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Final

Meeting Minutes Transmittal/Approval
Unit Manager's Meeting: 200 Aggregate Area/200 Area Operable Units
2440 Stevens Center Place, Room 1200, Richland, Washington
April 20, 1995

FROM/APPROVAL: Donna Wanek Date 8/8/95
Donna Wanek, 200 Aggregate Area Unit Manager, RL (H4-83)

APPROVAL: Paul R. Beaver Date 8/9/95
Paul R. Beaver, 200 Aggregate Area Unit Manager, EPA (B5-01)

APPROVAL: Dib Goswami Date 8/9/95
Dib Goswami, 200 Aggregate Area Unit Manager, WA Dept of Ecology

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

Attachment #1	-	Meeting Summary
Attachment #2	-	Attendance Sheet
Attachment #3	-	Agenda
Attachment #4	-	Action Item Status List
Attachment #5	-	Status of 200-BP-5 OU
Attachment #6	-	Status of 200-ZP-2 OU - ERA Activity
Attachment #7	-	Waste Control Plan - 200-ZP-2 OU
Attachment #8	-	Status of 200-ZP-1 OU
Attachment #9	-	Waste Control Plan - 200-ZP-1 IRM Groundwater Pump and Treat System Well Installations
Attachment #10	-	Waste Control Plan - 200-ZP-1 OU DNAPL Investigation-Well Installations
Attachment #11	-	200-ZP-1 OU NPL Agreement; IRM Implementation DOW
Attachment #12	-	200-ZP-1 OU NPL Agreement; Groundwater Sampling and Analysis Plan

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Prepared by: Jim Consort Date: 7/25/95
Jim Consort, Kay Kimmel, GSSC (B1-42)

Concurrence by: Joseph Zoghbi Date: 5/10/95
Joseph Zoghbi, BHI Project Manager - 200 Areas, ~~(H4-79)~~ H6-07

Attachment # 1
Unit Manager's Meeting: 200 Aggregate/200 Area Operable Units
April 20, 1995

Meeting and Summary of Commitments and Agreements

1. **Signing of the March 200 Area Unit Manager's Meeting Minutes:**
   Meeting minutes are not available since the March UMM was not held.

2. **Action Item Update:**

   No open action items.

3. **New Action Items:**

   No new Action Items.

4. **INFORMATION ITEMS**

Status 200-BP-5 Operable Unit - Dave Erb provided the status of BP-5 activities (Attachment #5)

- **216-BY System**

  EPA indicated that influent concentrations of Tc-99 from well 50-53A should be referred to as initial concentrations and not background concentrations.

- **216-BY Cribs Plume**

  Well evaluation of 55-57 and 55-60A part of the 200 NPL Agreement.

Status 200-UP-1 Operable Unit

Meeting to report status of the 200-UP-1 Operable Unit was canceled.

Status of 200-ZP-2 Operable Unit, ERA Activity

- Sean Driggers provided update on the carbon tetrachloride vapor extraction activities (Attachment #6). BHI assured the regulators that all wells planned to be perforated were included in the Well Perforation Report. Regulators expressed concern about not being informed that DOE had awarded a $100,000 contract to Washington State University for a vapor extraction efficiency study. They thought that funding for this activity was ill advised since DOE has recently indicated that funding for many activities recommended by the regulators is tight. DOE will provide the regulators with the work plan.

- Waste Control Plan (Technology Demonstration of Purus Unit - 200-ZP-2 Operable Unit) was submitted to DOE (Attachment #7).

Status of 200-ZP-1 Operable Unit

- J. Freeman-Pollard provided the update for activities at the 200-ZP-2 Operable Unit (Attachment #8). Regulators requested information about the lack of sufficient funding for the bioremediation technology demonstration. IRM well drilling data shows that the water table is located approximately 238 feet below grade; carbon steel well casing has been approved for well construction. Results of groundwater samples will be available by the next unit managers meeting.

- Waste Control Plan (200-ZP-1 Interim Remedial Measure Groundwater Pump and Treat System Well Installations) was submitted to DOE (Attachment #9).

- Waste Control Plan (200-ZP-1 O. U. DNAPL Investigation-Well Installations) was submitted to DOE (Attachment #10).

- 200-ZP-1 Operable Unit NPL Agreement; IRM Implementation DOW, is included as Attachment #11.

- 200-ZP-1 Operable Unit NPL Agreement; Groundwater Sampling and Analysis Plan, is included as Attachment #12.

Attachment #2
April 20, 1995
200 Aggregate Area Unit Managers Meeting
Official Attendance Record

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Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
R.D. Vinson	BHI	—	372-9296
Donna Wanek	DOE	UM	376-5778
Kenneth R Porter	ITH	200 Area GW	372-9277
Connie L. KASTA	ITH	200 Area GW	372 9675
GEORGE C HENCHEL	BHI	200 Activity P.M	372-9387
Diane Dickie	BHI	Support	(509) 372-9471
Paul Beaver	EPA	Unit mgr	376-8665
Regan Weeks	ITH	200 Area Support	2-9297
R. SCOTT HAJNER	BHI	TPA P.M.	2-9410
Dave Erb	ITH	BP-5 Team Lead	2-9275
Jim Consort	GSSC	AL support	9463694
Gary Friedman	Ecology	UM	736-3026
NORM HEPNER	ECOLOGY	B-POND	736-3018
Ted Wooley	Ecology	UM	736-3012
Fengfang Ma	Ecology	200-BP-1	736-3035
Beth Ward	DOE	200-UP-2	376-7142
Dave Einan	EPA	UM	376-3883
DENNIS FAULK	EPA	UM	376-8631
Shivan Thomas-Jones	ERC	ZP1 Lead	372-9347
D.L. PARKER	ERC	ZP1	372-9413
S.A. Driggers	ERC	ZP2	372-9298
J.F. Young	DOE-RL	ZP-2	376-7044

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Revision I

Past Practice's
CERCLA Unit Manager's Meetings

Thursday, April 20, 1995
Conference Room 1200, 2440 Stevens Place

In order to allow attendance by the Tri-Parties the 200-UP-1 OU has been canceled for this month.

9:15 - 9:45, 200-BP-5 - D. Erb

* General Status

9:45 - 10:00, 200-BP-1 - M. Buckmaster

* Prototype Barrier
* Proposed Plan/ROD

10:00 - 10:30, 200-UP-2 - M. Galgoul

* Action Item Status
* General Status
  -LFI Status
  -RCRA/CERCLA Integration Roadmap Status

10:15 - 10:30, 200-ZP-2 - Sean Driggers

* ERA Status
* PURUS Padre Technology Demonstration Status

10:30 - 11:00, 300-FF-1 - R. Carlson

* Action Item Status
* IRM Proposed Plan
* Phase III FS
* 300 APT Closure Plan
* Forecasted Activities

11:00 - 11:15, 300-FF-5 - L. Hulstrom

* Action Item Status
* RI/FS Report
* Proposed Plan
* River Station
* Forecasted Activities

11:15 - 11:55, 300-FF-2 - L. Hulstrom

* Action Item Status
* Work Plan Status
* Non-intrusive Field Activities
* Forecasted Activities

11:55 - 1:30, Lunch

1:30 - 4:00, **100 Area**

1:30 - 2:15, ROD Discussion - N. Werdel/A. Tortoso/G. Eidam

* Status
* Change Request M-15-95-02B

2:15 - 2:30, Treatability Studies - Mark Sturges/John April

* Status

2:30 - 2:45, Designation of RCRA Past Practice Units to CERCLA Past Practice Units - Greg Eidam/Arlene Tortoso

* Change Request C-95-01

2:45 - 3:00, 100-FR-1 Focus Feasibility Study - A. Krug

* Status

3:00 - 3:30, Status Report - Questions/Answers - N. Werdel/A. Tortoso/G. Eidam

Attachment #4

Action Item Status List
Unit Manager's Meeting: 200 Aggregate Area/200 Area Operable Units
April 20, 1995

ITEM NO.	ACTION	STATUS

No open action items.

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UNIT MANAGERS MEETING

200-BP-5 OPERABLE UNIT

D. B. ERB

April 20, 1995

PL513 - CHARACTERIZATION

* DATA VALIDATION FOR OCT, 1994 EVENT - FINAL REPORT RECEIVED MID-MARCH. NO CHANGES FROM PREVIOUS EVENT - Tc-99 HIGH STILL LOCATED AROUND WELLS 50-53A, 52-54 AND 55-57.

* APRIL, 1995 MONITORING EVENT STARTS THIS WEEK & INCLUDES SEVERAL UNSAMPLED WELLS AT B-5 SITE.

* A RISK BASED DECISIONAL ANALYSIS WAS STARTED. REPORT DUE ON APRIL 24.

PL515 - TREATMENT

GENERAL

* TREATABILITY TEST REPORT DUE DATE IN FLUX. NOW SCHEDULED FOR MAY 10. CHANGE REQUEST BEING DEVELOPED TO PUSH OUT TO TEST REPORT DUE DATE TO MID-AUGUST. THIS WILL PERMIT GETTING ALL TEST DATA RETURNED AND FACTORED IN TO TEST REPORT.

PL515 - TREATMENT

216-BY SYSTEM

* SINCE RESUMING OPERATIONS ON 1/18, OVER 270,000 GALLONS HAVE BEEN TREATED.

* TOTAL TREATMENT TO DATE GREATER THAN 290,000 GALLONS.

* Tc-99 INFLUENT CONCENTRATION HAS RANGED BETWEEN 8,800-11,400 Pci/L. BACKGROUND BEFORE TEST WAS ~2000 Pci/L (10/94). TREATMENT REMOVES Tc-99 TO LEVELS OF 80-160 Pci/L.

* Co-60 INFLUENT CONCENTRATION HAS INCREASED FROM 60 Pci/L TO NOW AT 140-180 Pci/L. TREATMENT SYSTEM REMOVES IT TO LESS THAN DETECTION LEVELS OF 37 Pci/L.

* MINI-COLUMN TEST PLAN WAS APPROVED AND TEST WAS STARTED ON MARCH 9. TWO TESTS DUPLICATE CURRENT SYSTEM RESIDENCE TIMES OF ~5 MIN/COLUMN. MORE THAN 3000 BED VOLUMES TESTED TO DATE; NO INDICATIONS OF BREAKTHROUGH YET.

* WELL EXTRACTION RATES DECLINED. DRAWDOWN OR BIOFOULING OF WELL SYSTEM SUSPECTED. WELL EXAM SHOWED VERY LITTLE BIOFOULING AND SOME INORGANIC PRECIP. ON PUMP. WELL AND PUMP CLEANED AND PUMPING RESUMED AT 3.0-3.3 GPM.

