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~~Comment-Draft~~

Meeting Minutes Transmittal/Approval
Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
450 Hills Street, Richland, Washington
May 27, 1992

FROM/APPROVAL: Eric D. Goller Date 6-24-92
Eric D. Goller, 100 Area Unit Manager, RL (A5-19)

APPROVAL: Darci Teel Date 6/24/92
Darci Teel, 100 Aggregate Area Unit Manager, WA Department of Ecology

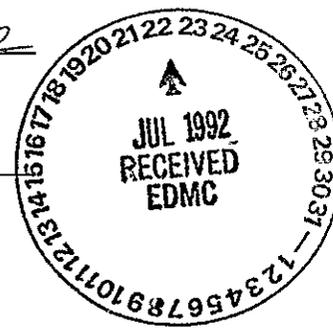
APPROVAL: Dennis Faulk Date 6-24-92
Dennis Faulk, 100 Aggregate Area Unit Manager, EPA (B5-01)

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

- Attachment #1 - Meeting Summary
- Attachment #2 - Agenda
- Attachment #3 - Attendance
- Attachment #4 - Action Item Status List
- Attachment #5 - Status of 100 Area Wide Activities Schedule
- Attachment #6 - 100 Aggregate Area Investigations Status
- Attachment #7 - Agreement Activity Notification 100 DR-1
- Attachment #8 - 100 NPL Change Control Form for 100-DR-1
- Attachment #9 - 100-DR-1 OU
- Attachment #10 - 100-HR-1 Tasks
- Attachment #11 - 100-HR-3 Groundwater Operable Unit Work Summary
- Attachment #12 - 100-BC-1 Source Operable Unit Work Summary
- Attachment #13 - 100-BC-5 Operable Unit and 100-KR-4 Operable Unit
- Attachment #14 - N-Area Surface Radiation Survey
- Attachment #15 - 100 Aggregate Area Groundwater Operable Units
- Attachment #16 - Summary of Spring Sediment Reconnaissance Survey
- Attachment #17 - Waste Control Plan Map for 100-K and 100-B
- Attachment #18 - 100 NPL Agreement Control Form for Milestone M30-03
- Attachment #19 - ECN 168778, 100-DR-1 DOW
- Attachment #20 - TPA Issue Decision Analysis Position Paper, 100-NR-1 and -2 Work Plan Schedules
- Attachment #21 - Agreement Activity Notification 100-BC-1 and 100-NR-1

Prepared by: Suzanne Clarke Date: 6/24/92
Suzanne Clarke, GSSC

Concurrence by: Bob Henckel Date: 6/24/92
Bob Henckel, WHC Coordinator



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Attachment #1
Meeting and Summary of Commitments and Agreements

Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 27, 1992

1. SIGNING OF THE APRIL 100 AREA UNIT MANAGER'S MEETING MINUTES:

Minutes from the April 100 Area Unit Manager's Meeting were reviewed and approved with changes in the distribution list only.

2. ACTION ITEM UPDATE: (See Attachment 4 for status (before May meeting), items listed below for the update to Attachment 4 made during the May meeting):

1NR.3 Closed (2/4/92).

1AAMS.6 Closed (2/10/92).

1AAMS.9 Action to Eric Goller from Jim Goodenough (5/27/92).

3. NEW ACTION ITEMS (INITIATED MAY 27, 1992):

1AAMS.11 Clarify if the 100 day turnaround time limit applies to Karl Pool samples taken from 100 BC.

1AAMS.12 Ecology requested that sampling on oil and grease well Eric Goller network be restarted in down-gradient wells N-3, N-8, and N-16 through N-26 (5/22/92 letter to Eric Goller from Steve Cross).

4. INFORMAL AGREEMENTS:¹

- June 22, 1992 tentative meeting was scheduled between RL, EPA and Ecology to discuss the River Impact Study/Spring Sampling. (See 3rd bullet under #5.)
- 100-HR-3 groundwater treatability test is tentatively agreed to in FY93. This issue will be revisited on August 1, 1992, when the Treatability Study Program Plan is completed. If another site is found to have clearly higher priority, then the site of the treatability study may be changed.

¹ Formal agreements are prepared on agreement sheets and signed by all relevant parties at the UMM. Informal agreements are those reached by consensus at the UMM. The wording is read back by the note-taker so that all parties agree on the content.

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5. 100 AREA ACTIVITIES:

- Feasibility Studies - On Schedule for 8/1/92.
- Ecological Investigations - DOW sent to EPA and Ecology. Asparagus sampling is complete. See Attachment #6.
- River Impact Studies - M 30-02: sediment sampling was identified as a data gap. Spring Sampling was not identified as a need. If regulators disagree, EPA, Ecology and RL need to meet 6/22/92 to discuss Spring Sampling. See Attachment #6.
- Risk Assessment - On schedule, however, need to define the scope of the Qualitative Risk Assessment Methodology.
- Interim Remedial Measures and Treatability Study Program Plan documents will be provided to regulators in August, 1992.

6. FIELD ACTIVITIES:

- Naik Naiknimbalkar (WHC) presented the update of the 100-DR-1 field activities (see Attachments #7, 8, 9, and 19).
- Update of the 100-HR-1 field activities is noted in Attachment #10.
- No changes to the status of the 100-HR-3 field activities (see Attachment #11).
- Roberta Day (WHC) presented the update of the 100-BC-1 field activities (see Attachments #12 and 21).
- Jim Roberts (WHC) presented the update of the 100-BC-5 field activities. Wells completed 5/28 (see Attachment #13).
 - Dennis Faulk (EPA) requested status on the proposal from RL concerning the proposed use of SW-846 methodology (as apposed to CLP) for the analysis of environmental samples.
 - EPA requested that the analysis of flood wave technique (scheduled for completion in September) be accelerated (target for July UMM). The analysis is to determine if the technique produces valuable data. If the technique proves effective then decisions concerning procurement and installation of new data loggers can be scheduled. Target date to initiate installation is October.
- 100-KR-4, started drilling, all 7 wells to be finished this year. See Attachment #13.
- 100-FR-1/100-NR-1, see Attachments #14 and 21.

7. DATA INTERPRETIVE REPORT - Interpretation of all spring and seep data. See Attachment #15.

8. WASTE CONTROL PLAN MAP FOR 100-K AND 100-B CENTRALIZED STORAGE AREAS - EPA and Ecology agreed on the waste storage location in 100-K and 100-B/C areas.

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Meeting scheduled for 6/4/92 at 1:00 pm with EPA, WHC, Ecology, and RL on the BC Waste Control Plan.

9. **AGREEMENT ON M 30-03 PACKET** - Ready for signatures, parties to meet on 6/4 to come to agreement. (Sediment sampling is outside of M 30-03 scope.) See Attachment #18.

10. **WORK PLAN PRODUCTION** - Alan Krug (WHC) requires schedule agreement to complete work plan and will issue one week following agreement.

11. **ISSUE PAPER TRANSMITTAL:** Issue Paper was transmitted from Steve Cross (Ecology) to Eric Goller (RL) at this meeting (5/27/92). RL must respond within 15 days (by June 17) (see Attachment #20).

12. **ISSUE RESOLUTION** - Issue Position Papers #1 and #2 were withdrawn.

13. **THERE WAS A DISCUSSION ON THE SCOPE OF THE 100-HR-3 TREATABILITY TEST.** No agreement was reached on the specific scope of the test.

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Attachment #2

100 Area Unit Managers Meeting
May 27, 1992

1. Issue Resolution 1:00 - 1:30
HR-1/HR-3/DR-1: E. Goller

2. 100 Area Activities 1:30 - 1:50
Risk Assessment: S. Clark
Feasibility Studies: L. Bergman
Ecological Investigations: S. Weiss
River Impact Studies: S. Weiss

3. Data Interpretive Report: R. Peterson 1:50 - 2:20

4. Field Activities 2:20 - 2:40
100-DR-1: N. Naiknimbalkar
100-HR-1: J. Ayres
100-HR-3: S. Vukelich
100-BC-1: R. Day
100-BC-5/100-KR-4: J. Roberts
100-FR-1/100-NR-1: W. Green

5. Waste Control Plan Map for 100-K and 100-B 2:40 - 2:45
Centralized Storage Areas (EII 4.3): J. Roberts

- BREAK 2:45 - 3:00

6. Agreement on M 30-03 Packet: A. Krug/R. Day 3:00 - 3:30

7. Work Plan Production: A. Krug/R. Day 3:30 - 3:40

8. Work Plan Schedules: 3:40 - 4:40

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Attachment #3

100 Aggregate Area Unit Manager's Meeting
 Official Attendance Record
 May 27, 1992

Please print clearly and use black ink

PRINTED NAME	SIGNATURE	ORGANIZATION	O.U. ROLE	TELEPHONE
Ward Staubitz	<i>Ward Staubitz</i>	USGS	EPA Support	(206) 593-6510
Dennis Faulk	<i>Dennis Faulk</i>	EPA	Unit Manager	376-8631
KAY KIMMEL	<i>Kay Kimmel</i>	SWEC	GSSC	509-372-0610
Karl N. Pool	<i>Karl N. Pool</i>	WHC	OSM	373-3137
Ken Sprecher	<i>Ken Sprecher</i>	BIC	Ecology Support	509 244-7005
Larry Gadbois	<i>L. Gadbois</i>	EPA	Unit Manager	509 376-4884
R. E. Day	<i>R. E. Day</i>	WHC	Environ/100	509-376-7602
Eric Goller	<i>Eric Goller</i>	PL	100 Ave. UW	509-376-7326
Darci Teel	<i>Darci Teel</i>	Ecology	Unit Mgr	509 545 2312
PAMELA INNIS	<i>Pamela Innis</i>	EPA	UNIT MANAGER	509/376-4919
Steve Cross	<i>Steve Cross</i>	Ecology	Unit Manager	206 459 6675
CHUCK OLIVE	<i>Chuck Olive</i>	"	" "	(206) 435-7556
Indib Goswami	<i>Indib Goswami</i>	Ecology	" "	(509) 546-4301
Brian Drost	<i>Brian Drost</i>	USGS	EPA Support	206-593-6510
Audree De Angeles	<i>Audree De Angeles</i>	PRC	EPA Support	206-624-2692
Rich Mullen	<i>Rich Mullen</i>	Parametrix	Ecology Support	206-455-2550
Robert Henckel	<i>Robert Henckel</i>	WHC	100 Area	509 376-2091
A. D. Krug	<i>A. D. Krug</i>	WHC	100 Area	509-376-5634
N.M. NAIK NIMBALKAR	<i>N.M. Naik Nimbalkar</i>	WHC	100 Area	509-376-8739
M. FRANK	<i>M. Frank</i>	USACE	-	509-376-7275
J.W. Roberts	<i>J.W. Roberts</i>	WHC	100 Area	509-376-5764
STEVE GALINE	<i>Steve Galine</i>	DOE-149	-	301 903-7607
J.K. Patterson	<i>J.K. Patterson</i>	WHC	ER PROGRAM OFFICE	509-376-0583

Attachment #4
Action Item Status List

Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 27, 1992

ITEM NO.	ACTION	STATUS
IHR1.28	Determine when the topographic mapping will be available on HEIS, who is responsible for digitizing the mapping, and when it will be available. Action: Alan Krug (11/15/90)	Open: Remains open on the question of when the data will be in HEIS. (7/18/91)
IHR3.29	Provide regulators with information about the situation concerning the cooling-water discharge pipeline/vent pipes on the island opposite D reactor. Action: Jim Goodenough (11/15/90)	Open: WHC sent a letter to DOE requesting guidance on the extent of NEPA documentation required and is awaiting DOE's response. (7/18/91)
IHR3.32	Regarding the removal of the vent pipes, WHC will: 1) Determine the need for an ACE permit; 2) obtain a letter from ACE that gives approval to begin work before the need for the permit is determined; and, 3) draft letters on the matter to the Natural Resources Trustees. Action: A. Krug (1/15/90)	Open: Pending overall resolution (7/18/91)
INR.3	Provide to Ecology (and EPA if desired) the DOE guidance documents that are needed. Action: Larry Goldstein (7/18/91)	Closed (2/4/92)
1AAMS.1	The 100 Area schedule assumptions presented by Merl Lauterbach are to be discussed with the regulators and resolved. Action: Doug Sherwood, Larry Goldstein, Mike Thompson (9/19/91)	Open

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ITEM NO.	ACTION	STATUS
IAAMS.2	WHC, DOE and the regulators are to meet to resolve questions on the 100 Area investigations. Topics to be discussed include geophysical logging, physical testing, archiving of "hot" samples, aquifer testing, etc. This meeting is tentatively scheduled for November 26, 1991. Action: Merl Lauterbach (11/21/91)	Open
IAAMS.3	Clarify the level above which RAD samples can not be shipped off site. Action: DOE (12/17/91)	Open
IAAMS.4	Provide a plan for incorporating the comments of EPA and Ecology into the work plans. Action: RL (12/17/91)	Open
IAAMS.5	Ecology and EPA are to be provided with sampling data on mulberries from N-Springs as well as data from the vegetation eradication program. The specific herbicides that were used are to be included. Action: T. Poston and J. Goodenough. (1/23/92)	Open
IAAMS.6	The N-Springs IRM program is to be reviewed and comments and recommendations are to be made to RL by 1/31/92. Action: L. Goldstein. (1/23/92)	Closed (2/10/92).
IAAMS.7	Provide information to the regulators on how to retrieve rad counting data from the 222-S Lab. Action to Jeff Lerch (2/27/92)	Open
IAAMS.8	Present a comparison of 222-S rad counting data, field screening data and geophysical logging results at the March UMMs. The data set used should include 2 or 3 boreholes, preferably holes in which both gross and spectral logs have been run. Action to Merl Lauterbach (2/27/92)	Open. The regulators will review the data concerning RLS Borehole Surveys (see Attachment 14) and present their decision on the need for further analysis at the May UMM. 4/23/92

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ITEM NO.	ACTION	STATUS
1AAMS.9	DOE shall send a letter to Ecology, suggested from S. H. Wisness to D. Jansen with a cc. to EPA, explaining what is included in the ER Program for the N Reactor Area and how the multiple programs will be handled organizationally. Action to J. D. Goodenough (2/27/92). Action: E. D. Goller (5/27/92).	Open
1AAMS.10	Arrange a meeting on the 100 Area Feasibility Studies, Phases I and II, with the regulators for the week of April 6th. Action to E. D. Goller (RL) 3/26/92.	Open. DOE will send a letter with a white paper to the regulators in late April/early May concerning the proposed structure of the 100 Area Feasibility Studies reports. A meeting is scheduled for Monday, May 11, 1:00 PM at the EPA-Richland office to confer with the regulators on this subject. 4/23/92

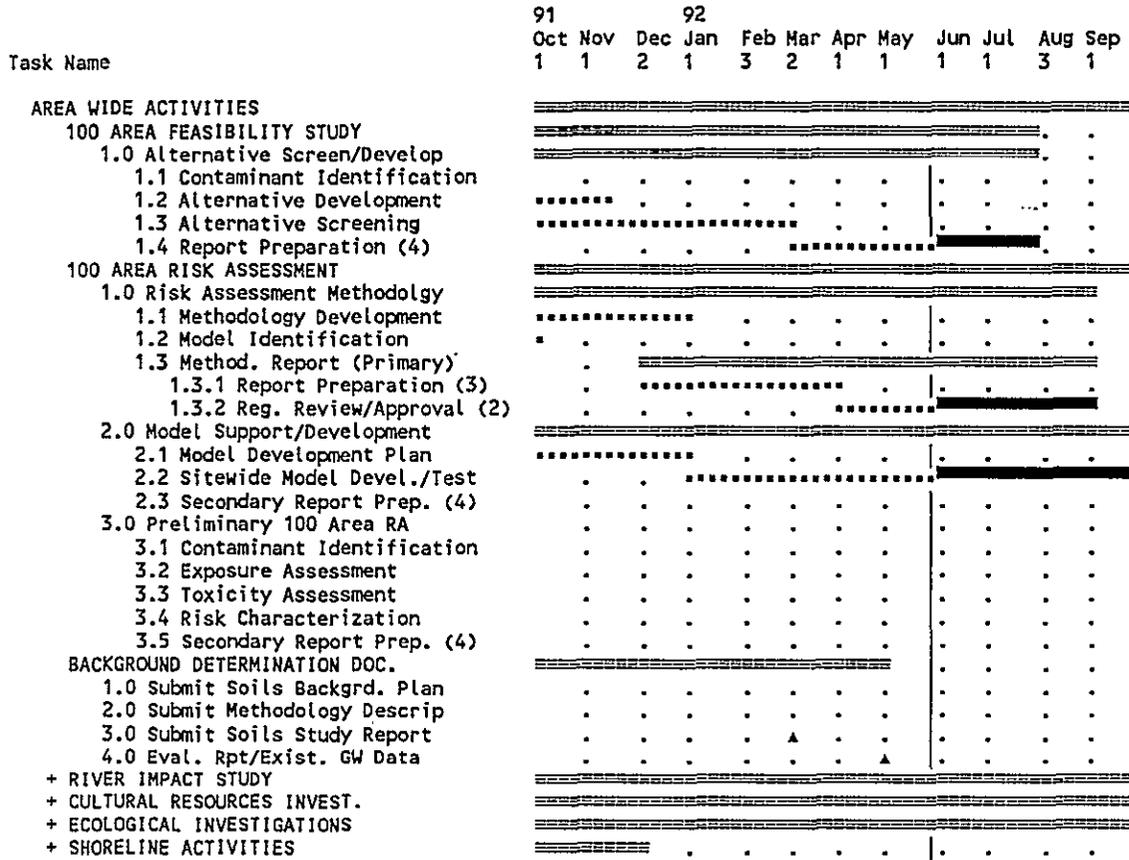
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100 AREA ACTIVITIES

9 2 1 2 4 1 3 0 8 3 1

Schedule Name : 100 Area Wide Activities
 Responsible :
 As-of Date : 27-May-92 Schedule File : DECSTAT

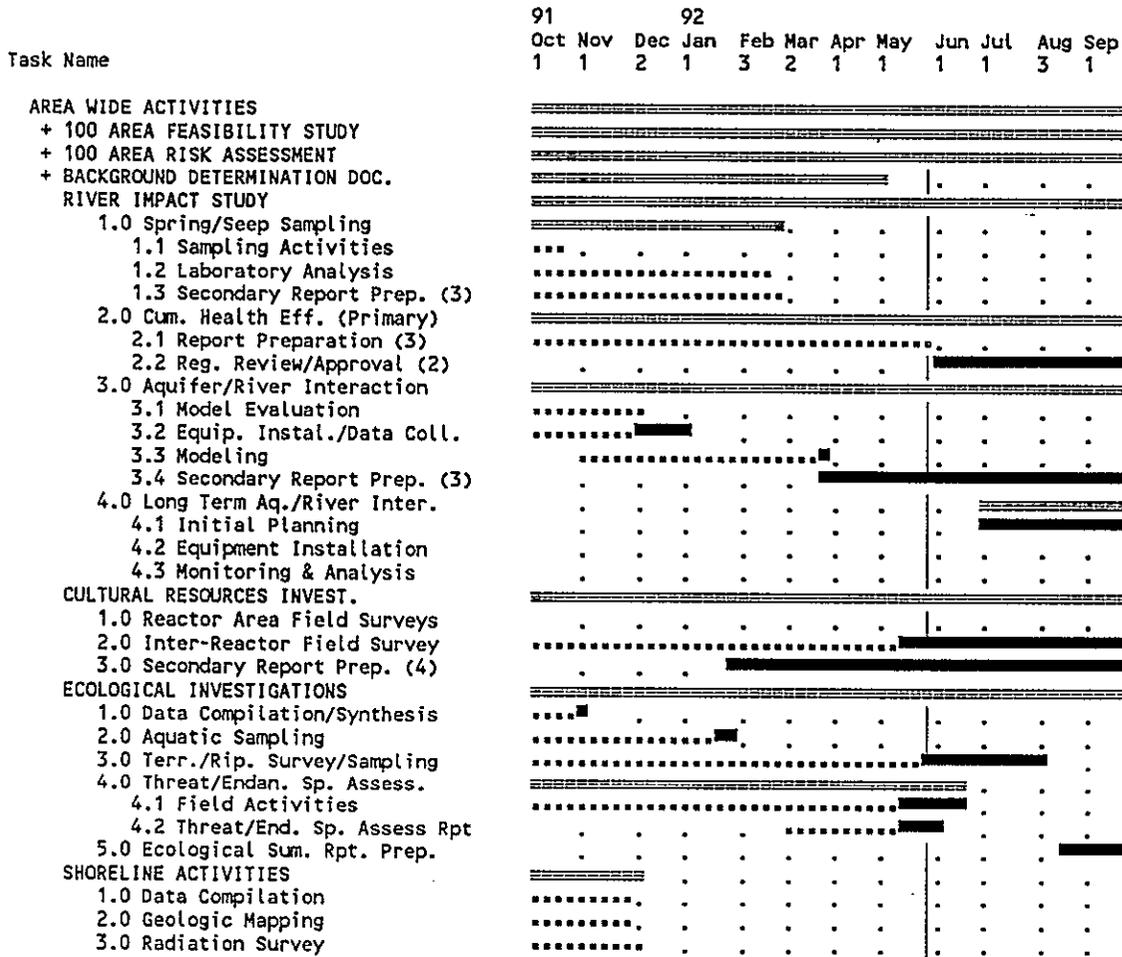
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 ■ Detail Task ■ Summary Task ○○○○ Baseline
 ■ (Progress) ■ (Progress) >>> Conflict
 ■ (Slack) ■ (Slack) ■ Resource delay
 Progress shows Percent Achieved on Actual ▲ Milestone
 ----- Scale: 5 days per character -----

Schedule Name : 100 Area Wide Activities
 Responsible :
 As-of Date : 27-May-92 Schedule File : DECSTAT

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 ■ Detail Task === Summary Task ○○○○ Baseline
 ■ (Progress) === (Progress) >>> Conflict
 ■ (Slack) === (Slack) .. Resource delay
 Progress shows Percent Achieved on Actual ▲ Milestone
 ----- Scale: 5 days per character -----

Attachment #6

Date: May 27, 1992
Subject: 100 Aggregate Area Investigations Status

RIVER IMPACT STUDIES

1.0 Spring and Seep Sampling The revised document, which includes the last few analyses and the radionuclide validation data, is being submitted this week. The revised document confirms the conclusions of the first draft.

A separate report evaluating 1991 and previous spring sampling data is being prepared. Data from riverbank seepage sampling and nearby groundwater wells are being compared, and data on chemical and radiological characteristics of seepage sediments are being analyzed.

2.0 Cumulative Health Effects (Milestone M-30-02) The plan is being submitted this week. The approach was to look at the current knowledge of site conditions and determine current impacts to human health and the environment. Data gaps identified in completing the assessment of the impacts were identified as proposed projects. River sediment sampling was identified as a data gap; however, additional spring sampling was not identified as a need for determining impacts. The DOW for sediment sampling will be submitted to the EPA and Ecology by June 22, 1992.

3.0 Aquifer/River Interaction (Milestone M-30-04) Water-level fluctuations in the Columbia River and shoreline groundwater wells are being analyzed to provide estimates of aquifer hydraulic parameters for groundwater flow models. Processing of data from 100-Aggregate area continuous water level recorders is now routine. Data are being used to analyze cyclic fluctuations in water levels to infer aquifer hydraulic properties.

3.2 River Stage Recorder Installation: A prototype conductivity probe is to be installed in one of the 100 Area data logger installations for testing. Pressure transducers in wells 1-B3-1, 1-H4-12A, and 1-F5-1 have failed; there are no replacements immediately available. A procurement request has been initiated. Replacement data logger and radiotelemetry equipment has still not arrived.

CULTURAL RESOURCES SURVEYS:

Cultural Resources No change. Work on consultations with Native Americans, interior HR-3 surveys, coordination with drilling, etc, is continuing.

ECOLOGICAL INVESTIGATIONS:

1.0 Data synthesis (evaluation) report: No change. A draft of the ecological data evaluation and synthesis has been peer reviewed. The comments are waiting to be incorporated.

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2.0 Aquatic investigations: No change. Waiting for return of analytical data.

3.0 Terrestrial Surveys and Sampling: A draft of the FY 1991 report has been published. A DOW FY 1992 sampling has been reviewed. Asparagus sampling has been completed with phone approval of EPA and Ecology. Eight samples were collected, which includes 2 control samples and a duplicate. The rest of the sampling will begin upon final approval of the DOW.

4.0 Threatened and Endangered Species Biological Assessment and Bald Eagle Site Management Plan: No change. All expected review comments on the drafts of the Bald Eagle Site Management Plan and Biological Assessments for wildlife and for plants have been received and are being incorporated.

100 AGGREGATE AREA SHORELINE INVESTIGATIONS

3.0 Shoreline Radiation Surveys The radiation surveys of the HR-3 and KR-4 shorelines have been completed. The pertinent reports are in internal review.

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FIELD ACTIVITIES

AGREEMENT ACTIVITY NOTIFICATION

Page 1 of 1

OPERABLE UNIT 100-DR-1

DATE 5-19-92

TSD _____

OTHER _____

E. D. Goller
UNIT MANAGER

ACTIVITY PERIOD 5-27-92 to 6-27-92

ACTIVITIES

SCHEDULED START DATE

108-D Office/Decon Facility

5-27-92

100-DR-1 Septic System

5-27-92

E. D. Goller 5-21-92

UNIT MANAGER

EPA/Ecology/DOE representatives that may want to observe any of the listed activities should verify the start date with the Unit Manager. Depending on the activity, location, and the individual's needs relative to observation/participation, the individual may be required to meet the training requirements of Environmental Investigation Instruction 1.7.

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100 NPL Agreement/Change Control Form

Control Number	<input checked="" type="checkbox"/> Change <input type="checkbox"/> Agreement <input type="checkbox"/> Information	Date Submitted: 03-26-92
	Operable Unit(s) <u>100-DR-1</u>	Date Approved:

Document Number & Title: DOE/RL-89-09, Draft C, RCRA Facility Investigation/Corrective Measures Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington, September 1991.	Date Document Last Issued: September 1991
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Originator: N.M. Naiknimbalkar	Phone: 376-8739
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Summary Description:
Section 5.1.5.3, Subtask 5c, Test Pit Sampling.

166-D fuel oil tank and associated pipeline: It is recommended that this site be removed from any further consideration for characterization and remediation activities.

Justification and Impact of Change:

In a review of data relating to the 166-D Fuel Oil Tank it was discovered that 166-D fuel oil tank, while planned, was never constructed. The construction comment copies of the drawings were sent out for comments in 1975 and shown in the 1975 site plot plan. Final construction drawings were never issued. Decommissioning and Decontamination records do not show decommissioning of the facility (see attachment). Photographs do not show the facility. Waste Information Data System (WIDS) does not list this site.

Soil gas surveys were conducted at this site. The samples contained less-than detectable concentrations of chlorinated solvent vapors. The samples also contained levels of benzene, toluene, ethyl-benzene, and xylenes (BTEX) at or below detection levels.

Based upon the above documented information, it is recommended that no non-intrusive or vadose activities be conducted at this location and this non-existent site be eliminated from further consideration.

<u>N.M. Naiknimbalkar</u> <i>M. Naiknimbalkar</i>	<u>4/13/92</u>
WHC Operable Unit Coordinator	Date
<u>E.D. Goller</u> <i>E. Goller</i>	<u>4-13-92</u>
DOE Unit Manager	Date
<u>D. Teel</u> <i>D. Teel</i>	<u>5-12-92</u>
Lead Regulatory Unit Manager	Date

Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3.

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From: Sylvia K Kiser at ~WHC159 3/27/92 8:29AM (820 bytes: 14 ln)
To: N M (Naik) Naiknimbalkar at ~WHC68
Receipt Requested
Subject: 166-D FUEL OIL TANK AND ASSOCIATED PIPELINE

----- Message Contents -----

Naik,

The subject facility "166-D Fuel Oil Tank and Associated Pipeline" has never existed. I base this on 18 years of experience in the 100 Areas dealing with facilities, and never in any of my historical records on buildings and facilities is there a 166-D Fuel Oil Tank listed as ever having been built.

I believe the drawings you have are just that comment drawings for a tank that was never built. If I can be of any further assistance, please give me a call.

