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Environmental
Restoration
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ERC Team **Meeting Minutes**

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OU: 100-HR-3, GW/VZ100
TSD: N/A
ERA: N/A
Subject Code: 8960, 8830

SUBJECT ISRM PROJECT UPDATE AND PROPOSED MILESTONE EXTENSION
100-HR-3 GROUNDWATER OPERABLE UNIT

TO Distribution

FROM G. A. Day 
H0-19/372-9571

DATE February 27, 2002

ATTENDEES

G. A. Day H0-19
J. S. Fruchter K6-96
B. J. Howard H0-19
J. D. Isaacs H0-19
W. W. Soper B5-18
A. C. Tortoso A6-38
V. R. Vermeul K6-96
M. D. Williams K9-36

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Attendees
L. R. Curry H0-19
C. J. Kemp H0-19
D. N. LaRue H0-11
T. A. Lee H9-02
C. W. Miller H9-03
G. B. Mitchem H0-19
J. P. Sands H0-12
A. K. Smet H0-12
L. C. Swanson H9-02
Administrative Records H6-08
Document and Information Services H0-09

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An In Situ Redox Manipulation (ISRM) project update meeting on the above subject was held on January 30, 2002, at 3350 George Washington Way, Conference Room 2C-58. The primary purpose of the meeting was to brief Washington State Department of Ecology (Ecology) on the following topics:

- Chromium trend at upgradient well 199-D5-39
- Recent field sampling results at the established ISRM barrier
- Proposed Fiscal Year (FY) 2002 Phase III emplacement and treatability test area mitigation schedule revision
- Rationale to extend the ISRM completion Milestone date from 9/30/02 to 6/30/03.

A set of site maps was provided at the meeting for use during the discussion. These maps are provided as Attachment A.

SUMMARY:

1. Chromium Trend at Well 199-D5-39:

A briefing was provided by Bechtel Hanford, Inc. (BHI) and Pacific Northwest National Laboratory (PNNL) concerning the increased chromium concentration in upgradient monitoring well 199-D5-39. The chromium concentration in this well has been steadily rising since 2001. By the fall of 2001, concentrations have exceeded 5,000 ug/L. This concentration exceeded the current waste disposal limits

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established at the Purgewater Storage and Treatment Facility (PSTF or ModuTank). The well was removed from the monitoring program until a suitable purgewater disposal alternative is identified (e.g., 100-HR-3 pump and treat facility).

One concern identified in the meeting is the unknown direction of plume movement at this well location. There is a general lack of well coverage to the northeast. It was requested by Ecology that, at a minimum, one additional monitoring well should be installed in the area of concern. Ecology also requested, and all agreed, that existing wells 199-D4-15, 199-D5-38, 199-D5-39, and 199-D5-43 be sampled monthly (instead of quarterly) to identify any short-term groundwater plume trends in the vicinity of well 199-D5-39.

2. Recent ISRM Field Sampling Results:

December's barrier integrity, field-sampling results were presented and discussed. Results are provided as Attachment B. Barrier wells within the treatability test area continue to exhibit variable behavior. Chromium concentrations in the central and western portion of the treatability test area continued to trend above the Remedial Action Objective (RAO) of 20 ug/L. Chromium concentrations at 199-D4-31 and -35 (FY 2000 Phase I barrier emplacement wells) also exceed the RAO.

The chromium concentration at downgradient compliance well 199-D4-39 is presently above 900 ug/L. The concentration trend in this well is unusual. Concentrations reached non-detect immediately following Phase I injections and then started to climb to the present reported value.

3. FY 2002 Field Implementation Schedule:

Phase III well installation started in December 2001 and will be completed in April 2002. The mitigation borehole characterization program has been delayed until March 2002 due to a change in the drilling sampling technical approach and contracting issues.

The ISRM Mitigation Plan and Phase III planning activities identified re-injections of the treatability test area wells to start in March of 2002. Phase III injection activities would begin in May, continuing into the fall months. This was contingent on the mitigation borehole characterization program being completed prior to re-injection activities. Currently, the mitigation characterization program will not be completed until March or April of 2002. This would push the treatability re-injections to April and May with Phase III injections to start in June 2002, a month before project transition from BHI to Flour Hanford, Inc. (FH).

