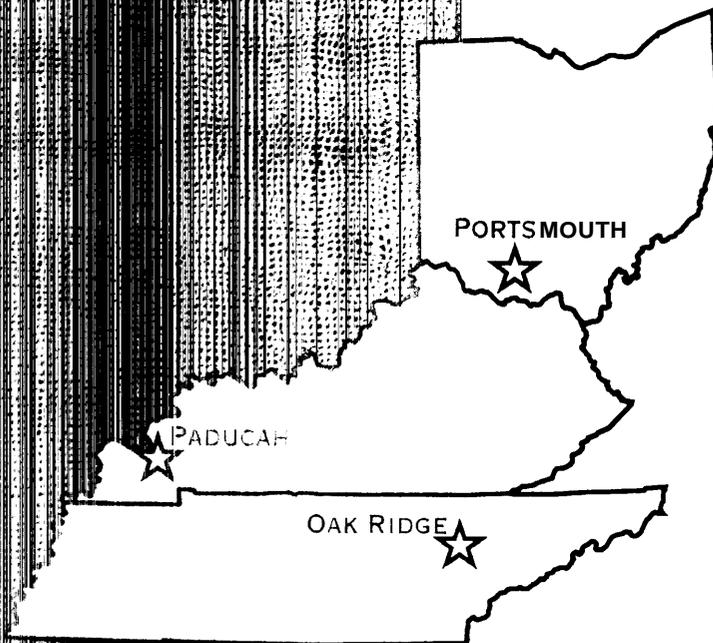




BJC/PAD-402

**ENVIRONMENTAL MANAGEMENT
& ENRICHMENT FACILITIES
MANAGEMENT AND INTEGRATION CONTRACT**

**Final Inventory/Characterization
Report for the C-400-03
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.

**Final Inventory/Characterization Report for the C-400-03
Department of Energy Material Storage Area (DMSA)
at the Paducah Gaseous Diffusion Plant,
Paducah, Kentucky**

Date Issued – September 11, 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.

C-400-03 DMSA ZONE MAP

HP **SURVEY** DATA

HP SMEAR AND AIR SAMPLE ACTIVITY REPORT

SME INSPECTION / SAMPLING SUMMARY

RFD FORMS

D & D CHARACTERIZATION FORMS

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PHOTOGRAPHS

INVENTORY AND CHARACTERIZATION REPORT

DMSA C-400-03 INVENTORY

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	Disintegrations per Minute
ft ²	Square Feet
ft ³	Cubic Feet
EPA	Environmental Protection Agency
HP	Health Physics
IH	Industrial Hygiene
lbs	Pounds
Lc	Level Sub C
LLW	Low Level Waste
NCS	Nuclear Criticality Safety
OREIS	Oak Ridge Environmental Information System
OS	Outside
PCB	Polychlorinated Biphenyl
PEL	Permissible Exposure Limits
PGDP	Paducah Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act
RFD	Request for Disposal
RMA	Radioactive Material Area
SME	Subject Matter Expert
SVOA	Semi-volatile Organic Analysis
TCLP	Toxicity Characteristic Leaching Procedure
TIO	Technical Information Officer
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
USEC	United States Enrichment Corporation
VOA	Volatile Organic Analysis

EXECUTIVE SUMMARY

Department of Energy Material Storage Area (DMSA) C-400-03 is located along the west wall of the C-400 Chemical Operations facility at column A9. It is commonly referred to as the Gold Dissolver System. It occupies an area of approximately 360 square feet (ft²). This DMSA was initially identified as a Phase 2 DMSA (has items possibly containing fissionable material). The gold dissolver process was abandoned in the 1960-1970 time frame. It had been used to recover gold from various pieces of equipment. The system includes associated equipment such as an acid tank, pumps, piping, work platform and other fixed accessories. Several small items were also identified in the DMSA. Current characterization activities in this DMSA were completed in March 2002. This DMSA now qualifies as a Phase 3 DMSA since it has been fully characterized and contains no fissionable material.

RCRA

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

TSCA

There were no Toxic Substances Control Act (TSCA) items identified in this DMSA.

LLW

Several small plastic containers, as well as several wooden, and metal items were identified and characterized as low level waste (LLW). These items have a volume of approximately 6 cubic feet (ft³) and a weight of approximately 34 pounds (lbs). All items of equipment/material were given barcode identification for future inventory control and equipment location. The LLW will remain in the DMSA.

D&D

The gold dissolver system was abandoned in place approximately 30-40 years ago. It has been designated to be handled in the future under the decontamination and decommission (D&D) program. The system has a volume of approximately 500 ft³ and an estimated weight of 15,000 lbs. This system will remain in the DMSA.