Sylvia Kiser

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Table 4.3. 166-D Fuel Oil Tank and Pipeline Soil Gas Monitoring Data

Soil Gas Measurements (ug/L)

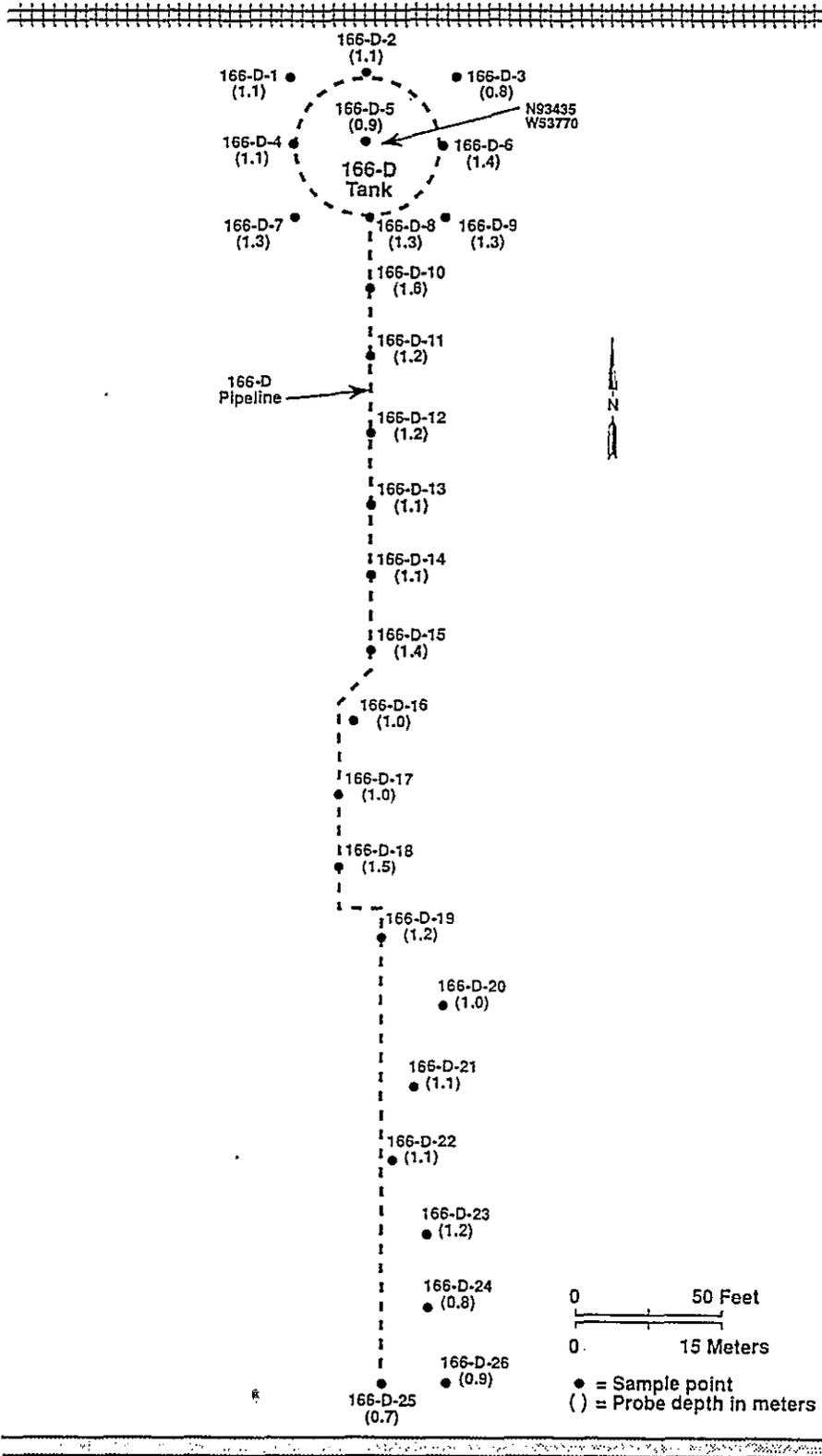
Probe #	Depth (ft)	VOC*	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE	PCE
166-D-1	3.5	1.0	09/11/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-2	3.5	2.0	09/11/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-3	2.7	1.0	09/11/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-4	3.6	2.0	09/11/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-5	3.0	2.0	09/11/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-6	4.6	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-7	4.3	2.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-8	4.2	0.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-9	4.2	2.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-10	5.1	2.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-11	3.8	2.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-12	3.8	2.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-13	3.7	2.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-14	3.5	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-15	4.7	0.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-16	3.2	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-17	3.2	1.0	09/11/91	09/13/91	<1	<1	<1	1.0	<1	<0.1	<0.1	<0.1
166-D-18	4.9	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-19	3.9	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-20	3.3	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-21	3.6	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-22	3.6	2.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-23	3.9	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-24	2.6	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-25	2.2	2.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-26	2.9	1.0	09/11/91	09/13/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1

VOC* - Total Volatile Organic Compounds (ppm) monitored with a 580B OVM on 08/16/91

Quality Control Samples (ug/L)

Type of QC Sample	Sample Date	Analysis Date	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	t-1,2-DCE	1,1,1-TCA	TCE	PCE
Ambient Air	09/11/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
Equipment Blank	09/11/91	09/12/91	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1
166-D-5 Duplicate	09/11/91	09/13/91	<1	<1	<1	1.7	<1	<0.1	<0.1	<0.1

9 2 1 2 6 4 8 0 8 1 1



UNIT MANAGER'S MEETING
100-DR-1 OU
May 27-28, 1992
Room 47, 450 Hills

Presenter - N. M. (Naik) Naiknimbalkar

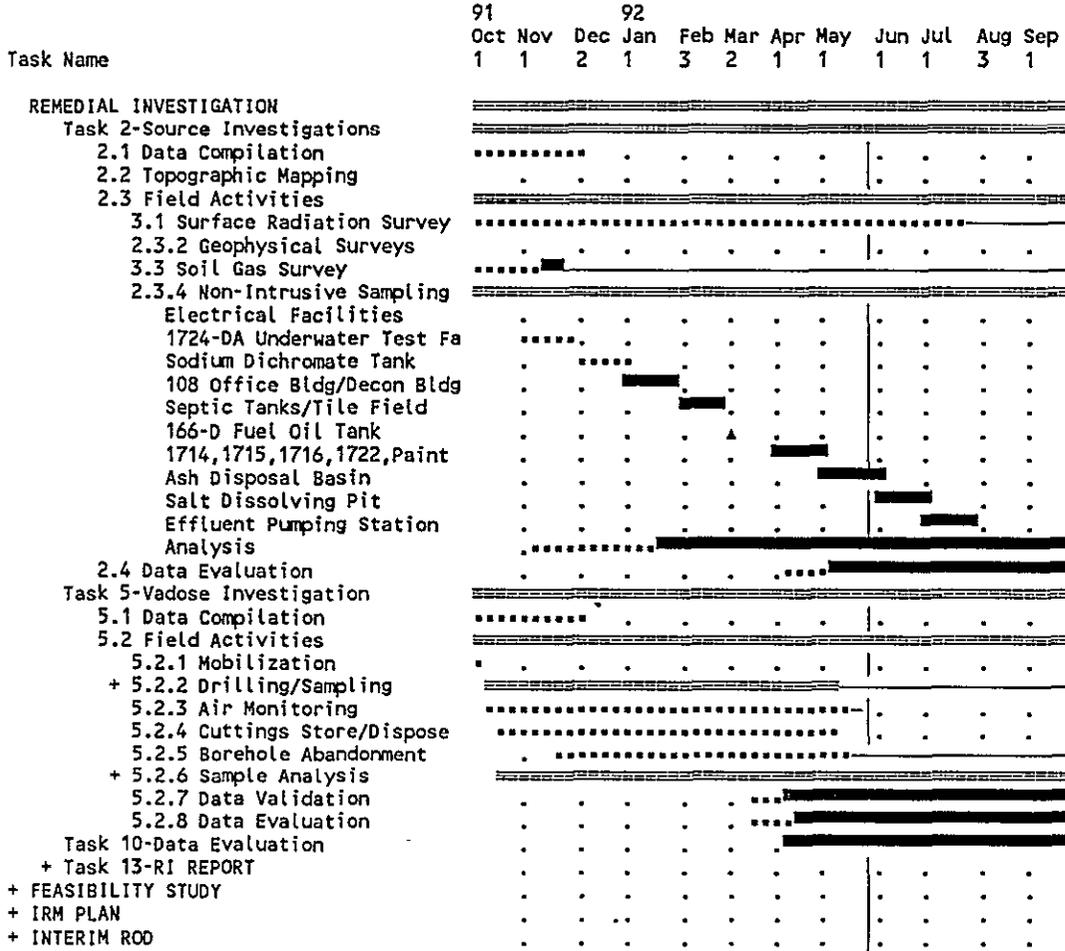
9 2 1 2 5 4 8 0 3 4 2

Schedule Name : 100-DR-1
 Responsible : N. Naiknimbalkar
 As-of Date : 27-May-92

Schedule File : DR1

Dependencies : REMEDIAL INVESTIGATION

9 2 1 2 5 1 9 0 8 4 3



 ■ Detail Task === Summary Task ○○○○ Baseline
 ■ (Progress) === (Progress) >>> Conflict
 ■ (Slack) === (Slack) .. Resource delay
 Progress shows Percent Achieved on Actual ▲ Milestone
 ----- Scale: 5 days per character -----

100-DR-1 Remedial Investigation

TASK NO.	ACTIVITY	STATUS
Task 2	SOURCE INVESTIGATION	
Task 2.1	DATA COMPILATION	COMPLETED DECEMBER 1992
Task 2.2	TOPOGRAPHIC MAPS	COMPLETED AUGUST 1991
Task 2.3.1	SURFACE RADIATION SURVEY	COMPLETED APRIL 1992
	SITES: 100-DR-1 Area with the exception of Controlled Zones.	
Task 2.3.2	GEOPHYSICAL SURVEY	COMPLETED MAY 1991
	SITES: 116-D-2 Pluto Crib Waste Acid Disposal Reservoir 1607-D4 Septic Tank Questionable Septic Tank (Routine surveys were conducted to locate drill hole sites & non-intrusive sites).	
Task 2.3	Soil Gas Surveys	See Table 1.

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Task 2.3.3

Table 1
100-DR-1 Operable Unit Soil Gas Surveys
Activity Completion Dates

Site Name	Probes Installed	Screened for Total VOC*	Sampled	Analyzed	Results Validated
1713-D	08-07-91	08-16-91	09-10-91	09-12-91	12-15-91
1714-D	07-24-91	08-16-91	09-09-91	09-10-91	12-15-91
1715-D	07-24-91	08-16-91	09-09-91	09-10-91	12-15-91
1716-D	08-06-91	08-16-91	09-05-91	09-07-91	12-15-91
1722-D	08-07-91	08-16-91	09-10-91	09-12-91	12-15-91
Paint Shop Near 182-D	08-30-91	Did Not Screen for VOC	09-09-91	09-10-91	12-15-91
184-DA UST	08-06-91	08-16-91	09-09-91	09-10-91	12-15-91
166-D Tank and Piping	08-01-91	08-16-91	09-11-91	09-13-91	12-15-91
103-D	01-30-92	02-03-92	02-06-92	02-07-92	
1607-D4 Septic Tank	02-20-92	02-26-92	02-26-92	02-28-92	
Burial Ground 4A	02-25-92	02-26-92	02-26-92	02-28-92	
Burial Ground 4B	02-07-92	02-11-92	02-11-92	02-13-92	02-14-92
Burial Ground 18	01-23-92	01-28-92	02-19-92	02-21-92	
126-D-2 Landfill	11-25-91	12-17-91			

VOC* - Volatile Organic Compounds

Task 2.3.4 Non-Intrusive

See Table 2

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Task 2.3.4

Table 2
Non-Intrusive

OPER. UNIT	SAMPL ES	SAMPLING ACTIVITY	BEGINNING SAMPLING DATE	ENDING SAMPLING DATE	DATE DATA IS DUE FROM THE LAB.	VALIDATION COMPLETION DATE	REPORT MILESTONE DATE
100-DR-1	3	1724-DA Underwater Test Facility	10/16/91	10/16/91	3/16/92	4/6/92	6/30/92
	5	Sodium Dichromate Tank	1/16/92	1/16/92	6/16/92	7/6/92	8/30/92
	5	108-D Office Bldg/Dec on Bldg	5/1/92	5/1/92	10/1/92	10/22/92	11/30/92
	5	Septic Tank Tile Field	5/1/92	5/1/92	10/1/92	10/22/92	11/30/92
	5	166-D Fuel Oil Tank	----	----	----	----	----
	5	1714-D Solvent Storage Bld	7/13/92	7/13/92	11/1/92	11/22/92	1/30/93
	5	1715-D Oil and Paint Storage Bldg	7/13/92	7/13/92	11/1/92	11/22/92	1/30/93
100-DR-1	5	1716-D Gas Station	7/13/92	7/13/92	11/1/92	11/22/92	1/30/93

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OPER. UNIT	SAMPLES	SAMPLING ACTIVITY	BEGINNING SAMPLING DATE	ENDING SAMPLING DATE	DATE DATA IS DUE FROM THE LAB.	VALIDATION COMPLETION DATE	REPORT MILESTONE DATE
	5	1722-D Equipment Development Lab	7/13/92	7/13/92	11/1/92	11/22/92	1/30/93
	5	Paint Shop (west of 182-D)	7/13/92	7/13/92	11/1/92	11/22/92	1/30/93
	5	Ash Disposal Basin	7/1/92	7/1/92	12/1/92	12/22/92	2/30/93
	6	Salt Dissolving Basin	7/1/92	7/1/92	12/1/92	12/22/92	2/30/93
	5	132-D-2 Effluent Pumping Station	7/1/92	7/1/92	12/1/92	12/22/92	2/30/93
	5	103-D Green Metal Storage	7/1/92	7/1/92	12/1/92	12/22/92	2/30/93
100-DR-1	25	Electrical Facilities*	9/11/91	9/11/91	2/11/92	3/1/92	5/1/92

*

Electrical Facilities Locations:

183-D (C4-S3), 185-D (C4-S11), 189-D (C4-S10), 190-D (E4-S9), 105-D (E4-S2), 151-D (A4), 190-DR (E4-S12/E4-S13), 181-D (C4-S1), 186-D (C4-S12), 105-DR (E4-S11), 190-D (C4-S13) and Pole East of D-Area along perimeter road.

Descriptions Of Work (DOW's): See Table 3

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Table 3

Descriptions Of Work

DOW	One Week DOE-RL Review Starting:	Two Week Regulatory Review starting:	Sampling Activity Starting:
108 Office Building	3-04-92	3-18-92	5-27-92
Septic Tanks/Tile Fields	3-04-92	3-18-92	5-27-92
166-D Fuel Tank	NA	NA	NA
1714-D, 1715-D, 1716-D, 1722-D and Paint Shop	5-25-92	6-8-92	7-13-92
Ash Disposal Basin	5-25-92	6-8-92	7-1-92
100-D Salt Dissolving Pit	5-25-92	6-8-92	7-1-92
132-D-3 Effluent Pumping Station	5-25-92	6-8-92	7-1-92
103-D Green Metal Storage Building	5-25-92	6-8-92	7-1-92

9 2 1 2 6 1 8 0 3 4 8

Task 2.4 Data Evaluation

Task 3 Geological Investigation
-Performed as part of 100-HR-3

Task 4 Surface Water and Sediment Investigation
-Performed as part of 100 Area wide task

Task 5 Vadose Investigation

Task 5.1 Data Compilation Completed December 1991

Task 5.2 Field Activities

Task 5.2.1 Mobilization Completed

Task 5.2.2 Drilling/Sampling See following borehole Summary
Table 4.

9 2 1 2 6 1 8 0 8 4 9

Table 4
Complete 100-DR-1 Boreholes Data-Summary

Borehole No.	Total Depth	Number of Samples to Off-site Lab.	Gross Gamma / Spectral Gamma	Highest Rad Counts/Depth (HPT-GM)	Start/Finish Date
116-D-1A Trench	53.2 ft.	13	Gross Gamma / Spectral Gamma	1500/18 ft.	10-22/ 11-1-91
116-D-1B Trench	36.8 ft.	9	None	1100/15-20 ft.	10-25/ 11-4-91
116-DR-1 Trench	40.2 ft.	6+2 Physical	Gross Gamma	900/18 ft.	11-13/ 11-13 -91
116-DR-2 Trench	37.0 ft.	7	Gross Gamma	400/15 ft.	11-15/ 11-19-91
116-D-4 French Drain	23.0 ft.	4	Gross Gamma	< BKGRD*	12-2/ 12-2-91
116-D-9 Crib	27.8 ft.	2	Gross Gamma	< BKGRD*	12-9/ 12-9-91
116-D-3 French Drain	22.4 ft.	4	Gross / Spectral Gamma	< BKGRD*	12-10/ 12-11-91
116-D-7 Retention Basin	36.6 ft.	4	Gross Gamma	2000/3 to 4 ft.	12-13/ 12-31-91
116-DR-9 (A) Reten. Basin	36.9 ft.	10	Gross Gamma	14000/2 ft.	1-10/ 1-15-92

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Borehole No.	Total Depth	Number of Samples to Off-site Lab.	Gross Gamma/Spectral Gamma	Highest Rad Counts/Depth (HPT-GM)	Start/Finish Date
116-DR-9 (B) Retention Basin	37.4 ft.	6	Gross Gamma	7000/4 ft.	1-20/ 1-23-92
116-DR-9 (C) Retention Basin	37.5 ft.	5	None	2000/4 ft.	1-27/ 2-6-92
116-D-5 Outfall Structure	27 ft.	2	Gross Gamma/Spectral Gamma	< BKGRD*	1-24/ 1-28-92
130-D-1 Gasoline Storage Tank	37 ft.	9	Gross Gamma	< BKGRD*	2-6/ 2-10-92
116-DR-5 Outfall Structure	27.5 ft.	2	Gross Gamma/Spectral Gamma	< BKGRD*	2-4/ 2-10-92
132-D-3 Effl. Pump Sta.	38.5 ft.	4	Gross Gamma/Spectral Gamma	< BKGRD*	2-19/ 2-20-92
116-D-6 French Drain	22 ft.	5	Gross Gamma/Spectral Gamma	< BKGRD*	2-18/ 2-19-92
116-D-2 Pluto Crib	6 ft.	Abandoned**			
116-D-2A*** Pluto Crib	25 ft.	3	Gross Gamma/Spect. Gamma	2000/12 ft.	2-18/ 2-19-92

* Background= 150 Counts per minute.

** 116-D-2: Original location of 116-D-2 shown in Figure 5-1, Draft C of 100-DR-1 Work Plan, is actually a location of water tower. Prior to drilling

9 2 1 2 6 1 8 0 3 5 1

for 116-D-2 Pluto Crib a walkover was conducted with R. Richards and a new location was established based on Mr. Richards recommendations. A hole was started at this location but was abandoned after intercepting unexpected cement slab.

*** 116-D-2A: A GPR survey, in the meanwhile, was being conducted for soil gas activities in the same area to locate 1607-D4 Septic Tank, suggested a disturbance 70 feet South and 30 feet West of the abandoned hole. This new location appeared to be the pluto crib because of the size and depth. Also, there was only one another disturbance in the area, the one intercepted for 1607-D4 Septic Tank. A hole was drilled to a depth of 25 feet and was designated as 116-D-2A. The drilling appears to confirm that this was the pluto crib because it encountered contamination beginning at 10 feet as expected.

Task 5.2.3	Air Monitoring	Continued as planned
Task 5.2.4	Cuttings Store/	Continued as planned
Task 5.2.5	Borehole Abandonment	Continued as planned
Task 5.2.6	Sample Analysis	Continued as planned
Task 5.2.7	Data Validation	
Task 5.2.8	Data Evaluation	

Report List for 100-DR-1 See Table 5

9 2 1 2 6 1 3 0 8 5 2

Table 5

Report List for 100-DR-1
WHC-SD-EN-DP-015, Summary Report Source Data Compilation for 100-HR-3 Operable Unit
WHC-SD-EN-AP-067. 100-DR-1 Area Nonintrusive Source Investigation Activities, December 26, 1991.
WHC-SD-EN-AP-067. Rev. 1, 100-DR-1 Area Nonintrusive Source Investigation Activities. (TBI).
WHC-SD-EN-AP-061, Rev.1. Description of Work for the 100-DR-1 Source Operable Unit. November 12, 1991.
WHC-SD-EN-AP-061, Rev.0. Description of Work for the 100-DR-1 Source Operable Unit. October 11, 1991.
WHC-MR-0257, 100-DR-1, Geophysical Surveys. May 1991.

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100-HR-1 TASKS, MAY 1992

Task 1, Project Management

-On Going

Task 2, Source Investigation

- Data Compilation, Completed (Dec 91)
- Topographic Mapping, Completed (Aug 91)
- Site Walkover, to be completed Spring-Summer 1992
- Surface Radiation Survey, Completed (Oct 91)
- Geophysical Survey-Completed (June 91)
- Septic Tanks, To be completed Summer 1992
- Pipeline Assessment- Completed (Jan 92)
- Electrical Facilities, Completed Sampling Dec 91 (8 Samples), Awaiting Analytical Results

Task 3, Geological Investigation

-Performed as part of 100-HR-3

Task 4, Surface Water and Sediment Investigation

-Performed as part of 100-HR-3

Task 5, Vadose Zone Investigation

- Drilling started on 26 Feb 1992
- Drilling completed on 13 Mar 1992
- 5 Boreholes Completed
 - 116-H-1 (Disposal Trench)
 - 116-H-2 (Disposal Trench)
 - 116-H-3 (French Drain)
 - 116-H-7 (Retention Basin)
 - 116-H-9 (Seal Pit Crib)

Task 6, Groundwater Investigation

-Performed as part of 100-HR-3

Task 7, Air Investigation

-Activity being performed as routine health and safety air monitoring in support of investigation activities.

Task 8, Ecological Investigation

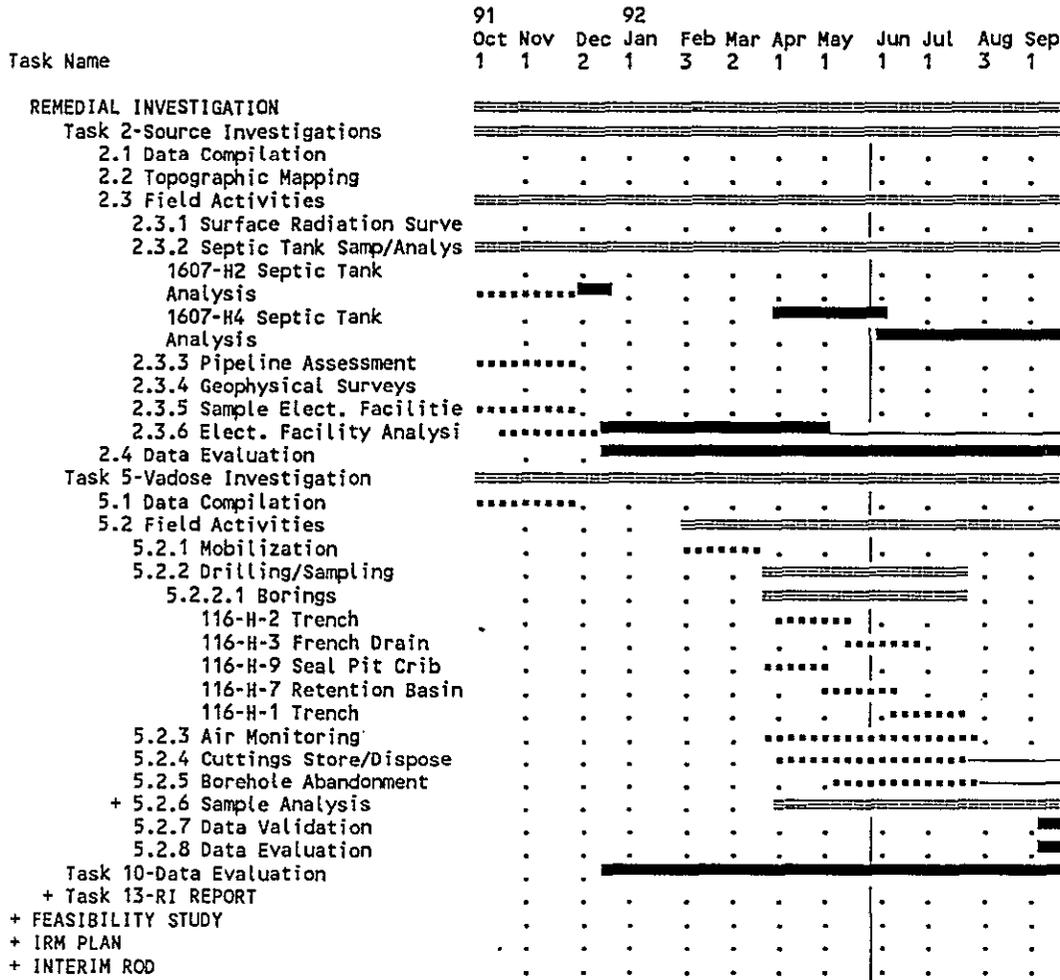
-Performed as part of 100-HR-3

9 2 1 2 6 1 8 0 8 5 4

Schedule Name : 100-Hr-1 Operable Unit
 Responsible : J. Ayres
 As-of Date : 27-May-92

Schedule File : HR-1

92126180855



 ■■■■ Detail Task === Summary Task ○○○○ Baseline
 .. (Progress) == (Progress) >>> Conflict
 ■ (Slack) == (Slack) .. Resource delay
 ▲ Milestone
 Progress shows Percent Achieved on Actual
 ----- Scale: 5 days per character -----

100-HR-1 DOW Schedule,		3/20/92		
Title & Document Number of DOW		One Week DOE-RL review starting:	Two week Regulatory review starting:	Sampling Activity starting:
1	100-H & 100-B Area Electrical Facilities Source Sampling, WHC-SD-EN-AP-064, Rev. 1	Completed	Completed	December 9, 1991
2	Description of Work for the 100-HR-1 Source Operable Unit, WHC-SD-EN-AP-066	Completed	Completed	February 26, 1992
3	1607-H4 Septic Tank Sampling (DOW Currently Being Written)	Approx. May 1992	Approx. May 1992	Approx. June 1992
4				
5				

100-HR-1 DOCUMENTS

- o 100-HR-1 GEOPHYSICAL SURVEYS WHC-MR-0263
- o 100-HR-1 RADIOLOGICAL SURVEYS WHC-MR-0275
- o Engineering Report for H Area Process WHC-SD-NR-ER-092
Effluent Line Examination

9 2 1 2 6 4 8 0 8 5 7

100 HR-3 GROUNDWATER OPERABLE UNIT
WORK SUMMARY 5/20/92

TASK 3 - GEOLOGIC INVESTIGATION

Data Compilation is complete. WHC released a report titled, "Geologic Information Summary for the Northern Portion of the Hanford Site". A Geologic Map should be completed in June, 1992.

TASK 5 - VADOSE INVESTIGATION

Data Complilation is complete. WHC released a report titled, "Hydrologic and Geologic Data Available for the Region North of Gable Mountain".

TASK 6 - GROUNDWATER INVESTIGATION

Data Complilation is almost complete. WHC plans to release a report titled, "Hydrologic Information Summary for the Region North of Gable Mountain" in June, 1992.

9 2 1 2 5 1 8 0 8 5 3

100 HR-3
GROUNDWATER WELL DRILLING
STATUS 5/20/92

Well #	Start Date	Present Depth (ft)	Finish Date	Status
1	1/29/92	55 TD	2/6/92	Developed
2	1/17/92	57 TD	1/27/92	Developed
3	1/23/92	62 TD	1/29/92	Developed
4	1/23/92	60 TD	1/29/92	Developed
5	1/30/92	62 TD	2/4/92	Developed
6	1/31/92	60 TD	2/10/92	Developed
7	1/29/92	57 TD	2/11/92	Developed
8	10/17/91	70 TD	11/5/91	Developed
9	11/7/91	77 TD	11/21/91	Developed
10	10/17/91	149 TD	11/12/91	Developed
11	11/25/91	75 TD	12/16/91	Developed
12	12/11/91	112 TD	1/15/92	Developed
13	12/16/91	100 TD	1/8/92	Developed
14	1/9/92	115 TD	1/28/92	Developed
15	12/17/91	100 TD	1/7/92	Developed
16	12/20/91	95 TD	1/7/92	Developed
17	1/8/92	113 TD	1/14/92	Developed
18	1/10/92	101 TD	1/22/92	Developed
19	1/15/92	102 TD	1/22/92	Developed
20	2/5/92	83 TD	2/11/92	Developed
21	2/10/92	46 TD	2/19/92	Developed
22	2/10/92	51 TD	2/12/92	Developed

* Soil samples are collected for laboratory analysis at 10 ft. above, 5 ft. above and 5 ft. below the expected groundwater table.

9 2 1 2 6 4 9 0 3 5 9

100-BC-1 SOURCE OPERABLE UNIT WORK SUMMARY
May 26, 1992

Task 2 - Source Investigation:

Source Data Compilation: Activity completed February, 1992. Identified documents are in the process of being cleared for external distribution.

Topographic Mapping: Activity completed August, 1991.

Field Activities:

Electrical Facility Sampling: Activity completed December, 1991. Preliminary (unvalidated) laboratory data has been received.

116-C-5 Retention Basin Sampling: Activity completed April 28, 1992.

Task 5 - Vadose Investigation:

See attached table for specific vadose drilling information.

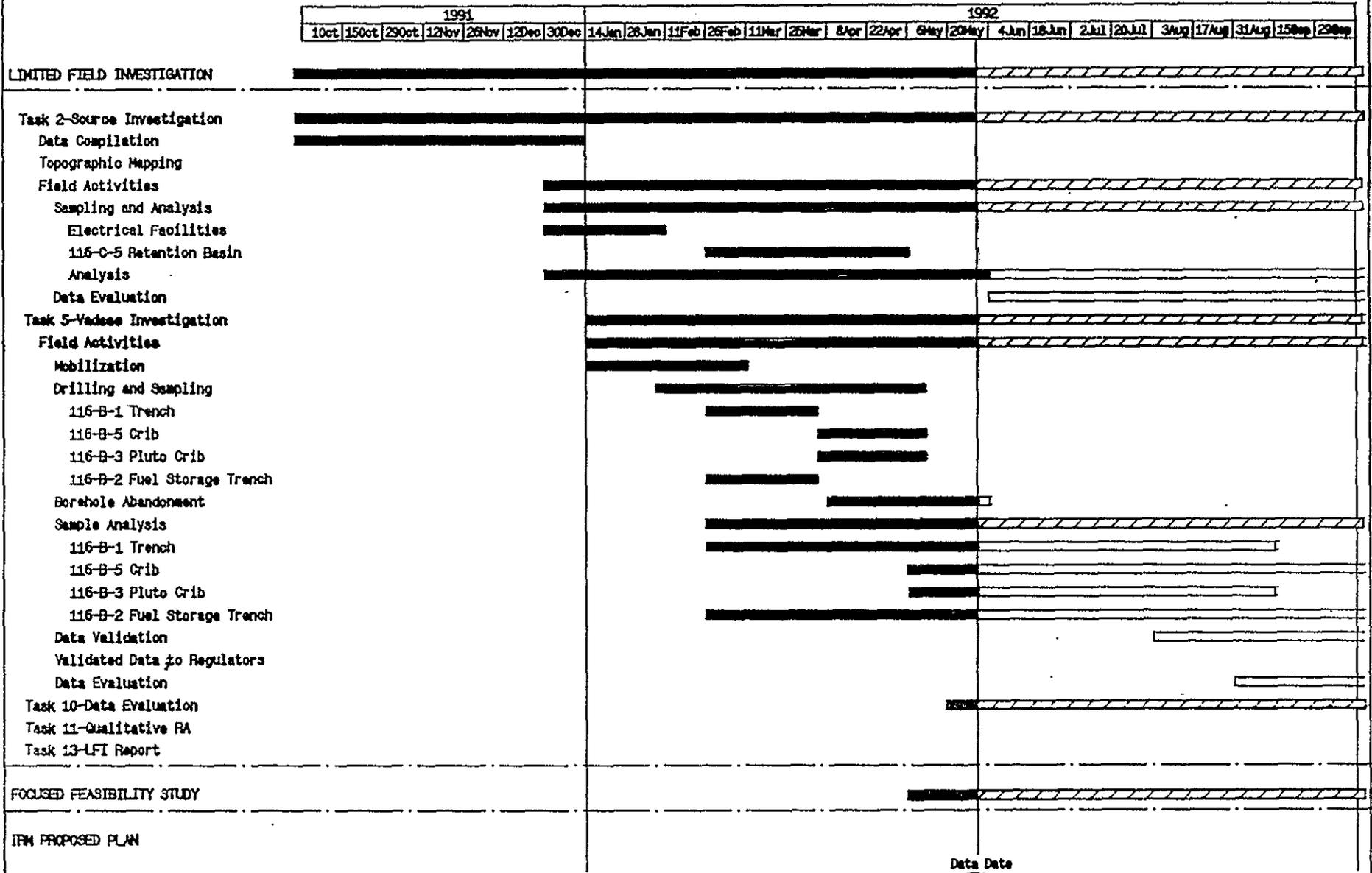
Due to the relocation of well B5-2, EPA has suggested that a test pit be added to the vadose activities. The suggested test pit has been agreed to and the DOW has been updated to include the new work scope. The DOW has been reviewed by DOE, EPA and Ecology with minimal comments. The activity is scheduled for the first week in June pending comment resolution.

