/28/93). |
| 1AAMS.16 | DOE should transmit Revision 1 of M-30-01. | Open (7/29/92). In DOE for transmittal (8/26/92). No additional information (4/28/93). |

93129410067

DON'T SAY IT --- Write It!

DATE: April 28, 1993

TO: Jack Donnelly, Ecology Kennewick FROM: Eric Goller, RL A5-19
 Paul Beaver, EPA B5-01
 Telephone: 376-7326

cc: Jim Patterson, WHC H6-27 (w/o atts.)
 Bob Henckel, WHC H6-02 (w/o atts.)
 Alan Krug, WHC H6-02 (w/o atts.)
 Bob Scheck, D&M G1-01 (w/o atts.)
 Kay Kimmel, D&M G1-01 (w/o atts.)

SUBJECT: 100-DR-1 OU LFI SOURCE INVESTIGATION VALIDATED DATA

Attached please find three documents reporting validated data summaries from the 100-DR-1 OU LFI source investigations. The three document titles and WHC identification numbers are:

1. WHC-SD-EN-TI-143 Data Validation Report for the 100-DR-1 Operable Unit Sodium Dichromate Tanks, rev. 0.
2. WHC-SD-EN-TI-144 Data Validation Report for the 100-DR-1 Operable Unit 1724-DA Underwater Test Facility, rev. 0.
3. WHC-SD-EN-TI-146 Data Validation Report for the 100-DR-1 Operable Unit 108-D Office Building, rev. 0

Please feel free to contact me with any comments or questions regarding these documents. In addition, comments or questions regarding the technical elements of these documents can be directed to Bob Henckel (376-2091) or Alan Krug (376-5634).

93129410068

DON'T SAY IT --- Write It!

DATE: April 28, 1993

| | | | |
|----------------------------|-----------|-----------------------|-------|
| TO: Jack Donnelly, Ecology | Kennewick | FROM: Eric Goller, RL | A5-19 |
| Larry Gadbois, EPA | B5-01 | Telephone: 376-7326 | |

cc: Jim Patterson, WHC H6-27 (w/o atts.)
 Bob Henckel, WHC H6-02 (w/o atts.)
 Alan Krug, WHC H6-02 (w/o atts.)
 Bob Scheck, D&M G1-01
 Kay Kimmel, D&M G1-01 (w/o atts.)

SUBJECT: 100-KR-1 OU LFI SOURCE INVESTIGATION VALIDATED DATA

Attached please find four documents reporting validated data summaries from the 100-KR-1 OU LFI source unit and vadose zone investigations. The four document titles and WHC identification numbers are:

1. WHC-SD-EN-TI-148 Data Validation Report for the 100-KR-1 Operable Unit Effluent Trench, rev. 0.
2. WHC-SD-EN-TI-149 Data Validation Report for the 100-KR-1 Operable Unit Effluent Crib, rev. 0.
3. WHC-SD-EN-TI-150 Data Validation Report for the 100-KR-1 Operable Unit Non-Intrusive Samples, rev. 0.
4. WHC-SD-EN-TI-151 Data Validation Report for the 100-KR-1 Operable Unit Retention Basin, rev. 0.

Please feel free to contact me with any comments or questions regarding these documents. In addition, comments or questions regarding the technical elements of these documents can be directed to Bob Henckel (376-2091) or Alan Krug (376-5634).

93139410069

DON'T SAY IT --- *Write It!*

DATE: April 28, 1993

TO: Pamela Innis, EPA
Jack Donnelly, Ecology
Steve Cross, Ecology

B5-01
Kennewick
Lacey

FROM: Bryan L. Foley A5-19

Telephone: 376-7087

CC: Jim Patterson, H6-27 (w/o atts.)
Bob Henckel, WHC H6-02 (w/o atts.)
Steve Vukelich, WHC H6-02 (w/o atts.)
Alan Krug, WHC H6-02 (w/o atts.)
Bob Scheck, D&M G1-01 (w/o atts.)

SUBJECT: Transmittal of Validated Sampling Data for the 100-NR-2 OU

Attached please find the data validation report for the 100-NR-2 Operable Unit Soil Samples (WHC-SD-EN-TI-140).

Please contact me if you have any questions, concerns or comments regarding this data report. Please note that I have assumed responsibility as the DOE-RL lead for both 100-NR-1 and 100-NR-2 operable units from Eric Goller. I am assigned to the Environmental Remediation Branch of DOE-RL's Environmental Restoration Division. I look forward to working with you in our continuing joint efforts to restore the Hanford Site.

93129410070

UNIT MANAGER'S MEETING

100 Area Operable Units Summary April 1993

9312210071

100-BC-1 SOURCE OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 11 - QUALITATIVE RISK ASSESSMENT

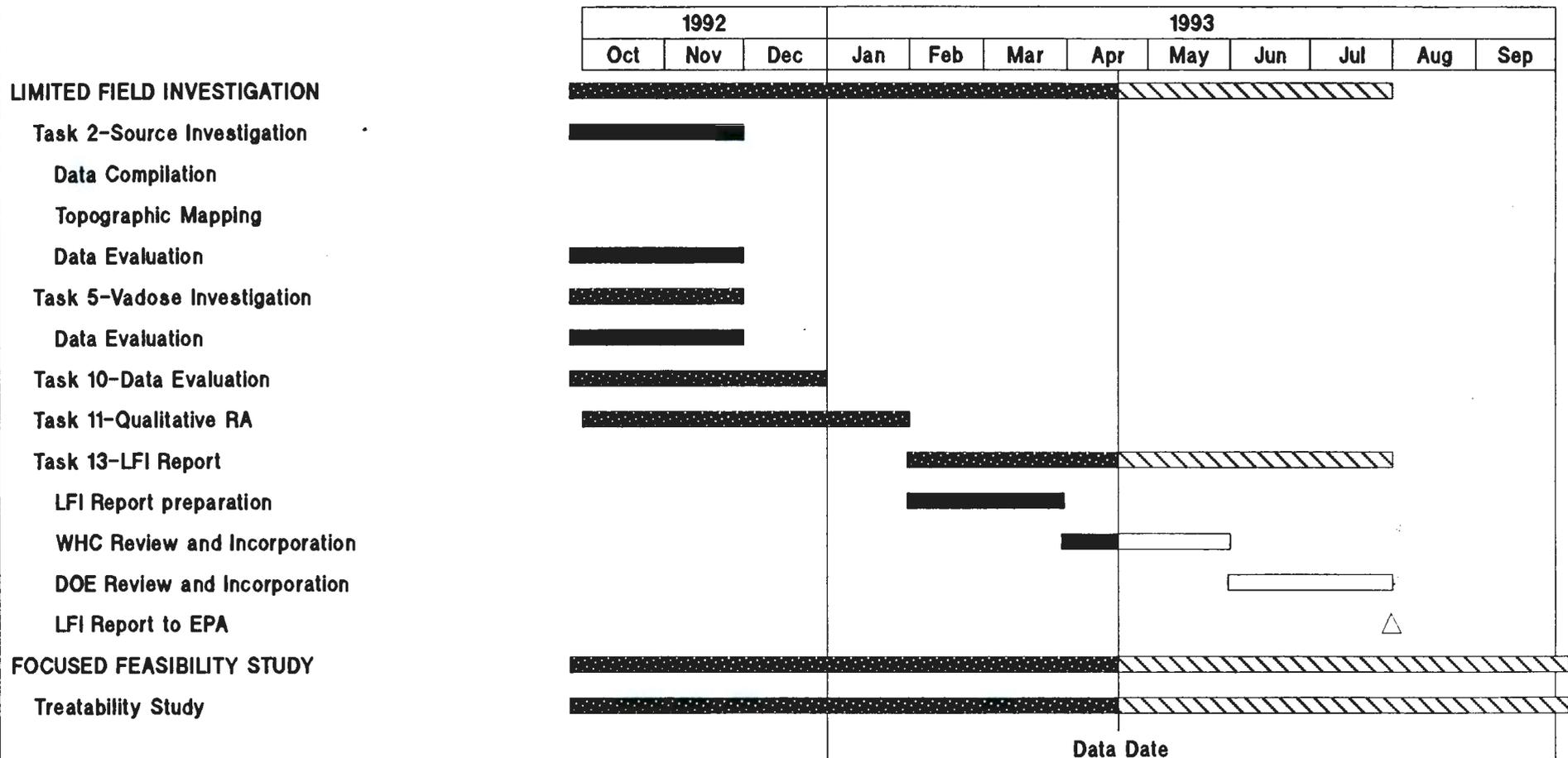
The report is being reviewed by DOE/RL-HQ and comments are due back on April 23, 1993.

TASK 13 - LIMITED FIELD INVESTIGATION REPORT

The report has gone through internal WHC review and comments are being incorporated. Submittal of the document for DOE/RL review is anticipated to be at the end of May 1993.