216-B-5 REVERSE WELL SYSTEM

* SINCE RESUMING OPERATIONS ON 1/17, HAVE PROCESSED ALMOST 630,000 GALLONS

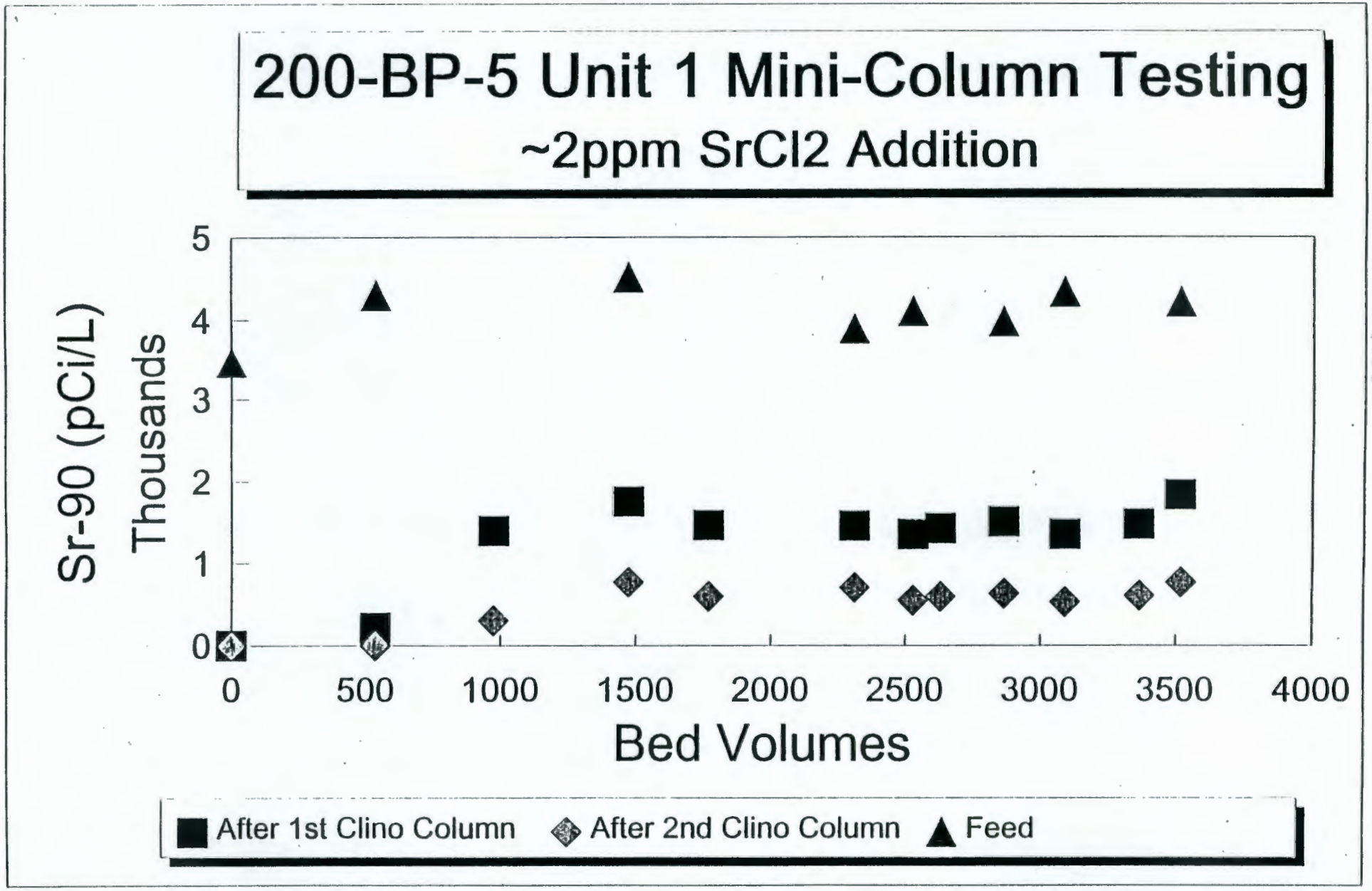
* TOTAL PRODUCTION TO DATE IS ~650,000 GALLONS.

* NO Pu-239/240 BREAKTHROUGH ON BONE CHAR & NO Cs-137 BREAKTHROUGH ON CLINO.

* CLINO RESIN CHANGEOUT PERFORMED IN LATE MARCH AFTER 3950 BV. NEW CLINO ADDED IN 2nd AND 3rd COLUMNS. KEPT OLD BONE CHAR IN FIRST COLUMN. FINAL SYSTEM EFFICIENCY AT ~ 70% FOR Sr-90 FOR LAST 2000 BV.

* SYSTEM NOW RUNNING AT 15 GPM WHICH YIELDS A TOTAL RESIDENCE TIME OF 16 MIN.

data



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* Sr-90, Cs-137, AND Pu-239/240 INFLUENT CONCENTRATIONS ARE ~ 4,600 pCi/L, 1,410 pCi/L AND ~16 pCi/L, PER 4/11/95 ANALYSIS.

* TREATED EFFLUENT LEVELS FOR Sr-90, Cs-137 & Pu-239/240 ARE 48.6 pCi/L, < DETECT, AND < DETECT, PER 4/11/95 ANALYSIS, @ 94 BED VOLUMES.

* BATCH EQUILIBRIUM TESTS PERFORMED AND INDICATED SUCCESSFUL Sr-90 REMOVAL WITH A SYNTHETIC ZEOLITE, UOP-A51.

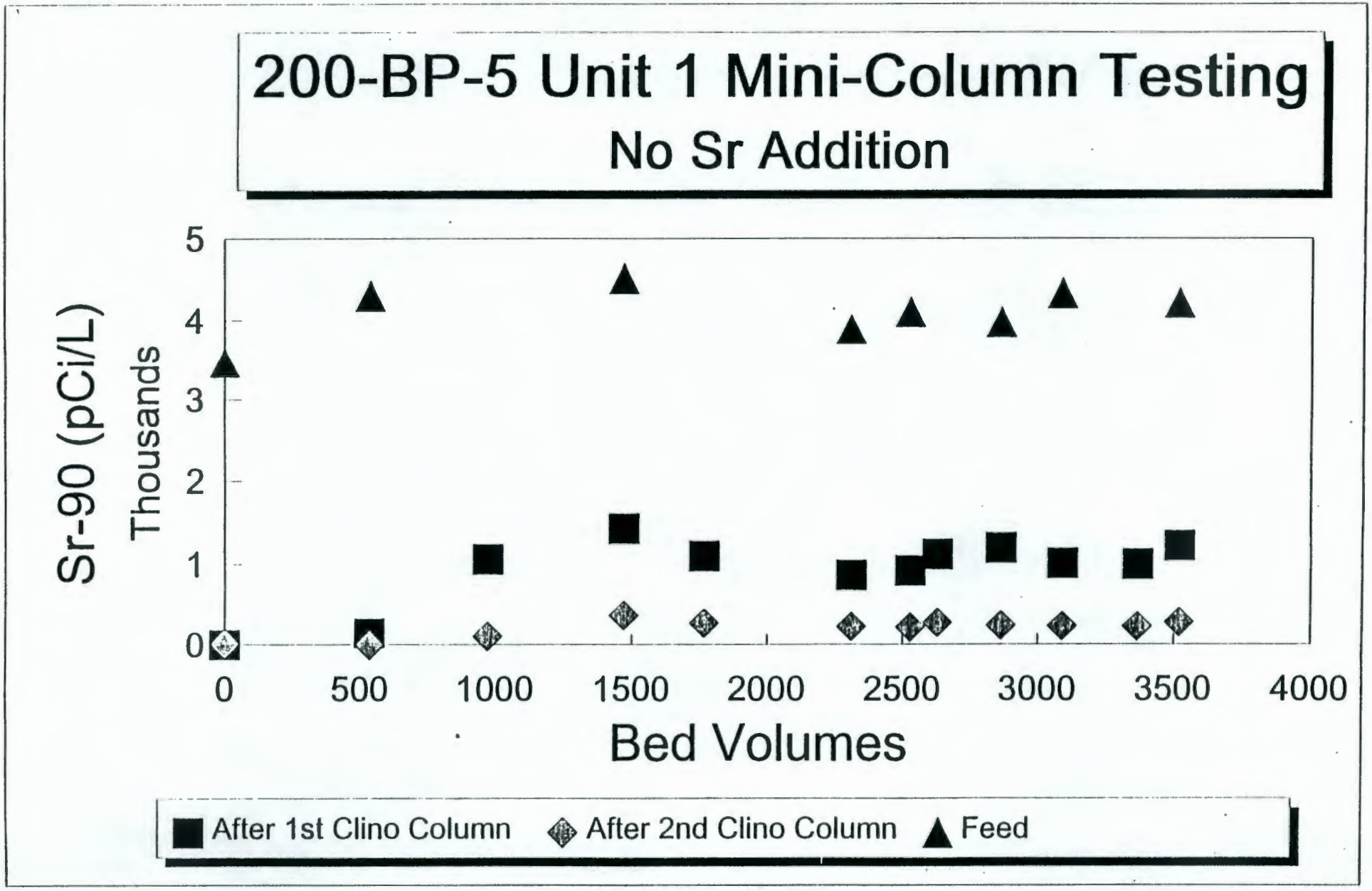
* FIRST SET OF MINI-COLUMN TESTS COMPLETED 3/17 AT ~3,500 BV. Sr-90 BREAKTHROUGH NOTED AT ~ 500 BV ON 2 TESTS. SYSTEMS REMOVED ~ 80% AND 95%.

* 2nd SET OF MINI-COLUMN TESTS ARE RUNNING.

  - CONTINUE ONE TEST FOR Cs-137 BREAKTHROUGH AND Sr-90 LOADING CAPACITY.

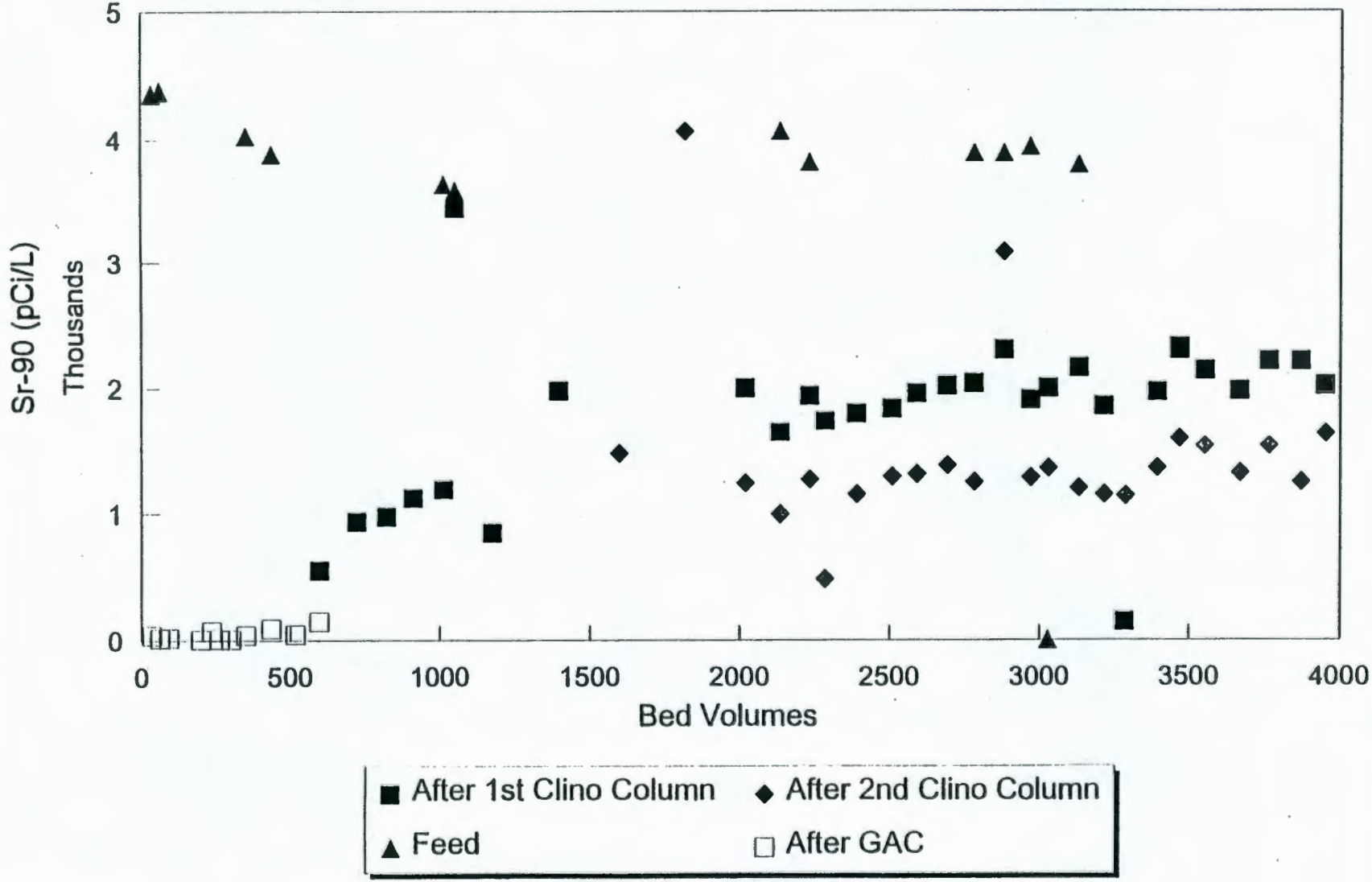
  - RUN ONE TEST WITH BONE CHAR, CLINO, CLINO FOR 12 min/col RESIDENCE TIME, FOR Sr-90 REMOVAL.

