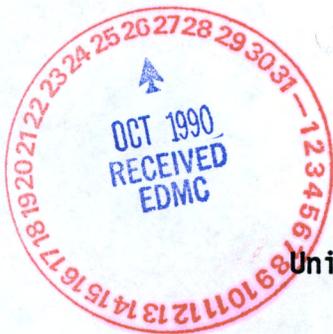


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September 17, 1990

**Meeting Minutes Transmittal/Approval**  
**Unit Managers Meeting: Past Practices - General Topics**  
**Federal Building, Room G-59**  
**Richland, Washington**  
**August 15, 1990**

From/ Appvl.: Robert K. Stewart Date: 9/19/90  
 Robert K. Stewart, R.I. Coordinator, DOE-RL (A6-95)

Appvl.: Doug Sherwood Date: 9/19/90  
 Douglas R. Sherwood, Representative, EPA (B5-01)

Appvl.: Larry Goldstein Date: 9/19/90  
 Larry Goldstein, CERCLA Unit Supervisor, Washington Dept. of Ecology

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 - Notes on the Work Plan Consistency Issues Presentation
- Attachment #6 - EPA Proposed Drinking Water Standards for 24 Additional Compounds
- Attachment #7 - Notes of the Hanford Past Practice Work Plan Strategy
- Attachment #8 - Notes on the 200-UP-2/200-W Area Proposed Scoping Activities Presentation
- Attachment #9 - Notes on the Observational Approach Presentation
- Attachment #10 - Notes on the Soils/Groundwater Background Strategy Presentation

Prepared by: Doug Fassett Date: 9/19/90  
SWEC GS8C

Concurrence by: Jack Rall Date: 9/19/90  
WHC ER Programs

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Distribution:

Dave Einan, EPA (B5-01)  
Doug Sherwood, EPA (B5-01)  
Dan Duncan, EPA, Region 10, RCRA

Chuck Cline, WDOE (two copies)  
R.O. Patt, Oregon Water Resources Dept.

Ward Staubitz, USGS  
Donna Lacombe, PRC  
Doug Fassett, SWEC (A4-35)

C.E. Clark, DOE-RL (A6-95)  
D.L. Clark, DOE-RL (A5-55)  
Julie Erickson, DOE-RL (A6-95)  
R.D. Freeberg, DOE-RL (A6-95)  
R.E. Gerton, DOE-RL (A6-80)  
Jim Goodenough, DOE-RL (A6-95)  
R.D. Izatt, DOE-RL (A6-95)  
Mary Marmon, DOE-HQ (EM-442)  
Paul Pak, DOE-RL (A6-95)  
Jim Rasmussen, DOE-RL (A6-95)  
Bob Stewart, DOE-RL (A6-95)  
Mike Thompson, DOE-RL (A6-95)  
S.H. Wisness, DOE-RL (A6-95)  
J.M. Hennig, DOE-RL (A5-21)

John Stewart, USACE

Melvin Adams, WHC (H4-55)  
Frank Calipristi, WHC (B2-35)  
Steve Clark, WHC (H4-55)  
Larry Hulstrom WHC (H4-55)  
Wayne Johnson, WHC (H4-55)  
Alan Krug, WHC (H4-55)  
Merl Lauterbach, WHC (H4-55)  
Fred Roeck, WHC (H4-55)  
KaeRae Parnell, WHC (H4-18)  
Jim Patterson, WHC (B2-15)  
Steve Weiss, WHC (H4-55)  
Tom Wintczak, WHC (B2-15)  
R.D. Wojtasek, WHC (B2-15)

Don Kane, EMO (K1-74)  
Terri Stewart, PNL (K2-12)  
Michael A. Neely, PNL (K6-96)

ADMINISTRATIVE RECORDS: 1100-EM-1, 300-FF-1, 300-FF-5, 200-BP-1, 100-HR-1,  
100-HR-3, 100-BC-1, 100-BC-5, 100-NR-1, 100-NR-3; Care of Susan Wray, WHC  
(H4-22)

Please inform Doug Fassett (SWEC) of deletions or additions to the  
distribution list.

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Attachment #1

Meeting Summary and Summary of Commitments and Agreements  
General Topics Unit Managers Meeting  
Federal Building, Room G-59  
August 15, 1990

Meeting Summary/Summary of Commitments and Agreements

1. Bob Stewart (DOE-RL) opened the meeting. The next Unit Managers Meeting is scheduled for September 19 and 20, 1990.
2. Doug Fassett (SWEC) circulated the General Topics minutes from the July 17, 1990, meeting for approval and signature. There were no comments; the minutes were approved and signed.
3. Brian Sprouse (WHC) presented the Administrative Record overview. A total of 14 additional documents were added to Administrative Records in August. Documents at the Spokane public library were moved to Gonzaga University. All documents are now in university libraries or federal reading rooms. There is a total of four repositories. The information at the repositories will be transferred to personal computer accessible software to the greatest extent possible in the near future. Larry Goldstein (Ecology) suggested the 100-NR-1 and 100-NR-3 files be included on the Administrative Record status list and Brian Sprouse agreed to this.
4. Bob Stewart reviewed the transition of responsibilities assigned to EMO and USACE. DOE is considering an RFP for a contractor to oversee RI/FS activities. Until a contractor is selected, USACE and WHC will handle RI/FS activities. EMO will not take over this contract as originally expected. An agreement has been signed between DOE and USACE; the transition of responsibility for 1100-EM-1 has begun.
5. Tom Wintczak (WHC) led a discussion on the impact of the funding levels established in the Bush budget. He gave a very brief description of the activities that would be funded at each of the operable units under the Bush budget. The Past Practices strategy cannot be achieved with current funding levels. Doug Sherwood (EPA) said a written notification of termination was required if a lack of funding prevented certain work, and consequently certain milestones, from being met. A notification that milestones for the BP-1 and FR-1 operable units will not be met is planned in the next few weeks. Planning future work is difficult when the future funding amounts are unknown.
6. Ward Staubitz (USGS) presented a discussion on Work Plan Consistency. The presentation was precipitated by inconsistencies between the draft RI/FS workplans for 100-KR-1 and 100-KR-4 and the revised and final workplans for other operable units. It is felt, by Ward Staubitz as a representative of EPA, that the draft KR workplans should have included changes made in previous workplans. The three major areas where discrepancies occur are: 1) a lack of consistency among workplans; 2) *inconsistency among work plans in execution of similar activities; and, 3) inconsistencies in the conceptual models used.* Suggestions

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for dealing with these problems included a Quality Control Group to provide consistent oversight and establishing a Conceptual Model Working Group which may include outside experts. Tom Wintczak (WHC) commented that these suggestions would increase costs and be difficult to implement in the time-frames available. He suggested that everyone should try to be more aware of avoiding inconsistencies. Mike Thompson (DOE) stated that DOE needs to look to WHC to enact more consistency checking. Larry Goldstein (Ecology) stated that this presentation reflects both EPA and Ecology concerns. Chuck Cline (Ecology) said that some slippage on the schedules for DR-1, HR-1 and HR-3 was acceptable if consistency was improved. In addition, he said it should save money if workplans were modeled after one well written workplan. Notes on this presentation are included in Attachment #5.

**ACTION ITEM #GT.61: Develop a response to the presentation on Consistency Problems. Action: B. Stewart/K.M.Thompson**

7. EPA has recently proposed drinking water standards for 24 more substances. A copy of this information is included as Attachment #6.
8. Mike Thompson (DOE) presented the RI/FS Streamlining Strategy. The first draft has been reviewed and the second draft has been completed. Comments were included and the language has been made consistent with the NCP. The strategy calls for the initiation of "aggregate area management studies" (AAMS) and changing the TPA milestones from RI/FS work plans to AAMS reports. Existing data would be used to justify expedited removal actions and as a basis for faster progress in the RI/FS process. DOE plans to implement this strategy at the 200 area operable units. Larry Goldstein (Ecology) commented that perhaps an interim response concept, including detailed criteria for such a response, should be added. Mike Thompson explained how this concept is included in the strategy. EPA commented that it would be inefficient to address the N area with both RCRA and CERCLA since most of the operable units are RCRA regulated units. Ecology will provide comments on the revised strategy by the end of August. Notes on the presentation are presented as Attachment #7.

**Action Item #GT.62: Negotiate an agreement, with all parties concerned, on the Streamlining Strategy. Develop an implementation plan by September. Action: M. Thompson**

9. Wayne Johnson gave a brief presentation on the 200-UP-2/200-W Area proposed scoping activities. Uranium and carbon tetrachloride ground water contaminant plumes have been identified beneath the Area. The ground water operable unit has not yet been defined for the area and the RI/FS workplan will not be written this fiscal year. Scoping activities began in May 1990 and the activities consisted primarily of data review and compilation. It was proposed that scoping of the Area continue as an aggregate area management study (AAMS). Notes on the presentation are presented as Attachment #8.

**ACTION ITEM #GT.63: WHC to draft a letter for DOE to send to EPA and Ecology proposing to treat the 200-UP-2/200-W Area and the associated groundwater contamination as an AAMS. Action: W.L. Johnson**

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10. Jeff Smyth (PNL) introduced a presentation on the Observational Approach to Environmental Restoration. Sam Gianti and David Lincoln of CH2M Hill explained this approach to managing uncertainty and gave an application example. The approach involves limiting the extensive investigations that sometimes accompany the conventional approach and contingency planning for possible variances from known conditions. The approach is reportedly endorsed by EPA. Mike Thompson (DOE) stated that DOE would like to incorporate this approach where possible. L. Goldstein (Ecology) said this approach would require close coordination between DOE and the regulators. DOE believes this is addressed in the streamlining document. Notes on the presentation are presented as Attachment #9.
  11. Terri Stewart (PNL) gave the RDDT&E update. She presented an example on bioremediation from the Savannah River Site. Subsurface remediation was accomplished using horizontal well technology. A handout was not provided on the presentation. Soil washing at the 300 Area was discussed as a possible future RDDT&E topic.
  12. Jim Hoover (WHC) presented the Soils and Groundwater Background Strategy Update. No groundwater sampling is planned; groundwater results from other operable units will be applied to the study. A new proposal paper will be developed for the soil sample collection effort; however, the existing drilling program is expected to be largely sufficient for sample collection efforts. D. Sherwood (EPA) pointed out that the purge water document indicates that a groundwater background data set is needed by October 1st. The response was that data would be available from other sources. L. Goldstein (Ecology) commented that there is a major difference of opinion on how the State standards are being understood. In particular, regarding groundwater background, to date all samples for background have been taken in the vicinity of TSD facilities. The only way Ecology will be comfortable with the numbers is if the data is representative of natural conditions, from sites clearly free from any facility impact. He further questioned whether the \$40,000 in the proposed budget will be sufficient to identify where to locate wells to determine background and whether there is a commitment for funds for FY 92 for the wells which will be needed. The timeframe to complete the strategy is to have the strategy proposal ready for release by the end of the fiscal year, and have the first draft of the Cleanup Standards Strategy prepared by early FY 92. Notes on the presentation are included as Attachment #10.

**ACTION ITEM #GT.64:** DOE will respond to Ecology's question on funding for FY 92 for the installation of new groundwater monitoring wells to develop background information. Action: M. Thompson/J. Patterson

**ACTION ITEM #GT.65:** Determine the appropriate timing for tasking USACE to proceed with the monitor well survey for the GIS. Action: K.M. Thompson/R. Hudson/USACE

13. Doug Fassett (SWEC) presented the status of the outstanding Action Items. The items were updated as necessary. The current Action Items are included as Attachment #4.

