



## ENGINEERING CHANGE NOTICE

Page 1 of 7

1. ECN 169870

Proj.  
ECN

2. ECN Category (mark one)			Supplemental <input checked="" type="checkbox"/>	Change ECN <input type="checkbox"/>	Supersedure <input type="checkbox"/>
Cancel/Void <input type="checkbox"/>			Direct Revision <input type="checkbox"/>	Temporary <input type="checkbox"/>	Discovery <input type="checkbox"/>
3. Originator's Name, Organization, MSIN, and Telephone No. C. D. Delaney, Geosciences Group, H4-56, 6-9235				4. Date 10/27/92	
5. Project Title/No./Work Order No. Work Plan for Characterizing the site for 200 Areas TEDB/AC2C1			6. Bldg./Sys./Fac. No. 600 Area		7. Impact Level 3Q
8. Document Number Affected (include rev. and sheet no.) WHC-SD-W049H-WP-001, Rev. 1			9. Related ECN No(s). NA		10. Related PO No. NA
11a. Modification Work <input type="checkbox"/> Yes (fill out Blk. 11b) <input checked="" type="checkbox"/> No (NA Blks. 11b, 11c, 11d)	11b. Work Package Doc. No. NA	11c. Complete Installation Work NA _____ Cog. Engineer Signature & Date		11d. Complete Restoration (Temp. ECN only) NA _____ Cog. Engineer Signature & Date	
12. Description of Change This change to the Site Characterization Work Plan - 200 Areas Treated Effluent Disposal Basin, Project W-049H addresses Phase I groundwater sampling of the uppermost aquifer from the three characterization /groundwater monitoring wells recently installed at the proposed site.					
					
13a. Justification (mark one)		Criteria Change <input type="checkbox"/>	Environmental <input checked="" type="checkbox"/>	Facilitate Const. <input type="checkbox"/>	
Design Error/Omission <input type="checkbox"/>		Design Improvement <input type="checkbox"/>	As-Found <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>	
13b. Justification Details See attached text.					
14. Distribution (include name, MSIN, and no. of copies) EXTERNAL LIMITS  See attached Distribution Sheet. <i>JS</i>				RELEASE STAMP	
				OFFICIAL RELEASE  BY WHC DATE NOV 18 1992 <i>Sta. 21</i>	

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Page 2 of 7

1. ECN (use no. from pg. 1)

169870

15. Design Verification Required  
 Yes  
 No

16. Cost Impact

ENGINEERING	CONSTRUCTION
Additional <input type="checkbox"/> \$	Additional <input type="checkbox"/> \$
Savings <input type="checkbox"/> \$	Savings <input type="checkbox"/> \$

17. Schedule Impact (days)  
 Improvement   
 Delay

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

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

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

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

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog./Project Engineer C. D. Delaney <i>C.D. Delaney</i>	<i>11/2/92</i>	PE	_____
Cog./Project Engr. Mgr. R. L. Jackson <i>R.L. Jackson</i>	<i>11/2/92</i>	QA	_____
QA W. R. Thackaberry <i>W.R. Thackaberry</i>	<i>11.6.92</i>	Safety	_____
Safety	_____	Design	_____
Security	_____	Other	_____
Proj. Prog./Dept. Mgr.	_____		_____
Def. React. Div.	_____		_____
Chem. Proc. Div.	_____		_____
Def. Wst. Mgmt. Div.	_____	DEPARTMENT OF ENERGY	_____
Adv. React. Dev. Div.	_____		_____
Proj. Dept.	_____		_____
Environ. Div.	_____	ADDITIONAL	_____
IRM Dept.	_____		_____
Facility Rep. (Ops.)	_____		_____
Other J. D. Davis <i>J.D. Davis</i>	<i>11/2/92</i>		_____

## 12. DESCRIPTION OF CHANGE

Available Background Information

This ECN is a change to the "Site Characterization Work Plan - 200 Areas Treated Effluent Disposal Basin (200 Areas TEDB), Project W-049H , Rev. 1, and addresses the groundwater sampling schedule and constituents and analytical methods for groundwater analyses during Phase I sampling at three recently installed RCRA-compliant groundwater monitoring wells (Davis and Delaney, 1992). Wells 699-40-36, 699-41-35 and 699-42-37 were drilled and completed in October 1992 and are located east of 200 East Area and 216-B-3 Pond (Figure 1).

