Meeting Minutes Transmittal/Approval

0063947

Unit Managers' Meeting
200 Area Groundwater and Source Operable Units
1200 Jadwin Avenue, Richland, Washington
July 15, 2004

APPROVAL: Arlene Tortoso Date: 2/17/05
Arlene Tortoso, Groundwater Unit Manager, DOE/RL

APPROVAL: Larry Romine Date: 2-17-05
Larry Romine, Federal Project Director, 200 Area D4 & Waste Site Remediation, DOE/RL

APPROVAL: Craig Cameron Date: 2/07/05
Craig Cameron, 200 Area Unit Manager, EPA

APPROVAL: John B. Price Date: 2/17/05
John Price, 200 Area Unit Manager, Ecology

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

Attachment 1	--	Agenda
Attachment 2	--	Attendance Record
Attachment 3	--	200 Area UMM Minutes – June 15, 2004
Attachment 4	--	200 Area Current Action Log
Attachment 5	--	Float Table
Attachment 6	--	200-UP-1, 200-ZP-1 and 200-PW-1 Status Report
Attachment 7	--	Comparison of Maximum Carbon Tetrachloride Rebound Concentrations Monitored at 200-PW-1 Soil Vapor Extraction Sites FY 1998- FY 2004
Attachment 8	--	Table A.1, Sampling Matrix for 200-PO-1 Supplementary Wells
Attachment 9	--	Attachment 3A, 200-PO-1 Operable Unit Supplemental Groundwater Well List
Attachment 10	--	Approval of the Carbon Tetrachloride Expedited Response Action Soil Vapor Extraction System Operating Plan for FY2004, Revised July 2004.
Attachment 11	--	Central Plateau Milestone Review, TPA Quarterly Review (4/04-6/04)

Prepared by: _____ Date 2-2-05
Linda DeLannoy, Project Systems & Support (H8-49)

Concurrence by: Mary Todd Robertson Date 2/9/05
Mary Todd-Robertson, FH Groundwater Protection Program (E6-35)

DISTRIBUTION
UNIT MANAGERS' MEETING,
200 AREA GROUNDWATER SOURCE OPERABLE UNITS

EPA

Craig Cameron	B5-01

Ecology

John Price	H0-57
Administrative Record (2)	A3-01

UNIT MANAGERS' MEETING AGENDA

1200 Jadwin/1C1
July 15, 2004

9 a.m. – 10 a.m.

Issues Resolution Meeting

- Review of Issues Table from June UMM

10 a.m. – Noon.

General (15 minutes)

- Outstanding Action Items
- Open for Regulatory Topics or Action Items

Central Plateau Closure (5 min)

- Decision/issues framework discussion

U Plant Area Regional Closure (10 minutes)

- Schedule Review –
  - FFS/PP
  - Confirmatory/Design Sampling and Analysis Plan
  - Drive Casing
  - Annotated Outline RDR/RAWP

BC Cribs Area Closure (10 minutes)

- Schedule Review
  - Status of FFS and PP path forward
  - Confirmatory DQO and SAP
  - Tc Plume Delineation
  - 216-B-26 Fate & Transport Modeling

200-TW-1, 200-TW-2, & 200-PW-5 (5 minutes)

- Schedule Review
  - Status of RI Report
  - Status of FS and PP

GROUNDWATER OPERABLE UNITS

General (5 minutes)

- Update on Well Decommissioning

200-BP-5 & 200-PO-1 OUs (10 minutes)

- Revised sampling lists for near-term collection
- Status of SAP revisions

200-UP-1 OU (5 minutes)

- Remediation Treatment Status
- RI/FS Work Plan Status – Meeting with Ecology July 21
- Drilling of New Monitoring Well "P" Still on Hold due to Safety Concerns
- Rebound Study – Ecology is Currently Reviewing Draft Operating Plan

200-ZP-1 OU (5 minutes)

- Remediation Treatment Status
- RI/FS Work Plan Status – Document Being Revised Based on Recent EPA Comments
- DOE-RL Update on DNAPL Subcontractor Selection
- Update on Expanding Extraction Well Network to North

200-PW-1, 200-ZP-2 (5 minutes)

- Remediate Treatment Status
- Revised Operating Plan Approval Signatures

SOURCE OPERABLE UNITS

200-PW-1, 200-PW-3, & 200-PW-6 OUs (15 minutes)

- Remediation Treatment Status
- Monthly Monitoring
- Schedule Review
  - Status of Field Work Preparation and Planning
  - Status of Field Work at 216-Z-9

200-CW-1 & 200-CW-3 OUs (2 minutes)

- Schedule Review
  - Status of FS and PP

200-PW-2 & 200-PW-4 OUs (10 minutes)

- Schedule Review
  - Status of Work Plan
  - Status of RI Report
  - Status of Field Planning for 216-S-7 Borehole

200-CS-1 OU (2 minutes)

- Schedule Review
  - Status of RI Report

200-CW-5, CW-2, CW-4, & SC-1 OUs (10 minutes)

- Schedule Review
  - Status of Work Plan
  - Status of RI Report
  - Status of FS

200 Area Ecological Evaluation (10 minutes)

- Schedule Review
  - Status of Eco DQO
  - Status of Eco Evaluation Report
- Overview of Eco Activities
  - Spring Sampling Progress

200-IS-1 & 200-ST-1 (10 minutes)

- Schedule Review
  - Status of Work Plan

200-LW-1/200-LW-2 (5 minutes)

- Status of Field Work

200-MW-1 (5 minutes)

- Status of Field Work

200-UR-1 (5 minutes)

- Schedule Review
  - Status of DQO and Work Plan

200-SW-1/2 (5 minutes)

- Schedule Review
  - Status of DQO and Work Plan

Groundwater and Source Operable Units Unit Managers' Meeting
Official Attendance Record – 200 Area
July 15, 2004

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
MARY TODD-ROBERTSON	FH	200 Area Waste Site Remedial Action	373-3920
Jane V Borghesi	FH	GW	373-3804
John Winterhalder	FH	GW	372-8144
Dennis Faulk	EPA		
Lansing G. Dysel	FH	Facilities	373-2465
Arlene C. Tortoso	DOE	GW	373-7631
Mark Byrnes	FH	Task Lead	373-3996
John Price	Ecology	Proj. Mgr	372-7921
Craig Cameron	EPA	Proj. Mgr.	376-8665
Jon Perry	FH-EP		376-4791
Stuart Luttrell	PNNL	GW Mon	376-6023
STEVE BERMISS	RL	P.M.	376-6221
Kevin Leary	DOE-RL	PM/Acting Project Dir	373-7285
Jennie Stults	Ecology		372-7956
Bruce Ford	FH	GRP Director	373-3809
Virginia Rohay	FH	Task Lead	373-3803
L. Craig Swanson	FH	Tech. Support	373-3807
Jean Vanni	Ecology		372-7930
TJ Murphy-Fitch	FH	TPAI	376-8848
Daniel Tennant	FH	TPAI	308-6513

Groundwater and Source Operable Units Unit Managers' Meeting
Official Attendance Record – 200 Area
July 15, 2004

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Mark Benecke	FH	BC Cribs	6-0002
Ron Jackson	FM	U-plan	3-3255
Mike Hickey	FH	CW-1 FS CW-5	3-3092
Sylvia Browning	FH	mtg Minutes	373-4457

MEETING MINUTES
200 AREA UNIT MANAGERS' MEETING – 200 AREA
July 15, 2004

Agenda: See Attachment #1

Attendees: See Attachment #2

Table of Issues: 07/15/04

IAMIT	UMM	ISSUES MTG	ISSUES	AGREEMENTS	FOLLOW- ON ACTION
	X	X	Points of calculation	Highest source of contamination; getting close to river. Pts of calculation did not include 2 points. (at River and Central Plateau boundary). Really focused on points of calculation at center of plume. EPA and Ecology will address this issue outside of the UMM. **Closed 7/15/04**	Meeting planned to be held between EPA and Ecology.
	X		ROD Strategy	Fluor's understanding provided by John and Craig @ EPA offices. There will be TPA changes if we combine documents, etc. FH hasn't seen serious impacts identified. We haven't seen significant changes to DOE by passing FS and going to broad decision base.	
	X	X	IS-1 OU –RL/ORP Agreements on scope (pipeline) by Oct 2004, clear delineation of sites, TSD vs. RPP status		RL/ORP meeting with ecology on pipeline proposal by July 2nd (RL- Foley)
	X		RCRA/CERCLA Integration		
X			SW-2 OU – Collaborative negotiations on		RL respond to

IAMIT	UMM	ISSUES MTG	ISSUES	AGREEMENTS	FOLLOW- ON ACTION
			TPA milestone, request for commitment within 1 week, outstanding issues (40CFR191; criteria for use of process knowledge)		Ecology request (Oct/Nov 2003) for collaborative negotiations
			Informal transmittal of docs		Craig Cameron

Issues Resolution Meeting

- Review of Issues Table from July UMM – The Department of Ecology stated that the December 31, 2004, TPA milestone (M-13-00O) to deliver a draft RI/FS work plan would be missed due to disagreements regarding technical work scope for characterizing 15 pre-1970 radioactive burial grounds (there are a total of 63 waste sites in the plan). DOE has proposed submitting the draft work plan without the 15 sites, then amending the work plan at a later date to include them. DOE is additionally considering proposing a phased approach that could be in the December draft. Ecology has requested a collaborative negotiation to reach agreement on work plan scope.

Unit Managers' Meeting

Topics of Discussion:

1. General

- Outstanding Action Items – Action item 3, "Provide a clear definition of Central Plateau," was reviewed. FH opened discussions regarding the boundary of Central Plateau by presenting of a graphic that showed the various boundary lines that have been used to represent both the Central Plateau and Core Zone. There are distinct differences that have resulted in confusion in various documents where these areas have been represented. Boundary needs to be determined prior to the 200 Area End States Workshop. RL indicated that a contractor had been solicited to help pull this information into a document which will include both a verbal and legal description. The regulatory agencies requested a follow-up meeting be held to get this resolved before the End States Workshop.
- Open for Regulatory Topics or Action Items – FH identified approximately 40 pumps/wells that may contain PCBs. FH suggested they should be managed as one and not as separate waste, but the process will render them non-serviceable. A consolidated handling area is under consideration. FH was asked by DOE to submit a proposal.

2. Central Plateau Closure

- Decision/issues framework discussion – FH reported 233S was brought down to grade, cap was poured, and the project had officially finished including administrative paperwork. The work groups were rolled over to B-Plant Lay-Down Yard. The sample analysis plan for this area was finished in June. Twenty-four structures will be taken down at B-Plant Lay-Down Yard. The process to obtain official approval to ultimately move workers to U Plant is underway. FH reported the Plutonium Finishing Plant has officially documented their safety analysis and is moving into decommissioning. The

next big activity will be the defueling process scheduled for completion in 2006 which includes fuel removal and shipment to Savannah River. DOE stated that the U-Plant Ancillary Facility EE/CA would be ready for signature next week. A change package will be developed to revise the U03 plant lead agency.

3. U Plant Area Regional Closure

- Schedule Review –
  - Status of FFS/PP – Ancillaries PP – EE/CA to be delivered to EPA today. CDI delivered latest draft of FS Tuesday to EPA. PNNL working on flux calculation for waste sites to determine impact of sources on groundwater in the U Plant Area.
  - Status of Confirmatory DQO and SAP – Comments from Ecology are being finalized.
  - Drive Casing – No discussion.
  - Annotated Outline – RDR/RAWP – Pipeline: The FH baseline calls for an EE/CA in FY 2006. EE/CA: Ecology advocating targeted milestones for the pipeline EE/CA and AM in FY 2005 and 2006. Ecology requested meetings with RL to discuss this need.

4. BC Cribs Area Closure

- Schedule Review –
  - Status of FFS and PP path forward – Proceeding with focused FS & PP
  - Confirmatory DQO and SAP – No Discussion
  - Tc Plume Delineation – Tc-99 plume delineation study is underway. It is hoped that this non-intrusive characterization technique will provide definition of deep contaminant plumes.
  - 216-B-26 Fate & Transport Modeling – FH reported fate and transport modeling of the 216-B-26 Trench is in progress.

5. 200-TW-1, 200-TW-2, & 200-PW-5

- Schedule Review –
  - Status of RI Report – Modeling efforts in response to USGS comments continued. Details of modeling sensitivity study were provided to reviewers on June 7, 2004. EPA indicated that USGS input would not be available until July 16, 2004.
  - Status of FS and PP – Resolution of EPA and Ecology comments to the FS continue. Current focus is on the risk-related comments received from Ecology. FH and RL met July 8, 2004, to discuss a path forward on the FS. RL will send formal response to the regulators agreeing to defer the revision of the TW-1/2 FS while a focused FS is prepared for the BC Cribs and Trenches.

GROUNDWATER OPERABLE UNITS

6. General

- Update on Well Decommissioning – Contract will be awarded during FY 2004.

7. 200-BP-5 & 200-PO-1 OUs

- Revised sampling lists for near-term collection – Updated well list for waste control plan for PO-1 and BP5 handout was reviewed (attached).
- Status of SAP Revisions – Being revised and will be provided to DOE in next couple of weeks and then to Ecology. DOE requested that the scope of RI/FS WP be reviewed after the start of FY 2005. Eileen was requested to locate milestone information regarding 200-BP-5. TPA milestone and individual work plan revisions need to be addressed in addition to determining requirement for RI/FS under M-13.

8. 200-UP-1 OU

- Remediation Treatment Status – Average Pumping Rate (counting all outage time as 0 gpm) for CY 2004 through June 20 is approximately 49.5 gpm. Ecology is currently reviewing a 200-UP-1 Operating Plan for a rebound study proposed to begin January 1, 2005. From May 31 through June 20, 2004, the system operated between 41.9 and 50.8 gpm. Well 299-W19-39 shutdown on June 5, due to high pressure. The system was shutdown for a total of 18.5 hours between June 7 and June 10, 2004, and for 5.5 hours on June 17, 2004, for an ERDF leachate transfer. System Run Time:
  - For May 31 – June 20 95.2%
  - FY 2004 (Year to date) 89.3%
  - System Inception to date 92.3%
- RI/FS Work Plan Status – Waiting for Ecology to setup June 21 meeting to review Draft B. Important Deliverables:
  - July 12, 2005 – DOE-RL submits Draft A RI Report to Regulators
  - April 5, 2007 – Issue Draft A FS Report to Regulators
- Drilling of New Monitoring Well "P" Still on Hold due to Safety Concerns – Drilling safety concerns with subcontractor have now been addressed and drilling of monitoring well "P" should start early next week. New wells "K" and "R" will follow. Missing data to support the CERCLA RI/FS process will be collected from these wells.
- Rebound Study – Ecology is currently reviewing draft Operating Plan

9. 200-ZP-1 OU

- Remediation Treatment Status –Average Pumping Rate for FY 2004 through June 13, 2004: 126 gpm. Due to the system being down several times for calibration, the pumping rates for this period are lower than normal. From May 31 through June 13, 2004, the system operated at between 119 and 143 gpm. New extraction well #4 is expected to be back on line early next week. Extraction well #2 shutdown on June 5,

2004, due to a bad level transducer. System was shutdown for a few hours on June 7 and 9, 2004, to work on call out system tie-in. System was shutdown for 3 hours on June 8 and again on June 10, 2004, for calibration. Extraction well #5 shutdown on June 10, 2004, due to a bad pump and was restarted again June 22, 2004. System Run Time:

- For May 31 – June 13 99.1%
- FY 2004 (Year to date) 95.2%
- System Inception to date 92.5%

- RI/FS Work Plan Status – Rev. 0 going through FH signature process.
- DOE-RL Update on DNAPL Subcontractor Selection – DOE-RL provided update on the DNAPL subcontractor award.
- Update on Expanding Extraction Well Network to North – Detailed cost and schedule estimates have been completed for pump-and-treat expansion. Design work will begin in early FY 2005.

10. 200-PW-1, 200-ZP-2 OU

- Remediation Treatment Status – Monthly monitoring was conducted in June 2004 (see attached data). Results were consistent with monitoring results from previous months. System was restarted June 7, 2004, after safety concerns were addressed. Average Air Flow Rate for June 7 through June 20, 2004: 309 CFM. The passive system remains operational.
- Revised Operating Plan Approval Signatures – Revised operations plan approval signatures needed from EPA.

SOURCE OPERABLE UNITS

11. 200-PW-1, 200-PW-3, & 200-PW-6 OUs

- Revised Operating Plan Approval Signatures – The revised Carbon Tetrachloride Expedited Response Action Soil Vapor Extraction System Operating Plan for FY 2004 (for 200-PW-1 Operable Unit) was approved by the Unit Managers on July 15, 2004 (attached).
- Schedule Review
  - Status of Field Work Preparation and Planning – Pre-job planning for the 216-A-8 Crib and 216-Z-9 Trench remedial investigations is continuing in support of drilling in October 2004. Vapor sampling at the 216-A-8 Crib, using a geoprobe for subsurface access, was conducted on July 7 and 8, 2004. The results will be used to guide selection of the location of the characterization borehole.
  - Status of Field Work at 216-Z-9 – Borehole depth for the DNAPL investigation at the 216-Z-9 site remained at 128 ft bgs. Safety issues with the drilling contractor have delayed drilling at this site; these issues are being addressed.

12. 200-CW-1 & 200-CW-3 OUs

- Schedule Review
  - Status of FS and PP – Received informal comments on FS and PP on June 25, 2004. Mike Hickey to set up meeting with Ecology to discuss path forward on completing revision of FS and PP.

13. 200-PW-2 & 200-PW-4 OUs

- Schedule Review
  - Status of Work Plan – Comment incorporation is nearing completion and clearance processing will be pursued in the near future. The issue of SAP compliance with the EPA QA requirements impacted getting this document completed in June. A meeting is scheduled for July 15 with RL to review QA sections to ensure compliance with EPA requirements.
  - Status of RI Report – Draft A is with Ecology undergoing review.
  - Status of Field Planning for 216-S-7 Borehole – Pre-job planning activities continued for characterization activities at the 216-S-7 Crib. Drilling activities are currently scheduled to begin in August.

14. 200-CS-1 OU

- Schedule Review
  - Status of Review of RI Report – Comments from the stakeholders will be delayed until August 25 due to delays in submitting the RI report to the stakeholders. This will subsequently delay the issuance of the Rev. 0 document to the end of September.

15. 200-CW-5, CW-2, CW-4, & SC-1 OUs

- Schedule Review
  - Status of Work Plan – RL raised a concern with the compliance of the EPA QA requirements as presented in the SAP.
  - Status of RI Report – Nothing captured
  - Status of FS – Issued internal draft for FH review June 22, 2004.