**Attachment #2**

**General Topics Unit Managers Meeting Agenda  
August 15, 1990  
Federal Building, Room G-59**

General Topics

9:00 - 10:00

**Approval of July's Unit Managers Meeting Minutes - Doug Fassett**

**Administrative Record Review - Brian Sprouse**

**EMO RI/FS and ACE Transition - Bob Stewart**

**Work Plan Consistency - Dave Einan**

10:00 - 11:00

**RI/FS Streamlining Strategy - Mike Thompson**

11:00 - 12:00

**Observation Approach to Environmental Restoration - Jeff Smyth**

12:00 - 1:00

**Lunch**

1:00 - 1:30

**RDDT&E Update - Terri Stewart**

1:30 - 2:00

**Soils/Groundwater Background Strategy Update - Jim Hoover**

2:00 - 2:30

**Action Item Status - Doug Fassett**

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Attachment #3  
Attendance List  
General Topics Unit Managers Meeting  
August 15, 1990

| Name                   | Org.      | O.U.                       | Phone          |
|------------------------|-----------|----------------------------|----------------|
| Gianti, Sam            | CH2M Hill |                            | (703) 471-1441 |
| Lincoln, David         | CH2M Hill |                            | (206) 453-5000 |
| Goodenough, James D.   | DOE-RL    | 100-DR, HR, KR             | (509) 376-7087 |
| Hildebrand, R. Douglas | DOE-RL    |                            | (509) 376-7287 |
| Pak, Paul              | DOE-RL    | 100-NR                     | (509) 376-4798 |
| Rasmussen, James E.    | DOE-RL    |                            | (509) 376-2247 |
| Stewart, Robert K.     | DOE-RL    | 1100-EM-1                  | (509) 376-6192 |
| Thompson, K. Michael   | DOE-RL    | Groundwater                | (509) 376-6421 |
| Werdel, Nancy A.       | DOE-RL    |                            | (509) 376-5500 |
| Cline, Chuck           | Ecology   | CERCLA Unit                | (206) 438-7556 |
| Goldstein, Larry       | Ecology   | CERCLA Unit                | (206) 438-7018 |
| Oswerly, Mike          | Ecology   | CERCLA Unit                | (206) 438-2018 |
| Neely, Mike            | EMO       |                            | (509) 376-5056 |
| Einan, Dave            | EPA       | 300-FF, 1100-EM,<br>100-KR | (509) 376-3883 |
| Sherwood, Doug         | EPA       |                            | (509) 376-9529 |
| Smith, Ronald M.       | PNL       | 300-FF-5                   | (509) 376-5831 |
| Smyth, Jeffrey D.      | PNL       |                            | (509) 376-0319 |
| Stewart, Terri L.      | PNL       |                            | (509) 375-2298 |
| LaCombe, Donna         | PRC       | EPA Cont.                  | (206) 624-2692 |
| Roy, Mell              | SAIC      |                            | (509) 943-3133 |
| Davis, Kathy           | SWEC      | GSSC to DOE-RL             | (509) 376-0412 |
| Fassett, Doug          | SWEC      | GSSC to DOE-RL             | (509) 376-9969 |
| Armacost, Vic          | USACE     | 1100-EM-1                  | (509) 522-6588 |
| Stewart, John          | USACE     | 1100-EM-1                  | (509) 522-6531 |
| Drost, Brian           | USGS      | EPA Support                | (206) 593-6510 |
| Staubitz, Ward         | USGS      | EPA Support                | (206) 593-6870 |
| Hoover, James D.       | WHC       |                            | (509) 376-2668 |
| Johnson, Wayne L.      | WHC       | 200/300 areas              | (509) 376-1721 |
| Krug, Alan             | WHC       | 100-HR-1                   | (509) 376-5634 |
| McCain, Richard G.     | WHC       |                            | (509) 376-0777 |
| Patterson, Jim         | WHC       |                            | (509) 376-0902 |
| Weiss, Steve           | WHC       | 100-DR-1, BC-1,<br>BC-5    | (509) 376-1683 |
| Wintczak, Tom          | WHC       |                            | (509) 376-0902 |

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Attachment #4  
Action Items Status List  
General Topics Meeting  
July 17, 1990

| Item No. | Action/Source of Action   | Status   |
|----------|---|--|
| 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<br>Test has started. The initial test borings were completed, and the method found appropriate for trial at the U-17 site. Problems with the deeper hole have resulted in timing delays for completion of the test. The final report will be provided to EPA/Ecology when the test is completed. (6/12/90) The report has been completed and internal review is ongoing. It will be available in about one month. (7/17/90) It is anticipated that the report will be cleared and issued by the end of September 1990. Regulators will be provided a copy at that time. (8/15/90) |
| 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 (1/24/90, GT-UMM)   | Open<br>Deferred pending closure of streamlining issue. (6/12/90) The Lessons Learned document will be integrated into this document. (7/17/90) Deferred pending closure of the streamlining issue. (8/15/90)  |
| GT.30    | Within two weeks of delivery of the narrative (per GT.29) to EPA and Ecology, Ecology will provide suggestions for the integration of RCRA TSD activities into that strategy. Action: T. Michelena/ L. Goldstein, Ecology (3/20/90, GT-UMM)   | Open<br>May 8, 1990 meeting, 9:00 AM at 450 Hill St., Room 35 - this meeting helped but further discussion on this issue is necessary. (6/12/90) Mike Thompson has revised the strategy to incorporate EPA-HQ and DOE-HQ input. Ecology and EPA will be asked to review the revised strategy and incorporate TSD considerations. (7/17/90) No change. (8/15/90)  |

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GT.31

DOE/WHC is to develop an implementation plan for the strategy associated with the logic diagram on source/groundwater operable unit integration and streamlining. This plan is to include schedule and budget impacts associated with implementation. Action: K.M. Thompson, (3/20/90, GT-UMM)

Open  
Completion of development of the strategy is needed before an implementation plan is developed. The implementation strategy should be developed incorporating appropriate NEPA planning. (6/12/90) Preparation of the implementation plan has been deferred pending completion and acceptance by Tri-Party Agreement participants. The revised strategy will not address NEPA issues in detail due to time constraints. (7/17/90) No change. (8/15/90)

GT.38

If possible, at the May Unit Managers Meeting a presentation on the approved, preferred alternative method for disposal of the reactors will be given. Action: Jim Goodenough (4/18/90, GT-UMM)

Open  
The final disposal decision (proposed action) has not yet been made. A presentation will be made to the Unit Managers at the earliest meeting following formalization of the proposed action. (7/17/90) No change. (8/15/90)

GT.43

A follow up meeting will be scheduled with EPA, Ecology, DOE and WHC to discuss the apparent conflicts between NEPA and RCRA/CERCLA activities. Action: Julie Erickson/Paul Dunigan (4/18/90, GT-UMM)

Open

GT.46

RDDT&E activity updates will be presented to the Unit Managers on a quarterly basis. Where specific activities are being conducted within an Operable Unit those RDDT&E functions will be discussed at that Unit Managers Meeting. The ISV work at 116-B-6A will be discussed at the next 100-BC-1/-5 meeting. Action: Jim Patterson (5/16/90, GT-UMM)

Closed  
Placed on Aug. UMM agenda and discussed at the meeting. Will be done quarterly. (8/15/90)

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- GT.48      WHC to ascertain if a report or an update on the Becker drilling program is appropriate for the July or August UMM. Action: Don Moak/Jim Patterson (5/16/90, GT-UMM)      Open  
 A presentation will be given when the report is out. (7/17/90) An update will be provided to the Unit Managers after the report has been issued, possibly October 1990. (8/15/90)
- GT.49      The plan for the Background Strategy is to be delivered to DOE for review by June 1990. This plan is to include a brief discussion of estimated costs and associated schedules for determining background in both media. Action: Jim Hoover, WHC (5/16/90, GT-UMM)      Open  
 Report expected first of August. (7/17/90) The Strategy Planning Document will be issued by the end of the Fiscal Year. Cost and Schedules were discussed during the August Unit Manager's Meeting. (8/15/90)
- GT.50      WHC will develop a plan for determining background using both TSD and Past Practices Operable Units. Initial efforts will be focused on the near-term (interim measure) while assuring consistency for longer term (site-wide) determination. Action: J. Hoover and RI Coordinators (TSD and PP units)      Closed  
 The subject was discussed at the August Unit Manager Meeting. It was determined that it does contain the necessary near-term and long-term information required. The issue will be reviewed when the strategy proposal is submitted at the end of the Fiscal Year. (8/15/90)
- GT.51      A committee will be formed over the next several weeks to develop and propose an alternative procedure for RI/FS (RFI/CMS) characterization generated waste. Action: Bob Stewart (5/16/90, GT-UMM)      Open  
 Committee formed and draft procedure in preparation. Bob Stewart will provide copies of the draft for EPA/Ecology review. It was agreed at the June 12 meeting that draft procedures would be prepared considering RI/FS (RFI/CMS) characterization waste as non-RCRA generated waste, and the procedure would be written to handle waste in a manner to protect human health and the environment. (6/12/90) A draft procedure is almost complete. It will be presented to regulators in about two weeks. (7/17/90) *Work on draft procedure has been delayed due to higher priority support contract work. The procedure is expected to be provided to EPA/Ecology by the September UMM. (9/19/90)*

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- GT.54 Provide the acceptance Criteria, Requirements Analysis and other HEIS criteria to EPA and Ecology. Action: Bob Henckel Closed  
The package has been compiled; it will be mailed by DOE-RL. Frank Calipristi is currently performing the final review. (7/17/90) Package was sent out on 7/26/90 to Tim Nord and Doug Sherwood. (8/15/90)
- GT.55 Provide information on the conversion of all Hanford data to the GIS coordinate system. Action: Larry Brown and Bob Henckel Open  
The best method of presenting the data on the GIS system is being discussed. Ward Staubitz and Chuck Cline will followup with WHC. (7/17/90) No change (8/15/90)
- GT.57 Determine what parts of ENCORE are funded and will be completed. Action: Jim Patterson Open  
It has been put on the priority list for funding for next year but the amount is uncertain. (7/17/90) \$ 900K has been allocated for the total ENCORE program. The scope of work is still being negotiated. This includes IRM, systems, plans and many other items. Ecology stated the funding appears excessive in view of projected short-fall in near-future. EPA and Ecology need to be involved in setting priorities. (8/15/90)
- GT.58 DOE will expedite completion of the integration and Lessons Learned documents so that it will be available for all involved parties. Action: Bob Stewart. Open. This Item was previously labeled HR1.18. (6/12/90) Comments have been received and they will be compiled. (7/17/90) Action has been delayed because of other required activities. (9/19/90)

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- GT.60 Plan a technical session with participation by WHC and PNL to address proper techniques of characterization of soil hydraulic properties and application of unsaturated flow and solute transport models for the RI/FS Workplans. Include Ward Staubitz and Chuck Cline and others as needed. Action: Jerry Cammann (7/17/90, GT.UMM) Open (8/15/90)
- GT.61 Develop a response to the presentation on Consistency Problems. Action: B. Stewart/K. M. Thompson (8/15/90, GT.UMM) Open *A surveillance was conducted on 8/29/90 to assess WHC responses to the workplan consistency issue. Copies will be provided at the 9/19/90 GT-UMM (9/19/90)*
- GT.62 Negotiate an agreement, with all parties concerned, on the Streamlining Strategy. Develop an implementation plan by September. Action: M. Thompson (8/15/90, GT.UMM) Open (8/15/90)
- GT.63 WHC to draft a letter for DOE to send to EPA and Ecology proposing to treat the 200-UP-2/200W Area and the Associated Groundwater contamination as an AAMS. Action W. L. Johnson (8/15/90, GT.UMM) Open (8/15/90)
- GT.64 DOE will respond to Ecology's question on funding for FY 92 for the installation of new groundwater monitoring wells to develop background information. Action: M. Thompson/J. Patterson (8/15/90, GT.UMM) Open (8/15/90)
- GT.65 Determine the appropriate Timing for tasking USACE to proceed with the monitor well survey for the GIS. Action: K. M. Thompson/R. Hudson/USACE (8/15/90, GT.UMM) Open (8/15/90)

Consistency Problems

- 1) Between Work Plan
- 2) Execution of the Work Plans
- 3) Conceptual Model

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1) Work Plans

- a) River/Seep/Sediment Sampling
- b) Field/Laboratory Screening
- c) Drilling Through Waste Management Units
- d) Test Pit Sampling
- e) Collection of Aquifer Matrix Samples for Chemical Analysis
- f) Physical Analyses of Contaminated Samples
- g) Flood-Wave and Water Level Measurements
- h) Flow and Solute Transport Models

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3) Conceptual Model

a) Recharge - 100-BC-1

- 100-KR-1

b) Flow System - 1100-EM-1

c) Future Updates

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*Paul*

**EPA**  
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# Environmental News

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EPA PROPOSES TO REGULATE 24 ADDITIONAL DRINKING WATER  
CONTAMINANTS

July 5, 1990

Sean McElheny (202) 382-4387

The U.S. Environmental Protection Agency today announced that, to further protect public health, it has proposed regulations for an additional 24 drinking water contaminants.

"This action will enhance the safety of the nation's drinking water by reducing contamination levels. When the regulations are final, 80,000 public water systems nationwide must meet the new standards and monitor for these contaminants," said EPA Administrator William K. Reilly.

EPA now enforces federal standards for 34 drinking water contaminants and expects that number to rise to 85 by 1992 as this proposed action and other proposed standards are completed.

Although most of the 24 contaminants occur only rarely in drinking water, the public will gain increased protection against diarrhea, cancer, and damage to the liver, kidney, heart and reproductive organs as a result of the new standards.