  - RUN ONE TEST WITH BONE CHAR, CLINO AND UOP-A51 SYNTHETIC ZEOLITE, FOR Sr-90 REMOVAL.


200-BP-5 Unit 1 Mini-Column Testing
No Sr Addition
Sr-90 (pCi/L)
Thousands
5
4
3
2
1
0
0
500
1000
1500
2000
2500
3000
3500
4000
Bed Volumes
After 1st Clino Column
After 2nd Clino Column
Feed

200-BP-5 Unit 1

Sr-90 Effluent vs Bed Volumes Processed



GAC data only effluent points until 595 bed volumes.

PL526 - REMEDIATION

216-B-5 REVERSE WELL PLUME

* FEB 6-10, 1995 TRACER TEST SHOWED RECIRCULATION CELL WAS ESTABLISHED AFTER 40-45 HRS. CONCENTRATION vs TIME CURVE USED TO CALCULATE DISPERSION AND EFFECTIVE POROSITY OF AQUIFER.

* A 2nd TRACER TEST USING DOWNGRADIENT WELL 299-E28-25 WILL BE RUN DURING LAST WEEK OF TEST, IN mid-MAY. TEST WILL CONFIRM HYDROLOGIC PROPERTIES FROM FIRST TEST. TEST WILL BE RUN A 25 GPM.

216-BY CRIBS PLUME

* WELL EVALUATIONS

  - AQUIFER PRODUCTIVITY TEST WITH CONCURRENT SAMPLING CONDUCTED ON 3/1 FOR 699-55-57. WELL PRODUCED 2-3 GPM. WELL WATER CONTAINED ~2000 pCi/L Tc-99 AND 31 pCi/L FOR Co-60.

  - WELL 699-55-60A CO-SAMPLED ON 3/2 WITH WHC AND PNL FOR SEPARATE ANALYSES. Tc-99 CONCENTRATION AT 26 pCi/L.

216-BY CRIBS PLUME

* IN SITU FLOW VELOCITY/DIRECTION TEST. TESTING TO BE CONDUCTED AT BOTH B-5 AND BY PLUMES IN APPROPRIATE WELLS. WORK TO START BY END OF APRIL. DATA WILL INDICATE VELOCITY AND DIRECTION OF GW FLOW AT VARIOUS WELLS AND LEVELS WITHIN AQUIFER.

April 20, 1995 Unit Managers Meeting
Project Status of the 200-ZP-2 Operable Unit

ERA STATUS

- Current Status of Vapor Extraction Operations
  - FY95 year-to-date vapor extraction totals as of April 11, 1995
  - Weekly data summary for the week ending April 12, 1995

- Wellfield Expansion
  - As of April 12, 18 of the 21 wells planned for jet perforation were completed. Airflow characterization tests performed on perfed wells indicate significant increases in extraction flowrates.
  - Low levels of radioactive contamination were discovered at well W15-8 at Z-9 and W18-175 at Z-1A.
  - Work remaining includes perforating wells W18-150 , -163, and -175 in the Z-1A crib.
  - Newly perfed wells are scheduled to be brought on-line by June 1, 1995, following packer and wellhead extraction assembly installations.

ERA STATUS (continued)

- **Secondary Containment Upgrades**
  - Fieldwork to install secondary containment for water condensate knock-out tanks on the vapor extraction systems is scheduled to begin during the first week of May.

- **WSU Vapor Extraction Efficiency Study**
  - Contract awarded April 3 with WSU to conduct vapor extraction efficiency study
  - Study objectives are twofold:
    - ▸ develop partitioning coefficients (soil/soil vapor) for carbon tetrachloride
    - ▸ develop data on the effect of soil vapor extraction on carbon tetrachloride extraction efficiency

April 20, 1995 Unit Managers Meeting
Project Status of the 200-ZP-2 Operable Unit

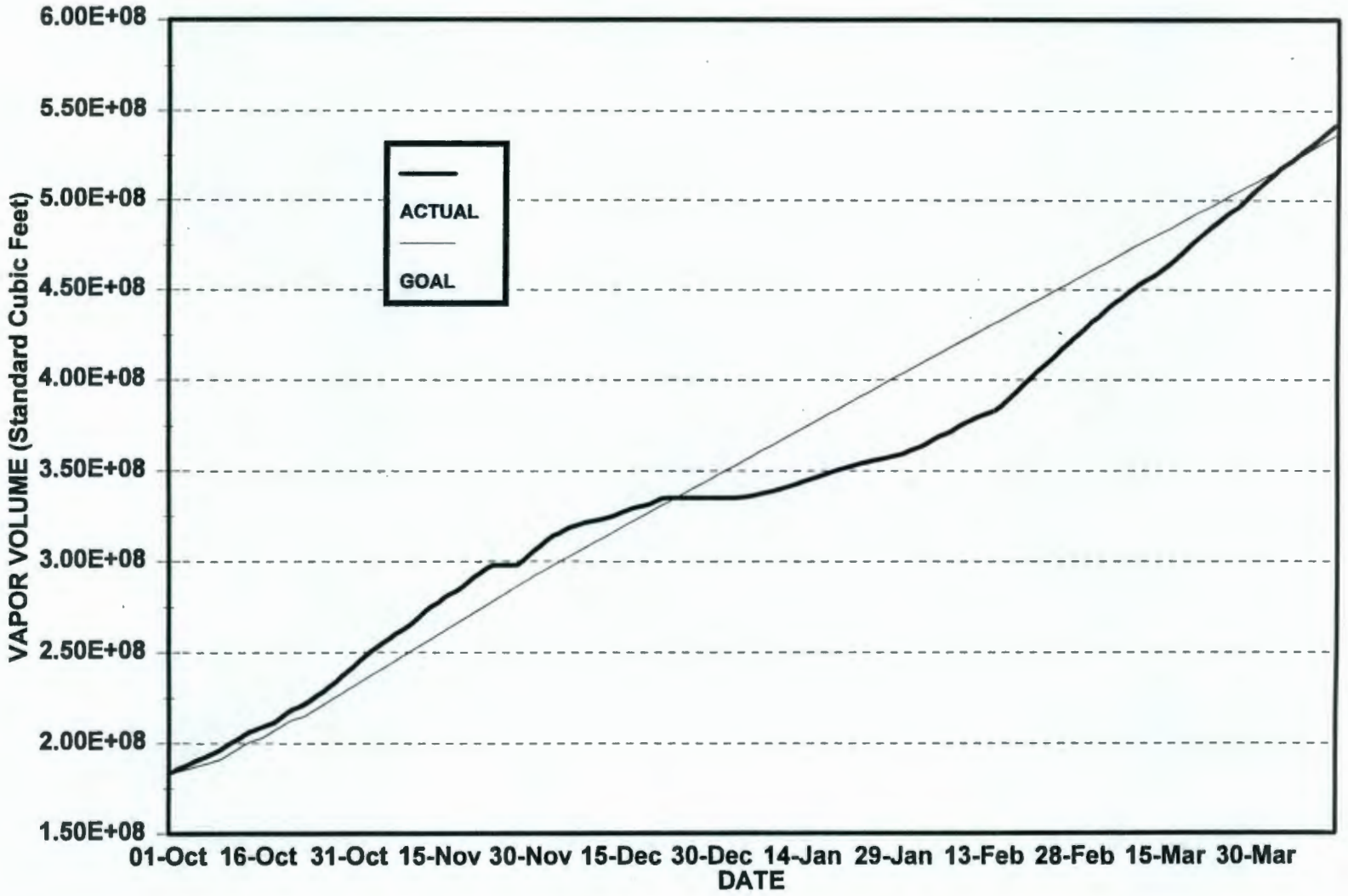
Purus Technology Demonstration Status

- Current Status of Operations
  - System shut-down on March 15 due to hydrochloric acid generation.
  - Primary condenser repaired and acid scrubber installed week of March 20
  - System returned to operation on April 3, following revision to the test plan and waste control plan

200-ZP-2 ERA
WEEKLY CCL4 EXTRACTION SUMMARY

Operational Period	VES System (cfm)	Avg. Flow (scfm)	Avg. Conc. (ppmv)	Time (hrs)	System Availability (percent)	CCl_4 Extracted kg/ (lbs)	1995 YTD Total kg/(lbs)	1994 Total kg/ (lbs)	1993 Total kg/ (lbs)	1992 Total kg/ (lbs)	Grand Total as of: 4/12/95
4/6 - 4/12 1995	Z-18 500	487	66	168	100%	58 (127)	Z-1A/18 2,136 (4,699)	Z-1A/18 8,757 (19,266)	Z-1A/18 2,541 (5,590)	Z-1A/18 959 (2,111)	Z-1A/18 14,394 (31,666)
	Z-1A 1000	664	91	165	99%	106 (232)					
	Z-9 1500	1,288	130	126	75%	221 (487)	Z-9 4,604 (10,129)	Z-9 35,029 (77,065)	Z-9 1,065 (2,342)	Z-9 –	Z-9 40,698 (89,536)
					Weekly Total =>	384 (846)				Project Total =>	54,707 (121,202)

