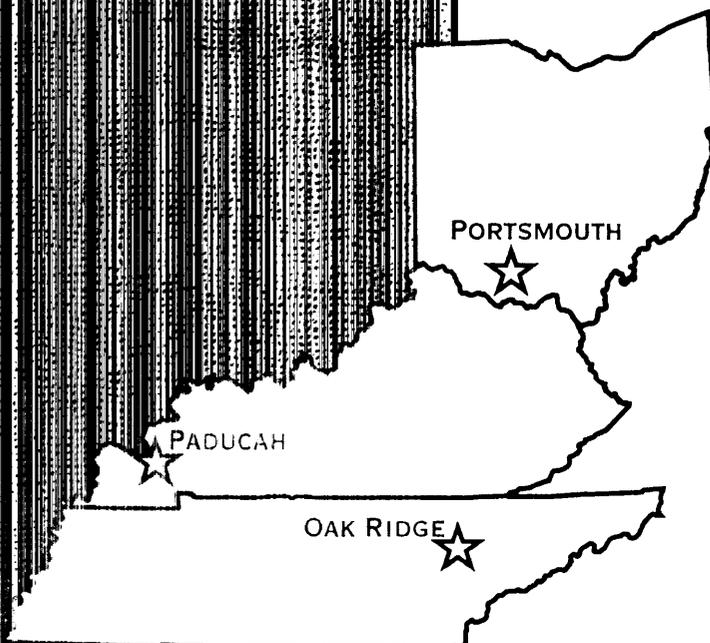




BJC/PAD-397

ENVIRONMENTAL MANAGEMENT
& ENRICHMENT FACILITIES
MANAGEMENT AND INTEGRATION CONTRACT

**Final Inventory/Characterization
Report for the OS-04
Department of Energy
Material Storage Area at the
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky**



MANAGED BY
BECHTEL JACOBS COMPANY LLC
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

This document has received the appropriate reviews
for release to the public.

6

**Final Inventory/Characterization Report for the OS-04
Department of Energy Material Storage Area (DMSA)
at the Paducah Gaseous Diffusion Plant,
Paducah, Kentucky**

Date Issued – September 12, 2002

Prepared by
WESKEM, LLC
Under subcontract 23900-BA-RM005F
Prepared for the
US Department of Energy
Office of Environmental Management

BECHTEL JACOBS COMPANY LLC
managing the
Environmental Management Activities at the
East Tennessee Technology Park
Oak Ridge Y-12 Plant Oak Ridge National Laboratory
Paducah Gaseous Diffusion Plant Portsmouth Gaseous Diffusion Plant
Under contract DE-AC05-98OR22700
for the
U.S. DEPARTMENT OF ENERGY

This report is an abridged edition. The following sections have been omitted from this report, but are included in the full report.

OS-04 DMSA ZONE MAP

HP SURVEY DATA

HP SMEAR AND AIR SAMPLE ACTIVITY REPORT

SME INSPECTION / SAMPLING SUMMARY

OREIS CHARACTERIZATION REPORT

D & D CHARACTERIZATION FORMS

CONTENTS

ACRONYMS v

EXECUTIVE SUMMARY..... .vii

PHOTOGRAPHS

D & D INVENTORY

ACRONYMS

ACM	Asbestos Containing Material
ADC	Authorized Derivative Classifier
D&D	Decontamination and Decommission
DMSA	Department of Energy Material Storage Area
DOE	Department of Energy
dpm	Disintegration per Minute
ft ²	Square Feet
ft ³	Cubic Feet
HP	Health Physics
IH	Industrial Hygiene
lbs	Pounds
Lc	Level Sub C
LLW	Low Level Waste
MDA	Minimum Detectible Activity
NCS	Nuclear Criticality Safety
OS	Outside
OREIS	Oak Ridge Environmental Information Systems
PCB	Polychlorinated Biphenyl
PEL	Permissible Exposure Limits
PGDP	Paducah Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act
RFD	Request for Disposal
RPD	Relative Percent Difference
SME	Subject Matter Expert
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TID	Tamper Indicating Device
TIO	Technical Information Officer
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
USEC	United States Enrichment Corporation

EXECUTIVE SUMMARY

Department of Energy Material Storage Area (DMSA) OS-04 is located northwest of the intersection of 4th and Ohio Streets on the west side of the plant. It occupies approximately 480 square feet (ft²). OS-04 is also Solid Waste Management Unit (SWMU) # 215. This DMSA was initially identified as a Phase 1 DMSA (expected to have no fissionable material but not fully characterized). The DMSA contains a rail tank car holding approximately 250 gallons of radiologically contaminated water and a deteriorated black liner. The liquid was fully characterized in May 1999. Evaluation of the data indicated no need for additional sampling of the liquid. A tamper indicating device (TID) was placed on the top hatch and bottom valve following the 1999 sampling event. Samples were taken of the soil/gravel within the DMSA during the current characterization project. The railcar, liquid, and associated items (crossties and track) are considered subject to future Decontamination and Decommission (D&D) activities. The equipment was given a barcode identification for future inventory control and equipment location reference. This DMSA now qualifies as a Phase 3 DMSA since it has been fully characterized and has no fissionable material.

RCRA/Mixed

There were no Resource Conservation and Recovery Act (RCRA)/Mixed items identified in this DMSA.

TSCA

There was no Toxic Substances Control Act (TSCA)/Polychlorinated Biphenyl (PCB) items or asbestos containing materials (ACM) identified in this DMSA.

LLW

There was no Request for Disposals (RFD) issued for low level waste (LLW) items in this DMSA. However, due to previous leakage, the soil/gravel beneath the rail car is radiologically contaminated. If the soil/gravel is removed and containerized, it should be handled as LLW.

