WASTE SITE RECLASSIFICATION FORM

Operable Unit: 100-KR-2 **Control No.:** 2016-013

Waste Site Code(s)/Subsite Code(s):

100-K-105

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:

(What is the current physical state of the site? What activities have been performed?)

The 100-K-105 Waste Site is a backfilled open pit. This site was identified during a historical photo review for the 100K Orphan Sites evaluation. The open excavation was noted on a 1955 photo (Attachment 1, Figure 1), and the site was added to the list of waste sites for further evaluation. No additional photographic or operational history was found to provide information about the use of this site. The site boundary is not currently visible but was estimated from the 1955 aerial photograph to be approximately 20 m (65 feet) in diameter with an unspecified depth. The site is presumed to have been backfilled prior to 1965 as photographs from that time frame do not show an open pit. The waste site is located approximately 220 m (720 ft) east of the 183.1 KE Headhouse near the southeast corner of the 100-K East Area near the perimeter road (see Attachment 1, Figure 2) and has no surface or subsurface connection to the 183.1 KE Headhouse.

In July of 2016, three potholes of dimensions 3.3 m (10 ft) wide by 3.3 m (10 ft) long to a depth of 1.8 m (6 ft) were excavated from inside the waste site boundary and each of the resulting soil piles were sampled for metals and radionuclides (Attachment 1, Table 1)following the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, Rev 5). The potholes showed no soil staining or evidence of underground structures. The waste site pothole locations are shown in Attachment 1, Figure 3.

Basis for reclassification:

(How does the site meet the reclassification status?)

The results of the pothole soil sampling were compared to the Remedial Action Goals (RAGs) identified in Interim Action Record of Decision for the 100-BC-1,100-BC-2,100-DR-1,100-DR-2,100-FR-1, 100-FR-2,100-HR-1,100-HR-2,100-KR-1,100-KR-2,100-IU-2,100-IU-6 and 200-CW-3 Operable Units (EPA/ROD/R10 99/039, 100 Area Remaining Sites Record of Decision) and the Remedial Design/Remedial Action Work Plan for the 100 K Area(DOE/RL-96-17,Rev. 6)and are presented in Attachment 1, Table 2 to this document. None of the soil sample results exceeded any of the RAGs. Additionally, there was no evidence of soil staining or underground structures in the excavated potholes. These soil sampling results are indicative of no process related impacts to the waste site and in combination with the lack of historical information form the basis for a reclassification of 100-K-105 to No Action.

WASTE SITE RECLASSIFICATION FORM

Operable Unit: 100-KR-2 **Control No.:** 2016-013

Waste Site Code(s)/Subsite Code(s):

100-K-105

Project Manager comments:

None.

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:

Mark S. French		4/13/16
DOE Federal Project Director (printed)	Signature	Date
N/A		
Ecology Project Manager (printed)	Signature	Date
		11-15-16
EPA Project Manager (printed)	Signature	Date