2
7
0
0
1
6
1
9
9
3

100-BC-1 OPERABLE UNIT



Data Date
19 Apr 93

| | | |
|----------------------------------|--|---------------------|
| Project: 100-BC-1 | DOE-RL 90-07, Rev 0 | Date: 19Apr93 15:32 |
| 100-BC-1 Operable Unit Work Plan | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

Summary

Progress

100-BC-5 GROUNDWATER OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 6 - GROUNDWATER INVESTIGATIONS

Groundwater Soil Samples:

Validation report for drilling sample data submitted December 31, 1992.

First Quarter Monitoring:

Sampling, analysis and validation is complete.
Validation report submitted December 31, 1992.

Second Quarter Monitoring:

Sampling complete.
Validation report submitted April 14, 1993.

Third Quarter Monitoring:

Sampling complete.

Fourth Quarter Monitoring:

Sampling in progress.

TASK 13 - LIMITED FIELD INVESTIGATION REPORT

Activities are in progress. Document is in Westinghouse internal review.

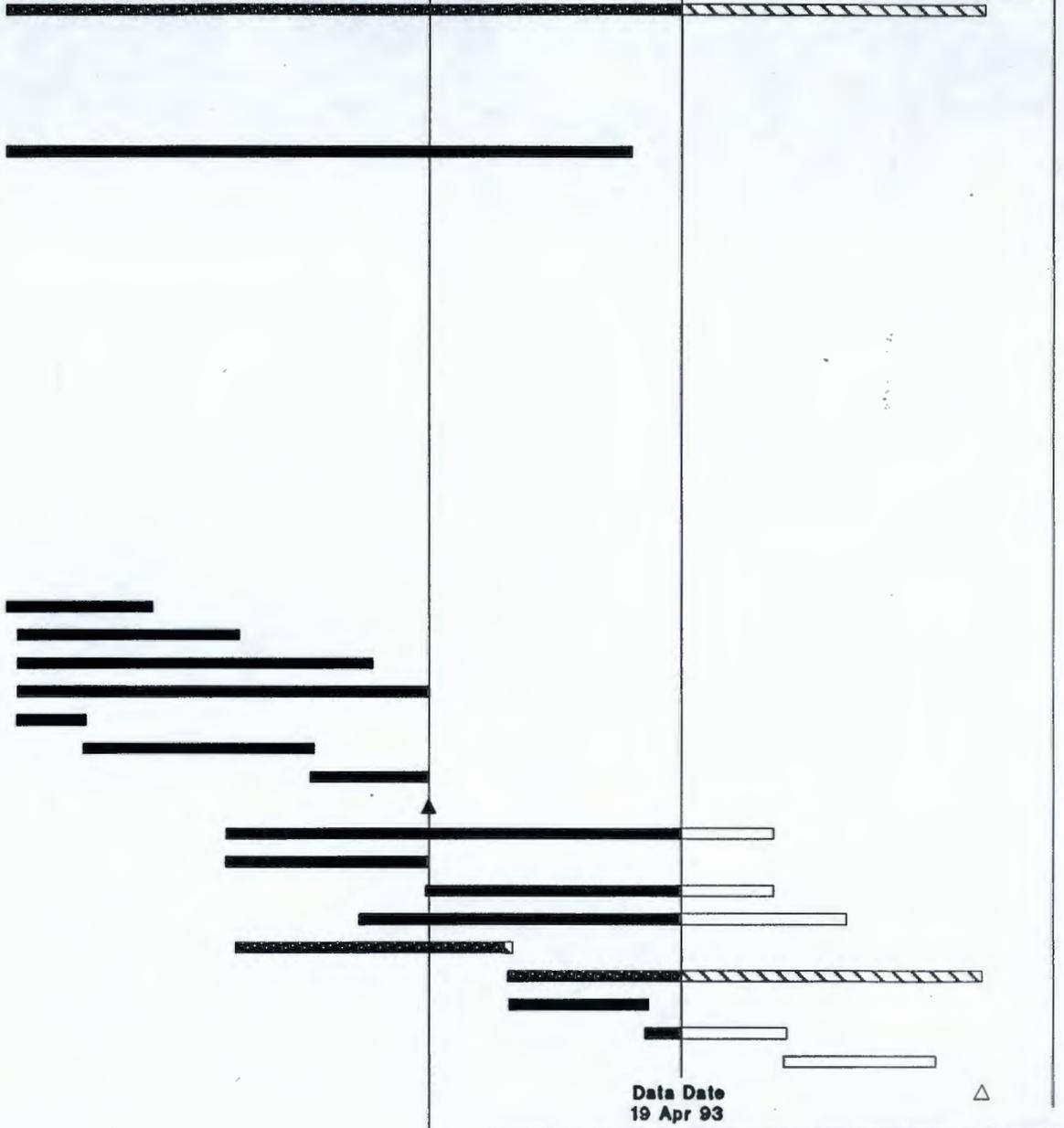
9313010074

100-BC-5 OPERABLE UNIT

| 1992 | | | | | | 1993 | | | | | | | | |
|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |

LIMITED FIELD INVESTIGATION

- Task 3-Geologic Investigation Complete
- Data Compilation Complete
- Task 5-Vadose Investigations Complete
- Data Compilation Complete
- Task 6-Groundwater Investigations
- Data Compilation Complete
- Field Activities Complete
- Evaluate Existing Wells Complete
- Well Installation Complete
- Well BC-1 199-B3-46 Complete
- Well BC-2 199-B3-47 Complete
- Well BC-2A 199-B2-12 Complete
- Well BC-3 199-B2-13 Complete
- Well BC-4 199-B4-8 Complete
- Well BC-5 199-B4-9 Complete
- Well BC-6 199-B9-2 Complete
- Well BC-7 199-B9-3 Complete
- Well BC-8 199-B8-6 Complete
- Well BC-9 199-B5-2 Complete
- Groundwater Soil Samples Complete
- Laboratory Analysis
- Data Validation
- Data Evaluation
- 1st Quarterly Monitoring
- Groundwater sampling
- Laboratory Analysis
- Data Validation
- Validated Data to Regulators Dec 1992
- 2nd Quarterly Monitoring
- Groundwater Sampling
- Laboratory Analysis
- Data Evaluation
- Task 11-Qualitative RA
- Task 13-LFI Report
- LFI Report Preparation
- WHC Review & Incorporation
- DOE Review & Incorporation
- LFI Report To Regulators



Data Date
19 Apr 93

Project: 100-BC-5 DOE-RL 90-08, REV 0 Date: 19Apr93 10:08

100-BC-5 Operable Unit Work Plan

Page: 1 Drawn by ER Program Control-Scheduling

Summary Task Progress
Detail Task Milestone

100-DR-1 SOURCE OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 2 - SOURCE INVESTIGATION

Data Validation:

Data validation reports for the Sodium Dichromate Tanks and the 1724-DA Underwater Test Facility are being submitted to DOE-RL/Regulators.

