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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

January 6, 2011

Mr. Mark S. French, Program Manager  
Richland Operations Office  
United States Department of Energy  
P.O. Box 550, MSIN: A3-04  
Richland, Washington 99352

Re: Transmittal of the Signed Waste Site Reclassification Form (WSRF) for the Cleanup Verification Package (CVP) for the 118-H-4, Ball 3X Burial Ground and Documentation of the Department of Ecology's (Ecology) Comparison of Site Data with Washington Administrative Code (WAC) 173-340 (2007) Requirements

Dear Mr. French:

Enclosed is the signed TPA-MP-14 WSRF (enclosure 1) for the 118-H-4, Ball 3X Burial Ground, for interim reclassification to "Interim Closed Out." Ecology's approval of this interim reclassification is based on the requirements for waste site reclassification identified in the *Remedial Design Report/Remedial Action Work Plan for the 100-Area*, DOE/RL-96-17, Revision 6, which identifies WAC 173-340 (1996) cleanup levels.

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In anticipation of the final Record of Decision (ROD) for the 100-H Area, we now evaluate data for consistency with corrective action requirements that will be updated within the final ROD. Therefore, we compared the data in the CVP for 118-H-4 against WAC 173-340 (2007) standard Method B (modified Method B for hexavalent chromium) requirements (enclosure 2). Ecology will consider this evaluation when the 118-H-4 waste site is evaluated for final reclassification under the final ROD.

If there are any questions, contact me at 509-372-7941 or Mandy Jones at 509-372-7916.

Sincerely,

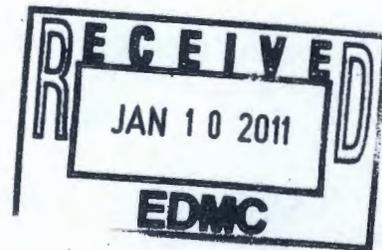
Nina M. Menard  
Environmental Restoration Project Manager  
Nuclear Waste Program

mj/aa  
Enclosures (2)

cc w/enc:

Dennis Faulk, EPA  
Tom Post, USDOE  
John Neath, USDOE  
Megan Proctor, WCH  
Stuart Harris, CTUIR  
Gabriel Bohnee, NPT  
Russell Jim, YN

Susan Leckband, HAB  
Ken Niles, ODOE  
Administrative Record: 100-H Area  
Environmental Portal  
Hanford Operating Record General File  
USDOE-RL Correspondence Control



100-HR-2



WASTE SITE RECLASSIFICATION FORM		
Date Submitted: <u>08/30/10</u>	Operable Unit(s): <u>100-HR-2</u>	Control Number: <u>2010-036</u>
Originator: <u>M. L. Proctor</u>	Waste Site Code: <u>118-H-4</u>	
Phone: <u>372-9227</u>	Type of Reclassification Action:	
	Closed Out <input type="checkbox"/> Interim Closed Out <input checked="" type="checkbox"/> No Action <input type="checkbox"/>	
	RCRA Postclosure <input type="checkbox"/> Rejected <input type="checkbox"/> Consolidated <input type="checkbox"/>	

This form documents agreement among parties listed authorizing classification of the subject unit as Closed Out, Interim Closed Out, No Action, RCRA Postclosure, Rejected, or Consolidated. This form also authorizes backfill of the waste management unit, if appropriate, for Closed Out and Interim Closed Out units. Final removal from the NPL of No Action and Closed Out waste management units will occur at a future date.

Description of current waste site condition:

The 118-H-4, Ball 3X Burial Ground was a mixed solid waste burial ground that operated in 1953 to receive thimbles, guides, and radioactive materials removed from the 105-H Reactor during installation of the 105-H Ball 3X System. The material excavated during remediation included contaminated soil and debris (concrete, piping, metallic debris, and miscellaneous reactor hardware). The site has been remediated and will be backfilled with concurrence from the lead regulatory agency. Remediation, verification sampling, and comparison of residual contaminant concentrations against cleanup levels have been performed in accordance with remedial action objectives and goals established by the *Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds), Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. The selected remedy involved (1) excavating the site to the extent required to meet specified soil cleanup levels, (2) disposing of contaminated excavation materials at the Environmental Restoration Disposal Facility at the 200 Area of the Hanford Site, (3) demonstrating through verification sampling that cleanup goals have been achieved, and (4) proposing the site for reclassification as Interim Closed Out.

Basis for reclassification:

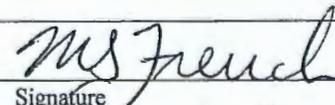
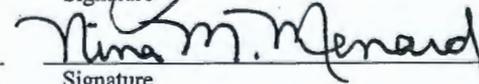
In accordance with this evaluation, the verification sampling results support a reclassification of this site to Interim Closed Out. The current site conditions achieve the remedial action objectives and the corresponding remedial action goals established in the *Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-2, 100-HR-2, and 100-KR-2 Operable Units, Hanford Site (100 Area Burial Grounds), Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. The results of verification sampling show that residual contaminant concentrations do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also demonstrate that residual contaminant concentrations are protective of groundwater and the Columbia River. The 118-H-4 waste site excavation has a maximum depth of approximately 4.5 m (14.8 ft) and contamination did not extend into the deep zone (below 4.6 m [15 ft] deep) above direct exposure limits. Therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. The basis for reclassification is described in detail in the *Cleanup Verification Package for the 118-H-4, Ball 3X Burial Ground (CVP-2010-00003)*, Washington Closure Hanford, Richland, Washington.