D&D

The rail tank car has been identified for the LLW disposal portion of the DMSA Project. Once the LLW disposal process begins, the liquid in the rail tank car will be treated as LLW. The rail car and its liquid have a volume of -3,055 cubic feet (ft³) and a combined weight of -45,960 pounds

NCS

There were no Nuclear Criticality Safety (NCS) concerns in the DMSA.

IH

All Industrial Hygiene (IH) data has been reviewed. All quality control samples were within normal acceptable guidelines. No personnel were exposed to any airborne concentration above a permissible exposure limit (PEL) or threshold limit value (TLV).

HP

Health Physics (HP) radiological results concluded the highest Alpha reading was 5,376 disintegrations per minute (dpm)/100cm² and the highest Beta/Gamma reading was 506,500 dpm/cm² both on the surface of the soil.

Safety

There were no safety related events during the characterization process. Safety concerns were reviewed prior to the start of the activity with all involved personnel and any concerns expressed were incorporated into the safety plan. All workers had stop work authority to assure unusual or unexpected work situations could be evaluated before proceeding. A safety officer was in attendance during all phases of the activities to monitor performance and provide safety related input to the workers.

All actions involved in this characterization were documented and have been retained in permanent files. Part of the documentation includes photographs. Several of these photographs are included in this report.

DMSA OS-4 View of Railcar



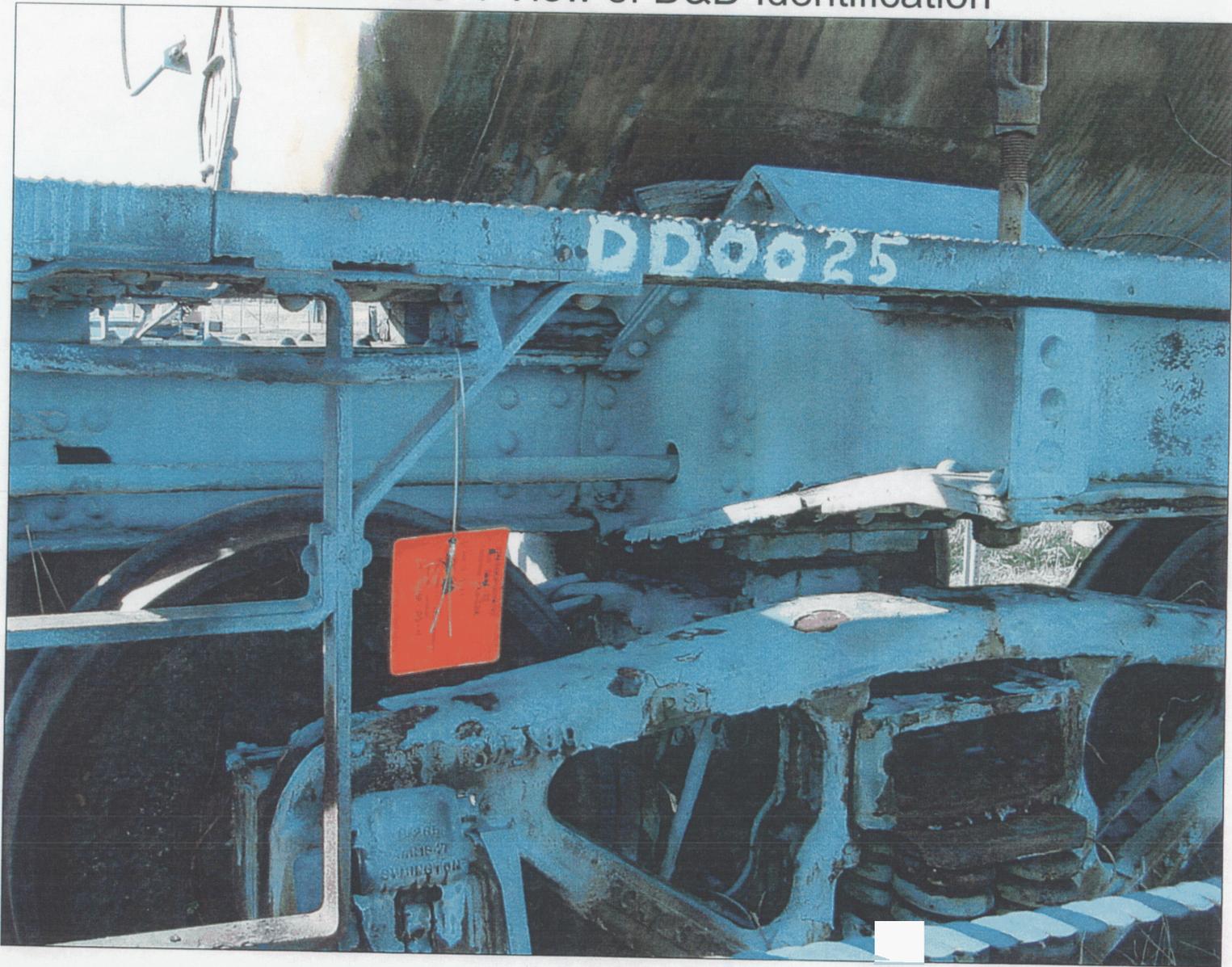
12

DMSA OS-4 View of Railcar



13

DMSA OS-4 View of D&D Identification



71

DMSA OS-4 Railcar



2002 2 19

DMSA OS-4 Tank Car Drain Valve



71

OS-04 DECONTAMINATION AND DECOMMISSION INVENTORY

Description	Original DD#	Barcode	# Items	Estimated Volume (ft³)	Estimated Weight (lbs)	Material Transferred to USEC
Rail Tank Car	DD00025	DMSA0111457	1	3,020	43,900	No

Total Estimated
Volume (ft³)
3,020

Total Estimated
Weight (lbs)
43,900

11