

START



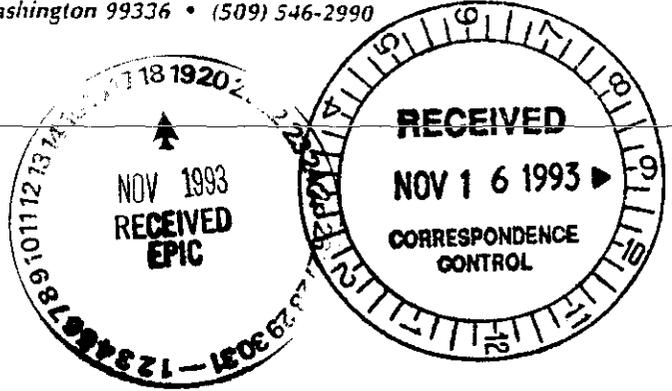
9307470

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

7601 W. Clearwater, Suite 102 • Kennewick, Washington 99336 • (509) 546-2990

March 8, 1993

Mr. Leo E. Little, Assistant Manager
Environmental Management
U.S. Department of Energy
P.O. Box 550, A3-42
Richland, WA 99352



Dear Mr. Little:

Re: Action Memorandum Approval: Sodium Dichromate Barrel
Landfill, U.S. Department of Energy Hanford Site, Richland,
WA

This letter constitutes approval of the subject Action Memorandum.

I. PURPOSE

The purpose of this action is to mitigate any threat to public health and the environment from the Sodium Dichromate Barrel Landfill, and to meet the ERA objective of clean closure. It is assumed that this will be the final remedial action taken at the 100-IU-4 Operable Unit.

II. BACKGROUND

Pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the U.S. Environmental Protection Agency (EPA) proposed the 100 Area at the U.S. Department of Energy (USDOE) Hanford Site for inclusion on the National Priorities List (NPL) on June 24, 1988. In November 1989, the 100 Area was included on the NPL.

A. Site Description

Located east of the D and DR reactors and west of H reactor (Figure 1), this landfill area is thought to have been in use in 1945 for disposal of discarded and crushed barrels. The landfill area is the sole waste site within the 100-IU-4 Operable unit.

Historical documentation for the site (site dimensions, usage, and waste volume) is not available. The Waste Information Data System (WIDS 1992) assumed that the crushed barrels contained 1% residual sodium dichromate at burial time and only these crushed barrels were buried at the site. Sodium dichromate was used as an additive to reactor cooling water to prevent pipe corrosion.

RL Commitment Control

MAR 12 1993

Richland Operations Office

93009.226

Leo E. Little
Page 2
March 8, 1993

In addition to Sodium Dichromate Barrels, the site also includes homestead surface debris, barbed and fencing wire, stove pipe, and various tin cans. The site may have been used as a general landfill. Burial depth is shallow since visual inspection finds large amounts of barrel debris on the surface. The limited field investigation also proved the depth of burial is around 6.5 feet. The site is rectangular in shape, and is about 1,500 feet long by 300 feet wide. The immediate area surrounding the site still shows evidence of its original agricultural use; field rows are noticeable on the west perimeter.

Chromium (Cr) exists in the 100-HR-3 Operable Unit area groundwater, but this site is not the suspected source. Groundwater samples from the site's monitoring well (699-93-46) do not report detectable levels of chromium. The groundwater depth is 29 feet. Site radiation survey indicate that radiation levels are not in excess of the natural background levels. The site contains many bare patches (most in circular shape with diameters from about one foot to ten feet) surrounded by "healthy" cheat grass. A Hanford Site survey identified areas containing this "natural phenomena" at several other localities.

B. Site Characterization

Site characterization activities included two geophysical, nonintrusive, ground-penetrating radar and electromagnetic induction surveys, surface debris collection, sample trenches, sample pit, and soil sampling.