NCS

There were no Nuclear Criticality Safety (NCS) concerns identified in this 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 concentrations above a permissible exposure limit (PEL) or threshold limit value (TLV).

HP

The Health Physics (HP) radiological surveys concluded the highest Alpha reading was 155 disintegrations per minute (dpm)/100 cm² on the Uni-strut. The highest Beta/Gamma reading was 137,590 dpm/100cm² on a pipe section with strainer.

Safety

There were no safety related events during the characterization process. All workers had stop work authority to ensure unusual or unexpected events were evaluated before work was allowed to proceed. A Health and Safety Officer was in attendance during all phases of work to evaluate conditions 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 C-400-03Gold Dissolver Solution Tank

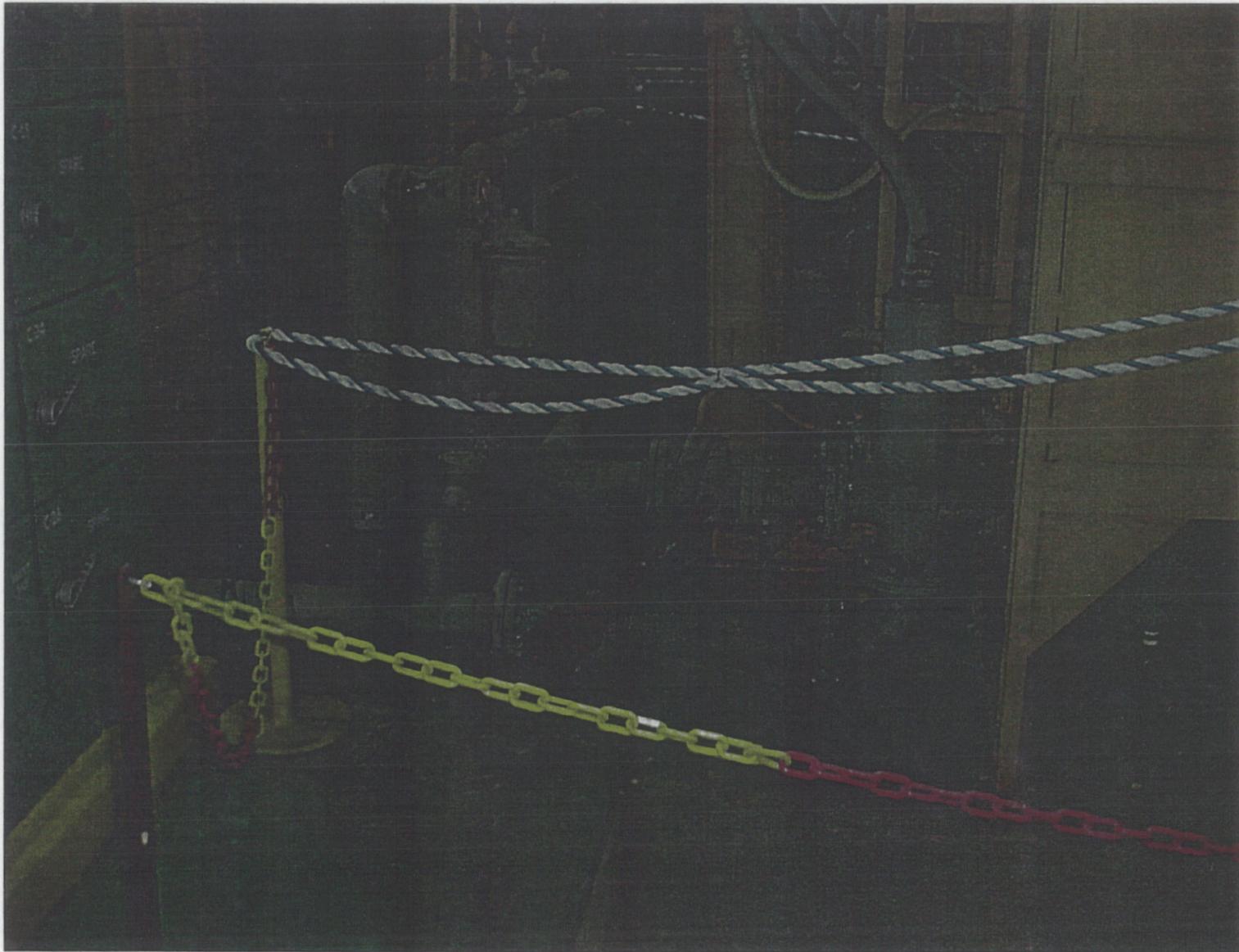


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DMSA C-400-03 Mechanical Support Equipment for Dissolver

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DMSA C-400-03 Gold Dissolver Solution Tank