9 2 1 2 5 4 9 0 3 6 1

100-BC-1 Drilling Summary					
Borehole No.	Total Depth	# of Samples	Logging	Highest Rad & Depth (Ludlum)	Start/Finish Date
116-B-1	28 feet	4 Chemical 2 Physical	Spectral	14,000 cpm (200 cpm GM) 17-19	3/19 - 3/26
116-B-2	23 feet	4 Chemical	Spectral	8,000 cpm (750 cpm GM) 12-14	3/19 - 3/30
116-B-3	20 feet	3 Chemical	Spectral	8,000 cpm (400 cpm GM) 6-7	4/2 - 4/8
116-B-5	25 feet	3 Chemical	Spectral	2,000 cpm	4/13 - 4/22

100-BC-1 DOW Schedule,				May 26, 1992
Title & Document Number of DOW		One Week DOE-RL review starting:	Two week Regulatory review starting:	Sampling Activity starting:
1	100-H & 100-B Area Electrical Facilities Source Sampling, WHC-SD-EN-AP-064, Rev. 1	Completed	Completed	December 9, 1991
2	Description of Work for the 100-BC-1 OU Vadose Zone Investigation Activities, WHC-SD-EN-AP-074, Rev 1	May 14, 1992	May 21, 1992	June 1 st wk, 1992
3	Source Investigation Field Activities for the 100-BC-1 Operable Unit Description of Work, WHC-SD-EN-AP-080, Draft	March 13, 1992	March 27, 1992	April 20, 1992

100-BC-1 OPERABLE UNIT



Data Date
27May

Summary Task [Hatched Box] Progress [Solid Black Box]
Detail Task [White Box] Milestone [Triangle]

Project: 100-BC-1 100-BC-1 Date: 20Apr92 7:46
 100-BC-1 OPERABLE UNIT
 Page: 1 Drawn by ER Program Control-Scheduling

100-BC-5 OPERABLE UNIT

1991			1992								
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep

LIMITED FIELD INVESTIGATION

Task 3-Geologic Investigation
Data Compilation

Task 5-Vadose Investigations
Data Compilation

Task 6-Groundwater Investigations
Data Compilation

Field Activities

Evaluate Existing Wells

Well Installation

Well BC-1 199-B3-46

Well BC-2 199-B3-47

Well BC-2A 199-B2-12

Well BC-3 199-B2-13

Well BC-4 199-B4-8

Well BC-5 199-B4-9

Well BC-6 199-B9-2

Well BC-7 199-B9-3

Well BC-8 199-B8-6

Well BC-9 199-B5-2

Groundwater Soil Samples

Laboratory Analysis

Data Validation

Validated Data to Regulators

Data Evaluation

LFI REPORT (Issue as secondary doc)

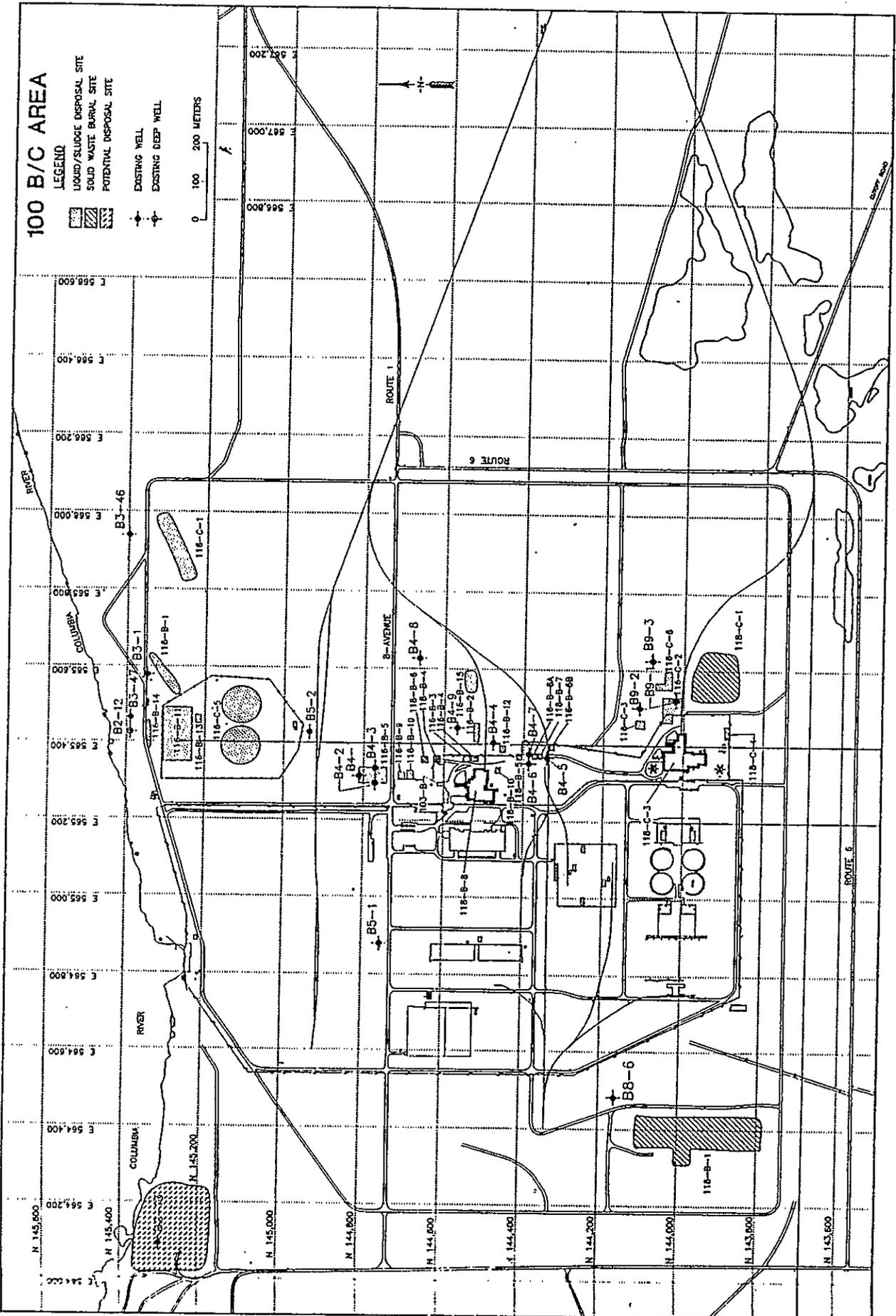
FOCUSED FEASIBILITY STUDY

IRM PROPOSED PLAN (Issue as Primary Document)

Date Date
28 May 92

Summary Task  Progress 
Detail Task  Milestone 

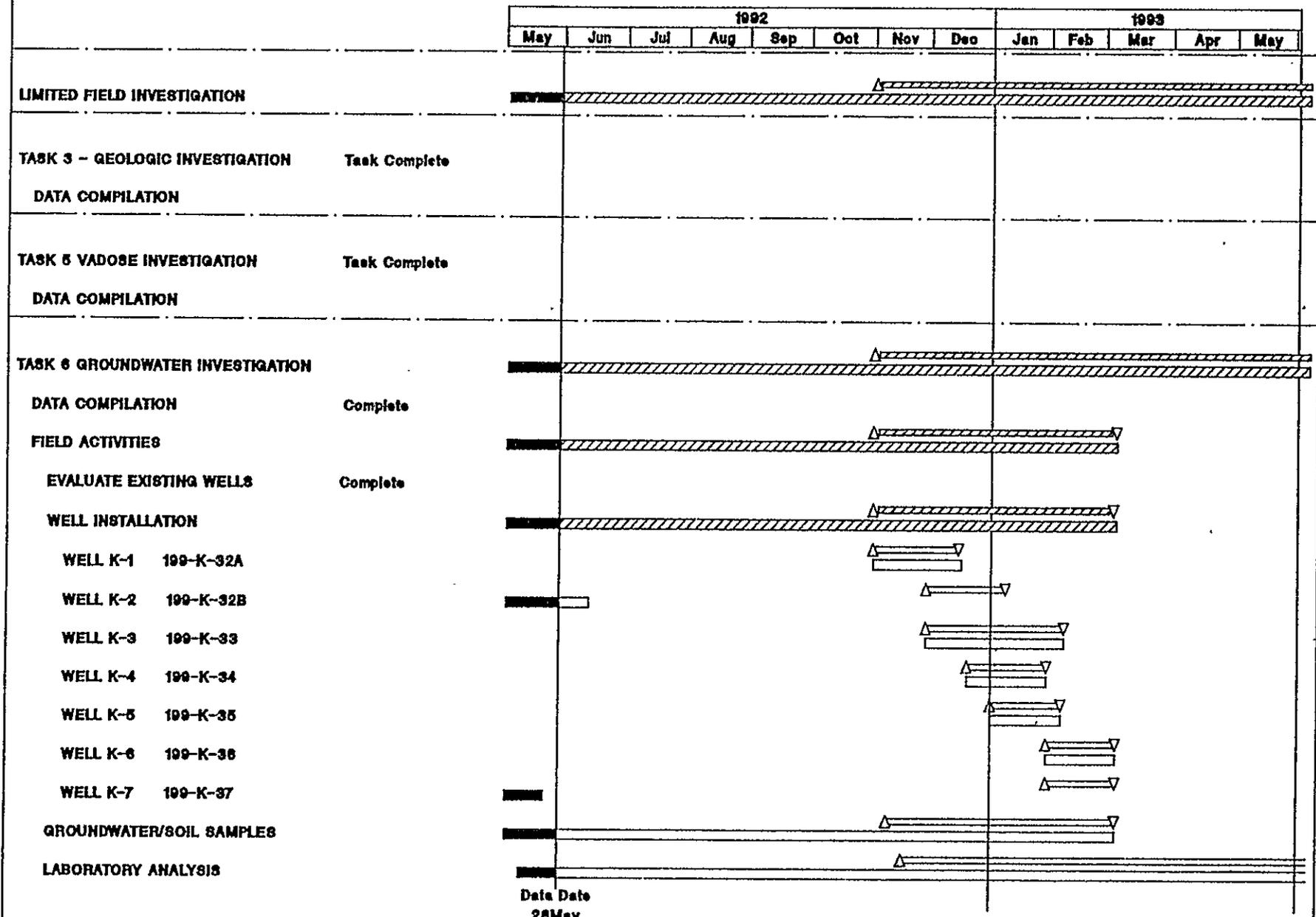
9 2 1 2 6 1 9 0 8 6 5



SEV 031992-G

9 2 1 2 3 4 3 0 8 3 6

100-KR-4 OPERABLE UNIT



Summary [Hatched] Target [Triangle] [Arrow]
 Detail Task [White] Progress [Hatched]

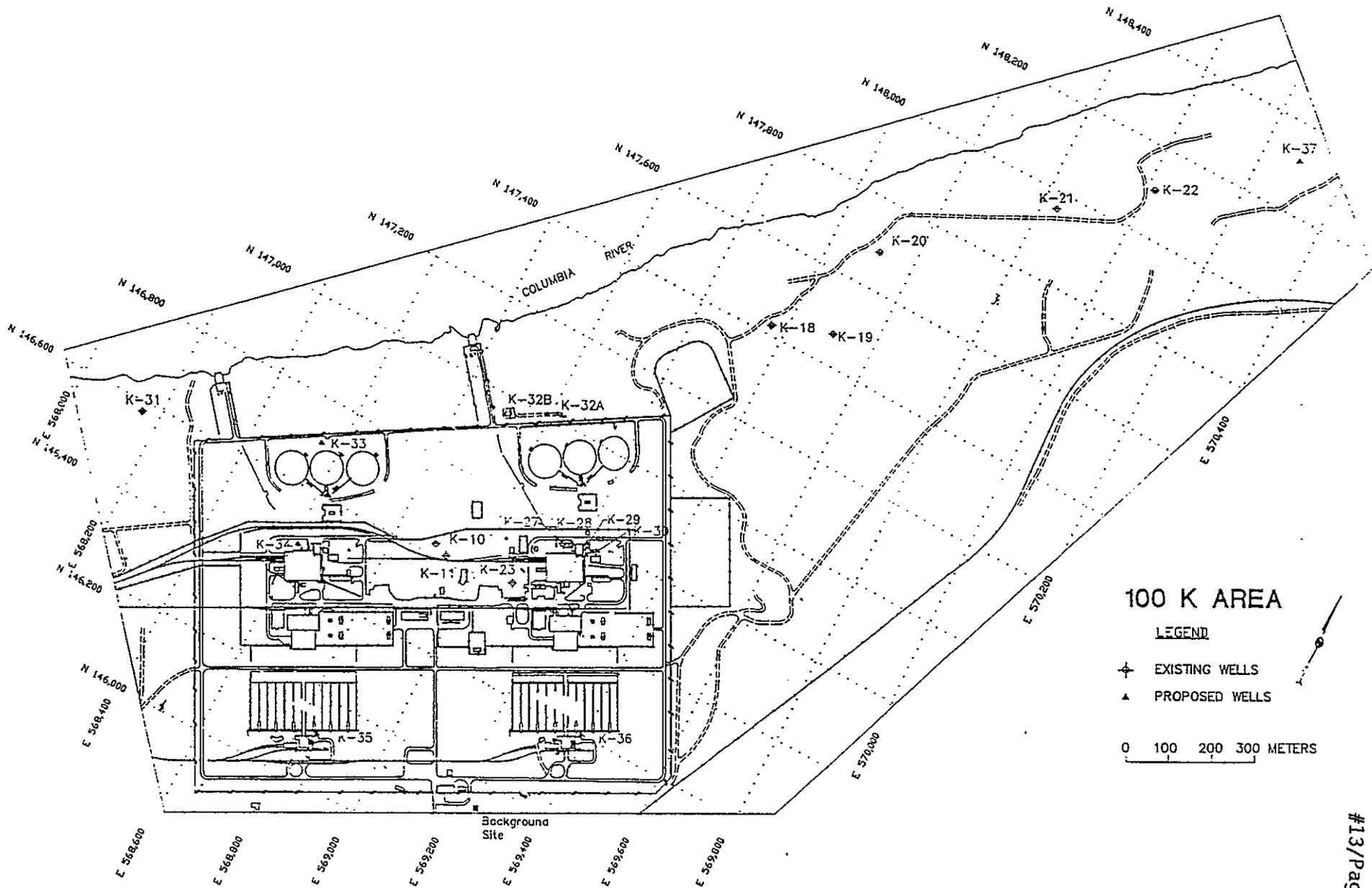
100-KR-4 DRILLING STATUS

WELL NUMBER	START DATE	COMPLETION DATE	CURRENT DEPTH	INST. READINGS	SCREEN INSTALLED
199-K-37	5/4/92	5/19/92	68 ft		
199-K-32A					
199-K-32B	5/4/92		111 ft		
199-K-33					
199-K-34	5/29/92				
199-K-35					
199-K-36					

100-KR-4 DOCUMENTS

Description of Work for the 100-KR-4 Groundwater Operable Unit,
WHC-SD-EN-AP-082, Rev. 1

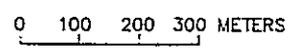
9 2 1 2 6 4 8 0 8 6 7



100 K AREA

LEGEND

- ◆ EXISTING WELLS
- ▲ PROPOSED WELLS



N-AREA SURFACE RADIATION SURVEY
5/92 UPDATE

START DATE: 4/92

PROJECTED COMPLETION DATE:

SURVEY: 8/92

REPORT: 9/92

AREA:

AREA SURVEY: @ 227 acres

ROAD SURVEY: @ 200 acres

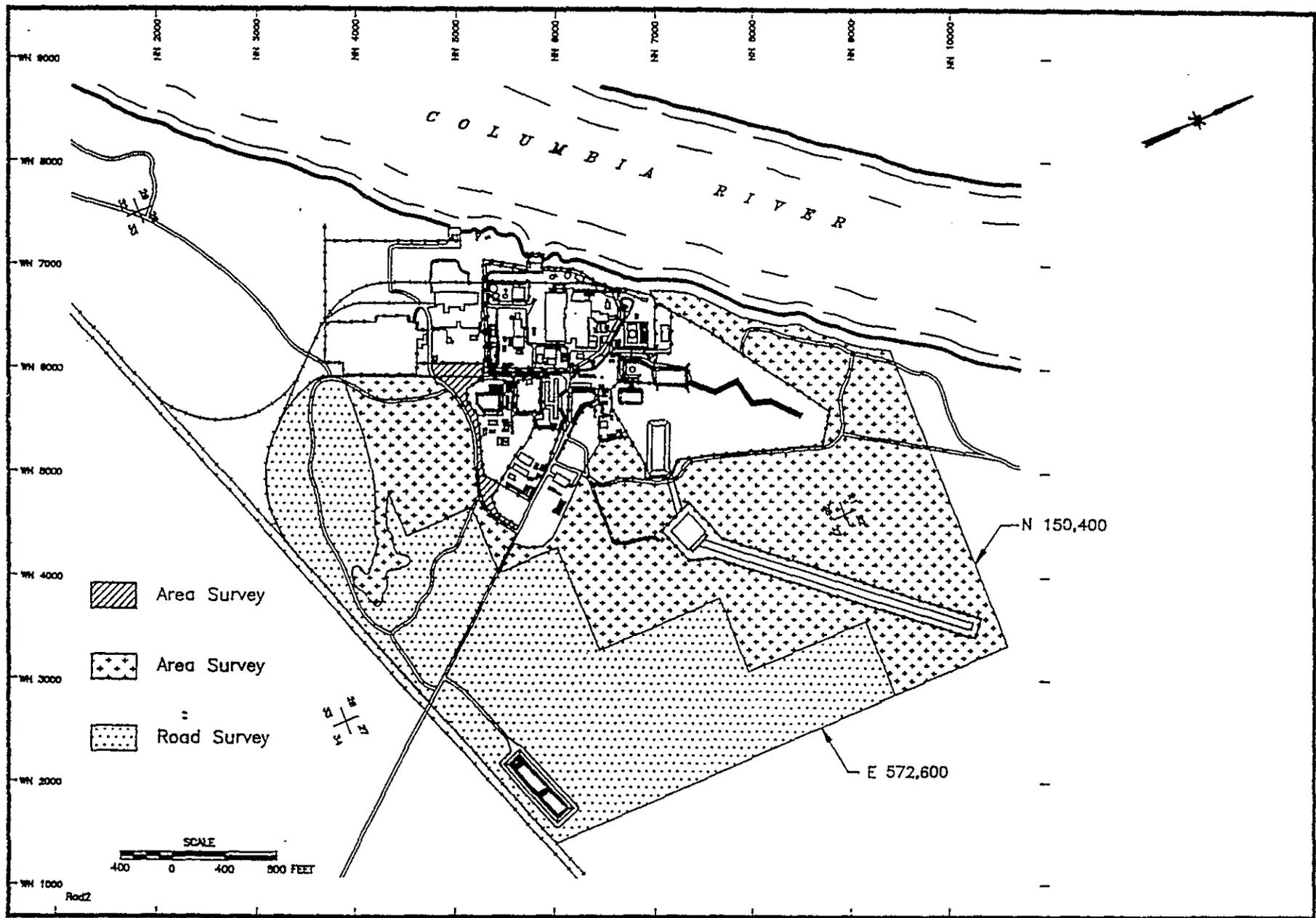
TOTAL AREA: @ 427 acres

AREA COMPLETED AS OF MAY 20, 1992: @ 56 acres

AREAS ABOVE BACKGROUND FOUND: NONE

PROBLEMS: NONE

92126180859



9 2 1 2 6 1 8 0 8 7 0

STATUS OF NR-1 USRADS SURVEY THRU 5-20-92

ACERAGE

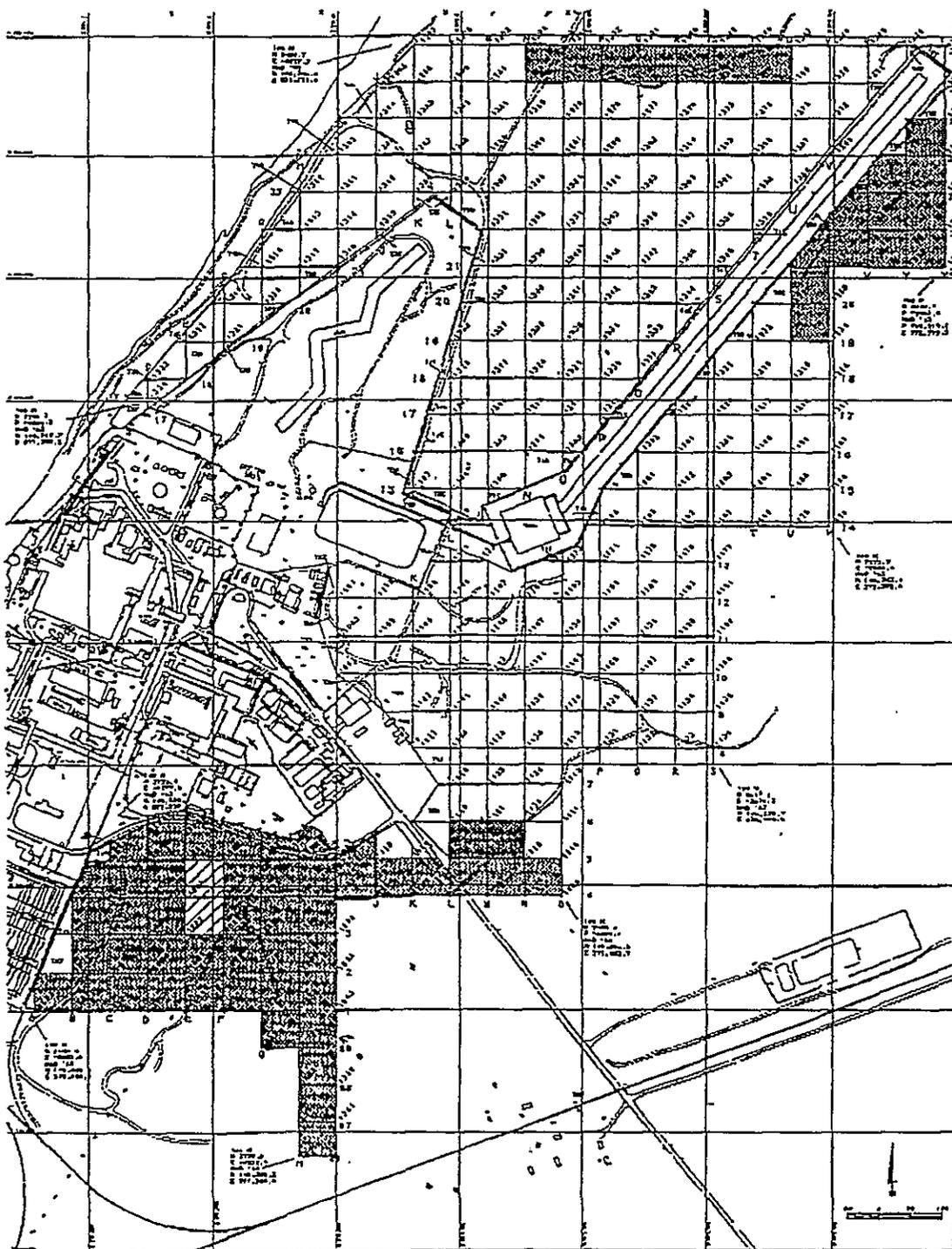
NRI TOTAL	241.3
COMPLETED	55.7
REMAINING	185.6



SURVEY PERFORMED WITH USRADS EQUIPMENT



SURVEY PERFORMED BY MANUALLY LOGGING DATA FROM LUDLUM-2221 AND LUDLUM-19



92126180371

USRADS SURVEYS

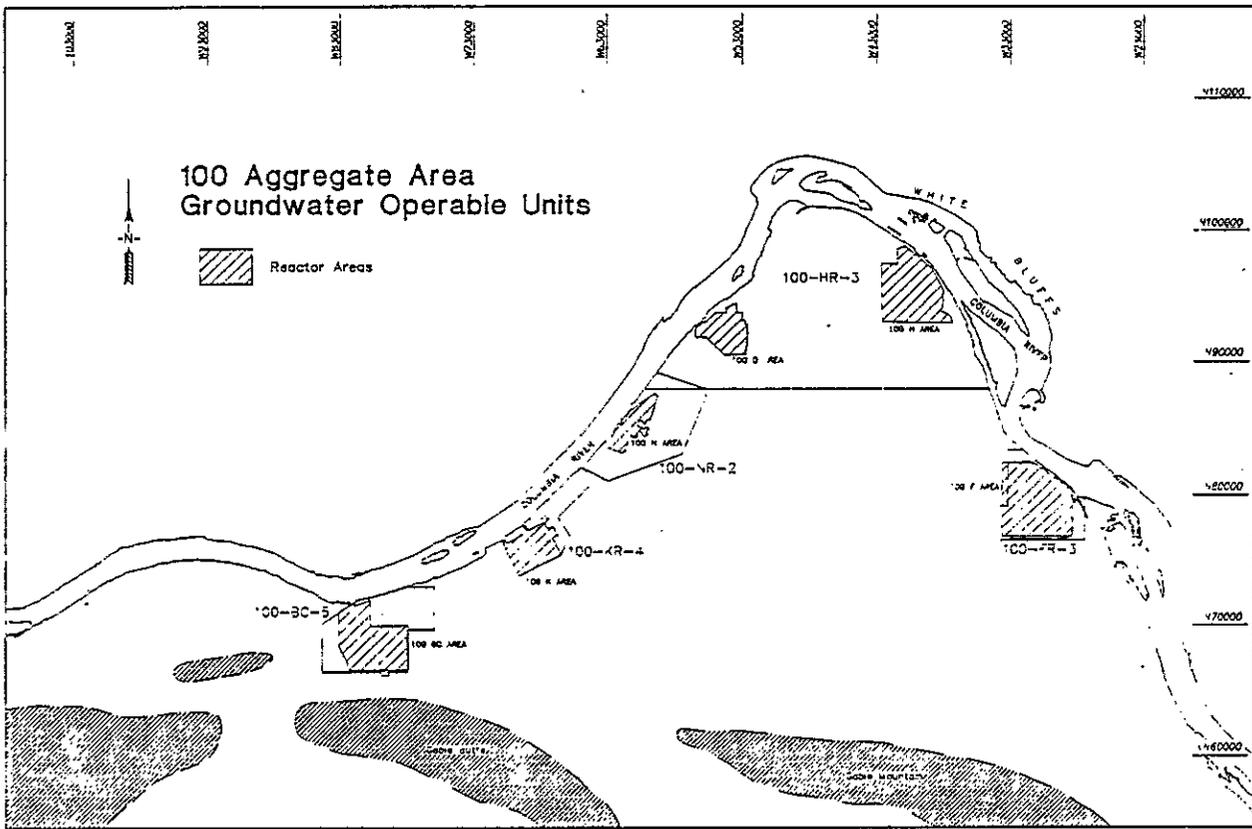
5/21/92

100-KR-1 DOW Schedule,			
Title & Document Number of DOW	One Week DOE-RL review starting:	Two week Regulatory review starting:	Sampling Activity starting:
1 Vadose Drilling & Trenching, WHC-SD-EN-AP-083	June 4, 1992	June 18, 1992	October 5, 1992

100-FR-1 DOW Schedule,			
Title & Document Number of DOW	One Week DOE-RL review starting:	Two week Regulatory review starting:	Sampling Activity starting
1 Source Investigations, WHC-SD-EN-AP-094	May 18, 1992	June 1, 1992	June 15, 1992
2 Vadose Investigations, WHC-SD-EN-AP-091	June 11, 1992	June 25, 1992	Feb. 11, 1993

100-NR-1 DOW Schedule,			
Title & Document Number of DOW	One Week DOE-RL review starting:	Two week Regulatory review starting:	Sampling Activity starting:
1 NR-1 Vadose Drilling and Trenching, WHC-SD-EN-AP-084	June 11, 1992	June 25, 1992	December 7, 1992

9 2 1 2 6 1 8 0 8 7 3



205052A 120191-A

APPENDIX D-1: SURFACE WATER/SEDIMENT INVESTIGATION
FOR THE 100 AGGREGATE AREA

- 1.0 Approach
- 2.0 Goals
- 3.0 Tasks
 - 3.1 Data Compilation
 - 3.2 Radiation Survey
 - 3.3 Geologic Mapping
 - 3.4 Spring and Seep Sampling - Water and Sediment
 - 3.5 Laboratory Analysis
 - 3.6 Permanent River Stage Recorders and
Data Loggers in Monitoring Wells
- 4.0 Data Evaluation

9 2 1 2 6 4 8 0 8 7 4

APPENDIX D-1: SURFACE WATER/SEDIMENT INVESTIGATION

Task Element 3.4: Spring and Seep Sampling

- Sample riverbank seepage, sediment associated with seepage, and adjacent river water during seasonal low river stage
- Southern shoreline of the river from Vernita Bridge downstream to the Hanford Townsite
- Constituents for analysis include field parameters (pH, temperature, and conductivity); water quality suite (anions, metals, radioactivity); and radionuclides
- Task 3.4 sampling intended to meet Milestone M-30-01
- Develop long-term riverbank seepage monitoring program, based on Task 3.4 results, previously acquired results, and results from Sitewide Surveillance program. To include:
 - Identify springs to be monitored
 - Constituents to monitor
 - Frequency and duration of monitoring

9 2 1 2 5 1 8 0 8 7 5

APPENDIX D-1: SURFACE WATER/SEDIMENT INVESTIGATION

Task Element 4.0: Data Evaluation

Purpose:

- (1) Evaluate residual effects of past Hanford Site operations on human health and the environment as related to the Columbia River
- (2) Identify additional data needs
- (3) Develop plan to resolve additional data needs

Selected Products:

- (1) Compilations of existing information
- (2) Description of the results of 1991 riverbank sampling activity (Milestone M-30-01)
- (3) Summary of existing information on cumulative health and environmental impacts to the Columbia River, including a plan for additional investigations (Milestone M-30-02)
- (4) Maps describing shoreline features, including geology, riverbank seepage, and structures
- (5) Results of analyzing water level fluctuations to infer aquifer properties (Milestone M-30-04)

9 2 1 2 5 4 8 0 8 7 6

TPA MILESTONE M-30-00: Complete Integrated General Investigations and Studies for the 100 Aggregate Area by September 1993

- M-30-01 Submit a report (secondary document) to EPA and Ecology evaluating the impact to the Columbia River from contaminated springs and seeps, as described in the operable unit work plans listed in M-30-03 (February 1992)
- M-30-02 Submit a plan (primary document) to EPA and Ecology to determine cumulative health and environmental impacts to the Columbia River, incorporating results obtained under M-30-01 (May 1992)
- M-30-03 Complete all nonintrusive field work as identified in draft work plans for the following operable unit work plans: 100-HR-1, 100-HR-3, 100-DR-1, 100-BC-1, 100-BC-5, 100-KR-1, 100-KR-4, 100-NR-1, 100-NR-3, and 100-FR-1 (September 1992)
- M-30-04 Submit a report (secondary document) to EPA and Ecology evaluating the interaction of Columbia River and the unconfined aquifer for aquifer hydraulic parameters (September 1992)
- M-30-05 Install all field instrumentation and initiate monitoring activities necessary to perform long-term evaluation of Columbia River and unconfined aquifer interaction, in accordance with the tasks defined in operable unit work plans listed in M-30-03 (September 1993)

9 2 1 2 6 1 8 0 8 7 7

PRELIMINARY INTERPRETATION OF RIVERBANK SEEPAGE
AND ASSOCIATED SEDIMENT DATA, 100 AGGREGATE AREA

- Introduction: Synopsis of Riverbank Seepage Investigations

100 Aggregate Area investigation objectives; previous shoreline data gathering activities; sampling locations; and databases.