General Objectives for the Phase I Groundwater Sampling and Analysis Program

This change addresses constituents to be analyzed from groundwater samples obtained at the three characterization/groundwater monitoring wells drilled at the proposed 200 Areas TEDB site. The groundwater sampling schedule for the three wells is also discussed. The objective of the Phase I groundwater sampling program is to establish an adequate pre-facility assessment of groundwater quality at the candidate site. Phase I sampling will provide baseline information on the possible presence and current extent of contamination in the uppermost aquifer underlying the proposed site. Subsequent Phase II sampling will provide operating facility monitoring information.

Strategy for Determining Constituents to be Analyzed

Based on data from existing RCRA groundwater monitoring wells near the site, the extent and concentration of groundwater contamination in the vicinity of the proposed 200 Areas TEDB was evaluated. Two objectives guided initial investigation of groundwater quality at the site: (1) search for evidence of past or present waste disposal practices related to Hanford Site activities that may have affected groundwater quality at the site and (2) determine if any of the WAC 173-200-040 list of constituents are present in groundwater at the site. Based on this initial evaluation of groundwater quality in the vicinity of the proposed site, a list was compiled of constituents to be analyzed for in groundwater from the three recently installed characterization/ groundwater monitoring wells.

Phase One Groundwater Sampling and Analysis Program

To determine groundwater quality at the 200 Areas TEDB, samples of groundwater from the uppermost aquifer are to be collected from wells 699-40-36, 699-41-35 and 699-42-37. The samples are to be analyzed for the constituents listed in Table 1. The groundwater is to be sampled, handled, analyzed and the results reported in accordance with the pertinent provisions of the Quality Assurance Plan for RCRA Ground Water Monitoring Activities (WHC 1992).

To obtain baseline data on groundwater quality in the vicinity of the proposed 200 Areas TEDB, samples will be collected and analyzed quarterly for all constituents in Table 1, for a one-year period. If the results suggest that an anomalous concentration or a concentration that exceeds the regulatory limits for that constituent is present, additional samples of the groundwater may be collected and analyzed at the discretion of the project hydrogeologist. Based on results from this initial sampling and analysis program and the operating parameters of the proposed facility, a long-term groundwater monitoring program will then be implemented.

## 13b. JUSTIFICATION

Additional site specific groundwater quality data are needed at the 200 Areas TEDB as per the requirements of WAC 173-216.

## REFERENCES

Davis, J. D. and C. D. Delaney, 1992, Site Characterization Work Plan - 200 Areas Treated Effluent Disposal Basin, Project W-049H, WHC-SD-W049H-WP-001, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

WHC, 1992, Quality Assurance Project Plan for RCRA Ground Water Monitoring Activities, WHC-SD-EN-QAPP-001, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