16. 200 Area Ecological Evaluation

- Schedule Review
  - Status of Eco DQO – FH and RL developed a SAP review and approval process for the RL staff. The final version of the SAP will be routed for RL review after technical editing is complete. The initial efforts are underway for the field implementation of the Ecological SAP.
  - Status of Eco Evaluation Report – Document is undergoing final technical editing.

- Overview of Eco Activities –
  - Spring Sampling Progress – Funding, equipment, and availability of field personnel are two potentially significant impediments to the implementation of the Ecological SAP. Bauer has action to discuss needs with Radiological Engineering personnel to ensure that equipment and personnel can be provided to support ecological environmental surveys and he will explore funding alternatives.

17. 200-IS-1 & 200-ST-1

- Schedule Review
  - Status of Work Plan – A number of sites assigned to the IS-1/ST-1 OUs are organizationally assigned to CH2M HILL. This issue needs to be resolved through the revision to the work plan. Regulators have indicated that the ORP sites fall under the 2008 milestone to complete RI/FS work.

18. 200-LW-1/200-LW-2

- Status of Field Work – Installation of the drive casing was completed on July 8, 2004.

19. 200-MW-1

- Status of Field Work – The pre-job planning for the borehole characterization activities was held on July 12, 2004. Drilling of the 216-A-4 Crib borehole is scheduled to begin once the site setup is complete. The test pits and 2 of the 3 boreholes were deferred to the beginning of FY 2005. Only the borehole at the 216-A-4 Crib will be conducted in FY 2004 and the planning documentation for all boreholes will be completed in FY 2004.

20. 200-UR-1

- Schedule Review
  - Status of DQO and Work Plan – Draft A was submitted to the regulators June 30, 2004, completing the TPA milestone M-013-00N.

21. 200-SW-1/2

- Schedule Review
  - Status of DQO and Work Plan – Efforts continued on the DQO and work plan. A meeting with Ecology was held on July 8, 2004, to discuss the approach to the DQO process and the binning of the waste sites. Ecology believes that collaborative negotiations are needed to establish the characterization data required to leave the radioactive burial ground inventory in the ground.

200 Area Unit Managers' Meeting
OPEN ACTION ITEMS & TRACKING

Action #	Action/Subject	Assigned To	Owed To	Assigned Date	Original Due Date	Adjusted Due Date	Date Complete	Status
34	Provide a clear definition of "Central Plateau"	FH	EPA&Ecology	10/16/03				In progress

200 Area Unit Managers' Meeting
200 Area Remedial Action Float Table
July 2004

Task	Scheduled Date	Float	Comments
200-CS-1			
Deliver Draft A FS/PP for Regulator Review	11/30/2005	--	On schedule
200-CW-1			
Deliver Draft B FS for Regulator Review	7/3/2003 (original date based on receipt of regulator comments 45 calendar days after submittal (which would be 5/15/2003) with 45 days to revise and reissue)	-375-d	Regulator comments originally due on 5/15/2003; policy level comments received on that date; Ecology indicated additional comments would be coming; additional informal comments were received on 6/25
	10/31/2004 (new target date based on collecting spring samples and incorporating data into the revision)	--	On schedule
200-LW-1			
Deliver Draft A RI Report for Regulator Review	10/31/2005	--	On schedule
200-PW-2			
Ecology approve Rev 1 RI/FS work plan	2/14/2003	-520-d	After BCR approval, field work is scheduled for 8/04 and completion of work is forecast to not generate a variance for the FS. Comments are resolved. The document is in the clearance cycle.
Deliver Draft A RI Report for Regulator Review	6/30/2004	--	Delivered 6/24/04
Deliver Draft A FS/PP for Regulator Review	12/31/2005	--	On schedule
200-SW-1/200-SW-2			
Brief Ecology on DQO Approach	7/8/2004	--	On schedule
Deliver draft A RI/FS work plan for regulator review	12/31/2004	--	On schedule
Deliver Waste Control Plan for regulator review	4/15/2005	--	On schedule
Start field sampling	7/27/2005	--	On schedule
Deliver Draft A RI Report for Regulator Review	9/19/2007	--	On schedule
200-TW-1 (includes 200-TW-2)			
EPA/Ecology approve RI Report	7/10/2003	-277-d	Modeling results delivered on 05/21/04 to regulators; waiting on response from USGS on 7/16/04
Deliver Draft A FS/PP for Regulator Review	3/31/2004	--	Comments received and document modification underway

200 Area Unit Managers' Meeting
200 Area Remedial Action Float Table
July 2004

Task	Scheduled Date	Float	Comments
Revise FF/PP for Region 10 Review	5/18/2004	-60-d	Request from regulators to separate BC Cribs and Trenches to a standalone FFS/PP and withdrawal of the TW1/2 FS/PP. Issue is being worked between RL and regulators.
200-UR-1			
Deliver draft A RI/FS work plan for regulator review	6/30/2004	--	Delivered 6/30/04
Deliver Waste Control Plan for regulator review	3/1/2006	--	On schedule
Start field sampling	4/26/2006	--	On schedule
Deliver Draft A RI Report for Regulator Review	5/14/2007	--	On schedule
200-UW-1			
Obtain regulator/RL concurrence on SAP	7/29/2004	--	On schedule
RL Transmit Draft C to regulators	8/31/2004	--	On schedule
Initiate confirmatory sampling	11/1/2004	--	On schedule
Tri-Party approval of 200-UW-1 ROD	1/1/2005	--	On schedule
200-IS-1/200-ST-1			
Deliver Rev. 1 RI/FS work plan	12/31/2004	--	New date being proposed to regulators. Document would address a review of technologies, a review of streamlining techniques, resolution of waste site ownership, and a decision logic for addressing pipelines.
Deliver Waste Control Plan for regulator review	1/24/2005	--	On schedule
200-PW-1/200-PW-3/200-PW-6			
Deliver Draft A RI Report for Regulator Review	6/30/2006		On schedule
200-MW-1			
Deliver Draft A RI Report for Regulator Review	12/31/2005	--	On schedule
200-CW-5/200-CW-2/200-CW-4/200-SC-1			
Deliver Rev. 1 RI/FS work plan	M-013-22 met on schedule; Rev. 0 work plan approved 9/28/2002. Consolidation TPA change package approved 6/5/2002. Rev. 1 originally scheduled to be delivered 5/6/2003	-377-d	Delivered to RL 4/1/04; on hold at RL pending some comments on the QAPjP.
Deliver Rev. 0 RI Report	9/1/2003 (original date based on receipt of regulator comments on 7/15/2003 with 45 days for revision)	-319-d	Inconsistencies between the work plan and the RI report were addressed. RESRAD runs have been completed and comments were incorporated. New delivery date 07/21/04
Deliver Draft A FS/PP for Regulator Review	10/31/2004	--	On schedule

200 Area UMM – July 2004

200-UP-1:

- Average Pumping Rate (counting all outage time as 0 gpm) for CY04 through ~~May 31~~ June 20 is approximately 49.5 gpm.
- Ecology is currently reviewing a 200-UP-1 Operating Plan for a rebound study proposed to begin January 1, 2005.
- From May 31 through June 20, the system operated between 41.9 and 50.8 gpm.
- Well 299-W19-39 shutdown on June 5 due to high pressure. The system was shutdown for a total of 18.5 hours between June 7 and June 10 and for 5.5 hours on June 17 for an ERDF leachate transfer.
- System Run Time
  - For May 31 – June 20 95.2%
  - FY2004 (Year to date) 89.3%
  - System Inception to date 92.3%

- RI/FS Work Plan Draft B – Waiting for Ecology to setup June 21 meeting
- Important ~~Milestones:~~ Deliverables; JBP 2-17-05 AQ 4/1/05
  - July 12, 2005 – ~~G2U40195~~, DOE-RL submits Draft A RI Report to Regulators
  - April 5, 2007 – ~~G2U54160~~, Issue Draft A FS Report to Regulators
- Drilling safety concerns with subcontractor have now been addressed and drilling of monitoring well "P" should start early next week. New wells "K", and "R" will follow. Missing data to support the CERCLA RI/FS process will be collected from these wells.

200-ZP-1:

- Average Pumping Rate for FY04 through June 13: 126 gpm
- Due to the system being down several times for calibration, the pumping rates for this period are lower than normal.
- From May 31 through June 13, the system operated at between 119 and 143 gpm. New extraction well #4 is expected to be back on line early next week.
- Extraction well #2 shutdown on June 5 due to a bad level transducer. System was shutdown for a few hours on June 7 and 9 to work on call out system tie-in. System was shutdown for 3 hours on June 8 and again on June 10 for calibration. Extraction well #5 shutdown on June 10 due to a bad pump and was restarted again June 22.
- Detailed cost and schedule estimates have been completed for pump-and-treat expansion. Design work will begin in early FY2005.

- System Run Time
  - For May 31 – June 13 99.1%
  - FY2004 (Year to date) 95.2%

- System Inception to date 92.5%

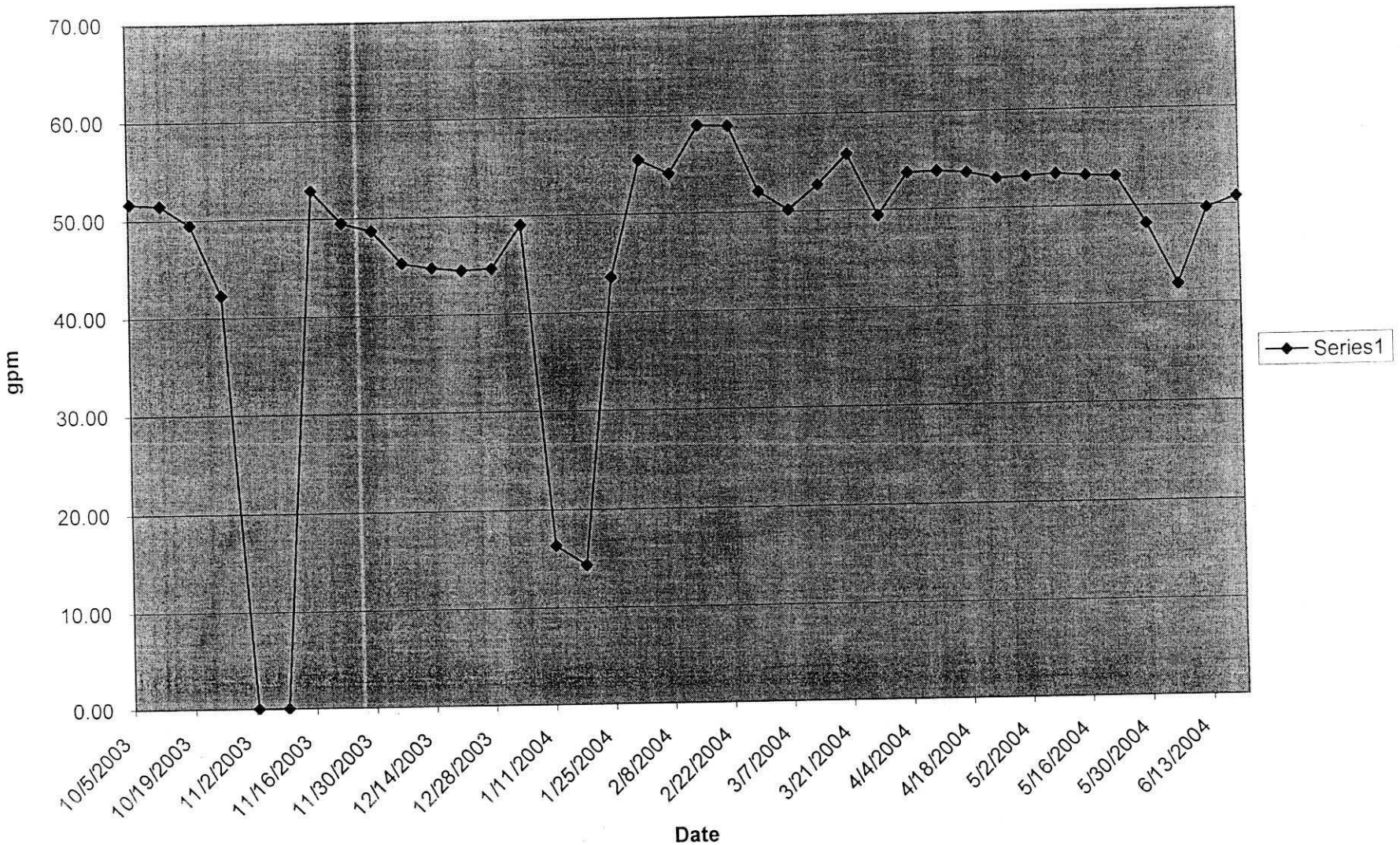
- RI/FS Work Plan Status – Rev. 0 going through FH signature process.
- DOE-RL update on the DNAPL subcontractor award.

200-PW-1 (200-ZP-2):

- System was restarted June 7 after safety concerns were addressed.
- Average Air Flow Rate for June 7 through June 20: 309 CFM
- The passive system remains operational
- Revised operations plan approval signatures needed from EPA.

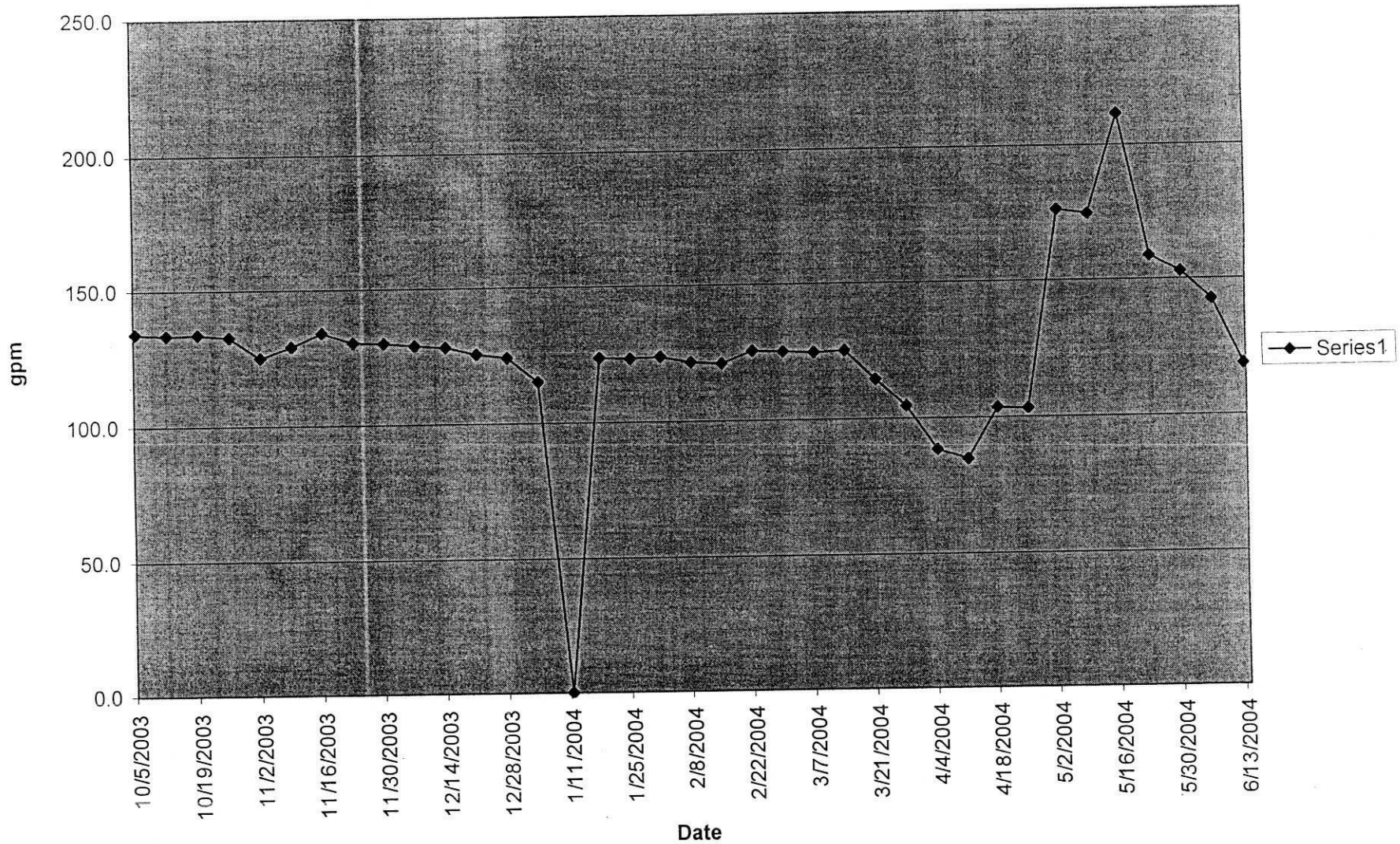
Got signed copy
via fax from
to Dennis

200-UP-1 Average Pumping Rate for FY2004

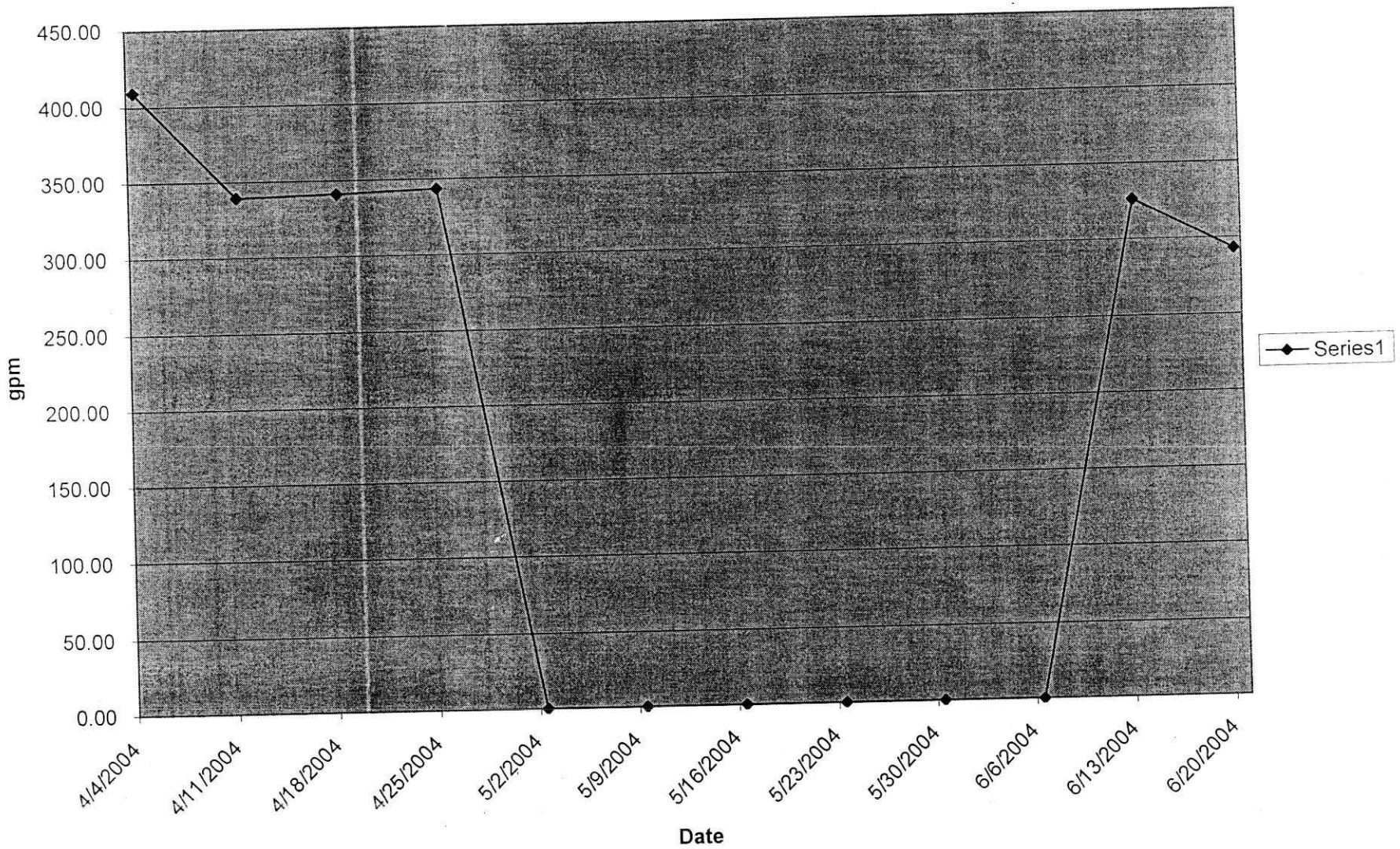


Attachment 6

200-ZP-1 AVERAGE PUMPING RATE FOR FY2004



Attachment 6



Attachment 6

Comparison of Maximum Carbon Tetrachloride Rebound Concentrations Monitored at 200-PW-1 Soil Vapor Extraction Sites FY 1998 - FY 2004