- Trends in Riverbank Seepage Water Quality: Relate Fall 1991 Results to Earlier Data

Hanford Site indicator constituents; comparison of recent data to previous data; and trends in seepage water quality.

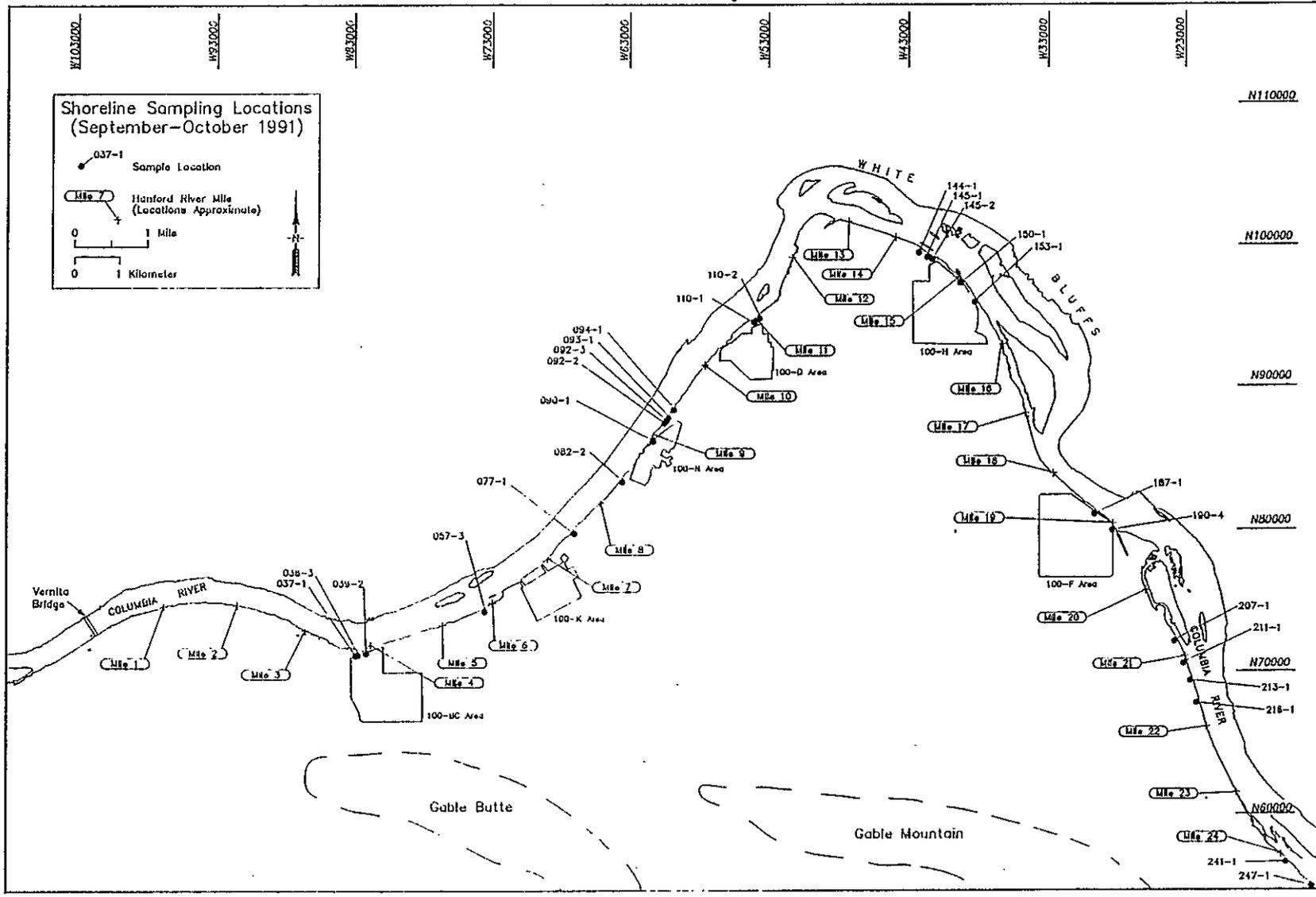
- Riverbank Seepage and Groundwater: Compare Riverbank Seepage to Nearby Monitoring Well Data

Interaction between river and groundwater; availability of wells for comparisons; and comparisons of wells, seeps, and river water for selected constituents.

- Sediments Associated with Seepage: Interpret Sediment Data Relative to Potential Sources

Sediment contamination indicators; sources for sediment contamination; reference/background levels; influence of sediment size; and distribution along shoreline.

9 2 1 2 6 1 8 0 8 7 3



GLOSC\050192-B

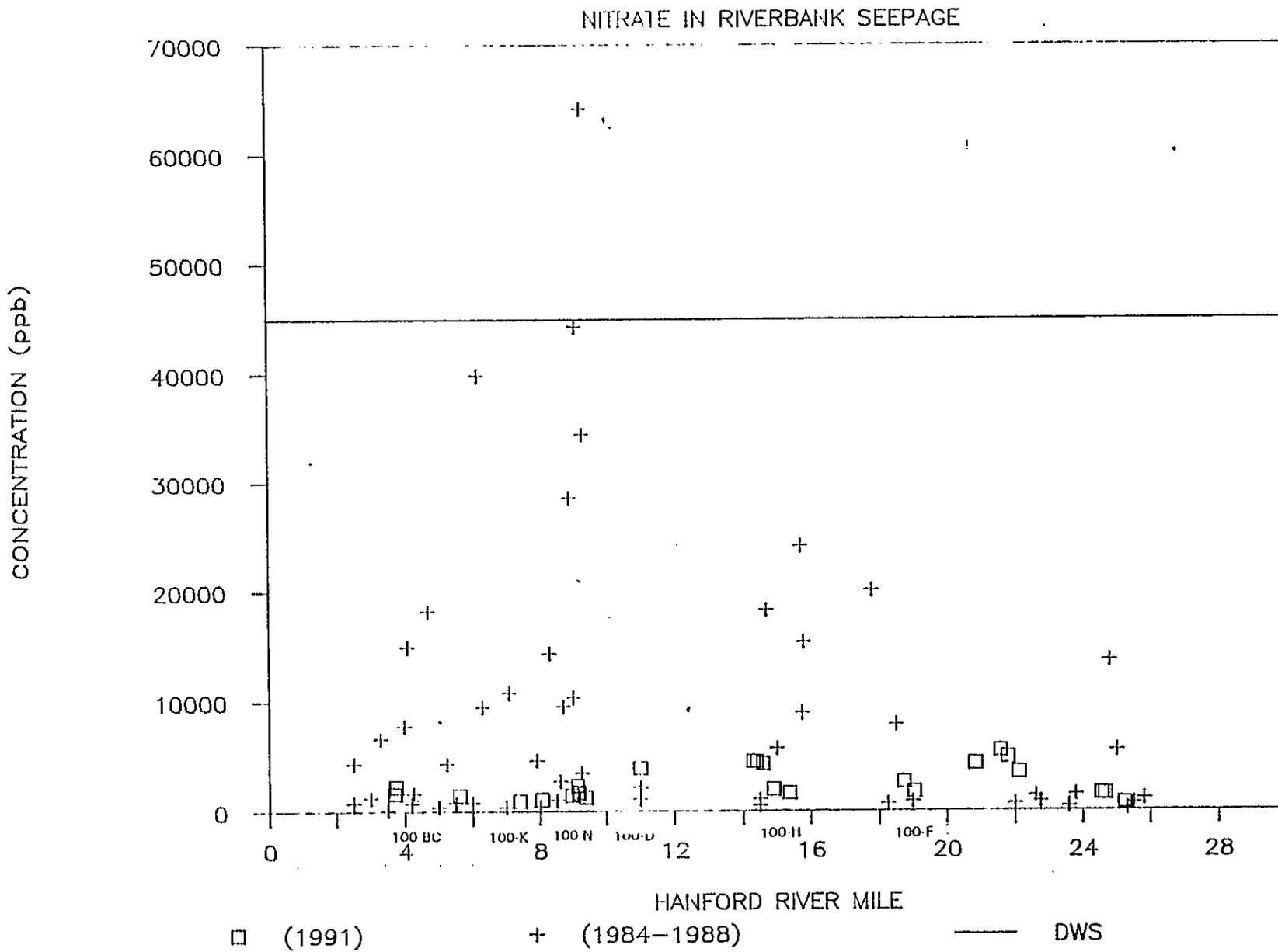
COMPARISON OF TASK 3.4 SAMPLING ACTIVITY RESULTS WITH PREVIOUSLY ACQUIRED DATA

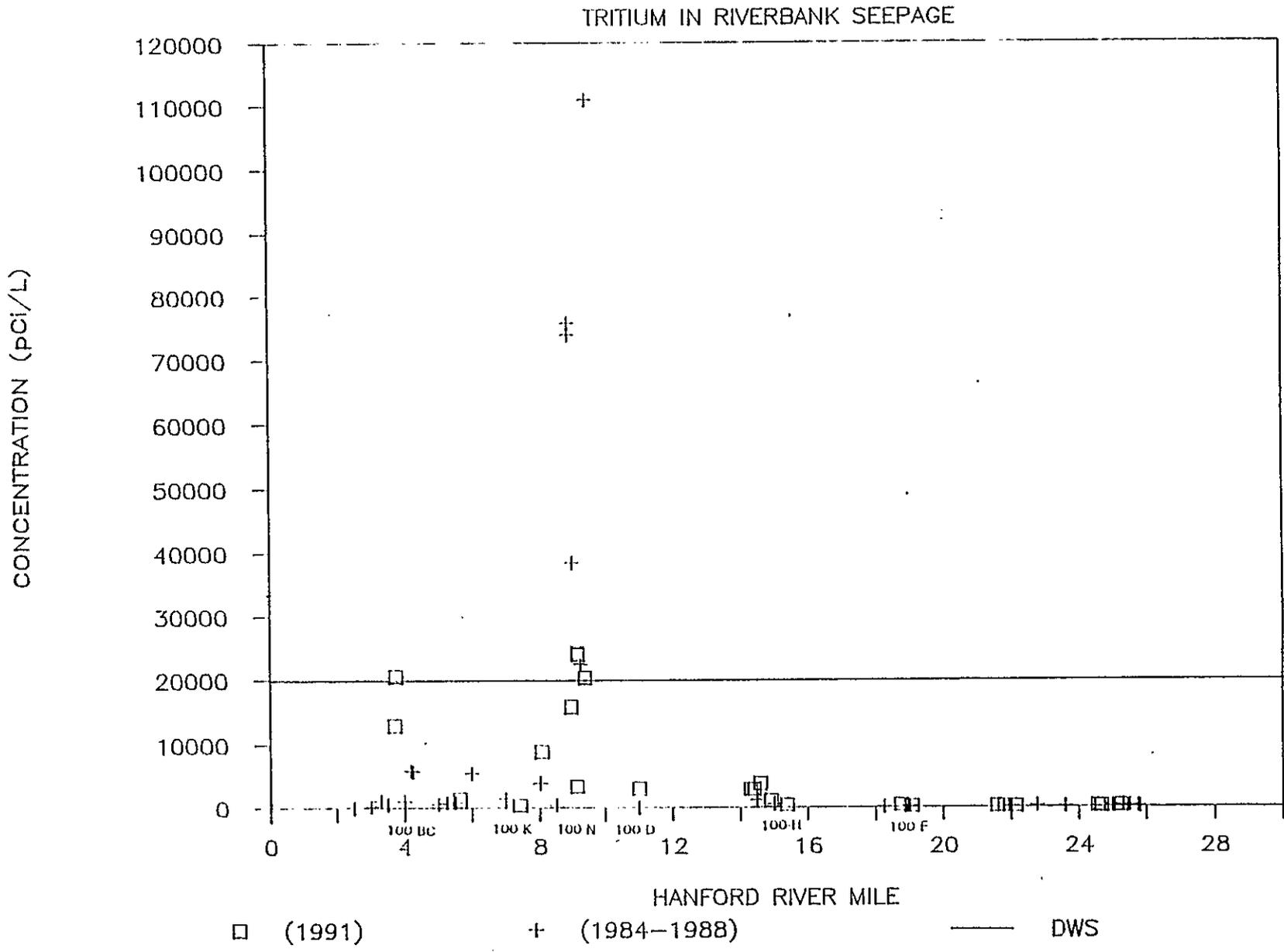
Summary

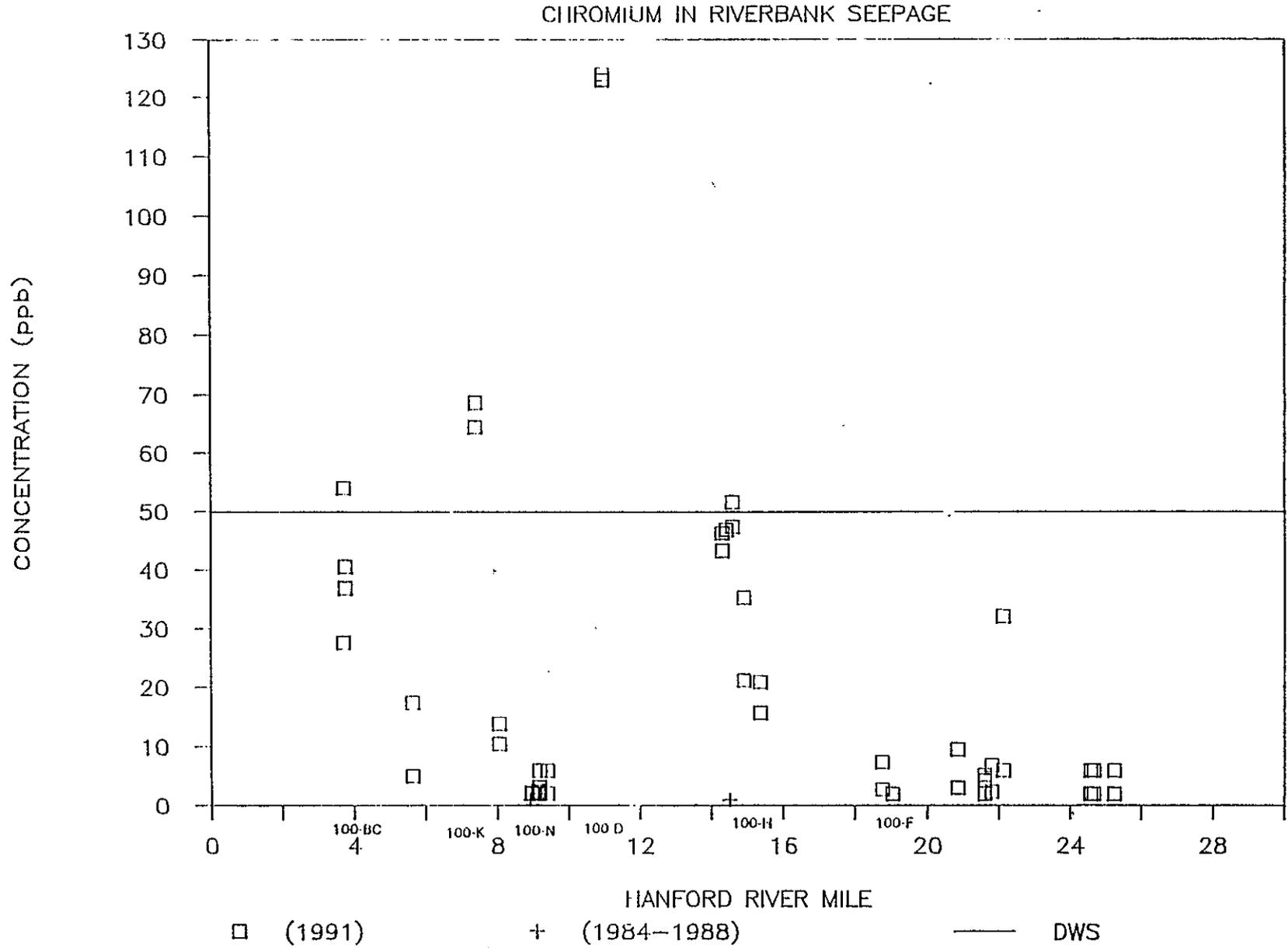
For Typical 100 Areas Contamination Indicators:

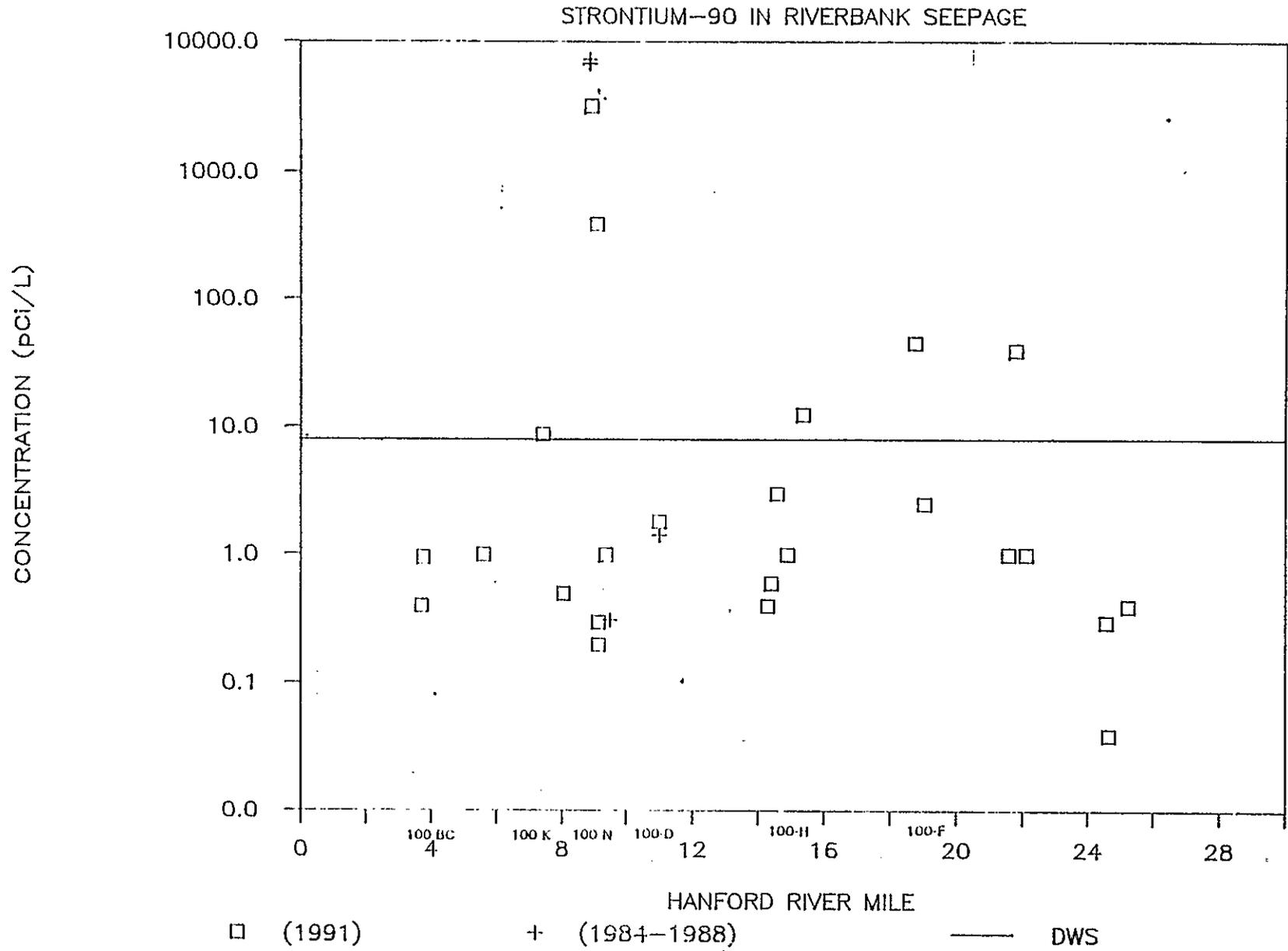
- New data suggest concentrations comparable to or lower than previously reported levels
- New data provide first comprehensive coverage of hexavalent chromium in riverbank seepage
- New data significantly improve coverage of strontium-90 in areas other than 100-N