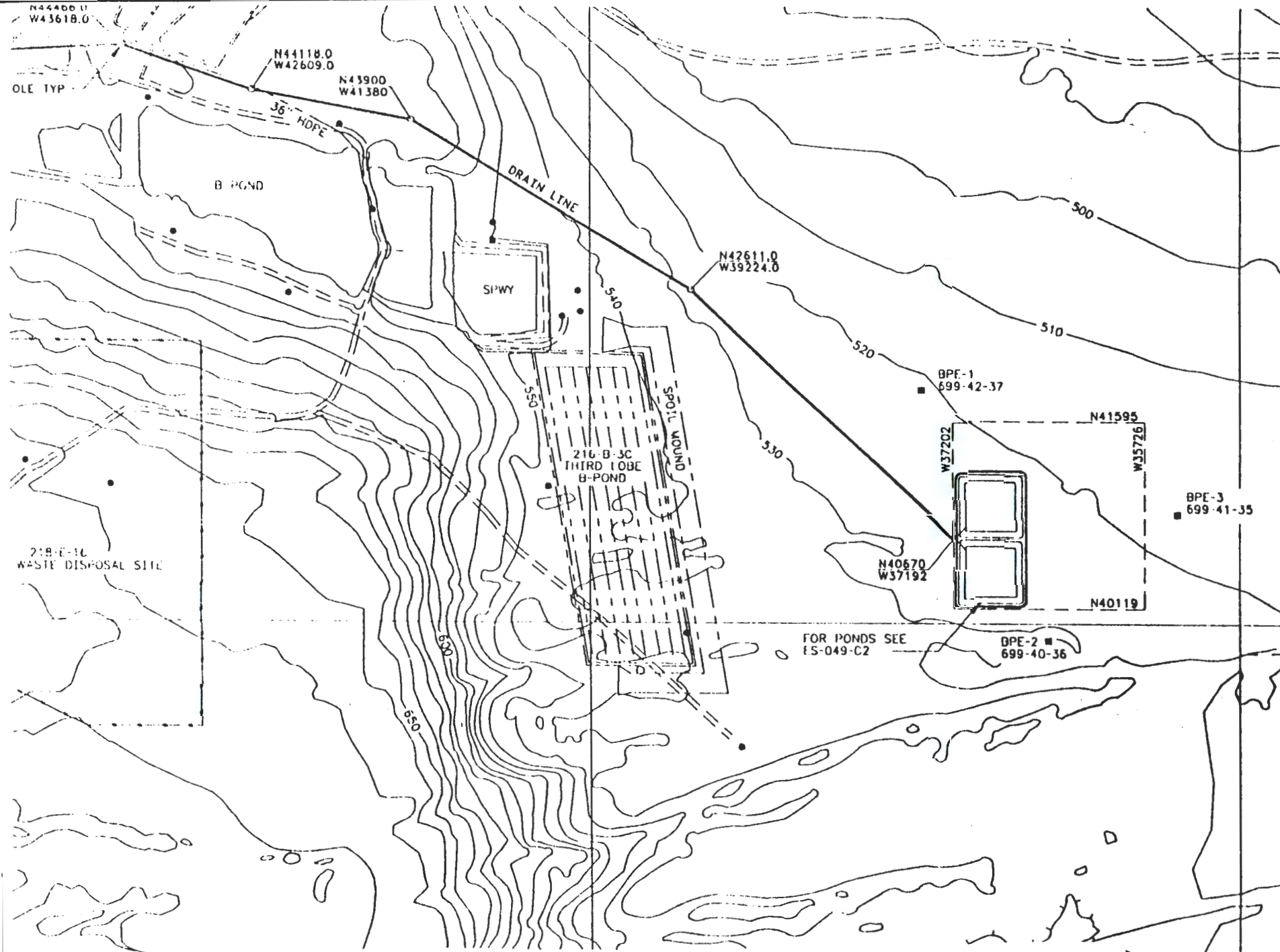


Figure 1. W-049H Treated Effluent Disposal Facility Groundwater Monitoring Well Locations.

Table 1. Constituents and analytical methods for groundwater analyses.

