

START

February 12, 1990

Meeting Minutes Transmittal/Approval

Unit Managers Meeting: General Topics

450 Hills Street, Room 47

January 24, 1990

From/ Appvl. *John J. Broderick* Date: 2/14/90
 John J. Broderick, Unit Manager, DOE-RL

Appvl.: *Paul T. Day* Date: 2/14/90
 Paul T. Day, Unit Manager, EPA

Appvl.: *Larry Goldstein* Date: FEB 14, 1990
 Larry Goldstein, Unit Manager, Washington Department of Ecology

To: Distribution

The purpose of this meeting was to discuss general topics which are common to all operable units.

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

- Attachment #1 - Meeting Summary/Summary of Commitments and Agreements;
- Attachment #2 - Agenda for the meeting;
- Attachment #3 - Attendance List;
- Attachment #4 - Action Items Status List;
- Attachment #5 - Handouts from Procedures/Lessons Learned
- Attachment #6 - Revised Integrated Schedule
- Attachment #7 - Technology Development at PNL
- Attachment #8 - Status of Performance Assessment
- Attachment #9 - Status of Background Development
- Attachment #10 - Status of HEIS

Distribution:

Doug Sherwood, EPA
 Dave Einan, EPA
 R.D. Wojtasek, WHC
 Ward Staubitz, USGS
 Chuck Cline, WDOE
 Mike Thompson, DOE-RL
 Bob Stewart, DOE-RL
 Paul Pak, DOE-RL
 Donna Lacombe, PRC

CC:

R.D. Freeberg, DOE-RL
 R.D. Izatt, DOE-RL
 R.E. Gerton, DOE-RL
 S.H. Wisness, DOE-RL
 D.L. Clark, DOE-RL
 J.D. Goodenough, DOE-RL



ADMINISTRATIVE RECORD (1100-EM-1, 300-FF-1, 300-FF-5, 200-BP-1, 100-HR-1, 100-HR-3)[Care of Susan Wray, WHC]
 (Distribution Continued on Page 2)

Distribution (continued):

Jerry Chiaramonte, SWEC/IT
Dave Myers, SWEC/IT
Holly Jo Harrison, SWEC/IT
Jim Patterson, WHC
Tom Wintczak, WHC
Jack Waite, WHC
Wayne Johnson, WHC
Alan Krug, WHC
Merl Lauterbach, WHC
Larry Hulstrom WHC
Steve Weiss, WHC
Fred Roeck, WHC
Steve Clark, WHC
Robert Henckel, WHC
David Jones, WHC
Jeff Ayres, WHC
Bruce Ford, WHC
Jerry Cammann, WHC
Ron Smith, PNL
George Last, PNL
Don Kane, EMO
Bill Wright, Golder

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Attachment #1
Meeting Summary and Summary of Commitments and Agreements
General Topics Unit Managers Meeting
450 Hills St., Room 47
January 24, 1990

Meeting Summary/Summary of Commitments and Agreements

1. Bob Stewart made a presentation on the status of procedure development and standardization for RI/FS activities on the Hanford Site. Handouts covering this discussion are found in Attachment 5.
2. Bob Stewart presented the current status of the "Lessons Learned" document as presented to the regulatory agencies on January 8, 1990. Handouts covering this discussion are found in Attachment 5.

Action # GT.17: EPA/Ecology to provide comments on "Lessons Learned Document" by January 31, 1990. Action: C.S. Cline, D.R. Sherwood

Action # GT.18: WHC will develop a small team for the purpose of developing a Hanford-specific guidance document. The committee is to include members from EPA/Ecology, SWEC/IT, and PNL/EMO as well as WHC. Action: Tom Wintczak

3. Tom Wintczak presented the most current FY-90 and FY-91 schedules that reflect up-to-date budgets. A number of factors that affect scheduling were discussed. Integration of efforts under individual Operable Units is a major factor affecting overall schedules. Written responses to EPA/Ecology paper on integration are due to Ecology by January 26, 1990. Another major factor that may greatly affect proposed schedules is the handling of "hot spots" found during the 300-FF-1 investigation. These areas of moderately elevated radiation exposure may result in redefining the priority of subsequent operable units. Integration of RI/FS work with the requirements of the National Environmental Policy Act may result in additional changes to the presented schedule. The schedule, as presented, is included as Attachment 6.

Action # GT.19: A presentation will be made at the February Unit Managers Meeting discussing the potential impacts of the NEPA process on Environmental Restoration activities. Action DOE/WHC, R.K. Stewart has lead.

4. Terri Stewart, PNL lead a presentation by PNL researchers on various technologies being addressed for possible use within many RI/FS and RFI/CMS Operable Units. Attachment 7 contains the viewgraphs used in this presentation.

5. Brian Sprouse presented the current status of the Administrative Record File. There has been no official response on the Candidate Record File since this subject was last presented to the Unit Managers.

Action # GT.20: EDMC will provide the Unit Managers with the listing of records currently in the Administrative Record (AR Index) and with the monthly Candidate File lists for the last six months. Action: Brian Sprouse.

Action # GT.21: At the individual Operable Unit Managers Meetings discussions will be held to ascertain which of the Candidate Records will be included in the Administrative Record. Action to be taken at the February meetings by all Unit Managers.

Action # GT.22: EDMC will delete the "I.D." codes from the Candidate Record listing. Candidate Record listings will be provided to the individual Unit Managers on a monthly basis. Action: Brian Sprouse

6. Jerry Cammann, WHC presented a discussion on the current status of effort and funding for Performance Assessment and Risk Assessment activities associated with individual Operable Units and the overall Hanford Site. Viewgraphs presented in support of this presentation are found in Attachment 8. WHC is preparing a risk assessment implementation plan for 200-BP-1, due to DOE on February 1.

7. Jim Hoover, WHC presented an update of the status of site wide groundwater and soils background determinations. Viewgraphs from this presentation are found in Attachment 9.

Action # GT.23: A strategy document for assessing background chemistries for soils and groundwater will be available for review by March 26, 1990. Action: Jim Hoover

8. Bob Henckle, WHC provided an update on the implementation of the Hanford Environmental Information System (HEIS). Viewgraphs used are presented in Attachment 10.

9. The dates for the next Unit Managers Meetings will be February 14 and 15, 1990.

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Attachment #2
Meeting Agenda
General Topics Unit Managers Meeting
January 24, 1990

Status of Procedure Development - Bob Stewart/DOE

A discussion and status of a Hanford Site-wide approach to uniform operating procedures currently being developed for RI/FS activities.

Work Plan Standardization - Bob Stewart/DOE

Status of Lessons Learned Report

Overall Schedules - Tom Wintczak/WHC

Presentation of the ongoing Operable Units integrated schedules for FY-90 and 91, reflecting the current budget scenario.

Issues for February Managers Meeting - Tom Wintczak/WHC

A discussion of major issues to be elevated to DOE-RL, EPA Region X, and Ecology managers for the upcoming February meeting.

Technology Development/ISV Status - Terri Stewart/PNL

Soil Washing/Bioremediation - Terri Stewart/PNL

Presentation on proposed near-term soils remediation pilot demonstration.

Administrative Record Checklist - Brian Sprouse/WHC

EDMC will provide an updated Administrative Candidate Review list and discuss actions taken to streamline the review process.

Performance Assessment FY-90 Status - Jerry Cammann/WHC

Current FY-90 work scope and update on site-wide approach.

Soils/Groundwater Background Baseline Update - Jim Hoover/WHC

Update on the strategies for a site-wide soils and groundwater background baseline approach.

HEIS Update - Bob Henckel/WHC

Discussion on the current status of HEIS procedures, data entry, validation and user access.

Action Items - Wayne Johnson/Merl Lauterbach/WHC

Agreements and Commitments

Attachment #3
Attendance List
General Topics Unit Managers Meeting
January 24, 1990

Name	Organization	Phone
Dave Einan	EPA	509-376-3883
Chuck Cline	WDOE	206-438-7556
John Broderick	DOE-RL	509-376-4197
Bob Stewart*	DOE-RL	509-376-6192
Mike Thompson	DOE-RL	509-376-6421
David Myers	SWEC/IT	509-376-0969
Jim Patterson	WHC	509-376-0568
Tom Wintczak*	WHC	509-376-0902
Wayne Johnson	WHC	509-376-1721
Alan Krug	WHC	509-376-5634
Merl Lauterbach	WHC	509-376-5257
Larry Hulstrom	WHC	509-376-4034
Fred Roeck	WHC	509-376-8819
Robert Henckel	WHC	509-376-2091
Don Kane	Battelle EMO	509-375-2333
Bill Wright	Golder	206-883-0777
Donna Lacombe	PRC	206-624-2692
Doug Sherwood	EPA	509-376-9529
Ron Smith*	PNL	509-376-5831
Jerry Cammann*	WHC	509-376-8506
Jim Rasmussen	DOE-RL	509-376-2247
George Last	PNL	509-376-8527
S.J. Kowall*	Battelle EMO	509-375-2283
Jerry Chiaramonte	SWEC/IT	509-376-7829
David Jones	WHC	509-376-8557
Roger Pressentin	DOE-RL	509-376-5983
Frank Calapristi*	WHC	509-376-0568
Rich Carlson	WHC	509-376-9027
Travis Young	Ecology	206-438-7695
Ed Baker*	PNL	509-375-2026
Tom Brouns*	PNL	509-376-7855
Sydney Koegler*	PNL	509-376-0492
Terri Stewart*	PNL	509-375-2298
Phillip Pohl*	PNL	509-375-2432
Jim Hartley*	Battelle EMO	509-376-4927
Brian Sprouse*	WHC	509-376-2530
Joann See*	WHC	509-376-0820
Roy Gephart*	PNL	509-376-2781
Paula Cowley*	PNL	509-376-2282
J.D. Hoover*	WHC	509-376-2668
Ed Thornton*	WHC	509-376-6470
Bill Green*	WHC	509-376-3886
R.A. Hildebrand*	DOE-RL	509-376-7287
L.C. Brown*	WHC	509-376-2579
R.P. Henckel*	WHC	509-376-2091

* = Presenter or Part-time Participant

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Attachment #4
Action Items Status List
General Topics Meeting
December 13, 1989

Item No.	Action	Status
ST1.4	EPA and Ecology requested notification prior to initiation of the Becker drilling and containment system test. K.M. Thompson will notify.	Open Test has not started.
ST1.6	EPA and Ecology requested that they be supplied with the report documenting the results of the Becker drilling and containment system test. W.H. Price (WHC) will supply a copy of the report for EPA and Ecology's on-site review. After clearance, copies of the report will be provided.	Open Test has not started.
ST2.1	Bob Stewart will coordinate the preparation of a letter from DOE requiring the contractors to clear documents supporting the Tri-Party Agreement.	Open Paul Pak, DOE has been assigned the task of coordinating an effort to address the clearance issue site-wide.
ST2.2	WHC (Rick Wojtasek) is to evaluate the possibility of generating Hanford site-wide quality requirements for environmental restoration activities.	Open Item continued, status updated based on presentation by Bob Stewart at 1/24/90 meeting.
ST2.5	EPA (Mike Schlender) will inform DOE (C.K. Kasch) of course availability in DQOs.	Closed This item was covered in DOE/EPA Quality Assurance Meetings.

9011/810759

- 90117810760
- ST4.1 WHC will revise the quality strategy document (for RI/FS data) to incorporate EPA's stated QA requirements. The strategy document will be issued as a Miscellaneous Report (MR) until a permanent status is decided. Action: Wayne Johnson, WHC
- GT.2 WHC is to provide a date to EPA/Ecology for issuance of the strategy document which describes methodologies and data use. Action: Carol Geier, WHC
- GT.5 WHC will provide the updated review checklist to unit managers for their respective areas of responsibility by the 5th day of each month. Action: Brian Sprouse, WHC
- GT.6 The EDMC will investigate whether a sort of the review checklist can be made to facilitate easier record statusing by the unit managers. Status of this capability will be reported at the January UM meeting. Action: Brian Sprouse.
- GT.8 WHC is to provide a detailed backup to EPA and Ecology for the areas proposed for program reductions by January, 1990. Action: Tom Wintczak
- GT.9 EPA/Ecology will review the information provided on the proposed approach to biota surveys and provide comments by the next UM meeting in December.
- Closed
Strategy published as a Miscellaneous Report (MR), delivered at 1/24/90 meeting.
- Closed
Document delivered at 1/24/90 meeting.
- Closed
See Action Items GT.20, GT.21 and GT.22
- Closed
Meeting to be held in February to close out past items, new items will be handled on a regular basis. All parties will name to the A.R. file papers that should be entered.
- Closed
Elevated to Project Manager Level for resolution.
- Closed
To be addressed under integration. WHC will publish strategy document to provide additional guidance to contractors.

