

START

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ENGINEERING CHANGE NOTICE

Page 1 of 43

1. ECN **603862**

Proj.
ECN

2. ECN Category (mark one) Supplemental <input checked="" type="checkbox"/> Direct Revision <input type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	3. Originator's Name, Organization, MSIN, and Telephone No. V. J. Rohay - RR/23P, H6-06, 376-5507		4. Date 03/24/93
	5. Project Title/No./Work Order No. Voc-Arid ID & 200W Carbon Tetrachloride ERA	6. Bldg./Sys./Fac. No. 200 West Area	7. Impact Level 3Q
	8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-EN-AP-109, Rev. 2	9. Related ECN No(s). N/A	10. Related PO No. N/A

11a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 11b) <input checked="" type="checkbox"/> No (NA Blks. 11b, 11c, 11d)	11b. Work Package No. N/A	11c. Modification Work Complete N/A _____ Cog. Engineer Signature & Date	11d. Restored to Original Condition (Temp. or Standby ECN only) N/A _____ Cog. Engineer Signature & Date
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12. Description of Change

Modify page A-61 to make 8.2.5 a section added entitled "Two-Well Recirculation Tracer Test" and "Water-Level Monitoring" changes from 8.2.5 to paragraph 8.2.6.



13a. Justification (mark one)	Criteria Change <input type="checkbox"/>	Design Improvement <input type="checkbox"/>	Environmental <input type="checkbox"/>
As-Found <input checked="" type="checkbox"/>	Facilitate Const. <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>	Design Error/Omission <input type="checkbox"/>

13b. Justification Details

To meet requirements for site characterization and bioremediation objectives.

14. Distribution (include name, MSIN, and no. of copies)

V.J. Rohay H6-06	D.J. Moak N3-05	F. Stone H6-01
A.J. Knepp H6-06	F.A. Morris BSRC*	K.J. Swett H6-06
J.M. Jimenez N3-05	G.V. Last K6-96	B.G. Tuttle N3-06
K.J. Koegler H6-05	E.C. Vogt T5-50	S.D. Tomich K6-08
M.C. Hagood H6-04	D.C. Lanigan K6-84	EDMC (2)(1) H6-08
S.P. Luttrell K6-96	ERC H6-07	Cen Files (2) L8-04
L.A. Doremus K6-96		

*Battelle Seattle Research Center, 4000 NE 41st St., Seattle, WA 98105-5428

RELEASE STAMP

OFFICIAL RELEASE **11**
BY WHC
DATE **MAR 29 1994**
Station # 12

9413207.0009

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15. Design Verification Required [] Yes [X] No	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION		Improvement N/A Delay N/A	
	Additional Savings	N/A \$ N/A \$	Additional Savings	N/A \$ N/A \$		

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

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

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

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

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog Engineer V. J. Rohay <i>V. Rohay</i>	<u>3/25/94</u>	PE	_____
Cog. Mgr. A. J. Knepp <i>A. J. Knepp</i>	<u>3/25/94</u>	QA	_____
QA R. L. Hand <i>A. Stone for</i>	<u>3/25/94</u>	Safety	_____
Safety	_____	Design	_____
Security	_____	Environ.	_____
Environ. M. C. Hagood	_____	Other	_____
Projects/Programs	_____		_____
Tank Waste Remediation System	_____		_____
Facilities Operations	_____	DEPARTMENT OF ENERGY	
Restoration & Remediation	_____	Signature or Letter No.	
Operations & Support Services	_____		
IRM	_____	ADDITIONAL	_____
Other	_____		_____

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8.2.5 Two-Well Recirculation Tracer Test

A well-to-well recirculation/tracer test will be conducted in the uppermost part of the unconfined aquifer to estimate hydraulic control based on tracer recovery, validate the computer simulation, qualitatively assess heterogeneities in the aquifer, confirm pumping (extraction) rates, and confirm hydraulic properties of the aquifer formation.

Groundwater will initially be purged from the extraction well (299-W11-30) at a constant rate of approximately 30 gal/min to remove turbid water from the wellbore. Groundwater will be discharged into the on-site purge water tank while monitoring the turbidity of the water. When the turbidity reaches about 10 NTU or less, groundwater will be purged for another 2 hr to assure that the well has been cleared of fine material. Water from the on-site purge water tank will be transferred to a disposal facility.