R Lobos

Attachment 1 to Waste Site Reclassification Form Control No. 2016-013

For Waste Site 100-K-105

Figure 1 – July 1955 Photograph showing location of 100-K-105 Pit

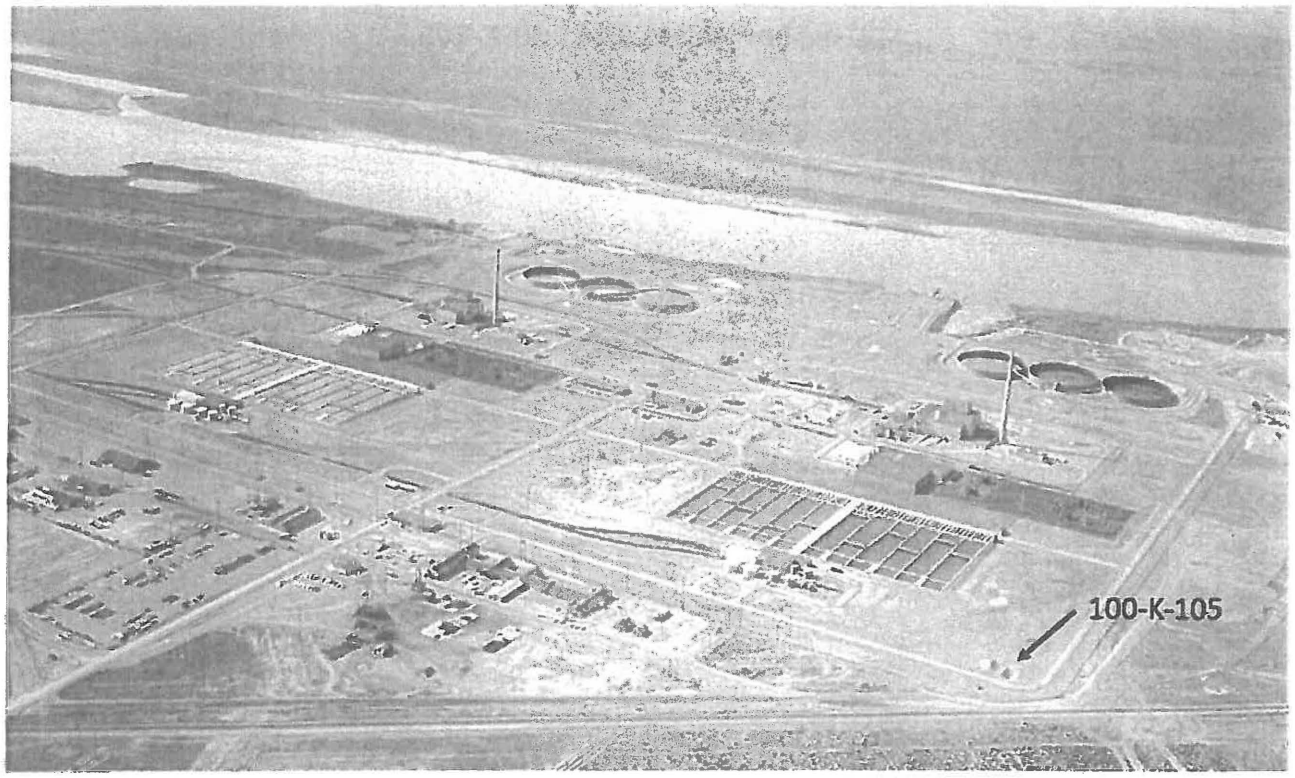