- 0117810761
- GT.11 WHC will finalize and issue the data quality strategy document without further changes. Action: Wayne Johnson Closed
- GT.12 A progress report on the status of the Becker Drilling program will be provided at the January Unit Managers Meeting. Action: K.R. Fecht Closed
- GT.13 A progress report on the status of the background programs for soil and groundwater will be presented at the January Unit Managers Meeting. Action: K.R. Fecht. Closed
Presentation presented at 1/24/90 Unit Managers Meeting.
- GT.14 EPA/Ecology wish to be involved in oversight of performance assessment activities. This function is currently scheduled for funding through the RDDT&E program from DOE-HQ. John Broderick will assess the ramifications of the proposed involvement of EPA/Ecology and report at the January Unit Managers Meeting. Closed
WHC will prepare a monthly presentation on the status of performance assessment activities to be presented at the General Topics sessions.
- GT.15 EPA/Ecology requested information on current year funding/programs/activities relating to site performance assessment activities supporting Operable Unit risk assessments. The information is to be presented at the January Unit Managers Meeting. Action: Jerry Cammann Closed
Presented at the 1/24/90 General Topics meeting.
- GT.16 WHC is to provide lists of available data through December 31, 1990 at the January Unit Managers Meeting. Subsequent delivery of data availability lists will be provided to cover periods through the last day of the preceding month. Data will be provided by Waste Unit within each Operable Unit. Action: Tom Wintczak Closed
Data will provided at individual Operable Unit Managers meetings as part of the standard agenda items.

Attachment 5

Status - RI/FS Work Plan Preparation Guidance and RI/FS Procedures

RI/FS Work Plan Preparation Guidance

- Draft RI/FS Work Plan Preparation "lessons-learned" document transmitted to EPA/Ecology on January 8, 1990, completing action item # GT1.7.
- After EPA/Ecology comments are received, "lessons-learned" document will be revised and issued to be used in work plan preparation, pending completion of a "Work Plan Preparation Guidance Document".
- On January 22, WHC was requested to establish a task team to prepare a Work Plan Preparation Guidance Document. This team will include PNL/EMO, SWEC/IT, and others as appropriate, including EPA/Ecology. Schedule for this effort is TBD.

RI/FS Procedures

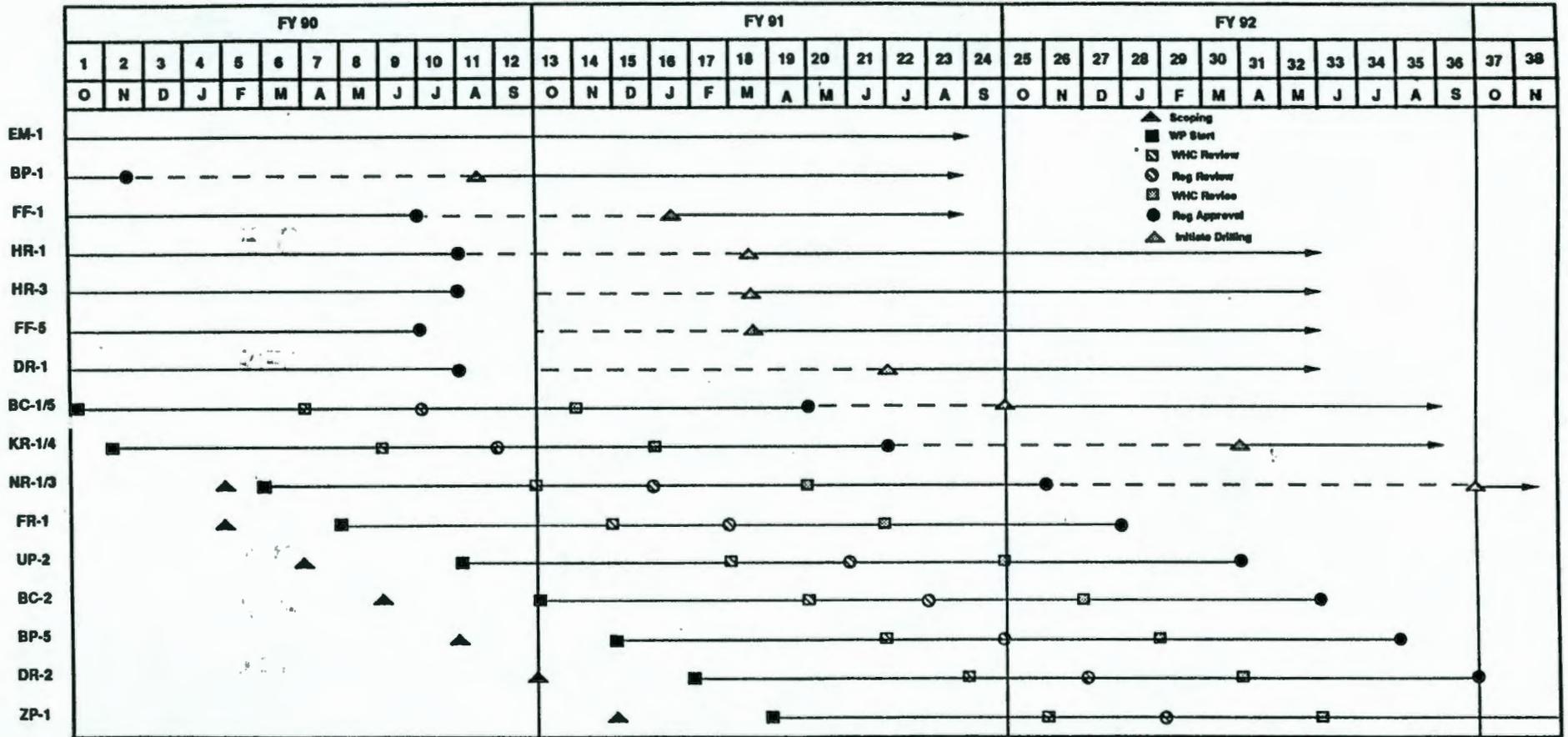
- Actions on preparation of a "DOE Requirements/Procedures Manual" have been put on hold pending resolution of the type document it is to be.
- Development of the DOE document has been placed "off-line" such that the WHC Environmental Information Instruction (EII) Manual will continue to be used and upgraded until the DOE Manual is issued.
- Following is a tabulation of EII status:
New EIIs:
 - EII 1.9, Work Plan Review and
EII 11.2, Geophysical Work - Effective January 19
 - EII 5.8, Groundwater Sampling
 - EII 5.10, Sample Identification & Data Entry in HEIS Database
 - EII 5.11, Sample Packaging and Shipping and
 - EII 6.10, Abandoning/Decommissioning Groundwater Wells are currently in the final review/approval stage.

Work In Progress:

- The 10 EIIs with EPA comments to be incorporated are on schedule for revision.
- The current plans for the EII manual include a systematic review and revision to incorporate "lessons Learned" (i.e. DOE-RL Audit-89-11), references to supporting/interfacing WHC documents, and replacement of Section 3.0, Definitions, with a Glossary for the manual to promote consistency in terms and titles.

ER Program Past Practices Activities

Attachment #6



Note: These schedules are based on the funding level submitted in the FY 1992 Five Year Plan and assumes funding at the current baseline (1/21/90) for FY 90.

DEMONSTRATION OF ENVIRONMENTAL RESTORATION TECHNOLOGY AT HANFORD

**Presented by
TL Stewart, SS Koegler, and PI Pohl**

**January Unit Managers Meeting
Richland, WA**

PURPOSE

**DESCRIBE THE REMEDIATION TECHNOLOGIES CURRENTLY
PLANNED FOR DEMONSTRATION AT HANFORD**

TOPICS

DESCRIPTION OF ER TECHNOLOGY DEVELOPMENT PROGRAM

DISCUSSION OF THREE SPECIFIC DEMONSTRATION PROJECTS

9 0 1 1 7 8 1 0 7 6 7

BACKGROUND

**HIGH PRIORITY TECHNOLOGY DEVELOPMENT
ACTIVITIES FOR HANFORD ENVIRONMENTAL
RESTORATION HAVE BEEN IDENTIFIED**

PROGRAM OF RDDT&E IS UNDERWAY

**OPPORTUNITIES TO ENHANCE AND EXPAND THE
PROGRAM ARE BEING SOUGHT**

9 0 1 1 7 8 1 0 7 6 8

CURRENT PROGRAM

SITE CHARACTERIZATION TECHNOLOGY

PERFORMANCE AND RISK ASSESSMENT

REMEDIATION TECHNOLOGY

- SOIL/GROUNDWATER TREATMENT**
- IN SITU STABILIZATION AND ISOLATION**
- PROTECTIVE BARRIERS**

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OBJECTIVE

**DEMONSTRATE REMEDIATION TECHNOLOGIES AT
HANFORD**

- THREE CURRENT PROJECTS**
- TWO FUTURE PROJECTS**

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PURPOSE OF DEMONSTRATIONS

SUPPORT RI/FS PROCESS BY:

- * **FACILITATING TECHNOLOGY TRANSFER**
 - **INCLUDE INNOVATIVE TECHNOLOGY IN WORKPLANS**
 - **ENSURE COLLECTION OF PERTINENT DATA DURING RI**
 - **STREAMLINE TREATABILITY TESTING**
 - **PROVIDE DATA AND INFORMATION FOR FS PROCESS**
 - **GAIN ACCEPTANCE OF TECHNOLOGY**

- * **FACILITATING TECHNOLOGY DEVELOPMENT PLANNING**
 - **PROVIDE TECHNOLOGY BASELINE**
 - **EVALUATE RDDT&E INVESTMENTS**

9 0 1 1 7 8 1 0 7 7 1

APPROACH

IDENTIFY TECHNOLOGY WITH BROAD APPLICABILITY

SELECT SITE FOR DEMONSTRATION

WORK WITH DOE-RL, OEC, AND REGULATORS

- OBTAIN AGREEMENT ON SITE SELECTION**
- DEVELOP SCHEDULES AND WORKPLANS**
- INTEGRATE WITH ONGOIN RI WORK**
- SECURE WORKPLAN APPROVALS AND PERMITS**
- EVALUATE RESULTS**
- TRANSFER TECHNOLOGY**

9 0 1 1 7 8 1 0 7 7 2

BENEFIT

GAIN DATA ON

- COST**
- PERFORMANCE**
- OPERABILITY**
- POSSIBLE IMPROVEMENTS**

**ENSURE AVAILABILITY OF TECHNOLOGIES FOR SITE
REMEDICATION**

INTERFACE REQUIREMENTS

GENERAL

UPDATE UNIT AND PROJECT MANAGERS ON INNOVATIVE TECHNOLOGIES SUPPORTING PLANNING AND EXECUTION OF RI/FS

SPECIFIC

WORK WITH SPECIFIC UNIT AND PROJECT MANAGERS TO RESOLVE TECHNICAL OR SCHEDULE ISSUES ASSOCIATED WITH WORK PLAN DEVELOPMENT AND APPROVAL (AS NEEDED) ON INDIVIDUAL PROJECTS