BHI proposes to postpone treatability test area re-injections until August 2002 and instead begin Phase III well injections/barrier emplacement in March 2002. This would allow injections to start without any major injection delays and would provide a much cleaner work transfer for project transition. PNNL was in agreement with the treatability test area re-injection delays. A proposed reschedule of the FY 2002 ISRM work activities was provided (Attachment C). The reschedule accounts for project transition of the work scope, identifies fall and winter months where field injections are ill-advised, and identifies a spring 2003 re-injection time block if additional barrier re-injections are required. Ecology was open to the change in schedule and will consider the request.

4. ISRM Milestone Extension Recommendation:

A draft Explanation of Significant Difference (ESD) was provided to Ecology in the fall of 2001 requesting an ISRM completion Milestone extension. The extension was requested to further evaluate barrier effectiveness in capturing hexavalent chromium and changing aquifer conditions encountered during Phase II construction. The extension allows for the completion of a few Phase III injection/extraction activities in the fall of 2002 (FY 2003). A revision to the ISRM construction schedule extends the project completion from September 2002 to December 2002.

Based on indications that a few additional Phase I barrier wells may have recently exceeded the RAO and on current knowledge of the Phase III aquifer conditions, a schedule optimizing the work to be performed for the remaining barrier emplacement was provided at the meeting. This schedule shows the recommendation to extend the Milestone completion date to June 30, 2003. This would allow for a spring injection period (if needed) for barrier re-injections and to allow for Phase III contingency if transition of project personnel and/or knowledge results in short-term delays to the over all ISRM schedule. The schedule also allows the flexibility to continue with the planned treatability test area re-injections in FY 2002 or to delay these re-injections to the spring of 2003 and instead complete all FY 2003 Phase III injections in FY 2002.

Ecology acknowledged that they would consider the request for the Milestone extension. Once agreed upon, the ESD, Federal Facility Agreement and Consent Order Change Control Form (TPA Change Request), Phase III Construction Activities Planning Hold Point Resolution, Mitigation Plan, and the Remedial Design Report / Remedial Action Work Plan (RDR/RAWP) may need to be modified or revised and finalized prior to June of 2002 to implement this request. The project will proceed with FY 2002 activities as discussed in the meeting while concurrence is under review.

ACTIONS:

1. Identify a suitable purgewater disposal alternative for monitoring well 199-D5-39. (G. A. Day)
2. Determine direction of plume movement at well 199-D5-39. Identify data needs and determine the location of the new monitoring well to be installed in the area of concern. (G. A. Day)
3. Increase the sampling and monitoring of wells 199-D4-15, 199-D5-38, 199-D5-39, and 199-D5-43 to a monthly program (instead of quarterly). Identify any short-term groundwater plume trends in the vicinity of well 199-D5-39. (J. S. Fruchter)
4. Concurrence with the proposed revision of the ISRM construction schedule and extend the Milestone completion date from September 30, 2002 to June 30, 2003. (A. C. Tortoso and W. W. Soper)
 - Ecology agreed with extending the ISRM completion Milestone to June 30, 2003 (e-mail from W.W. Soper to G.A. Day, A.C. Tortoso, et. al., 2/14/02 [Attachment D]).
5. Revise, and if needed, finalize the ESD, TPA Change Request, Hold Point documentation, Mitigation Plan documentation, and RDR/RAWP prior to June of 2002 to implement this request. (G. A. Day and A. C. Tortoso)

ATTACHMENTS:

- Attachment A: Site Maps.
- Attachment B: Recent Barrier Integrity Field Sampling Results.
- Attachment C: ISRM Barrier Emplacement, Optimal Workaround Schedule (FY 2002 / FY 2003).
- Attachment D: E-Mail for W.W. Soper to G.A. Day, A.C. Tortoso, et. al. (2/14/02).

