

WASTE SITE RECLASSIFICATION FORM

Operable Unit: 300-FF-2

Control No.: 2015-058

Waste Site Code(s)/Subsite Code(s): 600-386

Reclassification Category: Interim Final
Reclassification Status: Closed Out No Action Rejected
 RCRA Postclosure Consolidated None
Approvals Needed: DOE Ecology EPA

Description of current waste site condition:

The 600-386 waste site was previously remediated and reclassified under the *Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington. The 600-386 waste site was added to the *Record of Decision for the 300-FF-2 Operable Unit and 300-FF-5, and Record of Decision Amendment for 300-FF-1, Hanford Site, Benton County, Washington (300 Area Final Action ROD)* by the *Explanation of Significant Differences for the Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1 (EPA 2015)*. No further site remediation has been performed under the 300 Area Final Action ROD.

Basis for reclassification:

Results from previous investigation, remediation, and verification sampling at the 600-386 waste site demonstrate that the residual site condition achieves the requirements for unrestricted use and unlimited exposure as defined in the 300 Area Final Action ROD. Residual contaminant concentrations meet the CULs for direct exposure, groundwater protection, and river protection under a residential land use scenario. Contamination at the waste site did not extend into the deep zone (below 4.6 m [15 ft] depth); therefore, institutional controls to prevent uncontrolled drilling or excavation into the deep zone are not required. The basis for reclassification is further described in the *Final Action Evaluation for the 600-386 Waste Site* (attached.)

Regulator comments:

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 DOE Federal Project Director (printed)	 Signature	10/5/15 Date
N/A Ecology Project Manager (printed)	_____ Signature	_____ Date
B. Simes EPA Project Manager (printed)	 Signature	10/16/15 Date

Final Action Evaluation for the 600-386 Waste Site

The 600-386 waste site was previously remediated and reclassified as Interim Closed Out in accordance with the *Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington* (300-FF-2 ROD) (EPA 2001). Details of the remediation and verification sampling are presented with the interim reclassification evaluation in the *Remaining Sites Verification Package for the 600-386 Segment 5 Battery Remnant Area #1* (WCH 2012). Information is summarized below to support evaluation of the residual site condition in accordance with the *Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (300 Area Final Action ROD) (EPA 2013).

Interim Action Summary

The 600-386 waste site was a single wet cell battery remnant identified along Route 4 north of the 300 Area Industrial Complex during an orphan sites evaluation (WCH 2011). No stained soil or distressed vegetation was observed, and geophysical surveys and visual inspection did not suggest the presence of any other potentially hazardous debris items.

Remedial action was performed at the site on May 30, 2012 in accordance with the 300-FF-2 ROD (EPA 2001). This consisted of the removal of the battery remnant and immediately surrounding soil. Verification sampling for the site included collection of a focused grab sample with a field duplicate, as summarized in Table 1.

Table 1. 600-386 Verification Sampling Summary Table.

Sample Location	Sample Type	Washington State Plane Coordinates ^a	HEIS Number	Sample Analysis
600-386 (Main)	Composite	N118225.3, E593534.4	J1PPF8	ICP metals, mercury
600-386 (Duplicate)	Composite	N118225.3, E593534.4	J1PPF9	
Equipment blank	NA	NA	J1PPH0	ICP metals, mercury

Source: WCH (2012).

^a The coordinates provided represent the approximate center point of the waste site.

HEIS= Hanford Environmental Information System

ICP = inductively coupled plasma

NA = not applicable

Data Evaluation for Final Closure

This section demonstrates that residual contaminant concentrations at the 600-386 waste site achieves the applicable requirements to support residential land use in the 300 Area as established in the 300 Area Final Action ROD (EPA 2013). Table 2 presents a comparison of the sample results to the individual applicable soil CULs for direct exposure and protection of groundwater and the Columbia River, demonstrating that all individual CULs are attained.