REMEDICATION TECHNOLOGY DEMONSTRATIONS

116-B-6A CRIB ISV DEMONSTRATION - SS KOEGLER

**U1/U2 GROUNDWATER BIOLOGICAL TREATMENT
DEMONSTRATION - TM BROUNS**

SOIL WASHING "SITE" DEMONSTRATION - PI POHL

9 0 1 1 7 8 1 0 7 7 5

ISV DEMONSTRATION - STATUS

SCHEDULE - INITIATED IN FY 1988; COMPLETE IN FY 1991

PURPOSE - DEMONSTRATE USE OF ISV ON MIXED WASTE

CURRENT STATUS - WORKPLAN IN APPROVAL CYCLE

- EQUIPMENT PREPARATION IN FIELD ONGOING**
- TEST WILL BE CONDUCTED IN LATE FEBRUARY**

INTERFACE - CHARACTERIZATION/MONITORING REQUIRMENTS

- WORKPLAN APPROVAL**

9 0 1 1 7 8 1 0 7 7 6

U1/U2 GROUNDWATER TREATMENT - STATUS

SCHEDULE - INITIATED IN FY 1988; COMPLETE FY 1991

**PURPOSE - DEMONSTRATE USE OF FACULTATIVE
ANAEROBES FOR DESTROYING NITRATES AND CCl₄ IN
GROUNDWATER**

CURRENT STATUS - PILOT PLANT CONSTRUCTED

- SIMULATED STREAMS TESTED IN FY 1989**
- U1/U2 GROUNDWATER TESTS CONDUCTED IN
FY 1990 AND 1991**

**INTERFACE - IMPLEMENTATION OF TSD PART A INTERIM
PERMIT ON BIOLOGICAL TREATMENT IN 324 BUILDING**

9 0 1 1 7 8 1 0 7 7 7

SOIL WASHING SITE DEMONSTRATION - STATUS

**SCHEDULE - INITIATED FY 1990; ESTIMATED COMPLETION FY
1993**

**PURPOSE - DEMONSTRATE EPA SOIL WASHING ON RMW
- EVALUATE INNOVATIVE SOLVENTS AND NOVEL
EQUIPMENT FOR USE AT DOE SITES (R&D
SUPPORT)**

**CURRENT STATUS - NEGOTIATING WITH EPA FOR EQUIPMENT
- ESTABLISHING TREATABILITY TEST CAPABILITY**

INTERFACE - INITIATING NOW

FUTURE ER DEMONSTRATION

SITE CHARACTERIZATION TECHNOLOGY

- IN SITU SENSOR AND CALIBRATION SYSTEM FOR WATER TABLE LEVEL MEASUREMENTS**

REMEDICATION TECHNOLOGY

- IN SITU BIOREMEDIATION**

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SUMMARY

**ER TECHNOLOGY DEMONSTRATIONS ARE A PART OF THE
OVERALL DEVELOPMENT PROGRAM**

**DEMONSTRATIONS SUPPORT RI/FS PROCESS BY
FACILITATING TECHNOLOGY TRANSFER AND RDDT&E
PLANNING**

**CURRENTLY HAVE THREE PROJECTS UNDERWAY THAT
REQUIRE INTERFACE WITH UNIT MANAGERS**

**116-B-6A CRIB IN SITU VITRIFICATION
DEMONSTRATION PROJECT**

Pacific Northwest Laboratory

Project Manager: Syd Koegler

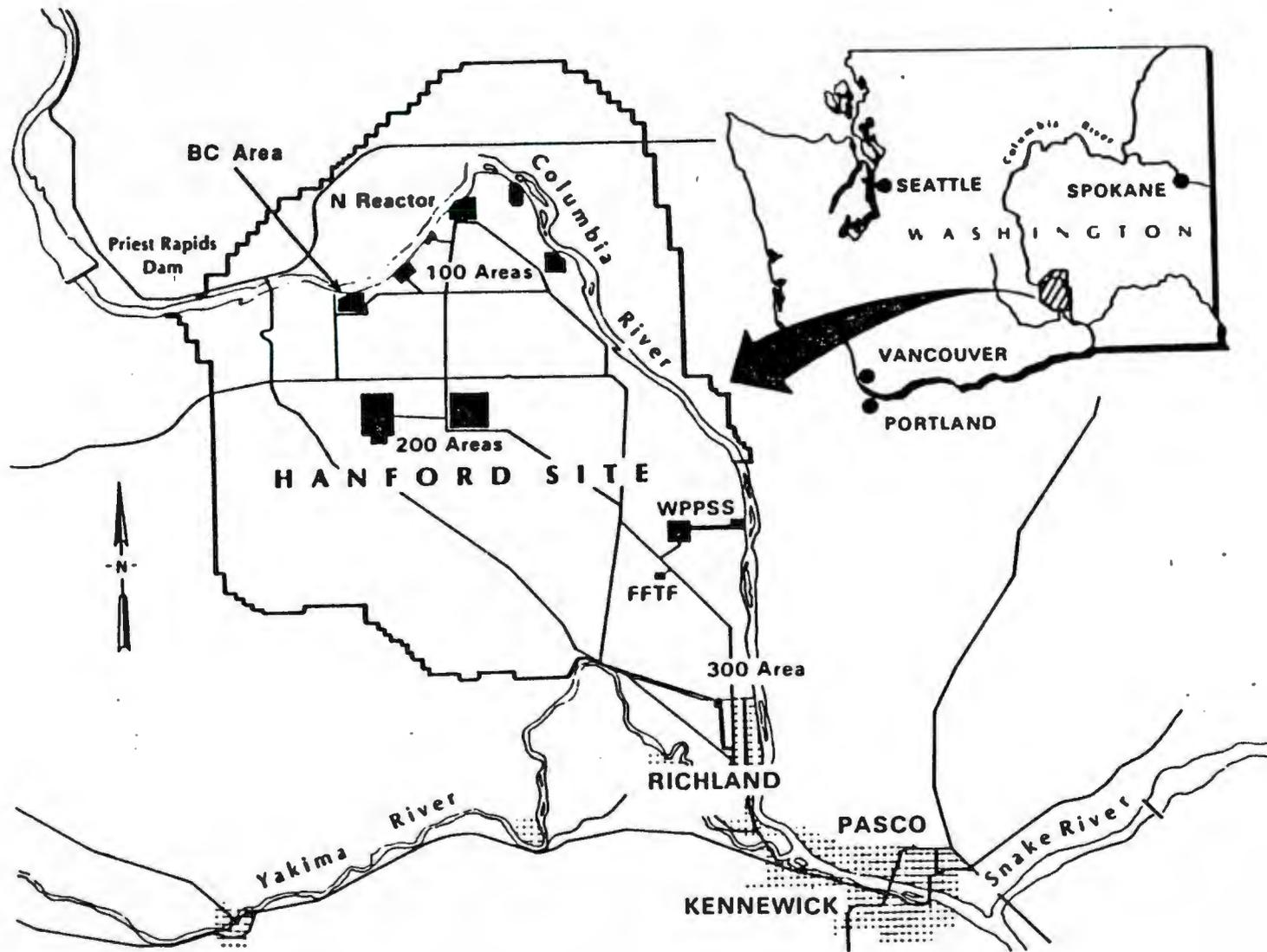
January Unit Manager's Meeting

PROJECT OBJECTIVES

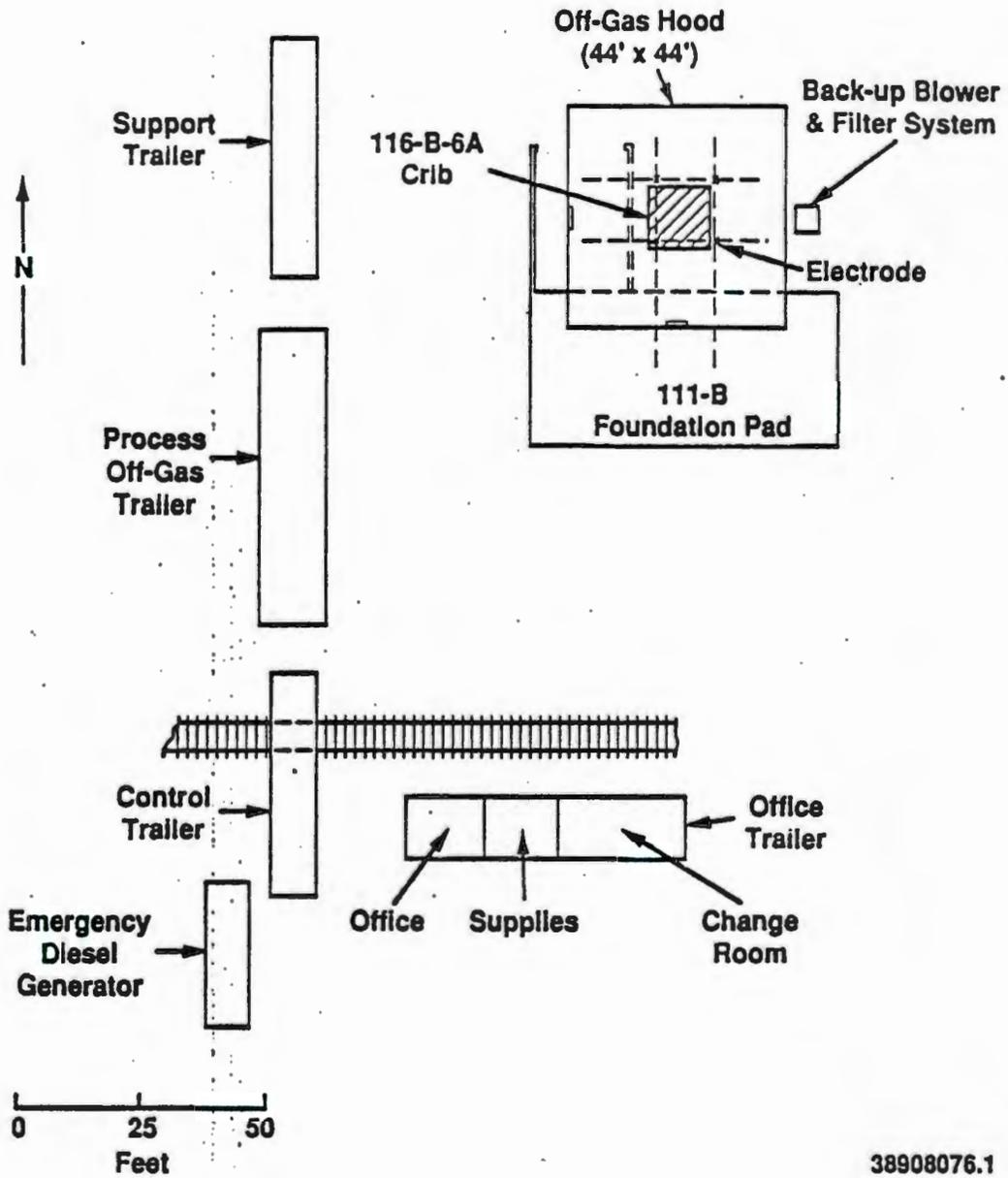
- **Demonstrate in situ vitrification of mixed fission products and hazardous wastes**
- **Demonstrate enhanced vitrification depth (≥ 20 ft)**
- **Verify off gas system performance for vitrification of an actual wooden crib**

BACKGROUND

- **116-B-6A Crib Site Description**
- **ISV Process Description**
- **ISV Equipment Description**

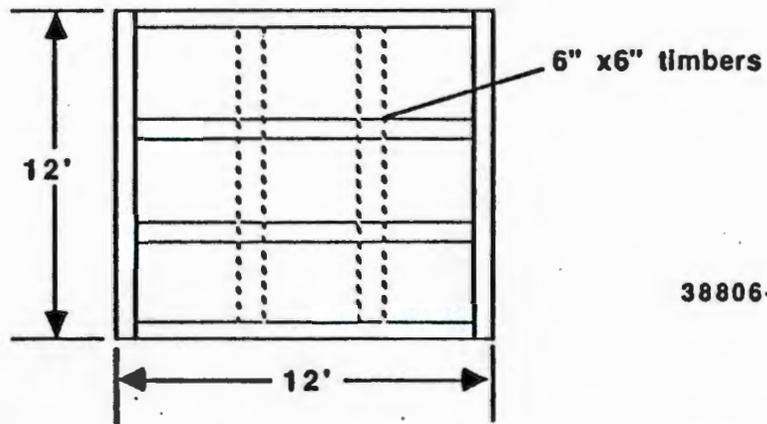
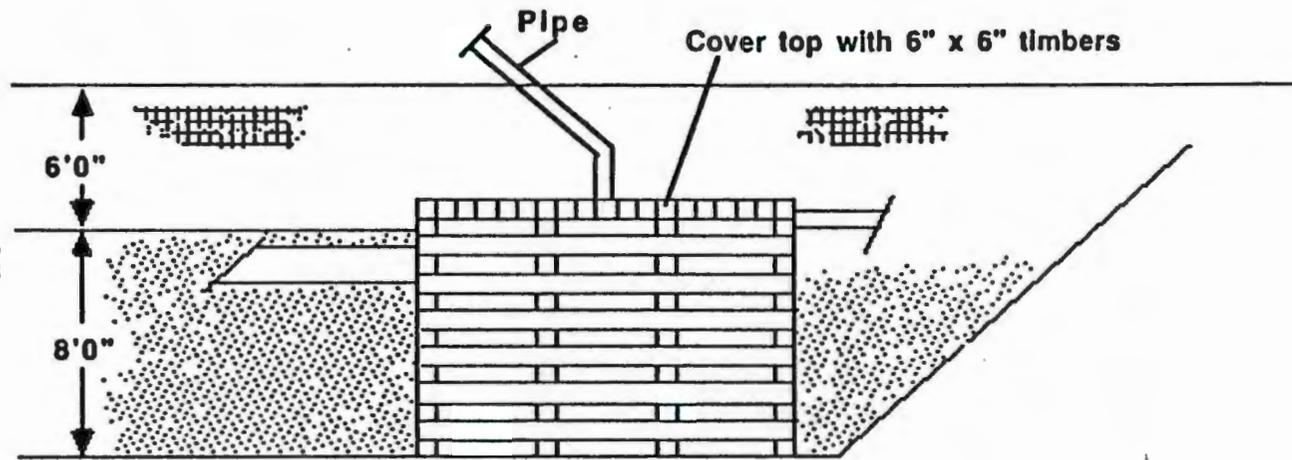