The Agency believes the establishment of these national standards will provide an impetus to clean up contaminated groundwater and ultimately will result in prevention of further contamination. Furthermore, monitoring requirements included in the proposed regulations should uncover cases of as yet undetected contamination:

The contaminants proposed for regulation include nine pesticides, six inorganic chemicals and nine synthetic organic chemicals. Six of the 24 contaminants are probable human carcinogens in drinking water and seven of the nine pesticides are in use today. Dioxin, beryllium, cyanide and sulfate are a few of the affected contaminants. (See attached chart).

EPA estimates that when the proposed regulations become effective, 2,300 public drinking water systems serving approximately two million people will have to treat their water for excess levels of the 24 contaminants. About 1,100 of those

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systems will be affected because of unacceptably high levels of sulfate, a contaminant that can cause acute health effects. Most of the sulfate-affected systems will be in the West and Midwest.

High levels of sulfate in drinking water may cause diarrhea in infants and in travelers not used to high sulfate levels. Infant diarrhea is of most concern because it can lead to dehydration, which can leave infants weak and susceptible to disease, and can be fatal if left untreated. The Agency estimates that the proposed sulfate standard will prevent 105,000 cases of travelers' diarrhea per year.

When the proposals are final, public water systems will have to monitor for these contaminants regularly to ensure that the standards are being met. EPA expects that initial monitoring will begin before final implementation of the regulations since the Agency will issue monitoring requirements for these and other as yet unregulated contaminants in December, 1990.

EPA standards generally apply to any drinking water supply system that regularly serves at least 25 people. The proposed regulations announced today cover 60,000 residential community systems serving customers year round and an additional 20,000 non-residential systems, such as those that supply schools and factories.

The proposed regulations establish federally enforceable standards, or maximum contaminant levels (MCLs), for the 24 pollutants. The proposals also set non-enforceable health goals, called maximum contaminant level goals (MCLGs), set at a level at which no known or anticipated health effects occur and which allow an adequate margin of safety. The MCLs are set as close to the MCLGs as feasible to ensure adequate protection of public health.

The proposals also: identify the best available treatment technology (BAT) which can achieve the MCLs; provide the mandatory language that public water suppliers must use to notify customers of standards violations; and establish requirements for monitoring, reporting and state implementation of the federal requirements.

Today's proposed regulations are mandated by the 1986 Amendments to the Safe Drinking Water Act, which require EPA to publish MCL's for 83 specific contaminants. The original Safe Drinking Water Act was passed by Congress in 1974, and EPA began setting national standards in 1975.

The Agency generally delegates the authority to enforce all federal drinking water standards to the states but can intercede

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-3-

when necessary. States may set standards more stringent than federal ones or establish standards for contaminants not regulated by EPA. However, states may not set standards less stringent than EPA's.

EPA believes that the economic impact of this proposal on most water treatment systems and their customers will be small. The Agency estimates the total cost of the proposed regulations to be \$87 million, with \$67 million going to sulfate control. EPA estimates that less than three percent of the nation's drinking water treatment systems will have to install new treatment equipment to meet the requirements of this proposal.

However, the impact of the regulations may be substantial for about 1,700 small systems (serving less than 500 persons) that may be out of compliance with specific contaminants. Seventy-seven percent of the systems exceeding the sulfate MCL are expected to be small systems. Households served by sulfate-contaminated systems could see their annual water bills increase by \$60 to \$1,750, depending on the size of their system and the extent of contamination. For households at systems affected by other contaminants, annual bills could increase by \$10 to \$950. EPA is pursuing several options to lessen the economic impact on such small systems and their customers such as phasing-in monitoring requirements, providing compliance deadline extensions and promoting the development of low-cost package treatment technologies.

The proposed regulations announced today were signed last week and should be published in the Federal Register by July 16, 1990. Written public comment on the proposal must be submitted within 90 days of the date of publication. The final rules should be published in the Federal Register by March, 1992. The monitoring requirements will become effective 30 days after publication of the final rule and the MCLs, 18 months after publication.

The Safe Drinking Water Hotline is available to the public to answer questions on these proposed rules or on other drinking water questions. The toll-free number is 800-426-4791; in Washington D.C., call 382-5533.

005/015  
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0186  
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07/03/89

PROPOSED NATIONAL PRIMARY DRINKING WATER REGULATIONS

| CONTAMINANTS      | DRINKING WATER HEALTH EFFECTS              | PROPOSED MCLG* (mg/l) | PROPOSED MCL** (mg/l)   | SOURCES  | NOTES |
|-------------------|--|-----------------------|-------------------------|--|-------|
| <b>INORGANICS</b> |  |                       |                         |  |       |
| Antimony          | Decreases growth and longevity             | 0.003                 | 0.01/0.005 <sup>1</sup> | Geological, manufacture of flame retardants, ceramics, glass, pesticides and tin/antimony solder           |       |
| Beryllium         | Probable cancer, damage to bones and lungs | Zero                  | 0.001                   | Geological, manufacture of high thermal conductivity materials   |       |
| Cyanide           | Spleen, brain and liver effects            | 0.2                   | 0.2                     | Used in electroplating, steel processing, plastics, synthetic fibers, mining, fertilizer and farm products |       |
| Nickel            | Heart and liver effects                    | 0.1                   | 0.1                     | Geological, used in electroplating, battery production, ceramics and glass coloration                      |       |

0006/015  
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 03/03

PROPOSED NATIONAL PRIMARY DRINKING WATER REGULATIONS (Cont'd)

| CONTAMINANTS                          | DRINKING WATER HEALTH EFFECTS   | PROPOSED MCLG* (mg/l) | PROPOSED MCL** (mg/l)    | SOURCES  | NOTES  |
|---------------------------------------|---------------------------------|-----------------------|--------------------------|--|--|
| Sulfate                               | Gastroenteritis                 | 400/500 <sup>1</sup>  | 400/500 <sup>1</sup>     | Geological, steel and metal industries, fungicide manufacture    | Secondary standard of 250 mg/l in effect   |
| Thallium                              | Kidney, liver and brain effects | 0.0005                | 0.002/0.001 <sup>1</sup> | Geological, electronics industry, alloys and glass manufacturing |  |
| ORGANICS                              |                                 |                       |                          |  |  |
| Dalapon                               | Kidney and liver effects        | 0.2                   | 0.2                      | Herbicide  | Estimated production in 1982 - seven to nine million pounds; reported level of 0.001 mg/l in water |
| Dichloro methane (methylene chloride) | Probable cancer                 | Zero                  | 0.005                    | Solvent  |  |

0007/015

REGION 10

PRESS DIVISION

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07/03/89

## PROPOSED NATIONAL PRIMARY DRINKING WATER REGULATIONS (Cont'd)

| CONTAMINANTS             | DRINKING WATER HEALTH EFFECTS                              | PROPOSED MCLG* (mg/l) | PROPOSED MCL** (mg/l) | SOURCES         | NOTES   |
|--------------------------|--|-----------------------|-----------------------|-----------------|---|
| Dinoseb -----            | Thyroid and reproductive organs effects                    | 0.007 -----           | 0.007 -----           | Herbicide ----- | Sale, distribution and shipment cancelled under FIFRA; reported levels up to 0.1 mg/l |
| Diquat -----             | Liver, kidney, GI tract effects and cataract formation     | 0.02 -----            | 0.02 -----            | Herbicide ----- | Estimated use in 1980 - 0.2 million pounds; no reported levels in water               |
| Di(ethylhexyl) adipate   | Possible carcinogen, liver and reproductive system effects | 0.5 -----             | 0.5 -----             | Plastics        |   |
| Di(ethylhexyl) phthalate | Probable cancer  | Zero -----            | 0.004 -----           | Plastics        |   |
| Endothall -----          | Liver, kidney, GI tract and reproductive system effects    | 0.1 -----             | 0.1 -----             | Herbicide ----- | Estimated usage in 1982 - 1.5 million pounds; no reported levels in water             |

0008/015

REGION 10

PRESS DIVISION

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03/03/89

PROPOSED NATIONAL PRIMARY DRINKING WATER REGULATIONS (Cont'd)

| CONTAMINANTS                           | DRINKING WATER HEALTH EFFECTS       | PROPOSED MCLG* (mg/l) | PROPOSED MCL** (mg/l) | SOURCES   | NOTES   |
|--|-------------------------------------|-----------------------|-----------------------|---|---|
| Endrin -----                           | Liver, kidney and heart effects --- | 0.002                 | 0.002                 | Pesticide -----   | Current MCL is 0.0002 mg/l; uses cancelled under FIFRA; no detectable levels reported |
| Glyphosate -----                       | Liver and kidney effects -----      | 0.7                   | 0.7                   | Herbicide -----   | Estimated production in 1980 - 15 to 20 million pounds; no reported levels in water   |
| Hexachloro benzene -----               | Probable cancer -                   | Zero                  | 0.001                 | Waste by-product in manufacture of chlorinated pesticides |   |
| Hexachloro cyclopentadiene (HEX) ----- | Kidney and stomach effects -----    | 0.05                  | 0.05                  | Waste by-product in manufacture of chlorinated pesticides | Proposed secondary MCL of 0.008 mg/l based on odor                                    |

PROPOSED NATIONAL PRIMARY DRINKING WATER REGULATIONS (Cont'd)

0009/015

REGION 10

PRESS DIVISION

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12:42

07/03/89

| CONTAMINANTS                                 | DRINKING WATER HEALTH EFFECTS               | PROPOSED MCLG* (mg/l) | PROPOSED MCL** (mg/l) | SOURCES   | NOTES   |
|--|---|-----------------------|-----------------------|---|---|
| Oxamyl -----<br>(Vydate)                     | Kidney effects                              | 0.2                   | 0.2                   | Pesticide   | Estimated production in 1982 - 0.4 million pounds; reported levels up to 0.049 mg/l                   |
| PAHs <sup>2</sup> -----<br>[Benzo(a) pyrene] | Probable cancer                             | Zero                  | 0.0002                | Fossil fuel burning, wood burning, coal tar, forest fires |   |
| Picloram -----                               | Kidney and liver effects                    | 0.5                   | 0.5                   | Herbicide   | Estimated production in 1982 - 0.3 million pounds; reported levels up to 8.3 mg/l                     |
| Simazine -----                               | Possible cancer, circulatory system effects | 0.001                 | 0.001                 | Herbicide   | Estimated production between 1978 and 1980 - 8 to 11 million pounds; reported levels up to 0.002 mg/l |

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PROPOSED NATIONAL PRIMARY DRINKING WATER REGULATIONS (Cont'd)

| CONTAMINANTS            | DRINKING WATER HEALTH EFFECTS                         | PROPOSED MCLG* (mg/l) | PROPOSED MCL** (mg/l)    | SOURCES   | NOTES |
|-------------------------|---|-----------------------|--------------------------|---|-------|
| 1,2,4-Trichloro benzene | - Kidney and liver effects                            | 0.009                 | 0.009                    | Manufacture of herbicides, dye carrier  |       |
| 1,1,2-Trichloro ethane  | - Possible carcinogen, kidney and liver effects       | 0.003                 | 0.005                    | Solvent, manufacture of vinylidene chloride   |       |
| 2,3,7,8-TCDD (Dioxin)   | ----- Probable cancer, reproductive and liver effects | - Zero                | ----- $5 \times 10^{-8}$ | ----- By-product of oil refineries and some chlorinated herbicides, bleach craft pulp and paper mill effluent |       |

\* Maximum Contaminant Level Goal, a non-enforceable health protection goal

\*\* Maximum Contaminant Level, a federally enforceable standard

1 EPA is considering alternative MCLGs and/or MCLs for these inorganics. After public comment, a single MCLG and MCL will be set.

2 In addition to benzo(a)pyrene, EPA is considering the establishment of an MCLG and an MCL for six additional polynuclear aromatic hydrocarbons (PAHs) classified as probable human carcinogens.