Risk requirements for residential cleanup also include individual hazard quotients of less than 1 for all COCs, a cumulative hazard quotient less than 1, individual contaminant carcinogenic risk values less than 1×10^{-6} , and a cumulative carcinogenic risk less than 1×10^{-5} (WAC 173-340-740). Antimony and lead were the only COCs detected above background levels

Table 2. Comparison of Residual Contaminant Concentrations to Residential Cleanup Levels for the 600-386 Waste Site.

COC	Maximum Result ^{a,b} (mg/kg)	Direct Exposure CUL ^c (mg/kg)	Groundwater and River Protection CUL ^c (mg/kg)	Does the Maximum Result Exceed CULs?
Antimony	0.66	32	252	No
Arsenic	1.6 (<BG)	20	20	No
Barium	61.2 (<BG)	16,000	--	No
Beryllium	0.19 (<BG)	160	--	No
Cadmium	0.15 (<BG)	80	176	No
Chromium (total)	7.8 (<BG)	120,000	--	No
Cobalt	6.3 (<BG)	24	--	No
Copper	9.1 (<BG)	3,200	3,400	No
Lead	19.1	250	1,480	No
Manganese	304 (<BG)	11,200	--	No
Mercury	0.012 (<BG)	24	8.5	No
Nickel	10.3 (<BG)	1,600	--	No
Vanadium	40.9 (<BG)	400	--	No
Zinc	33.2 (<BG)	24,000	64,100	No

^a Maximum value from verification sample results (WCH 2012).

^b Background values from DOE-RL (2001 and 2013).

^c CULs obtained from the 300 Area Final Action ROD (EPA 2013).

-- = not applicable

BG = background

COC = contaminant of concern

CUL = cleanup level

ROD = record of decision

in the 600-386 verification samples. Determination of the hazard quotient is given as daily intake divided by a reference dose (WAC 173-340-200 & 173-340-740). The toxic effects of lead are correlated with blood-lead levels rather than exposure levels or daily intake; as such, there is no reference dose for lead and no further evaluation of the hazard quotient is performed. The residential cleanup level (CUL) for antimony has been established based on attaining a hazard quotient of 1. Therefore, since antimony was the only COC detected above background with a reference dose, and because antimony was detected below the CUL, the individual and cumulative hazard quotients for the site are less than 1. Neither antimony nor lead is associated with a carcinogenic effect, so no further evaluation of carcinogenic risk for the 600-386 site has been performed.

Summary for Final Closure

The 600-386 site was remediated in accordance with the 300-FF-2 ROD (EPA 2001), and residual conditions achieve the residential criteria of the 300 Area Final Action ROD (EPA 2013). Site contamination did not extent into the deep zone (greater than 4.6 m [15 ft] below ground surface); therefore, institutional controls to prevent uncontrolled drilling or excavation

into the deep zone are not required. In accordance with this evaluation, the previous verification sampling results support a reclassification of the 600-386 waste site to Final Closed Out.

References

- DOE-RL, 2001, *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*, DOE/RL-92-24, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE-RL, 2013, *Remedial Investigation/Feasibility Study for the 300-FF-1, 300-FF-2, and 300-FF-5 Operable Units*, DOE/RL-2010-99, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- EPA, 2001, *Interim Action Record of Decision for the 300-FF-2 Operable Unit, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2013, *Record of Decision for the 300-FF-2 Operable Unit and 300-FF-5, and Record of Decision Amendment for 300-FF-1, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- EPA, 2015, *Explanation of Significant Differences for the Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.
- WAC 173-340, "Model Toxics Control Act – Cleanup," *Washington Administrative Code*, 2007.
- WCH, 2011, *100-F/IU-2/IU-6 Area – Segment 5 Orphan Sites Evaluation Report*, OSR-2011-0002, Rev. 0, Washington Closure Hanford, Richland, Washington.
- WCH, 2012, *Remaining Sites Verification Package for the 600-386 Segment 5 Battery Remnant Area #1*, Attachment to Waste Site Reclassification Form 2012-061, Rev. 0, Washington Closure Hanford, Richland, Washington.