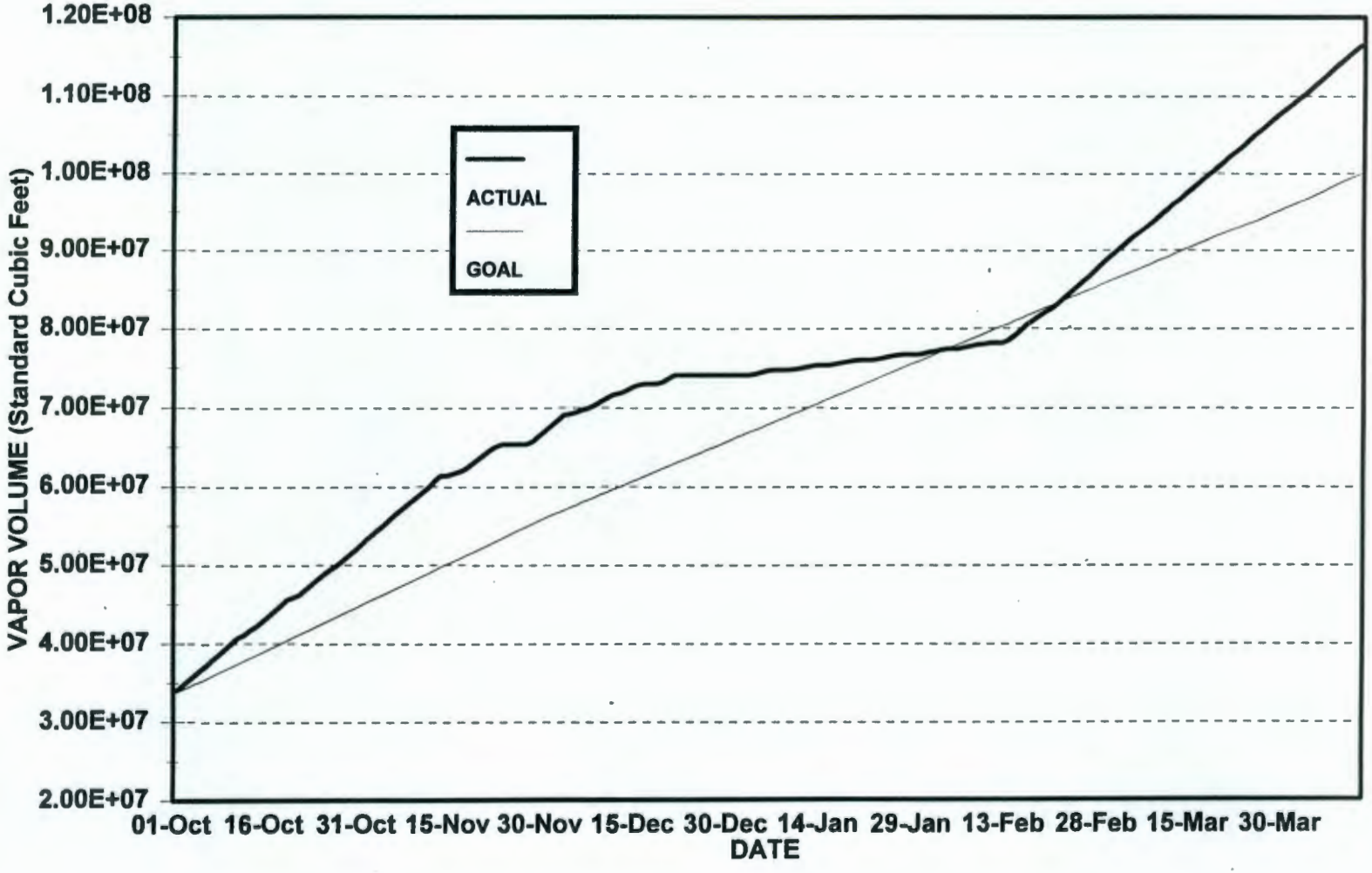
CARBON TETRACHLORIDE ERA
TOTAL VAPOR PROCESSED
October 1, 1994 - April 11, 1995



500 CFM VAPOR EXTRACTION SYSTEM

TOTAL VAPOR PROCESSED

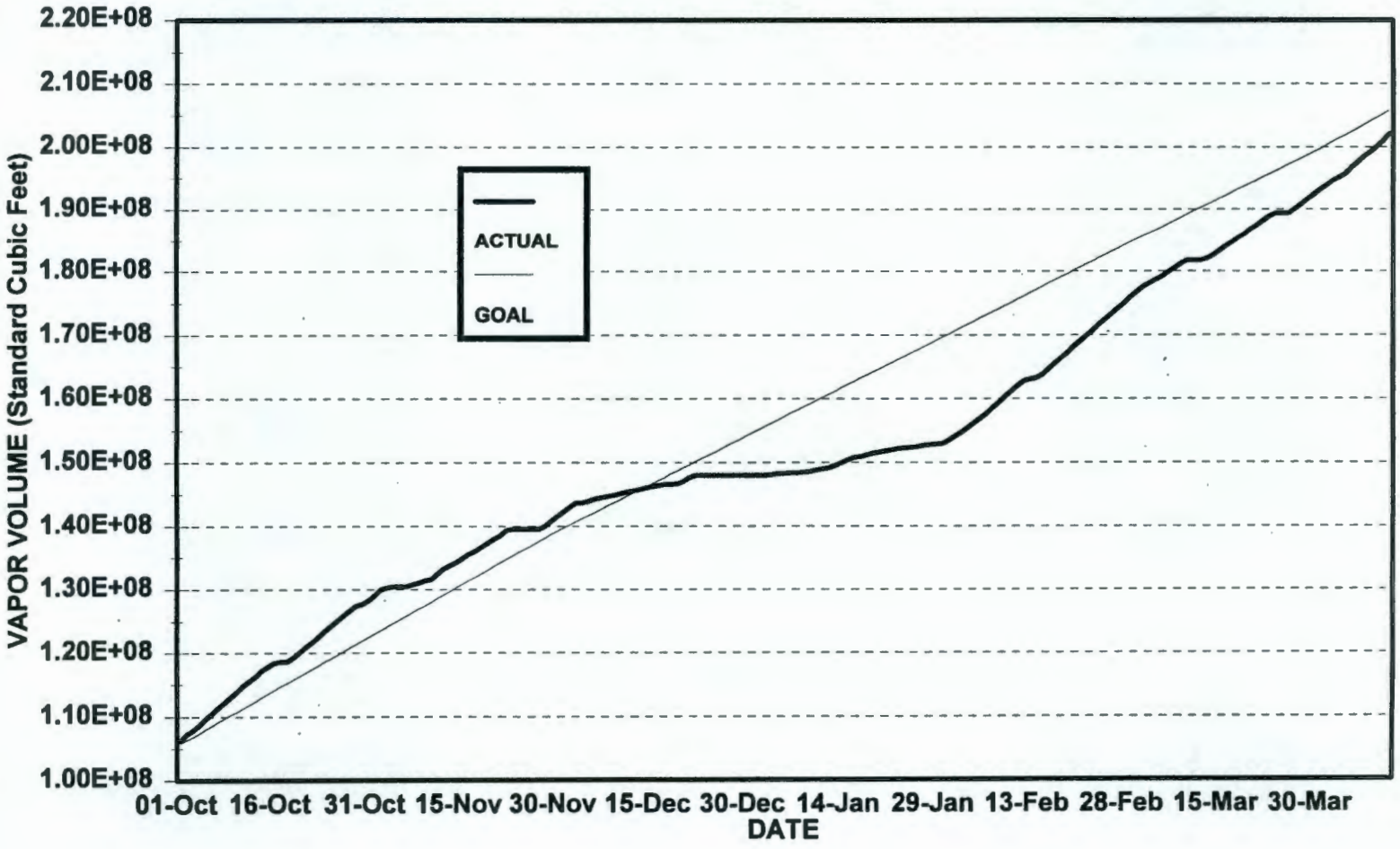
October 1, 1994 - April 11, 1995



1000 CFM VAPOR EXTRACTION SYSTEM

TOTAL VAPOR PROCESSED

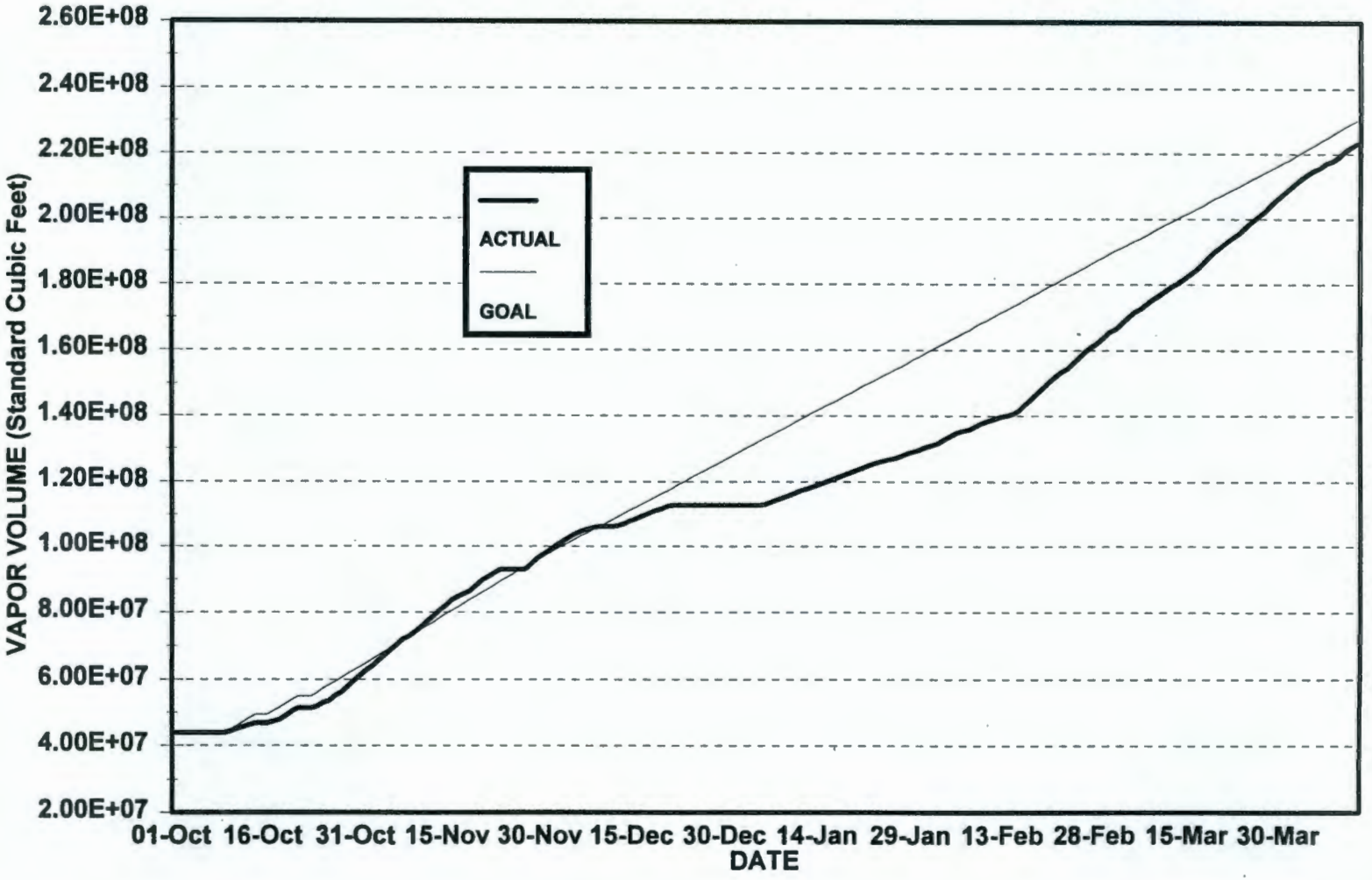
October 1, 1994 - April 11, 1995



1500 CFM VAPOR EXTRACTION SYSTEM

TOTAL VAPOR PROCESSED

October 1, 1994 - April 11, 1995



WASTE CONTROL PLAN

Page 1 of 2

Work Scope Description: Technology Demonstration of Purus Unit - 200-ZP-2 Operable Unit (See Attachment 1 for specific wastes addressed by this Waste Control Plan)

List Constitutents of Concern: Chlorinated Hydrocarbons: primarily Carbon Tetrachloride (CCl_4); Chloroform and VOCs; Isopropanol will be used for decontamination, HCl, and NaOH.