TASK 11 - QUALITATIVE RISK ASSESSMENT

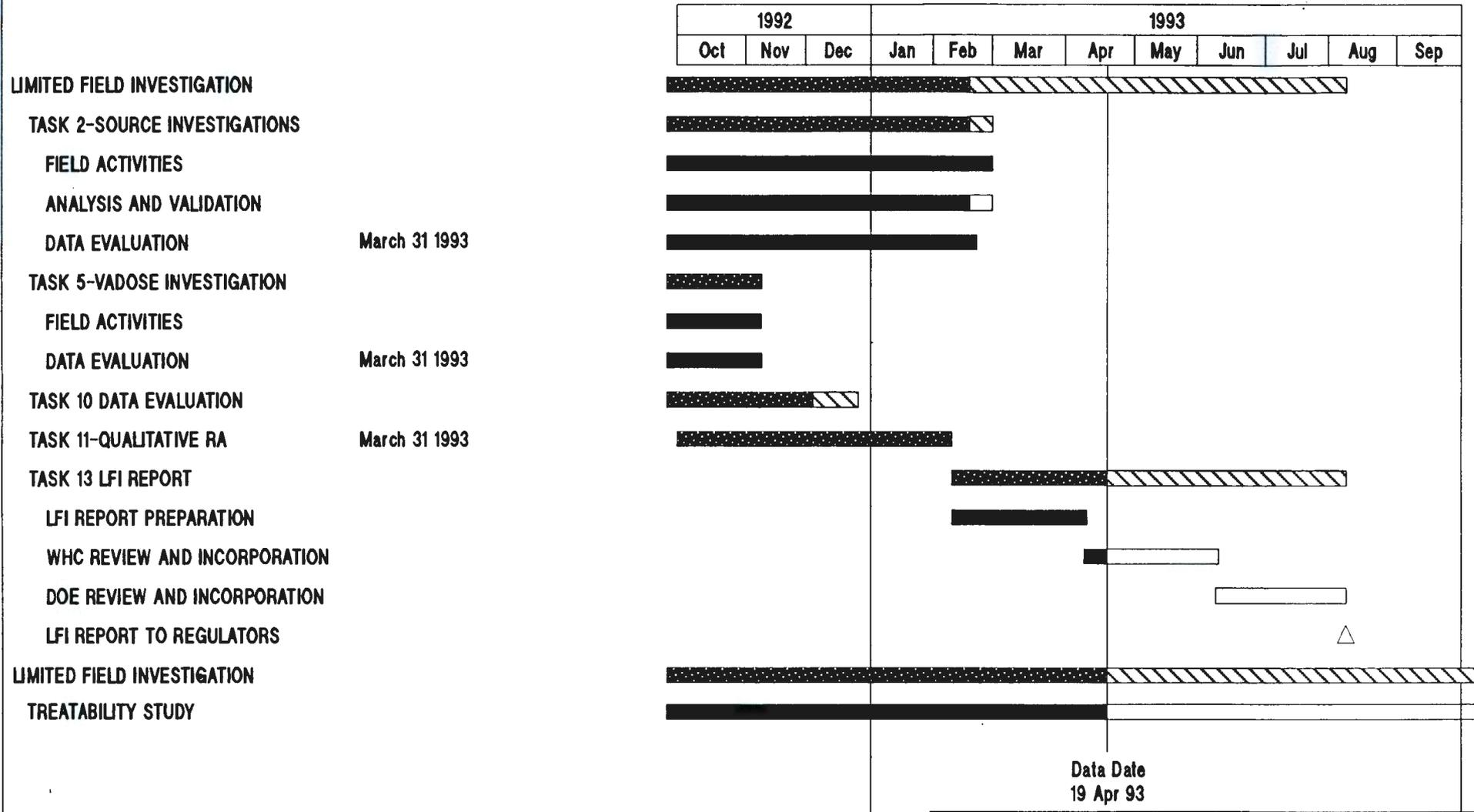
SAIC/Golder has prepared the report. It was received by WHC on March 31, 1993 and is in the process of being released through the Westinghouse Document Control System.

TASK 13 - LIMITED FIELD INVESTIGATION REPORT

IT Corporation is preparing the document. It is on schedule and due August 9, 1993.

93122410076

100-DR-1 OPERABLE UNIT



Summary 
 Progress 

Data Date
19 Apr 93

| | | |
|----------------------------------|--|---------------------|
| Project: 100-DR-1 | DOE-RL 89-09, Rev 0 | Date: 19Apr93 11:26 |
| 100-DR-1 Operable Unit Work Plan | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

100-FR-1 SOURCE OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 5 - VADOSE INVESTIGATION

Drilling/Excavation and Sampling:

Excavation for four test pits (116-F-1B, 116-F-1C, 116-F-3, and 116-F-9D) is scheduled to begin on April 19, 1993. The 116-F-3 Fuel Storage Basin Trench will be excavated last because the potential for contaminating the backhoe is the greatest.

93129410078

100-FR-1 OPERABLE UNIT

LIMITED FIELD INVESTIGATION

Task 2-Source Investigation

Data Compilation

Topographic Mapping

Field Activities

Source Sampling

132-F-1 Chronic Feeding Barn

Sample Analysis

Data Validation

Data Evaluation

Task 5-Vadose Investigation

Field Activities

Mobilization

Drilling/Excavation and Sampling

116-F-6 Liquid Waste Disposal Trench

116-F-3 Fuel Storage (Test Pit)

116-F-1A Lewis Canal

116-F-1B Lewis Canal (Test Pit)

116-F-1C Lewis Canal (Test Pit)

116-F-14 Retention Basin

116-F-2 Basin Overflow Trench

108-F French Drain (Hand Sample)

116-F-9C Animal Waste Trench (BH)

116-F-9D (Test Pit)

116-F-4 Pluto Crib (BH)

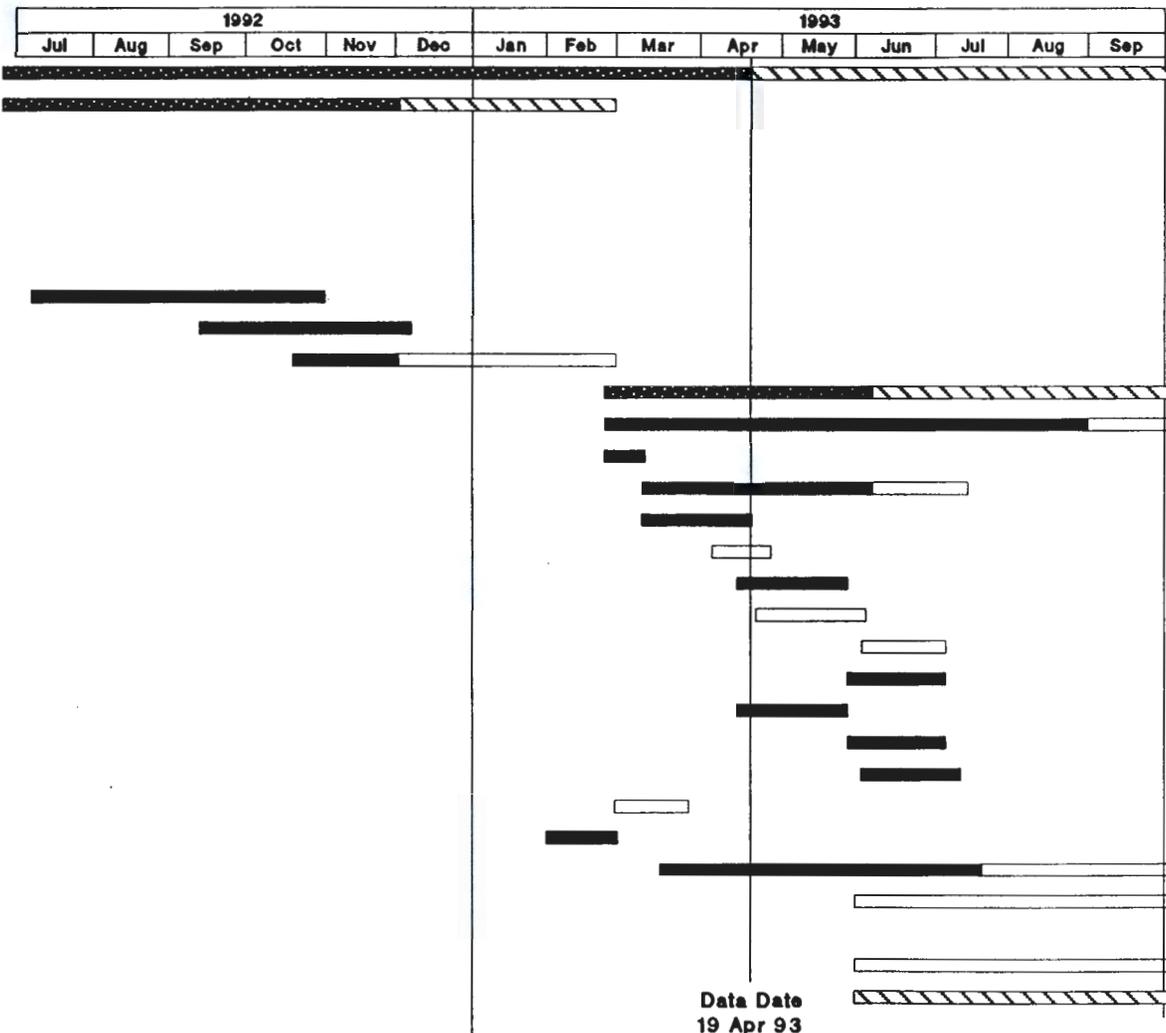
Sample Analysis

Data Validation

Validated Data to Regulators Nov 1993

Data Evaluation

Task 10-Data Evaluation



Data Date
19 Apr 93

Summary
 Progress

| | | |
|----------------------------------|--|---------------------|
| Project: 100-FR-1 | DOE-RL 90-33, REV 0 | Date: 19Apr93 11:29 |
| 100-FR-1 OPERABLE UNIT WORK PLAN | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

100-FR-3 GROUNDWATER OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 6 - GROUNDWATER INVESTIGATION

Groundwater Soil Samples:

Validation report for drilling sample data submitted March 12, 1993.

First Quarter Monitoring:

Sampling is complete.

Second Quarter Monitoring:

Sampling complete.