CONSTITUENT	ANALYTICAL GROUP	ANALYTICAL METHOD
1,1 Dichloroethane	Volatile Organics	SW-846 Method 8010
1,1,1-Trichloroethane	Volatile Organics	SW-846 Method 8010
1,2-Dichloroethane	Volatile Organics	SW-846 Method 8010
Aluminum	ICP Metals	SW-846 Method 6010
Americium-241	Gross Alpha	Laboratory Method
Ammonium	Ammonium	ASTM D 1426-D
Arsenic	AA Metals	SW-846 Method 7060
Barium	ICP Metals	SW-846 Method 6010
Bis(2-ethylhexyl) phthalate	Semi-volatile organics	SW-846 Method 7060
Cadmium	ICP Metals	SW-846 Method 6010
Cesium-137	Gross Beta	Laboratory Method
Chloride	Anions	ASTM Method D4327-88
Chloroform	Volatile Organics	SW-846 Method 8010
Chromium	ICP Metals	SW-846 Method 6010
Cobalt-60	Gross Beta	Laboratory Method
Coliform Bacteria	Coliform	SW-846 Method 9131/9132
Copper	ICP Metals	SW-846 Method 6010
Cyanide	Cyanide	SW 846 Method 9010
DDT	Pesticides	SW-846 Method 8080
Fluoride	Anions	ASTM Method D4327-88
Gross Alpha	Gross Alpha	Laboratory Method
Gross Beta	Gross Beta	Laboratory Method
Hydrazine	Hydrazine	ASTM Method D1385
Iodine-129	Iodine-129	Laboratory Method
Iron	ICP Metals	SW-846 Method 6010
Lead	AA Metals	SW-846 Method 7421
Manganese	ICP Metals	SW-846 Method 6010
Mercury	AA Metals	SW-846 Method 7470

CONSTITUENT	ANALYTICAL GROUP	ANALYTICAL METHOD
N-nitrosodimethylamine	Semi-Volatile Organics	SW-846 Method 7060
Nitrate	Anions	ASTM Method D4327-88
Plutonium 239/40	Gross Alpha	Laboratory Method
Radium	GrossAlpha	Laboratory Method
Selenium	AA Metals	SW-846 Method 7740
Silver	ICP Metals	SW-846 Method 6010
Strontium-90	Gross Beta	Laboratory Method
Sulfate	Anions	ASTM Method D4327-88
Technetium-99	Gross Beta	Laboratory Method
Tetrachloroethylene	Volatile Organics	SW-846 Method 8010
Toluene	Volatile Organics	SW-846 Method 8010
Trichloroethylene	Volatile Organics	SW-846 Method 8010
Tritium	Tritium	Laboratory Method
Xylene-o,p	Volatile Organics	SW-846 Method 8010
Zinc	ICP Metals	SW-846 Method 6010
Trans-1,2 Dichloroethylene	Volatile Organics	SW-846 Method 8010
PH	PH	ASTM D1293
Conductivity	Conductivity	SM 214 A
Total Organic Carbon	Total Organic Carbon	ASTM D1293
Total Organic Halides	Total Organic Halides	SW-846 Method 9020

Complete for all Types of Release

<b>Purpose</b> <input type="checkbox"/> Speech or Presentation <input type="checkbox"/> Full Paper (Check only one suffix) <input type="checkbox"/> Summary <input type="checkbox"/> Abstract <input type="checkbox"/> Visual Aid <input type="checkbox"/> Speakers Bureau <input type="checkbox"/> Poster Session <input type="checkbox"/> Videotape	<input type="checkbox"/> Reference <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> Thesis or Dissertation <input type="checkbox"/> Manual <input type="checkbox"/> Brochure/Flier <input type="checkbox"/> Software/Database <input type="checkbox"/> Controlled Document <input type="checkbox"/> Other	<b>ID Number (include revision, volume, etc.)</b> <p style="text-align: center; font-size: 1.2em;"><b>ECN 169890</b></p> <b>List attachments.</b> <p style="font-size: 1.2em; margin-left: 20px;"><b>NA Sp-W049-WP-001</b></p> <b>Date Release Required</b> <p style="text-align: center; font-size: 1.2em;">11/30/92</p>
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<b>Title</b> Site Characterization Work Plan - 200 Areas Treated Effluent Disposal Basin, Project W-049H	<b>Unclassified Category</b> UC-	<b>Impact Level</b> 3Q
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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)
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)

Complete for Speech or Presentation


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

**Title of Journal**

**CHECKLIST FOR SIGNATORIES**

Review Required per WHC-CM-3-4	Yes	No	Reviewer - Signature Indicates Approval
			Name (printed)                      Signature                      Date
Classification/Unclassified Controlled Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Patent - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Stan Berglin <i>Stan Berglin</i> 11/13/92
Legal - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	B. D. Williamson <i>B. D. Williamson</i> 11/13/92
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"/>	
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RL Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.