200-PW-1 (200-ZP-2) Location (Well or Probe) /feet bgs	Site	July 1998 - September 1999 Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	July 1999 - June 2001 Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	July 2001 - June 2002 Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	July 2002 - September 2003 Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	July 2002 (Z-9) or October 2003 (Z-1A) - March 2004 Maximum Rebound Carbon Tetrachloride (ppmv)	months* of rebound	July 2002 (Z-9) or April 2004 (Z-1A) - June 2004 Maximum Rebound Carbon Tetrachloride (ppmv)	months of rebound
79-03/ 5 ft	Z-18	0	12										
79-06/ 5 ft	Z-1A	1.4	12										
79-11/ 5 ft	Z-1A	2.9	12										
86-05/ 5 ft	Z-9	0	3										
86-05-01/ 5 ft	Z-9	0	3										
86-06/ 5 ft	Z-9	1.9	6										
87-05/ 5 ft	Z-1A	1.0	12										
87-09/ 5 ft	Z-1A	2.6	12										
94-02/ 5 ft	Z-9	1.4	3										
95-11/ 5 ft	Z-9	2.5	6										
95-12/ 5 ft	Z-9	1.3	6										
95-14/ 5 ft	Z-9	0	3										
CPT-13A/ 9 ft	Z-1A	1.0	12										
CPT-16/ 10 ft	Z-9	1.5	6										
CPT-17/ 10 ft	Z-9	5.1	6	6.6	24	3.2	6	6.6	15	9.0	21	9.9	24
CPT-18/ 15 ft	Z-9	5.0	6	5.2	24	1.4	6	2.4	15	2.4	21	2.5	24
CPT-4A/ 25 ft	Z-1A	not measured		3.5	0	3.4	10						
CPT-4E/ 25 ft	Z-1A	not measured		not measured		2.6	12	1.3	0			2.0	0
CPT-16/ 25 ft	Z-9	not measured		1.8	24	1.1	6	2	15	2.6	21	3.6	24
CPT-31/25 ft	Z-1A	0	12										
CPT-32/ 25 ft	Z-1A	10	12	16.5	18	13.0	12	8.3	6	6	6		
CPT-30/ 28 ft	Z-18	3.2	12	1.4	18	0	12	0	6	0	6		
CPT-13A/ 30 ft	Z-1A	not measured		3.6	18	2.6	12	1.6	6	2	6	1.8	0
CPT-7A/ 32 ft	Z-1A	5.4	12	6.2	18	5.6	12	3.9	6	9.5	6	1.9	0
CPT-27/ 33 ft	Z-9	not measured		2.6	24	1.5	6	1.7	15	2.7	21	2.7	24
CPT-1A/ 35 ft	Z-12	3.0	12	7.7	18	11.3	12	22.0	15	18.3	6	10.7	0
CPT-28/ 40 ft	Z-9					56.5	6						
CPT-33/ 40 ft	Z-1A	2.6	12			2.3	12						
CPT-34/ 40 ft	Z-18	1.7	12	1.9	0	2.2	12	1.6	0			1.4	0
CPT-21A/ 45 ft	Z-9	57	3	127	24	133	6	90.0	15	150	21	150	24
W15-220ST/ 52 ft	Z-9	1.6	3	2.5	24			1.5	1				
CPT-28/ 60 ft	Z-9	3.7	3										
CPT-9A/ 60 ft	Z-9	44	3	68	24	45.3	6	35.9	15	35.9	21	35.9	24
CPT-16/ 65 ft	Z-9	not measured		not measured		not measured		4.2	15			4.0	24
CPT-1A/ 68 ft	Z-12	not measured		not measured		5.5	12						
CPT-30/ 68 ft	Z-18	3.0	12										
CPT-32/ 70 ft	Z-1A					7.7	12						
CPT-13A/ 70 ft	Z-1A	5.6	12										
CPT-24/70 ft	Z-9	3.6	3					4.7	15			9.1	24
W15-219SST/ 70 ft	Z-9	7.6	3	7.8	24			1.9	1			9.5	22
CPT-18/ 75 ft	Z-9	not measured		18	24			4.5	15			8.0	24
CPT-4A/ 75 ft	Z-1A	not measured		not measured		7.1	3						
CPT-31/ 76 ft	Z-1A	4.2	12										
CPT-33/ 80 ft	Z-1A	9.2	12										
W15-82/ 83 ft	Z-9	46	6	55	24	66.7	6	85.8	15	85.8	21	85.8	24
CPT-21A/ 86 ft	Z-9	148	6	195	24	186	6	206	15	244	21	244	24
CPT-34/ 86 ft	Z-18	0	12										
W15-95U/ 86 ft	Z-9	39	6	43	21								
W15-218SST/ 86 ft	Z-9	0	3					1.6	2				
CPT-28/ 87 ft	Z-9	203	6	224	24	229	6	235	15	258	21	258	24
CPT-4B/ 90 ft	Z-1A					3.2	10						
CPT-1A/ 91 ft	Z-18	4.2	12			10.7	10						
CPT-4A/ 91 ft	Z-1A	14	12			7.5	2						
CPT-9A/ 91 ft	Z-9	72	3			74.3	6						
W15-85/ 91 ft	Z-9	not measured		51	24								
W18-252SST/ 100	Z-1A	24	12										
W18-152/ 101 ft	Z-12	33	12	25	18	25.7	12	20.7	6	12.4	6		
CPT-4E/ 103 ft	Z-1A	not measured		not measured		16.1	12						
W18-167/ 106 ft	Z-1A	228	12	248	18	297	12	243	6	266	6		
W18-165/ 109 ft	Z-1A	not measured		not measured		278	12	328	6	205	6		
W15-217/ 114 ft	Z-9	561	6	442	24	93.6	6	444	15	458	21	458	24
CPT-24/ 118 ft	Z-9	37	6	35	24			27.8	15			15.3	24
W15-220SST/ 118	Z-9	36	3	34	24			27.5	3			26.0	24
W18-158U/ 120 ft	Z-1A	492	12	284	18	163	3						
W15-219SST/ 130	Z-9	47	3	54	24			23.1	1			5.7	22
W18-249/ 130 ft	Z-18	215	12	176	18	196	12	46.3	6	41.0	6		
W18-248/ 131 ft	Z-1A	177	12	214	18	306	12	182	6	180	6		
W15-95L/ 144 ft	Z-9	not measured		not measured		31.8	6	25.1	15	40.3	21	40.3	24
W15-219SST/ 155	Z-9	24	3	44	24			6.8	1			0	22
W15-220L/ 163 ft	Z-9							----	15			8	24
W15-219L/ 175 ft	Z-9							----	15			23	24
W15-9L/ 176 ft	Z-9	15	6	20	21	16.9	6	13.1	15	13.1	21	13.1	24
W15-84L/ 180 ft	Z-9	not measured		not measured		not measured		25.9	15	25.9	21	25.9	24
W15-6L/ 182 ft	Z-9	1.3	6										
W15-220SST/ 185	Z-9	13	3	15	24			----	1				
W18-7/ 197 ft	Z-1A	29	12										
W18-12/ 198 ft	Z-18	19	12										
W18-6L/ 208 ft	Z-1A	15	12										

* - based on location (Z-1A/18/12 or Z-9) of monitoring point; specific points may be beyond SVE zone of influence during particular operating configurations

- Z-18 and Z-12 wells off-line Oct 96 - Apr 98

- CPT-1A, CPT-9A, and possibly CPT-7A appeared to be beyond SVE zone of influence in Oct 96 based on differential pressure (BHI-01105, p. 6-1)

- CPT-9A, CPT-21A, CPT-28 beyond SVE zone of influence in May 96 based on CCl4 concentrations and airflow modeling based on measured vacuums (BHI-01105, p. 6-1)

Carbon Tetrachloride Rebound Concentrations
Monitored at 200-PW-1 Soil Vapor Extraction Sites
July 2002 (Z-9) or April 2004 (Z-1A) - June 2004

200-PW-1 (200-ZP-2) Location (Well or Probe) /feet bgs	Site	05/01/2003 CCl4 (ppmv)	05/22/2003 CCl4 (ppmv)	07/01/2003 CCl4 (ppmv)	08/05/2003 CCl4 (ppmv)	08/26/2003 CCl4 (ppmv)	10/31/2003 CCl4 (ppmv)	12/04/2003 CCl4 (ppmv)	12/22/2003 CCl4 (ppmv)	01/20/2004 CCl4 (ppmv)	02/19/2004 CCl4 (ppmv)	03/16/2004 CCl4 (ppmv)	03/24/2004 CCl4 (ppmv)	04/29/2004 CCl4 (ppmv)	05/05/2004 CCl4 (ppmv)	06/03/2004 CCl4 (ppmv)	06/24/2004 CCl4 (ppmv)
CPT-17/ 10 ft	Z-9	5.3	6.6	4.5	6.1	5.3	3.2	4.1	2.7	5.8	5.0	--- (c)	9.0	7.0		9.9	9.0
CPT-18/ 15 ft	Z-9	0	2.0	0	1.8	2.4	0	1.1	1.0	1.5	1.4	--- (c)	1.6	1.2		2.5	2.5
CPT-4E/ 25 ft	Z-1A													1.7		1.4	2.0
CPT-16/ 25 ft	Z-9	1.0	0	1.2	1.5	1.5	2.6	1.2	1.4	0	1.7	2.2		1.8		1.4	3.6
CPT-32/ 25 ft	Z-1A						0	0	0	2.4	5.1	5.9					
CPT-30/ 28 ft	Z-1A						0	0	0	0	0	0					
CPT-13A/ 30 ft	Z-1A						0	0	0	0	0	1.8		1.4		1.5	1.8
CPT-7A/ 32 ft	Z-1A						2.4	3.0	2.7	4.3	3.0	9.5		1.7		1.9	1.7
CPT-27/ 33 ft	Z-9	1.0	1.7	1.1	1.0	1.6	1.1	0	1.1	1.5	2.0	2.7		2.5		1.4	2.2
CPT-1A/ 35 ft	Z-12						18.3	9.5	13.1	10.8	6.0	9.0		4.2		10.7	9.0
CPT-34/ 40 ft	Z-18													1.4		1.1	1.0
CPT-21A/ 45 ft	Z-9	72.8	90.0	75.1	85.5	83.0	52.3	89.1	68.5	59.2	71.8	--- (c)	150	59.2		136	81.9
CPT-9A/ 60 ft	Z-9	30.1	33.2	30.1	30.0	28.5	25.9	33.1	30.8	24.3	33.8	27.1		25.7		28.3	26.0
CPT-16/ 65 ft	Z-9													3.1		4.0	1.5
CPT-24/ 70 ft	Z-9													4.4		4.4	9.1
W15-219SST/ 70 ft	Z-9													9.5			
CPT-18/ 75 ft	Z-9													8.0		6.2	4.7
W15-82/ 83 ft	Z-9	50.0	56.2	49.2	44.3	54.4	24.0	34.4	43.1	47.5	45.9	50.5		83.1		0	85.4
CPT-21A/ 86 ft	Z-9	199	206	153	187	197	91.8	183	171	244	98.1	--- (c)	212	73.3		177	157
CPT-28/ 87 ft	Z-9	178	235	150	197	190	155	206	140	56.7	96.1	--- (c)	258	26.8		222	164
W18-152/ 101 ft	Z-12						5.7	10.5	11.3	10.5	12.4	12.1					
W18-167/ 106 ft	Z-1A						201	223	201	266	201	--- (b)					
W18-165/ 109 ft	Z-1A						94.2	205	193	188	186	94.8					
W15-217/ 114 ft	Z-9	74.3	409	89.7	335	444	53.8	80.4	66.4	82.5	62.0	--- (c)	458	256		377	257
CPT-24/ 118 ft	Z-9													5.3		15.3	8.5
W15-220SST/ 118 ft	Z-9														26.0	18.7	18.5
W18-249/ 130 ft	Z-18						8.0	31.1	21.4	19.6	22.1	41.0					
W15-219SST/ 130 ft	Z-9													5.7			
W18-248/ 131 ft	Z-1A						78.6	80.4	85.6	90.9	166	180					
W15-95L/ 144 ft	Z-9	17.2	18.8	25.1	13.7	10.9	19.2	20.3	----- (a)	----- (a)	40.3	23.0		35.0		22.0	28.1
W15-219SST/ 155 ft	Z-9													0			
W15-220L/ 163 ft	Z-9													7.5		6.4	0
W15-219L/ 175 ft	Z-9													--- (d)	23.0	2.9	0
W15-9L/ 176 ft	Z-9	8.2	11.6	10.3	13.1	12.5	6.1	5.8	----- (a)	----- (a)	9.1	9.6		8.8		10.1	11.9
W15-84L/ 180 ft	Z-9	8.3	25.9	17.9	21.0	23.8	4.7	4.9	4.9	10.7	18.5	--- (c)	19.5	15.6		16.4	20.9

(a) Unable to access because of drilling operations
(b) Unable to sample; tubing will be repaired.
(c) anomalously low due to pump problems; resampled on 3/24/04
(d) unable to install sample tubing; sampled W15-219SST/70 ft, W15-219SST/130 ft, and W15-219SST/155 ft instead

Attachment 7

Table A.1. Sampling Matrix for 200-PO-1 Supplementary Wells

Well	Alkalinity	Alpha	Anions	Arsenic	Beta	Cr6+	Cyanide	Gamma	Hg & Pb	I-129	ICP	Phenols	Sr-90	Tc-99	TDS	TOC	TOX	Tritium	Uranium	VOA	Other Comments	Co-Sampled with 200-PO-1 Operable Unit
RCRA Treatment, Storage and Disposal Units																						
PUREX Cribs																						
299-E17-1	S	S	S	S	S					S	S	S	S					S			S:Amm	
299-E17-14	Q	Q	Q	Q	Q					Q	Q	Q	Q					Q			Q:Amm	T
299-E17-16	S	S	S	S	S					S	S	S	S					S			S:Amm	T
299-E17-18	S	S	S	S	S					S	S	S	S					S			S:Amm	T
299-E17-19	S	S	S	S	S					S	S	S	S					S			S:Amm	T
299-E24-16	Q	Q	Q	Q	Q					Q	Q	Q	Q					Q			Q:Amm	
299-E24-18	S	S	S	S	S					S	S	S	S					S			S:Amm	T
299-E25-17	S	S	S	S	S					S	S	S	S					S			S:Amm	T
299-E25-19	Q	Q	Q	Q	Q					Q	Q	Q	Q					Q			Q:Amm	T
299-E25-31	S	S	S	S	S					S	S	S	S					S			S:Amm	
699-37-47A	S	S	S	S	S					S	S	S	S					S			S:Amm	T
Waste Management Area A-AX																						
299-E24-19	S		S		S			A		A	S	A	A	S		S	S	A	A			A
299-E24-20	S		S		S			A		A	S	A	A	S		S	S	A	A			T
299-E24-22	S		S		S			A		A	S	A	A	S		S	S	A	A			
299-E25-40	S		S		S			A		A	S	A	A	S		S	S	A	A			
299-E25-41	S		S		S			A		A	S	A	A	S		S	S	A	A			T
299-E25-46	S		S		S			A		A	S	A	A	S		S	S	A	A			T
299-E25-93	S		S		S			A		A	S	A	A	S		S	S	A	A			
299-E24-4																					See Notes	
299-E24-13																					See Notes	
299-E24-14																					See Notes	
299-E25-1																					See Notes	
299-E25-4																					See Notes	
299-E25-5																					See Notes	
299-E25-7																					See Notes	
299-E25-8																					See Notes	
299-E25-9																					See Notes	
299-E25-10																					See Notes	
299-E26-5																					See Notes	
216-A-29 Ditch																						
299-E25-26	S		S								A	A				S	S					
299-E25-28	S		S								A	A				A	A				Deep unconfined	T
299-E25-32P	S		S								A	A				S	S					T
299-E25-34	S		S								A	A				S	S					T
299-E25-35	S		S								A	A				S	S					T
299-E25-48	S		S								A	A				S	S					
299-E26-12	S		S								A	A				S	S					
299-E26-13	S		S								A	A				S	S					
699-43-45	S		S								A	A				S	S					T
216-B-3 Pond																						