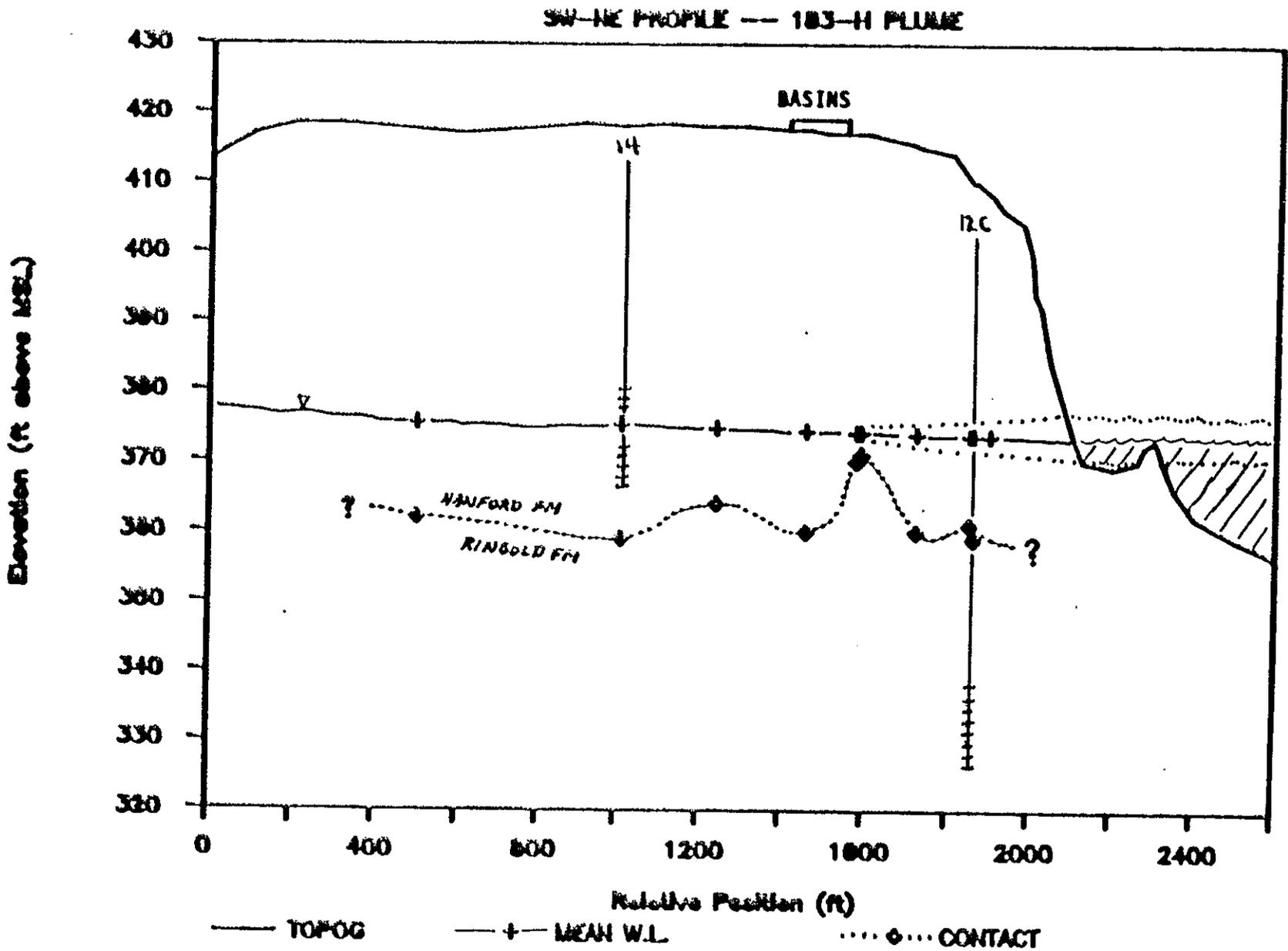
9 2 1 2 5 4 8 0 8 3 0



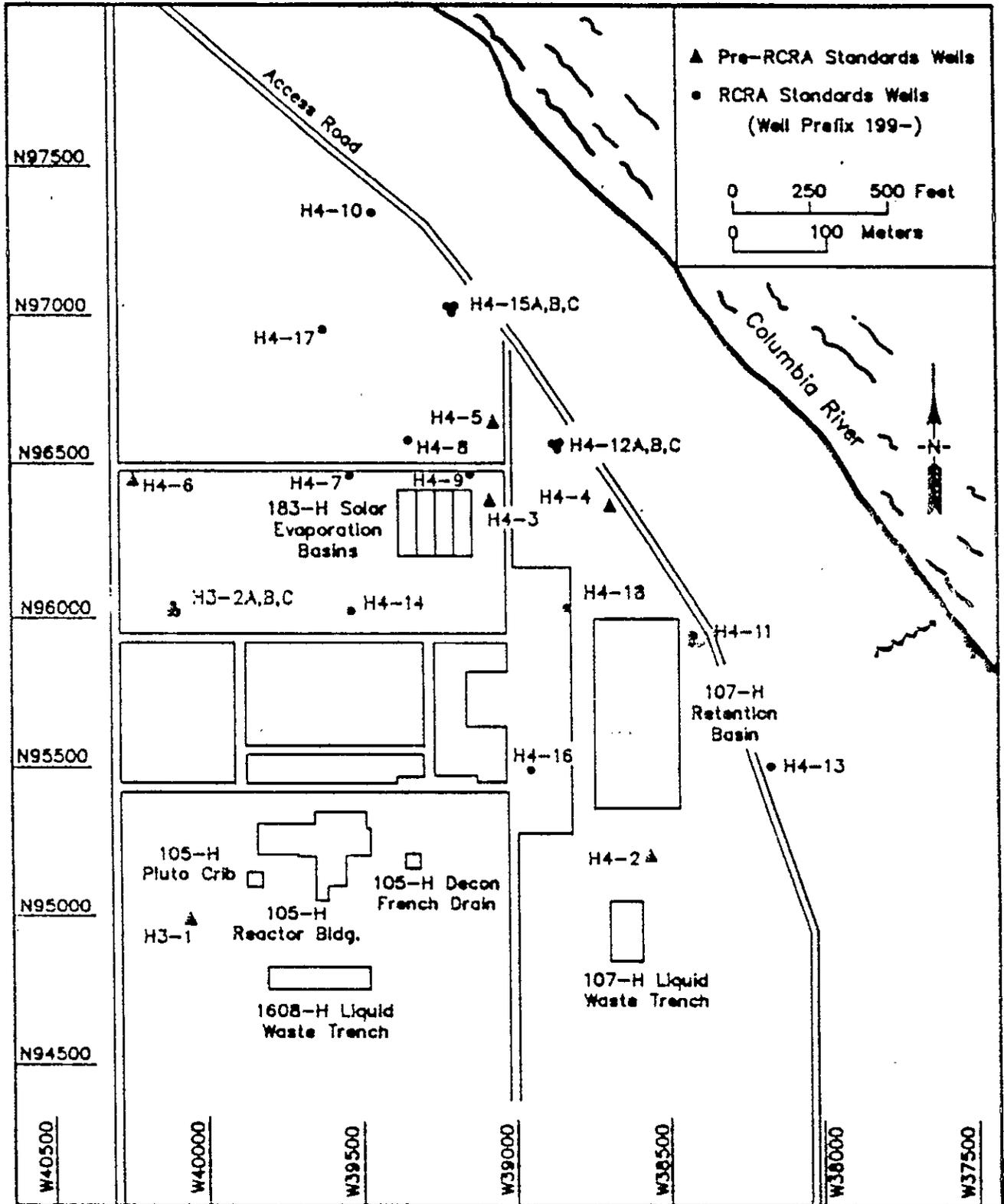




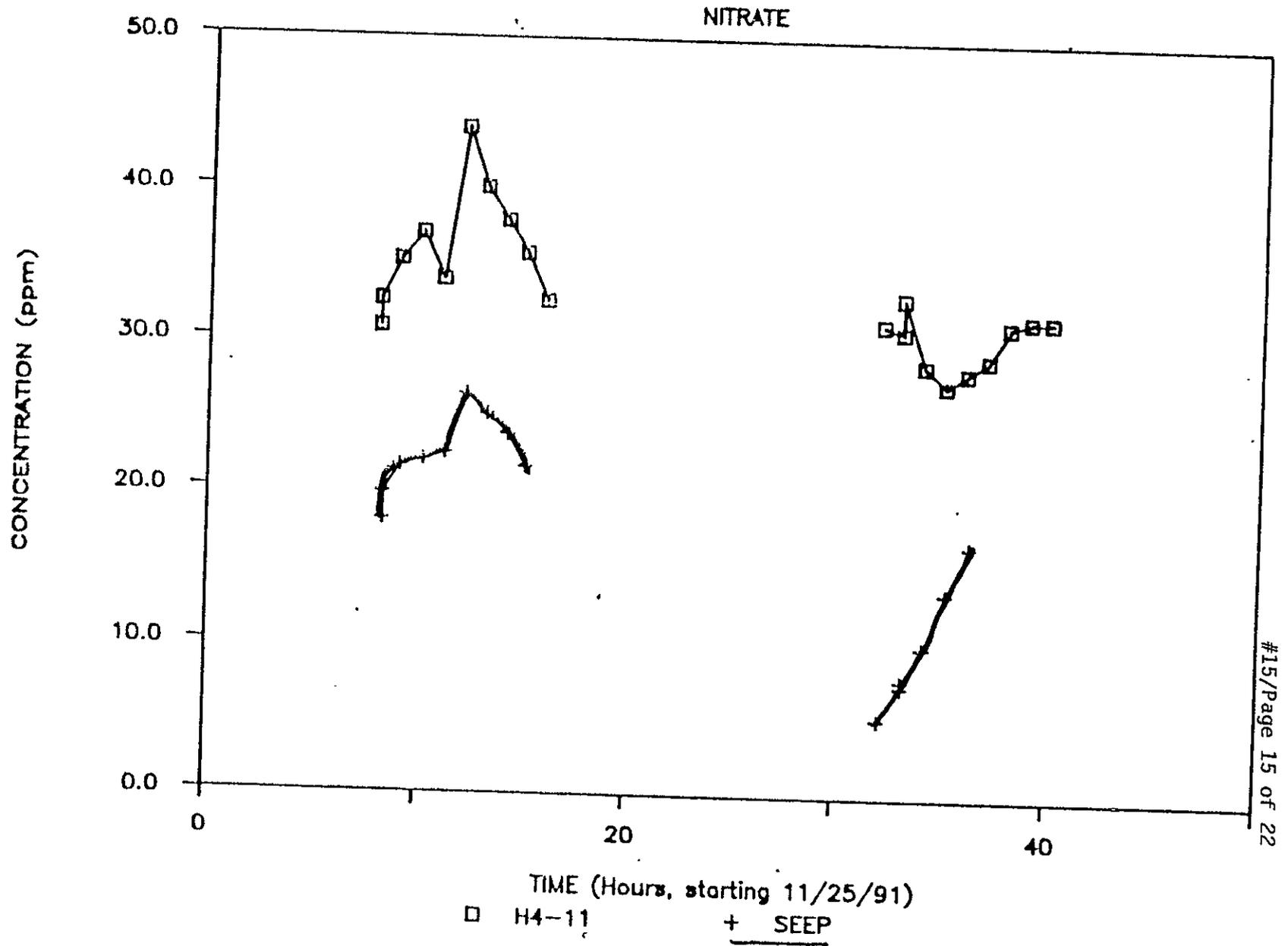




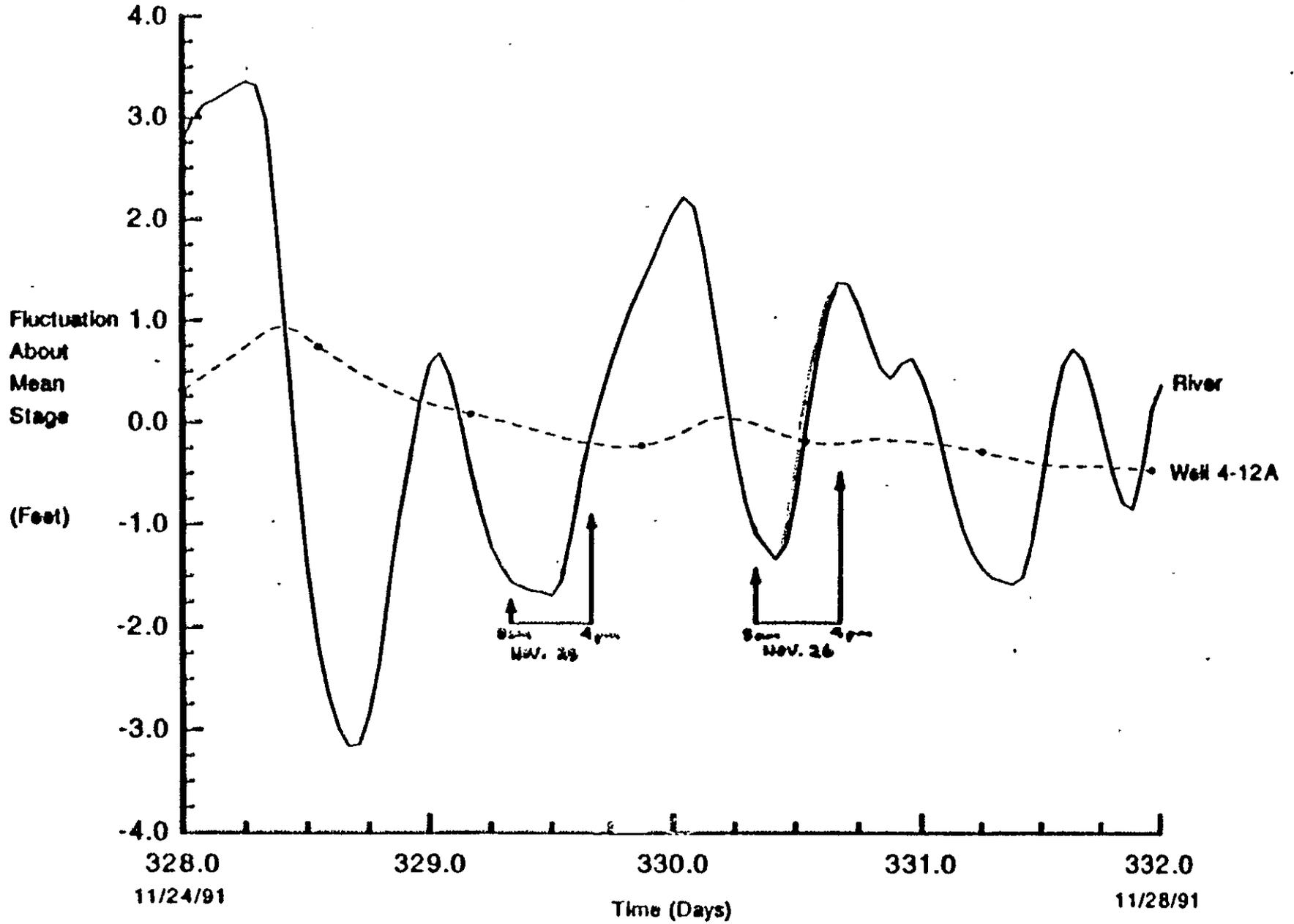
9 2 1 2 6 1 3 0 3 9 6

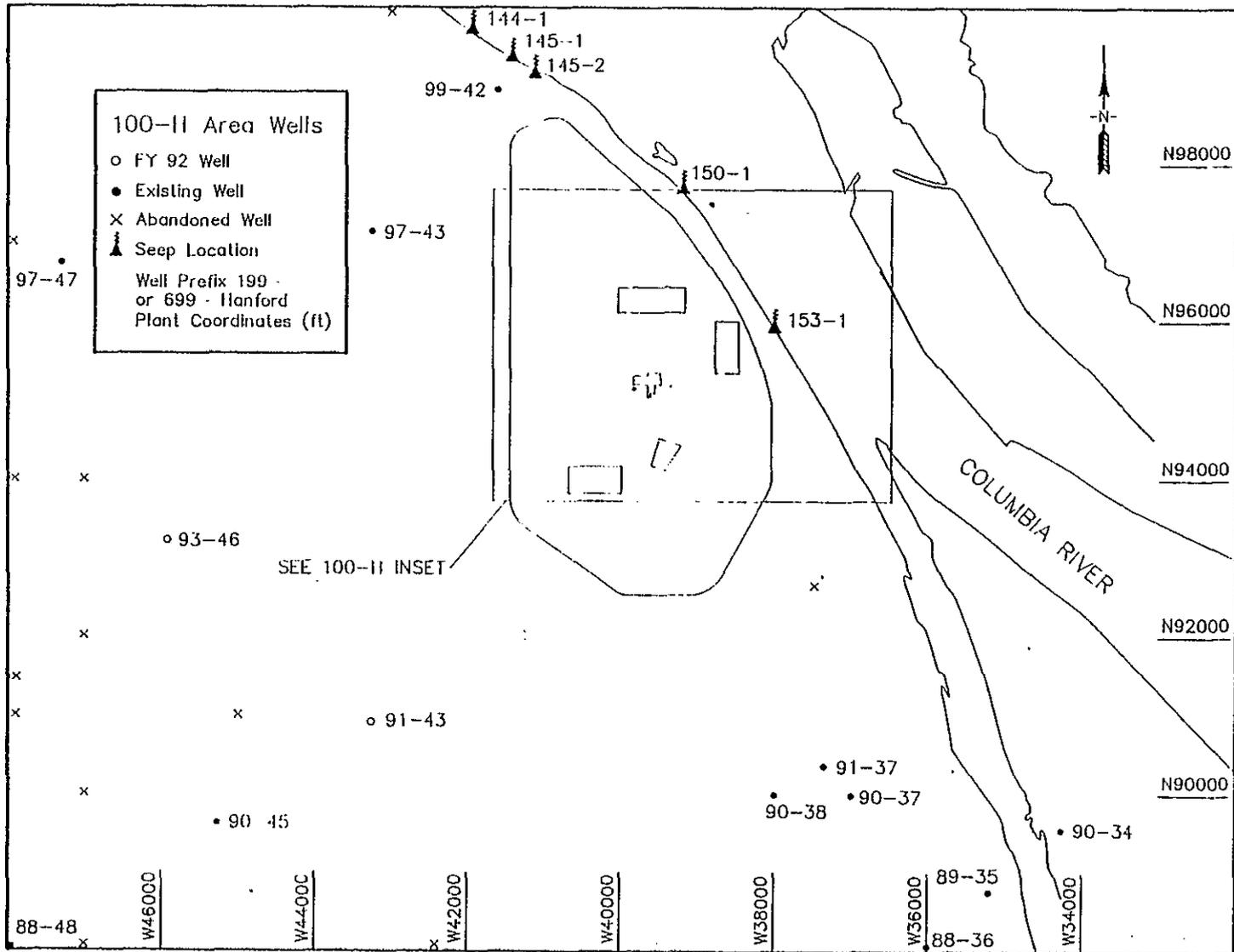


9 2 1 2 6 1 3 0 8 3 7

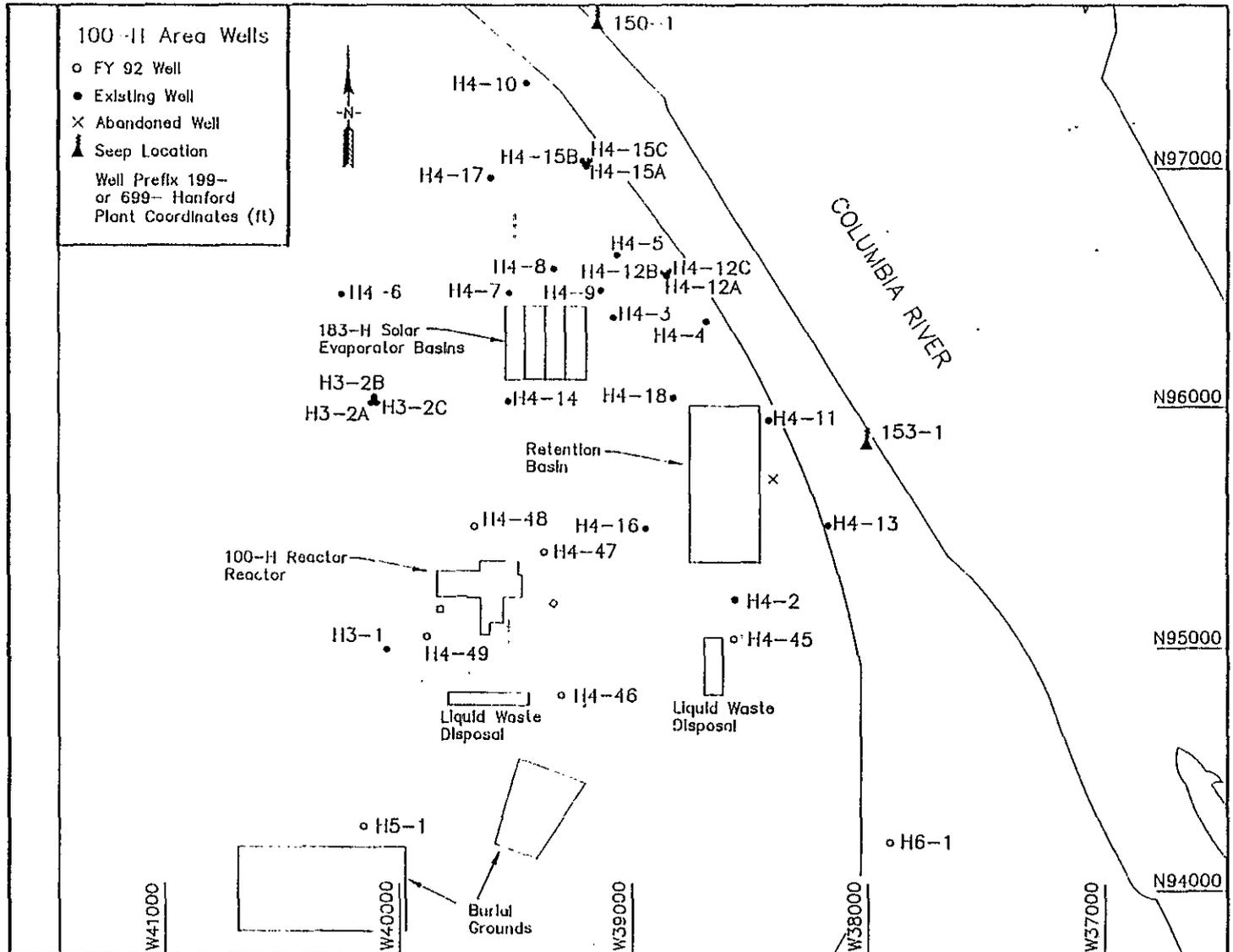


9 2 1 2 6 4 8 0 8 3 8

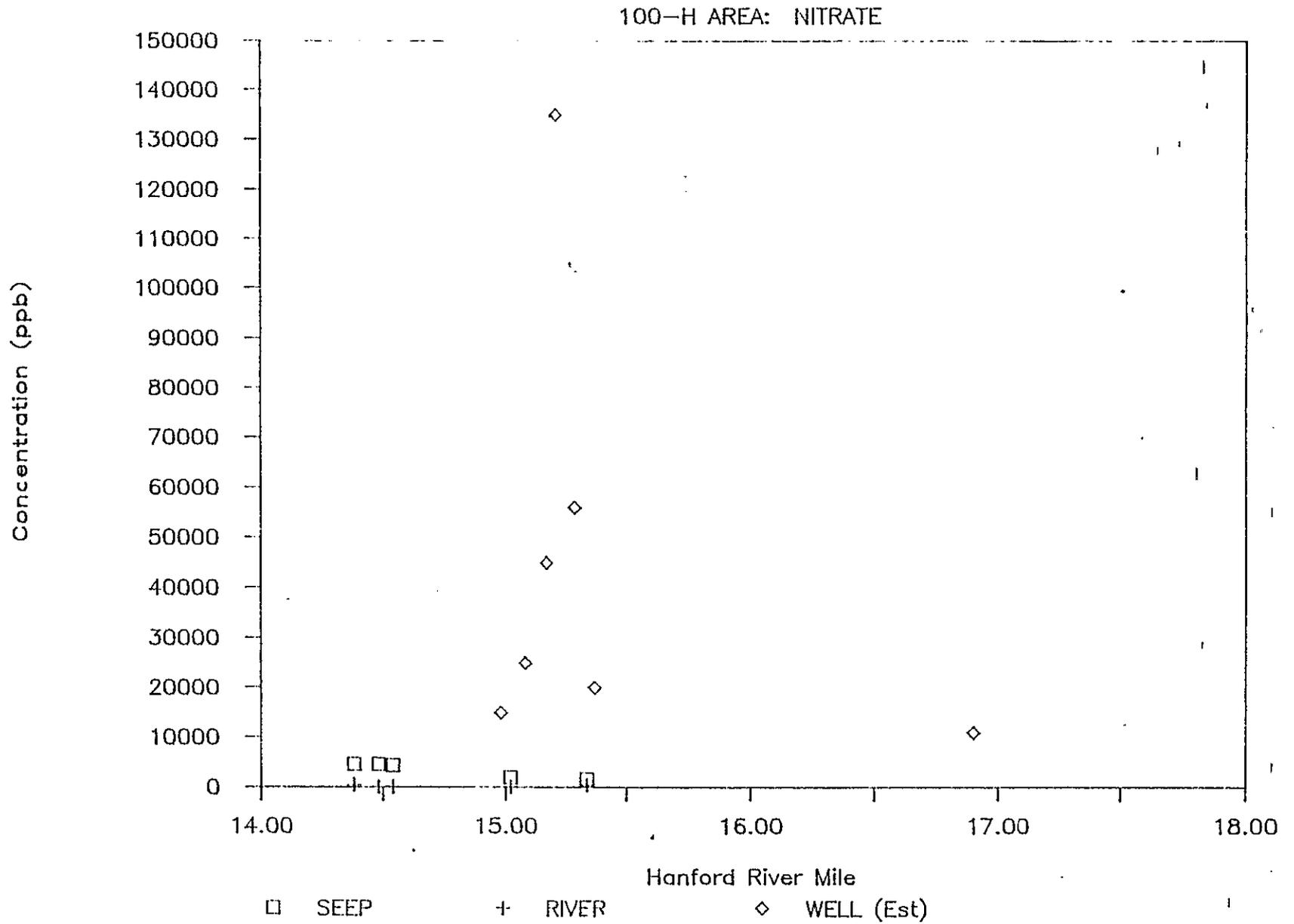




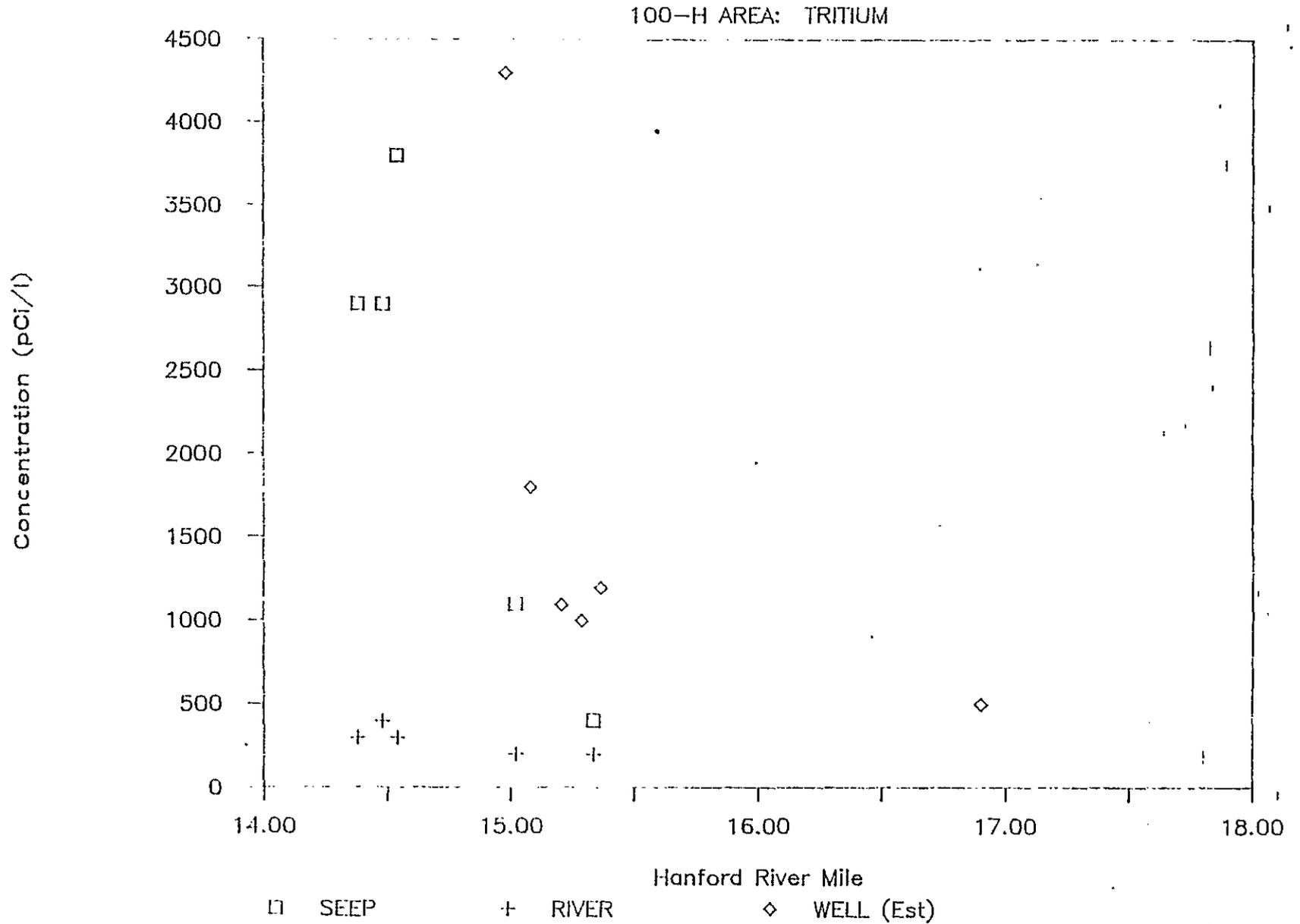
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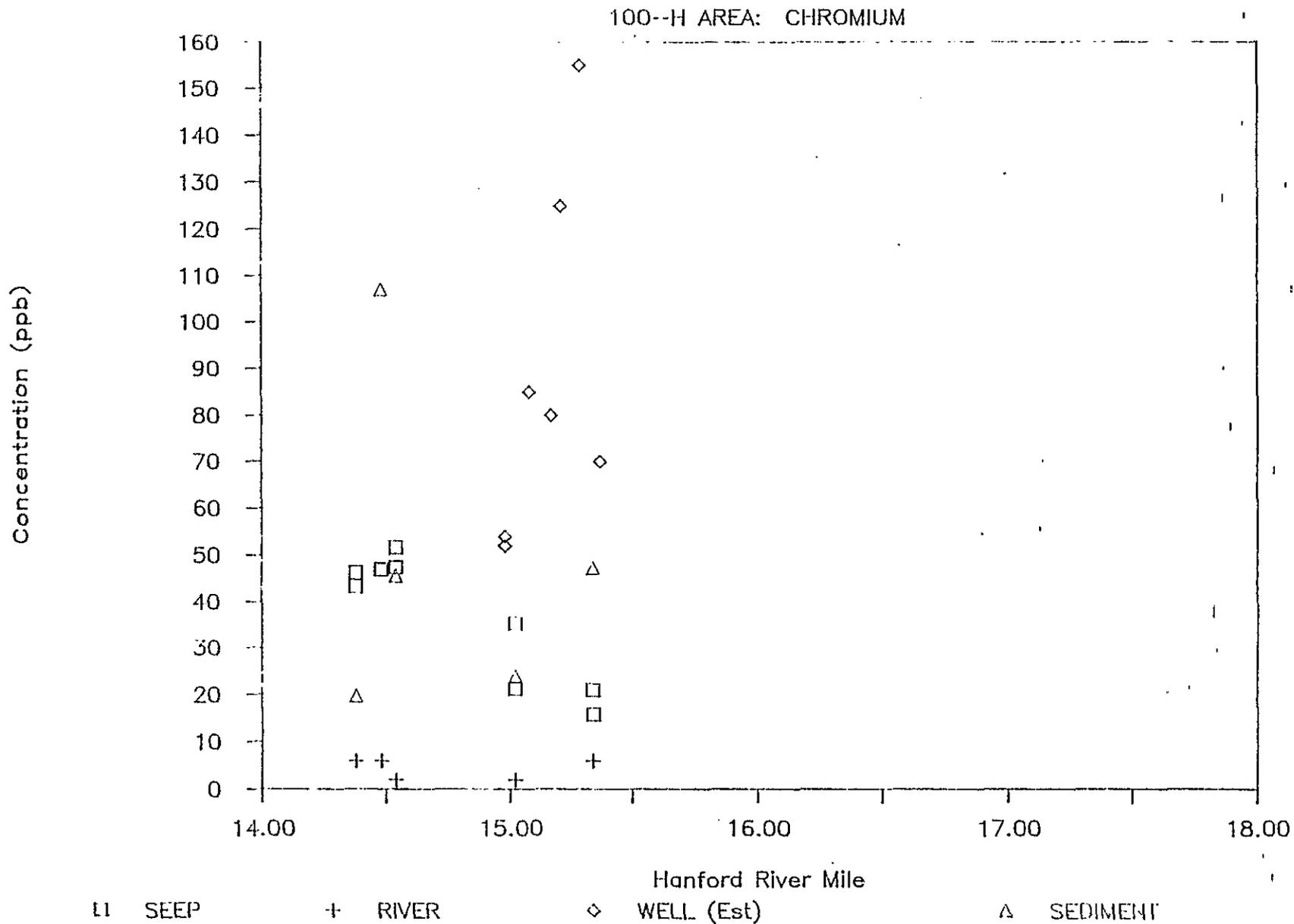


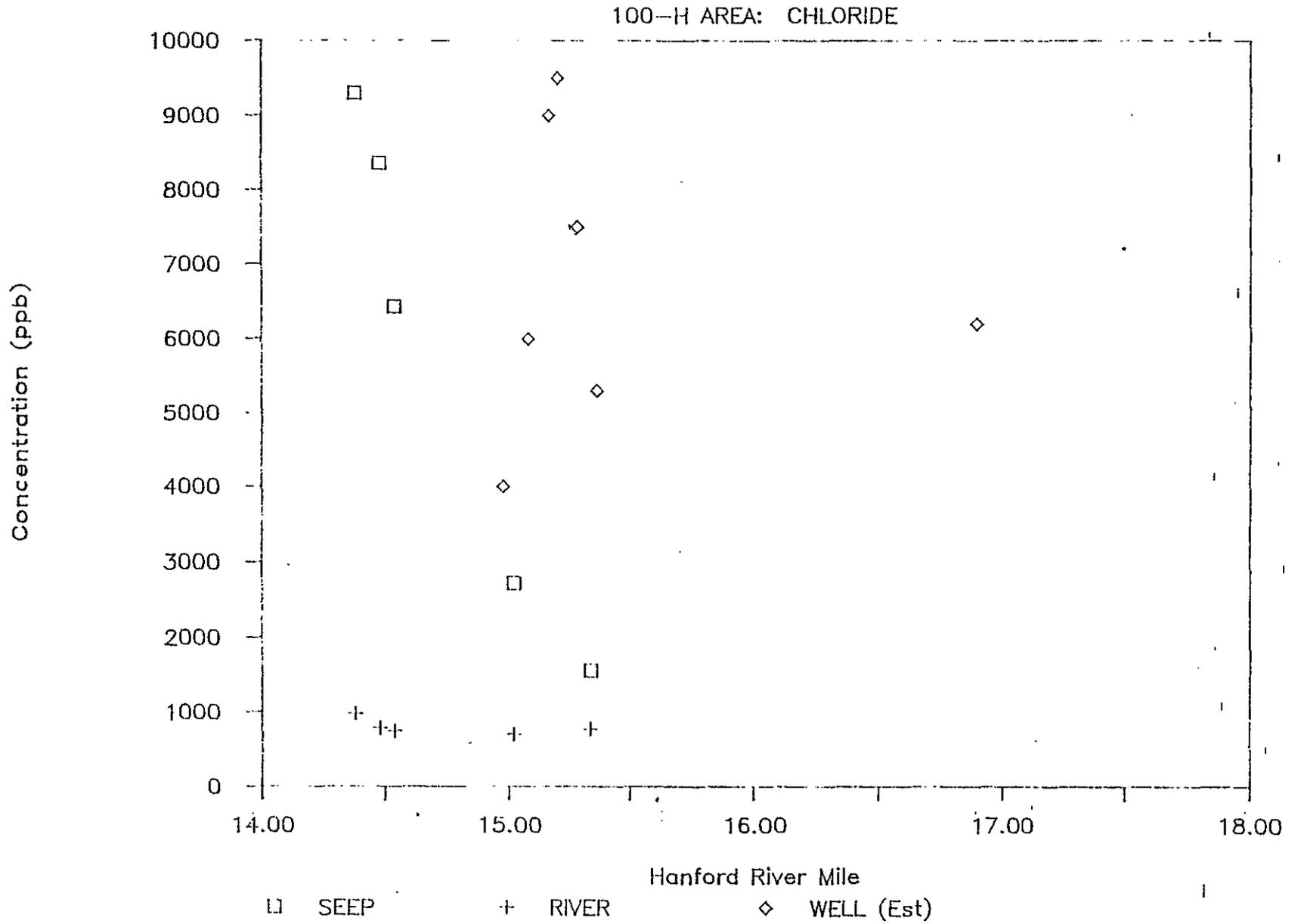
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9 2 1 2 3 4 3 0 3 9 2