Regulator Comments:

Approval of this WSRF documents regulator agreement that the 118-H-4 waste site qualifies for "Interim Closed Out" under this Interim Action ROD. In addition, Ecology has evaluated the data for this site against WAC 173-340 (2007) clean-up levels for direct contact, groundwater protection, and river protection. This evaluation is documented in the letter transmitting Ecology's approval of the site's interim reclassification to "Interim Closed Out."

Waste Site Controls:

Engineered Controls: Yes  No  Institutional Controls: Yes  No  O&M requirements: Yes  No   
 If any of the Waste Site Controls are checked Yes specify control requirements including reference to the Record of Decision, TSD Closure Letter, or other relevant documents.

M. S. French		<u>12/23/10</u>
DOE Federal Project Director (printed)	Signature	Date
N. Menard		<u>12/29/10</u>
Ecology Project Manager (printed)	Signature	Date
NA		
EPA Project Manager (printed)	Signature	Date

## Enclosure 2

### The Department of Ecology's Comparison of Supporting Data for the 118-H-4, Ball 3X Burial Ground Cleanup Verification Package (CVP) with Washington Administrative Code (WAC) 173-340 (2007) Requirements

**Overall summary:** Samples taken from the excavation exceed WAC 173-340 Table 749-3 screening levels for ecological protection for boron. This should be evaluated further with consideration of background values that will be established for the final Record of Decision.

**Summary of Exceedences within the Staging Area  
(Yes = concentration exceeds cleanup/screening level):**

Contaminant	WAC 173-340-740 (19996) Groundwater Protection	WAC 173-340-730 & -740 (1996) River Protection	RESRAD <sup>a</sup> (Kd, ml/g)	WAC 173-340, Table 749-3 Ecological Protection	WAC 173-340-740(7) (d or f) (2007) <sup>b</sup>	WAC 173-340-740(7)(e) Human Health (2007) <sup>b</sup>
Boron	No	No	--	Yes	No	Pass
Lead	Yes	Yes	Pass (30)	No	No	Pass
Zinc	No	Yes	Pass (30)	No	No	Pass

**Note:** This table does not include contaminants with soil concentrations below background or the practical quantitation limit (PQL). When soil concentrations are less than background or the PQL, cleanup levels default to background or the PQL. Ecology considers non-detected metals at half of their PQL.

- a. As shown in CVP-2010-00003
- b. The specific clean up level exceeded is denoted in parentheses (direct contact = dc, groundwater protection = gw, and surface water protection = sw)

**Outstanding Issues:**

- State ecological protection screening values are exceeded for boron, and vanadium (<background).
- USEPA screening levels are exceeded for lead, manganese (< background), vanadium (<background), and zinc.
- All samples exceed the WAC 173-340 Table 749-3 value for soil for protection of plants for boron, below, at or above their PQL. Several exceed the plant protection value by a factor of two or more.
- The split of J19LB1 (location SA-11) from the west staging area exceeds the soil cleanup value for protection of groundwater for hexavalent chromium by more than a factor of 2. This causes the hazard quotient for Cr (IV) and the hazard index for contaminants toxic to the kidney to exceed 1 at this location. This is greater than 10% of the samples in this area; this exceedance is also greater than a factor of 2 above the soil cleanup level. Therefore, the west staging area fails the 3-part test.

**Summary of Exceedences for focused samples  
(Yes = concentration exceeds cleanup/screening level):**

Contaminant	WAC 173-340-740 (19996) Groundwater Protection	WAC 173-340-730 & -740 (1996) River Protection	RESRAD <sup>a</sup> (Kd, ml/g)	WAC 173-340, Table 749-3 Ecological Protection	WAC 173-340-740(7) (d or f) (2007) <sup>b</sup>	WAC 173-340-740(7)(e) Human Health (2007) <sup>b</sup>
Boron	No	No	--	Yes	No	Pass

Note: This table does not include contaminants with soil concentrations below background or the PQL. When soil concentrations are less than background or the PQL, cleanup levels default to background or the PQL. Ecology considers non-detected metals at half of their PQL.

- a. As shown in CVP-2010-00003
- b. The specific clean up level exceeded is denoted in parentheses (direct contact = dc, groundwater protection = gw, and surface water protection = sw)

- State ecological protection screening values are exceeded for boron, and vanadium (<background).
- USEPA screening levels are exceeded for manganese (< background) and vanadium (<background).