Site Description: Z-9 Crib CCl_4 Vapor Extraction System Site, 200-ZP-2 Operable Unit, 200 West Area, Hanford Site, Richland, WA

Reference: BHI-00182 Rev: 0 Date Approved: 3/1/95

Preparer/ Project/RI Coordinator (Print/Sign Name)	Date	Safety Class	Impact Level
S.A. Driggers/			

Field Team Leader/ Cognizant Engineer: R.K. Tranbarger IDW Coordinator: G.G. Hopkins

Planned Drilling Start and Finish Dates: From: March 6, 1995 To: Sept. 30, 1995

Waste Storage Facility ID Number(s): N/A

Field Screening Methods

Method	Frequency	Reference	Detection Range	Analyst
Photo-Acoustical IR Spec:	Variable	B&K Procedure	0-1000,000 ppm	
pH		EIP 4.1	0-14	

Laboratory Methods (constituents of concern)

Method	Frequency	Reference	Detection Limits	Contract Lab
Refer to attached sampling plan BHI-00182, Rev. 1 (Ref 3-28-95), Appendix A				

APPROVALS (Print/Sign Name and Date)

G.G. Hopkins/ Robt Tranbarger for G.G. Hopkins per telecon 3/28/95 — IDW Coordinator

S.A. Driggers/ 3/24/95 — Project/RI Coordinator

C. St. John/ 3/29/95 — Safety Function (if required)

R.K. Tranbarger/ Robt Tranbarger 3/28/95 — Field Team Leader/Cognizant Engineer

S.O. DeLeón 3/29/95 — Quality Assurance (if required)

WASTE CONTROL PLAN

Drill Site Coordinate Location Z-9 Crib CCl_4 Vapor Extraction System Site, 200 West Area

Waste Container Storage Area(s) Coordinate Location(s) H135350, E566550 (200-ZP-2 Centralized Waste Container Storage Area)

Requirements for Soil Pile Sampling (if any) N/A

Nonregulated Material Disposal Location(s) Nonregulated materials will be dispositioned to the Hanford Site Central Landfill

SKETCH OF WORK SITE

Refer to 200-ZP-2 Test Plan, BHI-00182 (Figure 3)

APPROVALS (Print/Sign Name and Date)

D.A. Faulk
Lead Regulatory Agency Representative

for B.L. Foley 3/30/95
DOE-RL

for J.G. Zoghbi 3/29/95
Project/RI Coordinator

WASTE CONTROL PLAN - PURUS RESIN BEAD VAPOR-PHASE SEPARATION TECHNOLOGY DEMONSTRATION

BACKGROUND

Currently, a vapor extraction system (VES) is operating at the 216-Z-9 Trench site which is located within the 200-ZP-2 Operable Unit (OU). Granular Activated Carbon (GAC) vessels are attached to the VES to extract volatile organic compounds, specifically carbon tetrachloride, from the vapor stream. A Purus resin bead vapor-phase separation system will be temporarily (about 3 months) installed and operated at the 216-Z-9 Trench site to replace part of the GAC vessels. After completion of the Purus system technology demonstration, an evaluation will be performed to compare the VOC separation efficiency, reliability, and cost effectiveness of the Purus system against the GAC treatment system.

An approved Waste Control Plan (WCP) currently exists for the 200-ZP-2 OU (and 216-Z-9 Trench site). This supplement to the 200-ZP-2 OU Waste Control Plan is to support the Purus system technology demonstration at the 216-Z-9 Trench Vapor Extraction Site. The vapor-extracted condensate collected by the water knock-out tanks at the 200-ZP-2 OU is transferred to the 200-ZP-1 OU for treatment/disposal per an approved National Priorities List (NPL) Agreement/Change Control Form maintained at the 200-ZP-1 OU.

An evaluation of the Purus system operation indicates that potential hazardous constituents are the same as those currently encountered at the 200-ZP-2 Operable Unit, with the addition of sodium hydroxide (NaOH) and hydrochloric acid (HCl). As discussed below, the concentrated organic-phase and aqueous-phase condensate waste and acid scrubber liquid waste produced by the Purus system will be dispositioned separately from the GAC currently used at the 200-ZP-2 OU.

WASTE STREAMS

Contaminants generated from the Purus technology demonstration, the 200-ZP-1 OU, and the 200-ZP-2 OU are the same, except the Purus system will use sodium hydroxide in the acid scrubber to neutralize potential HCl generation during the desorption process. Otherwise, carbon tetrachloride will predominate the waste streams along with trace amounts of other VOCs. The potential contaminates of concern are addressed in the Purus Sampling and Analysis Plan (BHI-00182, Rev. 1, Appendix A). Following are descriptions of anticipated Purus system waste streams:

1. Aqueous-Phase Condensate Waste. The volume is anticipated to be between 600 and 1,500 liters. This material may be treated with other 200-ZP-2 condensates under the 200-ZP-2 NPL Change Form at 200-ZP-1. If the liquid condensate is not processed

through the 200-ZP-1 GACs, it will either be dispositioned off-site for disposal as hazardous waste or remain in storage at the 200-ZP-1/ZP-2 Centralized Waste Container Storage Area with CERCLA waste pending future dispositioning.

2. Organic-Phase (Carbon Tetrachloride) Condensate Waste. The volume is anticipated to be between 600 and 1,500 liters. The estimated three to eight drums (55-gallon size) will be dispositioned off-site as hazardous waste.

3. Granular Activated Carbon. The GAC column (two 2000 lb. drums) used for polishing the Purus system effluent vapor stream will eventually be recycled with other GAC from 200-ZP-2. The 400 lb. GAC drum used for pressure relief of the Purus system condensate tank will also be recycled with other GAC from 200-ZP-2. If an evaluation of the effluent-vapor-stream analyses indicate that the GAC is not saturated with VOCs, the GAC may be reused prior to recycling.

4. Polymeric Resin Beads. The Purus process and design provides for on-site thermal regeneration of both treatment cells. Dependent upon success of the regeneration/decontamination efforts, the beads will either be dispositioned off-site for reuse (returned to Purus), disposed off-site as a hazardous waste, or stored with other 200-ZP-2 CERCLA waste for future dispositioning.

5. Acid Scrubber Liquid Waste. An acid scrubber is attached to the Purus system to neutralize HCl in the vapor stream after desorption of the VOCs. The acid scrubber utilizes a 10% sodium hydroxide solution to neutralize the potential HCl generation. The product of the acid scrubber will consist of aqueous Na^+, OH^-, H^+, Cl^-, and trace amonts of VOCs (mainly CCl_4). The product will be maintained at a pH of greater than or equal to 3. The anticipated waste volume resulting from the acid scrubber is less than 55 gallons. The acid scrubber waste will be sampled and analyzed for waste designation purposes and dispositioned accordingly.

6. Decontamination Materials.

   A. Flushing water will be managed as detailed in Item #1 above.

   B. Approximately 40 liters of isopropanol-water mixture will be used for decontamination. This will be combined with liquid CCl4 (Item #2 above) and dispositioned off-site as hazardous waste.

   C. Soapy water volumes will be minimized. The soap utilized will be nonhazardous. Soapy decontamination water will be incorporated with other fluids (Item #2 above) for off-site disposal as hazardous waste.

   D. Solid decontamination waste, such as wipe rags and some personal protective equipment (gloves), will be accumulated with 200-ZP-2 solid contaminated waste.

WASTE MINIMIZATION

Following are potential or planned activities to reduce volumes and/or toxicity of waste streams generated during the Purus technology demonstration.

1. Aqueous-Phase Condensate Waste Treatment. An estimated six hundred to fifteen hundred liters (about three to eight 55-gal canisters) of waste water may be generated during the Purus technology demonstration. This aqueous phase liquid will be sampled and analyzed as discussed in the Appendix A of the Purus Test Plan (BHI-00182, Rev. 1). An engineering evaluation will be performed to determine the feasibility of treating the aqueous phase on-site (e.g., 200-ZP-1 OU pump and treat) based on the analytical results. Other factors to be considered in the evaluation include the effectiveness of separating the organic and aqueous phases and cost effectiveness.

2. Purus System Protection - pH control. Aqueous-phase condensate wastes will be analyzed for hydrochloric acid (pH and chloride ion) as discussed in the Purus test plan (BHI-00182, Rev. 1). HCl will be removed from the effluent vapor stream using a 10% solution of NaOH. The elimination of HCl in the effluent vapor stream will reduce internal corrosion of the Purus system thus maximizing the life of the internal components (compressors, resin beds, piping, etc.).

3. Granular Activated Carbon. The GAC will be recycled by regeneration with other 200-ZP-2 GAC. However, the potential on-site reuse will be evaluated prior to recycling the GAC.

4. Purus Resin Beads. The Purus test plan (BHI-00182), process, and design, support on-site thermal regeneration of the resin beads within the adsorption/ desorption chambers of the Purus system. Dependent on the effectiveness of regeneration, final disposition of resin beads will be either off-site (returned to Purus) or on-site.

5. Decontamination solids, containers, and reusable personnel protective equipment (PPE). These materials will be decontaminated with soapy water and reused or disposed as non-hazardous waste.

RESPONSIBILITIES

1. The Purus system will operate under the direction of Environmental Remediation Contractor (ERC) Field Services. The following waste management controls will be performed:

   A. Draining the condensate collection tank, which will include separating the aqueous and organic phases

   B. transport GAC for recycling

   C. containerize resin beads for on- and/or off-site disposal, if necessary.

   D. decontamination of miscellaneous equipment and reusable PPE

   E. pH monitoring and control of aqueous phase waste

   F. accumulate waste at 200-ZP-2

   G. decontamination/decommissioning of Purus system according to ERC approved Purus procedure.

2. ERC personnel or 200 Area Projects will implement the Sampling and Analysis Plan requirements set forth in the Purus test plan (BHI-00182, Appendix A).

3. ERC Field Services will arrange for waste transfers to Westinghouse (WHC) and will ensure compliance with WHC-EP-0063-4, including the transfer of carbon tetrachloride concentrates for off-site treatment.

4. WHC personnel will receive waste for on- and/or off-site disposal. Analytical records will be provided to WHC to verify waste designations.

MANAGEMENT PROCESSES

The CERCLA waste will be managed in accordance with CERCLA requirements. BHI-FS-01, Section 4.1 will be used for shipping CCl_4. Non-hazardous waste will be managed according to BHI-FS-01, Section 4.5.

020654

Unit Manager's Meeting: 200-ZP-1 Operable Unit
April 20, 1995

1. PILOT SCALE TREATABILITY TEST

- Status - Extracted 1,800,271 gallons
  Treated 1,797,301 gallons
  Injected 1,783,794 gallons

  NOTE: 200-ZP-2 Condensate 7,775 gallons

2. TECHNOLOGY DEMONSTRATION - BIOREMEDIATION

- Status - On Hold - Due to Lack of Funding

3. IRM IMPLEMENTATION - WELL DRILLING

- Status - Drilling of the injection well commenced on April 11, 1995.

  Change: Depth revised from ~250ft to ~290ft

4. GROUNDWATER MONITORING

- Status - Sampling was completed on April 6, 1995.

5. OTHER ACTIVITIES

- Treatability Test Report

  The 200-ZP-1 treatability test report (DOE/RL-95-30) was submittal to DOE for review on April 19, 1995.

- 200-ZP-1 NPL Agreement Forms

- 200-ZP-1 IRM Implementation and DNAPL Waste Control Plans

WASTE CONTROL PLAN

Page 1 of ____

Work Scope Description 200-ZP-1 Interim Remedial Measure Groundwater Pump & Treat System Well Installations (See Attachment 1 for waste streams covered by this plan).