Well	Alkalinity	Alpha	Anions	Arsenic	Beta	Cr6+	Cyanide	Gamma	Hg & Pb	I-129	ICP	Phenols	Sr-90	Tc-99	TDS	TOC	TOX	Tritium	Uranium	VOA	Other Comments	Co-Sampled with 200-PO-1 Operable Unit
699-42-42B	S	S	A		S				A		A	A						A			A: Cd; confined Ringold[a]	T
699-43-44	S	S	A		S				A		A	A						A			A:Cd	
699-43-45	S	S	A		S				A		A	A						A			A:Cd	T
699-44-39B	S	S	A		S				A		A	A						A			A:Cd	T
Non-Radioactive Dangerous Waste Landfill																						
699-25-33A			S								A	A				S	S			S	Bottom unconfined	
699-25-34A			S								A	A				S	S			S		
699-25-34B			S								A	A				S	S			S		
699-25-34D			S								A	A				S	S			S		
699-26-33			S								A	A				S	S			S		A
699-26-34A			S								A	A				S	S			S		
699-26-34B			S								A	A				S	S			S		
699-26-35A			Q	Q							Q	A				Q	S			Q	Q:Amm, COD, Col	T
699-26-35C			S								A	A				S	S			S	Bottom unconfined	
WAC Sites																						
Solid Waste Landfill																						
699-22-35			Q	Q							Q					Q				Q	Q:Amm, COD, Col	
699-23-34A			Q	Q							Q					Q				Q	Q:Amm, COD, Col	
699-23-34B			Q	Q							Q					Q				Q	Q:Amm, COD, Col	
699-24-33			Q	Q							Q					Q				Q	Q:Amm, COD, Col	
699-24-34A			Q	Q							Q					Q				Q	Q:Amm, COD, Col	
699-24-34B			Q	Q							Q					Q				Q	Q:Amm, COD, Col	
699-24-34C			Q	Q							Q					Q				Q	Q:Amm, COD, Col	T
699-24-35			Q	Q							Q					Q				Q	Q:Amm, COD, Col	
699-25-34C			Q	Q							Q					Q				Q	Q:Amm, COD, Col	
699-26-35A			Q	Q							Q	A				Q	S			Q	Q:Amm, COD, Col	T
400 Area Process Ponds																						
699-2-6A									Q		Q				Q	Q					Q:Cd, Cr, SO4	QA
699-2-7									Q		Q				Q	Q					Q:Cd, Cr, SO4	QA
699-8-17									Q		Q				Q	Q					Q:Cd, Cr, SO4	QA
200 Area Treated Effluent Disposal Facility (TEDF)																						
699-40-36	Q	Q	Q	Q	Q	Q			Q		Q				Q			A			Q: Cd	
699-41-35	Q	Q	Q	Q	Q	Q			Q		Q				Q			A			Q: Cd	

Submitted to 200 Areas Unit Managers Meeting, 07/15/2004

Well	Alkalinity	Alpha	Anions	Arsenic	Beta	Cr6+	Cyanide	Gamma	Hg & Pb	I-129	ICP	Phenols	Sr-90	Tc-99	TDS	TOC	TOX	Tritium	Uranium	VOA	Other Comments	Co-Sampled with 200-PO-1 Operable Unit
699-42-37	Q	Q	Q	Q	Q	Q			Q		Q				Q			A			Q: Cd	
CERCLA (300-FF-5)																						
618-10 Burial Grounds and 316-4 Crib																						
699-S6-E4A	S	S	S		S			S			S							S	S	S	S:SVOA	A
699-S6-E4B	S	A			A			A										S	A			T
699-S6-E4D	S	A			A			A										S	A			
699-S6-E4E	A																					
699-56-E4K	S	S	S		S			S			S							S	S	S	S:SVOA	
699-56-E4L	S	S	S		S			S			S							S	S	S	S:SVOA	
618-11 Burial Grounds																						
699-12-2C	S	Q	S		Q			Q		S	A							Q	Q	A		
699-13-0A	S	Q	S		Q			Q		S	A							Q	Q	A		
699-13-1E	S	Q	S		Q			Q		S	A							Q	Q	A		
699-13-2D	S	Q	S		Q			Q		S	A							Q	Q	A		
699-13-3A	S	Q	S		Q			Q		S	A							Q	Q	A		A
CERCLA 200-PO-1																						
200-BC Cribs (One-time sample prior to decommissioning)																						
299-E13-1																					See Notes	
299-E13-3																					See Notes	
299-E13-4																					See Notes	
299-E13-6																					See Notes	
299-E13-7																					See Notes	
299-E13-8																					See Notes	
299-E13-9																					See Notes	
299-E13-11																					See Notes	
299-E13-12																					See Notes	
299-E13-16																					See Notes	
299-E13-17																					See Notes	
299-E13-18																					See Notes	
299-E13-19																					See Notes	

Notes: Shading indicates wells added for this change.

Waste Management Area A-AX Wells will be sampled and evaluated for possible continued use to monitor cribs and to provide a monitoring location between WMA A-AX and C farms. Constituents are yet to be determined.

200-BC-Cribs wells will be sampled once before the wells are decommissioned. Constituents are to be determined.

Submitted to 200 Areas Unit Managers Meeting, 07/15/2004

Attachment 3A
200-PO-1 Operable Unit Supplemental Groundwater Well List

RCRA TSD Units

PUREX Cribs

299-E17-1
299-E17-14
299-E17-16
299-E17-18
299-E17-19
299-E24-16
299-E24-18
299-E25-17
299-E25-19
299-E25-31
699-37-47A

Waste Management Area A-AX

299-E24-19
299-E24-20
299-E25-40
299-E25-41
299-E25-46
299-E25-28
299-E25-32P
299-E25-34
299-E25-35
299-E25-48
299-E26-12
299-E26-13
699-43-45
299-E24-4
299-E24-13
299-E24-14
299-E25-1
299-E25-4
299-E25-5
299-E25-7
299-E25-8
299-E25-9
299-E25-13
299-E26-5

216-B-3 Pond

699-42-42B
699-43-44
699-43-45
699-44-39B

WAC Sites

Solid Waste Landfill

699-22-35
699-23-34A
699-23-34B
699-24-33
699-24-34A
699-24-34B
699-24-34C
699-24-35
699-25-34C
699-26-35A

400 Area Process Ponds

699-2-6A
699-2-7
699-8-17

200 Area Treated Effluent Disposal Facility

699-40-36
699-41-35
699-42-37

CERCLA (300-FF-5)

618-10 Burial Grounds and 316-4 Crib

699-S6-E4A
699-S6-E4B
699-S6-E4D
699-S6-E4E

618-11 Burial Grounds

699-12-2C
699-13-0A
699-13-1E
699-13-2D
699-13-3A

CERCLA (200-PO-1)

200-BC-Cribs

299-E13-1
299-E13-3
299-E13-4
299-E13-6
299-E13-7
299-E13-8
299-E13-9
299-E13-11
299-E13-12

Submitted to 200 Areas Unit Managers Meeting, 07/15/2004

RCRA TSD Units (cont from page 1)

Non-Radioactive Dangerous Waste Landfill

699-25-33A
699-25-34A
699-25-34B
699-25-34D
699-26-33
699-26-34A
699-26-34B
699-26-35A
699-26-35C

200-BC Cribs (continued)

299-E13-16
299-E13-17
299-E13-18
299-E13-19

Notes: Shading indicates wells added for this change.

Waste Management Area A-AX wells will be sampled and evaluated for possible continued use to monitor cribs and to provide a monitoring location between SST A-AX and C farms.

200-BC-Cribs wells will be sampled once before the wells are decommissioned.

APPROVAL OF THE CARBON TETRACHLORIDE EXPEDITED RESPONSE ACTION SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN FOR FY 2004 REVISED JULY 2004

The Unit Managers for the Carbon Tetrachloride Expedited Response Action (200-PW-1 Operable Unit) approve the attached FY 2004 Soil Vapor Extraction System Operating Plan.

A. C. Tortoso 7/15/04 D. A. Faulk 7-15-04

A. C. Tortoso
U.S. Department of Energy
Richland Operations Office

Date

D. A. Faulk
U.S. Environmental Protection Agency
Region 10, Hanford Office

Date

FY 2004 SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN FOR THE CARBON TETRACHLORIDE EXPEDITED RESPONSE ACTION (200-PW-1 OPERABLE UNIT) REVISED JULY 2004

Reason for revision: The soil vapor extraction system was not operated from April 19, 2004 through June 7, 2004 while the system was evaluated and repositioned to address a safety concern. As a result, the period of operation has been extended through October 31, 2004.

Soil vapor extraction will be used at the 200-PW-1 Operable Unit (OU) during FY 2004 to remove carbon tetrachloride from the vadose zone. The primary objectives for this remediation are protection of the groundwater and mass removal. Only the 14.2 m^3/min soil vapor extraction (SVE) system will be operated. Two sites will be remediated using SVE: the 216-Z-9 (Z-9) site and the 216-Z-1A/Z-18/Z-12 (Z-1A) site. Specific on-line wells have been selected prior to start-up at each site based on vapor monitoring, previous concentration trends, and location. These site-specific plans are included in this operating plan for approval by the Unit Managers prior to implementation. Based on characterization data collected at on-line wells during operation, the mix of on-line wells may be reconfigured during operations to optimize removal. These adjustments to the mix of on-line wells will not be submitted to the Unit Managers for approval prior to implementation but will be reported at Unit Manager Meetings. Ongoing passive soil vapor extraction will be maintained at Z-1A wells when the passive wells are not being used for active soil vapor extraction operations.

Soil vapor monitoring will be conducted at vadose zone locations near the groundwater, the Cold Creek unit (formerly called the Plio-Pleistocene layer), and the ground surface at the Z-1A and Z-9 sites while they are not being actively remediated using SVE. The soil vapor monitoring plan for both sites from April 2004 through October 2004 is included with this operating plan for approval prior to implementation. Monitoring results will be reported at the Unit Manager Meetings. If carbon tetrachloride vapor concentrations increase such that the carbon tetrachloride contamination may impact human health or the environment (including groundwater), the Unit Managers will decide on the appropriate response to mitigate the problem (e.g., relocating the vapor extraction system to address the problem).

Drilling of vertical well C3426 to investigate the presence of dense, nonaqueous-phase liquid (DNAPL) carbon tetrachloride at the Z-9 site continued in the vadose zone during April and May 2004. It is anticipated that drilling in the vadose zone will also be conducted during July 2004 and possibly during August 2004. During FY 2004, the SVE system will be operated at the Z-1A site during this time to avoid interfering with the characterization sampling to be conducted during drilling.

The anticipated schedule for SVE operations and soil vapor monitoring is:

April 2004 through July 2004:	Operate the SVE system at the Z-1A site Monitor soil vapor concentrations at the Z-9 site
August 2004 through October 2004:	Operate the SVE system at the Z-9 site Monitor soil vapor concentrations at the Z-1A site

SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN AT THE 216-Z-1A, 216-Z-18, AND 216-Z-12 SITE April 2004 – July 2004

Thirty-four wells at the 216-Z-1A, 216-Z-18, and 216-Z-12 site (Z-1A site) are identified for potential soil vapor extraction (Table 1). Eight of these wells are the passive soil vapor extraction wells, which may be used temporarily for active soil vapor extraction. Selected wells will be prepared for potential hook-up to the soil vapor extraction system during April through July 2004.

The last non-operational soil vapor monitoring at Z-1A prior to SVE restart will take place in mid to late March 2004. At that time, any sampling tubes will be removed from potential on-line wells. The current wellhead assemblies (configured for non-operational soil vapor monitoring) will not be disturbed until the monitoring has been completed and the tubing removed.

Passive soil vapor extraction is being conducted at the following Z-1A wells with lower intervals open between the Cold Creek unit and groundwater: 299-W18-6L, 299-W18-7, 299-W18-10L, 299-W18-11L, 299-W18-12, 299-W18-246L, 299-W18-247L, 299-W18-252L (Table 2).

For initial start-up operations at Z-1A, extraction will be implemented at five planned intervals in the Z-1A tile field: 299-W18-165, 299-W18-166, 299-W18-167, 299-W18-168, and 299-W18-174 (Table 1) (Figure 1). During non-operational monitoring at Z-1A since October 2003, the highest carbon tetrachloride concentrations (maximum 266 ppmv) have been observed at wells associated with the tile field. Start-up operations in FY 2001, FY2002, and FY 2003 were also initiated using these five extraction intervals (a sixth interval selected in FY 2001 produced virtually no flow). Selecting the same set of initial wells will allow comparison of the rebound in FY 2001 after 18 months to that in FY 2002 after 12 months to that in FY 2003 after 6 months to that in FY2004 after 6 months.

These five intervals will be characterized on the first day of operations. During continued operations, all on-line wells will be characterized each week and all off-line wells, if requested, will be characterized during the 2nd, 4th, 6th, 8th, 10th, and final weeks, according to the attached sampling and analysis plan (Table 3). As before, the mix of on-line wells will be periodically changed during operations, based on changing concentrations, extraction interval locations, and operating experience. In general, the initial extraction wells will be nearer the primary carbon tetrachloride source (Z-1A Tile Field) and wells added later will expand operations away from this source.

The 200-PW-1 OU task lead organizes and maintains spreadsheets of the characterization data on a desktop computer. The characterization data are included in the annual performance evaluation report.

SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN AT THE 216-Z-9 SITE
August 2004 – October 2004

Twenty-two wells at the 216-Z-9 site (Z-9 site) are identified for potential vapor extraction (Table 4). One of these wells is new well C3426, which is anticipated to be completed as a vapor extraction well during FY2004. Selected wells will be prepared for potential hook-up to the soil vapor extraction system during August through October 2004.

The last non-operational soil vapor monitoring at Z-9 prior to SVE restart will take place in mid to late July 2004. At that time, any sampling tubes will be removed from potential on-line wells. The current wellhead assemblies (configured for non-operational soil vapor monitoring) will not be disturbed until the monitoring has been completed and the tubing removed.

For initial start-up operations at Z-9, extraction will be implemented at four planned intervals: 299-W15-217, 299-W15-82, 299-W15-9U, and 299-W15-9L (Table 4) (Figure 1). During non-operational monitoring at Z-9 since July 2002, the highest carbon tetrachloride concentration observed was 444 ppmv at well 299-W15-217. Start-up operations in FY 1998, FY 1999, FY 2001, and FY 2002 were also initiated using these four extraction intervals. Selecting the same set of initial wells will allow comparison of the rebound in FY 1998 after 9 months to that in FY 1999 after 6 months to that in FY 2001 after 24 months to that in FY 2002 after 6 months to that in FY 2004 after 24 months. (The SVE system was not operated at the Z-9 site during FY2003 to avoid interfering with the characterization sampling to be conducted during drilling of well C3426.)

These four intervals will be characterized on the first day they are placed into operation. During continued operations, all on-line wells will be characterized each week and all off-line wells, if requested, will be characterized during the 2nd, 4th, 6th, 8th, 10th, and final weeks, according to the attached sampling and analysis plan (Table 3). As with Z-1A, the mix of on-line wells will be periodically changed during operations, based on changing concentrations, extraction interval locations, and operating experience. In general, the initial extraction wells will be nearer the carbon tetrachloride source (Z-9 Trench) and wells added later will expand operations away from this source.

The 200-PW-1 OU task lead organizes and maintains spreadsheets of the characterization data on a desktop computer. The characterization data are included in the annual performance evaluation report.

Table 1. Wells Available for Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through July 2004

Potential On-Line Wells	Reason	Initial Wells
299-W18-6L	Groundwater Protection	
299-W18-6U	Mass removal	
299-W18-7	Groundwater Protection	
299-W18-10L	Groundwater Protection	
299-W18-11L	Groundwater Protection	
299-W18-12	Groundwater Protection	
299-W18-89	Mass removal	
299-W18-93	Mass removal	
299-W18-94	Mass removal	
299-W18-96	Mass removal	
299-W18-97	Mass removal	
299-W18-98	Mass removal	
299-W18-99	Mass removal	
299-W18-152	Mass removal	
299-W18-153	Mass removal	
299-W18-157	Mass removal	
299-W18-158L	Mass removal	
299-W18-159	Mass removal	
299-W18-163L	Mass removal	
299-W18-165	Mass removal	X
299-W18-166	Mass removal	X
299-W18-167	Mass removal	X
299-W18-168	Mass removal	X
299-W18-169	Mass removal	
299-W18-171L	Mass removal	
299-W18-174	Mass removal	X
299-W18-246L	Groundwater Protection	
299-W18-246U	Mass removal	
299-W18-247L	Groundwater Protection	
299-W18-247U	Mass removal	
299-W18-248	Mass removal	
299-W18-249	Mass removal	
299-W18-252L	Groundwater Protection	
299-W18-252U	Mass removal	

Table 2. Passive Soil Vapor Extraction Wells at the 216-Z-1A/Z-18/Z-12 Site, FY 2004

Passive Soil Vapor Extraction Wells	Reason
299-W18-6L	Groundwater Protection
299-W18-7	Groundwater Protection
299-W18-10L	Groundwater Protection
299-W18-11L	Groundwater Protection
299-W18-12	Groundwater Protection
299-W18-246L	Groundwater Protection
299-W18-247L	Groundwater Protection
299-W18-252L	Groundwater Protection

Table 3. Sampling and Analysis Plan for Soil Vapor Extraction System Operations, April Through October 2004

When to Monitor	on-line wells	off-line wells	vacuum wellhead	flow	CCl4 carbon tetrachloride	CHCl3 chloroform	CH2Cl2 methylene chloride	MEK MEK
first day of operations	X		X	X	X	X	X	X
beginning of 2nd week	X	X	X	X	X	X	X	X
beginning of 3rd week	X		X	X	X	X	X	X
beginning of 4th week	X	X	X	X	X	X	X	X
beginning of 5th week	X		X	X	X	X	X	X
beginning of 6th week	X	X	X	X	X	X	X	X
beginning of 7th week	X		X	X	X	X	X	X
beginning of 8th week	X	X	X	X	X	X	X	X
beginning of 9th week	X		X	X	X	X	X	X
beginning of 10th week	X	X	X	X	X	X	X	X
beginning of 11th week	X		X	X	X	X	X	X
beginning of 12th week	X		X	X	X	X	X	X
last day of operations	X	X	X	X	X	X	X	X
Fax copy of monitoring records to 200-PW-1 OU Task Lead (Virginia Rohay at 373-3974) by close of day following monitoring.								

Table 4. Wells Available for Soil Vapor Extraction System Operations at the 216-Z-9 Site, August through October 2004

Potential On-Line Wells	Reason	Initial Wells
299-W15-6U	Mass removal	
299-W15-6L	Groundwater Protection	
299-W15-9U	Mass removal	X
299-W15-9L	Groundwater Protection	X
299-W15-82	Mass removal	X
299-W15-84U	Mass removal	
299-W15-84L	Mass removal	
299-W15-85	Mass removal	
299-W15-86	Mass removal	
299-W15-95U	Mass removal	
299-W15-95L	Mass removal	
299-W15-46 (C3426)	TBD	
299-W15-216U	Mass removal	
299-W15-216L	Groundwater Protection	
299-W15-217	Mass removal	X
299-W15-218U	Mass removal	
299-W15-218L	Groundwater Protection	
299-W15-219U	Mass removal	
299-W15-219L	Groundwater Protection	
299-W15-220U	Mass removal	
299-W15-220L	Groundwater Protection	
299-W15-223	Mass removal	

TBD = to be determined. The screen depth will be selected based on field screening of soil vapor samples collected during drilling. This well potentially will be completed as a groundwater monitoring well rather than a vapor extraction well, depending on field screening results in the vadose zone and groundwater.