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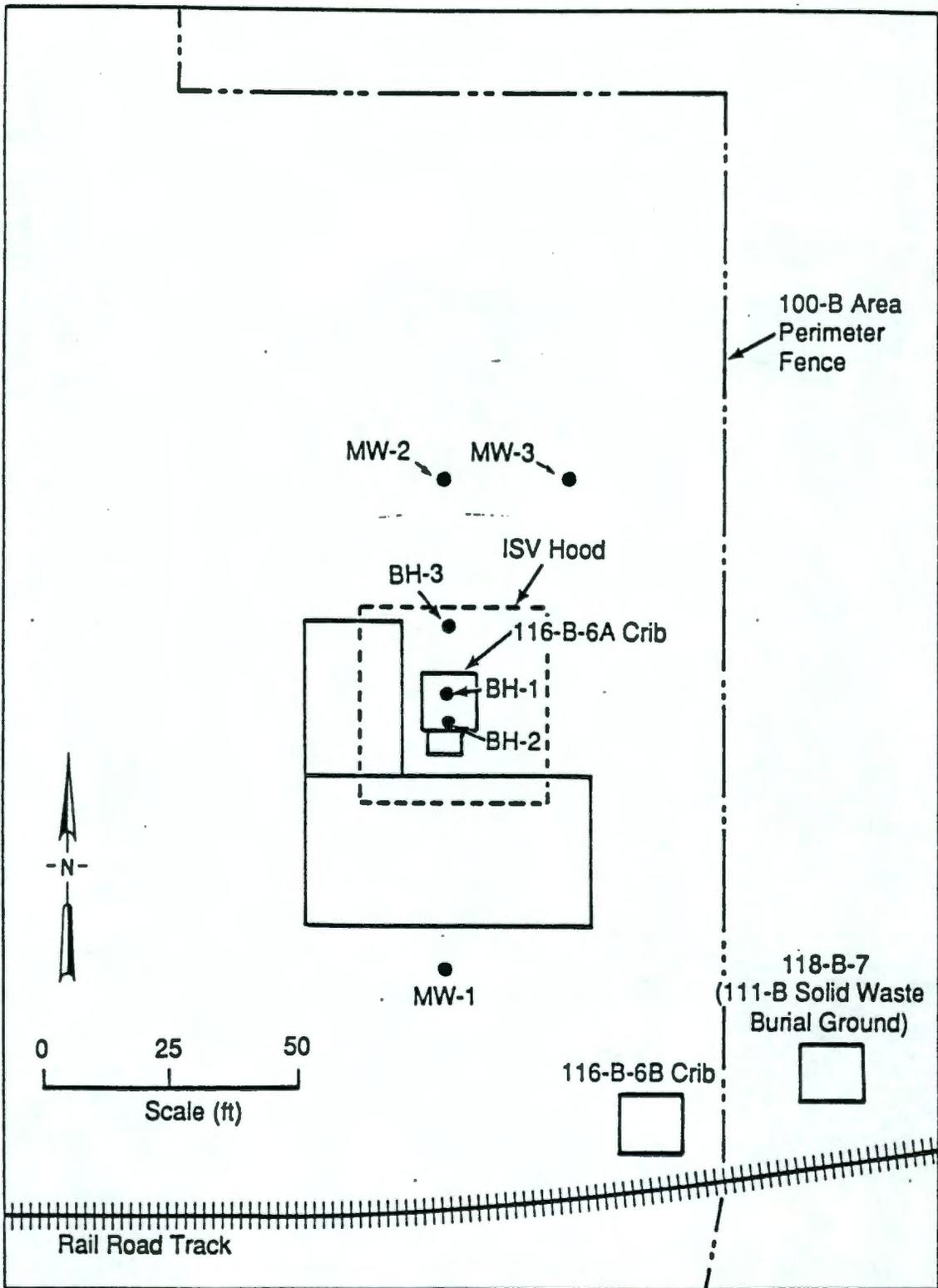
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116-B-6-1 Crib



38806-104.15M

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APPROACH

- **Characterize site and verify ISV technology (FY-1989)**
- **Large-scale ISV demonstration test (FY-1990)**
- **Evaluate product and process results (FY-1991)**

9 0 1 1 7 8 1 0 7 8 8

STATUS

Tasks Completed:

- **Site characterization completed**
- **Groundwater wells installed**
- **Engineering-scale test completed to test frit injection & vitrification of wood components**
- **Equipment moved to site and set up, utilities installed**
- **Work Plan & other documents prepared**

9 0 1 1 7 8 1 0 7 8 9

SCHEDULE

FY 1990 Activities:

- Complete operations staff training
- Documentation approval
- Perform test

FY 1991 Activities:

- Cool block 9-12 months
- Core drill, sample block & soil
- Evaluate test, write final report

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**U1/U2 GROUNDWATER BIOLOGICAL
TREATMENT DEMONSTRATION**

Pacific Northwest Laboratory

Project Manager: Thomas M. Brouns

January Unit Managers Meeting

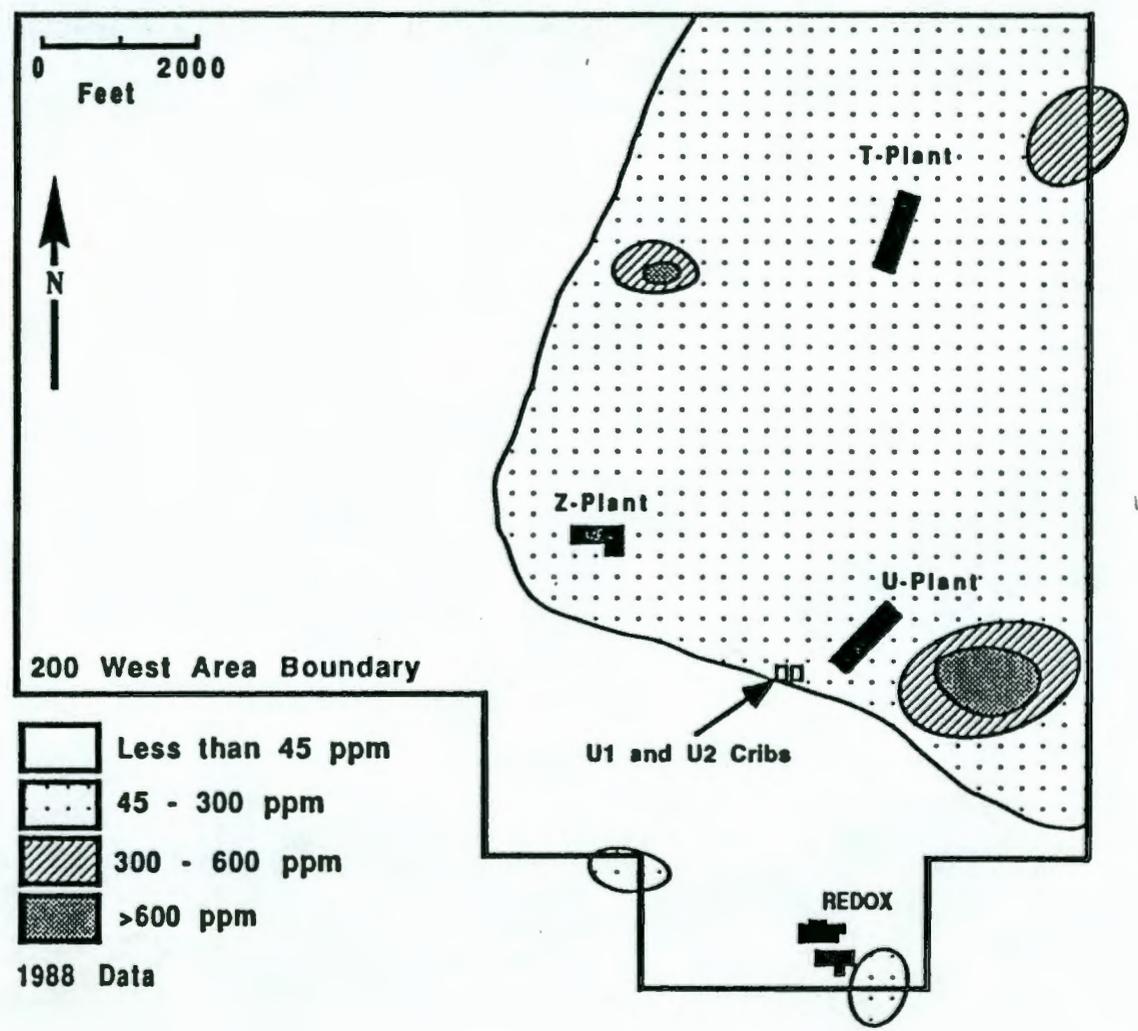
OBJECTIVES

- **Develop effective biological process for the destruction of nitrates and organics in aqueous streams**
- **Demonstrate simultaneous destruction of nitrates and organics in Hanford groundwater**
- **Transfer technology to the DOE operating contractor and other DOE sites**

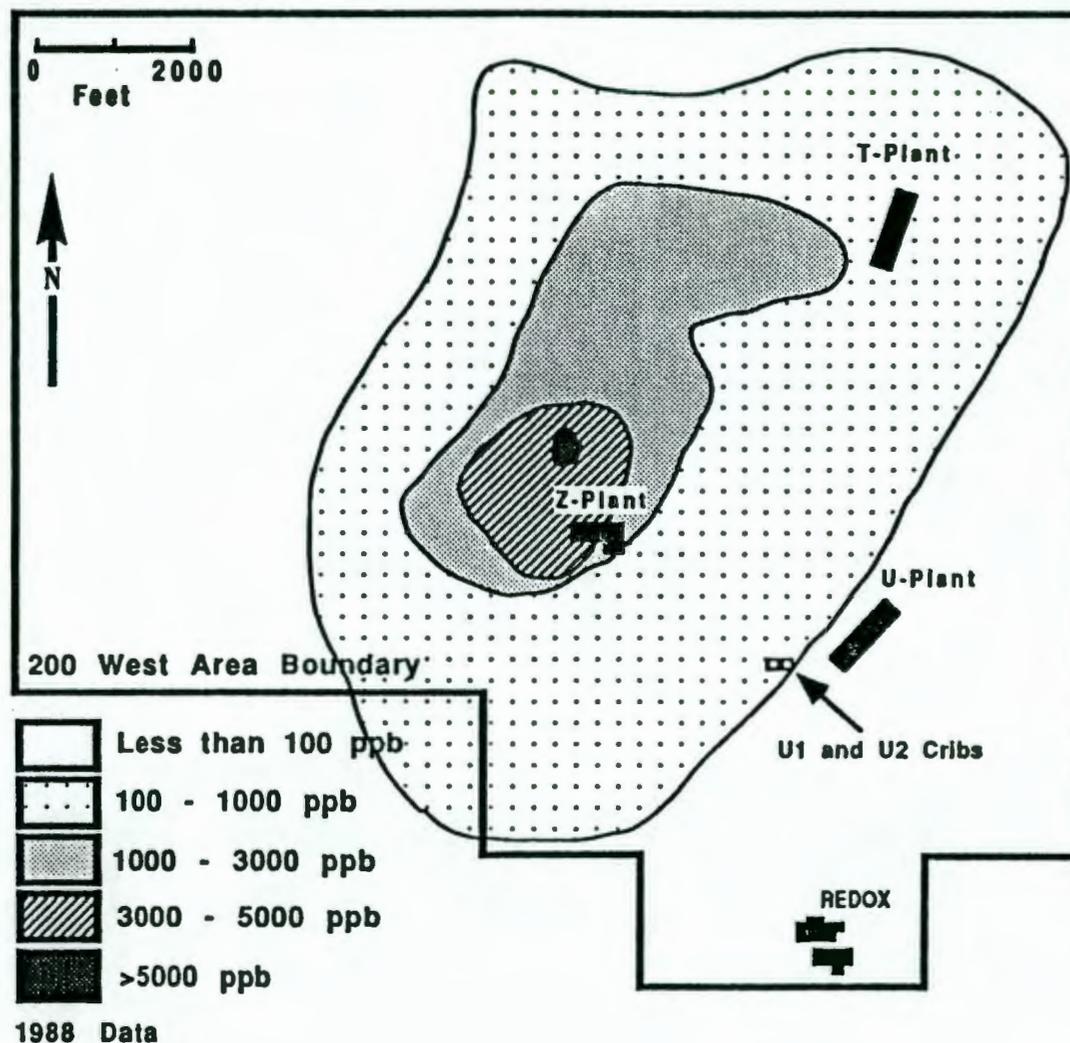
BACKGROUND

- **Facultative anaerobic microorganisms degrade NO_3^- to N_2**
- **Carbon tetrachloride co-metabolized to CO_2**
- **Organisms supplied acetate as primary carbon source**
- **Organisms are native soil bacteria**