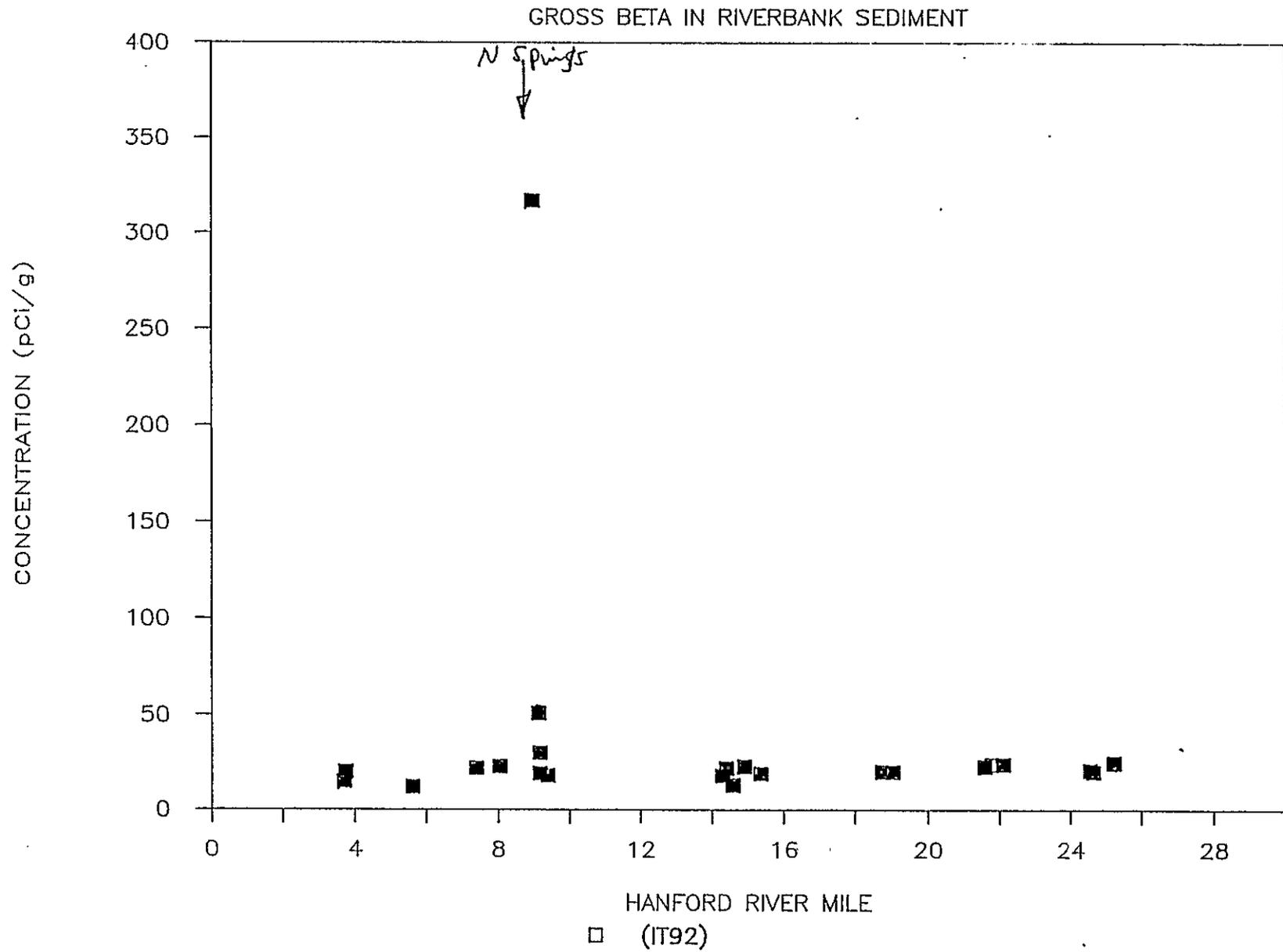


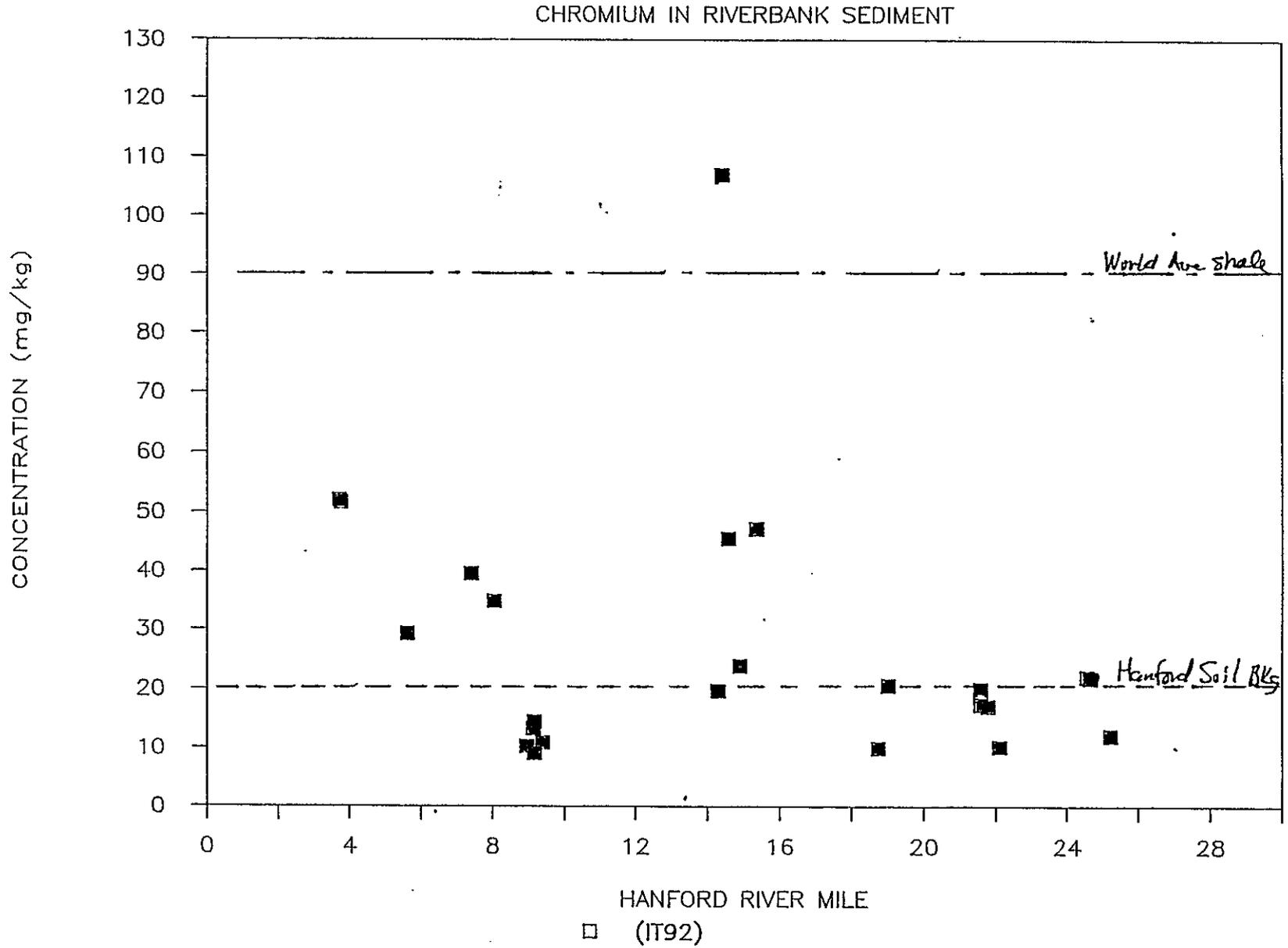




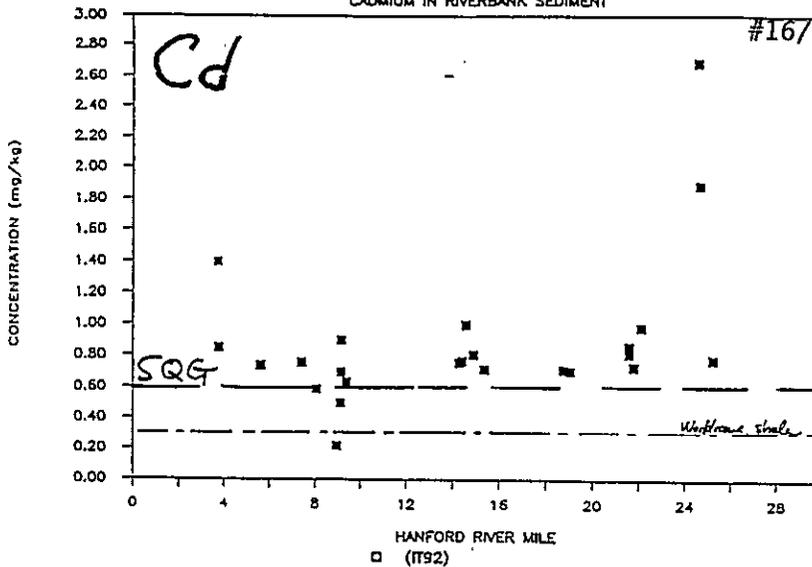
SUMMARY OF SPRING SEDIMENT RECONNAISSANCE SURVEY:

- Twenty-three locations between river mile 3.7 and 24.7
- Analyzed for 18 metals, gross beta, gross alpha, gamma scan, strontium-90
- Above background occurrences for silver, zinc, cadmium chromium and strontium-90
- Potential environmental effects of sediment-bound heavy metals due to shoreline disturbances (excavation, etc.) should be considered in risk assessment.

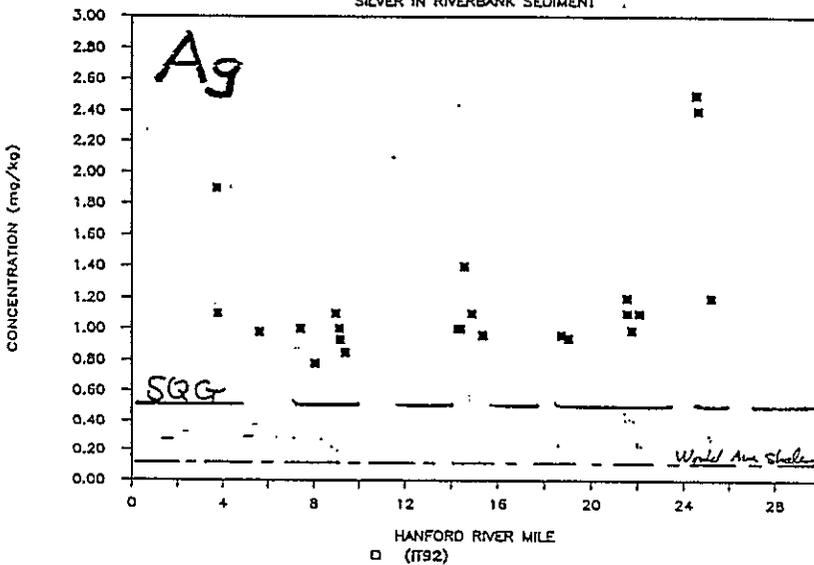




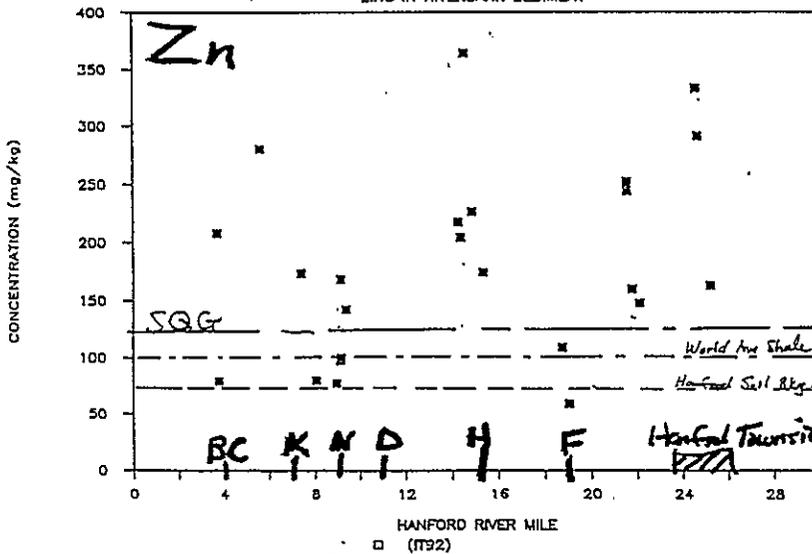
CADMIUM IN RIVERBANK SEDIMENT



SILVER IN RIVERBANK SEDIMENT



ZINC IN RIVERBANK SEDIMENT



SQG:
Sediment Quality
Guide, Ontario
Lowest Effect
(Persaud, 1991)

9 2 1 2 6 1 3 0 8 9 3

Fig. 5

120°

110°

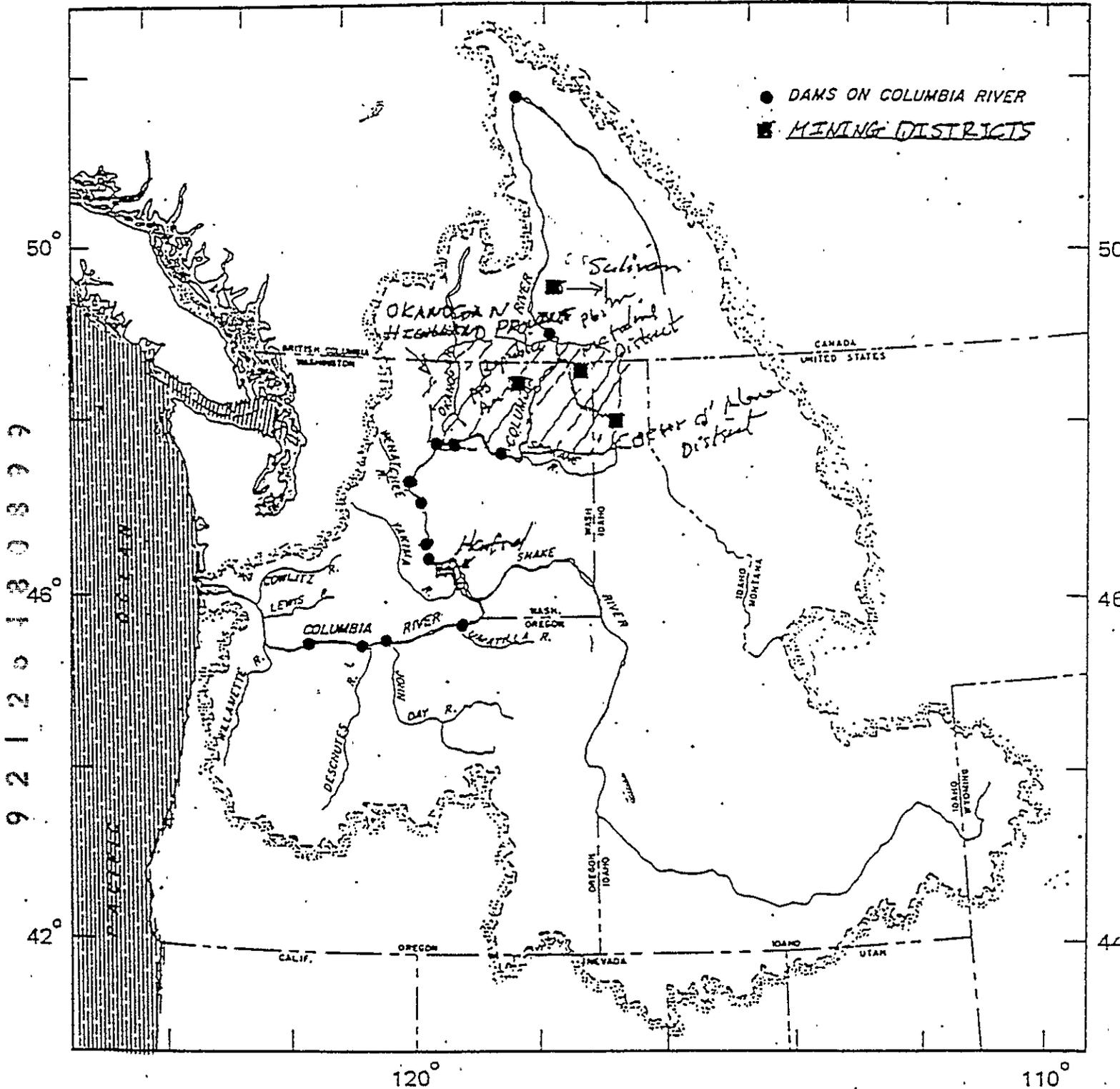
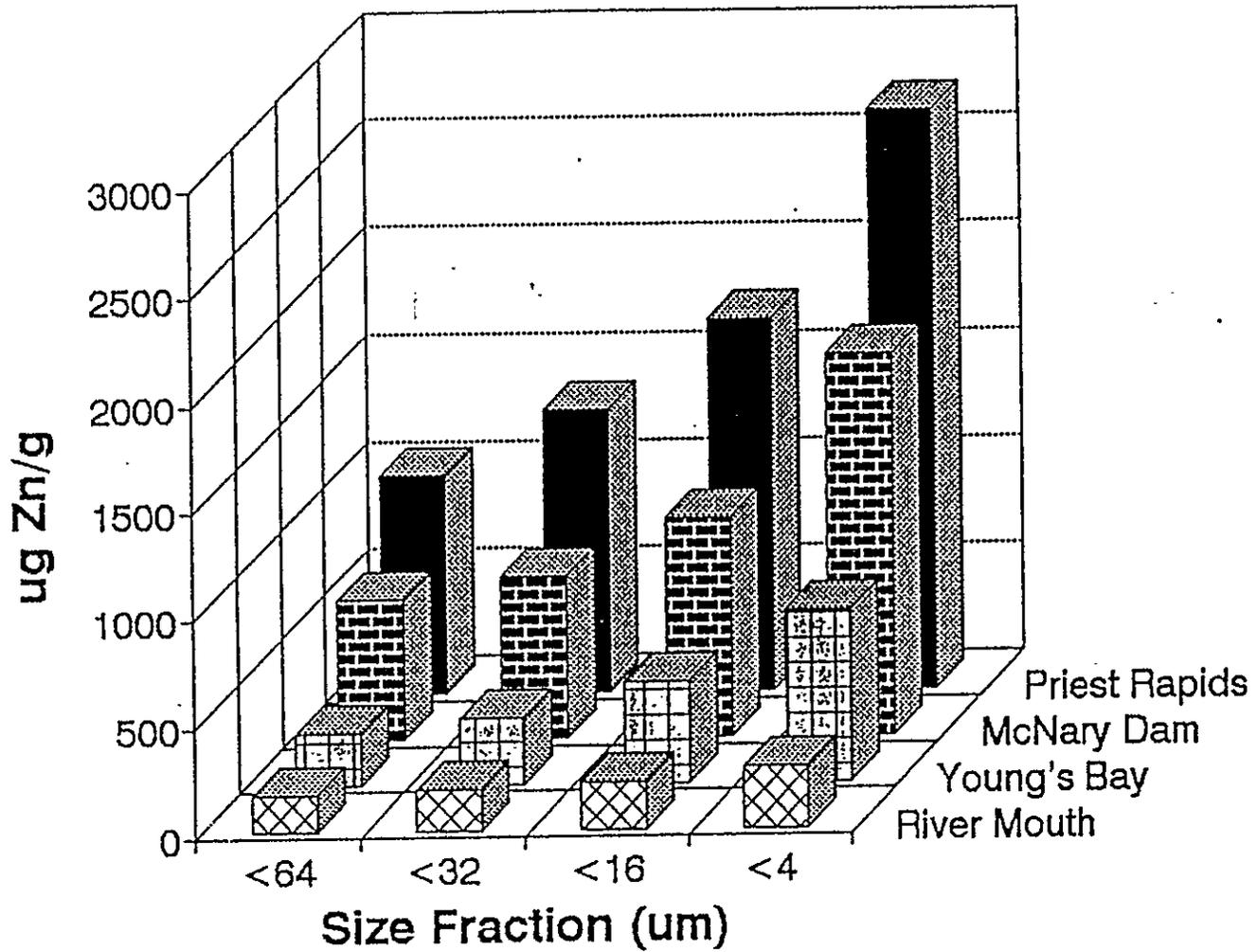


Figure 1. Columbia River drainage basin showing major tributaries and contaminant or tracer sources.

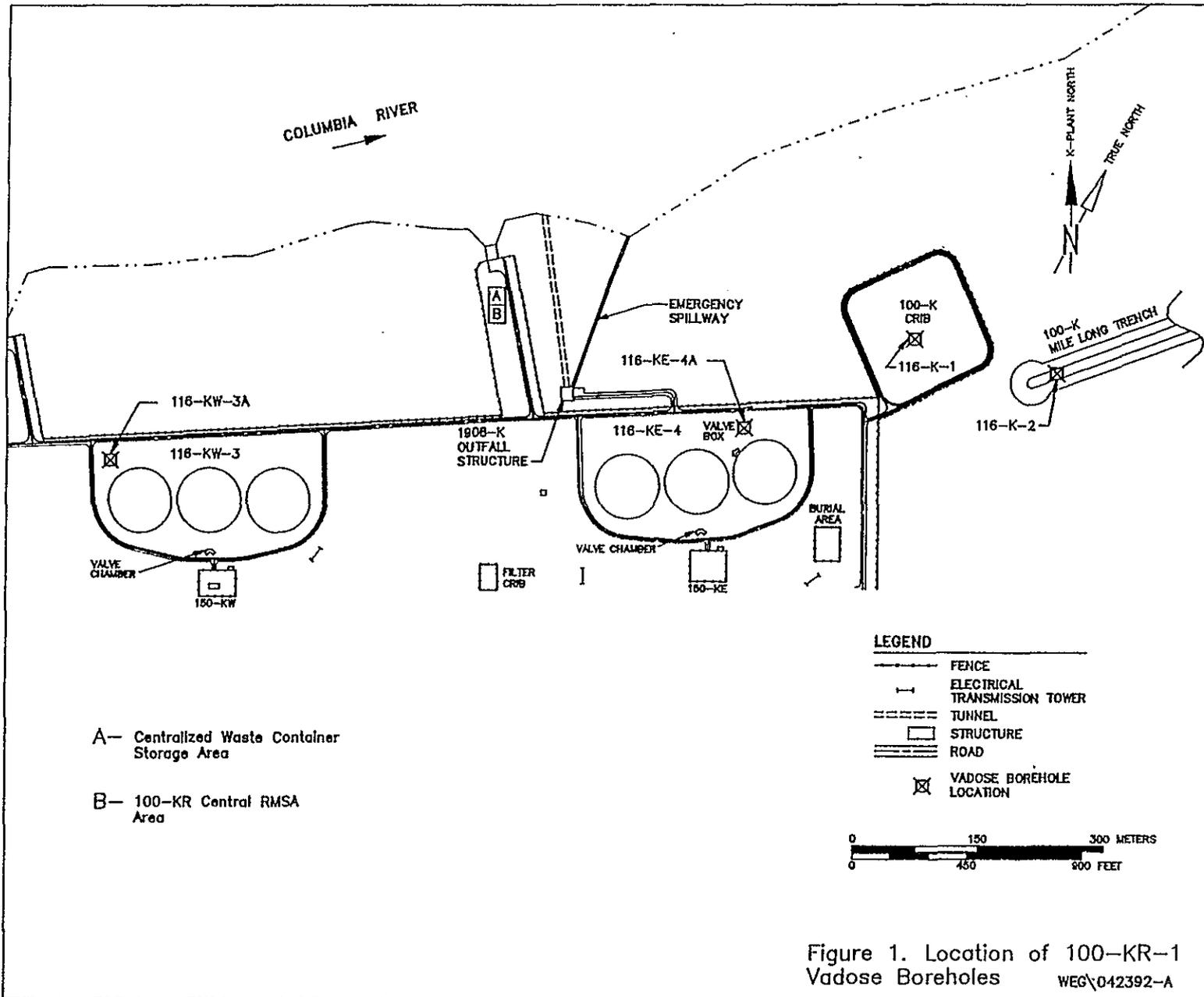
9 2 1 2 6 4 3 0 9 0 0



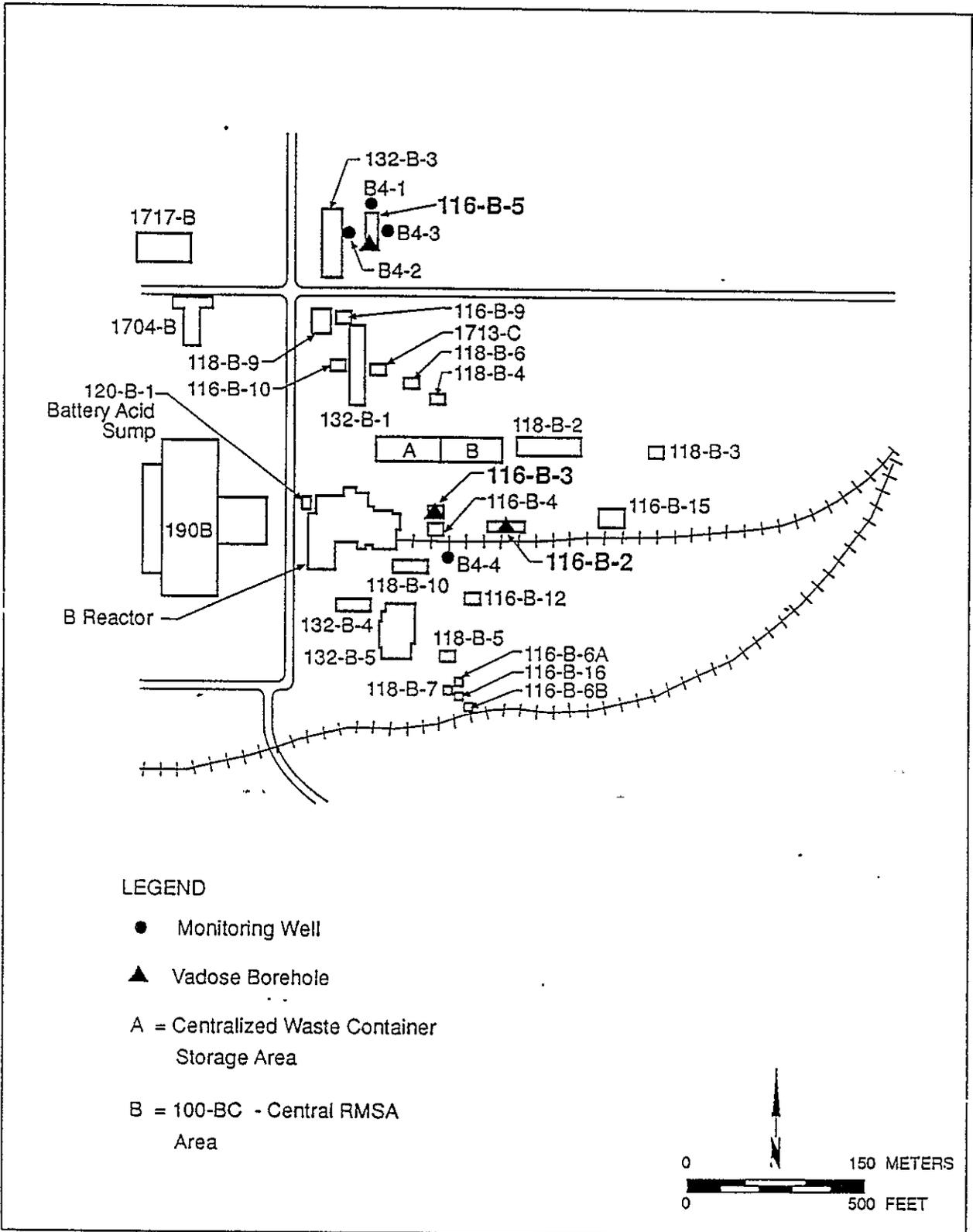
1975 data (Johnson, Wagner & Catshall, 1992; in prep.)

9 2 1 2 5 1 9 0 9 0 1

WASTE CONTROL PLAN
MAP FOR 100-K AND 100-B



9 2 1 2 5 4 8 0 9 0 3



Attachment #18

Control Number	100 NPL Agreement/Change Control Form Change <input checked="" type="checkbox"/> Agreement <input type="checkbox"/> Information Operable Unit(s) _____	Date Submitted Date Approved																		
Document Number & Title: Milestone M-30-03: Complete all non-intrusive field work as identified in draft work plans for the following operable units: 100-HR-1/3, 100-DR-1, 100-BC-1/5, 100-KR-1/4, 100-FR-1/3, and 100-NR-1/3.		Date Document Last Issued																		
Originator R. P. Henckel		Phone 6-2091																		
Summary Description Milestone M-30-03 was created in the spring of 1991, prior to the rescoping of the 100 Area Work Plans. It calls for the completion of all non-intrusive field work in the first 11 operable unit work plans. Since that time, the draft work plans have undergone a number of changes. The purpose of this 100 NPL Agreement/Change Control Form is to document agreement on those activities which must be completed by September 1992, to fulfill this milestone. The attached table lists the specific activities which, when completed, denote completion of the milestone.																				
Justification and Impact of Change Not applicable.																				
<table border="0"> <tr> <td colspan="2">R. P. Henckel</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>WHC 100 Area Rem. Investigation Mgr.</td> <td>Date</td> </tr> <tr> <td>E. D. Goller</td> <td>_____</td> </tr> <tr> <td>DOE Unit Manager</td> <td>Date</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>EPA</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>Ecology</td> <td>Date</td> </tr> </table> <p>Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement Section 9.3</p>			R. P. Henckel		_____	_____	WHC 100 Area Rem. Investigation Mgr.	Date	E. D. Goller	_____	DOE Unit Manager	Date	_____	_____	EPA	_____	_____	_____	Ecology	Date
R. P. Henckel																				
_____	_____																			
WHC 100 Area Rem. Investigation Mgr.	Date																			
E. D. Goller	_____																			
DOE Unit Manager	Date																			
_____	_____																			
EPA	_____																			
_____	_____																			
Ecology	Date																			

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The M-30-03 milestone, which is to be completed by September, 1992, is stated as follows:

Complete all non-intrusive field work as identified in draft work plans for the following operable work plans:

100-HR-1, 100-HR-3, 100-DR-1, 100-BC-1, 100-BC-5, 100-KR-1, 100-KR-4, 100-NR-1, 100-NR-2, 100-FR-1 AND 100-FR-3.

For purposes of defining the scope of work for this milestone, non-intrusive activity shall be as described in Section 7.3.2 of the Tri-party Agreement Action Plan. This consists of the following type of activities:

- Survey location of sites
- Surface radiation
- Surface geophysical surveys
- Air sampling
- Soil gas surveys
- Biotic surveillance and
- Near-surface vadose zone sampling.