Table 5a. Distribution of Selected Monitoring Locations During Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through July 2004

Target Zone	Number of Monitoring Locations		
	Z-1A	Z-9	Total
Near-surface (3-25 m below ground surface)	5	9	14
Cold Creek (25-45 m below ground surface)	0	7	7
Groundwater (50-65 m below ground surface)	8[a]	4	12
Total	13	20	33

[a] Eight available monitoring locations near the vadose/groundwater interface in the Z-1A area are being monitored as part of the passive soil vapor extraction system network.

Table 5b. Distribution of Selected Monitoring Locations During Soil Vapor Extraction System Operations at the 216-Z-9 Site, August through October 2004

Target Zone	Number of Monitoring Locations		
	Z-1A	Z-9	Total
Near-surface (3-25 m below ground surface)	10	3	13
Cold Creek (25-45 m below ground surface)	6	3	9
Groundwater (50-65 m below ground surface)	8[a]	0	8
Total	24	6	30

[a] Eight available monitoring locations near the vadose/groundwater interface in the Z-1A area are being monitored as part of the passive soil vapor extraction system network.

Table 6a. Non-Operational Wells and Probes Selected for Monitoring During Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through July 2004

Target Zone	Z-9	Depth (m)	Comment	Z-1A	Depth (m)	Comment
near-surface	CPT-17 10 ft (blue)	3	southwest of Z-9	CPT-4E 25 ft (white)	8	north central in Z-1A/Z-18/Z-12 field
near-surface	CPT-18 15 ft (white)	5	northwest of Z-9	CPT-13A 30 ft (blue)	10	southeast of Z-1A
near-surface	CPT-16 25 ft (blue)	8	east of Z-9	CPT-7A 32 ft (yellow)	10	farfield northeast of Z-1A
near-surface	CPT-27 33 ft (red)	10	southeast of Z-9	CPT-1A 35 ft (black)	11	west of Z-12
near-surface	CPT-21A 45 ft (green)	14	south of Z-9	CPT-34 40 ft (green)	12	west of Z-18
near-surface	CPT-9A 60 ft (blue)	18	farfield north of Z-9			
near-surface	CPT-16 65 ft (red)	20	east of Z-9			
near-surface	CPT-24 70 ft (green)	21	northwest of Z-9			
near-surface	CPT-18 75 ft (red)	23	northwest of Z-9			
Cold Creek	299-W15-82	25	east side of Z-9			
Cold Creek	CPT-21A 86 ft (red)	26	south of Z-9			
Cold Creek	CPT-28 87 ft (red)	27	farfield south of Z-9			
Cold Creek	299-W15-217	35	southwest corner of Z-9			
Cold Creek	CPT-24 118 ft (red)	36	northwest of Z-9			
Cold Creek	299-W15-220 SST/118 ft (red)	36	east of Z-9			
Cold Creek	299-W15-95L	44	north side of Z-9			
ground-water	299-W15-220L 163 ft	50	east of Z-9	299-W18-247L*	51	southeast of Z-18
ground-water	299-W15-219L 175 ft	53	northwest of Z-9	299-W18-246L*	52	west of Z-1A
ground-water	299-W15-84L 180 ft	55	west of Z-9	299-W18-252L*	53	middle of Z-1A/Z-18/Z-12 field
ground-water	299-W15-9L	57	11 m from 299-W15-32 extraction well	299-W18-10L*	55	east side of Z-18
ground-water				299-W18-7*	60	east side of Z-1A
ground-water				299-W18-11L*	60	within Z-18
ground-water				299-W18-12*	60	within Z-18
ground-water				299-W18-6L*	63	west side of Z-1A

* Passive soil vapor extraction wells

Note: Colors refer to the color coding on the soil vapor probe tubing.

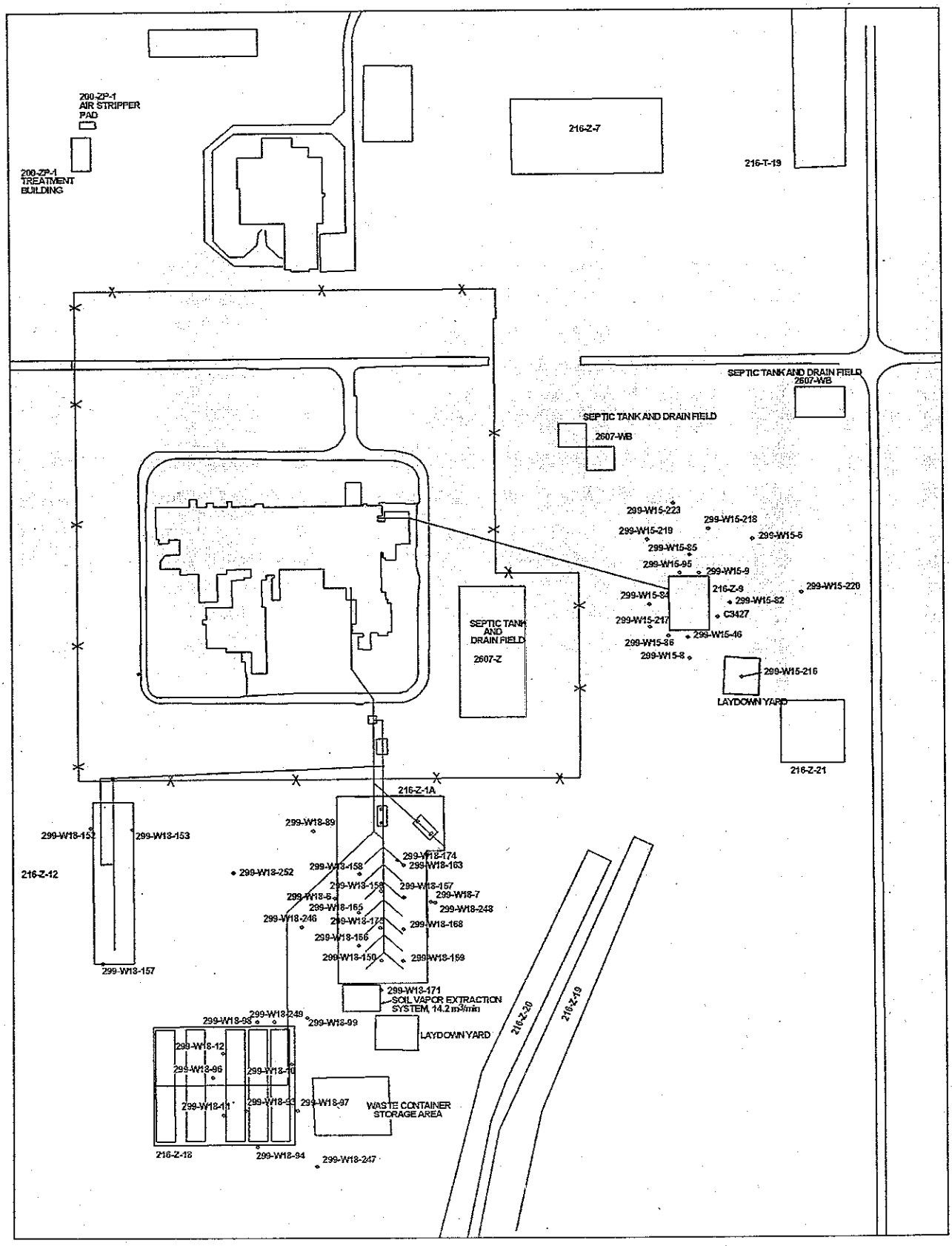
Table 6b. Non-Operational Wells and Probes Selected for Monitoring During Soil Vapor Extraction System Operations at the 216-Z-9 Site, August through October 2004

Target Zone	Z-9	Depth (m)	Comment	Z-1A	Depth (m)	Comment
near-surface	CPT-28 40 ft (green)	12	farfield south of Z-9	CPT-32 25 ft (green)	8	west of Z-1A
near-surface	CPT-21A 45 ft (green)	14	south of Z-9	CPT-4E 25 ft (white)	8	north central in Z-1A/Z-18/Z-12 field
near-surface	CPT-9A 60 ft (blue)	18	farfield north of Z-9	CPT-30 28 ft (green)	9	north of Z-18 (middle of Z-1A/Z-18/Z-12 field)
near-surface				CPT-13A 30 ft (blue)	10	southeast of Z-1A
near-surface				CPT-7A 32 ft (yellow)	10	farfield northeast of Z-1A
near-surface				CPT-1A 35 ft (black)	11	west of Z-12
near-surface				CPT-33 40 ft (green)	12	between Z-18 and Z-12
near-surface				CPT-34 40 ft (green)	12	west of Z-18
near-surface				CPT-1A 68 ft (yellow)	21	west of Z-12
near-surface				CPT-32 70 ft (red)	21	west of Z-1A
Cold Creek	CPT-21A 86 ft (red)	26	south of Z-9	299-W18-152	31	northwest corner of Z-12
Cold Creek	CPT-28 87 ft (red)	27	farfield south of Z-9	299-W18-167	32	within Z-1A
Cold Creek	CPT-9A 91 ft (red)	28	farfield north of Z-9	CPT-4F 109 ft (red)	33	north central in Z-1A/Z-18/Z-12 field
Cold Creek				299-W18-165	33	within Z-1A
Cold Creek				299-W18-249	40	northeast corner of Z-18
Cold Creek				299-W18-248	40	east side of Z-1A
ground-water				299-W18-247L*	51	southeast of Z-18
ground-water				299-W18-246L*	52	west of Z-1A
ground-water				299-W18-252L*	53	middle of Z-1A/Z-18/Z-12 field
ground-water				299-W18-10L*	55	east side of Z-18
ground-water				299-W18-7*	60	east side of Z-1A
ground-water				299-W18-11L*	60	within Z-18
ground-water				299-W18-12*	60	within Z-18
ground-water				299-W18-6L*	63	west side of Z-1A

* Passive soil vapor extraction wells

Note: Colors refer to the color coding on the soil vapor probe tubing.

Figure 1. Location of Extraction and Monitoring Wells at the 216-Z-1A/Z-18/Z-12 and 216-Z-9 Sites



July 9, 2004

VADOSE ZONE MONITORING PLAN FOR SOIL VAPOR EXTRACTION SITES
April 2004 –October 2004

Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring

This plan describes planned non-operational monitoring and passive soil vapor extraction monitoring to be conducted during April through October 2004 for the 200 West Area Carbon Tetrachloride Expedited Response Action (200-PW-1 Operable Unit). Non-operational monitoring will be conducted at the 216-Z-9 (Z-9) site during April through July 2004 while the soil vapor extraction (SVE) system is operating at the 216-Z-1A/Z-18/Z-12 (Z-1A) site. Non-operational monitoring will be conducted at the Z-1A site during August through October 2004 while the SVE system is operating at the Z-9 site. Passive soil vapor extraction monitoring will be conducted at the Z-1A site from April 2004 through October 2004 at passive wells that are not being used for active soil vapor extraction.

Scope: Monitor carbon tetrachloride soil vapor concentrations at selected probes and wells during non-operation of the soil vapor extraction (SVE) system (Tables 5 and 6). At any particular time, all of the probes and some of the wells will be "non-operational," i.e., they will not be connected to the SVE system. Eight of the non-operational wells have a passive soil vapor extraction system installed at the wellhead.

Passive soil vapor extraction is a remediation technology that uses naturally induced pressure gradients between the subsurface and the surface to drive soil vapor to the surface. In general, falling atmospheric pressure causes subsurface vapor to move to the atmosphere through wells, while rising atmospheric pressure causes atmospheric air to move into the subsurface. The passive soil vapor extraction systems will be used to remove carbon tetrachloride from the vadose zone.

Passive extraction wells will vent through aboveground canisters containing granular activated carbon (GAC). The wells will be monitored monthly using the sampling method used for the non-operational wells. The carbon tetrachloride vapor concentration will be monitored both upstream and downstream of the GAC. The measured vapor concentrations will be used to estimate the amount of carbon tetrachloride extracted through each well during the month.

For monitoring the non-operational probes and wells and the passive extraction wells, the components of this scope are:

- Collect soil vapor samples using the rebound study sampling method and sampling pump (BHI-01105)
- Analyze soil vapor samples for carbon tetrachloride using the B&K in accordance with GPP-EE-05-4.0 at field screening level QC-1 (CP-A-QA-03-5.2)
- Evaluate concentration trends for the Fluor Hanford Waste Disposal/Groundwater Remediation Project
- Report results to 200-PW-1 Operable Unit Managers
- Include results in annual reports

Purpose and Objectives: The purpose of non-operational monitoring is to measure carbon tetrachloride concentrations in the vadose zone during the shutdown of the SVE system.

The objectives of monitoring the non-operational wells and probes are (1) to measure carbon tetrachloride concentrations and trends near the vadose-atmosphere and vadose-groundwater interfaces to evaluate whether non-operation of the SVE system is negatively impacting the atmosphere or groundwater; and (2) to be cognizant of carbon tetrachloride concentrations and trends near the lower permeability Cold Creek unit to provide an indication of concentrations that can be expected during restart of SVE operations and to support selection of on-line wells.

The objectives of monitoring the passive soil vapor extraction system wells, which are all open near the vadose-groundwater interface, are: (1) to measure carbon tetrachloride concentrations and trends near the vadose-groundwater interface; and (2) to quantify the mass of carbon tetrachloride removed using this technology.

Duration: Non-operational monitoring and passive soil vapor extraction monitoring will be conducted from April 2004 through October 2004 during FY 2004.

Monitoring Frequency: Monitoring will be conducted monthly.

Monitoring Locations: Locations were selected to focus carbon tetrachloride monitoring near the vadose-atmosphere and vadose-groundwater interfaces and near the Cold Creek unit (Table 5). These monitoring locations may be revised by the 200-PW-1 OU task lead based on developing trends, accessibility, and/or recommendations of the sampler. The 200-PW-1 Operable Unit Managers will be advised of any changes to the monitoring locations. Monitoring locations are shown on Figures 2 and 3.

Data Management: The field screening data obtained from non-operational wells and probes and passive extraction wells are entered into a controlled field logbook, which is maintained by Lockheed Martin Services Inc (LMSI) Records Information Management (RIM) department. The 200-PW-1 OU task lead organizes and maintains spreadsheets of the field screening data on a desktop computer. The field screening data are included in the annual performance evaluation report.

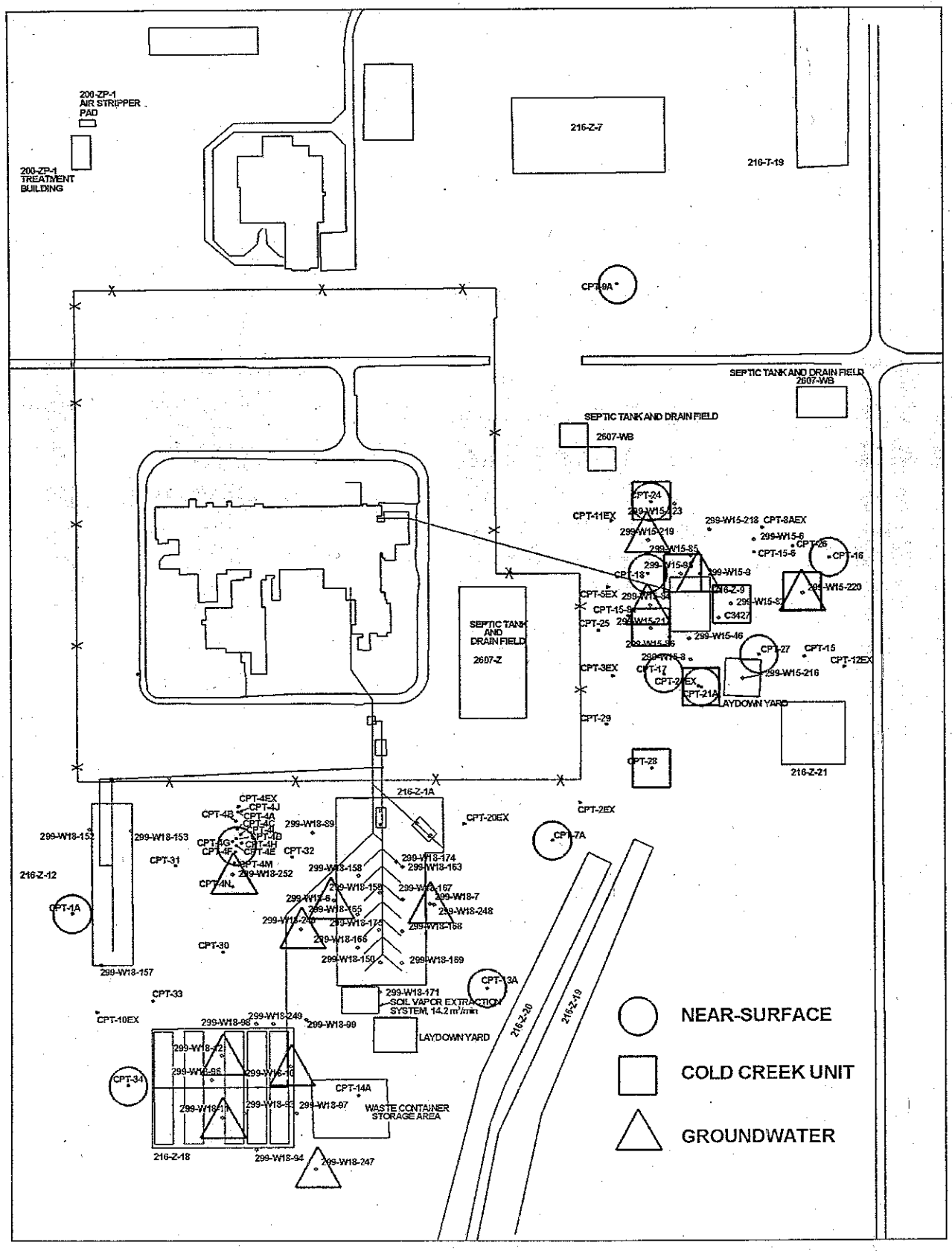
References:

CP-A-QA-03-5.2, *Quality Assurance Program Plans*, Procedure 5.2, "Onsite Measurements Quality Assurance Program Plan," Fluor Hanford, Inc., Richland, Washington.