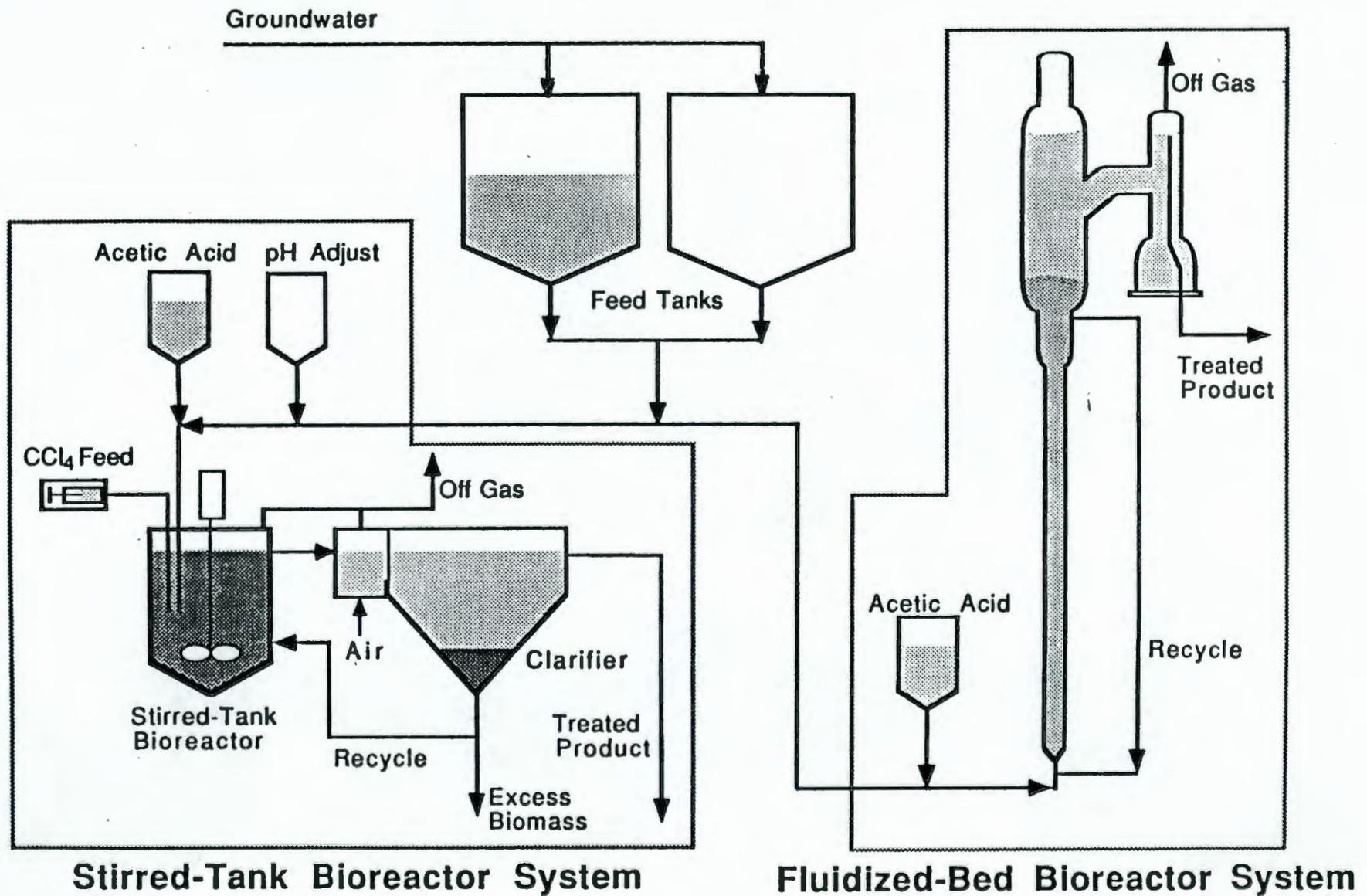
General NO₃ Distribution in Groundwater 200 West Area, Hanford Site Washington



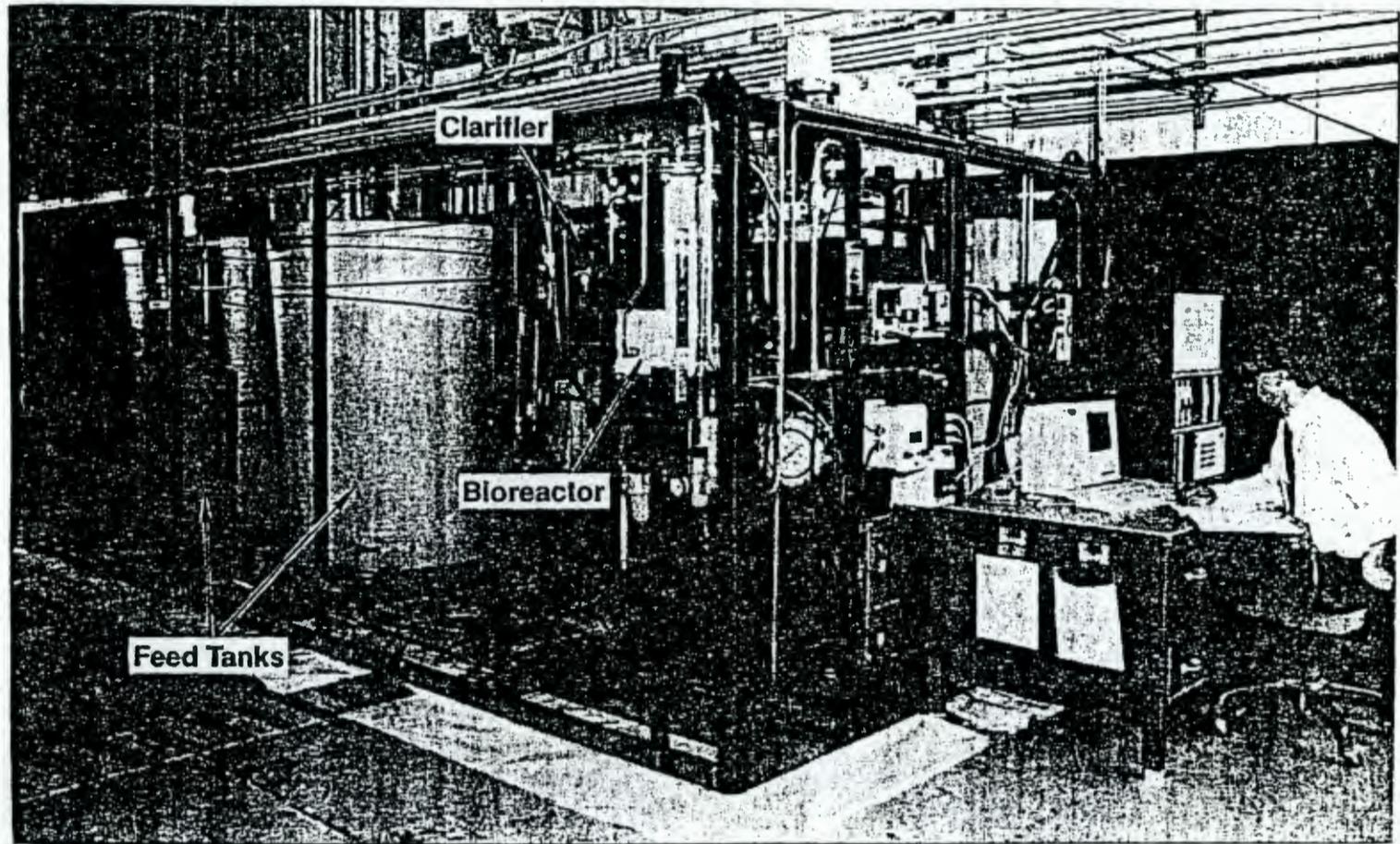
General CCl₄ Distribution in Groundwater 200 West Area, Hanford Site Washington



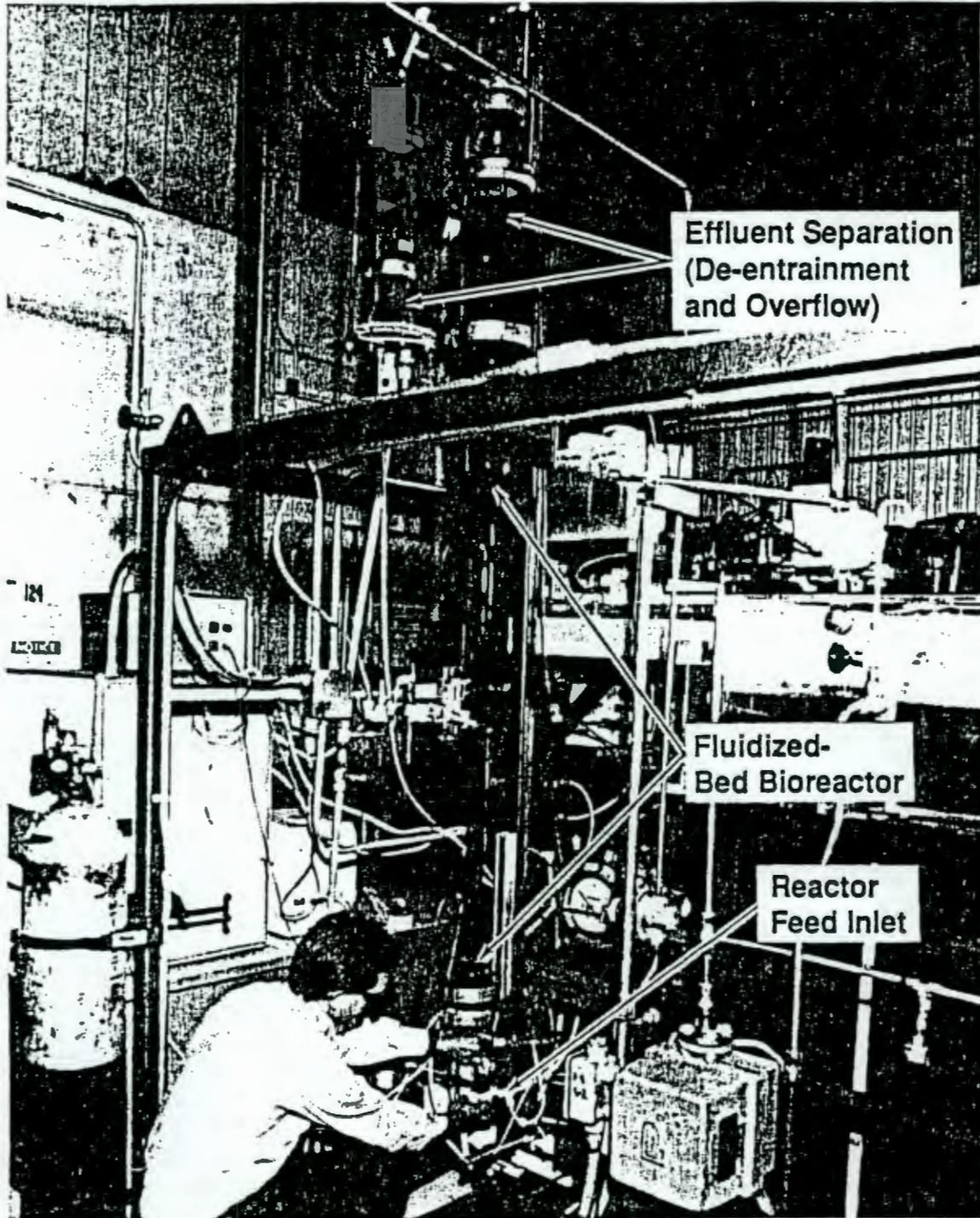
Schematic of the Pilot-Scale Biological Treatment System