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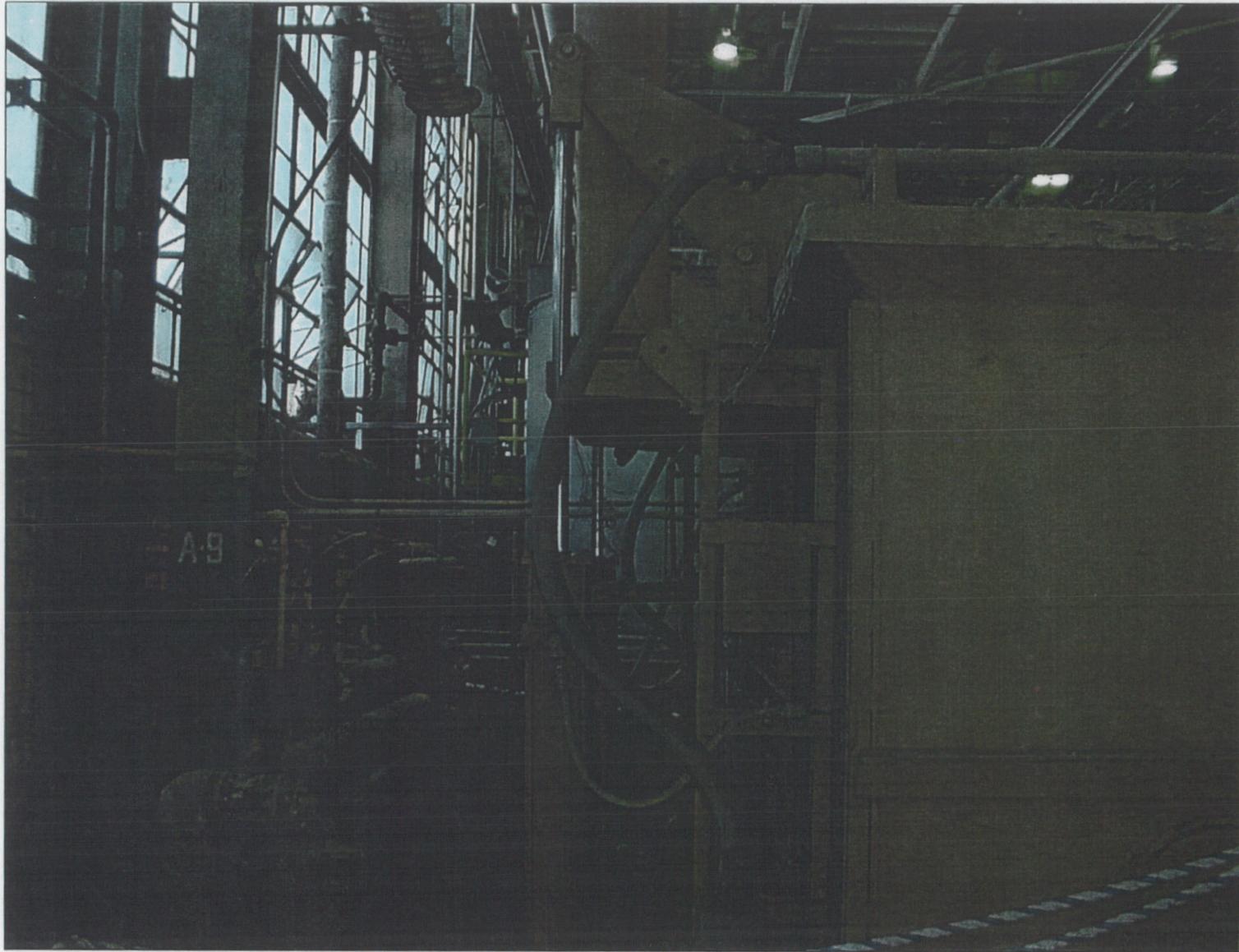
DMSA C-400-03 Gold Dissolver Solution Tank