Figure 2 - Location of 100-K-105 Waste Site relative to the 183.1 Headhouse

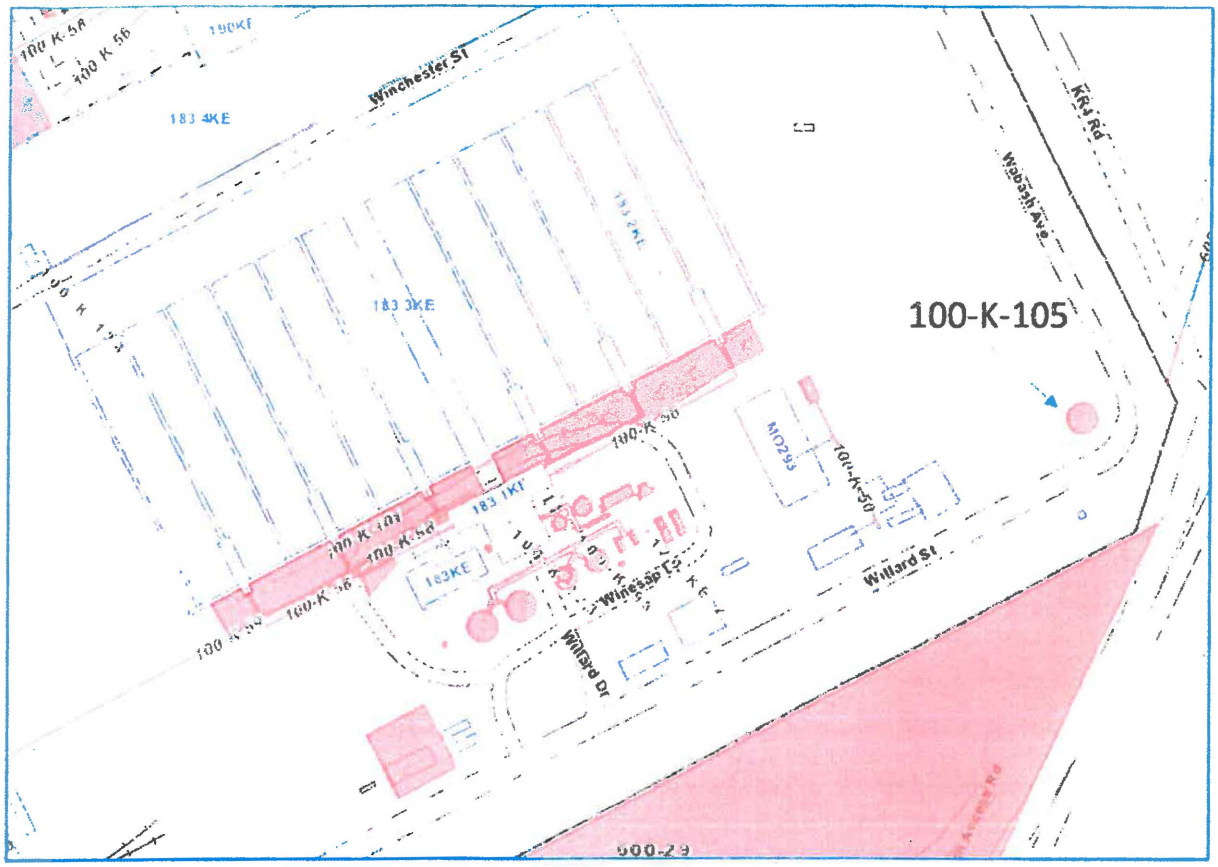
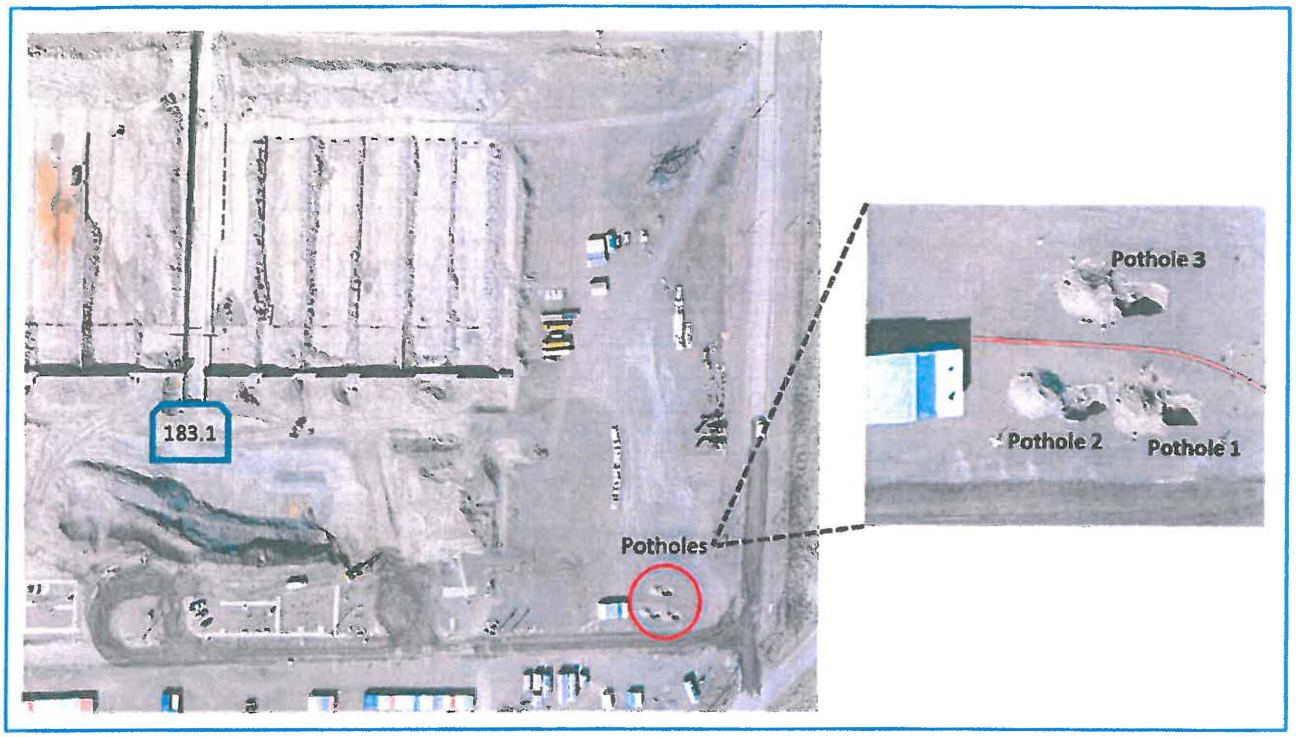


Figure 3 100-K-105 Pothole Locations



Note: For each soil pile, a single sample was created by compositing 4 grabs per pile.