9312041080

9 3 1 2 9 4 1 0 0 3 1

100-FR-3 OPERABLE UNIT

| 1992 | | | | | | 1993 | | | | | | | | |
|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |

LIMITED FIELD INVESTIGATION

Task 3-Geological Investigation Complete
 Data Compilation Complete
 Task 5-Vadose Investigation Complete
 Data Compilation Complete

Task 6-Groundwater Investigation Complete
 Data Compilation Complete

Field Activities

Evaluate Existing Wells

Well Installation

Well F3-1 199-F6-1

Well F3-2 199-F5-42

Well F3-3 199-F5-43A

Well F3-3A 199-F5-43B

Well F3-4 199-F5-44

Well F3-5 199-F1-2

Well F3-6 199-F5-45

Well F3-7 199-F5-48

Well F3-8 199-F5-47

Well F3-9 199-F8-3

Well F3-11 199-F5-46

Well F3-12 199-F7-3

Well F3-13 199-F8-4

Groundwater/Soil Samples

Laboratory Analysis

Data Validation

1st Quarterly Monitoring

Groundwater Sampling

Laboratory Analysis/Validation

Validated Data to Regulators

2nd Quarterly Monitoring

Groundwater Sampling

Laboratory Analysis/Validation

Data Evaluation

Task 10-Data Evaluation

June 14, 1993

Data Date
19 Apr 93

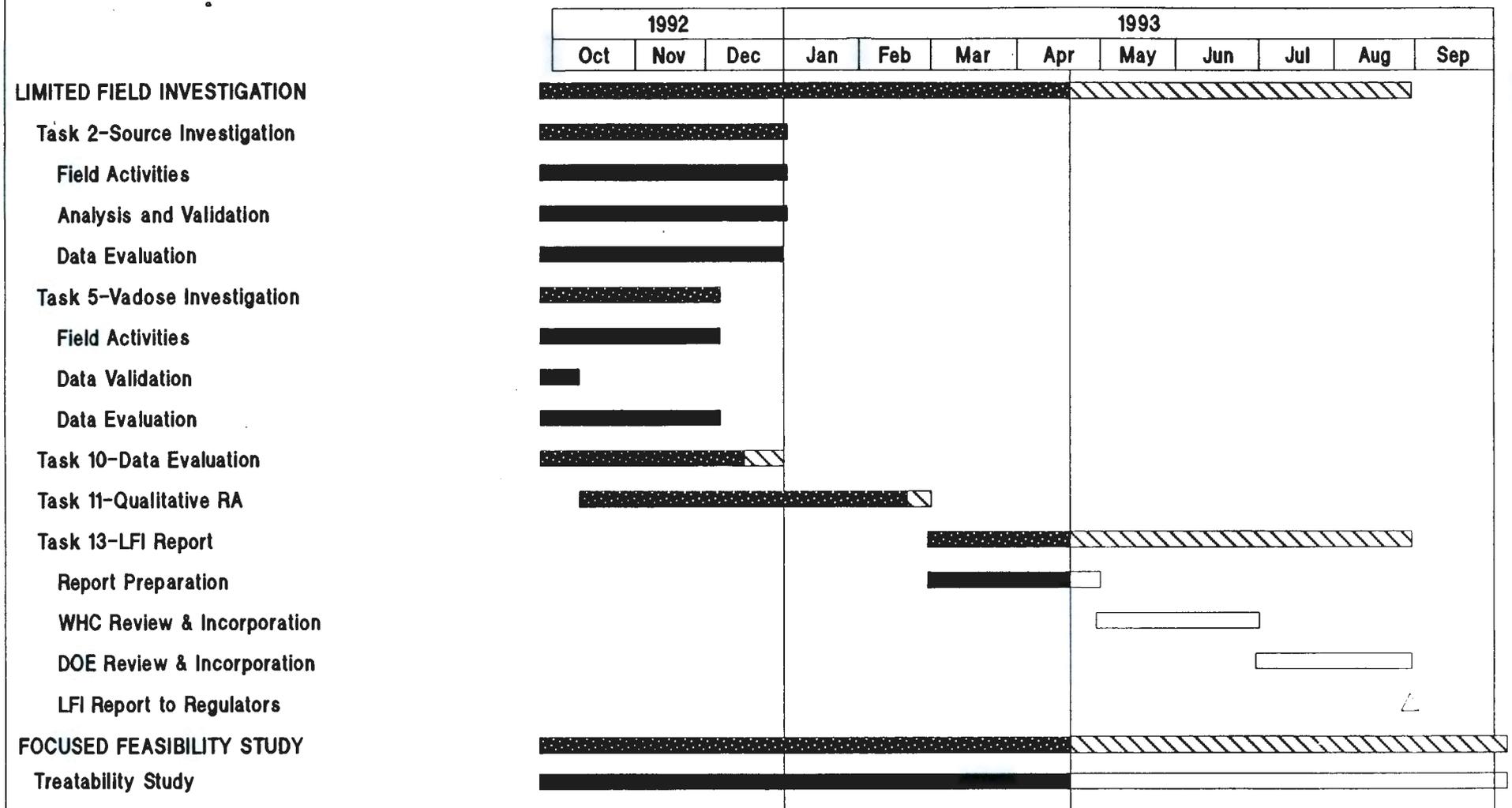
Summary Task  Progress 
 Detail Task  Milestone 

| | | |
|----------------------------------|--|---------------------|
| Project: 100-FR-3 | DOE-RL 01-53, REV 0 | Date: 19Apr93 14:09 |
| 100-FR-3 OPERABLE UNIT WORK PLAN | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

#6/Page 11 of 22

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100-HR-1 OPERABLE UNIT



Data Date
19 Apr 93

| | | |
|-------------------|---------------------|---------------------|
| Project: 100-HR-1 | DOE-RL 88-35, Rev 0 | Date: 19Apr93 10:11 |
|-------------------|---------------------|---------------------|

100-HR-1 Operable Unit Work Plan

| | |
|---------|--|
| Page: 1 | Drawn by ER Program Control-Scheduling |
|---------|--|

Summary

Progress

#6/Page 12 of 22

100-HR-3 GROUNDWATER OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 6 - GROUNDWATER INVESTIGATION

Quarterly Monitoring:

Four rounds of groundwater samples have been taken. The fifth round is scheduled for May 1993.

Data Validation:

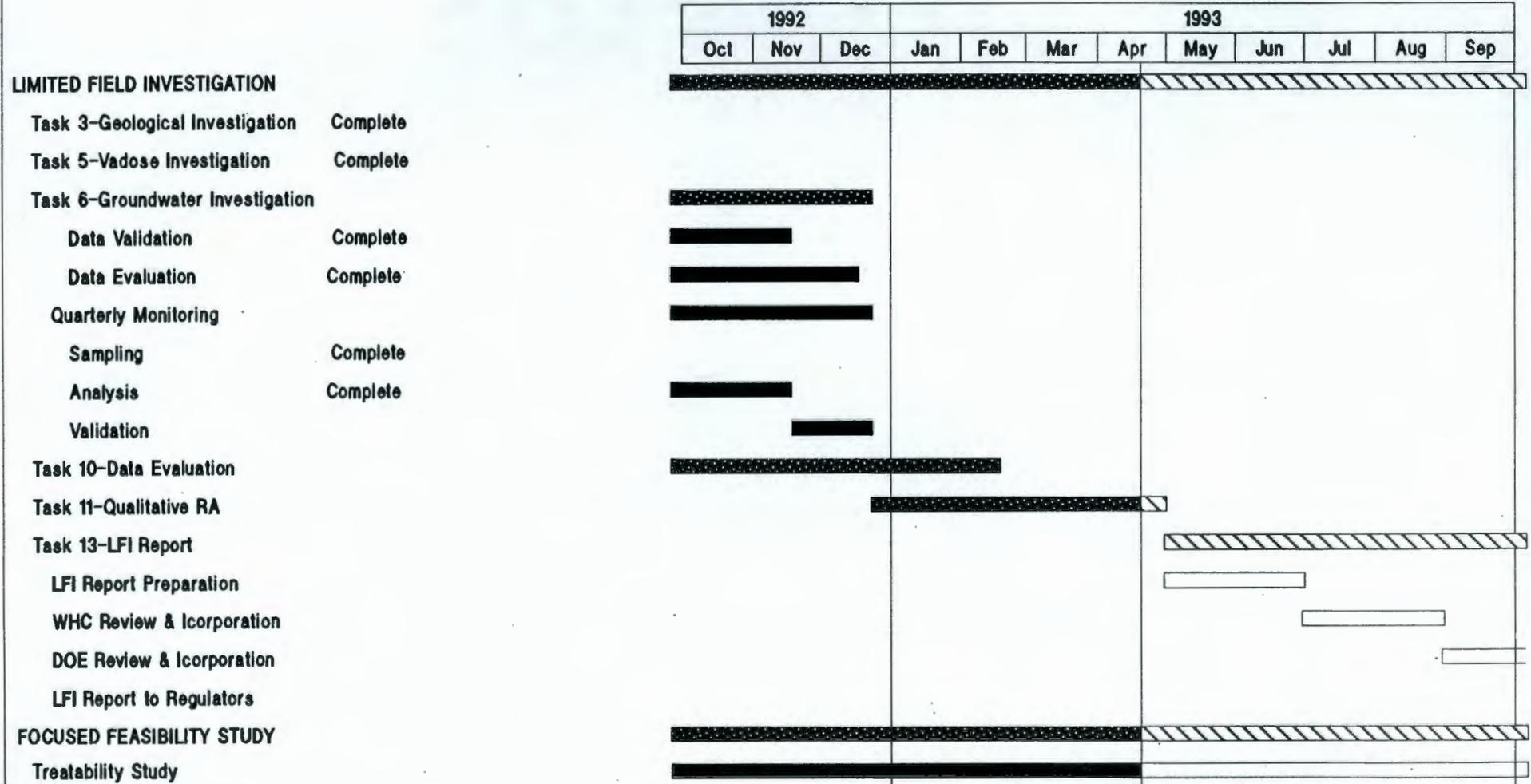
First and second round groundwater data have been validated. The third round is being validated.