GPP-EE-05-4.0, *Analysis of Volatile Organic Compounds in Vapor Samples Using the Bruel and Kjaer 1301 and Innova 1312 Multi-Gas Analyzers*, Fluor Hanford, Inc., Richland, Washington.

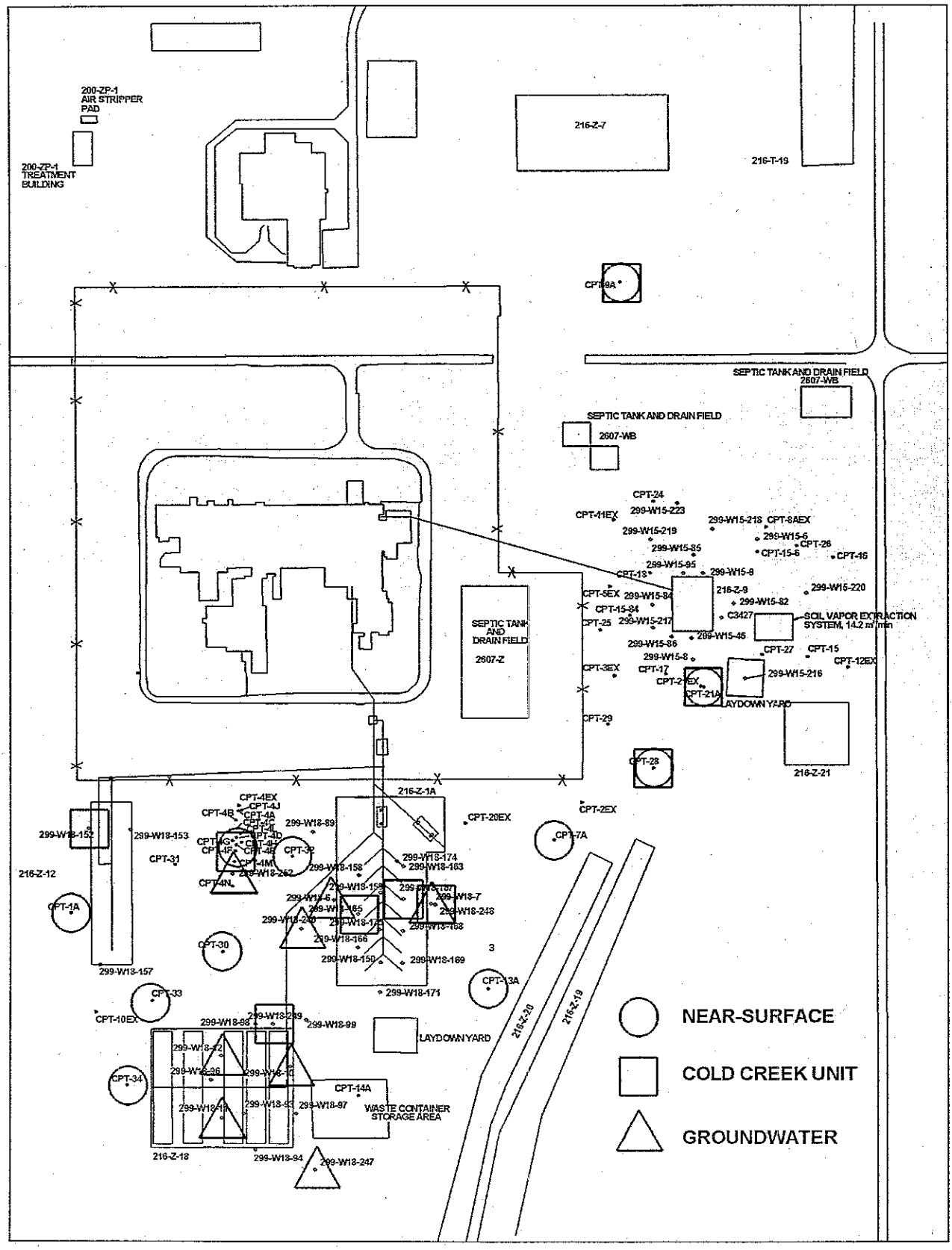
BHI-01105, 1997, *Rebound Study Report for the Carbon Tetrachloride Soil Vapor Extraction Site, Fiscal Year 1997*, Bechtel Hanford, Inc., Richland, Washington.

Figure 2. Location of Wells and Probes Selected for Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring, April through July 2004



July 9, 2004

Figure 3. Location of Wells and Probes Selected for Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring, August through October 2004



July 9, 2004

APPROVAL OF THE CARBON TETRACHLORIDE EXPEDITED RESPONSE ACTION
SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN FOR FY 2004
REVISED JULY 2004

The Unit Managers for the Carbon Tetrachloride Expedited Response Action (200-PW-1 Operable Unit) approve the attached FY 2004 Soil Vapor Extraction System Operating Plan.

A. C. Tortoso 7/13/04 D. A. Faulk 7-15-04

A. C. Tortoso	Date	D. A. Faulk	Date
U.S. Department of Energy		U.S. Environmental Protection Agency	
Richland Operations Office		Region 10, Hanford Office	

FY 2004 SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN FOR THE CARBON TETRACHLORIDE EXPEDITED RESPONSE ACTION (200-PW-1 OPERABLE UNIT) REVISED JULY 2004

Reason for revision: The soil vapor extraction system was not operated from April 19, 2004 through June 7, 2004 while the system was evaluated and repositioned to address a safety concern. As a result, the period of operation has been extended through October 31, 2004.

Soil vapor extraction will be used at the 200-PW-1 Operable Unit (OU) during FY 2004 to remove carbon tetrachloride from the vadose zone. The primary objectives for this remediation are protection of the groundwater and mass removal. Only the 14.2 m^3/min soil vapor extraction (SVE) system will be operated. Two sites will be remediated using SVE: the 216-Z-9 (Z-9) site and the 216-Z-1A/Z-18/Z-12 (Z-1A) site. Specific on-line wells have been selected prior to start-up at each site based on vapor monitoring, previous concentration trends, and location. These site-specific plans are included in this operating plan for approval by the Unit Managers prior to implementation. Based on characterization data collected at on-line wells during operation, the mix of on-line wells may be reconfigured during operations to optimize removal. These adjustments to the mix of on-line wells will not be submitted to the Unit Managers for approval prior to implementation but will be reported at Unit Manager Meetings. Ongoing passive soil vapor extraction will be maintained at Z-1A wells when the passive wells are not being used for active soil vapor extraction operations.

Soil vapor monitoring will be conducted at vadose zone locations near the groundwater, the Cold Creek unit (formerly called the Plio-Pleistocene layer), and the ground surface at the Z-1A and Z-9 sites while they are not being actively remediated using SVE. The soil vapor monitoring plan for both sites from April 2004 through October 2004 is included with this operating plan for approval prior to implementation. Monitoring results will be reported at the Unit Manager Meetings. If carbon tetrachloride vapor concentrations increase such that the carbon tetrachloride contamination may impact human health or the environment (including groundwater), the Unit Managers will decide on the appropriate response to mitigate the problem (e.g., relocating the vapor extraction system to address the problem).

Drilling of vertical well C3426 to investigate the presence of dense, nonaqueous-phase liquid (DNAPL) carbon tetrachloride at the Z-9 site continued in the vadose zone during April and May 2004. It is anticipated that drilling in the vadose zone will also be conducted during July 2004 and possibly during August 2004. During FY 2004, the SVE system will be operated at the Z-1A site during this time to avoid interfering with the characterization sampling to be conducted during drilling.

The anticipated schedule for SVE operations and soil vapor monitoring is:

April 2004 through July 2004:	Operate the SVE system at the Z-1A site Monitor soil vapor concentrations at the Z-9 site
August 2004 through October 2004:	Operate the SVE system at the Z-9 site Monitor soil vapor concentrations at the Z-1A site

SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN AT THE 216-Z-1A, 216-Z-18, AND 216-Z-12 SITE April 2004 – July 2004

Thirty-four wells at the 216-Z-1A, 216-Z-18, and 216-Z-12 site (Z-1A site) are identified for potential soil vapor extraction (Table 1). Eight of these wells are the passive soil vapor extraction wells, which may be used temporarily for active soil vapor extraction. Selected wells will be prepared for potential hook-up to the soil vapor extraction system during April through July 2004.

The last non-operational soil vapor monitoring at Z-1A prior to SVE restart will take place in mid to late March 2004. At that time, any sampling tubes will be removed from potential on-line wells. The current wellhead assemblies (configured for non-operational soil vapor monitoring) will not be disturbed until the monitoring has been completed and the tubing removed.

Passive soil vapor extraction is being conducted at the following Z-1A wells with lower intervals open between the Cold Creek unit and groundwater: 299-W18-6L, 299-W18-7, 299-W18-10L, 299-W18-11L, 299-W18-12, 299-W18-246L, 299-W18-247L, 299-W18-252L (Table 2).

For initial start-up operations at Z-1A, extraction will be implemented at five planned intervals in the Z-1A tile field: 299-W18-165, 299-W18-166, 299-W18-167, 299-W18-168, and 299-W18-174 (Table 1) (Figure 1). During non-operational monitoring at Z-1A since October 2003, the highest carbon tetrachloride concentrations (maximum 266 ppmv) have been observed at wells associated with the tile field. Start-up operations in FY 2001, FY2002, and FY 2003 were also initiated using these five extraction intervals (a sixth interval selected in FY 2001 produced virtually no flow). Selecting the same set of initial wells will allow comparison of the rebound in FY 2001 after 18 months to that in FY 2002 after 12 months to that in FY 2003 after 6 months to that in FY2004 after 6 months.

These five intervals will be characterized on the first day of operations. During continued operations, all on-line wells will be characterized each week and all off-line wells, if requested, will be characterized during the 2nd, 4th, 6th, 8th, 10th, and final weeks, according to the attached sampling and analysis plan (Table 3). As before, the mix of on-line wells will be periodically changed during operations, based on changing concentrations, extraction interval locations, and operating experience. In general, the initial extraction wells will be nearer the primary carbon tetrachloride source (Z-1A Tile Field) and wells added later will expand operations away from this source.

The 200-PW-1 OU task lead organizes and maintains spreadsheets of the characterization data on a desktop computer. The characterization data are included in the annual performance evaluation report.

SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN AT THE 216-Z-9 SITE August 2004 – October 2004

Twenty-two wells at the 216-Z-9 site (Z-9 site) are identified for potential vapor extraction (Table 4). One of these wells is new well C3426, which is anticipated to be completed as a vapor extraction well during FY2004. Selected wells will be prepared for potential hook-up to the soil vapor extraction system during August through October 2004.

The last non-operational soil vapor monitoring at Z-9 prior to SVE restart will take place in mid to late July 2004. At that time, any sampling tubes will be removed from potential on-line wells. The current wellhead assemblies (configured for non-operational soil vapor monitoring) will not be disturbed until the monitoring has been completed and the tubing removed.

For initial start-up operations at Z-9, extraction will be implemented at four planned intervals: 299-W15-217, 299-W15-82, 299-W15-9U, and 299-W15-9L (Table 4) (Figure 1). During non-operational monitoring at Z-9 since July 2002, the highest carbon tetrachloride concentration observed was 444 ppmv at well 299-W15-217. Start-up operations in FY 1998, FY 1999, FY 2001, and FY 2002 were also initiated using these four extraction intervals. Selecting the same set of initial wells will allow comparison of the rebound in FY 1998 after 9 months to that in FY 1999 after 6 months to that in FY 2001 after 24 months to that in FY 2002 after 6 months to that in FY 2004 after 24 months. (The SVE system was not operated at the Z-9 site during FY2003 to avoid interfering with the characterization sampling to be conducted during drilling of well C3426.)

These four intervals will be characterized on the first day they are placed into operation. During continued operations, all on-line wells will be characterized each week and all off-line wells, if requested, will be characterized during the 2nd, 4th, 6th, 8th, 10th, and final weeks, according to the attached sampling and analysis plan (Table 3). As with Z-1A, the mix of on-line wells will be periodically changed during operations, based on changing concentrations, extraction interval locations, and operating experience. In general, the initial extraction wells will be nearer the carbon tetrachloride source (Z-9 Trench) and wells added later will expand operations away from this source.

The 200-PW-1 OU task lead organizes and maintains spreadsheets of the characterization data on a desktop computer. The characterization data are included in the annual performance evaluation report.

VADOSE ZONE MONITORING PLAN FOR SOIL VAPOR EXTRACTION SITES
April 2004 –October 2004

Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring

This plan describes planned non-operational monitoring and passive soil vapor extraction monitoring to be conducted during April through October 2004 for the 200 West Area Carbon Tetrachloride Expedited Response Action (200-PW-1 Operable Unit). Non-operational monitoring will be conducted at the 216-Z-9 (Z-9) site during April through July 2004 while the soil vapor extraction (SVE) system is operating at the 216-Z-1A/Z-18/Z-12 (Z-1A) site. Non-operational monitoring will be conducted at the Z-1A site during August through October 2004 while the SVE system is operating at the Z-9 site. Passive soil vapor extraction monitoring will be conducted at the Z-1A site from April 2004 through October 2004 at passive wells that are not being used for active soil vapor extraction.

Scope: Monitor carbon tetrachloride soil vapor concentrations at selected probes and wells during non-operation of the soil vapor extraction (SVE) system (Tables 5 and 6). At any particular time, all of the probes and some of the wells will be "non-operational," i.e., they will not be connected to the SVE system. Eight of the non-operational wells have a passive soil vapor extraction system installed at the wellhead.

Passive soil vapor extraction is a remediation technology that uses naturally induced pressure gradients between the subsurface and the surface to drive soil vapor to the surface. In general, falling atmospheric pressure causes subsurface vapor to move to the atmosphere through wells, while rising atmospheric pressure causes atmospheric air to move into the subsurface. The passive soil vapor extraction systems will be used to remove carbon tetrachloride from the vadose zone.

Passive extraction wells will vent through aboveground canisters containing granular activated carbon (GAC). The wells will be monitored monthly using the sampling method used for the non-operational wells. The carbon tetrachloride vapor concentration will be monitored both upstream and downstream of the GAC. The measured vapor concentrations will be used to estimate the amount of carbon tetrachloride extracted through each well during the month.

For monitoring the non-operational probes and wells and the passive extraction wells, the components of this scope are:

- Collect soil vapor samples using the rebound study sampling method and sampling pump (BHI-01105)
- Analyze soil vapor samples for carbon tetrachloride using the B&K in accordance with GPP-EE-05-4.0 at field screening level QC-1 (CP-A-QA-03-5.2)
- Evaluate concentration trends for the Fluor Hanford Waste Disposal/Groundwater Remediation Project
- Report results to 200-PW-1 Operable Unit Managers
- Include results in annual reports

Purpose and Objectives: The purpose of non-operational monitoring is to measure carbon tetrachloride concentrations in the vadose zone during the shutdown of the SVE system.

The objectives of monitoring the non-operational wells and probes are (1) to measure carbon tetrachloride concentrations and trends near the vadose-atmosphere and vadose-groundwater interfaces to evaluate whether non-operation of the SVE system is negatively impacting the atmosphere or groundwater; and (2) to be cognizant of carbon tetrachloride concentrations and trends near the lower permeability Cold Creek unit to provide an indication of concentrations that can be expected during restart of SVE operations and to support selection of on-line wells.

The objectives of monitoring the passive soil vapor extraction system wells, which are all open near the vadose-groundwater interface, are: (1) to measure carbon tetrachloride concentrations and trends near the vadose-groundwater interface; and (2) to quantify the mass of carbon tetrachloride removed using this technology.

Duration: Non-operational monitoring and passive soil vapor extraction monitoring will be conducted from April 2004 through October 2004 during FY 2004.

Monitoring Frequency: Monitoring will be conducted monthly.

Monitoring Locations: Locations were selected to focus carbon tetrachloride monitoring near the vadose-atmosphere and vadose-groundwater interfaces and near the Cold Creek unit (Table 5). These monitoring locations may be revised by the 200-PW-1 OU task lead based on developing trends, accessibility, and/or recommendations of the sampler. The 200-PW-1 Operable Unit Managers will be advised of any changes to the monitoring locations. Monitoring locations are shown on Figures 2 and 3.

Data Management: The field screening data obtained from non-operational wells and probes and passive extraction wells are entered into a controlled field logbook, which is maintained by Lockheed Martin Services Inc (LMSI) Records Information Management (RIM) department. The 200-PW-1 OU task lead organizes and maintains spreadsheets of the field screening data on a desktop computer. The field screening data are included in the annual performance evaluation report.

References:

CP-A-QA-03-5.2, *Quality Assurance Program Plans*, Procedure 5.2, "Onsite Measurements Quality Assurance Program Plan," Fluor Hanford, Inc., Richland, Washington.

GPP-EE-05-4.0, *Analysis of Volatile Organic Compounds in Vapor Samples Using the Bruel and Kjaer 1301 and Innova 1312 Multi-Gas Analyzers*, Fluor Hanford, Inc., Richland, Washington.

BHI-01105, 1997, *Rebound Study Report for the Carbon Tetrachloride Soil Vapor Extraction Site, Fiscal Year 1997*, Bechtel Hanford, Inc., Richland, Washington.

Table 1. Wells Available for Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through July 2004

Potential On-Line Wells	Reason	Initial Wells
299-W18-6L	Groundwater Protection	
299-W18-6U	Mass removal	
299-W18-7	Groundwater Protection	
299-W18-10L	Groundwater Protection	
299-W18-11L	Groundwater Protection	
299-W18-12	Groundwater Protection	
299-W18-89	Mass removal	
299-W18-93	Mass removal	
299-W18-94	Mass removal	
299-W18-96	Mass removal	
299-W18-97	Mass removal	
299-W18-98	Mass removal	
299-W18-99	Mass removal	
299-W18-152	Mass removal	
299-W18-153	Mass removal	
299-W18-157	Mass removal	
299-W18-158L	Mass removal	
299-W18-159	Mass removal	
299-W18-163L	Mass removal	
299-W18-165	Mass removal	X
299-W18-166	Mass removal	X
299-W18-167	Mass removal	X
299-W18-168	Mass removal	X
299-W18-169	Mass removal	
299-W18-171L	Mass removal	
299-W18-174	Mass removal	X
299-W18-246L	Groundwater Protection	
299-W18-246U	Mass removal	
299-W18-247L	Groundwater Protection	
299-W18-247U	Mass removal	
299-W18-248	Mass removal	
299-W18-249	Mass removal	
299-W18-252L	Groundwater Protection	
299-W18-252U	Mass removal	

Table 2. Passive Soil Vapor Extraction Wells at the 216-Z-1A/Z-18/Z-12 Site, FY 2004

Passive Soil Vapor Extraction Wells	Reason
299-W18-6L	Groundwater Protection
299-W18-7	Groundwater Protection
299-W18-10L	Groundwater Protection
299-W18-11L	Groundwater Protection
299-W18-12	Groundwater Protection
299-W18-246L	Groundwater Protection
299-W18-247L	Groundwater Protection
299-W18-252L	Groundwater Protection

Table 3. Sampling and Analysis Plan for Soil Vapor Extraction System Operations, April Through October 2004

When to Monitor	on-line wells	off-line wells	vacuum wellhead	flow	CCl4 carbon tetrachloride	CHCl3 chloroform	CH2Cl2 methylene chloride	MEK MEK
first day of operations	X		X	X	X	X	X	X
beginning of 2nd week	X	X	X	X	X	X	X	X
beginning of 3rd week	X		X	X	X	X	X	X
beginning of 4th week	X	X	X	X	X	X	X	X
beginning of 5th week	X		X	X	X	X	X	X
beginning of 6th week	X	X	X	X	X	X	X	X
beginning of 7th week	X		X	X	X	X	X	X
beginning of 8th week	X	X	X	X	X	X	X	X
beginning of 9th week	X		X	X	X	X	X	X
beginning of 10th week	X	X	X	X	X	X	X	X
beginning of 11th week	X		X	X	X	X	X	X
beginning of 12th week	X		X	X	X	X	X	X
last day of operations	X	X	X	X	X	X	X	X
Fax copy of monitoring records to 200-PW-1 OU Task Lead (Virginia Rohay at 373-3974) by close of day following monitoring.								