Groundwater recirculation will begin by routing the extracted water from well 299-W11-30 to well 299-W11-29 for injection at a rate of 30 gal/min (i.e., discharge rate will equal injection rate). The extraction and injection lines will be configured to form a closed loop and purge water will not be exposed at the surface. Recirculation will continue for up to 2 days to assure that steady-state flow conditions are nearly reached. At the end of this time, groundwater samples will be obtained for determining VOC, TOX, and anion concentrations in the water.

After reaching near steady-state conditions, a lithium bromide tracer solution (i.e., mixed with distilled water) will be injected into the closed loop at the surface for 1 hr using a metering pump. Injection of the tracer will yield a concentration of 500 ppm in the injection well. Probes will be used in wells 299-W11-32 (top screen) and 299-W11-30 to monitor for the bromide pulse. It is anticipated that the test will last up to 36 hr before the tracer pulse reaches well 299-W11-30. For verification of the probe readings, water samples will be collected as the pulse passes by.

As soon as the tracer pulse passes extraction well 299-W11-30, groundwater will continue to be recirculated until dilution of the bromide concentration drops below 3 ppm. During this operation, bromide will be monitored with the probes and groundwater samples will be obtained for determining VOC and anion concentrations. At the end of the test, the pumps will be shut down and baseline groundwater monitoring will continue.

8.2.6 Water-Level Monitoring

9413207.0011

Complete for all Types of Release

Purpose		ID Number (include revision, volume, etc.)
<input type="checkbox"/> Speech or Presentation	(Check only one suffix)	ECN 603862 for WHC-SD-EN-AP-109, Rev. 2
<input type="checkbox"/> Full Paper		List attachments.
<input type="checkbox"/> Summary		Date Release Required
<input type="checkbox"/> Abstract		March 24, 1994
<input type="checkbox"/> Visual Aid		
<input type="checkbox"/> Speakers Bureau		
<input type="checkbox"/> Poster Session		
<input type="checkbox"/> Videotape		

Title: FY 93 Site Characterization Work Plan for the VOC-Arid ID/Carbon Tetrachloride ERA	Unclassified Category UC- 630	Impact Level 4
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New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WHC or other company? <input type="checkbox"/> No <input type="checkbox"/> Yes Disclosure No(s).	Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
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Copyrights? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has written permission been granted? <input type="checkbox"/> No <input type="checkbox"/> Yes (Attach Permission)	Trademarks? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
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Complete for Speech or Presentation

Title of Conference or Meeting N/A	Group or Society Sponsoring
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Date(s) of Conference or Meeting	City/State	Will proceedings be published? <input type="checkbox"/> Yes <input type="checkbox"/> No	Will material be handed out? <input type="checkbox"/> Yes <input type="checkbox"/> No
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Title of Journal N/A

CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer - Signature	Indicates Approval	Date
			Name (printed)	Signature	
Classification/Unclassified Controlled Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Patent - General Counsel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Not req'd per S. Berglin</i>	<i>[Signature]</i>	<i>3/24/94</i>
Legal - General Counsel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Not req'd per S. Berglin</i>	<i>[Signature]</i>	<i>3/24/94</i>
Applied Technology/Export Controlled Information or International Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
WHC Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Communications	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
RL Program/Project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>P. M. Pak</i>	<i>Review not req'd per P. Pak</i>	<i>3/24/94</i>
Publication Services	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Other Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

Information conforms to all applicable requirements. The above information is certified to be correct.

References Available to Intended Audience	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Transmit to DOE-HQ/Office of Scientific and Technical Information	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Author/Requestor (Printed/Signature)	Date
V. J. Rohay <i>VJRohay</i>	<i>3/25/94</i>
Intended Audience	
<input type="checkbox"/> Internal <input type="checkbox"/> Sponsor <input checked="" type="checkbox"/> External	
Responsible Manager (Printed/Signature)	Date
A. J. Knapp <i>AJ Knapp</i>	<i>3/25/94</i>

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP	
Stamp is required before release. Release is contingent upon resolution of mandatory comments.	
Date Cancelled	Date Disapproved

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