9 2 1 2 6 4 8 0 9 0 5 The attached table (Table 1) details and statuses the activities which, when conducted, will complete this milestone. It lists them on a operable unit by operable unit basis. The following is a summary by activity type:

1. Survey location of sites: Topographic mapping of the 100 Area was completed in FY '91 and provides the basis for site locations. As sampling and drilling is completed, individual sites are scheduled for surveying and entering into the HEIS data base. This is an on-going activity and will continue into FY '93 as additional sites are sampled.
2. Surface radiation: Surface radiation surveys have been completed or are scheduled to be completed in 100-HR-1, 100-DR-1, 100-NR-1 and the 100 Area shoreline of the Columbia River by September, 1992. No surveys are planned for 100-BC-1, 100-FR-1, 100-KR-1, 100-BC-5, 100-FR-3, 100-HR-3, 100-KR-4, and 100-NR-2.
3. Surface geophysical surveys: Surface geophysical surveys have been completed in 100-HR-1 and 100-DR-1 to aid in locating specific potential waste sites and drilling sites. No geophysical surveys are planned for the remaining operable units but surveys will be conducted as needed.
4. Air Sampling: No air sampling has been conducted or is planned to be conducted as part of the non-intrusive activities. Air sampling is, however, routinely conducted for Health and Safety reasons as part of the drilling and sampling activities.
5. Soil gas surveys: Soil gas surveys have been completed in the 100-DR-1 operable unit and are planned to be completed for the 100-NR-1 operable unit by September, 1992. No soil gas surveys are planned for the remaining operable units, although some surveys may be conducted to support specific waste site investigations.
6. Biotic surveillance: Various biotic surveillance and sampling activities have been conducted in all of the source and groundwater operable and along the 100 Area Columbia River Shoreline. These initial surveys provide the information to develop the conceptual models of environmental and human health risk for the 100 Area. Additional surveys will be conducted on an as needed basis.

7. Near-surface vadose sampling: Near-surface vadose sampling has been or is scheduled to be completed by September, 1992 in the 100-HR-1, 100-DR-1, 100-BC-1, and the 100-FR-1 operable units. Additionally, spring water and sediment sampling have been conducted along the 100 Area Columbia River shoreline. No near-surface vadose sampling is planned for the 100-KR-1, 100-NR-1, 100-BC-5, 100-FR-3, 100-HR-3, 100-KR-4, and 100-NR-2 operable units.

9 2 1 2 6 4 3 0 9 0 5

OPERABLE UNIT	ACTIVITY DESCRIPTION
100 Area Wide	<p>Spring Water & Sediment Sampling as identified in DOE/RL-92-12</p> <p>Shoreline Radiation Survey of HR-3 & KR-4</p> <p>Ecological Surveys:</p> <ul style="list-style-type: none"> i) Bird Surveys at HR-3 & BC-5 ii) Vegetation Maps of Shoreline from 100-B to 100-F iii) Mammal & Burrowing Insect surveys for waste disposal cribs and trenches for HR-1, DR-1, BC-1, FR-1, KR-1, and NR-1. <p>Ecological Sampling:</p> <ul style="list-style-type: none"> i) Asp., reed canary grass and tree leaf sampling at HR-3, BC-5, FR-3, KR-4, and NR-2 ii) Aquatic sampling at HR-3 and NR-2 as identified in Appendix D2 of the work plans.
100-HR-1	<p>Surface Radiation Survey (all of HR-1 except controlled zones)</p> <p>Septic Tank Sampling 1607-H-4</p> <p>Septic Tank Sampling 1607-H-2</p> <p>100H Process Effluent Pipeline Inspection (north pipeline between expansion box #5 and the retention basin)</p> <p>Geophysical Surveys (116-H-4, 1716-H, 1717-H, 116-H-7, 190-H)</p> <p>Potential PCB Contaminated Electrical Facilities (105-H, 151-H)</p>

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OPERABLE UNIT	ACTIVITY DESCRIPTION
100-DR-1	<p>Surface Radiation Survey (100-DR-1 Area with the exception of Controlled Zones)</p> <p>Geophysical Survey (116-D-2 Pluto Crib, Waste Acid Disposal Reservoir, 1607-D4 Septic Tank, Questionable Septic Tank)</p> <p>Soil Gas Surveys (1713-D, 1714-D, 1715- D, 1716-D, 1722-D, Paint Shop Near 182- D, 184-DA UST, 166-D Tank and Piping, 103-D, 1607-D4 Septic Tank, Burial Ground 4A, Burial Ground 4B, Burial Ground 18, 126-D-2 Landfill)</p> <p>1724-DA Underwater Test Facility</p> <p>Sodium Dichromate Tank</p> <p>108-D Office Bldg/Decon Bldg</p> <p>Septic Tank File Field</p> <p>1714-D Solvent Storage Bldg</p> <p>1715-D Oil & Paint Storage Bldg</p> <p>1716-D Gas Station</p> <p>1722-D Equipment Development Lab</p> <p>Paint Shop (West of 182-D)</p> <p>Ash Disposal Basin (126-D-1)</p> <p>Salt Dissolving Basin</p> <p>103-D Green Metal Storage</p> <p>Electrical Facilities (183-D, 185-D, 189-D, 190-D, 105-D, 151-D, 190-DR, 181-D, 186-D, 105-DR)</p>

9 2 1 2 5 1 3 0 9 0 8

OPERABLE UNIT	ACTIVITY DESCRIPTION
100-HR-3	None
100-BC-1	Electrical Facility Sampling (181-B, 183-B, 186-B, 185-B, 190-B, 190-BA, 190-C, Pole E2-L2321, Pole E2-L2313, 1713-B) 116-C-5 Retention Basin
100-BC-5	None
100-KR-1	None
100-KR-4	None
100-NR-1	Soil Gas Survey (116-N, UN-100-N-17 Trench) Surface Rad Survey (Excludes: parking lots, known rad areas, areas routinely surveyed, HGP and BPA facilities, and HGP Burn Pit & Grass Dump)
100-NR-2	None
100-FR-1	Source Investigation (132-F Feeding Barn)
100-FR-3	None

92125130909

ENGINEERING CHANGE NOTICE

Page 1 of _____

1. ECN 168778

Proj.
ECN

2. ECN Category (mark one)		Supplemental <input type="checkbox"/>	Change ECN <input type="checkbox"/>	Supersedure <input type="checkbox"/>
Cancel/Void <input type="checkbox"/>	Direct Revision <input checked="" type="checkbox"/>	Temporary <input type="checkbox"/>	Discovery <input type="checkbox"/>	
3. Originator's Name, Organization, MSIN, and Telephone No. M. T. Stankovich, RR/ENV/ERE, H4-55, 6-2493				4. Date
5. Project Title/No./Work Order No. 100 Areas Nonintrusive Source Sampling Description		6. Bldg./Sys./Fac. No. 108-D/100-DR Septic System		7. Impact Level 3
8. Document Number Affected (include rev. and sheet no.) WHC-SD-EN-AP-067, Rev. 2		9. Related ECN No(s). N/A		10. Related PO No. N/A
11a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 11b) <input checked="" type="checkbox"/> No (NA Blks. 11b, 11c, 11d)	11b. Work Package Doc. No. N/A	11c. Complete Installation Work N/A _____ Cog. Engineer Signature & Date	11d. Complete Restoration (Temp. ECN only) N/A _____ Cog. Engineer Signature & Date	
12. Description of Change Incorporate regulators comments to Revision 1.				
13a. Justification (mark one)				
Criteria Change <input type="checkbox"/>	Design Improvement <input type="checkbox"/>	Environmental <input checked="" type="checkbox"/>	As-Found <input type="checkbox"/>	Facilitate Const. <input type="checkbox"/>
Design Error/Omission <input type="checkbox"/>				Const. Error/Omission <input type="checkbox"/>
13b. Justification Details Sampling activity required by the Tri-Party Agreement.				
14. Distribution (include name, MSIN, and no. of copies) See distribution list.				RELEASE STAMP

92126130910

ENGINEERING CHANGE NOTICE

15. Design Verification Required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	16. Cost Impact		17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION	
	Additional <input type="checkbox"/> \$	Additional <input type="checkbox"/> \$	Improvement <input type="checkbox"/> NA	
	Savings <input type="checkbox"/> \$ NA	Savings <input type="checkbox"/> \$ NA	Delay <input type="checkbox"/>	

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	<input type="checkbox"/>	Seismic/Stress Analysis	<input type="checkbox"/>	Tank Calibration Manual	<input type="checkbox"/>
Functional Design Criteria	<input type="checkbox"/>	Stress/Design Report	<input type="checkbox"/>	Health Physics Procedure	<input type="checkbox"/>
Operating Specification	<input type="checkbox"/>	Interface Control Drawing	<input type="checkbox"/>	Spares Multiple Unit Listing	<input type="checkbox"/>
Criticality Specification	<input type="checkbox"/>	Calibration Procedure	<input type="checkbox"/>	Test Procedures/Specification	<input type="checkbox"/>
Conceptual Design Report	<input type="checkbox"/>	Installation Procedure	<input type="checkbox"/>	Component Index	<input type="checkbox"/>
Equipment Spec.	<input type="checkbox"/>	Maintenance Procedure	<input type="checkbox"/>	ASME Coded Item	<input type="checkbox"/>
Const. Spec.	<input type="checkbox"/>	Engineering Procedure	<input type="checkbox"/>	Human Factor Consideration	<input type="checkbox"/>
Procurement Spec.	<input type="checkbox"/>	Operating Instruction	<input type="checkbox"/>	Computer Software	<input type="checkbox"/>
Vendor Information	<input type="checkbox"/>	Operating Procedure	<input type="checkbox"/>	Electric Circuit Schedule	<input type="checkbox"/>
OM Manual	<input type="checkbox"/>	Operational Safety Requirement	<input type="checkbox"/>	ICRS Procedure	<input type="checkbox"/>
FSAR/SAR	<input type="checkbox"/>	IEFD Drawing	<input type="checkbox"/>	Process Control Manual/Plan	<input type="checkbox"/>
Safety Equipment List	<input type="checkbox"/>	Cell Arrangement Drawing	<input type="checkbox"/>	Process Flow Chart	<input type="checkbox"/>
Radiation Work Permit	<input type="checkbox"/>	Essential Material Specification	<input type="checkbox"/>	Purchase Requisition	<input type="checkbox"/>
Environmental Impact Statement	<input type="checkbox"/>	Fac. Proc. Samp. Schedule	<input type="checkbox"/>		
Environmental Report	<input type="checkbox"/>	Inspection Plan	<input type="checkbox"/>		
Environmental Permit	<input type="checkbox"/>	Inventory Adjustment Request	<input type="checkbox"/>	NA	<input checked="" type="checkbox"/>

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number/Revision
NA		

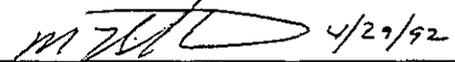
20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog./Project Engineer M. T. Stankovich <i>M.T. Stankovich</i>	4/29/92	PE	
Cog./Project Engr. Mgr. M. J. Lauterbach <i>M.J. Lauterbach</i>	4/92	QA	
QA G. S. Corrigan <i>Gary Corrigan</i>	5-5-92	Safety	
Safety		Design	
Security		Other	
Proj. Prog./Dept. Mgr.			
Def. React. Div.			
Chem. Proc. Div.			
Def. Wst. Mgmt. Div.			
Adv. React. Dev. Div.		DEPARTMENT OF ENERGY	
Proj. Dept.		E. H. Goller <i>E.H. Goller</i>	5-5-92
Environ. Div.			
IRM Dept.		ADDITIONAL	
Facility Rep. (Ops.)		D. Teel (Ecology) <i>D. Teel</i>	5-5-92
Other			

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RECORD OF REVISION		(1) Document Number WHC-SE-EN-AP-067	Page 1
(2) Title 100 Area Nonintrusive Source Sampling Description			
CHANGE CONTROL RECORD			
(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
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0	(7) EDT 133021		
1	ECN 164712, added new three new sampling activities		
2	ECN 168778, incorporated regulators comments to Revision 1.	<i>RP</i> 4/29/92	<i>RP</i> 4/29/92

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		Organization/Charge Code 81221/PPH1AA
7. Abstract		
This activity plan describes the field activities associated with the nonintrusive source sampling in the 100 Area of the Hanford Site and will serve as a field guide for those performing the work.		
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9. Impact Level 3		

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1.0 SCOPE OF WORK

This document details the field activities associated with nonintrusive source sampling in 100-DR-1 Operable Unit of the Hanford Site and will serve as a field guide for those performing the work (DOE-RL 1991, Task 2). It should be used in conjunction with *RCRA Facility Investigation/Corrective Measure Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington* (DOE-RL 1991) for general investigation strategy and with *Environmental Investigations and Site Characterization Manual* (WHC 1988a) for specific procedures. This description of work describes specific limited field investigation (LFI) activities and sampling locations in accordance with discussions at the June 27, 1991 100 Area work plan rescoping meeting.

Revision 0 of this description of work addressed sampling of the sodium dichromate tank location. Revision 1 adds the 108-D office building and equipment decontamination station and the 100-DR-1 septic tank/tile fields. Revision 2 incorporates regulators comments to Revision 1.

2.0 GENERAL REQUIREMENTS

2.1 HEALTH AND SAFETY

All personnel working to this description will perform all work in accordance with the following:

- WHC-EP-0383, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan* (WHC 1990)
- WHC-CM-4-10, *Radiation Protection* (WHC 1988b)
- WHC-CM-4-11, *ALARA Program Manual* (WHC 1988c)
- WHC-CM-4-3, *Industrial Safety Manual*, Vol. 1 through 3, (WHC 1987)
- WHC-CM-7-5, *Environmental Compliance Manual* (WHC 1988d)
- WHC-SD-EN-SAD-002, *100 Area Low Hazard Characterization Activities Safety Assessment*, Rev. 0 (Taylor 1991)
- Site-specific job safety analysis.

2.2 PREREQUISITES

A readiness review will be completed by the cognizant engineer before each sampling task is initiated. The readiness review will be completed per EII 1.13, Environmental Engineering and Geotechnology Readiness Review, (WHC 1988a). The Source Sampling Status Checklist (Attachment 1) will be initialed by the cognizant engineer or field team leader and dated as each step of the task is completed.

3.0 SAMPLING AND FIELD ACTIVITIES

3.1 SODIUM DICHROMATE TANKS

3.1.1 Location

This description addresses the sampling of the original sodium dichromate tank location described in the 100-DR-1 Operable Unit work plan (DOE-RL 1991, Section 2.1.4.9.5).

Two tanks were original installed aboveground west of 108-D building as shown in Figure 1. Photographs show the tanks inside the exclusion fence that surrounds the 108-D office/decontamination facility. The foundation of the tanks are believed to be under the fill material that was placed on the site after the 108-D building demolition.

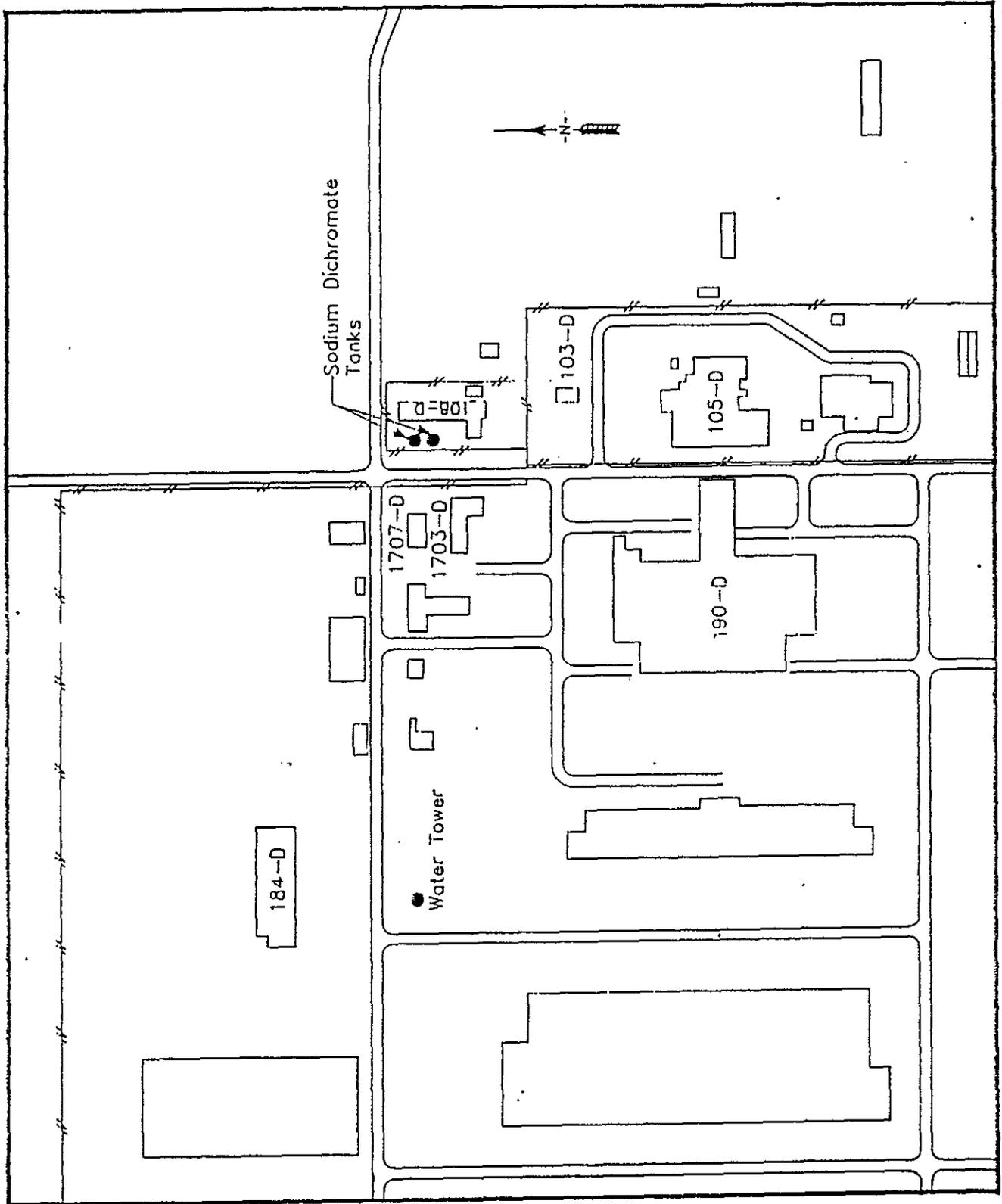
3.1.2 Sample (Chemical)

The sample will be analyzed for:

<u>Analyte</u>	<u>Method</u>
Volatile	8240
Semivolatile	8270
PCB/Pesticides	8080
Phosphorus Pesticides	8140
Target Analyte List	6010
Mercury	7470
Anions	300.0
Cyanide	9010
Radiation	Performed under laboratory standard procedure
¹⁴ C	
⁹⁰ Sr	
Gross Alpha	
Gross Beta	
Alpha Spec:	to include ^{235/238} U, ^{239/240} Pu, and ²⁴¹ Am
Gamma Spec:	report all identifiable and quantifiable isotopes
Total Activity.	

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Figure 1. 100-D Area Sodium Dichromate Tank Location.



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3.1.3 Test Pit Construction

The test pit will be constructed at the dichromate tanks site within an area whose perimeter is approximately 5 ft greater than that of the tank's foundation pads (Figure 2). The perimeter will be staked out with the north boundary of the pit aligned with the north edge of building 1707-D foundation. The west boundary will be parallel to and 2 ft east of the exclusion area fence. The south boundary will be 40 ft from the north boundary. The east boundary will be 25 ft from the west boundary.

3.1.4 Sample Collection

As the test pit is excavated, one sample at each tank site will be field screened using a soil test kit for chromium (hexavalent). If the field screening detects chromium, a sample will be collected for offsite analysis. A minimum of two samples will be collected. In the event, field screening reveals that no chromium is present, samples will be collected from below and to the side of each tank site.

Field screening will be performed in accordance with the manufacturer's recommendations. Samples will be collected in accordance with Environmental Investigation Instruction (EII) 5.2, Soil and Sediment Sampling (WHC 1988a). A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The logbook will be used and maintained in accordance with EII 1.5, Field Logbooks (WHC 1988a).

3.2 108-D OFFICE BUILDING AND EQUIPMENT DECONTAMINATION STATION

The 108-D building was located just north of the 103-D fuel-element storage building and has been demolished. The building was a large structure with three floors and a basement, approximately 132 ft long, 32 ft wide, and 41 ft high. The 108-D building was built for the purpose of adding chemicals to the process water before it entered the reactor. The original purpose for this building, however, was abandoned and it was used as an office complex and a decontamination and repair shop for contaminated reactor process tube replacement equipment.

3.2.1 Location

This section addresses the sampling of the soil at the north end of the 108-D office building site and adjacent to the sanitary sewer pipeline described in the 100-DR-1 Operable Unit work plan (DOE-RL 1991, Section 2.1.4.4.1). This site is being sampled because of the possibility that the integrity of the sewer pipeline was compromised by acidic decontamination fluids. The work plan (DOE-RL 1991, Figure 2-2) shows the location of the 108-D building in relation to other landmarks in 100-DR-1. The building is no longer present. Records showed that Decommissioning and Decontamination (D&D) demolished the 108-D Building in 1978, and that the rubble was taken to the 184-D Coal Pit. A test pit, approximately 32 by 3 ft will be dug approximately 5 ft north of the 108-D building site. The sanitary pipeline location is shown in Figure 3.

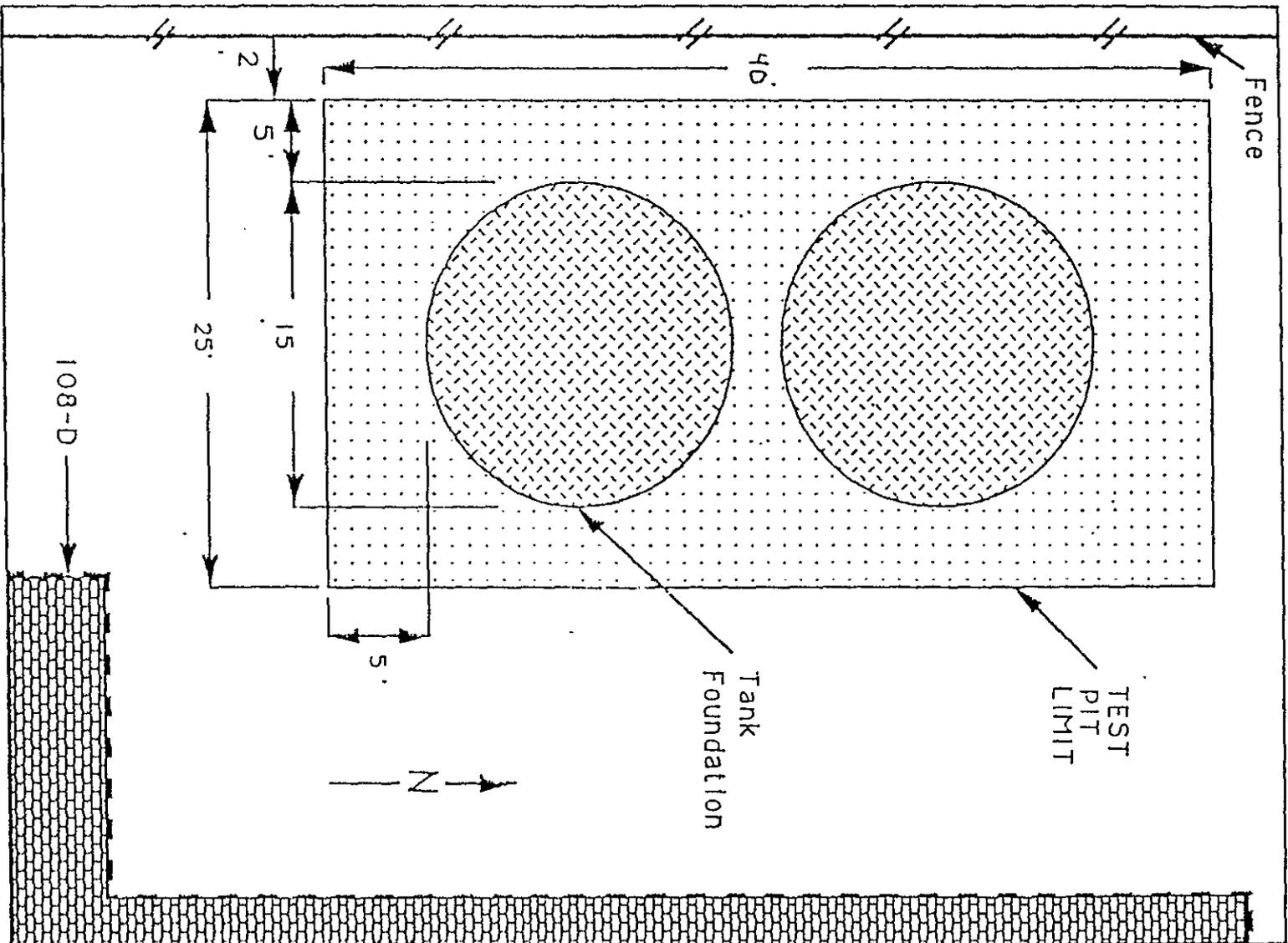
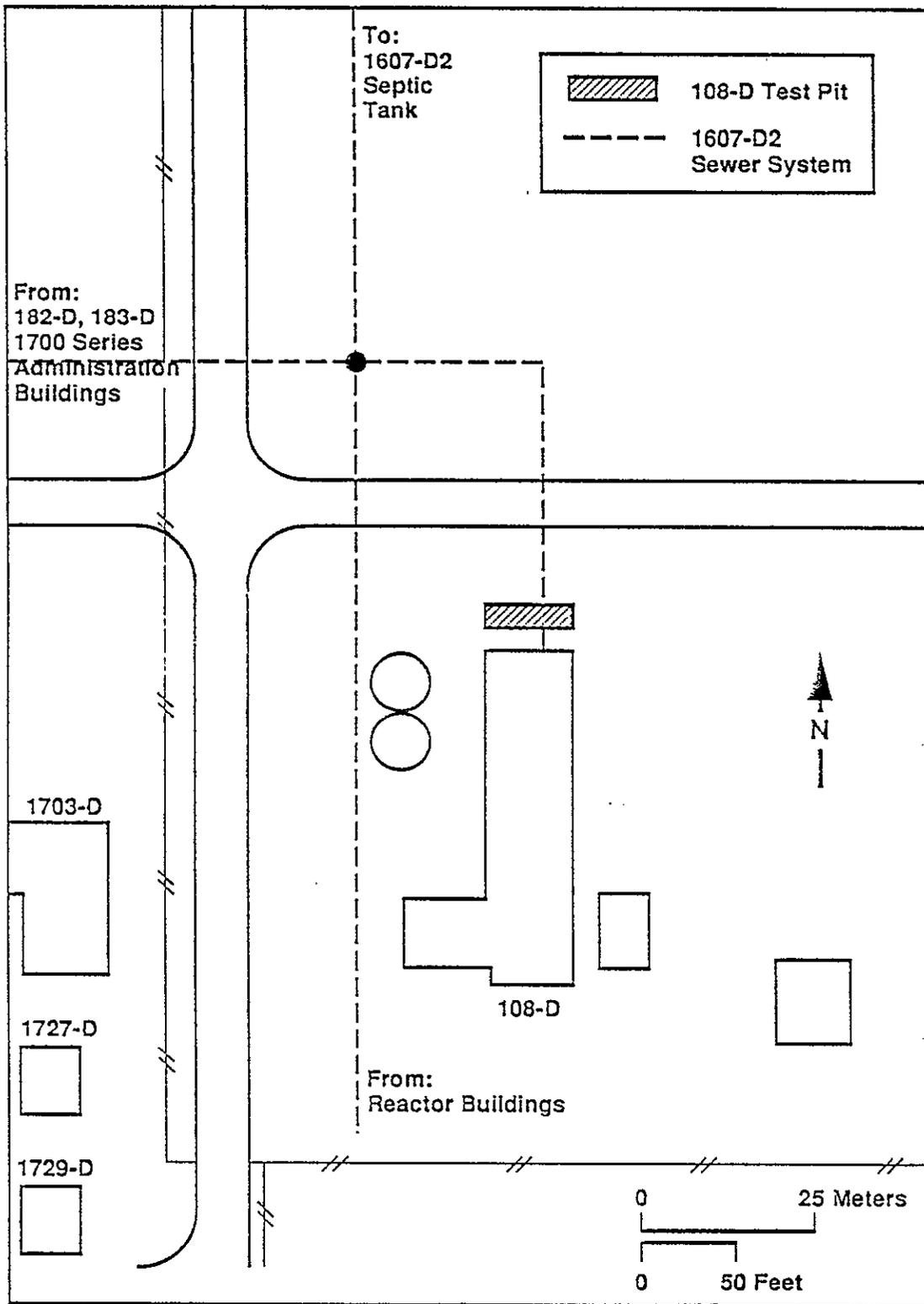


Figure 2. Sodium Dichromate Test Pit.

Figure 3. 100-D Area 108-D Building, Associated Structures and Test Pit.



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A plot map of the 100-D Area sewer system shows where the sanitary drain line leaves the north side of the 108-D building. The sewer line goes north and crosses underneath the 100-D Area entrance road. After crossing the road, the sanitary line heads west until it ties into the main sanitary pipeline for the 1607-D2 sewer system. A ground-probing radar survey of the area was conducted for the vadose zone drilling of D-116-3 (December 1991). The survey showed the ground as being very disturbed and did not show the sanitary pipeline or the foundation of the 108-D building. Since there are no visible signs of the 108-D building, the location of the building will be identified and staked using aerial photos. The exact location of the sanitary pipeline egress from 108-D building is unknown, but is expected to be approximately 10 ft from the northeast corner of the building and is 15.5 ft deep. The sampling protocol for the pipeline site is delineated in Section 3.2.4.

3.2.2 Sample Analysis

3.2.2.1 Contaminants of Concern. The contaminants of concern for the 108-D septic sewerline are suspected to be: (1) low level fission products from the maintenance shops and cask decontamination pad (DOE-RL 1991); and (2) decontamination solution. Because of the uncertainty of the sewer pipeline contaminants, the soil samples will be analyzed for the full range of radioactive and CERCLA target analyte list (TAL) and target compound list (TCL) constituents (DOE-RL 1991, Table QAPjP-1).

3.2.2.2 Field Screening. The field screening discussed in this section is not for health and safety determination. Health and safety issues are covered in the Radiation Work Permit (RWP) or the Job Safety Analysis (JSA). Field screening covered in this section is for the purpose of selecting samples for laboratory analysis. Samples will be field screened for volatiles and radioactivity. If the Field Team Leader (FTL) finds radioactive contamination two times background or volatiles contamination five times background, a sample will be taken per Section 3.2.4.