TASK 13 - LIMITED FIELD INVESTIGATION REPORT

The report is in progress and is scheduled for release in August, 1993.

93127410083

100-HR-3 OPERABLE UNIT



Data Date
19 Apr 93

Project: 100-HR-3 DOE-RL 88-36, Rev 0 Date: 19Apr93 9:00

100-HR-3 Operable Unit Work Plan

Page: 1 Drawn by ER Program Control-Scheduling

Summary 

Progress 

100-KR-1 SOURCE OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 5 - VADOSE INVESTIGATION

Drilling/Excavation/Sampling:

Four vadose boreholes and four test pits were completed ahead of schedule in the October/November 1992 time frame.

Sample Analysis:

Completed in March 1993 (ahead of schedule).

Data Validation:

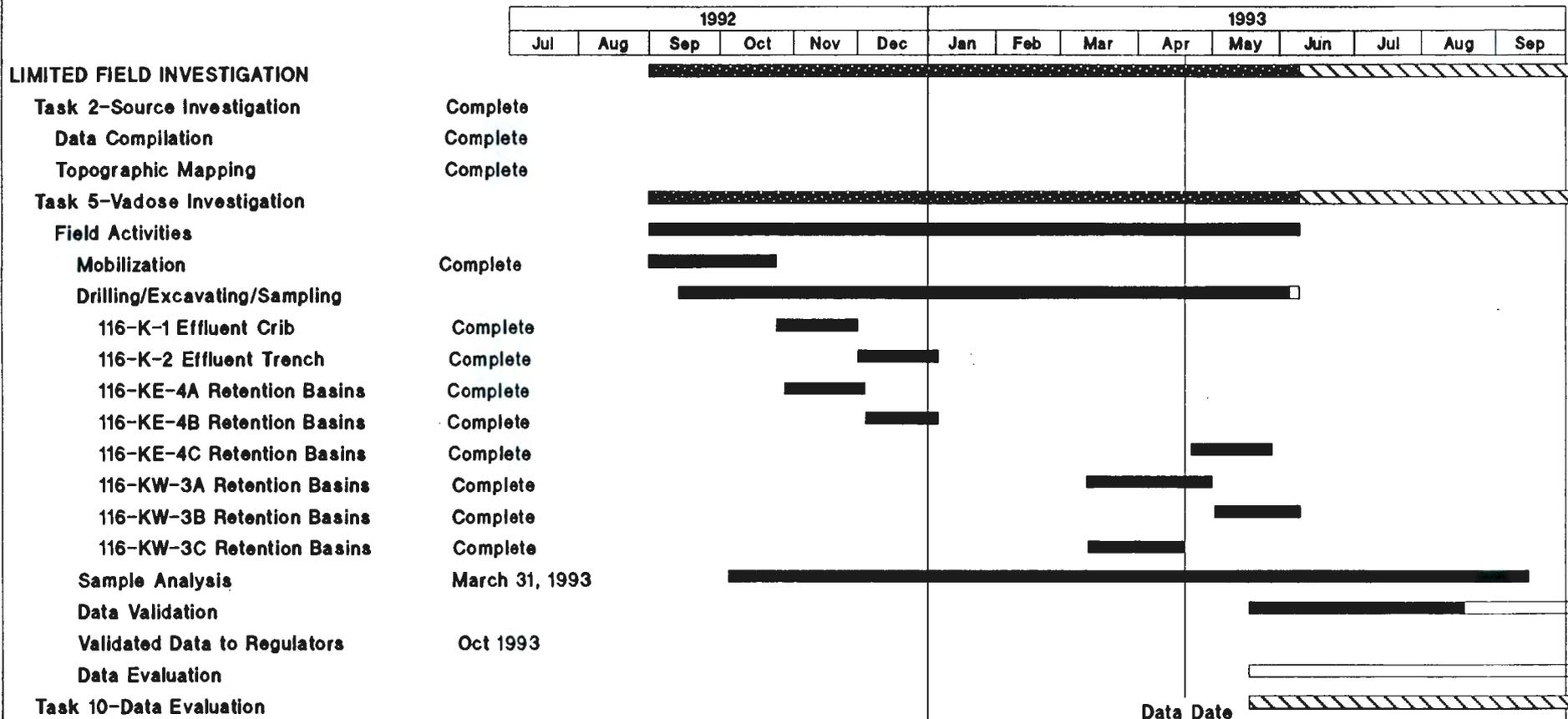
Scheduled for completion in May 1993 (ahead of schedule).

Validated Data to Regulators:

Scheduled for a June 1993 delivery (ahead of schedule).

93123410085

100-KR-1 OPERABLE UNIT



Summary
 Progress

Data Date
19 Apr 93

| | | |
|---|--|--------------------|
| Project: 100-KR-1 | DOE-RL 90-20, REV 0 | Date: 19Apr93 9:11 |
| 100-KR-1 OPERABLE UNIT WORK PLAN | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

100-KR-4 GROUNDWATER OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 6 - GROUNDWATER INVESTIGATION

Groundwater Soil Samples:

Validation report for drilling sample data submitted March 12, 1993.

First Quarter Monitoring:

Sampling, analysis and validation is complete.
Validation report submitted March 12, 1993.

Second Quarter Monitoring:

Sampling complete.

Third Quarter Monitoring:

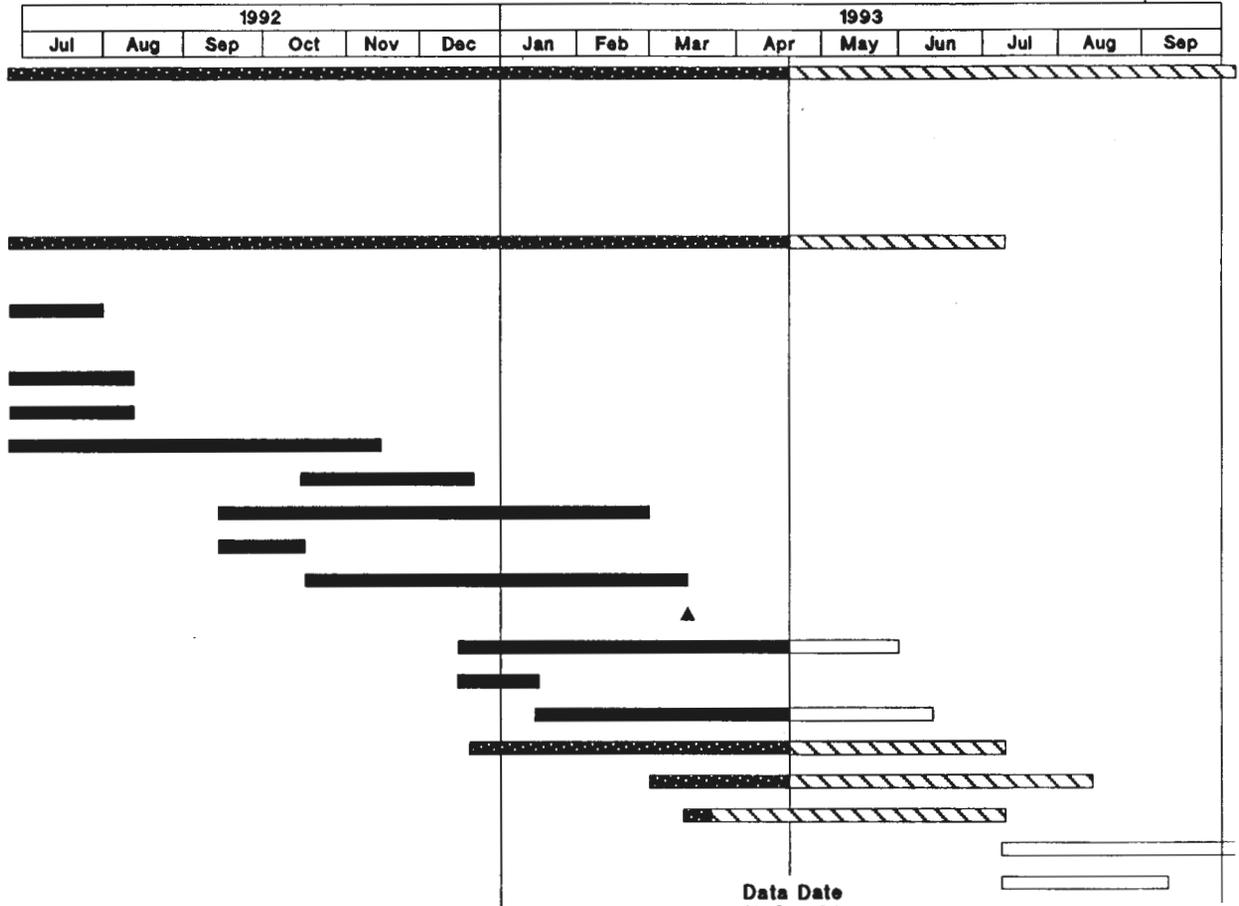
Sampling complete.