7/2/90

DRAFT

## TALKING POINTS

- ° Proposed drinking water regulations for 24 contaminants:
  - 6 inorganics and 18 organics
  - 23 new and one revised (endrin)
  - 9 are pesticides, 3 volatile organics and 6 other organics
- ° Increase the number of regulated contaminants:
  - 34 standards in effect
  - increase to 57
  - number of standards up to 85 by 1992 when this action and other proposed standards are finalized (83 were required by 1986 SDWA)

[May want to mention final 38 SOCs and IOCs, lead and copper, and radionuclides proposal]
- ° Adverse health effects:
  - chronic and acute (for sulfate)
  - 6 probable carcinogens
  - liver, kidney, heart and reproductive effects among chronic effects
- ° Benefits of drinking water standards
  - uncover cases of yet undetected contamination
  - prevention of further contamination
  - provide targets for cleanup of contaminated groundwaters
- ° Standards will apply to public water systems which regularly serve at least 25 people; 60,000 residential and 20,000 non-residential systems
- ° Most contaminants occur rarely
  - few systems expected to be impacted
  - 2,300 systems or less than 3% of the systems affected
  - approx. 2 million people may benefit
- ° Costs
  - National:
    - Up to \$87 million per year (O&M and capital debt retirement)
      - \$81 million to treat
      - \$6 million to monitor
    - \$289 million one time capital cost
  - Household:
    - large systems (over 1 million) - \$10 to \$280 per household per year
    - small systems (below 500) - \$950 to \$1750 per household per year
- ° Sulfate impacts
  - most costs due to sulfate (\$67 million of the \$87 million annual costs)
  - over 1,000 systems affected
  - 77% are small systems serving less than 500 people

9118915179

-2-

## ° Sulfate

- problems: west and midwest
- acute effect: diarrhea (which may lead to dehydration)
- 105,000 cases avoided per year
- susceptible population (infants and travelers)
- short term effect, acclimatization occurs
- secondary MCL in effect - 250 mg/l

## ° Pesticides

- 7 of the 9 pesticides used in the U.S.; endrin and dinoseb uses have been cancelled under FIFRA
  - Some are widely used herbicides (crop and non-crop applications):
    - dalapon - corn, cotton, peas
    - glyphosate - residential uses (weeds control)
    - simazine - control broadleaf weeds, and algacide
  - Some have been reported above levels of concern in drinking water or ground water
    - dinoseb (cancelled)
    - picloram
    - simazine
  - Others not reported at levels of concern have the potential for leaching
- ° Other contaminants:
- 2,3,7,8-TCDD (dioxin) - not reported in finished drinking water; not likely to leach to ground waters; removed from surface waters by conventional treatments (such as filtration)
  - SOCs are mostly from industrial sources (exception - PAHs may occur naturally)
  - Inorganics - occur naturally in the environment; except for sulfate, no major contamination anticipated

911132173

May 17, 1990

## Contaminants Required to be Regulated by the SDWA Amendments of 1986

- The original group of contaminants required to be regulated by the SDWA Amendments appeared in Advanced Notices of Proposed Rulemakings published in the *Federal Register* on March 4, 1982 (47 FR 9352) and October 5, 1983 (48 FR 45502).
- Final substitutes to the Drinking Water Priority List (DWPL) notice were signed by the Administrator on January 13, 1988, and published in the *Federal Register* on January 22, 1988 (53 FR 1892).
- Table 1 shows the List of 83 contaminants. Table 2 shows contaminants removed from the list of 83. Table 3 shows the substitutes added.

**Table 1**  
**List of Contaminants Required to be Regulated**  
**under the SDWA Amendments of 1986**

### Volatile Organic Chemicals

|                                       |   |  |
|---------------------------------------|---|--|
| Benzene - <sup>0.1</sup>              | 1,1-Dichloroethylene - <sup>0.1</sup>     | Trichlorobenzene - <sup>5</sup>        |
| Carbon tetrachloride - <sup>0.1</sup> | cis-1,2,-Dichloroethylene - <sup>2</sup>  | 1,1,1-Trichloroethane - <sup>0.1</sup> |
| Chlorobenzene - <sup>2</sup>          | trans-1,2,Dichloroethylene - <sup>2</sup> | Trichloroethylene - <sup>0.1</sup>     |
| Dichlorobenzene - <sup>0.1,2</sup>    | Dichloromethane - <sup>5</sup>            | Vinyl chloride - <sup>0.1</sup>        |
| 1,2,-Dichloroethane - <sup>0.1</sup>  | Tetrachloroethylene - <sup>2</sup>        |  |

### Microbiology and Turbidity

|                                |                                     |                            |
|--------------------------------|-------------------------------------|----------------------------|
| Giardia lamblia - <sup>4</sup> | Standard plate count - <sup>4</sup> | Turbidity - <sup>0.4</sup> |
| Legionella - <sup>4</sup>      | Total coliforms - <sup>0.4</sup>    | Viruses - <sup>4</sup>     |

### Inorganics

|                             |                             |                           |
|-----------------------------|-----------------------------|---------------------------|
| Aluminum - <sup>x</sup>     | Copper - <sup>*</sup>       | Nitrite - <sup>+,2</sup>  |
| Antimony - <sup>5</sup>     | Cyanide - <sup>5</sup>      | Selenium - <sup>0.2</sup> |
| Arsenic - <sup>0,*,**</sup> | Fluoride - <sup>0,*,*</sup> | Silver - <sup>0,x,2</sup> |
| Asbestos - <sup>2</sup>     | Lead - <sup>0,*</sup>       | Sodium - <sup>x</sup>     |
| Barium - <sup>0.2</sup>     | Mercury - <sup>0.2</sup>    | Sulfate - <sup>5</sup>    |
| Beryllium - <sup>5</sup>    | Molybdenum - <sup>x</sup>   | Thallium - <sup>5</sup>   |
| Cadmium - <sup>0.2</sup>    | Nickel - <sup>5</sup>       | Vanadium - <sup>x</sup>   |
| Chromium - <sup>0.2</sup>   | Nitrate - <sup>0.2</sup>    | Zinc - <sup>x</sup>       |

Cont'd on Next Page

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Table 1 Cont'd

## Organics

|                                    |  |                                      |
|------------------------------------|--|--------------------------------------|
| Acrylamide - <sup>2</sup>          | Dinoseb - <sup>5</sup>                   | PCBs - <sup>2</sup>                  |
| Adipates - <sup>5</sup>            | Diquat - <sup>5</sup>                    | Pentachlorophenol - <sup>2</sup>     |
| Alachlor - <sup>2</sup>            | EDB - <sup>2</sup>                       | Phthalates - <sup>5</sup>            |
| Aldicarb - <sup>2</sup>            | Endothall - <sup>5</sup>                 | Picloram - <sup>5</sup>              |
| Aldicarb sulfone - <sup>+2</sup>   | Endrin - <sup>0,2</sup>                  | Simazine - <sup>5</sup>              |
| Aldicarb sulfoxide - <sup>+2</sup> | Epichlorohydrin - <sup>2</sup>           | Styrene - <sup>+2</sup>              |
| Atrazine - <sup>2</sup>            | Ethylbenzene - <sup>+2</sup>             | 2,3,7,8-TCDD (Dioxin) - <sup>5</sup> |
| Carbofuran - <sup>2</sup>          | Glyphosate - <sup>5</sup>                | Toluene - <sup>2</sup>               |
| Chlordane - <sup>2</sup>           | Heptachlor - <sup>+2</sup>               | Toxaphene - <sup>0,2</sup>           |
| 2,4,-D - <sup>0,2</sup>            | Heptachlor epoxide - <sup>+2</sup>       | 2,4,5-TP - <sup>0,2</sup>            |
| Dalapon - <sup>5</sup>             | Hexachlorocyclopentadiene - <sup>5</sup> | 1,1,2-Trichloroethane - <sup>5</sup> |
| DBCP - <sup>2</sup>                | Lindane - <sup>0,2</sup>                 | Vydate - <sup>5</sup>                |
| Dibromomethane - <sup>x</sup>      | Methoxychlor - <sup>0,2</sup>            | Xylene - <sup>2</sup>                |
| 1,2-Dichloropropane - <sup>2</sup> | PAHs - <sup>5</sup>                      |                                      |

## Radionuclides

|   |                             |                        |
|---|-----------------------------|------------------------|
| Beta particle and photon radioactivity - <sup>0,3</sup> | Radium 226 - <sup>0,3</sup> | Radon - <sup>3</sup>   |
| Gross alpha particle activity - <sup>0,3</sup>          | Radium 228 - <sup>0,3</sup> | Uranium - <sup>3</sup> |

- 0 Contaminants currently regulated  
 1 Contaminants with MCLs and MCLGs promulgated July 8, 1987  
 2 Contaminants with NPDWRs proposed on May 22, 1989  
 3 Contaminants with NPDWRs scheduled for proposal in February 1991  
 4 Contaminants with NPDWRs promulgated on June 29, 1989  
 5 Contaminants with NPDWRs scheduled for proposal in June 1990  
 x Contaminants removed from the list of 83  
 + Contaminants added to the list of 83  
 \* Contaminants with NPDWRs proposed in August 18, 1988  
 \* \* Fluoride final rule April 2, 1986  
 \* \* \* Arsenic to be revised at a later date

Table 2

## Removed from SDWA List of 83:

|                |            |          |      |
|----------------|------------|----------|------|
| Aluminum       | Molybdenum | Sodium   | Zinc |
| Dibromomethane | Silver     | Vanadium |      |



May 17, 1990

**Table 3**  
**Substituted into SDWA List of 83:**

|                    |              |                    |         |
|--------------------|--------------|--------------------|---------|
| Aldicarb sulfone   | Ethylbenzene | Heptachlor epoxide | Styrene |
| Aldicarb sulfoxide | Heptachlor   | Nitrite            |         |

911100-0171



## HANFORD PAST PRACTICE WORK PLAN STRATEGY

### OBJECTIVES:

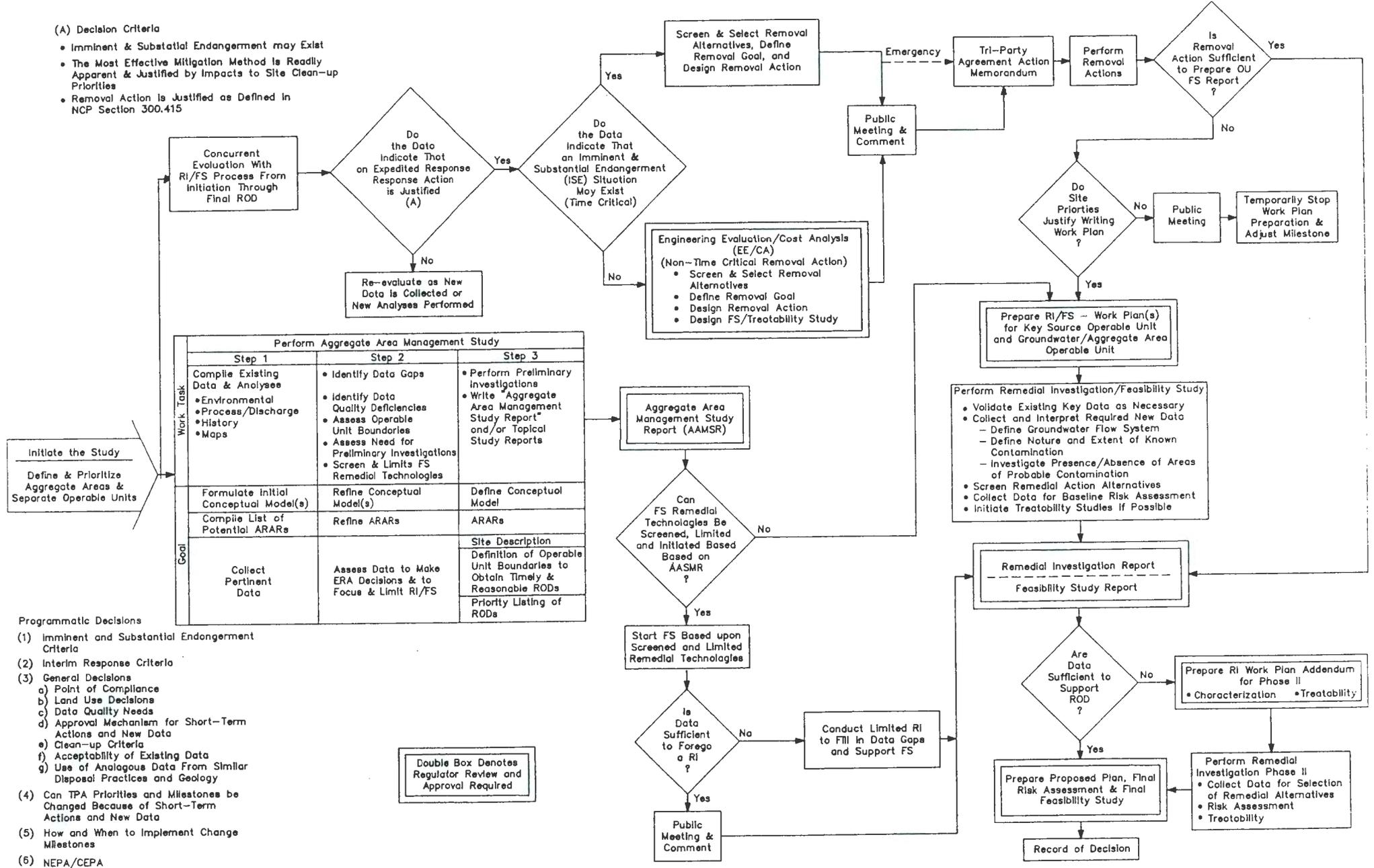
- o INTEGRATE MOST EFFECTIVE CERCLA AND RCRA PAST PRACTICE REQUIREMENTS & GUIDANCE FROM EPA INTO A SINGULAR PROCESS APPLICABLE TO HANFORD.
- o PROVIDE FOR EXPEDITED RESPONSE (REMOVAL) ACTIONS (ERAs) WHERE JUSTIFIED.
  - IMMINENT & SUBSTANTIAL ENDANGERMENT
  - NON-TIME CRITICAL REMOVAL ACTIONS
- o REDEFINE TRI-PARTY AGREEMENT MILESTONES TO ALLOW FOR MORE EFFECTIVE USE OF EXISTING DATA.
  - INITIATE "AGGREGATE AREA MANAGEMENT STUDIES" (AAMSS) SIMILAR TO SUPERFUND "SCOPING" STUDIES TO GATHER AND INTERPRET EXISTING DATA. EXISTING TPA MILESTONES ARE FOR DELIVERY OF RI/FS WORK PLANS; CHANGE TO AAMS REPORTS.
  - USE EXISTING DATA AS BASIS FOR ERAs.
  - USE AGGREGATE AREA MANAGEMENT STUDY REPORT (AAMSR) TO FOCUS RI/FS WORK PLAN TO "FILL IN THE DATA GAPS" AND VERIFY DATA WHERE DATA QUALITY IS DEFICIENT.
  - USE EXISTING DATA TO MAKE EXPEDITED REMEDIATED REMEDIAL DECISIONS IN RI/FS PROCESS (EX. START FEASIBILITY STUDY IN AAMS AND TREATABILITY STUDIES IN RI PHASE).
- o IDENTIFY CRITICAL DECISIONS THAT AFFECT CLEANUP SUCH AS ULTIMATE LAND USE AND POINT OF COMPLIANCE.
- o TIME AND COST EFFICIENCY.