Background will be determined before excavation is started. The FTL will determine the ambient radiation and volatiles background 3 ft over the sampling site. The background will be determined per EII 3.4, Field Screening, Appendixes A and B. The radiation and volatiles backgrounds will be recorded in the field logbook.

Radiation field screening will be performed using a Geiger-Mueller (GM) instrument with a P-11 probe. Volatiles will be screened using an organic vapor monitor (OVM). The OVM will be calibrated and maintained per EII 3.4, Field Screening, (WHC 1988a).

3.2.2.3 Laboratory Analysis. The samples will be analyzed for:

Analyte	Method
Volatile	TCL-CLP (contract lab procedure)
Semivolatile	TCL-CLP
PCB/Pesticides	TCL-CLP
TAL	TAL-CLP
Mercury	TAL-CLP
TCLP (Toxic Characteristic Leach Procedure)*	1311
Cyanide	TAL-CLP
Anions	EPA 300 and 353.2
Radiation:	Performed under laboratory standard procedure
¹⁴ C	
⁹⁰ Sr	
Gross Alpha	
Gross Beta	
Alpha Spec:	to include ^{235/238} U, ^{239/240} Pu, and ²⁴¹ Am
Gamma Spec:	report all identifiable and quantifiable isotopes
Total Activity	

*Sample is being analyzed for another WHC group information and is not a requirement of the work plan.

3.2.3 Test Pit Construction

The test pit will be constructed parallel to and no closer than 5 ft to the north side of the 108-D building. It will be approximately 32 ft long by 3 ft wide and 16 ft deep. It will be constructed per the JSA. Excavated material will be surveyed by the HPT per the RWP. If found to be in excess of the guidelines, material will be treated as contaminated. The RWP sets the maximum limits for task at 1.0 mrem of whole body exposure and/or 10,000 dpm alpha or beta/gamma. If the contamination exceeds this limit, the sampling activities will be terminated and the task will be reassessed. The excavated material will be replaced in the test pit following the "last out, first in" rule and as instructed by EII 5.2, Soil and Sediment Sampling, Appendix F, (WHC 1988a) when the sampling is completed. All waste will be handled per EII 4.2, Interim Control of Unknown, Suspected Hazardous and Mixed Waste, WHC 1988a).

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3.2.4 Sample Collection

The bucket of the backhoe will be decontaminated before commencing sampling activities. Samples shall be taken from the center of the bucket before the excavated material is placed on the ground. All sample material will be collected in the order shown in Section 3.2.2.3. A minimum of one sample or a maximum of two samples will be collected per the following guidance. Criteria for sample selection are as follows:

- Collect one sample the first time the material does not pass the radiation or organic screening criteria.
- If the sanitary sewer pipeline is located, collect one sample adjacent to and immediately below the pipeline elevation.
- If the sanitary sewer pipeline is not located, collect one sample at the bottom of the pit at the expected location of the pipeline.

All test pit material will be field screened for volatiles and radioactive per Section 3.2.2.2. Sample material will be collected per EII 5.2 Soil and Sediment Sampling, Appendix F (WHC 1988a). A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The logbook will be used and maintained per EII 1.5 Field Logbooks (WHC- 1988a).

All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody is initiated and maintained after the sample is collected. The chain of custody is done per EII 5.1 Chain of Custody (WHC 1988a).

Any excavated soil will be replaced in the test pit site after sampling is completed. This will be done per EII 5.2 Soil and Sediment Sampling, Appendix F (WHC 1988a).

3.3 100-DR SEPTIC TANKS/TILE FIELDS

Sanitary sewage generated at the 100-D/DR Area was treated in underground septic tanks and subsequently discharged to associated tile fields. There is no documentation of hazardous wastes being disposed of in these facilities. Because of the diversity of the support functions carried out in the 100-D/DR Area (e.g., the laboratory and the maintenance shops, which included a paint shop and an automotive repair shop), it is conceivable that some chemical or radiological wastes could have been disposed of in these facilities.

3.3.1 Location

This section addresses the sampling of the three septic tanks and tile fields as described in the 100-DR-1 Operable Unit work plan (DOE-RL 1991, Section 2.1.4.6). The location of sanitary septic systems in relation with other landmarks in the 100-DR-1 Operable Unit is provided by DOE (DOE-RL 1991, Figure 2-2). The sanitary sewer transfer, treatment, and disposal facilities to be sampled are the 1607-D2 (124-D-2), the 1607-D4 (124-D-4), and the 1607-D5 (124-D-5) sanitary septic systems. Figure 4 shows the locations of these facilities.

Brief descriptions of the three facilities are as follows:

- 1607-D2 (124-D-2) sanitary septic system: This system, constructed in 1950, is active. Its location is clearly documented in drawings, aerial photo-graphs, and by field features. This tank served the 182-D, 183-D, 190-D, and several 1700-D office and maintenance service buildings. It also served the 118-D-6 reactor building. The septic tank is located in the area of the 116-D-7 and 116-DR-9 retention basins, in the northeast corner of the 100-DR-1 Operable Unit. This tile field replaced the tile field constructed in the present location of 116-DR-9.
- 1607-D4 (124-D-4) sanitary septic system: The site appears to have been decommissioned, but no documentation was found to confirm this. This septic tank received sanitary sewage from the 115-D gas recirculation building. It is located in the southeast corner of 100-DR-1 near the 118-D-6 reactor building and related facilities. Although there are some conflicting descriptions as to the tank's location, it is believed to be approximately 100 ft east of the south end of the 115-D building.
- 1607-D5 (124-D-5) sanitary septic system. This system is active. Its location is clearly documented in drawings, aerial photo-graphs, and by field features. This tank and tile field received sanitary sewage from the 181-D river pumphouse. It is located in the southwest corner of 100-DR-1 near the banks of the Columbia River adjacent to the river pumphouse.

3.3.2 Sample Analysis

3.3.2.1 Contaminants of Concern. The contaminants of concern for the sanitary septic system are: (1) solvent products from the maintenance shops and (2) possible low level radioactive contaminants from the reactor buildings. Because of the uncertainty of the sewer pipeline contaminants, the soil samples will be analyzed for the full range of radioactive and CERCLA TAL and TCL constituents (DOE-RL 1991, Table QAPjP-1).

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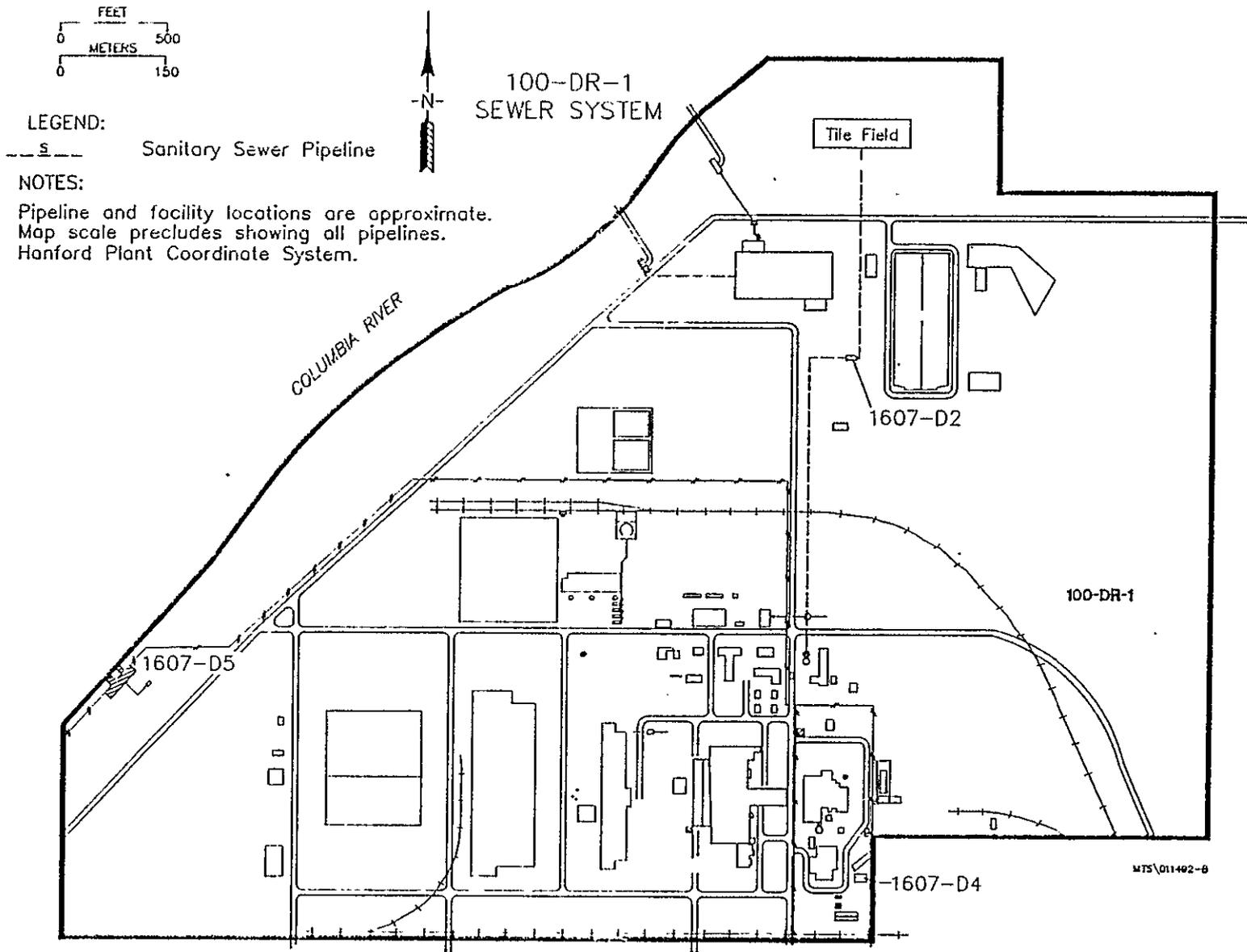


Figure 4. 1607-D2, 1607-D4, and 1607-D5 Sanitary Sewer System.

3.3.2.2 Field Screening. The field screening discussed in this section is not for health and safety determination. Health and safety issues are covered in the RWP or the JSA. Field screening covered in this section is for the purpose of selecting samples for laboratory analysis. Samples will be field screened for volatiles and radioactivity. If the FTL finds radioactive contamination two times background or volatiles contamination five times background, a sample will be taken per Section 3.3.4.

Background will be determined before excavation is started. The FTL will determine the ambient radiation and volatiles background 3 ft over the sampling site. The background will be determined per EII 3.4, Field Screening, Appendixes A and B. The radiation and volatiles backgrounds will be recorded in the field logbook.

The samples will be field screened for volatiles and radioactivity. Radiation field screening will be performed using a Geiger-Mueller (GM) instrument with a P-11 probe. The volatiles will be screened using an OVM. The OVA will be calibrated and maintained per EII 3.4, Field Screening (WHC 1988a).

3.3.2.3 Laboratory Analysis. The soil samples will be analyzed for:

<u>Analyte</u>	<u>Method</u>
Volatile	TCL-CLP
Semivolatile	TCL-CLP
PCB/Pesticides	TCL-CLP
TAL	TAL-CLP
Mercury	TAL-CLP
TCLP*	1311
Cyanide	TAL-CLP
Anions	EPA 300 and 353.2
Radiation	Performed under laboratory standard procedure
¹⁴ C	
⁹⁰ Sr	
Gross Alpha	
Gross Beta	
Alpha Spec: to include ^{235,238} U, ^{239/240} Pu, and ²⁴¹ Am	
Gamma Spec: report all identifiable and quantifiable isotopes	
Total Activity	

*Sample is being analyzed for another WHC group information and is not a requirement of the work plan.

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The liquid samples will be analyzed for:

Analyte	Method
Volatile	TCL-CLP
Semivolatile	TCL-CLP
PCB/Pesticides	TCL-CLP
TAL	TAL-CLP
Mercury	TAL-CLP
Cyanide	TAL-CLP
Anions	EPA 300, 350.3, and 353.2
Sulfide	9030
Total Dissolved Solid	160.1
Akalinity	310.1
Turbidity	180.1
pH	9040
Chemical Oxygen Demaind	410.1
Specific Conductance	120.1
TOX and TOC	9020/9060
TCLP	1311
Temperature	Field Metered
Dissolved Oxygen Probe	Field Metered
Radiation	Performed under laboratory standard procedure
¹⁴ C	
⁹⁰ Sr	
⁹⁹ Tc	
Gross Alpha	
Gross Beta	
Alpha Spec:	to include ^{235,238} U, ^{239/240} Pu, and ²⁴¹ Am
Gamma Spec:	report all identifiable and quantifiable isotopes
Tritium	EPA 906
Total Activity.	

3.3.3 Inactive Septic Tank Sample Collection

The sampling activity of the 1607-D4 (124-D-4) sanitary septic system is divided into three parts: achieving access to the tank, sampling the contents of the tank, and returning the site to it's preexisting condition. This section only covers the source sampling of the tank. If the tank is not present or if it has been backfilled and access is not possible with hand-held equipment, sampling will be postponed and addressed at a later date.

Geophysics techniques EII 11.2, Geophysical Survey Work (WHC 1988a) will be used to locate and stake out the septic tank location. The cover material will be removed from the top of the septic tank to gain access to the cleanout ports. As the cleanout port covers are removed, the Site Safety Officer (SSO) and HPT will monitor as specified by the JSA and RWP.

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After access to the tank is achieved, the field team leader will determine the sample(s) according to the following guidelines:

Situation	Criteria
Empty tank (no liquid, sludge, or fill material)	No sample will be taken. Document sampling attempt in field logbook and close tank.
Liquid	Take a sample of liquid from each compartment in tank. After liquid is sampled, probe liquid to verify presence of sludge below liquid. If sludge present, take sample. If no sludge is present, document sampling attempt in field logbook and close tank after sampling completed.
Sludge	Take sample of sludge from each compartment in tank. Document sampling in field logbook and close tank after sampling completed.
Fill material	If tank contains fill material, attempt to auger to bottom to determine if sludge is present. If sludge is present, take sample. Document sampling in field logbook. If auger attempt is unsuccessful, document in field logbook and close tank.

All material removed from inside of the septic tank will be field screened for volatiles and radioactivity per Section 3.3.2.2. All samples will be collected in the order shown in Section 3.3.2.3. Sludge samples will be collected per EII 5.2, Soil and Sediment Sampling, Appendix G (WHC 1988a). Liquid samples will be collected as recommended by the EPA (EPA 1986, Section 9.2.2.4). A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The log-book will be used and maintained per EII 1.5, Field Logbook (WHC 1988a).

All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody is initiated and maintained after the sample is collected. The chain of custody is done per EII 5.1, Chain of Custody (WHC 1988a).

The excavated dirt will be replaced over the septic tank site after sampling is completed and the cleanout port cover has been secured. The excavation and return of the site to normal will be covered by EII 5.2, Soil and Sediment Sampling, Appendix F (WHC 1988a).

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3.3.4 Active Septic Tank Sample Collection

In the active septic system tile fields, 1607-D2 (124-D-2) and 1607-D5 (124-D-5), one shallow hand auger boring close to the inlet of each tile field will be used for sample collection. A clean decontaminated hand auger will be used for each sample site. Geophysics techniques will be used to assist in locating the augering location.

All augered material will be field screened for volatiles and radioactivity per Section 3.3.2.2. All samples will be collected in the order shown in Section 3.3.2.3. Sample material will be collected per EII 5.2, Soil and Sediment Sampling, Appendix E (WHC 1988a). A field logbook (WHC-N-429-1) will be used to document activities associated with the sample collection. The logbook will be used and maintained per EII 1.5, Field Logbooks (WHC 1988a).

All samples collected will be packaged and sent to an offsite laboratory for analysis. The packaging of the samples is done per EII 5.11, Sample Packaging and Shipping (WHC 1988a). A chain of custody is initiated and maintained after the sample is collected. The chain of custody is done per EII 1.5, Chain of Custody (WHC 1988a).

Any excavated soil will be replaced over the augered site after sampling is completed. This will be done per EII 5.2, Soil and Sediment Sampling, Appendix F (WHC 1988a).

4.0 SAMPLE LABELING

The Hanford Environmental Information System (HEIS) is used to track the sample and laboratory data obtained during environmental investigations conducted under this description of work. Each sample will be identified and labeled with a unique HEIS sample number. HEIS numbers will be assigned in the field per EII 1.11, Technical Data Management (WHC 1988a). Field sampling data will be collected and recorded in the field logbook (WHC-N-429-1).

5.0 ANALYSES

Samples collected for chemical analysis will be analyzed for the full suite of CERCLA CLP TCL and TAL constituents, specific anions, radionuclides, and TCLP (108-D Office Building and 100-DR-1 Septic Tanks/Tile Fields). TCLP shall be analyzed for information purposes only and is not a requirement of the work plan (DOE-RL 1991). Estimated quantity of material needed for analyses are shown in Tables 1, 2, and 3. The laboratory will use existing Level III and Level IV methods for CLP TCL and TAL constituents, Level V for radionuclides, and Level III methods for TCLP. The specific anions will be analyzed using EPA methods (EPA 1986). Sample custody will follow the procedures as specified in the 100-DR-1 Operable Unit work plan (DOE-RL 1991, Appendix A, Section 5.1) and EII 5.1 Chain of Custody (WHC 1988a).

Table 1. Sodium Dichromate Tanks Soil Analyte List.

Analyte	Method	Holding Time	Container/Volume
AA metals/mercury/ cyanide	CLP	6 mo/28 d/14 d	Glass/500 mL
Volatile organic	CLP	14 d	Glass (septum)/125 mL
Semivolatile organic PCB/pesticides	CLP CLP	7 d ^a	Amber glass/1,000 mL
Anions	EPA 300	28 d & 48 h	Amber glass/250 mL
Carbon-14 Strontium-90 Gross alpha Gross beta Gamma spec	Lab SOP	6 mo	Glass/1,000 Ml
Alpha spec	Lab SOP		
Total Activity (222-S Lab)		6 mo	Plastic or glass vial (at least 1 g)

^a7 d for extraction, 40 d after extraction for analysis.

9 2 1 2 5 4 8 0 9 3 0

Table 2. 108-D Office Building and 100-DR-1 Septic Tank/Tile Field Soil Analyte List.

Analyte	Method	Holding Time	Container/Volume
AA metals/mercury/ cyanide	CLP	6 mo/28 d/14 d	Glass/500 mL
Volatile organic	CLP	10 d	Glass (septum)/125 mL
Semivolatile organic PCB/pesticides	CLP CLP	10 d ^a	Amber glass/250 mL
Anions	EPA 300, 353.2	28 d	Amber glass/125 mL
TCLP ^b	1311	6 mo	Glass/125 mL
Carbon-14 Strontium-90 Gross alpha Gross beta Gamma spec	Lab SOP	6 mo	Glass/1,000 Ml
Alpha spec	Lab SOP		
Total Activity (222-S Lab)		6 mo	Plastic or glass vial (at least 1 g)

^a10 d for extraction, 40 d after extraction for analysis.

^bfor 108-D and septic tanks/tile field only.

9 2 1 2 6 1 3 0 9 3 1

Table 3. 1607-D4 Liquid Analyte List.

Analyte	Method	Preservation	Holding Time	Container/Volume
AA metals mercury	CLP	HNO ₃	6 mo 28 d	Plastic/1,000 mL
Cyanide	CLP	NaOH	14 d	Glass/1,000 mL
Volatile organic	CLP	None	14 d	Glass (septum) 3 con, 40 mL each
Semivolatile organic PCB/pesticides	CLP	None	5 d ^a	Amber glass 2,000 mL
Anions	EPA 300, & 353.2	None	28 d	Plastic/500 mL
Sulfide	9030	ZnAc & NaOH	7 d	Glass/100 mL
TCLP metals	1311	None	6 mo	Plastic/150 mL
TDS	160.1	None	7 d	Plastic/1,000 mL
Turbidity	180.1		14 d	
pH	9040		ASAP	
Chemical oxygen demand	410.1	H ₂ SO ₄	28 d	Plastic/500 mL
Ammonia (as nitrogen)	350.2			
Specific conductance	120.1	None	28 d	Glass/500 mL
TOX	9020	H ₂ SO ₄	28 d	Glass (septum) 250 mL
TOC	9060	H ₂ SO ₄	28 d	Amber glass/125 mL
Temperature Dissolved oxygen probe Turbidity	Field Metered	None	ASAP	As required
Strontium-90 Gross alpha Gross beta Gamma spec Alpha spec	Lab SOP	HNO ₃	6 mo	Plastic/6,000 mL
Tritium	Lab SOP	None	6 mo	Plastic/1,000 mL
Carbon-14	Lab SOP	None	6 mo	Plastic/500 mL
Technetium-99	Lab SOP	None	6 mo	Plastic/1,000 mL
Total Activity (222-S Lab)			6 mo	Plastic/glass vial (at least 1 g)

^a5 d for extraction, 40 d after extraction for analysis.

6.0 QA/QC REQUIREMENTS

Internal QC samples shall be collected as specified in the work plan Appendix A, Quality Assurance Project Plan.

The following QA sample will be collected for the 108-D Office Building and Equipment Decontamination Station.

QA Sample	QC	Medium
Trip blank (one per trip container)	A pedigree of matrix will be included in project file.	Silica sand
Field duplicate (one sample)		First soil sample taken
Split (one sample)		First soil sample taken

The following QA sample will be collected for the 100-DR Septic Tank/Tile Fields.

QA Sample	QC	Medium
Trip blank (one per trip container)	A pedigree of matrix will be included in project file.	Deionized distilled water
Field duplicate (one sample of each matrix)		From chamber closest to inlet to tank water, sludge
Split (one sample of each matrix)		From chamber closest to inlet to tank
Equipment blank (one sample of liquid matrix)		Deionized distilled water
Field blank (one sample of liquid matrix)		Deionized distilled water

The FTL will document in the field logbook the QA sample's HEIS number, sample location, sample medium, and any relationship to other samples.

9 2 1 2 6 1 3 0 9 3 3

7.0 SCHEDULE

The following schedule is for nonintrusive source sampling in the 100-DR-1 Operable Unit. This schedule is subject to change and the operable unit coordinator should be contacted for current status. An agreement activity notification form will be issued at least 5 d before start of field work.

Sample task	Sampling date
108-D Office Building and Equipment Decontamination Station	Middle 2 wk of May
100-DR Septic Tanks	Middle 2 wk of May

8.0 CHANGES TO DESCRIPTION OF WORK

Major changes to this description of work, such as analyzing different parameters or using different analytical methods, will be submitted on the Source Sampling Project Change Form (Attachment 2). The change will require, at least, the verbal approval of FTL and operable unit coordinator. The change will be filed as an Engineering Change Notice (ECN) and a copy will be inserted into the 100-H and 100-B areas' project file. Copies will be submitted to the appropriate field personnel.

9.0 REFERENCES

- DOE-RL, 1991, *RCRA Facility Investigation/Corrective Measure Study Work Plan for the 100-DR-1 Operable Unit, Hanford Site, Richland, Washington*, DOE/RL-89-09, Draft C, U.S. Department of Energy, Richland Field Office, Richland, Washington.
- EPA, 1986, *Test Methods for Evaluating Solid Waste Physical/Chemical Methods*, SW-846, U.S. Environmental Protection Agency, Washington, D.C.
- Taylor, W. E., 1991, *100 Area Low Hazard Characterization Activities Safety Assessment*, WHC-SD-EN-SAD-002, Rev 0, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1987, *Industrial Safety Manual*, WHC-CM-4-3, Vol. 1 through 3, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988a, *Environmental Investigations and Site Characterization Manual*, WHC-CM-7-7, Westinghouse Hanford Company, Richland, Washington.

- WHC, 1988b, *Radiation Protection*, WHC-CM-4-10, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988c, *ALARA Program Manual*, WHC-CM-4-11, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1988d, *Environmental Compliance Manual*, WHC-CM-7-5, Westinghouse Hanford Company, Richland, Washington.
- WHC, 1990a, *Environmental Engineering, Technology, and Permitting Function Quality Assurance Program Plan*, WHC-EP-0383, Westinghouse Hanford Company, Richland, Washington.

9 2 1 2 6 4 8 0 9 3 5

ATTACHMENT 1

100-AREA NONINTRUSIVE
SOURCE SAMPLING STATUS CHECKLIST

Signature/Date

LANDLORD CONTACTED FOR ENTRANCE

100 AREA ENVIRONMENTAL PROTECTION NOTIFIED

PREJOB SAFETY MEETING COMPLETED

SAMPLES COLLECTED AND LABELED

SAMPLES SURVEYED BY HPT

SAMPLE PACKAGED IN SHIPPING CONTAINER

TOTAL ACTIVITY SCAN OF SAMPLES COMPLETED

CHAIN OF CUSTODY FORM COMPLETED

SAMPLES SHIPPED TO LABORATORY

9 2 1 2 6 4 8 0 9 3 6

ATTACHMENT 2
100-AREA NONINTRUSIVE SOURCE SAMPLING PROJECT CHANGE FORM

Date: _____

Person Initiating Change: _____

Change: _____

Reason for Change: _____

APPROVAL:

Field Team Leader: _____

Operable Unit Coordinator: _____

Environmental QA Representative: _____

92126480937

May 27, 1992

Tri-Party Agreement Issue Decision Analysis Position Paper

100-NR-1 and -2 Work Plan Schedules

Responsible Managers:

IA (Issue Advocate): Steve Cross, Ecology

DP (Disputing Party): Eric Goller, USDOE-RL

Non-Disputing Party: Pam Innis, EPA

IA Statement of Issues:

Must all reactor shutdown activities be completed before any environmental restoration activities may be commenced in the field?

Is a 24-month delay of remedial activities in the 100-NR-1 operable unit, and a 30-month delay in the 100-NR-2 operable unit, justified by "funding limitations" to N-Reactor shutdown.

Statement of Facts:

At a meeting on July 2, 1991, Ecology was presented with a 100N SHUTDOWN PROGRAM SCHEDULE. This schedule extends from 1991 to N-Reactor turnover for decommissioning at the end of 1997.

Enclosure 2 to the cover letter (dated DEC 13 1991) submitting the 100-NR-1 and -2 operable unit work plans states:

"The RFI/CMS work plan schedule is based upon the June, 1991, N-Reactor Shutdown Program Plan which has been deferred for two years due to funding limitations. Under this deferred schedule, N-Reactor shutdown activities will begin in FY 1994 and be completed by the end of FY 1999 (6-year schedule)."

The NR-2 schedule provides for completion of the RFI report by June of 1994, the CMS report by February of 1995, and the IRM plan by February of 1995. The schedule indicates that, after a 30-month hiatus, preparation of an interim ROD would begin in September of 1997, and be completed by October of 1999. The schedule provides for no investigatory or remedial action during the 30-month hiatus.

9 2 1 2 6 1 3 0 9 3 9

AGREEMENT ACTIVITY NOTIFICATION

Page _ of _

OPERABLE UNIT 100-BC-1

DATE May 27, 1992

TSD _____

E. D. Goller

OTHER _____

UNIT MANAGER

ACTIVITY PERIOD June 1 - June 30

ACTIVITIES

SCHEDULED START DATE

100-B/C Test Pit

June 8, 1992

Eric Goller 5-27-92

UNIT MANAGER

EPA/Ecology/DOE representatives that may want to observe any of the listed activities should verify the start date with the Unit Manager. Depending on the activity, location, and the individual's needs relative to observation/participation, the individual may be required to meet the training requirements of Environmental Investigation Instruction 1.7.

92126480940

AGREEMENT ACTIVITY NOTIFICATION

Page 2 of 2

OPERABLE UNIT 100-NR-1

DATE 5/19/92

TSD _____

OTHER _____

E. D. Goller
UNIT MANAGER

ACTIVITY PERIOD 6-1-92 through 9-30-92

ACTIVITIES

SCHEDULED START DATE

100-NR-1 Soil Gas Survey

E. D. Goller, 5-21-92

UNIT MANAGER

92126480941

EPA/Ecology/DOE representatives that may want to observe any of the listed activities should verify the start date with the Unit Manager. Depending on the activity, location, and the individual's needs relative to observation/participation, the individual may be required to meet the training requirements of Environmental Investigation Instruction 1.7.

AGREEMENT ACTIVITY NOTIFICATION

OPERABLE UNIT 100-NR-1

DATE 4/23/92

TSD _____

E. D. Goller

OTHER _____

UNIT MANAGER

ACTIVITY PERIOD 5-2-92 through 9-30-92

ACTIVITIES

SCHEDULED START DATE

100-N Surface Rad Survey

4-2-92

E. D. Goller 4-21-92

UNIT MANAGER

EPA/Ecology/DOE representatives that may want to observe any of the listed activities should verify the start date with the Unit Manager. Depending on the activity, location, and the individual's needs relative to observation/participation, the individual may be required to meet the training requirements of Environmental Investigation Instruction 1.7.

921201309112

Distribution

Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 27, 1992

- Julie K. Erickson Chief, Env. Remed. Br., DOE-RL, ERD (A5-15)
- Ronald E. Gerton Director, DOE-RL (A6-80)
- Mike Thompson, DOE-RL, EAP/RPB (A5-19)
- Diane Clark, DOE-RL, TSD/SSB (A5-55)
- Steve Balone, DOE-HQ (EM-442)
- Suzanne Clarke, SWEC GSSC to DOE-RL (A4-35)

- Dennis Faulk 100 Aggregate Area Manager, EPA (B5-01)
- Ward Staubitz, USGS Support to EPA
- Audree DeAngeles, PRC Support to EPA

- Darci Teel 100 Aggregate Area Manager, WDOE (Kennewick)
- Larry Goldstein WDOE (Lacy)

- Tom Wintczak, WHC (L4-92)
- Mel Adams, WHC (H4-55)
- Bob Henckel, WHC (H4-55)
- L.D. Arnold, WHC (B2-35)
- A.D. Krug, WHC (H4-55)
- Roberta, Day, WHC (H4-55)
- Powers, Linda L., WHC

- Don Praast, GAO (A1-80)

ADMINISTRATIVE RECORD: 100 AAMS; Care of EDMC, WHC (H4-22)

Please inform Suzanne Clarke (SWEC) of deletions or additions to the distribution list.

9 2 1 2 6 1 8 0 9 1 3