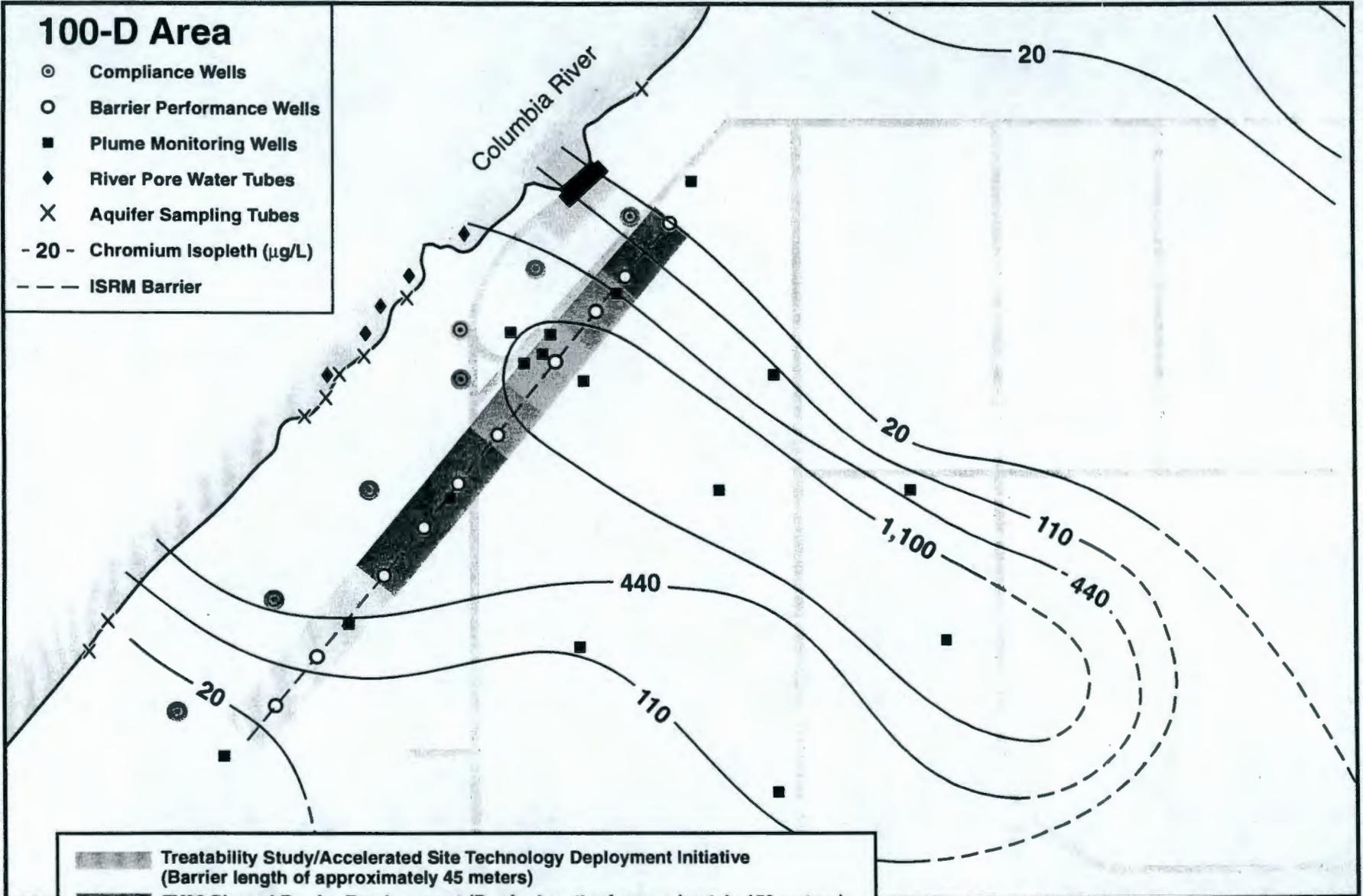
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ATTACHMENT A:

Site Maps

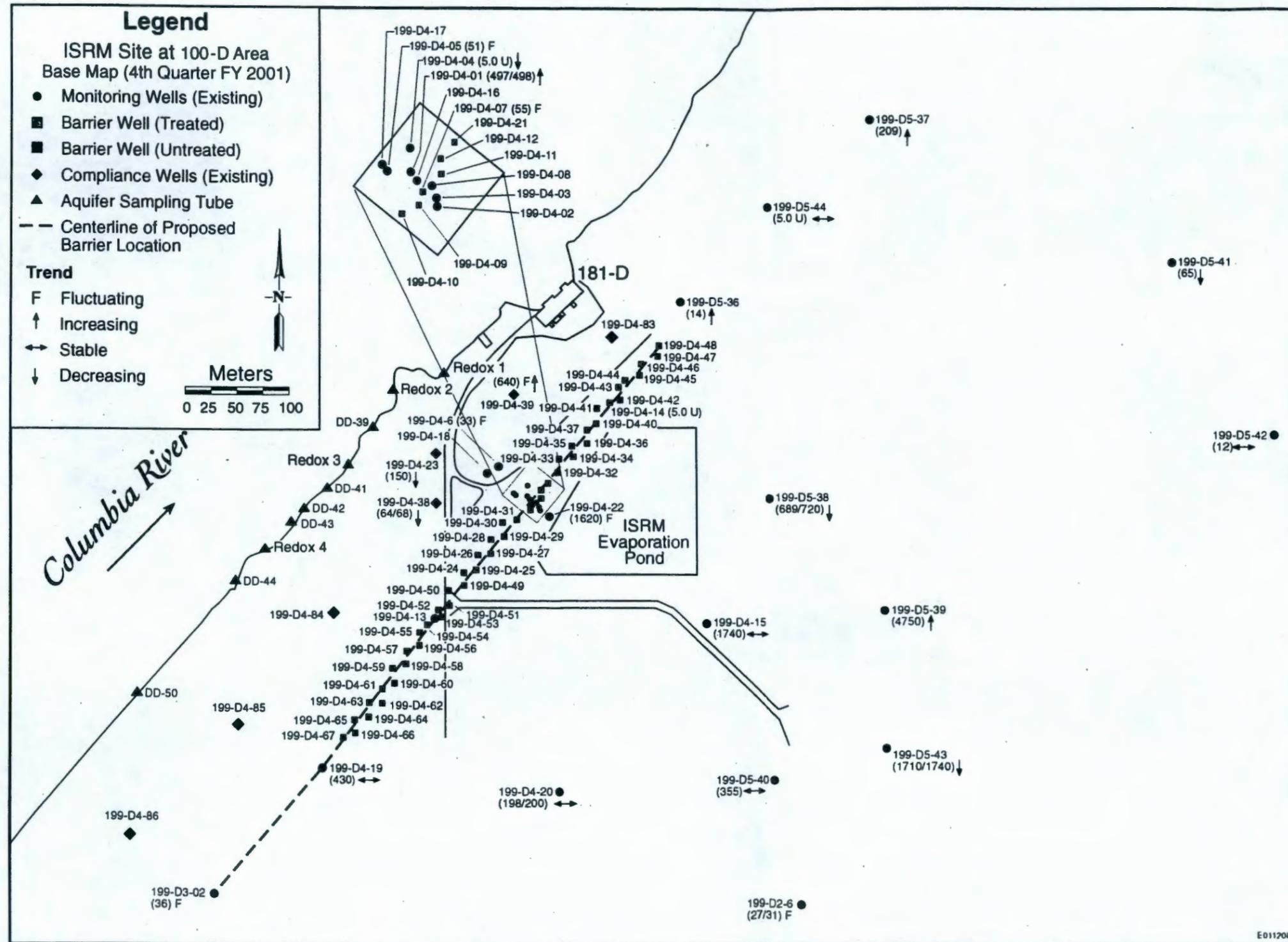
100-D Area

- ⊙ Compliance Wells
- Barrier Performance Wells
- Plume Monitoring Wells
- ◆ River Pore Water Tubes
- × Aquifer Sampling Tubes
- 20 - Chromium Isopleth ($\mu\text{g/L}$)
- - - ISRM Barrier



