

Final Report for Interim Stabilization of 218-W-2A Burial Ground Contamination Area

***Prepared for the U.S. Department of Energy, Richland Operations Office
Office of Environmental Restoration***

Submitted by: Bechtel Hanford, Inc.

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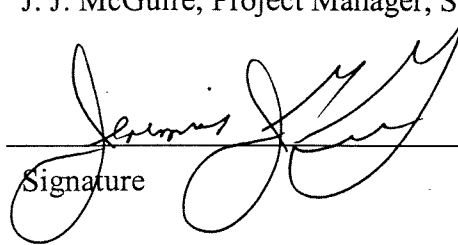
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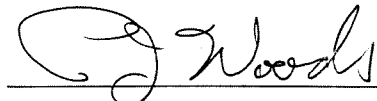


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Author

C. D. Sherman
Bechtel Hanford, Inc.

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METRIC CONVERSION CHART

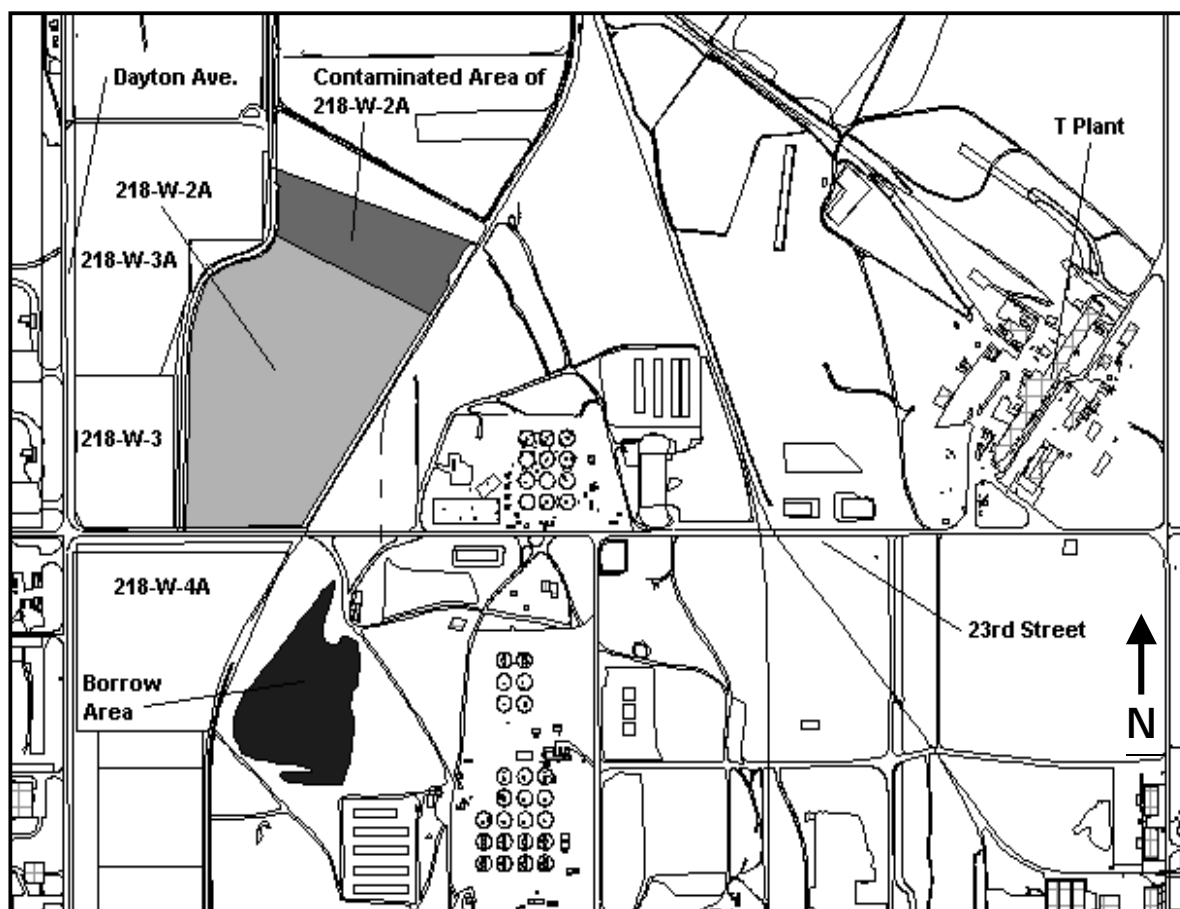
Into Metric Units			Out of Metric Units		
<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>	<i>If You Know</i>	<i>Multiply By</i>	<i>To Get</i>
Length			Length		
inches	25.4	millimeters	millimeters	0.039	inches
inches	2.54	centimeters	centimeters	0.394	inches
feet	0.305	meters	meters	3.281	feet
yards	0.914	meters	meters	1.094	yards
miles	1.609	kilometers	kilometers	0.621	miles
Area			Area		
sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.093	sq. meters	sq. meters	10.76	sq. feet
sq. yards	0.0836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.6	sq. kilometers	sq. kilometers	0.4	sq. miles
acres	0.405	hectares	hectares	2.47	acres
Mass (weight)			Mass (weight)		
ounces	28.35	grams	grams	0.035	ounces
pounds	0.454	kilograms	kilograms	2.205	pounds
ton	0.907	metric ton	metric ton	1.102	ton
Volume			Volume		
teaspoons	5	milliliters	milliliters	0.033	fluid ounces
tablespoons	15	milliliters	liters	2.1	pints
fluid ounces	30	milliliters	liters	1.057	quarts
cups	0.24	liters	liters	0.264	gallons
pints	0.47	liters	cubic meters	35.315	cubic feet
quarts	0.95	liters	cubic meters	1.308	cubic yards
gallons	3.8	liters			
cubic feet	0.028	cubic meters			
cubic yards	0.765	cubic meters			
Temperature			Temperature		
Fahrenheit	subtract 32, then multiply by 5/9	Celsius	Celsius	multiply by 9/5, then add 32	Fahrenheit
Radioactivity			Radioactivity		
picocuries	37	millibecquerel	millibecquerel	0.027	picocuries