9 8 1 2 9 4 1 0 0 8 7

100-KR-4 OPERABLE UNIT

LIMITED FIELD INVESTIGATION

- Task 3-Geological Investigation Complete
- Data Compilation Complete
- Task 5-Vadose Investigation Complete
- Data Compilation Complete
- Task 6-Groundwater Investigation
- Data Compilation Complete
- Field Activities
- Evaluate Existing Wells Complete
- WELL INSTALLATION
- Groundwater/Soil Samples
- Laboratory Analysis
- Data Validation
- 1st Quarterly Monitoring
- Groundwater Sampling
- Laboratory Analysis/Validation
- Validated Data to Regulators March 12, 1993
- 2nd Quarterly Monitoring
- Groundwater Sampling
- Laboratory Analysis/Validation
- Data Evaluation
- Task 10-Data Evaluation
- Task 11 -Qualitative RA
- Task 13-LFI Report
- LFI Report Preparation



Summary
 Progress

Data Date
19 Apr 93

| | | |
|----------------------------------|--|---------------------|
| Project: 100-KR-4 | DOE-RL 90-21, REV 0 | Date: 19Apr93 15:47 |
| 100-KR-4 OPERABLE UNIT WORK PLAN | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

100-NR-1 SOURCE OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 5 - VADOSE INVESTIGATION

Drilling/Sampling:

The Description of Work for taking surface samples at 1322-N/NA and 116-N-2 was approved and the sampling was conducted on April 7, and 8, 1993.

Data Evaluation:

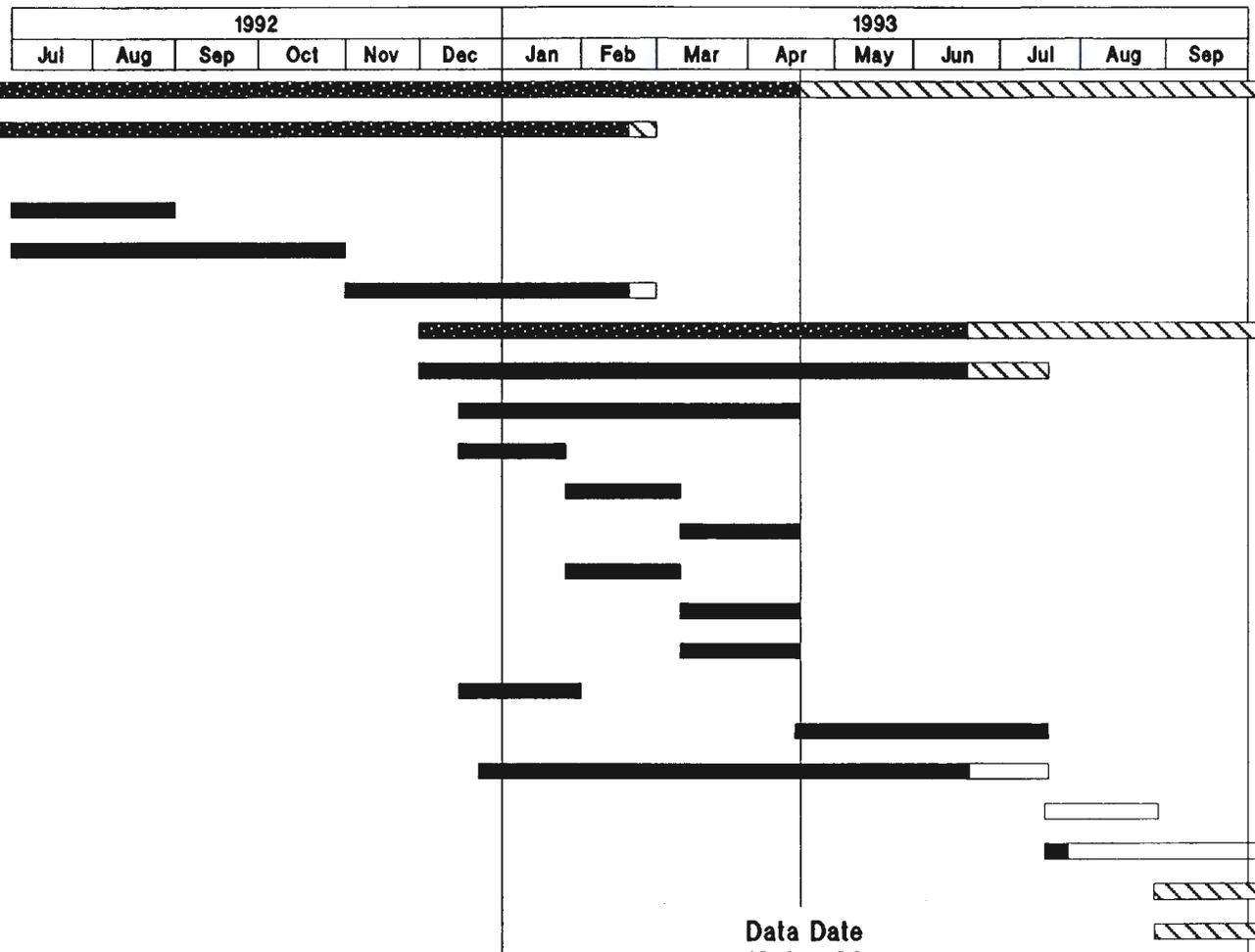
A task order was issued to IT Corporation to initiate data evaluation.

68001702136

100-NR-1 OPERABLE UNIT

LIMITED FIELD INVESTIGATION

- Task 2- Source Investigation
 - Data Compilation
 - Surface Radiation
 - Soil Gas Survey
- Data Evaluation
- Task 5-Vadose Investigation
 - Field Activities
 - Drilling/Sampling
 - 120-N-2
 - 119-N
 - 1322-N
 - Settling Pond
 - 166-N
 - 116-N-2
 - Test Pit 120-N-1
 - Borehole Abandonment
 - Sample Analysis
 - Data Validation
 - Data Evaluation
- Task 10-Data Evaluation
- Task 11-Qualitative RA



Data Date
19 Apr 93

Summary

Progress

| | | |
|----------------------------------|--|--------------------|
| Project: 100-NR-1 | DOE-RL | Date: 19Apr93 9:58 |
| 100-NR-1 OPERABLE UNIT WORK PLAN | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

100 NR-2 GROUNDWATER OPERABLE UNIT
WORK SUMMARY
April 19, 1993

TASK 6 - GROUNDWATER INVESTIGATION

Quarterly Monitoring:

Two rounds of groundwater samples have been taken. The third round is scheduled for May 1993.

Data Validation:

The soil data has been validated.