- Treatability Study/Accelerated Site Technology Deployment Initiative (Barrier length of approximately 45 meters)
- FY00 Phase I Barrier Emplacement (Barrier length of approximately 150 meters)
- FY01 Phase II Barrier Emplacement (Barrier length of approximately 300 meters)
- FY02 Phase III Barrier Emplacement (Barrier length of approximately 215 meters)

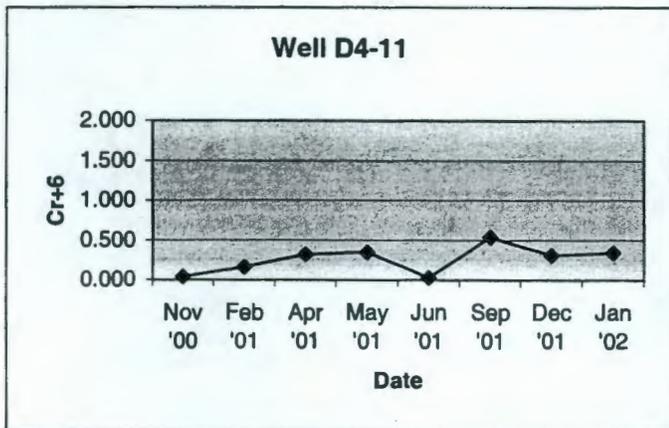
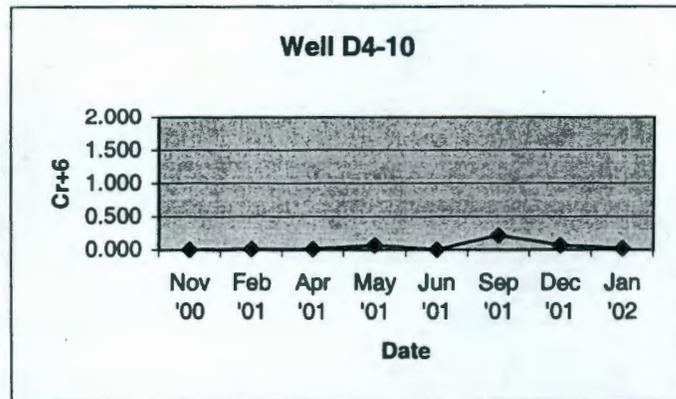
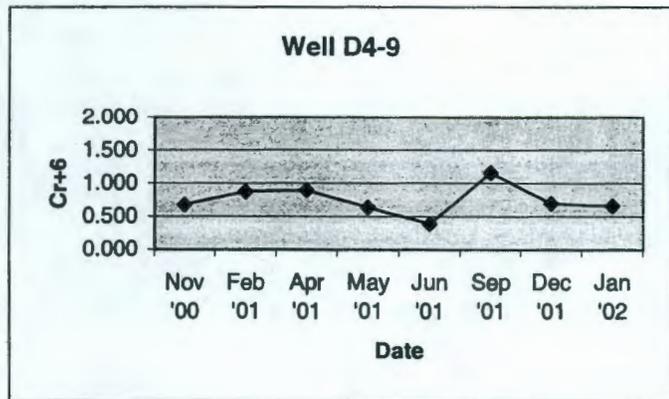
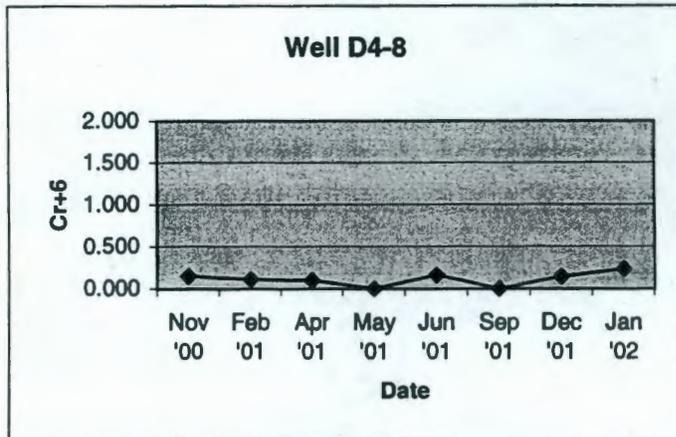
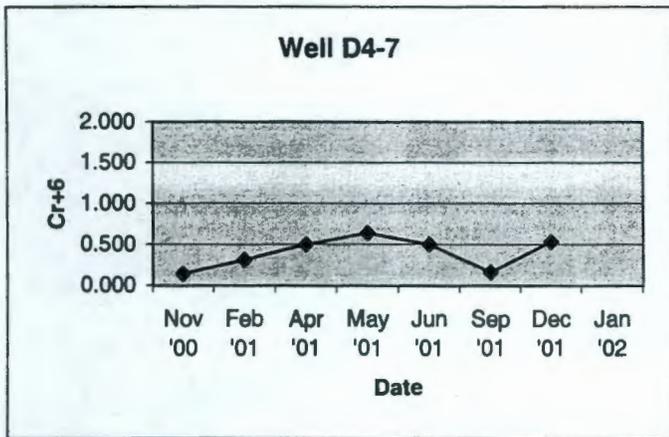
Figure 1. Fourth Quarter Plan View Base Map.