### STATUS:

- o FIRST DRAFT REVIEWED BY DOE-RL & CONTRACTORS, DOE-HQ (EH-232), EPA-REGION X, EPA-HQ, WASHINGTON DEPT. OF ECOLOGY
- o SECOND DRAFT COMPLETED THAT INCORPORATES COMMENTS; STARTING SECOND ROUND OF REVIEW
- o EPA & ECOLOGY ARE SUPPORTIVE OF STRATEGY OBJECTIVES & CONTENT

(A) Decision Criteria

- Imminent & Substantial Endangerment may Exist
- The Most Effective Mitigation Method is Readily Apparent & Justified by Impacts to Site Clean-up Priorities
- Removal Action is Justified as Defined in NCP Section 300.415



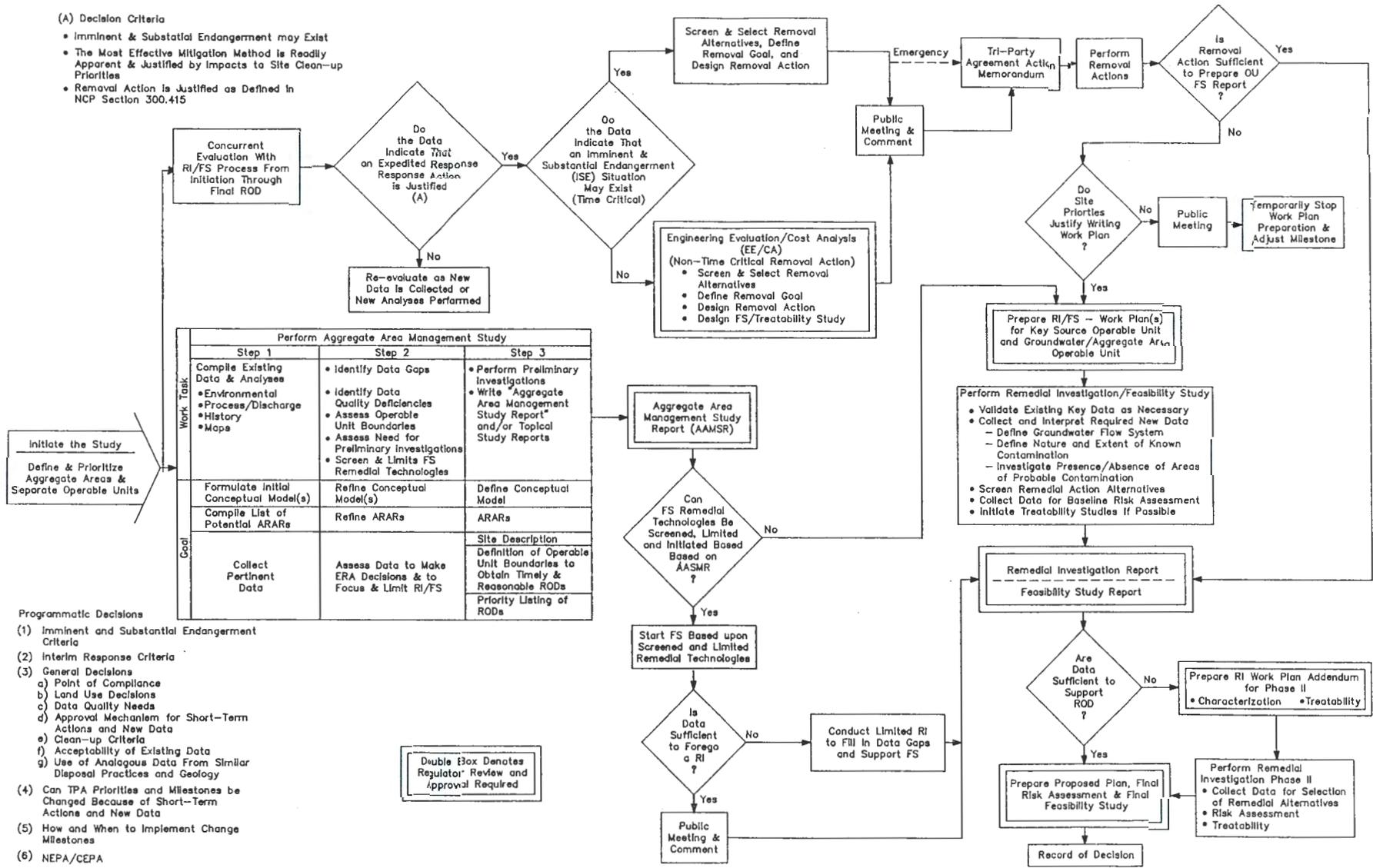
| Perform Aggregate Area Management Study  |  |   |
|--|--|---|
| Step 1   | Step 2   | Step 3  |
| <b>Work Task</b><br>Compile Existing Data & Analyze<br>• Environmental<br>• Process/Discharge<br>• History<br>• Maps | • Identify Data Gaps<br>• Identify Data Quality Deficiencies<br>• Assess Operable Unit Boundaries<br>• Assess Need for Preliminary Investigations<br>• Screen & Limit FS Remedial Technologies | • Perform Preliminary Investigations<br>• Write "Aggregate Area Management Study Report" and/or Topical Study Reports     |
| Formulate Initial Conceptual Model(s)  | Refine Conceptual Model(s)   | Define Conceptual Model   |
| Compile List of Potential ARARs  | Refine ARARs   | ARARs   |
| <b>Goal</b><br>Collect Pertinent Data  | Assess Data to Make ERA Decisions & to Focus & Limit RI/FS   | Site Description<br>Definition of Operable Unit Boundaries to Obtain Timely & Reasonable RODs<br>Priority Listing of RODs |

- Programmatic Decisions
- (1) Imminent and Substantial Endangerment Criteria
  - (2) Interim Response Criteria
  - (3) General Decisions
    - a) Point of Compliance
    - b) Land Use Decisions
    - c) Data Quality Needs
    - d) Approval Mechanism for Short-Term Actions and New Data
    - e) Clean-up Criteria
    - f) Acceptability of Existing Data
    - g) Use of Analogous Data From Similar Disposal Practices and Geology
  - (4) Can TPA Priorities and Milestones be Changed Because of Short-Term Actions and New Data
  - (5) How and When to Implement Change Milestones
  - (6) NEPA/CEPA

Double Box Denotes Regulator Review and Approval Required

(A) Decision Criteria

- Imminent & Substantial Endangerment may Exist
- The Most Effective Mitigation Method is Readily Apparent & Justified by Impacts to Site Clean-up Priorities
- Removal Action is Justified as Defined in NCP Section 300.415



Double Box Denotes Regulator Review and Approval Required

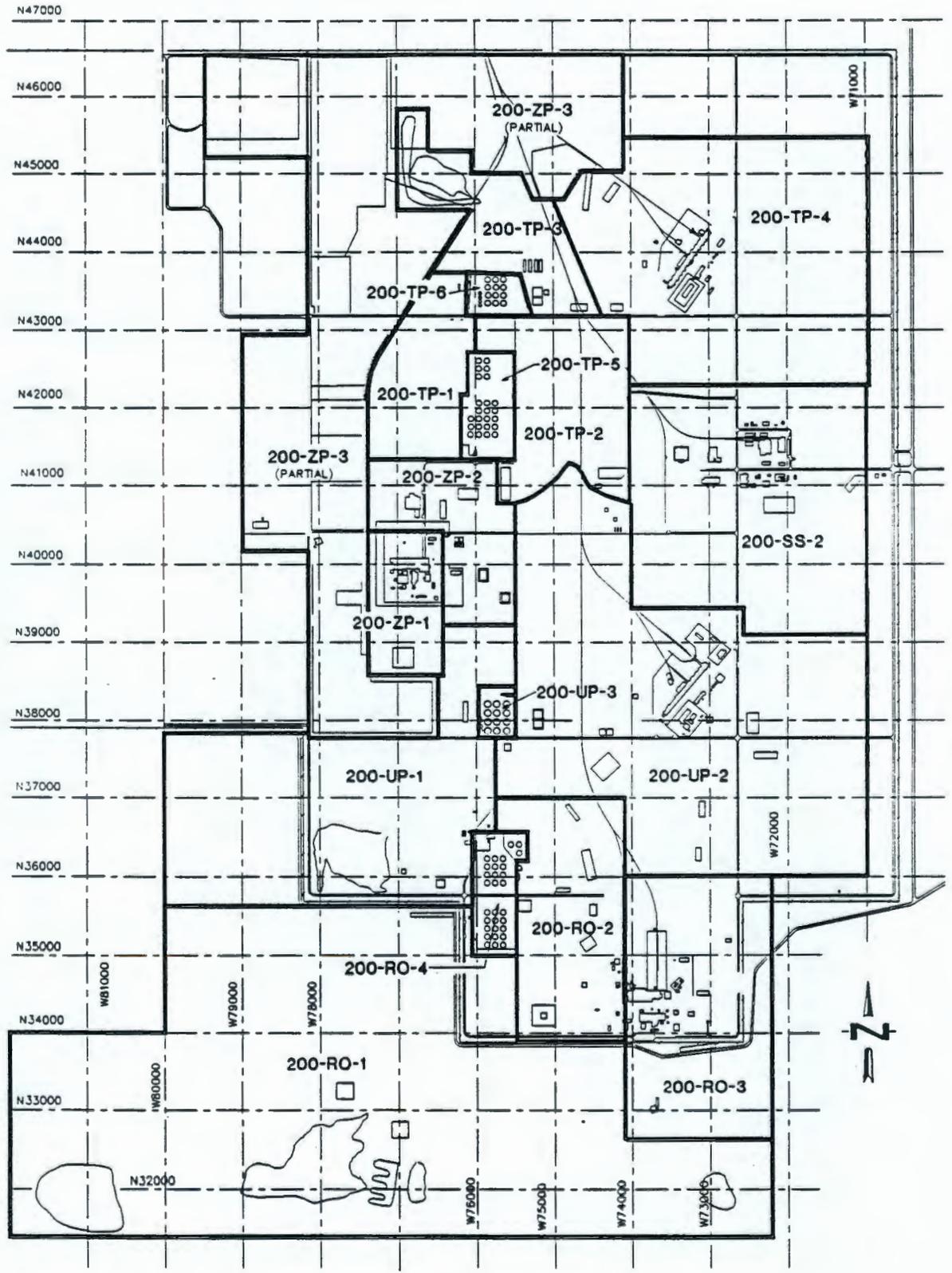
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**200-UP-2/200-W AREA PROPOSED SCOPING ACTIVITIES**