List Constitutents of Concern Carbon Tetrachloride, Trichloroethylene (TCE), Chloroform

Site Description 200-ZP-1 Groundwater Operable Unit, 200 West Area, Hanford Site, Richland, WA Extraction Wells 299-W15-29 and 299-W15-30. Injection Well 299-W15-31. (See Attachment 2)

Reference BHI-00155 Rev 00 Date Approved 3/8/95

Preparer/ Project/RI Coordinator J.R. Freeman-Pollard/M.E. Darrach (Print/Sign Name) Date ____ Safety Class ____ Impact Level ____

Field Team Leader/ Cognizant Engineer M. E. Darrach IDW Coordinator G. G. Hopkins

Planned Drilling Start and Finish Dates: From April, 1995 To: June, 1995

Waste Storage Facility ID Number(s) N/A

Field Screening Methods

Method	Frequency	Reference	Detection Range	Analyst
PID(11.7eV lamp)	See Attachment 1		0-1000 ppm	SSO/Geologist
GM	See Attachment 1	IP-0718	0-100,000 ppm	RCT
PAM	See Attachment 1	IP-0718	0-100,000 ppm	RCT

Laboratory Methods (constituents of concern)

Method	Frequency	Reference	Detection Limits	Contract Lab
Vadose Zone See Attachment 1				
Groundwater Perched water	See Attachment 3	(BHI-00155, Sections 6.2, 6.4, 6.5 and 7.0)		

APPROVALS (Print/Sign Name and Date)

G. G. Hopkins/ G.G. Hopkins 3/22/95 IDW Coordinator

J.R. Freeman-Pollard/ J.R. Freeman-Pollard 3/22/95 Project/RI Coordinator

Cliff St. John/ Per Telecon J.R. Freeman-Pollard 3/22/95 Safety Function (if required)

M.E. Darrach/ Mark Darrach 3/22/95 Field Team Leader/Cognizant Engineer

Quality Assurance (if required)

A-6000-903 (04/92)

WASTE CONTROL PLAN

Drill Site Coordinate Location: See Attachment 2 (Wells 299-W15-29, 30 and 31)

Waste Container Storage Area(s) Coordinate Location(s): N135350, E566550 (See CWCSA, Attachment 2)

Requirements for Soil Pile Sampling (If any): N/A

Nonregulated Material Disposal Location(s): Nonregulated materials will be disposed at the Hanford Site Control Landfill.

SKETCH OF WORK SITE

See Attachment 2

APPROVALS (Print/Sign Name and Date)

Dennis Faulk/ 33095
Lead Regulatory Agency Representative

Donna Wanek/ Donna Wanek 3/27/95 for J. G. Zoghbi 3/24/95
DOE-RL Project/RI Coordinator

ATTACHMENT 1

200-ZP-1 IRM GROUNDWATER PUMP-and-TREAT SYSTEM WELL INSTALLATIONS - WASTE CONTROL PLAN

In support of the 200-ZP-1 Interim Remedial Measure (IRM) groundwater pump-and-treat system two extraction wells and one injection well will be drilled in the 200-ZP-1 Groundwater Operable Unit (OU) of the Hanford Site's 200 West Area. Well installations will provide both groundwater characterization data as well as a mechanism for future pump-and-treat remediation efforts. The contaminants of concern, relative to the IRM, include carbon tetrachloride (CCl4), chloroform, and trichloroethylene (TCE). The source of these groundwater contaminants are the 216-Z-9 Trench, 216-Z-1A Tile Field, and the 216-Z-18 Crib of the 200-ZP-2 Operable Unit. The waste generated as a result of the well installations will be managed per this Waste Control Plan (WCP).

Waste streams that will be potentially generated as a result of the well installations include vadose zone drill cuttings, groundwater slurries, perched water slurries, purgewater, decontamination fluids, and miscellaneous decontamination trash (wipes, plastic, disposable ppe, etc.). Specific waste streams will be managed as follows:

* VADOSE ZONE DRILL CUTTINGS - although the target of these well installations is to access the 200-ZP-1 Groundwater OU, the proximity of the wells to the 200-ZP-2 OU vadose zone contaminant sources render the vadose zone drill cuttings potentially hazardous. If, considered necessary, vadose zone drill cuttings will be contained in steel drums or metal burial boxes with a 10 mil plastic liner. The drums may be staged at the drill site prior to transport to the 200-ZP-1/ZP-2 Central Waste Container Storage Area (CWCSA). Encounters with radioactive contaminants are not expected. However, vadose zone soil samples will be collected at 5 foot intervals and surveyed by the radiological control technician (RCT) a minimum of once each day to confirm the absence of radioactivity. Vadose zone soils will also be surveyed at 5 foot intervals by the field geologist for carbon tetrachloride. The results of the survey with a PID (11.7 eV lamp) will be recorded and used in combination with process knowledge (proximal vadose zone well analytical data) and radiological field screening to disposition the vadose zone soils. Contained vadose zone soils will eventually be dispositioned with similar 200-ZP-2 soils.

* SLURRIES - groundwater slurries and perched water slurries will be contained in steel drums with a 10 mil plastic liner. A representative sample of each slurry drum will be sent to 222-S lab to facilitate radiological release. All contained slurries will be overpacked in poly drums prior to storage at the 200-ZP-1/ZP-2 CWCSA. Sampling protocol for slurries will be as identified in ATTACHMENT 3 of this WCP. Contained slurries will be dispositioned along with similar slurry waste.

* PURGEWATER - purgewater will be managed in accordance with BHI-EE-01, Environmental Investigations Procedures, EIP 1.11, "Purgewater Management".

ATTACHMENT 1 (con't)

*DECONTAMINATION of REUSABLE EQUIPMENT - decontamination of reusable equipment will be accomplished in accordance with BHI-EE-01, Section 6.2, "Field Cleaning and\or Decontamination of Drilling Equipment." A mobile, enclosed unit utilizing filters and resin beds may be used to decontaminate reusable equipment. Successful decontamination of reusable tools and equipment generally requires visual verification that surfaces are free of visible contamination. However, the surfaces of some equipment cannot be completely inspected (e.g., inside small diameter pipes, inside of pumps). For equipment with hidden surfaces that have directly contacted groundwater containing hazardous constituents, the equipment will be considered successfully decontaminated if hidden surfaces are triple-rinsed or steam/pressure cleaned.

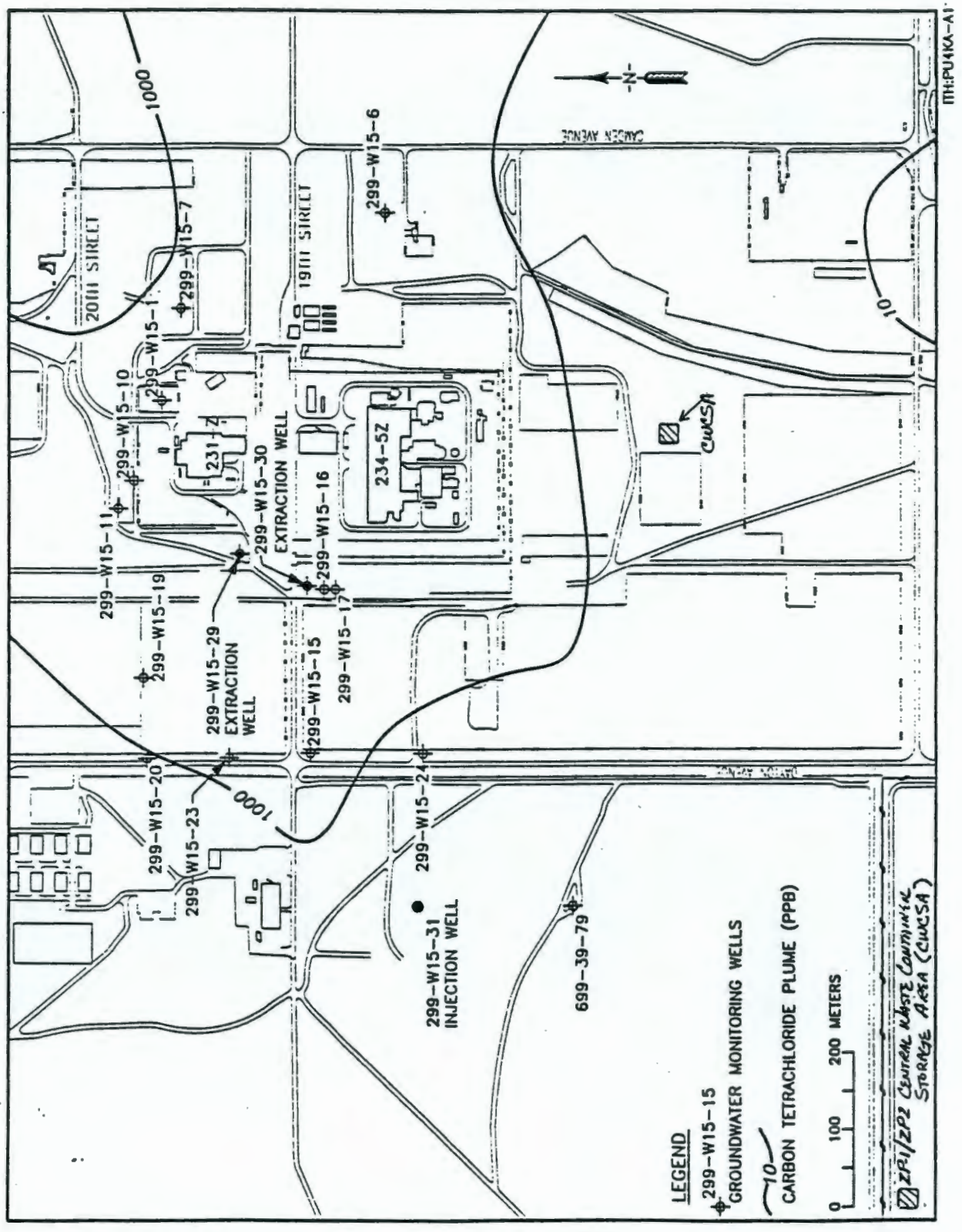
* DECONTAMINATION FLUIDS - Decontamination fluids used to decontaminate tools and equipment that have directly contacted groundwater containing F-Listed constituents will be contained and managed as potentially F-listed hazardous waste. Decontamination fluids will be contained in steel drums, overpacked with poly drums, and sampled for the constituents of concern and radiological release. Decontamination fluids will be stored at the 200-ZP-1/ZP-2 CWCSA pending receipt of sample analytical results and final dispositioning.

* MISCELLANEOUS TRASH - miscellaneous trash that has intimately contacted groundwater containing F-listed constituents, such as wipes or rags used for downhole drill tool decontamination, will be contained in borehole specific steel drums and managed as potentially hazardous waste. Miscellaneous trash will be dispositioned using the waste designation of the contaminated media contacted.

The contained waste will be packaged, marked, labeled, and tracked in accordance with the BHI Field Support Procedure (FS) 4.14. If FS-4.14 is not issued for use prior to initiation of the well installation activities, the applicable packaging, marking, labeling, and tracking guidance provided in the WHC-CM-7-7 manual, procedure EII 4.3, may be used until FS-4.14 is issued.

At the discretion of the project leads, alternative waste management methods, authorized under CERCLA regulations, may be substituted for any portion of the guidance provided in this WCP.

Figure 1. Locations of the Extraction and Injection Wells to Support 200-ZP-1 Pump-and-Treat Activities.



ATTACHMENT 2

6.2 GENERAL SAMPLING REQUIREMENTS

The characterization goals for this DOW are (1) determining vertical extent and distribution of carbon tetrachloride and chlorinated solvent co-contaminants in groundwater, and (2) obtaining representative physical samples from significant water-producing zones in order to facilitate optimal screen and gravel pack designs.

Table 1 lists analytical parameters of interest, holding times, and bottle and preservation requirements.

Table 1. Analytical Methods for Target Analytes.