Table 4. Wells Available for Soil Vapor Extraction System Operations at the 216-Z-9 Site, August through October 2004

Potential On-Line Wells	Reason	Initial Wells
299-W15-6U	Mass removal	
299-W15-6L	Groundwater Protection	
299-W15-9U	Mass removal	X
299-W15-9L	Groundwater Protection	X
299-W15-82	Mass removal	X
299-W15-84U	Mass removal	
299-W15-84L	Mass removal	
299-W15-85	Mass removal	
299-W15-86	Mass removal	
299-W15-95U	Mass removal	
299-W15-95L	Mass removal	
299-W15-46 (C3426)	TBD	
299-W15-216U	Mass removal	
299-W15-216L	Groundwater Protection	
299-W15-217	Mass removal	X
299-W15-218U	Mass removal	
299-W15-218L	Groundwater Protection	
299-W15-219U	Mass removal	
299-W15-219L	Groundwater Protection	
299-W15-220U	Mass removal	
299-W15-220L	Groundwater Protection	
299-W15-223	Mass removal	

TBD = to be determined. The screen depth will be selected based on field screening of soil vapor samples collected during drilling. This well potentially will be completed as a groundwater monitoring well rather than a vapor extraction well, depending on field screening results in the vadose zone and groundwater.

Table 5a. Distribution of Selected Monitoring Locations During Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through July 2004

Target Zone	Number of Monitoring Locations		
	Z-1A	Z-9	Total
Near-surface (3-25 m below ground surface)	5	9	14
Cold Creek (25-45 m below ground surface)	0	7	7
Groundwater (50-65 m below ground surface)	8[a]	4	12
Total	13	20	33

[a] Eight available monitoring locations near the vadose/groundwater interface in the Z-1A area are being monitored as part of the passive soil vapor extraction system network.

Table 5b. Distribution of Selected Monitoring Locations During Soil Vapor Extraction System Operations at the 216-Z-9 Site, August through October 2004

Target Zone	Number of Monitoring Locations		
	Z-1A	Z-9	Total
Near-surface (3-25 m below ground surface)	10	3	13
Cold Creek (25-45 m below ground surface)	6	3	9
Groundwater (50-65 m below ground surface)	8[a]	0	8
Total	24	6	30

[a] Eight available monitoring locations near the vadose/groundwater interface in the Z-1A area are being monitored as part of the passive soil vapor extraction system network.

Table 6a. Non-Operational Wells and Probes Selected for Monitoring During Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through July 2004

Target Zone	Z-9	Depth (m)	Comment	Z-1A	Depth (m)	Comment
near-surface	CPT-17 10 ft (blue)	3	southwest of Z-9	CPT-4E 25 ft (white)	8	north central in Z-1A/Z-18/Z-12 field
near-surface	CPT-18 15 ft (white)	5	northwest of Z-9	CPT-13A 30 ft (blue)	10	southeast of Z-1A
near-surface	CPT-16 25 ft (blue)	8	east of Z-9	CPT-7A 32 ft (yellow)	10	farfield northeast of Z-1A
near-surface	CPT-27 33 ft (red)	10	southeast of Z-9	CPT-1A 35 ft (black)	11	west of Z-12
near-surface	CPT-21A 45 ft (green)	14	south of Z-9	CPT-34 40 ft (green)	12	west of Z-18
near-surface	CPT-9A 60 ft (blue)	18	farfield north of Z-9			
near-surface	CPT-16 65 ft (red)	20	east of Z-9			
near-surface	CPT-24 70 ft (green)	21	northwest of Z-9			
near-surface	CPT-18 75 ft (red)	23	northwest of Z-9			
Cold Creek	299-W15-82	25	east side of Z-9			
Cold Creek	CPT-21A 86 ft (red)	26	south of Z-9			
Cold Creek	CPT-28 87 ft (red)	27	farfield south of Z-9			
Cold Creek	299-W15-217	35	southwest corner of Z-9			
Cold Creek	CPT-24 118 ft (red)	36	northwest of Z-9			
Cold Creek	299-W15-220 SST/118 ft (red)	36	east of Z-9			
Cold Creek	299-W15-95L	44	north side of Z-9			
ground-water	299-W15-220L 163 ft	50	east of Z-9	299-W18-247L*	51	southeast of Z-18
ground-water	299-W15-219L 175 ft	53	northwest of Z-9	299-W18-246L*	52	west of Z-1A
ground-water	299-W15-84L 180 ft	55	west of Z-9	299-W18-252L*	53	middle of Z-1A/Z-18/Z-12 field
ground-water	299-W15-9L	57	11 m from 299-W15-32 extraction well	299-W18-10L*	55	east side of Z-18
ground-water				299-W18-7*	60	east side of Z-1A
ground-water				299-W18-11L*	60	within Z-18
ground-water				299-W18-12*	60	within Z-18
ground-water				299-W18-6L*	63	west side of Z-1A

* Passive soil vapor extraction wells

Note: Colors refer to the color coding on the soil vapor probe tubing.

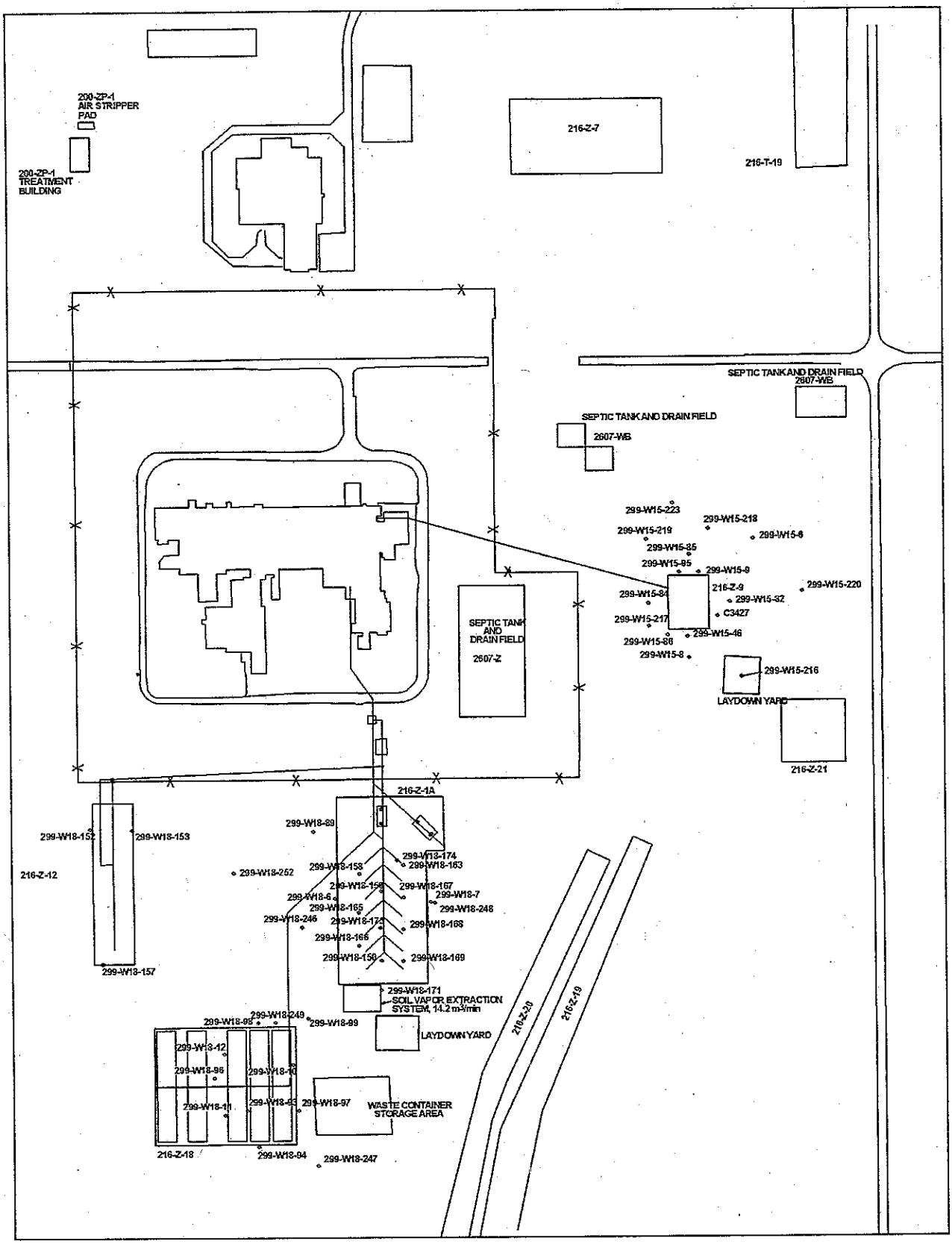
Table 6b. Non-Operational Wells and Probes Selected for Monitoring During Soil Vapor Extraction System Operations at the 216-Z-9 Site, August through October 2004

Target Zone	Z-9	Depth (m)	Comment	Z-1A	Depth (m)	Comment
near-surface	CPT-28 40 ft (green)	12	farfield south of Z-9	CPT-32 25 ft (green)	8	west of Z-1A
near-surface	CPT-21A 45 ft (green)	14	south of Z-9	CPT-4E 25 ft (white)	8	north central in Z-1A/Z-18/Z-12 field
near-surface	CPT-9A 60 ft (blue)	18	farfield north of Z-9	CPT-30 28 ft (green)	9	north of Z-18 (middle of Z-1A/Z-18/Z-12 field)
near-surface				CPT-13A 30 ft (blue)	10	southeast of Z-1A
near-surface				CPT-7A 32 ft (yellow)	10	farfield northeast of Z-1A
near-surface				CPT-1A 35 ft (black)	11	west of Z-12
near-surface				CPT-33 40 ft (green)	12	between Z-18 and Z-12
near-surface				CPT-34 40 ft (green)	12	west of Z-18
near-surface				CPT-1A 68 ft (yellow)	21	west of Z-12
near-surface				CPT-32 70 ft (red)	21	west of Z-1A
Cold Creek	CPT-21A 86 ft (red)	26	south of Z-9	299-W18-152	31	northwest corner of Z-12
Cold Creek	CPT-28 87 ft (red)	27	farfield south of Z-9	299-W18-167	32	within Z-1A
Cold Creek	CPT-9A 91 ft (red)	28	farfield north of Z-9	CPT-4F 109 ft (red)	33	north central in Z-1A/Z-18/Z-12 field
Cold Creek				299-W18-165	33	within Z-1A
Cold Creek				299-W18-249	40	northeast corner of Z-18
Cold Creek				299-W18-248	40	east side of Z-1A
ground-water				299-W18-247L*	51	southeast of Z-18
ground-water				299-W18-246L*	52	west of Z-1A
ground-water				299-W18-252L*	53	middle of Z-1A/Z-18/Z-12 field
ground-water				299-W18-10L*	55	east side of Z-18
ground-water				299-W18-7*	60	east side of Z-1A
ground-water				299-W18-11L*	60	within Z-18
ground-water				299-W18-12*	60	within Z-18
ground-water				299-W18-6L*	63	west side of Z-1A

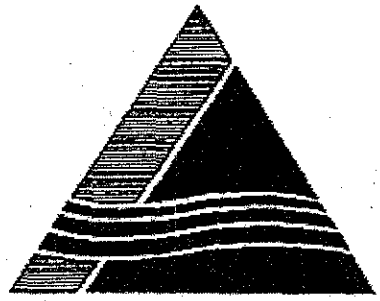
* Passive soil vapor extraction wells

Note: Colors refer to the color coding on the soil vapor probe tubing.

Figure 1. Location of Extraction and Monitoring Wells at the 216-Z-1A/Z-18/Z-12 and 216-Z-9 Sites

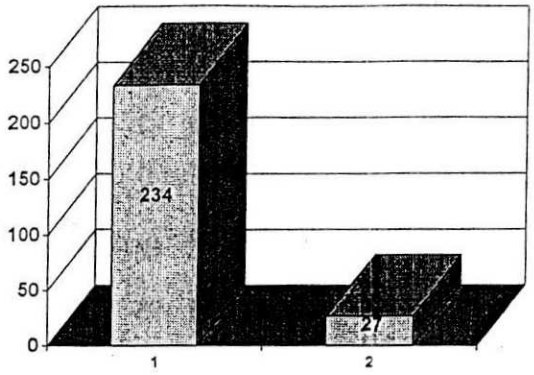


CENTRAL PLATEAU MILESTONE REVIEW



3rd Quarter FY 2004

Central Plateau Milestones
TPA Milestone Statistics
(Major & Interim Milestones)



Major Milestone	Compliance Due Date	Total Active*	Milestone Number	Compliance Due Date	Milestone Description
M-13-00 Submit Work Plans for RFI/CMS or RI/FS Studies	**12/31/2004** (M-13-00O)	1	M-13-00N(C)	06/30/04	Submit 1 200 NPL RI/FS (RFI/CMS) Work Plan For The 200-UR-1
			M-13-00O	12/31/04	Submit 1 200 NPL RI/FS (RFI/CMS) Work Plan For The 200-SW-1
M-15-00 Site Investigations / Feasibility Studies	**12/31/2008** (M-15-00)	9	M-15-41C(C)	03/31/04	Submit Draft 200-TW-1 OU & 200-TW-2 OU FS & Proposed Plan
			M-15-39B(C)	05/31/04	Submit Draft A 200-CS-1 Chemical Sewer Group RI Report
			M-15-43B(C)	06/30/04	Submit 200-PW-2 OU RI Report Including Past Practice Waste Sites
			M-15-40C	10/31/04	Submit Draft A 200-CW-5 Pond/Z Ditches Cooling Water Group FS
			M-15-46A	10/31/05	Submit 200 Area Chemical Laboratory Waste OUs RI Report
			M-15-39C	11/30/05	Submit Draft A 200-CS-1 Chemical Sewer Group FS and Proposed Plan
			M-15-43C	12/31/05	Submit 200-PW-2 OU FS and Proposed Plan/Permit Modification
			M-15-44A	12/31/05	Submit 200-MW-1 OU RI Report
			M-15-46B	09/30/06	Submit 200 Area Chemical Laboratory Waste OUs FS
			M-15-44B	12/31/06	Submit 200-MW-1 OU FS and Proposed Plan
			M-15-00C	12/31/08	Complete 200 AreaNon-Tank Farm OU Pre-ROD Site Investigations
			M-15-00	12/31/08	Complete RI/FS (or RFI/CMS) Process for All Operable Units
M-16-00 Remedial Design / Remedial Action	**9/30/2024** (M-16-00)	3	M-16-66	09/30/04	Initiate Intermediate Design & Authorization Safety Analysis
			M-16-67	03/31/07	Submit Design Report, Schedule, Work Plan for 618-10/11
			M-16-00	09/30/24	Complete Remedial Actions for All Non-Tank Farm Operable Units
M-20-00 Submit Closure Plans for All RCRA TSD Units	**12/31/2008** (M-20-00) (Shared with FH)	5	M-20-39	11/30/05	Submit 216-S-10 Pond & Ditch Closure Plan to Ecology
			M-20-33	12/31/05	216-A-10/216-A-36B/216-A-37-1 Crib Closure/Post Closure Plans
			M-20-54	12/31/08	Submit 241-CX Tank System Closure/Postclosure Plan
			M-20-00B	12/31/08	Submit 216 & 241 Areas Closure/Post Closure Plans
			M-20-00	12/31/08	Submit Part B Permit Applications or Closure/RCRA TSD Units
M-24-00** RCRA Groundwater Monitoring	**Annually**	9	***M-24-57A(C)***	12/31/03	DOE Shall Install a Minimum of 15 Wells by 12/31/03
			M-24-57B(C)	06/30/04	DOE Initiates Discussions Annually to Reaffirm Selected Wells
			M-24-57C	08/01/04	Conclude Negotiations & Revise M-024-57 by 08/01/04
			M-24-57D	12/31/04	DOE Shall Install a Cumulative of 30 Wells by 12/31/04
			M-24-57E	06/30/05	DOE Initiates Discussions Annually to Reaffirm Selected Wells
			M-24-57F	08/01/05	Conclude Negotiations & Revise M-024-57 by 08/01/05
			M-24-57G	12/31/05	DOE Shall Install a Cumulative of 45 Wells by 12/31/05
			M-24-57H	06/30/06	DOE Initiates Discussions Annually to Reaffirm Selected Wells
			M-24-57I	08/01/06	Conclude Negotiations & Revise M-024-57 by 08/01/06
			M-24-57J	12/31/06	DOE Shall Install a Cumulative of 60 Wells by 12/31/06
			M-24-00O	TBD	Complete Well Installations in Accordance with RCRA/CERCLA GW Reqs
			6 --- MILESTONE COMPLETED IN FY04 *(C)*		

TOTAL ACTIVE MILESTONES 27

* Includes TPA changes requests approved thru March 31, 2004.