**W. L. JOHNSON**

**AUGUST 15, 1990**

91118930181

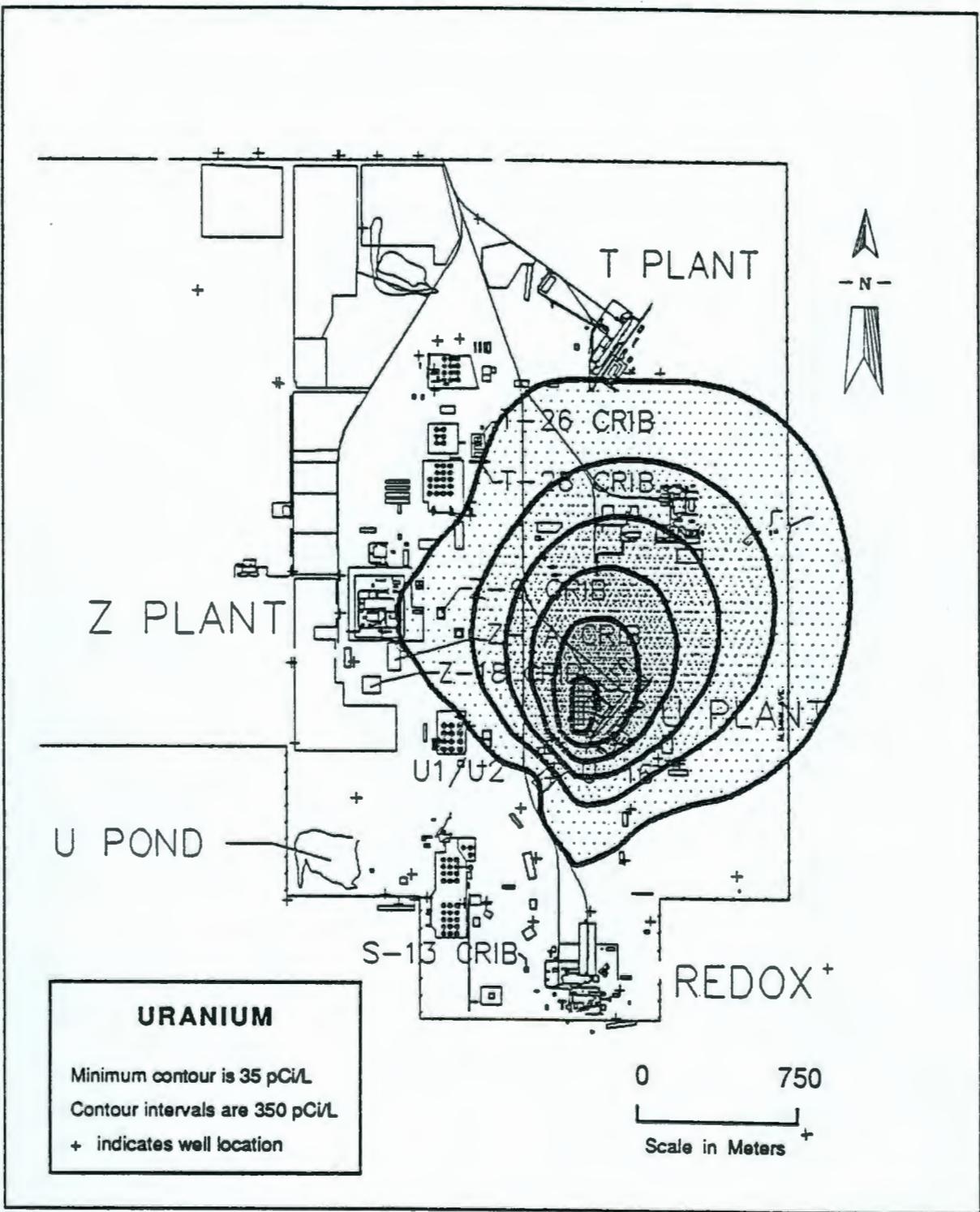


| DRAWN | CHKD. | APPD. | DATE | REV. | DESCRIPTION |
|-------|-------|-------|------|------|-------------|
| JJA   |       |       | 1/89 | 1.0  |             |
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|       |       |       |      |      |             |

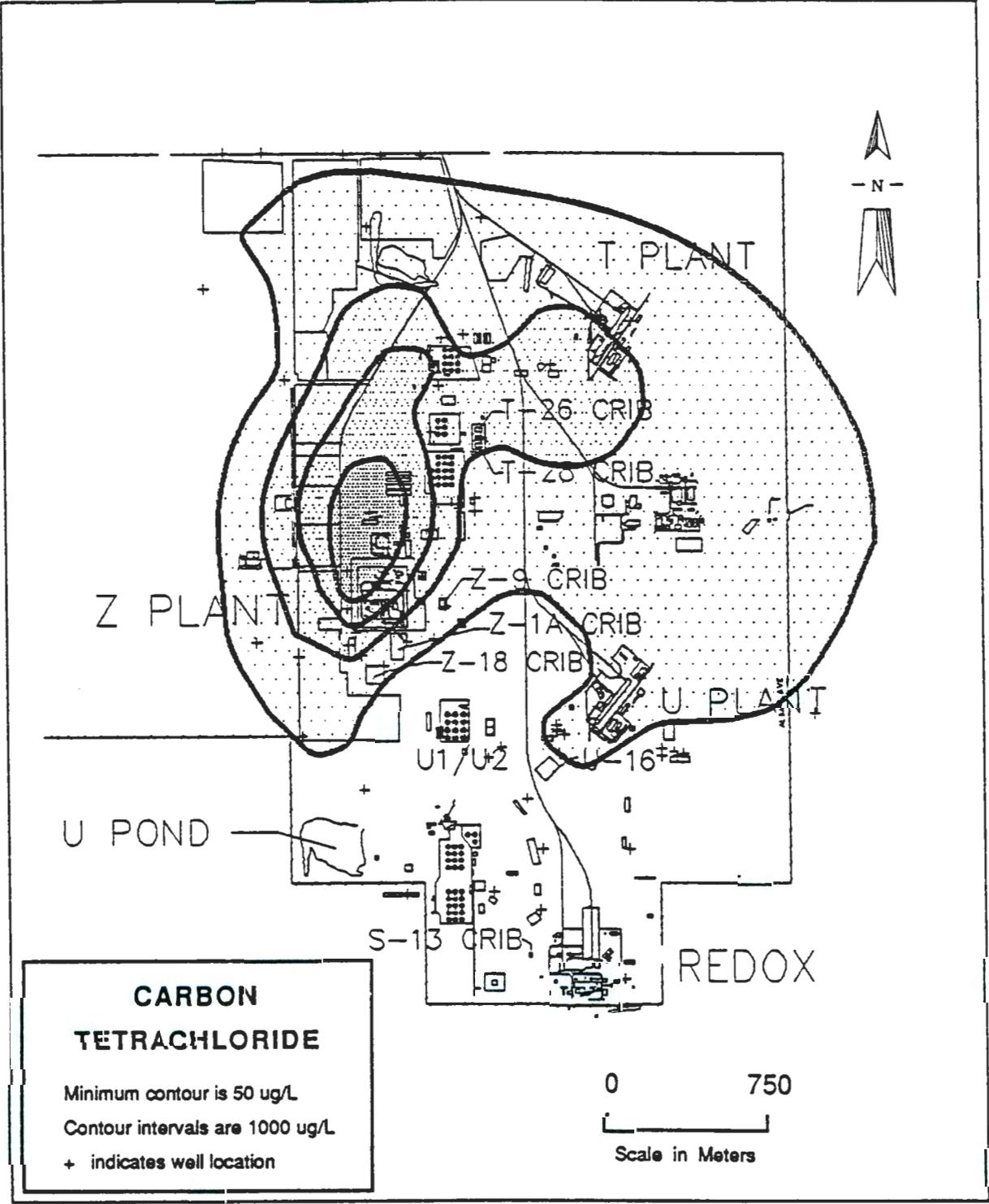

**Westinghouse Hanford Company**  
 P.O. Box 1970  
 Richland, WA 99350

**200 West Area**  
 Key Plan

91118930182



91110210105



**200-UP-2/200-W PROPOSED ACTIVITIES**

- o **SCOPING ACTIVITIES WERE INITIATED IN MAY 1990**
  - **PREDOMINANTLY DATA REVIEW AND COMPILATION**
  - **FOCUS WAS ON 200-UP-2 SOURCES, BUT INCLUDED OTHER SOURCES CONTRIBUTING TO 200-W GROUND WATER PLUMES.**
  - **ORIGINAL IDEA WAS 200-UP-2 WOULD BECOME OR SPIN-OFF THE "200-W AREA GROUND WATER OPERABLE UNIT"**
  
- o **PROPOSE CONTINUING SCOPING OF THE 200-W AREA AS AN AGGREGATE AREA MANAGEMENT STUDY (AS FUNDING ALLOWS):**
  - **TREMENDOUS AMOUNTS OF DATA EXISTS (BOTH PROCESS AND ENVIRONMENTAL)**
  - **WORK PLAN(S) WOULD BE DEFERRED UNTIL COMPLETION OF THE AGGREGATE AREA MANAGEMENT STUDY**

9 | 1 | 1 | 8 | 9 | 3 | 0 | 1 | 8 | 5

## The Observational Approach to Environmental Restoration at DOE Facilities

■ *Need*   ■ *Implementation*   ■ *Application*

presentation to  
Tri-Party Agreement Unit Managers

Pacific Northwest Laboratory  
CH<sub>2</sub>M HILL

August 15, 1990

## Overview of Presentation

- Introduction—Jeff Smyth, PNL
- Implementation—Sam Gianti, CH<sub>2</sub>M HILL
- Application—David Lincoln, CH<sub>2</sub>M HILL
- Summary—Jeff Smyth, PNL
- Discussion

## Overview of Presentation



Introduction—Jeff Smyth, PNL

- Project History
- DOE Site Remediation
- Current Approach to Remediation
- Observational Approach
- Uncertainty

Implementation—Sam Gianti, CH2M HILL

Application—David Lincoln, CH2M HILL

Summary—Jeff Smyth, PNL

Discussion

3

Introduction

## Project History

- PNL workshops
  - evaluate potential of approach
- Presentation to EH
  - Fundamentals of observational approach
  - Summary of PNL workshop results
  - Approach supported — Application needed
- Los Alamos National Laboratory presentation
  - Possible use of approach in workplan development
- Today's presentation
  - Modified EH discussion

4

91118930186

## DOE Site Remediation

- **Environmental restoration arena**
  - No experience exists for mixed waste site remediation
  - Many contaminants
  - Large sites
  - Oversight by EPA and states
- **EPA has 10 years of site remediation experience**
- **Lessons learned should benefit DOE**
  - RI/FS process must be streamlined
  - Uncertainty must be recognized
- **Remediation goal is protection of health and environment**

## Uncertainty in Site Remediation

- **Site characteristics**
- **Waste characteristics**
- **Waste disposal history**
- **Health and environmental risks**
- **Remedial action performance**

91118930187

## Current Approach to Remediation

- Study, design, and build
- Assumes uncertainties eliminated by characterization
  - Design and cleanup routine
- Process bottlenecked by uncertainties

## Alternative Responses to Uncertainty

- Design for average conditions
  - Leads to high risk of failure
- Design for worst conditions
  - Leads to high cost
- Design for most probable conditions
  - Prepare contingencies

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## Observational Approach

- A technique for managing uncertainty
  - Used by geotechnical engineers for decades
- Conceptual framework for site remediation
- Provides the opportunity for:
  - reduced time to remediation
  - better technical product
  - protection of health and environment

## Observational Approach Fundamentals

- Recognize uncertainty explicitly
  - More data are not equivalent to better understanding
  - Decline of data value
- Focus characterization efforts
  - Obtain data to support/eliminate potential remedies
- Converge early on a probable remedy
  - Design based on probable conditions
  - Identify reasonable deviations
- Identify contingency plans

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## Summary

- DOE has unique restoration needs
- Need to streamline site remediation process
- Must consider and manage uncertainty
- Observational approach can manage uncertainty
- EH and EM support testing observational approach

## Overview of Presentation

Introduction—Jeff Smyth, PNL

### Implementation—Sam Gianti, CH<sub>2</sub>M HILL

- History
- Structure of Current Approach
- Structure of Observational Approach
- Major Differences
- Potential Benefits

Application—Dave Lincoln, CH<sub>2</sub>M HILL

Summary—Jeff Smyth, PNL

Discussion

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## History

- Endorsed by EPA
- Accepted by technical community
- Project managers have been using observational approach pieces by default

## Structure of the Current Approach to Site Remediation



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## Scoping, RI



- Develop conceptual model
- Identify likely response scenarios
- Prepare project plans
- Conduct field investigation
- Conduct baseline risk assessment
- Perform treatability studies