Analyte	General Analytical Technique	Water Analysis Method	Container and Volume	Comments
CCl_4, CCl_3, C_2Cl_3	GC; GC/MS	SW846 method 8240	40-mL VOA vial with septum Gs* 3 x 40 mL, HCl to pH <2, cool 4 °C	GC technique pertains to mobile field laboratory trailer and GC/MS pertains to EAL. Store sample on ice.
Dissolved Oxygen	YSI Portable Probe/HACH Portable Spectrophotometer	HACH method 8316	NA	Spectrophotometer will be used only for low-range readings.
Eh	ORION Eh Probe	NA	NA	Will be measured at the wellhead.
pH	HACH field probe	NA	NA	
Redox Couples	HACH Spectrophotometer	HACH Procedures 8146, 8008, 8039, 8153	NA	Redox Couples

EAL = Environmental Analytical Laboratory
GC = gas chromatograph
GC/MS = gas chromatograph/mass spectrometer
Gs* = glass septum with zero headspace

6.3 PHYSICAL SOIL SAMPLES

Once the water table has been encountered (approximately 210 ft below ground surface) in the extraction and injection wells, sampling should be conducted so that representative geologic material is obtained. Samples for sieve analysis will be retrieved from the producing zone. These samples are the primary driver for the physical sampling program as they will directly dictate gravel pack and screen designs. The samples will be sieved (GEL-07 test) in the 300 Area geotechnical laboratory. Total activity splits will be collected for radiological analysis at the 222-S Laboratory. Chain of

custody of all samples will be maintained and documented in accordance with EIP 3.0, "Chain of Custody" (BHI 1994a).

6.4 GROUNDWATER SAMPLING

Groundwater samples will be obtained from all major water-producing zones as determined by the wellsite geologist. These samples will be obtained in accordance with EIP 4.1, "Groundwater Sampling" (BHI 1994a). If more than one water-producing zone is encountered, temporary telescoping screens will be installed and the casing backpulled to expose the screen to the formation. Then a submersible pump with supporting output volume control electronics will be utilized to develop the well to a permissible sampling nephelometric turbidity unit (NTU) value range. When acceptable turbidity levels are achieved, the volume control electronics will be utilized to produce the lowest output volume possible to facilitate sample collection and accurate volatile organic analyses.

The groundwater sampling at the extraction wells will focus on establishing the vertical extent of volatile organic compounds in order to optimize the placement of the well screens for plume remediation. Volatile organic analyses shall be conducted with gas chromatography equipment in a mobile laboratory operated by the Environmental Restoration Contractor. This will facilitate quick turnaround time. Splits of every other sample are to be shipped to an offsite laboratory for volatile organic analysis as an independent cross check of the onsite analysis. The high percentage of splits is justified as a function of low sample density. However, the number of splits is not expected to exceed two per borehole. The suite of information obtained from every onsite sample retrieved shall include the following information:

- Volatile organic analysis for carbon tetrachloride, chloroform, and TCE
- Dissolved oxygen
- Eh/pH
- Redox couples

6.5 PERCHED WATER SAMPLING

If encountered, a perched water sample will be collected per EIP 4.1, "Groundwater Sampling" (BHI 1994a), and will be analyzed for the data presented directly above in Section 6.4.

7.0 QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

Internal quality control samples shall be collected by the sampling scientist as outlined below. The sampling shall be documented in the sampling logbook per EIP 1.5, "Field Logbooks" (BHI 1994a).

- Field Duplicate Samples. A minimum of one duplicate for every other groundwater sample shall be collected. Duplicate samples shall be retrieved from the same sampling location using the same equipment and sampling technique and shall be placed in two sets of identically prepared

and preserved containers. All field duplicates shall be analyzed independently to provide an indication of the reproducibility of sampling and/or analysis techniques.

- Equipment Rinsate Blanks. Equipment rinsate blanks consist of pure deionized distilled water that is run through decontaminated sampling equipment and placed in clean sample containers. Equipment blanks are used to verify the adequacy of sampling equipment decontamination procedures and shall be collected at the same frequency as field duplicate samples where applicable.

8.0 SCHEDULE

Drilling of the 200-ZP-1 extraction and injection wells should commence within 3 months of Regulatory and Quality Assurance approval of this DOW. This schedule is subject to change, and the operable unit coordinator should be contacted for the current status. An Agreement Activity Notification form will be issued at least 5 days before the start of field work.

9.0 ALARA CONSIDERATIONS AND CHANGES TO THE DESCRIPTION OF WORK

All boreholes will be drilled utilizing the guidance of the As Low As Reasonably Achievable (ALARA) program.

Field changes to this DOW, such as a changing sampling methods, analyzing different parameters, using different analytical methods, or significantly changing the sampling guidelines, will be submitted on the attached form (Attachment 1) and kept on file with the operable unit coordinator. Copies will be submitted to DOE, regulatory agencies, and the appropriate Bechtel Hanford, Inc. personnel within 10 working days of the occurrence.

10.0 REFERENCES

BHI, 1994a, *Environmental Investigations Procedures*, BHI-EE-01, Vol. 1, Bechtel Hanford Inc., Richland, Washington.

BHI, 1994b, *Hanford Site Radiological Control Manual*, HSCRM-1, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1994c, *Quality Management Plan*, Bechtel Hanford, Inc., Richland, Washington.

BHI, 1994d, *Safety and Health Procedures*, BHI-SH-02, Bechtel Hanford, Inc., Richland, Washington.

WASTE CONTROL PLAN

Page 1 of 2

Work Scope Description: 200-ZP-1 O.U. DNAPL Investigation - Well Installations
(See Attachment 1 for waste streams covered by this plan)

List Constitutents of Concern: Carbon Tetrachloride, Chloroform, Trichloroethylene, Gross Alpha, Gross Beta

Site Description: 200-ZP-1 Groundwater Operable Unit, 200 West Area, Hanford Site, Richland, WA
Extraction well #ZP-1-DW

Reference: BHI-00183 Rev: A0 Date Approved:

Preparer/ Project/RI Coordinator: JR Freeman-Pollard/DL Parker (Print/Sign Name) Date: Safety Class: Impact Level:

Field Team Leader/ Cognizant Engineer: GB Gould IDW Coordinator: GG Hopkins

Planned Drilling Start and Finish Dates: From: April 1995 To:

Waste Storage Facility ID Number(s): N/A

Field Screening Methods

Method	Frequency	Reference	Detection Range	Analyst
GM	Per RWP	IP-0718	0-100,000 CPM	RCT
PAM	Per RWP	IP-0718	0-100,000 CPM	RCT
GC	See Attachment 1			Geologist

Laboratory Methods (constituents of concern)

Method	Frequency	Reference	Detection Limits	Contract Lab
Vadose Zone (0-195')	See Attachment 1			
Soil Core Samples Total Organic Carbon	See Attachment 2			
Groundwater	See Attachment 2			

APPROVALS (Print/Sign Name and Date)

JR Freeman-Pollard/DL Parker 4/3/95
Project/RI Coordinator

GB Gould
Field Team Leader/Cognizant Engineer

GG Hopkins for GG Hopkins 4/4/95
IDW Coordinator

CH St. John 4/6/95
Safety Function (if required)

N/A
Quality Assurance (if required)

9513383.1286

WASTE CONTROL PLAN

Drill Site Coordinate Location: <50 ft. due North of the 216-Z-9 trench.

Waste Container Storage Area(s) Coordinate Location(s): 200-ZP-1/ZP-2 O.U. Centralized Waste Container Storage Area (N38950, W76770)

Requirements for Soil Pile Sampling (if any): N/A

Nonregulated Material Disposal Location(s): Nonregulated materials (paper, plastic, trash, etc.) will be disposed at the Hanford Site Central Landfill.

SKETCH OF WORK SITE

See Attachment 3

APPROVALS (Print/Sign Name and Date)

DA Faulk 4-17-95
Lead Regulatory Agency Representative

DM Wanek 4/7/95
DOE-RL

JG Zoghbi 4/7/95
Project/RI Coordinator

ATTACHMENT 1

200-ZP-1 O.U. DNAPL INVESTIGATION - WELL INSTALLATION

WASTE CONTROL PLAN

This waste control plan (WCP) provides guidance for the management of waste generated as a result of the installation of well(s) for potential use in a partitioning interwell tracer test to be performed in the area of the 216-Z-9 Trench in fiscal year 1996. The trench received approximately 1.07 million gallons of low salt, acidic, aqueous and organic waste. It is estimated that 291,000 to 1,051,785 pounds of carbon tetrachloride were disposed to the sediment column at this site. The Dense Non-Aqueous phase Liquids (DNAPL) investigation will support design of the 200-ZP-1 Operable Unit (OU) Interim Remedial Measure (IRM). The drilling of these wells and associated testing comprise portions of Phases I and III of the DNAPL investigation.

Waste streams that will be potentially generated as a result of the well installations include vadose zone drill cuttings, groundwater slurries, purgewater, decontamination fluids, reusable equipment, and miscellaneous decontamination trash (wipes, plastic, disposable ppe, etc.). Specific waste streams will be managed as follows:

* VADOSE ZONE DRILL CUTTINGS - due to the proximity of the wells to the 216-Z-9 Trench and substantial process knowledge based on previous proximal soil sampling analytical results, the vadose zone drill cuttings will be considered as potentially hazardous waste. A minimum of three intervals (24-29 m, 33.5-35 m, and 42.7-45.7 m. depth) will be sampled for VOC's in well ZP1-DW using a gas chromatagraph headspace field screening technique. Up to an additional three vadose zone samples may be taken if unusual conditions are noted by the wellsite geologist. The vadose zone sampling will be conducted in support of 200-ZP-2 OU activities.
Due to the moderate potential for encounters with radioactive elements, the soils will be contained in galvanized drums with 10 mil nylon reinforced plastic liners as required for potentially "mixed" radioactive/hazardous waste. Health Physics will provide continuous radiological field screening of the drill cuttings or at an alternate frequency if so identified in the applicable Radiation Work Permit.
Waste drums may be staged at the drill site prior to transport to the 200-ZP-1/ZP-2 Central Waste Container Storage Area (CWCSA). Contained vadose zone soils will eventually be dispositioned with similar 200-ZP-2 soils.

* SLURRIES - groundwater slurries and perched water slurries will be contained in 90-mil poly liners inside of galvanized drums. A representative sample of each slurry drum will be sent to 222-S lab to facilitate radiological release. All contained slurries will be overpacked in poly drums prior to storage at the CWCSA. The sampling protocol for groundwater saturated waste will be as identified in ATTACHMENT 2 of this WCP. Contained slurries will eventually be dispositioned along with similar 200-ZP-1 wastes.

ATTACHMENT I (con't)

*PURGEWATER - purgewater will be managed in accordance with BHI-EE-01, Environmental Investigations Procedures, EIP 1.11 "Purgewater Management".

ATTACHMENT 1 (con't)

* DECONTAMINATION of REUSABLE EQUIPMENT - decontamination of reusable equipment will be accomplished in accordance with BHI-EE-01, Section 6.2, "Field Cleaning and/or Decontamination of Drilling Equipment." A mobile, enclosed unit utilizing filters and resin beds may be used to decontaminate reusable equipment. Successful decontamination of reusable tools and equipment generally requires visual verification that surfaces are free of visible contamination. However, the surfaces of some equipment cannot be completely inspected (e.g.,inside small diameter pipes, inside of pumps). For equipment with hidden surfaces that have directly contacted environmental media containing hazardous constituents, the equipment will be considered successfully decontaminated when hidden surfaces are triple-rinsed or steam/pressure cleaned.