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100-NR-2 OPERABLE UNIT

LIMITED FIELD INVESTIGATION

Task 3-Geological Investigation

Data Compilation

Task 5-Vadose Investigation

Data Compilation

Task 6-Groundwater Investigation

Data Compilation

Field Activities

Well Siting

Well Installation

Well N-1

Water Level Measurement

Air Monitoring

Groundwater/Soil Samples

Laboratory Analysis

Data Validation

Data Evaluation

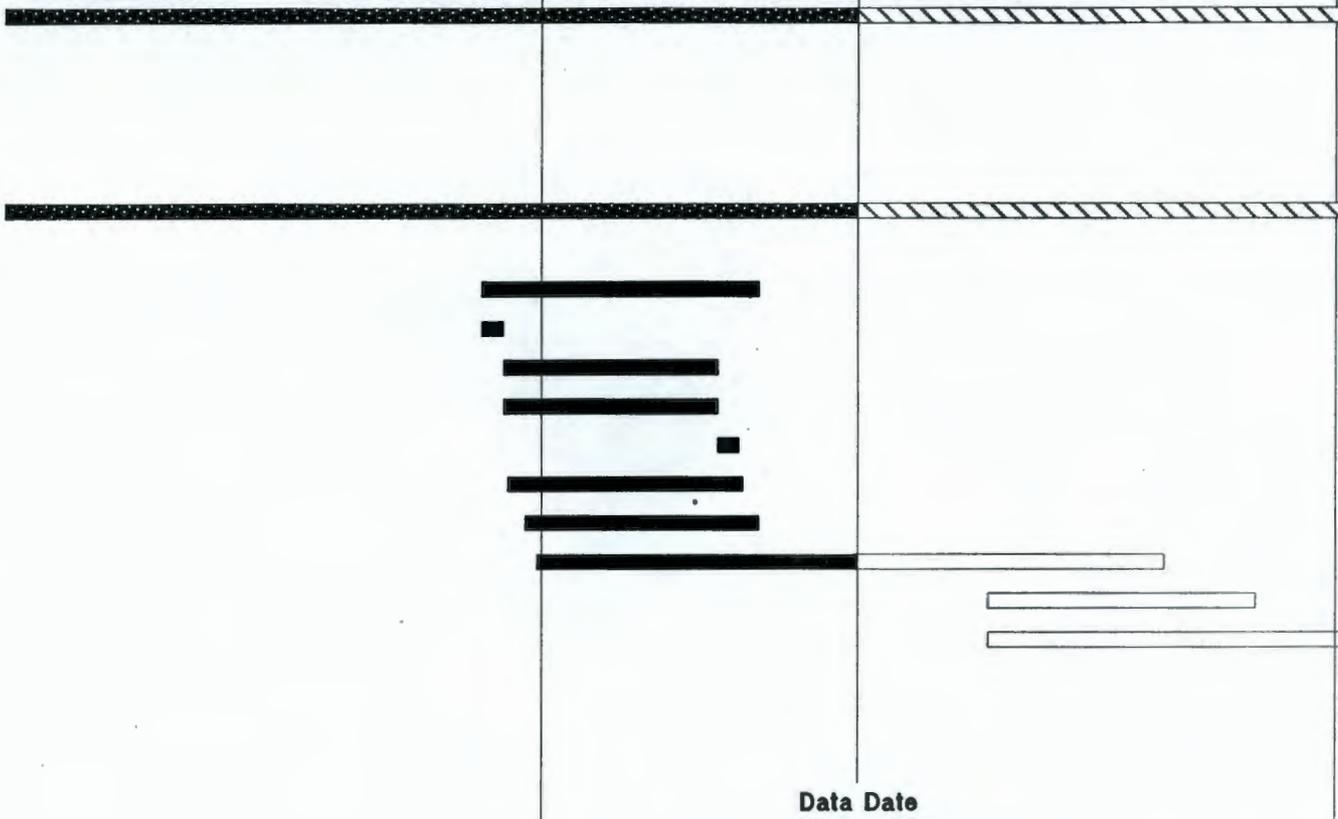
Task 11-Qualitative RA

Task 13-LFI Report

FOCUSED FEASIBILITY STUDY

IRM PROPOSED PLAN

| 1992 | | | | | | 1993 | | | | | | | | |
|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |



Data Date
19 Apr 93

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| Project: 100-NR-2 | DOE-RL | Date: 19Apr93 8:12 |
| 100-NR-2 OPERABLE UNIT WORK PLAN | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

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| Summary |  |
| Progress |  |

9 3 1 2 9 4 1 0 0 9 3

PROPOSAL FOR CO-DISPOSAL TREATABILITY TEST

PRESENTED BY

**WESTINGHOUSE HANFORD COMPANY
ENVIRONMENTAL RESTORATION ENGINEERING**

APRIL 1993

WHAT IS CO-DISPOSAL ?

A BENEFICIAL USE SOLIDIFICATION/STABILIZATION PROCESS WHEREIN WASTE MATERIALS ARE USED TO CREATE A CEMENT OR POLYMER TO STABILIZE OTHER WASTE.

EXAMPLES:

CEMENT/POLYMER (WASTE ROCK)*

Contaminated soils
 Soil wash fines/process water
 Basin sludge
 Purgewater
 Waste site leachate
 Groundwater

APPLICATIONS

Mixed waste landfill (ER)
 Mixed waste landfill (W-025)
 Insitu Stabilization of waste sites
 Grout Curtains
 Barriers

* Soil particles or rocks < 0.5 inch are probably best for waste rock.

APPLICABILITY TO 100 AREA TREATABILITY PROGRAM

Solidification/Stabilization (eg. Cement, Polymer, Bitumin) is one of the recommended near term studies in the treatability program plan because:

- **Solidification may be required for soils or sludges containing toxic metals in excess of land disposal restrictions.**
- **Solidification processes may be used to stabilize other waste.**
- **Soil washing, fines may need to be stabilized.**
- **Solidification studies will contribute to grout injection studies for the 100 and or 200 Areas.**

Co-Disposal is a means to beneficially stabilize waste sites using waste material generated in the 100 Area, it is feasible whether land disposal restricted materials are present or not, and it meets requirements for solidification/stabilization tests identified in the treatability program plan.

EXAMPLE TREATABILITY TEST:

CONDUCT FIELD SCALE TEST USING CLEAN SOILS AND LABORATORY "WASTE FORM QUALIFICATION" TEST.

Field SCALE TEST:

- **OBJECTIVE: Demonstrate system operations of a mobile mixing plant.**

- **USE CLEAN SOIL WASH FINES AND CLEAN WATER. FROM SOIL WASHING SET UP TEST.**
- **MOBILE MIXING EQUIPMENT ALREADY ONSITE**

LABORATORY TEST:

- **OBJECTIVE:** Test potential waste materials to develop qualifying cement and/or polymer mixtures for stabilization.

- **Example Waste Samples to Qualify**

| | |
|-------------------------|-------------|
| 100-DR-1 soils | Purgewater |
| 100-FR-1 soils | Clean Water |
| 300-FF-1 soils | |
| 200-BP-1 drill cuttings | |

- **Waste rock mixtures will be developed and tested for combinations of the above soils**
- **Example Tests to Meet Waste Disposal Requirements**
 - Compressive Strength (to determine loading strength)
 - Paint Filter (for residual liquids)
 - Hydraulic Conductivity (permeability tests)
 - Wet/Dry Cycling (to assess potential degradation)
 - TCLP (if needed)

POTENTIAL OPERABLE UNIT TREATABILITY TESTS

100-HR-2

100-DR-2

100-BC-2

STATUS OF M-30-05 ACTIVITIES

EPA Comments on DOE/RL-92-64 (M-30-04)

- Additional analyses completed per comments
- Comment responses in transmittal process

Field Equipment Installations

- Continued operations at 100-B, 100-H, and 100-F Areas; conductivity probe at 100-H
- Obtained hourly data from temporary arrays at 100-K (February) and 100-D (April); 100-F Area planned for May
- Two permanent stations transferred from 300 Area to 100-K, in support of K-East Basin project and 100-KR-4 characterization

STATUS OF M-30-05 ACTIVITIES Cont.

Data Acquisition Plan for Aquifer/River Interaction

- **Draft Plan covers three areas: Water level measurements, shoreline seepage, and shoreline water quality**
- **Satisfies need for documenting M-30-05 activities regarding "Installation of field equipment" and "Initiation of monitoring activities"**
- **Currently undergoing internal review**

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100 AREA TREATABILITY STUDY STATUS - 4/28/93

100 Area Soil Washing Treatability Test Status - PNL has completed TCLP extraction tests and preliminary characterization measurements on bulk soils from each of the test pits in the 100-BC-1 and 100-DR-1 Operable Units. TCLP extracts and bulk soil samples have been sent to the laboratory for analyses. PNL is finishing up pH and specific gravity measurements and will be measuring ion exchange capacity. Wet sieve tests are scheduled to start the week of April 26, 1993. Some preliminary test results will be presented at the unit managers meeting.

100-HR-3 Groundwater Treatability Test Status -

- Precipitation/Ion Exchange - The laboratory set up has been completed for the precipitation part of the treatability study. All the necessary apparatus is in the laboratory. The test solutions have been formulated and received. Actual testing with ferric sulfate and sodium sulfide should commence next week.

The ion exchange columns are being fabricated at the 200 Area glass shop. The ion exchange resins are on site.

- Bionitrification - The carbon ratio tests have been completed. The results indicate that denitrification has been achieved to less than 1ppm, well below the performance level of 45ppm. The next series will be with composite samples for pH testing.