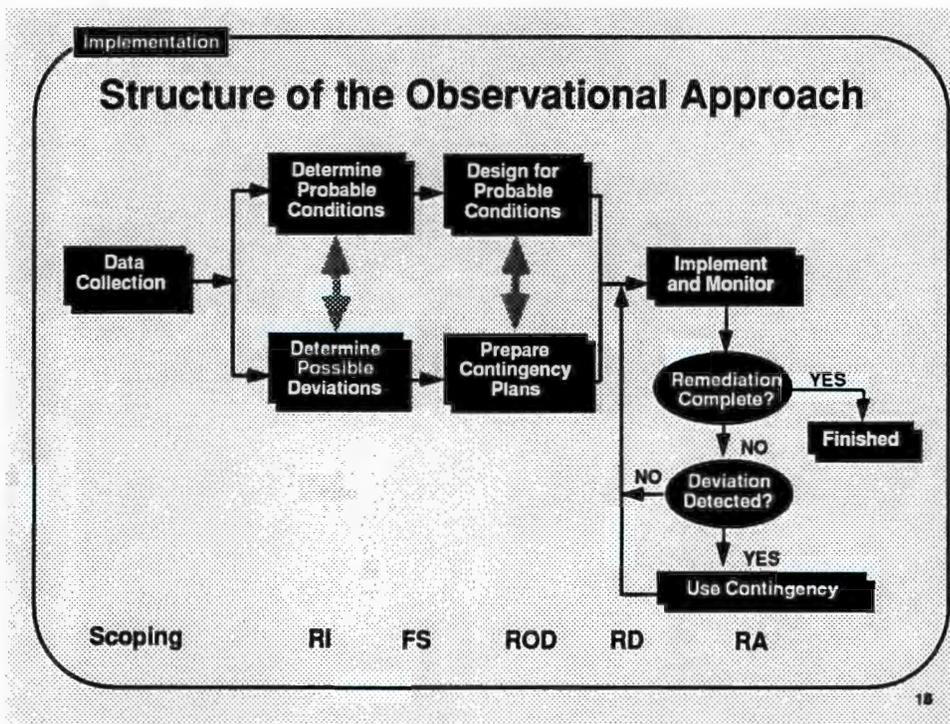
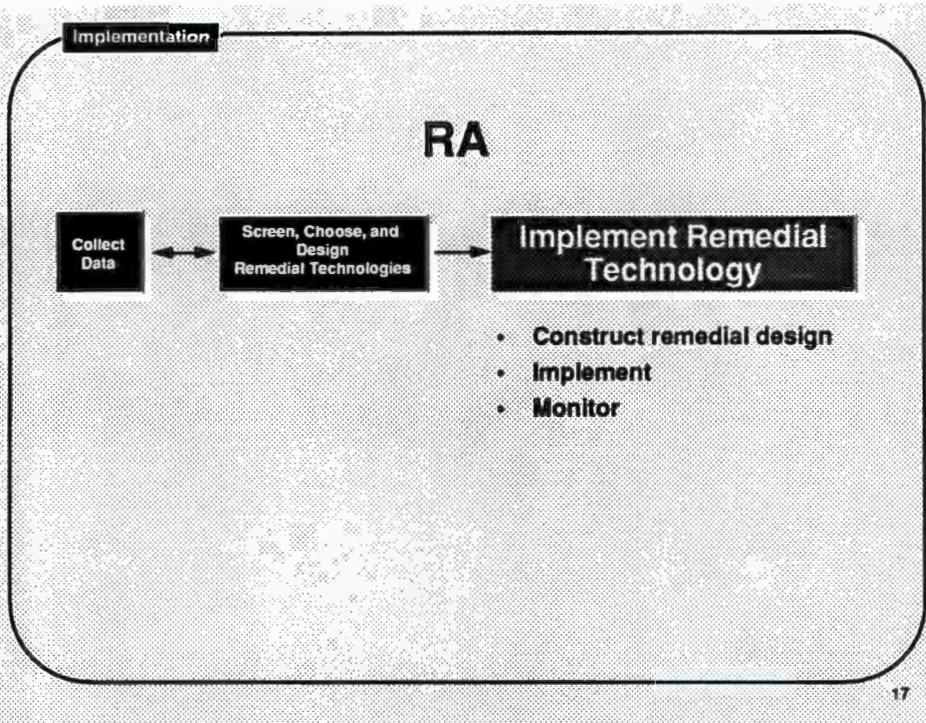
## FS, ROD, RD



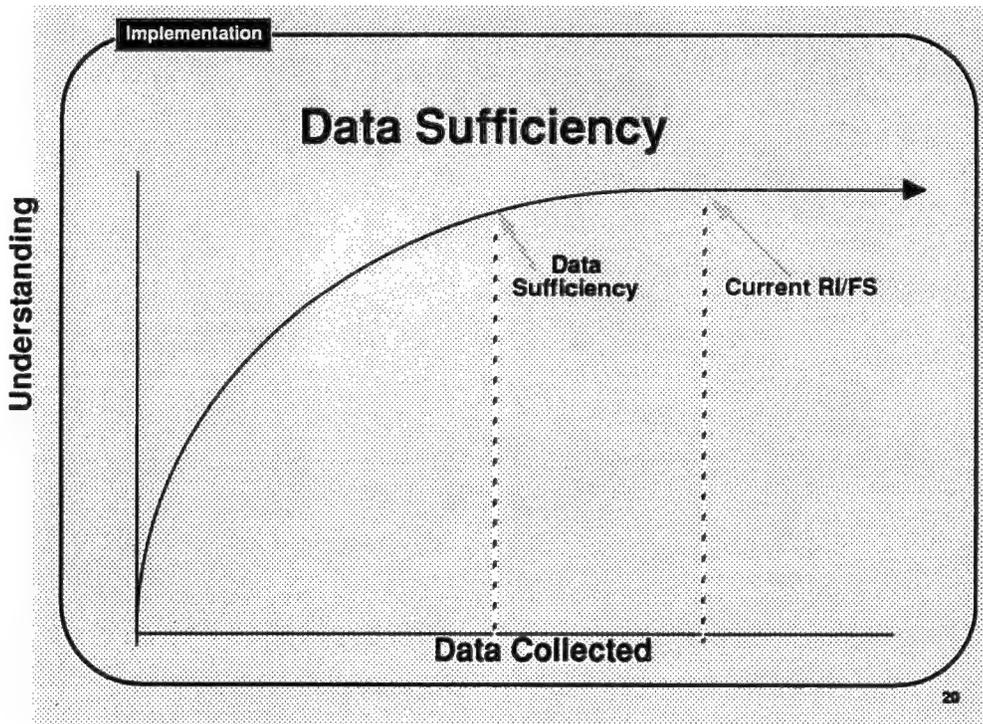
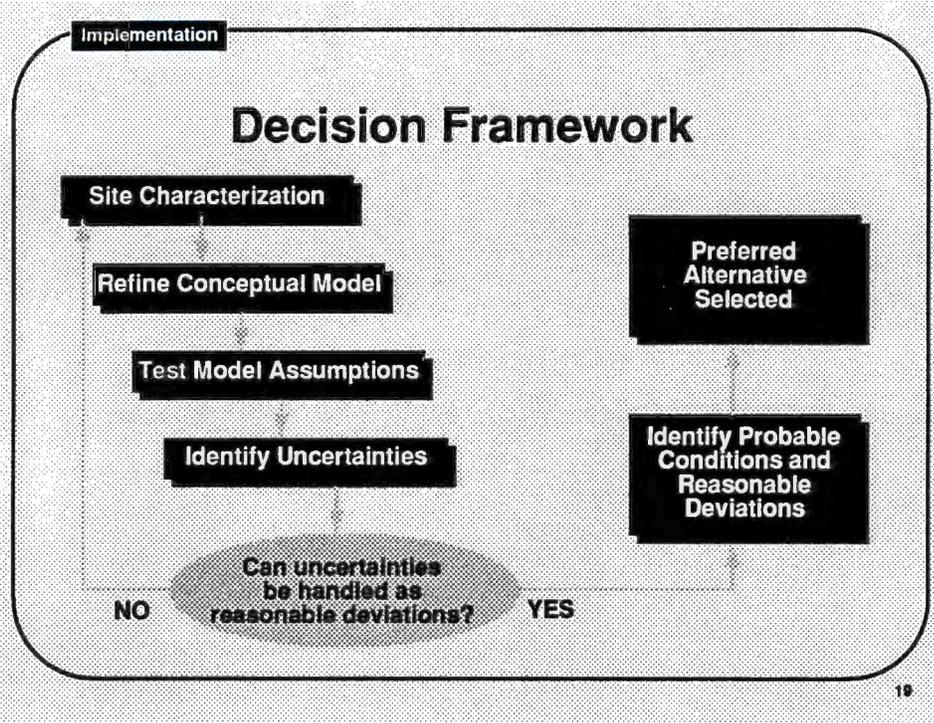
- Develop full range of alternatives
- Screen full range of alternatives
- Perform detailed analysis of alternatives
- Solicit public comment
- Choose remedy
- Perform treatability studies
- Collect additional data
- Design details

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## Major Differences

- Many small decisions instead of a few large decisions
- Initial recognition of uncertainty in Work Plan
- Refine probable conditions and deviations in RI
- "What if" chapter in the FS
- Contingent Record of Decision

## Potential Benefits

- Technical definition of "sufficient data"
- Focused and effective data collection
- Opportunity to begin remediation earlier
- Prepared for reasonable deviations

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## Overview of Presentation

Introduction—Jeff Smyth, PNL

Implementation—Sam Glantl, CH<sub>2</sub>M HILL

 **Application—David Lincoln, CH<sub>2</sub>M HILL**

- Background
- Remedial Action Components
- Groundwater Extraction
- Water Treatment
- Groundwater Monitoring

Summary—Jeff Smyth, PNL

Discussion

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Application

## Background Whittier Narrows

- Observational approach to an operable unit FS
- Operable unit in San Gabriel Basin (NPL site)
  - Los Angeles area
  - San Gabriel Basin—170 sq. mi.
  - Whittier Narrows—1.5 mi. wide
  - VOC contaminants
  - Drinking water source

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Application

## Location of Case Study



Application

## Probable Contaminant Concentrations

Well WC-1

Well WC-2

PCE & TCE <15 ppb  
Other VOC <MCL

PCE MCL to 30 ppb  
TCE <8 ppb  
Other VOC <MCL

200 ft

300 ft

PCE & TCE <MCL  
Other VOC <MCL

PCE & TCE <MCL  
Other VOC <MCL

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## Remedial Action Components

- Groundwater extraction
- Water treatment
- Water discharge
- Groundwater monitoring

## Groundwater Extraction

### Issues

- Nature and extent of contamination
- Groundwater flow hydraulics
- Contaminant transport parameters

### Deviations

- Focused on significant parameters
- Realistic combinations
- Concept of range including maximum credible

### Design Considerations

- Based on probable conditions
- Provided influent flow rates to treatment

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## Water Treatment

| Treatment Technology | Deviation  | Modification  | Design Considerations  |
|----------------------|--|---|--|
| Stripping            | Higher VOC concentration   | Increases air: water ratio                                      | Install variable-speed blower, or allow for replacement of blower                  |
|                      | Higher VOC concentration   | Onsite carbon regeneration for off-gas                          | Oversize carbon beds on off-gas system, design for possible addition of facilities |
|                      | Higher influent flow rate  | Add stripping towers and carbon beds for off-gas                | Design for additional towers to be added, adequate area at treatment plant site    |
| Carbon Adsorption    | Higher vinyl chloride concentrations                                 | Replace GAC system (unable to adequately adsorb vinyl chloride) | Design alternate treatment system  |
| Advanced Oxidation   | Higher methylene chloride and/or carbon tetrachloride concentrations | Add post stripping with off-gas treatment                       | Design for additional facilities, adequate area at treatment plant site required   |