Biological Treatment System for the Degradation of Nitrates and Organics



Fluidized-Bed Bioreactor



APPROACH

- **Determine degradation kinetics**
- **Design & construct pilot-scale treatment system**
- **Evaluate treatment system effectiveness using simulated groundwater**
- **Demonstrate treatment of nitrate and carbon tetrachloride in Hanford groundwater**

STATUS

- **Completed pilot-scale testing with simulated groundwater in FY 1989**
- **Preparing compliance notebook for activation of the Part A TSD Permit**
- **Demonstration with U1/U2 groundwater scheduled for FY 1990 and FY 1991**

SCHEDULE

FY 1990

- **Permit activation, process modifications to enhance operability**
- **Pilot-scale demonstration with U1/U2 groundwater**

FY 1991

- **Complete pilot-scale demonstration**
- **Data analysis and reporting**

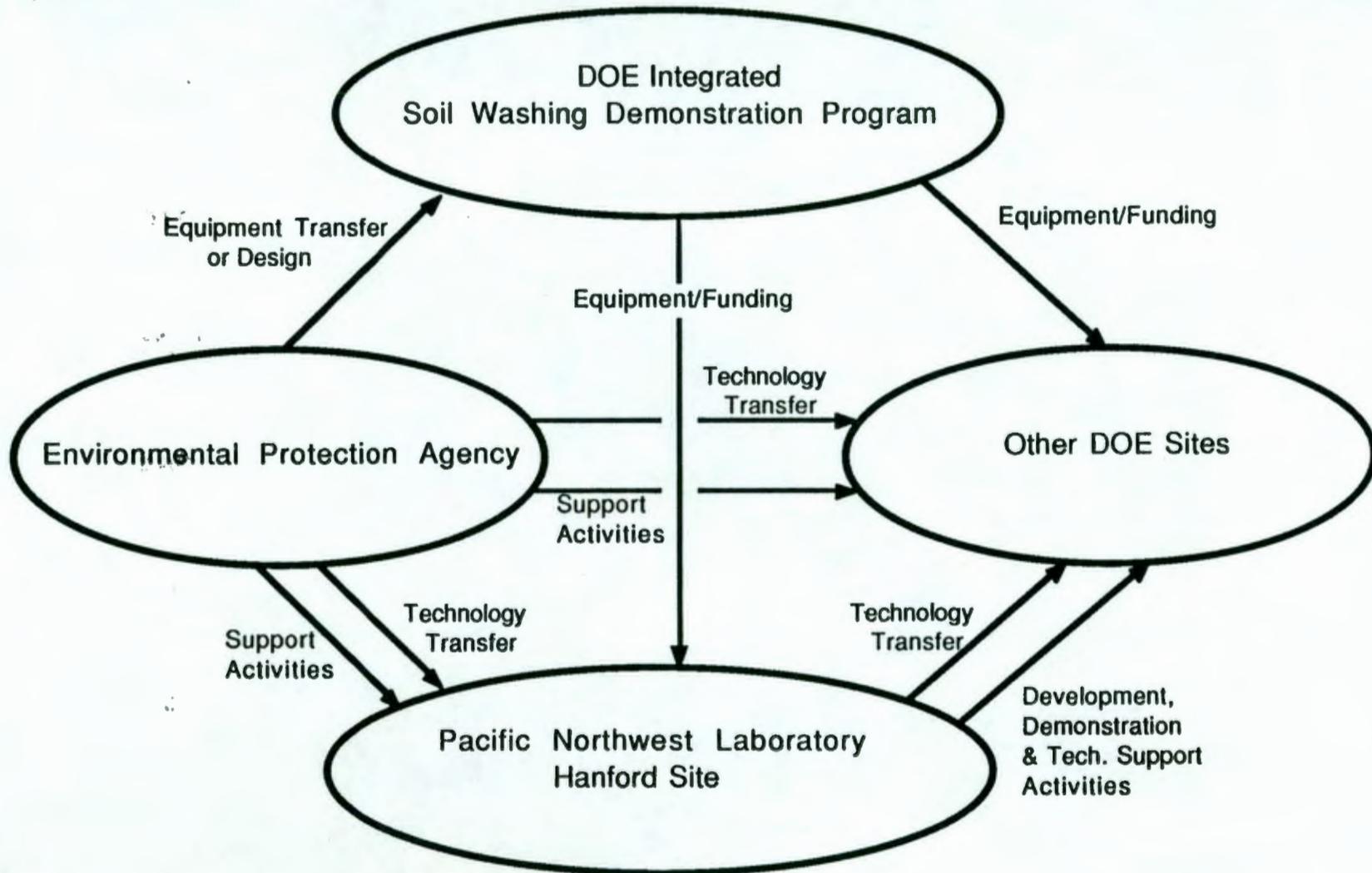
Soil Washing SITE Demonstration

BACKGROUND

- For use on contaminated soils with small fraction of fines (<100 μ m)
 - Coarse material is clean
 - Fine fraction is contaminated
- Used commercially in Europe
- Demonstrated (10/89) in Minnesota under EPA's SITE program - 500 lb/hr
- Current EPA demo underway in NJ waste site (Ra226 and Th230)

Soil Washing Site Demonstration

JOINT DOE/EPA EFFORT (FTTA)



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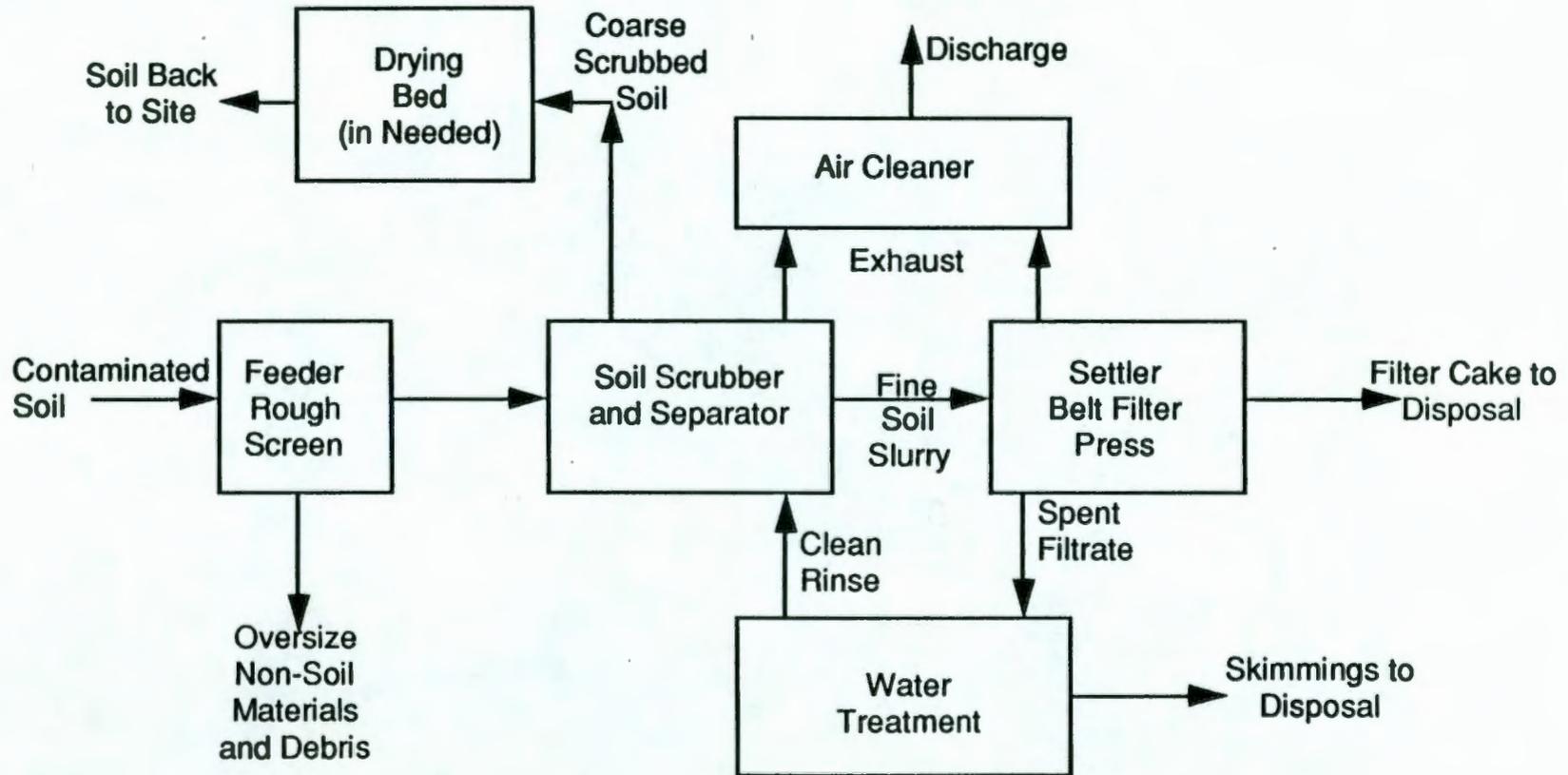
Soil Washing SITE Demonstration

APPROACH & STATUS

- **Receive funding/approval - Pending**
- **Conduct bench-scale tests - archive pond samples**
- **Obtain Mini-Soils Washer - Negotiations underway**
- **Develop integrated process strategy**
- **Develop Treatability Test Work Plan & supporting documentation in conjunction with RI/FS**
- **Conduct demonstration**

Soil Washing SITE Demonstration

EPA MINI-WASHER PROCESS



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Soil Washing SITE Demonstration

MINI-WASHER OPERATING CONDITIONS

- **Soil feed rate** **50 - 100 lb/hr**
- **Wash water rate** **1 - 2 gal/hr**
- **Expected separation based on known soil size distribution** **80% - 20% clean - contaminated**
- **Transported on two 40' trailers**
- **2 technicians, 1 supervisor required**

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Soil Washing SITE Demonstration