* DECONTAMINATION FLUIDS - decontamination fluids used to decontaminate tools and equipment that have directly contacted environmental media containing F-listed constituents will be contained and managed as potentially F-listed hazardous waste. Decontamination fluids will be contained in 90-mil liners in galvanized drums and overpacked in poly drums. Decontamination fluids will be sampled for radiological release. Decontamination fluids will be stored at the 200-ZP-1/ZP-2 CWCSA pending reciept of sample analytical results and final dispositioning.

* MISCELLANEOUS TRASH - miscellaneous trash, such as wipes or rags, that have intimately contacted environmental media containing F-listed constituents will be contained in borehole specific galvanized drums with 10-mil nylon reinforced plastic liners and managed as potentially hazardous waste. Miscellaneous trash will be dispositioned using the analytical results or process knowledge associated with the contaminated media contacted.

The contained waste will be packaged, marked, labeled, and tracked in accordance with the BHI Field Support Procedure (FS) 4.14. If FS-4.14 is not issued for use prior to initiation of the well installation activities, the applicable packaging, marking, labeling, and tracking guidance provided in the WHC-CM-7-7 manual, procedure EII 4.3, may be used until FS-4.14 is issued.

At the discretion of the project leads, alternative waste management methods, authorized under CERCLA regulations, may be substituted for any portion of the guidance provided in this WCP.

ATTACHMENT II

SAMPLING IN THE SATURATED ZONE:

* Soil Core Samples -(195 ft. to Total Depth)

Total Organic Carbon (TOC) Analyses
start at 195 ft., then every 20 ft to Total Depth, and major lithology changes
EPA SW-846, 9060
Quanterra Lab

DNAPL Analyses (visual)
195 ft. to Total Depth - continuous
Submit to offsite lab (Quanterra) for verification if DNAPL is visually identified

* Groundwater Samples-

Carbon tetrachloride, chloroform, TCE (SW-846, 8240 or 8260)
Gross alpha, Gross beta (EPA 900, or lab specific)
Total activity (lab specific)
One sample at completion of well development
Quanterra

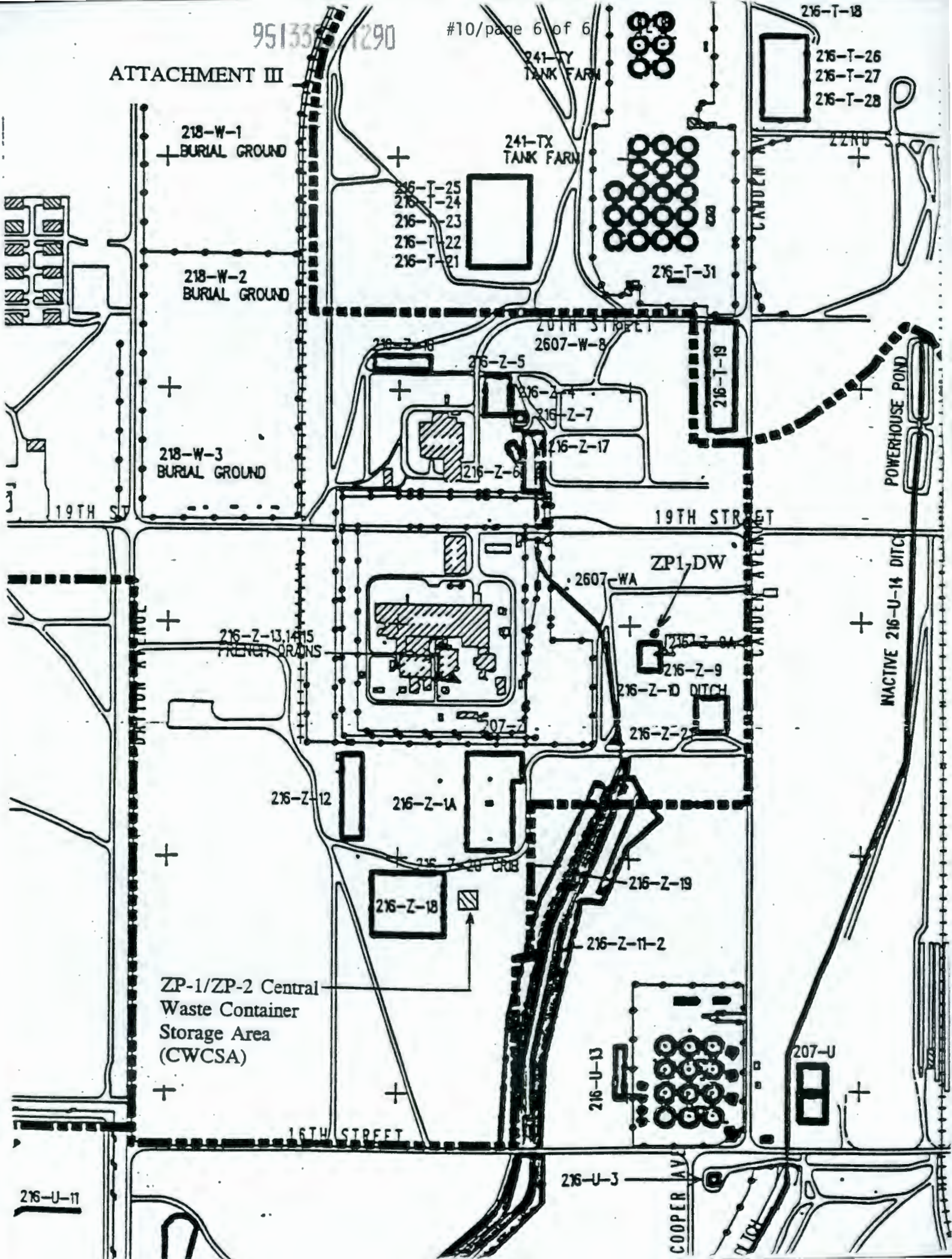
DNAPL Analyses (visual)
One or more sample during development
Submit to offsite lab (Quanterra) for verification if DNAPL is visually identified

* QA/QC-

Data quality is controlled by this DOW and the Quality Assurance Project Plan (QAPjP) presented in 200-ZP-1 Groundwater Sampling and Analysis/Project Quality Assurance Plan, Appendix A (BHI 1994i). The quality assurance (QA) documents that cover the test activities are the Quality Management Plan (BHI 1994). Quality control/verification samples for Level III analyses should be collected at the following frequency.

- One trip blank shall be collected to accompany each shipment of groundwater samples/sample bottles to the laboratory.
- One equipment blank shall be collected for every 20 groundwater/sediment samples submitted to the laboratory or per sampling episode.
- One duplicate sample shall be collected for every 20 groundwater/sediment samples submitted to the laboratory or per sampling episode.
- One split sample shall be collected for every 20 groundwater/sediment samples submitted to the laboratory or per sampling episode.

ATTACHMENT III



020654

Control Number: BHI-00189	200 NPL Agreement/Change Control Form __ Change _X Agreement __ Information Operable Unit: 200-ZP-1	Date Submitted: March 10, 1995 Date Approved:

Document Number/Title: 200-ZP-1 IRM Implementation Description of Work, BHI-00155 Rev 00	Date Document Last Issued:
Originator: J. R. Freeman-Pollard	Phone: 372-9347

Summary Discussion:

DOE, EPA, and Ecology unit managers agree that the drilling, sampling and construction of two extraction wells (299-W15-29 and 299-W15-30) and one injection well (299-W15-31) will be completed in accordance with the 200-ZP-1 IRM Implementation Description of Work, BHI-00155 Rev 00.

Justification and Impact of Change:

Since 200-ZP-1 does not have an approved work plan, regulatory approval of the 200-ZP-1 IRM Implementation Description of Work (BHI-00155 Rev 00) is needed prior to commencement of well drilling activities. Implementation of this agreement presents no impacts to activities ongoing in 200-ZP-1.

J. G. Zoghbi 200 Areas Project Manager Joseph Zoghbi	Date 3/14/95
D. M. Wanek DOE Project Manager Donna Wanek	Date 3/15/95
D. N. Goswami Ecology Unit Manager	Date 3/27/95
D. A. Faulk Env. Protection Agency Unit Manager	Date 3-27-95

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

total pages 1

BHI-DIS ca 3-28-95

020654

Control Number: BHI - 00190	200 NPL Agreement/Change Control Form __ Change _X Agreement __ Information Operable Unit(s): 200-ZP-1 Groundwater	Date Submitted: March 16, 1995 Date Approved:

Document Number/Title: 200-ZP-1 Groundwater Sampling and Analysis Plan, Revision 0	Date Document Last Issued:
Originator: J. R. Freeman-Pollard	Phone: 372-9347

Summary Discussion:

Ecology, EPA, and DOE Unit Managers agree to the following changes to the 200-ZP-1 Groundwater Sampling and Analysis Plan, Revision 0.

1. Treatability Test Monitoring Wells

   Treatability test monitoring will be eliminated. Treatability testing has been completed.

2. Remedial Action Assessment Wells

   The remedial action assessment well network will consist of 6 groundwater monitoring wells (299-W11-30, 299-W15-6, 299-W15-10, 299-W15-15, 299-W15-18 and 299-W18-24).

(Continued on next page)

Justification and Impact of Change:

(See next page)

J. G. Zoghbi 200 Areas Project Manager	Date 3/14/95
D. M. Wanek DOE Project Manager	Date 3/15/95
D. N. Goswami Ecology Unit Manager	Date 3/27/95
D. A. Faulk Env. Protection Agency Unit Manager	Date 3-16-95

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

total pages 3

BHI-DIS ca 3-28-95

Summary Description continued:

Each well shall be sampled semi-annually.

Field methods will be used to determine the concentrations of carbon tetrachloride, chloroform, trichlorethylene and nitrate in groundwater. One split sample shall also be collected (in conjunction with samples analyzed in the field) during each round of sampling and analyzed using a higher level analysis method.

It is anticipated that the remedial action assessment well network and the sampling and analysis approach will be modified to address specific needs of the IRM as it progresses.

3. Plume Periphery Wells

Plume periphery wells shall be sampled annually.

Field methods will be used to determine the concentrations of carbon tetrachloride, chloroform, trichloroethylene and nitrate in the groundwater. One split sample shall also be collected (in conjunction with samples analyzed in the field) during each round of sampling and analyzed using a higher level analysis method.

The sampling and analysis approach will be modified to address specific needs of the IRM as it progresses.

4. Point of Compliance Wells

Point of compliance wells shall be sampled annually.

Justification and Impact of Change:

The monitoring network specified in BHI-00038, 200-ZP-1 Groundwater Sampling and Analysis/Quality Assurance Plan, Revision 0, was designed to meet the needs of an earlier IRM design. This earlier IRM design as proposed in the 200-ZP-1 IRM Proposed Plan (DOE/RL-93-68), Rev. 0 addressed the entire 1000 parts per billion (ppb) concentration contour of carbon tetrachloride in groundwater. The revised focus of the IRM as specified in DOE/RL-93-68, Rev. 3, is the area defined by the 2000 - 3000 ppb contour near Z-Plant. Because this is a much smaller area, fewer wells will be required to monitor the effects of the IRM.

In addition, field methods in conjunction with higher level analysis (e.g. split samples) are deemed appropriate to monitor progress toward meeting IRM objectives in the remedial action assessment and plume periphery well networks.

Justification and Impact of Change continued:

Implementing this agreement will allow the information necessary to support the IRM to be gathered while eliminating unnecessary data gathering activities. The impact of this change will be considerable cost savings to the project. This agreement will require modification and reissuance of 200-ZP-1 Groundwater Sampling and Analysis Plan.

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Unit Manager's Meeting: 200 Aggregate Area/200 Area Operable Unit
April 20, 1995

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