<table style="width: 100%;"> <tr> <td style="width: 30%;">References Available to Intended Audience</td> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 10%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Transmit to DOE-HQ/Office of Scientific and Technical Information</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>Author/Requestor (Printed/Signature)</td> <td colspan="2" style="text-align: center;">Date</td> </tr> <tr> <td>C. D. Delaney <i>C. D. Delaney</i></td> <td colspan="2" style="text-align: center;">11/10/92</td> </tr> <tr> <td>Intended Audience</td> <td colspan="2"></td> </tr> <tr> <td><input type="checkbox"/> Internal    <input type="checkbox"/> Sponsor    <input checked="" type="checkbox"/> External</td> <td colspan="2"></td> </tr> <tr> <td>Responsible Manager (Printed/Signature)</td> <td colspan="2" style="text-align: center;">Date</td> </tr> <tr> <td>R. L. Jackson <i>R. L. Jackson</i></td> <td colspan="2" style="text-align: center;">11/10/92</td> </tr> </table>	References Available to Intended Audience	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Transmit to DOE-HQ/Office of Scientific and Technical Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Author/Requestor (Printed/Signature)	Date		C. D. Delaney <i>C. D. Delaney</i>	11/10/92		Intended Audience			<input type="checkbox"/> Internal <input type="checkbox"/> Sponsor <input checked="" type="checkbox"/> External			Responsible Manager (Printed/Signature)	Date		R. L. Jackson <i>R. L. Jackson</i>	11/10/92		<p style="text-align: center;"><b>INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP</b></p> <p>Stamp is required before release. Release is contingent upon resolution of mandatory comments.</p> <div style="text-align: center;">  </div> <table style="width: 100%; border-top: 1px solid black;"> <tr> <td style="width: 50%;">Date Cancelled</td> <td style="width: 50%;">Date Disapproved</td> </tr> </table>	Date Cancelled	Date Disapproved
References Available to Intended Audience	<input checked="" type="checkbox"/>	<input type="checkbox"/>																									
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R. L. Jackson <i>R. L. Jackson</i>	11/10/92																										
Date Cancelled	Date Disapproved																										



## DISTRIBUTION SHEET

To: Distribution From: J. D. Davis 6-8919 Date: 11/19/92

Project Title/Work Order:

WHC-SD-W049H-WP-001 Rev. 1

EDT No.:

ECN No.: 169870

Name	MSIN	With Attachment	EDT/ECN & Comment	EDT/ECN Only
M. R. Adams	H6-01	X		
M. C. Carrigan	R3-35	X		
M. P. Connelly	H4-14	X		
A. F. Crane	R3-45	X		
B. A. Davis	A4-35	X		
J. D. Davis	H6-01	X		
C. D. Delaney	H6-06	X		
L. P. Diediker	T1-30	X		
J. J. Dorian	B2-16	X		
D. G. Farwick	H4-16			
K. R. Fecht	H6-06	X		
D. L. Flycht	R3-45			
B. A. Gilkerson	L4-78			
W. F. Heine	B2-35			
D. P. Hughes	R3-35	X		
R. D. Izatt (DOE/RL)	A5-15	X		
R. L. Jackson	H6-06	X		
J. R. Kelly	R3-28	X		
C. J. Kemp	H4-14	X		
A. J. Knepp	H6-06	X		
D. S. Landeen	H4-14	X		
M. J. Lauterbach	H6-01	X		
K. A. Lindsey	H6-06	X		
L. S. Marniya (DOE/RL)	A5-24	X		
W. J. McMahon	H6-06	X		
D. S. Messinger	E6-23	X		
G. R. Mezger (DOE/RL)	A5-18	X		
T. W. Moon	H6-06	X		
R. W. Oldham	H6-06	X		
E. C. Rafuse	H6-06	X		
S. A. Richey	E6-25	X		
M. R. Sackschewski	H4-14	X		
S. W. Seiler	B4-64	X		
D. S. Takasumi	L4-78	X		
J. E. Thrasher	R3-45	X		
E. T. Trost	B4-64	X		
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