## Water Discharge

### Deviation

- Potential flow rate deviations

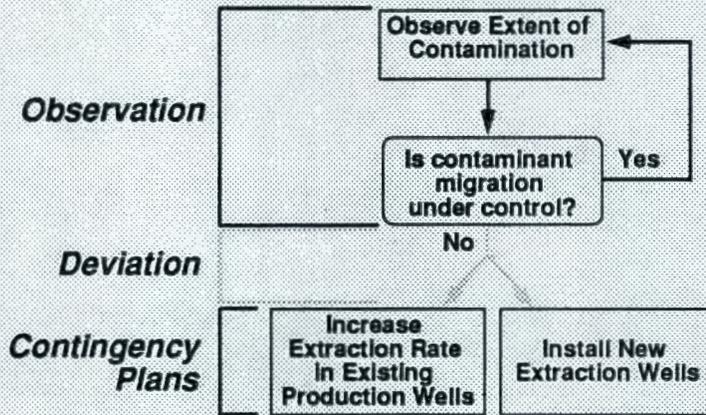
### Design Considerations

- Expand water distribution system
- Consider oversize pipes

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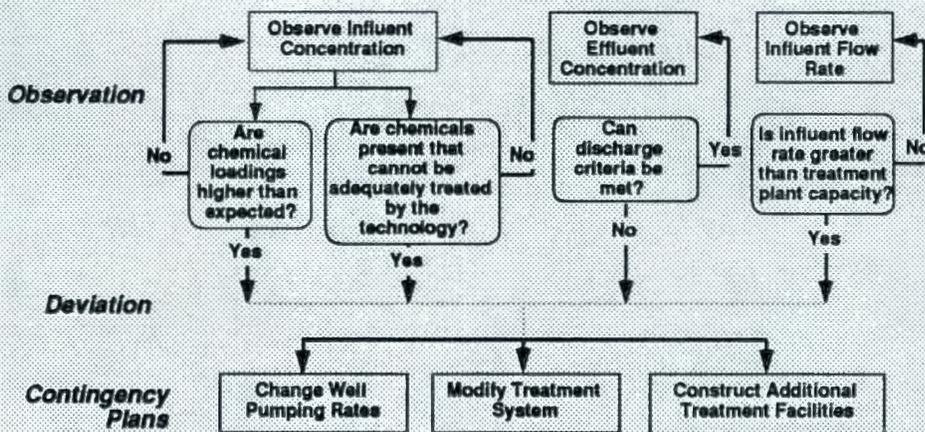
Application

## Groundwater Monitoring Strategy for Dealing with Deviations During Groundwater Extraction



Application

## Groundwater Monitoring Strategy for Dealing with Deviations During Water Treatment



## Summary

- EPA guidance followed
- Regulatory reports had additional analysis
  - Probable conditions
  - Deviations
  - Contingencies
- EPA reviewing operable unit FS

## Overview of Presentation

Introduction—Jeff Smyth, PNL

Implementation—Sam Glanti, CH2M HILL

Application—David Lincoln, CH2M HILL



**Summary—Jeff Smyth, PNL**

Discussion

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## Summary

- Focusing characterization needs through technology application
- Recognizing uncertainty throughout site remediation process
- Opportunity for
  - Better technical approach
  - Time and cost savings
  - Better health and environmental protection
- Implementation requires cooperation
- Compatible with existing regulations and guidance

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DRAFT

# Proposal For The Development of A Strategy For The Determination And Use of Cleanup Standards At The Hanford Site

Prepared for the U. S. Department of Energy



Westinghouse  
Hanford Company

Richland, Washington

Hanford Operations and Engineering Contractor for the  
U. S. Department of Energy under Copntract DE-AC06-87RL10930

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Approved for Sponsor Release

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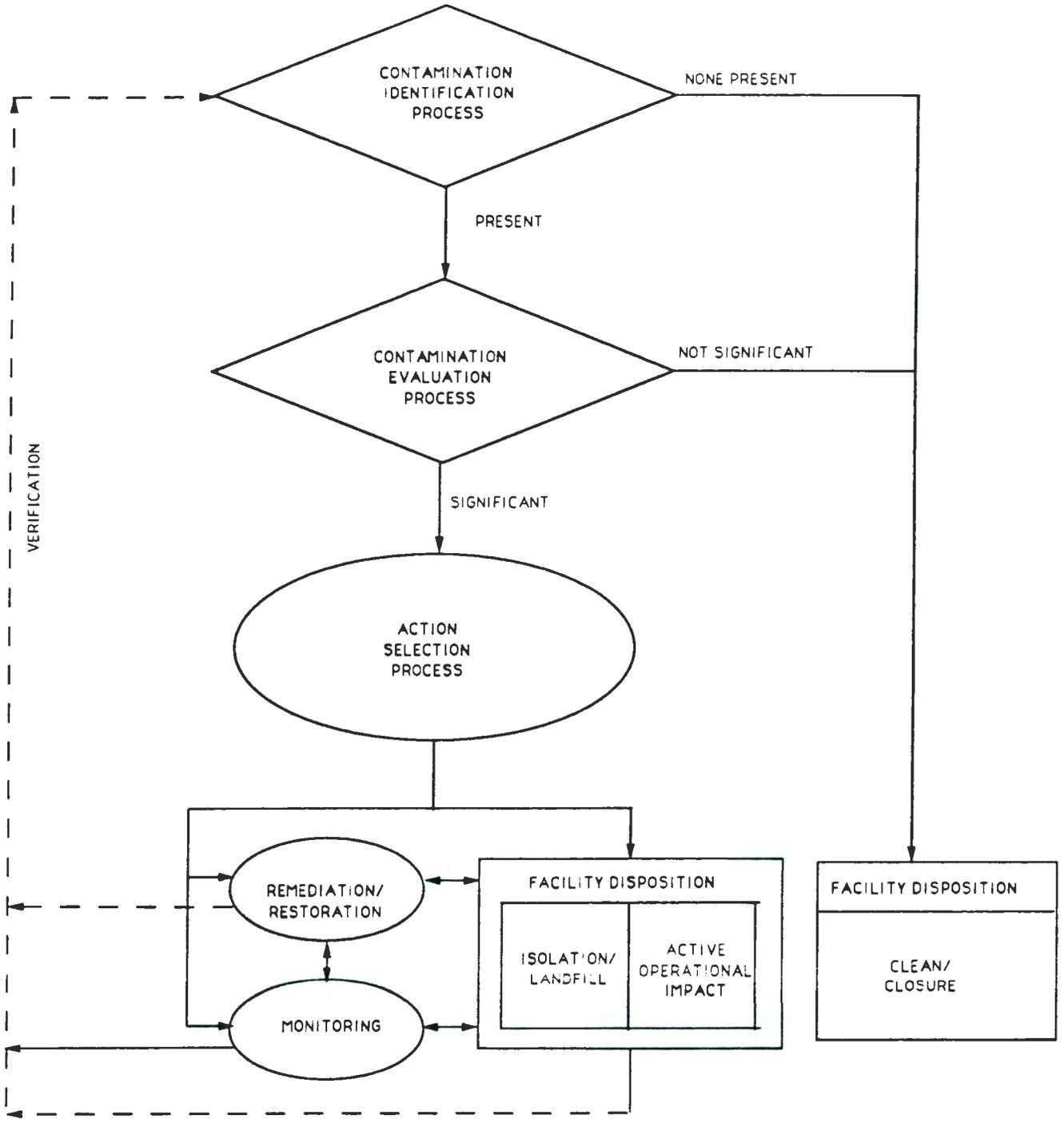
## ISSUE

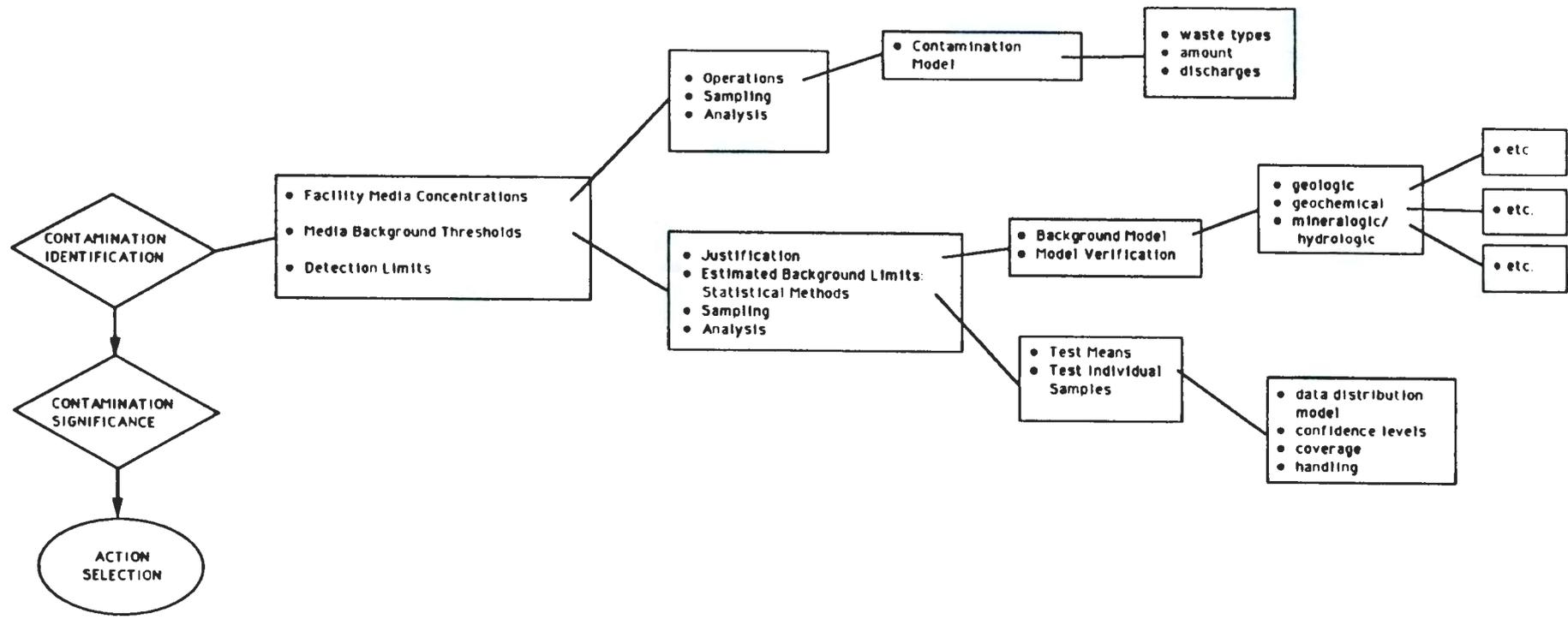
**Are Environmental and Waste Management practices at Hanford performed in a manner to ensure protection of human health and the environment ?**

**Justification: A technically and legally defensible basis, i.e., Cleanup Standards Strategy**

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**CLEANUP STANDARDS STRATEGY DEVELOPMENT & SITE-WIDE SOIL BACKGROUND SAMPLING/ANALYSIS**

**DRAFT BUDGET ESTIMATE - FY'91**

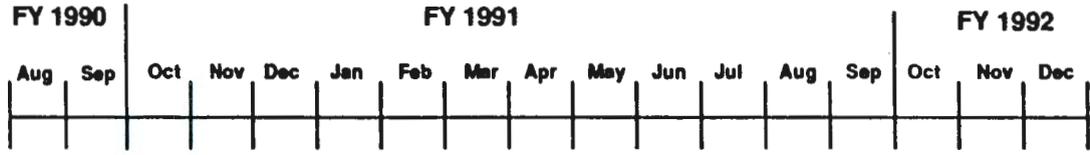
| Manpower                   | Manhours  | Direct Materials            | Estimated Cost |
|----------------------------|-----------|-----------------------------|----------------|
| WHC                        | 9360      | Field Sampling              |                |
| PNL & Other                | 1155      | OSM                         | \$25,000       |
|                            |           | Env. Engr.                  | \$10,000       |
| Total Manhours             | 10515     | Analytical<br>(200 samples) | \$250,000      |
|                            |           | Other                       |                |
| Average Rate/Hr            | \$33      | Stores                      | \$5,000        |
| Total                      | \$346,995 | Equipment                   | \$5,000        |
| Average Labor OH           | 30%       | Computer Services           |                |
| Total                      | \$451,094 | Consultants                 | \$5,000        |
| Average G&A                | 25.50%    | Photography                 | \$5,000        |
| Loaded Total               | \$566,122 | Graphics                    | \$5,000        |
|                            |           | Miscl.                      | \$1,000        |
|                            |           | Total                       | \$311,000      |
| Manpower                   |           |                             |                |
| Sampling/Analysis/Services |           |                             |                |
|                            |           |                             | \$566,122      |
|                            |           |                             | \$311,000      |
| Grand Total                |           |                             | \$877,122      |

**Proposed Budget For Cleanup Standards Strategy Development & Site-Wide  
Soil Background Sampling/Analysis -FY '91**

|   |                |
|---|----------------|
| I. Cleanup Standards/ER Criteria Strategy Development<br>Preparation, reviews, revision (Approx. 4 man-years) | \$ 390 K       |
| II. Soil Background:  |                |
| Sampling/Analysis   | \$ 300 K       |
| Documentation:  | \$ 75 K        |
| Proposal  |                |
| Soil Background Position Paper  |                |
| S/A Results Evaluation & Report   |                |
| III. Groundwater Background:  | \$ 40 K        |
| Data compilation/evaluation   |                |
| Model development   |                |
| Model corroboration planning (recommendations for current and future S/A)                                     |                |
| Position (Status) report  |                |
| IV. Task Team Support   | \$ 56 K        |
| V. Services, etc.   | <u>\$ 18 K</u> |
| Total   | \$ 879 K       |

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### Proposed Activities for Development of Cleanup Standards Strategy and Site Background Activities



#### WHC PLANNED MILESTONES