POTENTIAL PROCESSES FOR INTEGRATED DEMONSTRATIONS

Soil Source

- Air rotary well drill
- Sampling

Sludge Treatment

- Vitrification
- Grout
- Dewatering

Wash Water

- Purge water (source)
- Biological treatment
- Solvent extraction

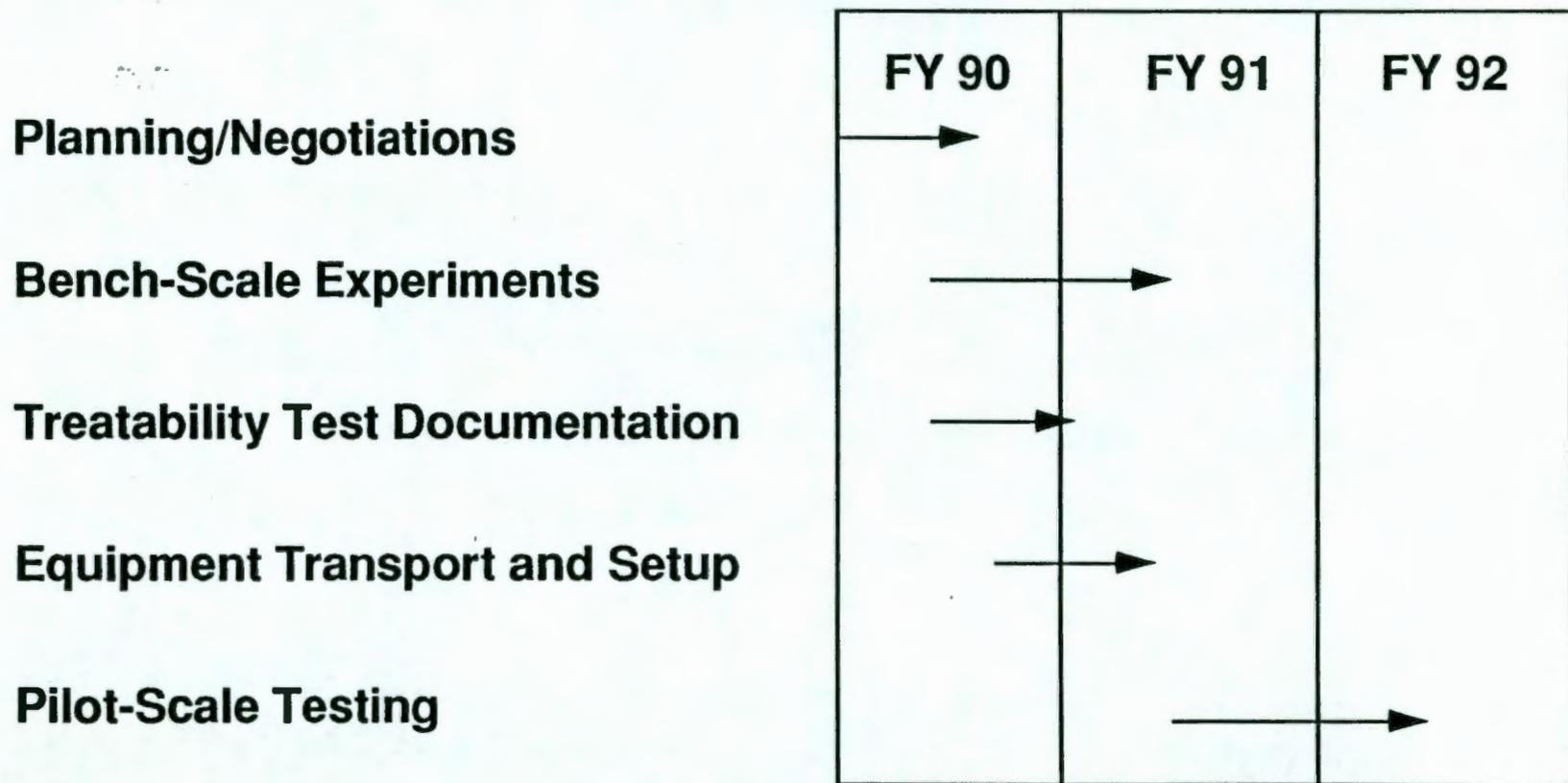
Dust/Vapor

- Cover
- Foams
- Water spray

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Soil Washing SITE Demonstration

PRELIMINARY SCHEDULE



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Soil Washing SITE Demonstration

CONCLUSIONS

- **Soil washing is a proven volume reduction step in contaminated soil remediation**
- **Simple and inexpensive technology that is applicable to radionuclides and heavy metals**
- **Results should be well accepted by public**



**Westinghouse
Hanford Company**

Environmental Technology Group

FY 1990 PERFORMANCE ASSESSMENT ACTIVITIES

January 24, 1990

Jerry W. Cammann

**Westinghouse Hanford Company
Richland, Washington**

"Making Sure Through Total Quality"

Attachment #8



Outline

- **PA Technology Development Program Activities**
- **PA Applications Program Activities**
- **Related PA Activities**
- **General: PA Funding Outlook/Integration**
- **Suggested Future Special Topic Sessions**



PA Technology Development

- **Code Testing/Documentation**
 - PORMC-3
 - PORFLO-3, Version 2.0
 - User's Guide/Technical Manual
 - "Jornada Site" Calibration

- **Evaluation/Documentation of Recharge**
 - Lysimeter Measurements (BWTF, Grass Site, 200E)
 - Isotopic Evaluation (Touchet Bed Silts/Pasco Gravels)

- **Contaminant/Sediment Interactions**
 - Batch-Sorption/Diffusion Half-Cell Tests (Sat/Unsat)
 - Flow-Through Column Tests (Unsat)
 - Retardation/Diffusion Coefficients for Reactive Species
 - Focus on Contaminants of Most Concern (U, Sr, Ru, Tc, I, C, Zr)
 - SST Waste Extracts or Synthetic Solutions with Tracers
 - Touchet Bed Silts/Pasco Gravels

"Making Sure Through Total Quality"



PA Technology Development (cont.)

- Data Archiving/Data Base Maintenance
- RDDT&E Proposals (Performance/Risk Assessment Related)
 - RL5010: Development of Geophysical Well Logging Technique
 - RL5014: Test Facility for Evaluation of Contaminant Transport
 - RL8070: Hanford Site Geohydrologic PA Model
 - RL8101: Cumulative Impacts Assessment - Hanford



PA Applications

- **SST Characterization Well**
 - Address GAO Concern Regarding Water Infiltration
 - Soil Moisture Content/Contamination with Depth
 - Support Code Calibration

- **100 Area Flow/Transport Simulations**
 - Impacts of N-Reactor Shutdown/Reduced Discharges
 - Plume Migration from 1301 LWDF to N-Springs
 - Influence of River Level Fluctuations
 - Moisture Retention (Pressure Plate, Vapor Adsorption, etc.)
 - Hydraulic Conductivity (Unsat Soil Column, Centrifuge, Guelph)
 - Sr Retardation Coefficient (Batch/Flow-Through Column)
 - Support Study for Mitigative Actions, If Required
 - Recommend Changes to Groundwater Monitoring Well Network

"Making Sure Through Total Quality"



PA Applications (cont.)

- **Low-Level Solid Waste Burial Grounds Support**
 - Radiological Performance Assessments (DOE Order 5820.2A)
 - Support Design/Siting of New LLBG's
 - Estimate Remaining Life of Existing LLBG's
 - Determine Cumulative Effects of LLBG Operations

- **RCRA/CERCLA Program Support**
 - 2101M Pond "NOD" Response
 - 1100-EM-1 Baseline Risk Assessment Review
 - 200-BP-1 Implementation Plan (PA Role In Phase I RI)
 - Initiate 200-BP-1 Baseline Risk Assessment ("No Action")



Related PA Activities

- **Physical Property Determination (Nonradioactive Samples)**
 - 1100-EM-1, LLBG's, RCRA Groundwater Wells, 100N Area
 - Hydraulic Conductivity, Particle Size, Moisture Retention
- **Physical Property Laboratory (Radioactive Samples)**
 - 377 Bldg. Being Transferred from PNL to WHC
 - Support Development of Physical Property Test Procedures
 - Current Budgetary Shortfall - Under Program Office Review
- **Long-Term Climate Change Assessment**
 - Protective Barrier Program
 - Identify Bounds on Long-Term Climate Change
 - Independent Peer Review Conducted
 - Study Plan Being Modified
- **Calibration of UNSAT-H Against FLTF Data Base**



General: PA Funding Outlook/Integration

- **Funding Outlook**

- PA Technology Development Activities Funded Through OTD
- Funding Provided Through Second Quarter of FY 1990
- Team Going Back to DOE-HQ to Prioritize Work Nationally
- Good Chance of Receiving Entire FY 1990 Budget Allocation
- Out-Year Funding Somewhat Uncertain

- PA Applications Funded Through Operations Programs
- Expected to Continue

- **PA Integration Activities**

- Finalizing Responses to Third-Party Peer Review Comments
- Enhance Coordination with "MA & PA" Integration Team
- Form a Hanford Site-Wide PA Overview Committee
- Revise PA Technology Development Plan to Provide More of an Operational Focus

"Making Sure Through Total Quality"



Suggested Future Special Topic Sessions

- **Site-Wide Groundwater Monitoring/Modeling Efforts**
 - Presented by PNL's Geosciences Department
 - March/April Unit Manager's Meeting

- **Hanford Protective Barrier and Warning Marker System Development Program**

Attachment #9

**SOILS/GROUNDWATER
BACKGROUND ISSUES UPDATE**

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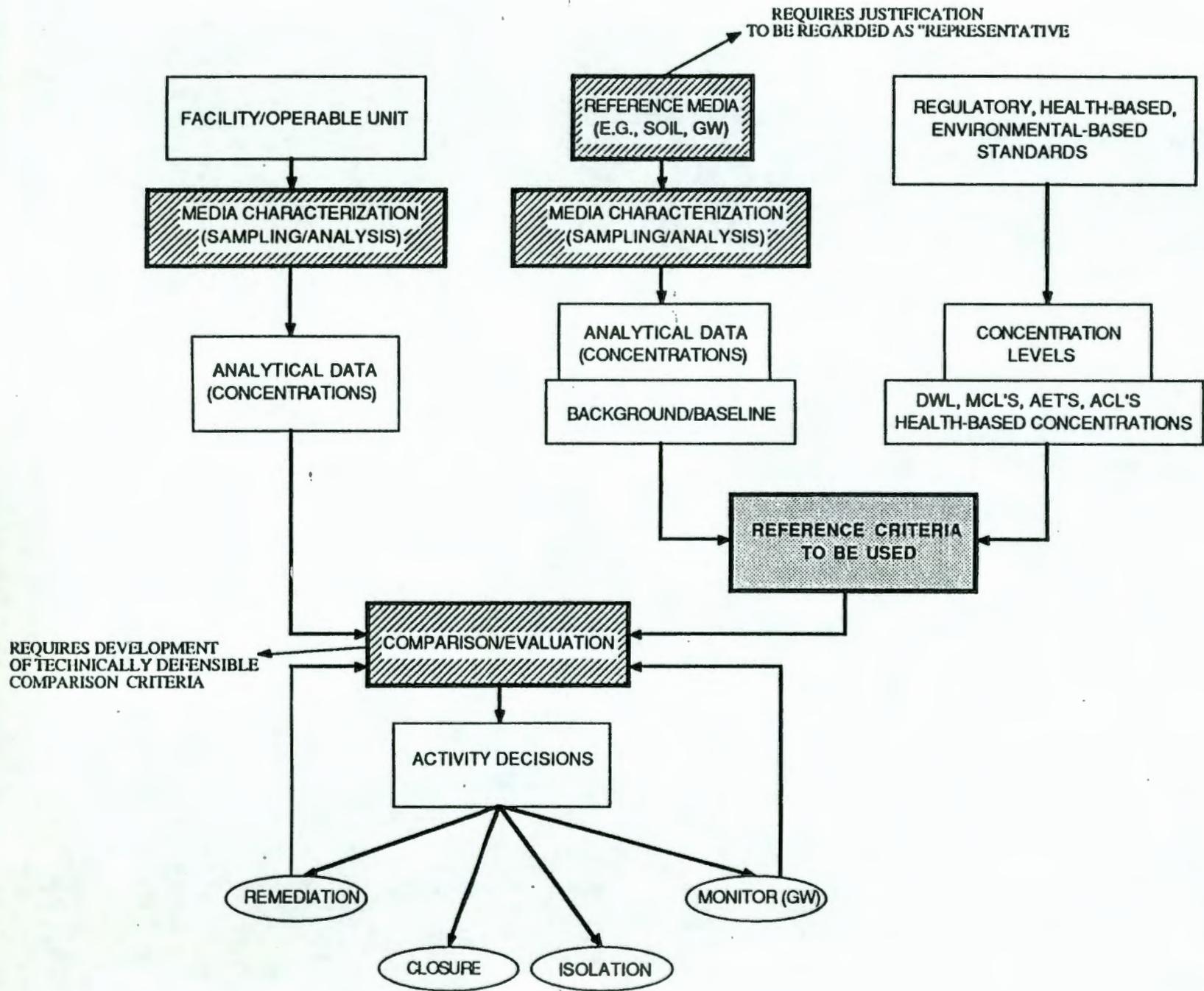
- **PERSPECTIVE**
- **OBJECTIVES**
- **PLAN OF ACTION**
- **STATUS/ SUMMARY**