The first geophysical survey identified many subsurface anomalous zones. The survey identified the need to remove the surface debris (about 41 barrels and homestead debris) which interfered with the survey. Field screening and offsite laboratory analysis sample collection occurred during surface debris cleanup. The second geophysical survey provided more detail, clearer anomaly delineation, and detection of about 144 small and large anomalies. The survey interpreted most of these as metallic debris. Based on survey results, limited field investigations were carried out.

Two sample trenches and one sample pit were dug to confirm the survey findings. Numerous crushed drums were found to a depth of about 6.5 feet in both the trenches. A crushed drum with the wording "Sodium Dichromate Crystals" still legible was discovered in trench 2.

Soil samples were collected from the surface, two test trenches, and one test pit. Also during surface debris cleanup, surface samples were obtained for analysis. The samples were either field screened for Cr+6 and total Cr or sent to an offsite laboratory for analysis for Cr, Cr+6 and gamma emitting radionuclides.

Leo E. Little
Page 3
March 8, 1993

All samples were field surveyed for radiation. The field instruments did not detect any radiation levels and showed detectable Cr+6 levels of less than five ppm. Laboratory analysis shows a maximum concentration of total Cr at 56.3 ppm and 15.6 ppm of Cr+6.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

A. Present Conditions

Limited field investigations were carried out in the Sodium Dichromate Barrel Landfill. There are about 144 anomalies, and full scale investigation of a large number of these anomalies is yet to be carried out to determine all the contents of these anomalies. Historical documentation for the site (usage and waste type, waste volume) is not available. WIDS 1992, assumes that the crushed barrel contained 1% residual sodium dichromate at the burial time and that only crushed barrel were buried at the site. This assumption seems to be correct as evidenced from the limited field investigation of excavation of two test trenches, which revealed numerous crushed drums in the trenches. Only one crushed drum with the wording "Sodium Dichromate Crystals" still legible was discovered in trench No. 2. However, the entire site cannot be assumed to be the same based on this limited field investigation. The sample analysis results are well below the Model Control Toxic Act (MCTA) Residential Soil Clean-up chromium standard of 100 ppm. However, it is too early to conclude that there is no threat or danger to the public health or environment from contaminants at the site without full investigation of all the anomalies. The ERA's goal is to achieve clean closure and unrestricted use of land. Public comments are in favor of complete removal of these drums from the site.

B. Applicable or Relevant and Appropriate Requirements

The ERA will be conducted in accordance with 40 CFR 300, Subpart E; the Hanford Federal Facility Agreement and Consent Order (Part 3, Article XIII, Section 38); the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA), and the State of Washington Model Toxics Control Act (MCTA, Chapter 173-340 WAC).

IV. PROPOSED ACTION AND ESTIMATED COSTS

Westinghouse Hanford Company (WHC), as the USDOE contractor, prepared an engineering evaluation/cost analysis (EE/CA) concerning technologies that were applicable to the Sodium Dichromate Barrel Landfill. The proposal was submitted to the EPA and Washington State Department of Ecology (Ecology) by USDOE for parallel review, and was also made available for public comment for the period of thirty (30) days. The EE/CA proposed three remedial action alternatives. They are: No-Action Alternative, Sample All Anomalies, and Excavate and Dispose At Central

8227-60636

Landfill. Ten (10) public comments were received, including comments from Confederated Tribes and Bands of the Yakima Indian Nation. One public comment supported a "no action alternative," while the majority (about 70% of the total response) opted for total excavation and removal of barrels from the site. The rest of the public comments were deemed not relevant. The following proposed alternatives were evaluated.

A. No Action - The very limited nature of the field activity does not justify the action. Also, the existing sampling data is not sufficient for Ecology regulators to support this alternative.

B. Sample All Anomalies - The purpose of sampling all anomalies (about 144) is to further confirm that the site contains no regulated hazardous waste. Sample collection will require a small backhoe and dust control devices. All excavated debris will be reburied where found. The debris type will be visually identified at each anomaly location. If the anomaly is a crushed drum(s), sample collection will be for field screening and offsite laboratory analysis. If the anomaly is homestead debris, no sample collection will occur. When all the analysis results are received and show that the site is contaminant free, all maps will be upgraded. A note will be added that the site contained buried crushed drums and that Cr and Cr+6 levels are within background levels. Reseeding of the disturbed sample areas will be done. The total cost for this alternative is estimated at \$288,990.