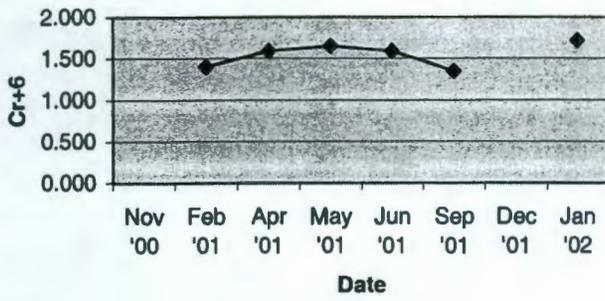
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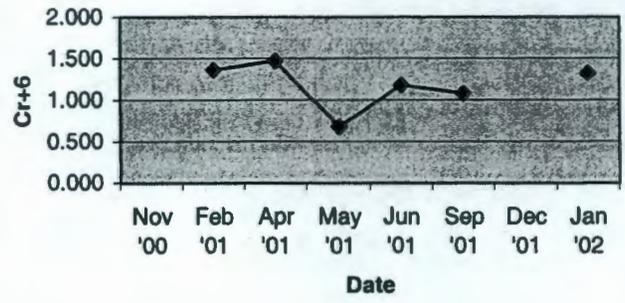
ATTACHMENT B: Recent Barrier Integrity Field Sampling Results