1.0 INTRODUCTION

The 218-W-2A burial ground is located in the 200 West Area of the Hanford Site. The burial ground site is located west of the 221-T Building, north of 23rd Street, and directly east of the 218-W-3 and 218-W-3A burial grounds. The 218-W-2A burial ground is an industrial waste burial site containing 19 trenches and a cell block burial area. It contains mostly miscellaneous radioactive solid waste from facilities located in the 200 West Area. The solid waste consists mainly of tanks, concrete blocks, facility wastes, and process equipment. The site was backfilled and stabilized in 1980 but remained in active status until 1985 due to two unused trenches and the cell block burial sites. The site was then posted as an underground radioactive material (URM) area.

Radioactive contamination was found in the tumbleweeds growing on approximately 3.64 ha (9 ac) of the site. The contamination area (CA) was found in the northern region of the burial ground. Figure 1 shows the location of the 218-W-2A burial ground CA. The site is monitored annually for surface contamination and subsidence control.

Figure 1. Location of 218-W-2A Contamination Area.



The objectives of the interim stabilization for the 218-W-2A CA involved reducing risk to workers, simplifying ongoing surveillance and maintenance activities at the site, and transforming the site to a safer and more stable configuration while awaiting the identification and implementation of final remediation actions.

This report describes the interim stabilization of the CA located within the 218-W-2A burial ground site. Covering the CA with clean fill material and gravel, eliminating the spread of contaminated tumbleweeds, and downposting the site to a URM area completed the interim stabilization activities.

2.0 SITE PREPARATION

Individuals from multiple disciplines participated in site walkdowns to aid in planning and identifying hazards. Drawings were examined to identify utilities, and cultural and biological resource evaluations were performed.

Earthmoving equipment was mobilized to the site. The Washington State Department of Health determined that there was no need to apply for a notice of construction for routine radiation area remedial action stabilization activities.

3.0 INTERIM STABILIZATION

Interim stabilization began at the western boundary of the CA and proceeded in an easterly direction. Stabilization efforts were accomplished by backfilling clean fill material over the 218-W-2A burial ground CA. Numerous concrete posts identifying the burial ground were marked or flagged prior to beginning stabilization activities. A water spray was applied as needed for dust suppression during earthmoving activities.

Clean fill material was transported from a borrow pit located directly south of the burial ground and 23rd Street. The borrow pit was saturated with water prior to removal of clean fill material (Figure 2).

Earthmoving equipment was used to place clean fill material over the CA (Figure 3). The fill material was graded with a bulldozer and roadgrader to obtain a minimum depth of 60.96 cm (24 in.). Figures 4 and 5 display photographs of a bulldozer stabilizing fill material and a roadgrader operating during interim stabilization activities, respectively. Gravel was then placed on top of the fill material at a minimum depth of 10.16 cm (4 in.). The layer of clean fill material and gravel was thicker in some locations due to ruts and minor depressions in the existing CA surface.

Figure 2. Water Truck Saturating Borrow Pit with Water.



Figure 3. Dump Truck Unloading Clean Fill Material.



Figure 4. Bulldozer Stabilizing Clean Fill Material.



Figure 5. Roadgrader Operating During Interim Stabilization Activities.



Figures 6 and 7 show photographs of the area before and after stabilization activities, respectively. The total volume of clean fill material hauled during this project was approximately 22,203 m³ (29,040 yd³), and 3,058 m³ (4,000 yd³) of gravel were placed on top of the fill material.

Interim stabilization actions were finalized by downposting the CA to a URM area. The site is currently free of vegetation and has a gravel surface. The entire surface area of the 218-W-2A burial ground has one continuous URM posting. Equipment decontamination was not required or performed in support of interim stabilization. This site will become a part of the bare ground vegetation control program.

4.0 COST AND SCHEDULE

Field work began on November 28, 2000, and was completed on February 8, 2001 (a total of 39 working days were required). The cost of the project through February 8, 2001, was \$242,250, which included planning and field work. The burdened costs are summarized in Table 1. The work was performed under work package #20001025003.

Table 1. Burdened Cost and Hours Summary.

Labor/Tools	Costs	Hours
Manual labor	\$123,750	2,281
Non-manual labor	\$25,800	388
Materials	\$50,000	--
Equipment	\$42,700	--
Total	\$242,250	2,624

5.0 LESSONS LEARNED

There were no lessons learned for this project.

Figure 6. 218-W-2A Before Interim Stabilization.



Figure 7. 218-W-2A After Interim Stabilization.



6.0 BIBLIOGRAPHY

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