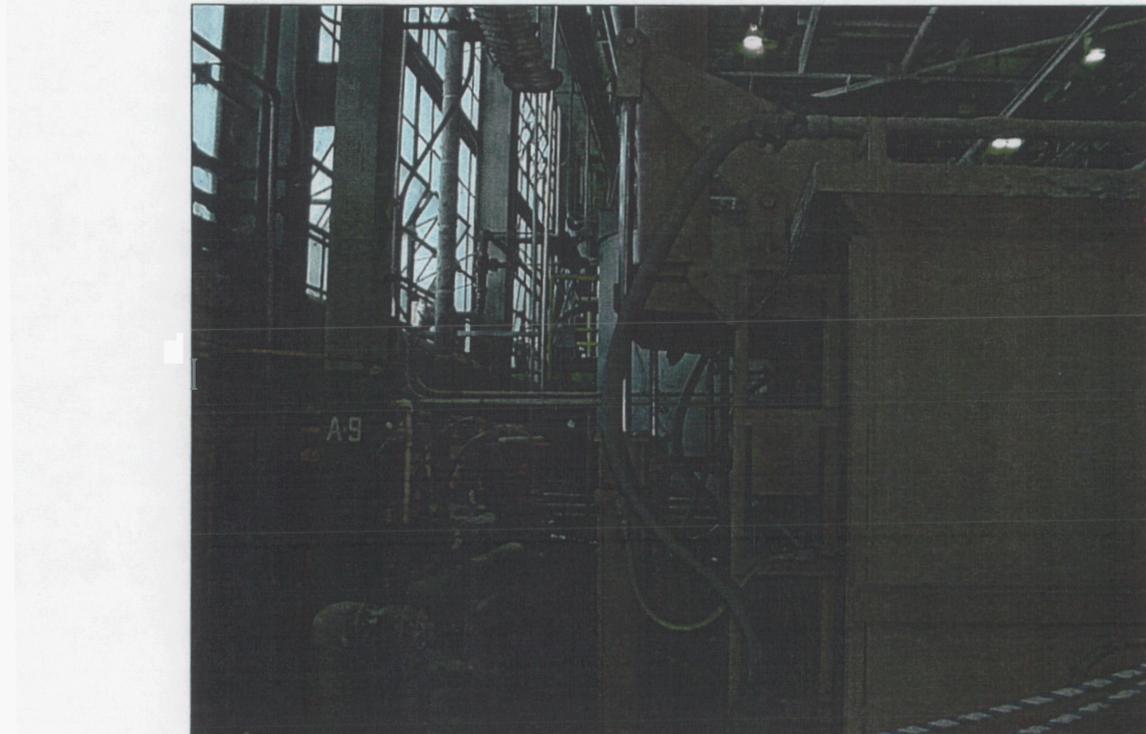
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DMSA C-400-03 Gold Dissolver Solution Tank

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DMSA C-400-03 Gold Dissolver Solution Tank - Side View



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DMSA C-400-03 Gold Dissolver Tank - Side View



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Inventory And Characterization Report

<i>Curr. Zone</i>	<i>Item ID</i>	<i>Barcode #</i>	<i>Description</i>	<i>Vol. ft3</i>	<i>t sca non</i>	<i>t sca mix</i>	<i>r crn non</i>	<i>r crn mix</i>	<i>llw</i>	<i>asb</i>	<i>f is</i>	<i>l nd</i>	<i>Gen. Date</i>	<i>Char. Date</i>	<i>Transferred To</i>
C-400-03															
ZONE	112403-01	DMSA0216652	WET MOP	0.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2/28/02	2/28/02	
ZONE 1	112401-01	DMSA0216654	5 GAL PLASTIC BUCKET WITH 2 ONE QT CONTAINERS	0.67	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2/28/02	2/28/02	
ZONE 2	112402-01	DMSA0216653	4 FT WOODEN STEP LADDER	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2/28/02	2/28/02	
ZONE 2	112404-01	DSMA0216651	PIECE OF UNI-STRUT	0.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2/28/02	2/28/02	
ZONE 2	112405-01	DMSA0216650	PIPE SECTION WITH STRAINER	0.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2/28/02	2/28/02	
Summary for C-400-03 (5 RFDs)				6.27 Ft3											
Grand Total (5 RFDs)				6.27 Total Ft3											

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'C-400-03DMSA INVENTORY

Description	Original RFD #	Material Classification	Column #	Barcode	# Items	Volume Cubic Feet (ft³)	Estimated Weight (lbs)	Material Transferred to USEC
(1) 5-Gallon White Plastic Bucket with (2) 1-qt containers	112401	LLW	Zone 1	DMSA0216654	1	0.67	5	No
(1) 4ft Wooden Step Ladder	112402	LLW	Zone2	DMSA0216653	1	4.00	20	No
(1) Wet Mod	112403	LLW	400-03	DMSA0216652	1	0.50	5	No
Piece 2" Uni-Strut	112404	LLW	Zone 2	DMSA0216651	1	0.60	2	No
1ft Pipe Section with Strainer	112405	LLW	Zone3	DMSA0216650	1	0.50	2	No

Total Volume (ft³)
6.27

Total Estimated Weight (lbs)
34

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C-400-03 D&D INVENTORY

Description	Original DD#	Column #	Barcode	# Items	Volume Cubic Feet (ft ³)	Estimated Weight (lbs)	Material Transferred to USEC
Gold Recovery System - Includes Acid Tank, Pumps, Piping, Work Platform plus any other Fixed Accessories	DD0091	Zone 1	DMSA0216645	1	500	15,000	No

Total Volume (ft³)
500.00

Total Estimated Weight (lbs)
15,000

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