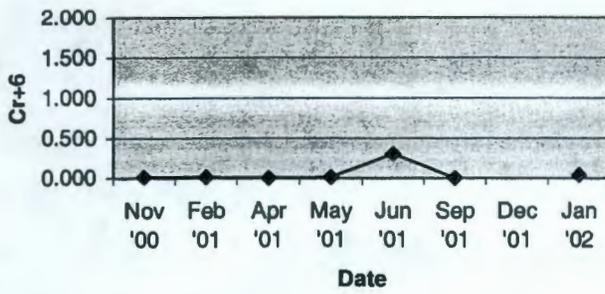
Well D4-2



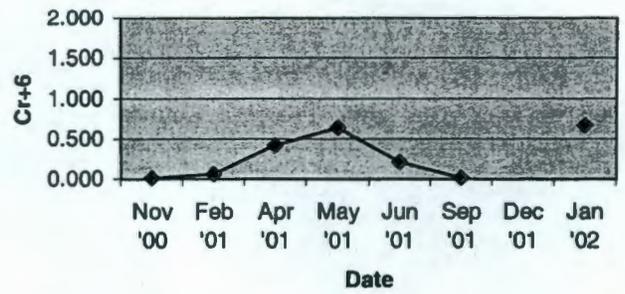
Well D4-3



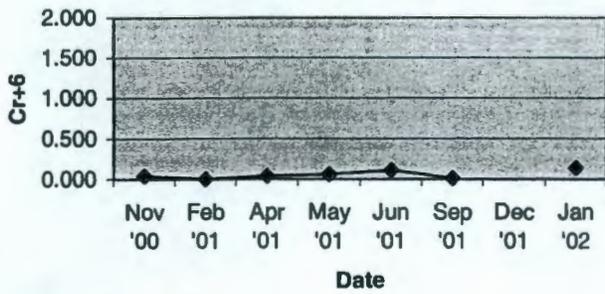
Well D4-4



Well D4-5



Well D4-12



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ATTACHMENT C:

ISRM Barrier Emplacement, Optimal Workaround Schedule
(FY 2002 / FY 2003)

Act ID	Act Des	Orig Dur	Early Start	Early Finish	FY02												FY03			
					DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
2002 Fiscal Year 2002																				
+ D	Phase III FY 2002 Well Drilling																			
		90	18DEC01A	26APR02																
+ M	Drill Mitigation Samples/Monitoring Wells																			
		26	15MAR02	19APR02																
+ I	Phase III FY 2002 Injections																			
		65	12MAR02	11JUN02																
+ E	Phase III FY 2002 Extractions																			
		84	14MAR02	11JUL02																
+ T	Transition Planning																			
		22	01JUL02	31JUL02																
+ R	Reinjection of Wells Drilled 1997																			
		22	01AUG02	30AUG02																
+ RE	Extraction of Reinjection Wells Drilled 1997																			
		47	06AUG02	10OCT02																
2003 Fiscal Year 2003																				
+ I3	Phase III FY 2003 Planned Injections																			
		22	01OCT02	30OCT02																
+ E3	Phase III FY 2003 Planned Extractions																			
		40	04OCT02	02DEC02																
+ WP	Weather Prohibits Injection Process																			
		80	01NOV02	28FEB03																
+ F3PI	FY 2003 Potential Reinjections																			
		22	03MAR03	01APR03																
+ F3PE	FY 2003 Potential Extraction of Reinjections																			
		40	06MAR03	30APR03																

Note: These Reinjections/Extractions Activities could be switched with Phase III FY 2003 Planned Injections/Extractions

Project Start 01OCT00 Early Bar
 Project Finish 30APR03 Resource Early Bar
 Data Date 26JAN02 Progress Bar
 Run Date 26JAN02 Critical Activity

ISRB

Sheet 1 of 1

GROUNDWATER MANAGEMENT PROJECT
ISRM Barrier Emplacement
 Optimal Workaround FY 2002 / FY2003

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ATTACHMENT D:

E-Mail for W.W. Soper to G.A. Day, A.C. Tortoso, et. al.
(February 14, 2002).

Day, Garrett A

From: Soper, Wayne [WSOP461@ECY.WA.GOV]
Sent: Thursday, February 14, 2002 8:14 AM
To: 'Day, Garrett A'; Tortoso, Arlene C; Fruchter, Jonathan S; Mitchem, Gregory B; Isaacs, Jared D
Cc: Hedges, Jane (ECY); Price, John
Subject: RE: ISRm 1/30/02 ISRm Meetin Notes

Arlene & Garrett: Ecology agrees to extend the date for the completion Milestone for Phase III of ISRm to June 30, 2003.
Wayne Soper, Ecology.

-----Original Message-----

From: Day, Garrett A [<mailto:gaday@mail.bhi-erc.com>]
Sent: Wednesday, February 13, 2002 1:26 PM
To: Tortoso, Arlene C; Soper, Wayne; Fruchter, Jonathan S; Mitchem, Gregory B; Isaacs, Jared D
Subject: ISRm 1/30/02 ISRm Meetin Notes

Attached is my draft version of the ISRm Meeting Minutes for 1/30/02. Please provide any comments or concerns you may have by mid next week. Thanks.

- Garrett

<< File: isrm MM.doc >>