** M-24-00/57 Modified by Change Request M-24-02-02 Approved March 01, 2004

WASTE SITE REMEDIATION & FACILITIES

M-013-00
M-015-00
M-016-00

WASTE SITE REMEDIATION PROJECTS
FY 2004 TPA MILESTONE SUMMARY
(Major & Interim Milestones)

Status as of: June 30, 2004

PBS	Milestone	Title	Compliance Date	Forecast/ Actual Date	Completed		Forecast		
					Ahead Schedule	On Schedule	Ahead Schedule	On Schedule	Behind Schedule
	M-015-41C	Submit 200-TW-1 & TW-2 OU FS and PP including Past Practice Waste Sites in 200-PW-5 Fission Product-Rich Process Waste Group	3/31/04	3/30/04		X			
	M-015-39B	Submit 200-CS-1 Chemical Sewer Group RI Report	5/31/04	5/27/04	X				
	M-013-00N	Submit 1 200 NPL RI/FS (RFI/CMS) Work Plan for the 200-UR-1 Unplanned Releases	6/30/04	6/30/04		X			
	M-015-43B	Submit 200-PW-2 OU RI Report including Past Practice Waste Sites in the 200-PW-4 General Process Waste Group	6/30/04	6/24/04	X				
	M-016-66	Initiate Intermediate Design and Authorization Safety Analysis for Remedial Actions (618-10/11)	9/30/04	9/30/04				X	

WASTE SITE REMEDIATION ACCOMPLISHMENTS

200 Area Waste Site Remediation

The Draft A Remedial Investigation Report for the 200-CS-1 Operable Unit was submitted to the regulators on May 27, 2004, meeting TPA Milestone M-015-39B.

The Draft A Remedial Investigation Report for the 200-PW-2/200-PW-4 Operable Units was submitted to the regulators on June 24, 2004, meeting TPA Milestone M-015-43B.

The Draft A Remedial Investigation/Feasibility Study Work Plan and Engineering Evaluation/Cost Analysis for the 200-UR-1 Operable Unit was submitted to the regulators on June 30, 2004, meeting TPA Milestone M-013-00N.

The Tri-Party Agreement Appendices B and C were modified (Change Number C-03-01) to establish a new soil operable unit (200-UW-1) for selected waste sites in the U Plan area. The change request was approved by the parties on April 23, 2004. The 200-UW-1 Proposed Plan is in its final revision to be submitted as Draft C for EPA Region 10 review. This revision clarifies RCRA/CERCLA integration, refines the alternatives, clarifies intruder scenarios, and provides a path forward in dealing with impacts of deep vadose contamination on the underlying groundwater system.

The Rev.0 Work Plan for the 200-PW-1, 200-PW-3, and 200-PW-6 OU Group (plutonium- and/or organic-rich) was approved on April 26, 2004. Pre-job planning is in progress. The remedial investigations are scheduled for late FY2004 and for FY2005. The remedial investigation report is scheduled to be completed by June 30, 2006.

Interim TPA milestones were established for the 200-PW-1, 200-PW-3, and 200-PW-6 OUs under Change Number M-15-01-05. Milestones were established for the submittal of the Remedial Investigation Plan by June 30, 2006 and of the Feasibility Study and Proposed Plan by September 30, 2007.

The 200-CW-5, 200-CW-2, 200-CW-4, and 200-SC-1 Rev. 1 consolidated work plan for these OUs was finalized and transmitted to DOE/RL on April 1, 2004. Comments received on the OU Remedial Investigation (RI) Report from the regulators in December 2003 have been incorporated. The final document is planned for transmittal in July 2004 to DOE/RL and the regulators.

Progress continues on development of the data quality objectives (DQO) and sampling analysis plan to support completion of the 200 Area NPL site ecological risk assessment needs.

Planning efforts were initiated for the remedial investigation activities for the 200-MW-1 OU. Field activities are scheduled to begin in the 4th quarter.

Planning efforts were initiated for the remedial investigation activities for the 200-LW-1 and 200-LW-2 OUs. Field activities are scheduled to be completed in the 4th quarter.

Planning efforts were initiated for additional remedial investigation activities supporting the 200-PW-2 OU work at the 216-S-7 Crib. Field activities are scheduled to be completed in the 4th quarter.

Development of the 200-SW-1 and 200-SW-2 OU Group (nonradioactive and radioactive landfills and dumps) Work Plan continues. Issues include 40 CFR 191 as an applicable or relevant and appropriate requirement for these OUs and the use of process knowledge. The DQO for this work plan is in progress. The work plan will be submitted to the regulators by December 31, 2004 under Tri-Party Agreement milestone M-013-00O.

Remedial design activities continued for the 618-10 and 618-11 Burial Grounds in support of TPA Milestone M-16-66.

WASTE SITE REMEDIATION SSUES

U Plant Soil Waste Sites

Issue- The characterization and remediation planning approach for pipelines in the U Plant area is not progressing at a pace that is satisfactory to the regulators due to primarily budgetary constraints.

Impact - Delays in the regional closure at the U Plant area.

Status- Meetings continued between RL and ORP and their Subcontractors in developing characterization and remediation criteria for central plateau pipelines. These criteria will be documented in the 200-IS-1 work plan. A focused pipeline EE/CA for the U Plant area is planned in FY05 using the characterization and remediation criteria developed in the 200-IS-1 work plan.

200-PW-2 and 200-PW-4 Work Plan Approval

Issue- Outstanding comments remain on the 200-PW-2 and 200-PW-4 Operable Units Work Plan. The comments include the need for a borehole in a hexone waste site.

Impact- No further impact; the issue has been resolved.

Status- A comment resolution meeting was held with Ecology on May 14 and all remaining issues were resolved. Finalization and issuance of Revision 1 of the work plan is underway.

Planning is underway to drill a borehole in the 216-S-7 Crib. The additional characterization data will be included in the Feasibility Study which follows the RI report so the associated FY04 and FY05 TPA milestones should not be negatively impacted.

200-IS-1 and 200-ST-1 Work Plan Approval

Issue- Ecology has requested that the pits, lines, tanks, and boxes (200-IS-1) and septic tanks (200-ST-1) work plan be revised to include additional information on "likely response scenarios and potentially applicable technologies and operable units that may address site problems." This would require a revision to the Rev. 0 document.

Impact- Approval of the work plan is required to support planned field work in the spring of 2005. Ecology expects the revision prior to approval.

Status- USDOE is preparing a Revision 1 work plan. One unresolved issue is the interface between RL and ORP; the latter has programmatic responsibility for some waste sites included in these operable units that are not addressed by the work plan. RL and ORP are working on options to resolve this issue that results in a logical and consistent process for addressing sites in both programs.

200-TW-1, 200-TW-2, and 200-PW-5 RI Report Approval

Issue – The regulators provided comments in a letter dated March 2, 2004, concerning the fate and transport modeling performed for the representative waste sites. The regulators provided conditional approval of the RI Report pending resolution of the modeling comments.

Impact - Approval of the RI Report is contingent on resolving these comments.

Status – Based on coordination with EPA, Ecology, and the USGS, RL has conducted additional modeling runs that incorporate agreed upon modifications and sensitivity analysis. Preliminary results of these modeling runs have been provided to EPA, Ecology, and the USGS in June, 2004, for review. EPA has indicated that the USGS cannot provide comments until July 19, 2004. The RI Report will be revised to incorporate the modeling results once the regulators and the USGS are satisfied with the additional modeling results.

200-TW-1, 200-TW-2, and 200-PW-5 FS Report Review

Issue- Ecology comments on the Draft A report stated," the FS as structured now is extremely complex and impossible to process within the TPA prescribed review period. The task of reviewing and commenting on the proposed remedy will be arguably impossible for the general public. USDOE in consultation with the regulatory agencies needs to develop a strategic approach to the remedy selection and public involvement for same." This opinion has the potential to significantly impact the current ROD strategy for the Central Plateau OUs.

Impact- Approval of the FS and proposed plan could be delayed and would not support the accelerated remedial actions at BC Cribs and Trenches.

Status- Regulator comments on the Draft A report urged its retraction and replacement with a focused FS (FFS) for the BC Cribs and Trenches Area to support an accelerated decision for those sites. The FS for the remaining waste sites would be placed in abeyance until a ROD for the BC Cribs and Trenches Area is issued. Submitting a FFS for the BC Cribs and Trenches is planned for the 4th Quarter FY 2004. The overall ROD strategy is being revisited by on ongoing IAMIT subcommittee.

FACILITIES ACCOMPLISHMENTS

Completed demolition of the 233-S Plutonium Concentration Facility. The final site stabilization and waste removal actions are being completed in July 2004.

The Action Memorandum for the Non-time Critical Removal Action For The 224B Plutonium Concentration Facility was approved on June 2, 2004. The Removal Action Work Plan, the Air Monitoring Plan, the Waste Management Plan and the Sampling and Analysis Plan for the associated B Plant Construction Laydown Yard were approved on June 23, 2004. The removal action for the laydown yard was initiated immediately upon the approval of those plans. The removal action for the 224-B building is being deferred and will likely coincide with future remedial activities at B Plant.

12 of the 22 buildings in the B Plant Construction Laydown Yard have been demolished as of July 9. Demolition of the remaining structures is expected to be completed by August 2004.

The Engineering Evaluation/Cost Analysis (EE/CA) for the U Plant Ancillary Facilities was submitted to RL for transmittal to the regulators in June 2004. The goal of having the EE/CA available for public comment in the August timeframe will support the start of the removal action in the fall of 2004. The removal action for the U Plant Ancillary Facilities supports overall U Plant zone remedial actions.

The Feasibility Study/Proposed Plan (FS/PP) for the Proposed Remediation of the 221-U Canyon Disposition Initiative (CDI) has been revised to incorporate regulator comments. Workshops with key regulator staff are planned for August to confirm that comments have been appropriately addressed. The final FS/PP are expected to be completed in September 2004 for final regulator review in anticipation of public comment in the December/January timeframe.

FACILITIES ISSUES

None to Report

TPA Milestone Summary Schedule

Status as of: June 30, 2004
Updated July 01, 2004 10:00 AM

Operable Unit	Fiscal 2002 By Quarter 1st 2nd 3rd 4th	Fiscal 2003 By Quarter 1st 2nd 3rd 4th	Fiscal 2004 By Quarter 1st 2nd 3rd 4th	Fiscal 2005 By Quarter 1st 2nd 3rd 4th	Fiscal 2006 By Quarter 1st 2nd 3rd 4th	Fiscal 2007 By Quarter 1st 2nd 3rd 4th	Fiscal 2008 By Quarter 1st 2nd 3rd 4th	Fiscal 2009 By Quarter 1st 2nd 3rd 4th	Fiscal 2010 By Quarter 1st 2nd 3rd 4t
200 Area Remedial Action						Note 1 - "Ecology believes this is at risk"			
200 Area Work Plans	M-13-00L 12/26/01(A) Submit 3 200 NPL RI/FS (RFI/CMS) Work Plans								
	M-13-26 12/26/01 (A) Submit Plutonium / Organic-Rich Process Waste Group (200-PW-1) Work Plan								
		M-13-00M 12/30/02(A) Submit 1 200 NPL RI/FS (RFI/CMS) Work Plan for 200-IS-1 OU, Includes waste sites in 200-ST-1							
			M-13-00N 06/30/04 (A) Submit 1 200 NPL RI/FS (RFI/CMS) Work Plan for 200-UR-1 OU						
				M-13-00Q (Note 1) Submit 1 200 NPL RI/FS (RFI/CMS) Work Plan for 200-SW-2 OU, Includes waste sites in 200-SW-1					
200 Area Assessments									
200-CW-1		M-15-38A 10/23/02(A) Submit 200-CW-1FS/PP Proposed RCRA Permit Mod for Gable Mtn Pond/B Pond & Ditch Cooling Waste Group							
200-CW-5			M-15-40B 05/30/02(A) Submit 200-CW-5 U Pond / Z Ditches Cooling Water Group RI Report Including Past Practice Waste Sites in 200-CW-2, 200-CW-4 & 200-SC-1						
200-LW-1				M-15-40C Submit 200-CW-5 FS/PP for U Pond / Z Ditches Cooling Water Group , Including Past Practice Waste Sites in 200-CW-2, 200-CW-4, & 200-SC-1					
200-MW-1					M-15-46A Submit 200 Area Chemical Lab Waste OUs RI Report				
					M-15-44A Submit 200-MW-1 OU RI Report				
						M-15-46B Submit 200 Area Chemical Lab Waste OUs FS			
						M-15-44B Submit 200-MW-1 FS & Proposed Plan			
200-CS-1			M-15-39A 09/29/03(A) Complete Chemical Sewer Group field Work Through Sample Collection & Analysis						
				M-15-39B 05/27/04 (A) Submit 200-CS-1 Chemical Sewer Group RI Report					
					M-15-39C Submit 200-CS-1 FS/PP/Proposed RCRA Permit Mod for Chemical Sewer Group				
200-TW-1 / 200-TW-2		M-15-41B 10/23/02(A) Submit 200-TW-1 & 200-TW-2 OU RI Report to Regulators, Including Past Practice Waste Sites in 200-PW-5							
				M-15-41C 03/30/04(A) Submit 200-TW-1 & 200-TW-2 OU FS/Proposed Plan to Regulators, Including 200-PW-5					
200-PW-2				M-15-43B 06/24/04 (A) Submit 200-PW-2 OU RI Report Including Past Practice Waste Sites in 200-PW-4					
					M-15-43C Submit 200-PW-2 OU FS/PP/Proposed RCRA Permit Mod Including Past Practice Waste Sites in 200-PW-4				
200 Area Common		M-15-47 06/27/02(A) Submit PP to Regulators to Conduct RA for Source Control at High-Risk Waste Sites Which Includes an Engineering Evaluation of an Engineered Surface Barrier							
								M-15-00 Complete RI/FS (or RFI/CMS) Process fo All Operable Units	
								M-15-00C Complete All 200 Area Non-Tank Farm O Pre-ROD Site Investigations Under Approved Work Plan Schedules	
200 Area Closure Plans									
200-CS-1					M-20-39 Submit 216-S-10 Pond/Ditch Closure/ Post Closure Plan to Ecology in Coord with / FS for 200-CS-1 (t/b coord under M-15-39C)				
200-PW-2					M-20-33 Submit 216-A-10, 216-A-36B, 216-A-37-1 Cribs & 207-A South Retention Basin Closure/Post Closure Plan to Ecology In Coord w/FS for 200-PW-2 (t/b coord under M-15-43C)			M-20-54 Submit 314-CX-70, -71, -72 Tanks Closure/ Post Closure Plan to Ecol in Coord w/ 200- FS Scheduled under M-13-00M	
200-IS-1								M-20-00B Submit Closure/Post Closure Plans for 216-A-10, 216-A-36B, 216-A-37-1, 207-A South Retention Bas 216-S-10 Pond, 216-S-10 Ditch, 341-CX-71, and 241-CX-72	

Major Milestone | Interim Milestone | Forecast | Complete | Unrecoverable | "At Risk" | (P) Pending Change Request | RCRA Permit Commitment

GROUNDWATER REMEDIATION PROJECT

M-013-00
M-024-00

GROUNDWATER REMEDIATION PROJECT
FY 2004 TPA MILESTONE SUMMARY
(Major & Interim Milestones)

Status as of: June 30, 2004

PBS	Milestone	Title	Compliance Date	Forecast/ Actual Date	Completed		Forecast		
					Ahead Schedule	On Schedule	Ahead Schedule	On Schedule	Behind Schedule
	M-024-57A	Complete required well installations in accordance with RCRA and CERCLA groundwater requirements. Install a minimum of 15 wells by 12/31/03.	12/31/03	12/31/03		X			
	M-024-57B	DOE Initiates Discussions Annually to Reaffirm Selected Wells	6/30/04	6/30/04	X				
	M-024-57C	Conclude Negotiations & Revise M-024-57	8/1/04	8/1/04				X	

Draft B RI/FS work plan for the 200-UP-1 operable unit is being reviewed by Ecology. The title of this report is *Remedial Investigation /Feasibility Study Work Plan for the 200-UP-1 Groundwater Operable Unit,* DOE-RL-92-76.

EPA and DOE/RL comments were received on the *Remedial Investigation/Feasibility Study Work Plan for the 200-ZP-1 Groundwater Operable Unit,* DOE/-RL-2003-55. Draft comment responses have been developed and are under review.

The three 100 Area pump-and-treat systems (100-KR-4, 100-NR-2 and 100-HR-3) and the 200-ZP-1 OU are all operating above 90% availability for FY 04. For the 200-ZP-1 OU, replacements for current extraction wells 1 and 4 have been installed. Extraction well 1 is in operation. Well 4 was put on line however, it is waiting for the repair of a failed gasket.

Three extraction wells are currently pumping within the 200-UP-1 OU. Due to technical difficulties during the 1st quarter of FY04, the 200-UP-1 pump-and-treat system is currently showing 88% availability through mid June 2004. The 200-UP-1 OU is pumping >50 gpm throughout the remainder of the year to ensure that a 50 gpm average, as required by the interim action record of decision, is achieved at the end of CY 2004.

Vapor extraction at Trench T-04 in the 218-W-4C Burial Ground was completed on May 3, 2004.

As of June, 2004, 6 wells have been completed and accepted, drilling and completion of another 9 wells is underway for completion of the M-024 CY 2004 milestone.

A total of 146 wells were decommissioned as of June 2004.

The DQO Process was initiated in October 2003 for the evaluation of impacts at 100 N to aquatic and riparian ecoreceptors. The schedule for the DQO and SAP was revised so that seasonal sampling could be included. The final report will be issued in October, 2005 rather than October 2004 as previously planned. The revised schedule will also allow better coordination with the River Corridor Risk Assessment so that appropriate sample media are collected for both assessments. This change has been documented in CN135 Post-ROD Change Notice for the 100-NR-2 Operable Unit.

Laboratory studies supporting the 100-NR-2 strontium-90 (Sr-90) treatment options of phytoremediation and in situ formation of apatite at PNNL are progressing. Core samples were collected during drilling of a new monitoring well near the center of the former N springs. The core samples will be used to help assess Strontium-90 mobility and extraction efficiency based on site-specific media properties.

Work continued on remedial actions to address an additional area of chromium contaminated groundwater in the 100 D Area. A targeted pump and treat system was selected for the near term to minimize the impact of contaminated groundwater on the river and to achieve mass reduction of hexavalent chromium. Construction of the extraction and injection network and associated treatment system nears completion. Startup of an initial 40 -50 gpm system is scheduled for July 2004.

A focus group of outside experts was assembled to evaluate possible causes of the ISRM breakdown and to make recommendations for a mitigation plan. The group met at Hanford on March 2nd, 3rd and 4th.

The focus group report has been received and recommends investigation of the ISRM barrier. Investigation activities will be initiated in the next quarter. As a follow up to this focus group another group will come late July /early August to evaluate amendments to the barrier. In addition to these two groups, a group came in May and reviewed the Pump and Treat systems. Their report is expected in July 2004.

GROUNDWATER REMEDIATION ISSUES

None to Report

TPA Milestone Summary Schedule

Status as of: June 30, 2004
Updated July 01, 2004 10:15 AM