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PERSPECTIVE

**HOW ARE WASTE MANAGEMENT ACTIVITIES
IMPACTED BY "BACKGROUND" RELATED ISSUES?**

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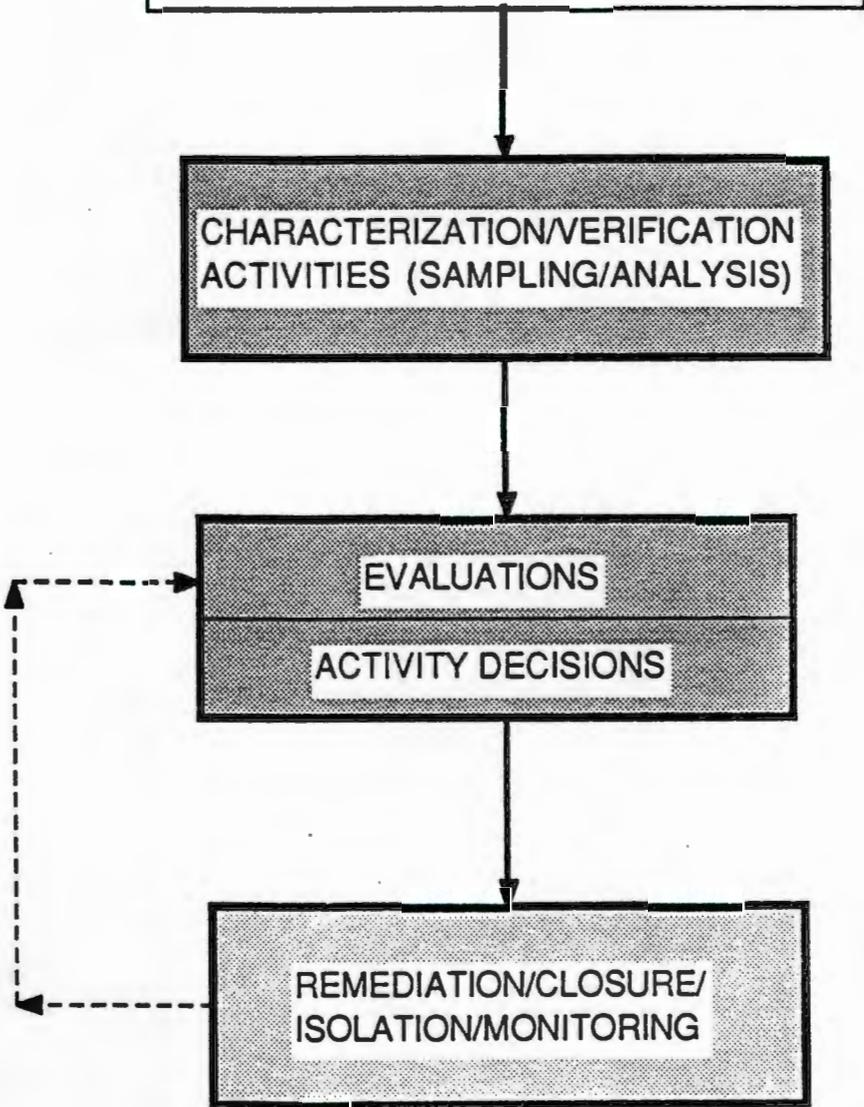


HAZARDOUS WASTE MANAGEMENT UNITS
(TSD FACILITIES / OPERABLE UNITS)

CHARACTERIZATION/VERIFICATION
ACTIVITIES (SAMPLING/ANALYSIS)

EVALUATIONS
ACTIVITY DECISIONS

REMEDIATION/CLOSURE/
ISOLATION/MONITORING



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OBJECTIVES

- **Change from ad hoc to a more unified approach for resolution of "Background" issues**
- **Development of Site wide approach to "Background" related issues that are common for RCRA and CERCLA use where possible**

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PLAN OF ACTION

- **IDENTIFICATION OF ISSUES**
- **ISSUE PRIORITIZATION**
- **STRATEGY DEVELOPMENT FOR ISSUE RESOLUTION AND IMPLEMENTATION**
- **PURSUE PRIORITY ISSUES CONCURRENTLY WITH PREPARATION OF STRATEGY DOCUMENT**

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ISSUE CATEGORIES

- **Application of various reference criteria**
- **Justification of background sites and compositions (Site Data)**
- **Technical basis for comparison criteria**
- **Media other than soil and groundwater**
- **Interim measures**

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I. APPLICATION OF VARIOUS REFERENCE CRITERIA

- **Definition of terms: (background, baseline, action levels, ACL, MCL's, water quality standards, health-based standards, environmental-based standards, contamination)**
- **Basis for use of these various reference standards in RCRA/CERCLA activities**

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II. JUSTIFICATION OF BACKGROUND SITES AND COMPOSITIONS: SITE DATA

- **Geohydrologic framework**

- Geology/provenance**

- stratigraphy

- structure

- lithologies

- mineralogy

- facies (type, dimensions, extent)

- Hydrologic/Hydrochemical Framework**

- vadose zone

- saturated zone

- unconfined aquifer

- unconfined aquifer

- groundwater recharge sources

- contamination transport

- **Physical and Chemical Compositional Data**

- Soil: mineralogy, grain size, chemical composition (bulk and partial leachate), porosity, hydraulic conductivity, etc.)**

- Groundwater: chemical composition, pH, Eh, etc.**

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III. TECHNICAL BASIS FOR USE OF COMPARISON CRITERIA

- **USE OF BACKGROUND AND HEALTH-BASED,
ENVIRONMENTAL BASED STANDARDS**

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IV. CONTROL MEDIA OTHER THAN SOIL AND GROUNDWATER

Sampling, analysis, comparison criteria;

- **Concrete: (cores, chips, wipe samples)**
- **Metal Surfaces:**
- **Biota**
- **Air**

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V. INTERIM MEASURES

- **Use of "background" vs other reference standards in RCRA & CERCLA**
- **Representativeness of soil and groundwater as background or baseline**
- **Numbers of background or baseline samples required**
- **Identification of contamination, clean-up levels, etc. (e.g., methods, criteria, etc.)**

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TASK TEAMS

I.

- STRATEGY DOCUMENT
- APPLICATION OF VARIOUS REFERENCE CRITERIA
- MEDIA OTHER THAN SOIL AND GROUNDWATER
- INTERIM MEASURES

II. TECHNICAL BASIS FOR COMPARISON CRITERIA

III.

- SITE DATA REVIEW AND COMPILATION; GROUNDWATER
- SITE DATA REVIEW AND COMPILATION; SOILS

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STRATEGY DOCUMENT OUTLINE

- 1. INTRODUCTION**
- 2. OBJECTIVES (PLAN OF ACTION)**
- 3. SITE WIDE APPROACH FOR USE OF VARIOUS
REFERENCE CRITERIA**
- 4. TECHNICAL BASIS FOR COMPARISON CRITERIA**
- 5. SITE INFORMATION COMPILATION/SUMMARY**
- 6. MEDIA OTHER THAN SOIL AND GROUNDWATER**
- 7. PRIORITIZATION**
- 8. IDENTIFICATION/PRIORITIZATION OF OTHER
INFORMATION NEEDS**
- 9. INTERIM MEASURES**
- 10. SCHEDULES AND MILESTONES**

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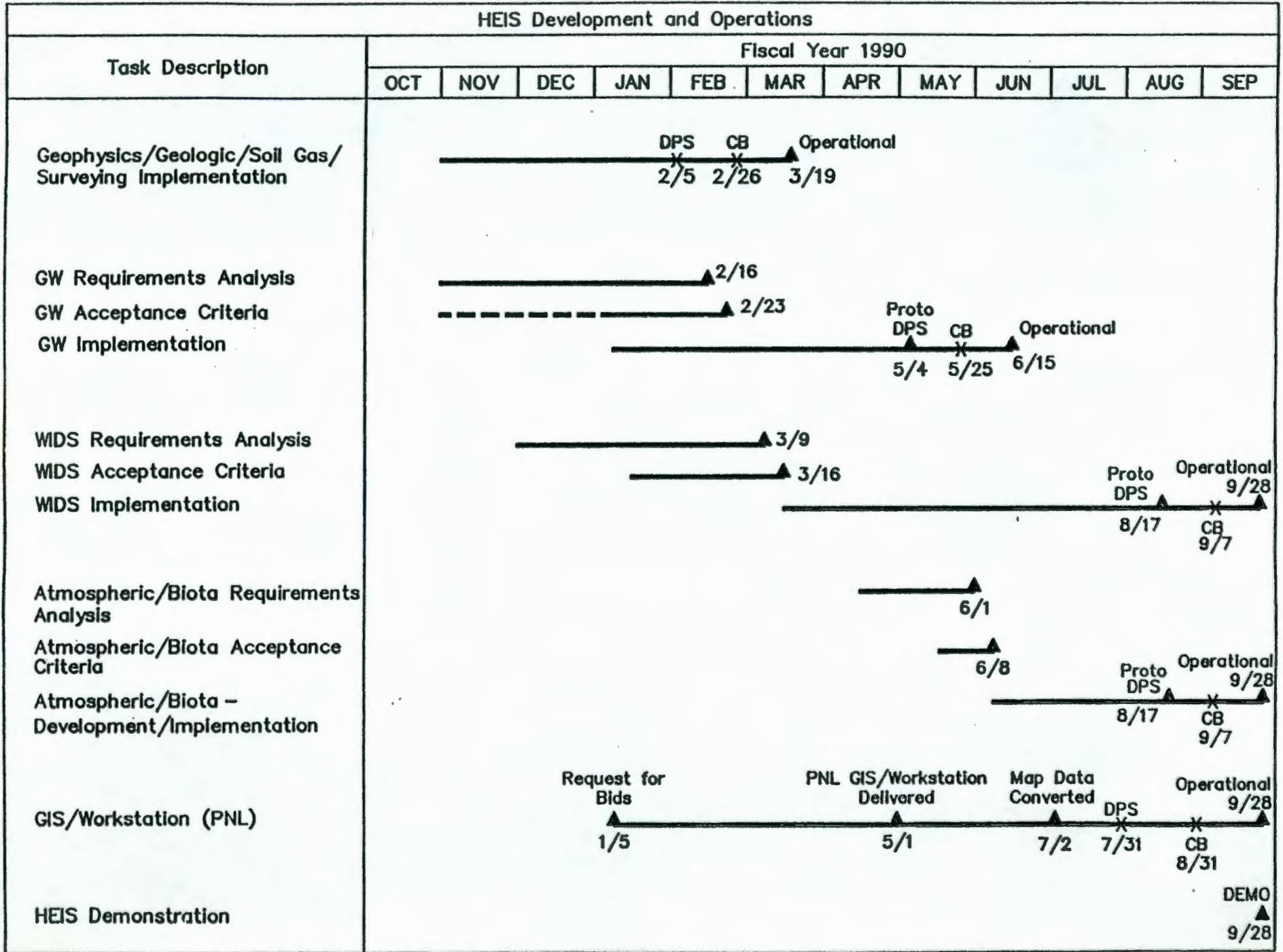
SUMMARY/STATUS

- **IDENTIFICATION OF "BACKGROUND" RELATED ISSUES**
- **ISSUE ORGANIZATION**
- **PRIORITIZATION OF ISSUES**
- **STRATEGY DOCUMENT OUTLINE/COMPLETION SCHEDULE**
- **TASK TEAM ORGANIZATION**
- **TASK TEAM AGENDAS/SCHEDULES**

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HEIS DEVELOPMENT FOR FY90

- **Finalize the Geologic/Geophysics/Soil Gas Area Developed in FY89.**
- **Develop Technical Areas in FY90:**
 - **Groundwater**
 - **WIDS**
 - **Atmospheric/Biota**
- **Procurement and Installation of a GIS**
- **Preparation of HEIS Procedures**
 - **Access and Security**
 - **Specific Technical Areas and GIS**



HEIS OPERATIONAL CONSIDERATIONS

- **Technical Aspects on Schedule:**
 - **Need to Finalize Requirements/Acceptance Criteria for the Groundwater, WIDS, and Atmospheric/Biota Areas.**
- **Roles of WHC, PNL and IRM as the System Becomes Operational.**
- **Identify Problems That May Effect Current Funding Levels:**
 - **Current Funding Intended for Development Purposes.**
 - **Operational Aspects May Require Additional Funding**