100-HR-1 Excavation Treatability Test Status - Test plan comment resolution meeting was held April 12, 1993. All comments were resolved with exception of Ecology's comments 2, 16, and 19.

- Details were discussed with Ecology and DOE on April 20, 1993, and April 21, 1993.
- A meeting has been scheduled for April 27, 1993, to finalize the comment resolutions.

Project continues on schedule, based on following assumptions:

- Excavation at 116-F-4.
- Contaminated soil stored on-site for future treatability test, or until ROD.
- Completion of field activities signifies meeting the milestone.

NOTE: Changes to assumptions may impact schedule.

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100-AREA TREATABILITY TESTS

| 1992 | | | | 1993 | | | | | | | |
|------|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |



Data Date
19 Apr 93

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| Project: 100-Area RI/FS Activities | | Date: 19Apr93 12:32 |
| 100-AREA DRAFT TREATABILITY TESTS | | |
| Page: 1 | Drawn by ER Program Control-Scheduling | |

| | |
|----------|--|
| Summary | |
| Progress | |

9 3 1 2 9 4 1 0 1 0 3

FOCUSED GROUNDWATER SAMPLING IN THE 100 AREA

By: Steven E. Vukelich
James W. Roberts
David A. Myers

April 28, 1993

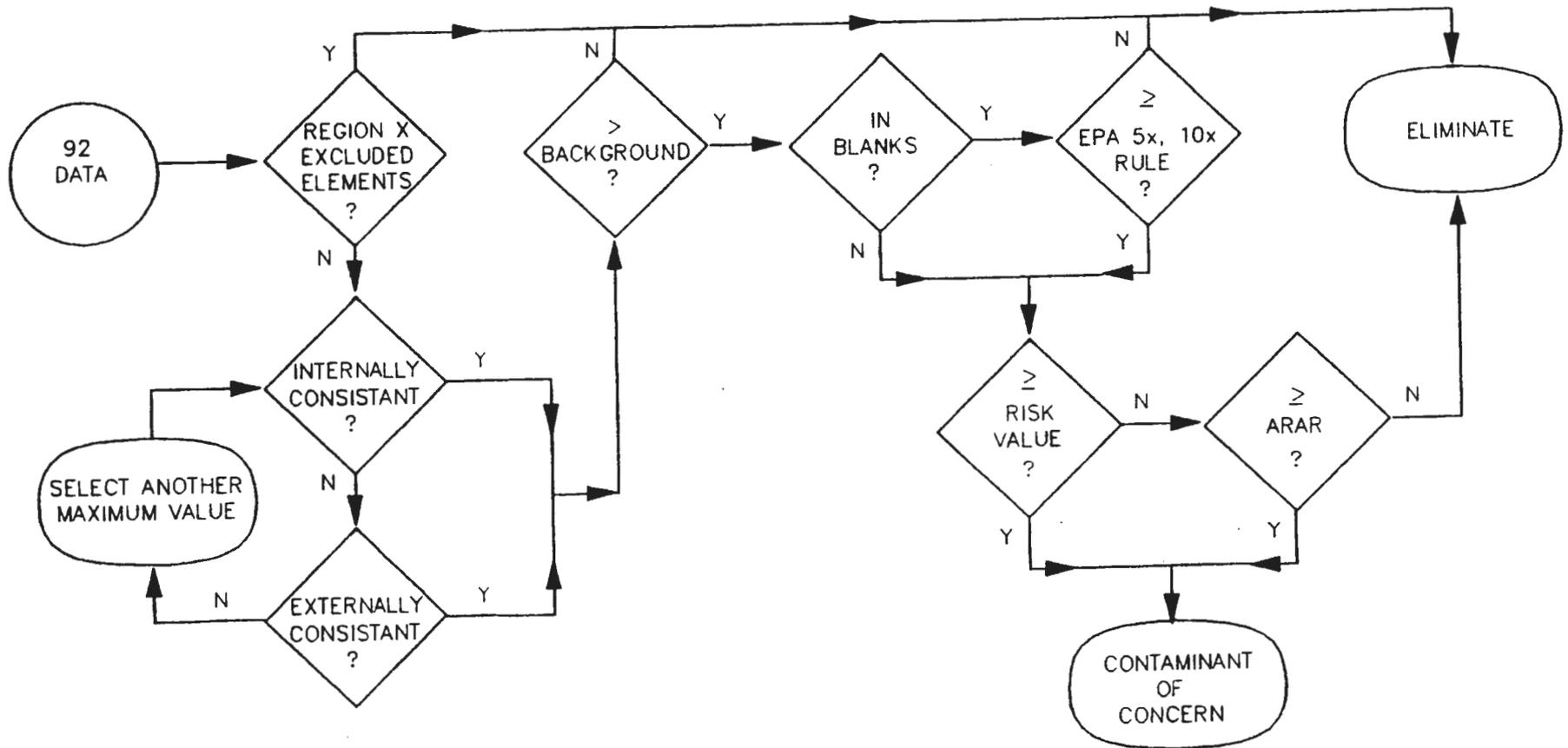
FUTURE SAMPLING SHOULD FOCUS ON IDENTIFIED CONTAMINANTS

- This Presentation:
 - Shows how contaminants are identified
 - Identifies contaminants
 - Proposes revised sample lists

SIX QUESTIONS TO IDENTIFY CONTAMINANTS

- Are analytical results consistent?
- Is the analyte toxic?
- Is the analyte a background constituent?
- Is the analyte a laboratory contaminant?
- Does the analyte pose a risk?
- Does the analyte exceed any ARAR?

CONTAMINANT IDENTIFICATION FLOW CHART



FOUR CONTAMINANTS IN THE 100 D AREA

- Chromium
- Nitrogen (Nitrates/Nitrites)
- Strontium-90
- Tritium

PROPOSED D AREA SAMPLE LIST

- Metals
- Nitrogen (Nitrates/Nitrites)
- Gross Alpha/Beta
- Strontium-90
- Tritium

FIVE CONTAMINANTS IN THE 100 H AREA

- Chromium
- Nitrogen (Nitrates/Nitrites)
- Strontium-90
- Technetium-99
- Uranium-235/238

PROPOSED H AREA SAMPLE LIST

- Metals
- Nitrogen (Nitrates/Nitrites)
- Gross Alpha/Beta
- Strontium-90
- Technetium-99
- Uranium-235/238

ONE CONTAMINANT IN THE 600 AREA

- Chromium

PROPOSED 600 AREA SAMPLE LIST

- Metals
- Nitrogen (Nitrates/Nitrites)
- Gross Alpha/Beta
- Tritium

THREE CONTAMINANTS IN THE 100 BC AREA

- Strontium-90
- Technetium-99
- Tritium

PROPOSED BC AREA SAMPLE LIST

- Metals
- Gross Alpha/Beta
- Strontium-90
- Technetium-99
- Tritium

Distribution
Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
April 28, 1993

| | |
|---|--|
| Roger D. Freeberg /Julie K. Erickson /Eric Goller | DOE-RL, ERD (A5-19) |
| Mike Thompson | DOE-RL, EAP/RPB (A5-19) |
| Diane Clark | DOE-RL, TSD/SSB (A5-55) |
| Heather Trumble | DOE-RL, OTD/FTB (A6-55) |
| Steve Balone | DOE-HQ (EM-442) |
| | |
| Dennis Faulk | 100 Aggregate Area Manager, EPA (B5-01) |
| Ward Staubitz, USGS | Support to EPA |
| Audree DeAngeles, PRC | Support to EPA |
| | |
| Jack Donnelly | 100 Aggregate Area Manager, WDOE (Kennewick) |
| Larry Goldstein | WDOE (Lacey) |
| | |
| Lynn Albin | Washington Dept. of Health |
| | |
| Tom Wintczak, WHC | Program Manager (H6-27) |
| Mel Adams, WHC /A.D. Krug, WHC (H6-02) | (H6-01) |
| Bob Henckel, WHC | (H6-02) |
| L.D. Arnold, WHC | (B2-35) |
| Diana Sickel, WHC | (H6-27) |
| Chris Widrig, PNL (Please route to:) | (K1-21) |
| Wayne Martin, PNL | (K1-19) |
| Mark Hanson, PNL | (K1-51) |
| Roy Gephart, PNL | (K1-22) |
| Steve Slate, PNL | (K1-19) |
| Joan Keller, PNL | (K1-21) |
| Ben Johnson, PNL | (K1-78) |

Original Sent to: ADMINISTRATIVE RECORD: 100 AAMS; Care of EDMC, WHC (H6-08)

Please inform Suzanne Clarke (376-8189) or Kay Kimmel (376-1985) of Mactec/Dames & Moore of deletions or additions to the distribution list.

93129410115