This alternative will confirm whether the site contains any regulated hazardous waste. The sampling will also require total screening for metals and organics, and analysis for selected samples. The cost is much higher than the third alternative of total excavation and removal. Also, this option does not address future problem(s) that may arise. The public comments are against this option. This option does not meet the original intent of the ERA, which is clean closure of the site.

C. Excavate and Dispose At Central Landfill - This alternative involves excavation of all anomalies, placing the debris in dump trucks and disposal at the central landfill. Sample collection will occur if discolored soil or debris other than crushed drums or homestead types appear during the excavations. Area stabilization and reseedling will follow excavation. The total cost is estimated at \$192,140. The cleanup activity will take about six (6) weeks, depending on weather conditions.

This alternative is technically feasible and cost effective. It will be effective in meeting the ERA goal by removing all potential contamination. This action is also the preferred alternative by the public, and may allow unrestricted use of the land. Confirmatory sampling must occur to show that the site is clean.

9313089.229

Implementation

Labor.....	\$45,400
Materials and Supplies.....	5,000
Analytical Services.....	15,400
Equipment Leasing.....	18,000
Central Landfill.....	54,000
Engineering and Administration....	10,000
Sub Total.....	<u>\$147,800</u>
30% Contingency.....	44,340
<hr/> TOTAL	<u>\$192,140</u>

V. RECOMMENDATION

This decision document recommends the excavation of all anomalies and disposal of the materials at the central landfill (Option C) for the Sodium Dichromate Barrel Landfill of the USDOE Hanford Site in Richland, WA. This decision was developed in accordance with CERCLA as amended by the Superfund Amendments and Reauthorization Act (SARA), and to the extent practicable, the National Contingency Plan (NCP). This decision is based on the administrative record for this project. Because conditions at the site meet the NCP section 300.415(b)(2) criteria for action, it is recommended that the preferred alternative be approved.

If you have any further questions, please contact Dave Nylander at (509)736-3000.


Roger Stanley, Program Manager
Nuclear & Mixed Waste Mgmt. Program
Washington State Dept. of Ecology


Randall F. Smith, Director
Hazardous Waste Division Waste
U. S. Environmental Protection
Agency, Region 10

RS:mf

cc: Robert K. Stewart, USDOE
Paul Day, EPA
Paul Beaver, EPA
Dave Jansen, Ecology
Dave Nylander, Ecology
Darci Teel, Ecology
Dib Goswami, Ecology
Administrative Record (Sodium Dichromate ERA)

9515089.2250

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author: R. F. Stanley, Ecology
 R. F. Smith, EPA

Addressee: L. E. Little, RL

Correspondence No.: Incoming: 9307470

Subject: ACTION MEMORANDUM APPROVAL: SODIUM DICHROMATE BARREL
 LANDFILL U.S. DEPARTMENT OF ENERGY HANFORD SITE, RICHLAND, WA

INTERNAL DISTRIBUTION

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	
		M. R. Adams	H6-01	
		L. D. Arnold	B2-35	
		B. A. Austin	B2-35	
		J. M. Frain	H6-04	
		K. A. Gano	X0-21	
		R. P. Henckel	H6-02	
		G. W. Jackson	H6-21	
		W. L. Johnson	H6-04	
		L. G. Juguilon	H6-27	
		R. E. Lerch	B3-63	
		P. J. Mackey	B3-15	
		H. E. McGuire, Level I	B3-63	
		S. R. Moreno	B3-06	
		J. K. Patterson	H6-27	
		P. J. Valcich	H6-04	
		T. M. Wintczak, Assignee	H6-27	
		EPIC	H6-08	
		PJV:LB	H6-04	
		Field File Custodian (Sodium Dichromate ERA File)	H6-08	

(Original)



MC
SL-04

4515089.2231