Table 2 Pothole Soil Sampling Results Comparison to Soil Cleanup Levels

				Soil Cleanup Levels (mg/kg) [a]						
Group	Analyte	Units	Soil Background	Direct Exposure	Protective of Groundwater	Protective of the River	Pothole 1	Pothole 1 Duplicate	Pothole 2	Pothole 3
Anions	Chloride	mg/kg	- -	- -	25000	- -	16	1.6 B	0.6 U	1 B
Anions	Nitrate	mg/kg	11.8	128000	1000	2000	5.75 B	5.75 B	2.66 U	2.79 U
Anions	Nitrite	mg/kg	- -	8000	100	200	0.985 U	1.18 U	0.985 U	1.05 U
Anions	Sulfate	mg/kg	237	- -	25000	- -	5.4 B	3.8 B	3 U	4.4 B
Metals	Antimony	mg/kg	5	32	5[b]	5	0.11 N	0.13 N	0.096 N	0.12 N
Metals	Arsenic	mg/kg	6.5	20b	20[b]	20	2.3	2.5	2.2	2.5
Metals	Barium	mg/kg	132	5600	200	400	64	62	52	60
Metals	Beryllium	mg/kg	1.51	10.4[c]	1.51	1.51	0.34	0.33	0.27	0.31
Metals	Cadmium	mg/kg	0.81[e]	13.9[c]	0.81[b]	0.81[b]	0.072 B	0.087 B	0.055 B	0.05 B
Metals	Chromium	mg/kg	18.5	80000	18.5	18.5[b]	8.8	8.9	7.3	9.2
Metals	Cobalt	mg/kg	15.7	24	15.7[b]	- -	7.3	7.6	7.2	7.5
Metals	Copper	mg/kg	22	2960	59.2	22[b]	13	14	12	14
Metals	Chromium VI	mg/kg	- -	2.1[c]	4.8	2	0.29 B	0.23 B	0.23 B	0.16 B
Metals	Lead	mg/kg	10.2	353	10.2[b]	10.2[b]	4.4	4.6	3.7	4.3
Metals	Manganese	mg/kg	512	3760	512	512[b]	310	320	270	300
Metals	Mercury	mg/kg	0.33	24	0.33	0.33[b]	0.0034 U	0.0041 U	0.0035 U	0.0088 B
Metals	Molybdenum	mg/kg	- -	400	8	- -	0.28	0.31	0.3	0.29
Metals	Nickel	mg/kg	19.1	1600	19.1	27.4	9	9.5	8.2	10
Metals	Selenium	mg/kg	0.78[e]	400	5	1	0.5 B	0.45 B	0.51 B	0.54 B
Metals	Silver	mg/kg	0.73	400	8	0.73[b]	0.019 B	0.021 B	0.018 B	0.025 B
Metals	Strontium	mg/kg	- -	48000	960	- -	24 N	26 N	23 N	29 N
Metals	Tin	mg/kg	- -	48000	960	- -	0.61 BC	0.66 BC	0.57 BC	0.59 BC

				Soil Cleanup Levels (mg/kg) [a]						
Group	Analyte	Units	Soil Background	Direct Exposure	Protective of Groundwater	Protective of the River	Pothole 1	Pothole 1 Duplicate	Pothole 2	Pothole 3
Metals	Uranium	mg/kg	3.21	240	3.21[b]	3.21[b]	0.33	0.36	0.32	0.93
Metals	Vanadium	mg/kg	85.1	560	85.1[b]	- -	42	46	47	43
Metals	Zinc	mg/kg	67.8	24000	480	67.8	39	41	41	54
Radionuclide	Cesium-137	pCi/g	1.1	6.2	1465	2930	0.00479 U	0.00065 U	0.00221 U	0.00468 U
Radionuclide	Cobalt-60	pCi/g	0.008	1.4	13900	27800	-0.00386 U	0.00138 U	6.78E-05 U	0.0029 U
Radionuclide	Europium-152	pCi/g	- -	3.3	- -	- -	-0.0187 U	-0.00132 U	-0.00104 U	0.00417 U
Radionuclide	Europium-154	pCi/g	0.033	3	- -	- -	-0.00515 U	-0.00176 U	0.0093 U	-0.00393 U
Radionuclide	Europium-155	pCi/g	0.054	125	- -	- -	0.0267 U	0.0682 U	0.0424 U	0.0448 U
Radionuclide	Strontium-90	pCi/g	0.18	4.5	27.6	55.2	0.0686 U	0.174	0.0249 U	0.106 U

[a] Cleanup levels are established in the 1995 *Interim Action Record of Decision for the 100-BC-1, 100-DR-1, and 100-HR-1 Operable Units, Hanford Site, Benton County, Washington* (EPA 1995) or calculated per WAC 173-340, Method B (Ecology 1996), unless otherwise noted. Nonradionuclide soil concentrations protective of groundwater and the river are based upon application of the "100 times" rule (Ecology 1996).

[b] Where cleanup levels are less than background, cleanup levels default to background per WAC 173-340-700[4][d] (Ecology 1996). The arsenic cleanup level of 20 mg/kg has been agreed to by the Tri-Party Agreement Project Managers as discussed in Section 2.1.2.1 of this document.

[c] Carcinogenic cleanup level calculated based on the inhalation exposure pathway (WAC 173-340-750[3]) (Ecology 1996) using an airborne particulate mass-loading rate of 0.0001 g/m^3 (WDOH 1997).

[d] No Hanford Site-specific or Washington State background value available.

[e] Hanford Site-specific background not available. Value is from Ecology (1994).

[f] The cleanup level for protection of the Columbia River is the radionuclide-specific soil activity protective of groundwater from multiplied by the dilution attenuation factor (DAF) of 2.

U = Not Detected

B = Result between MDL and RL

D = Diluted result