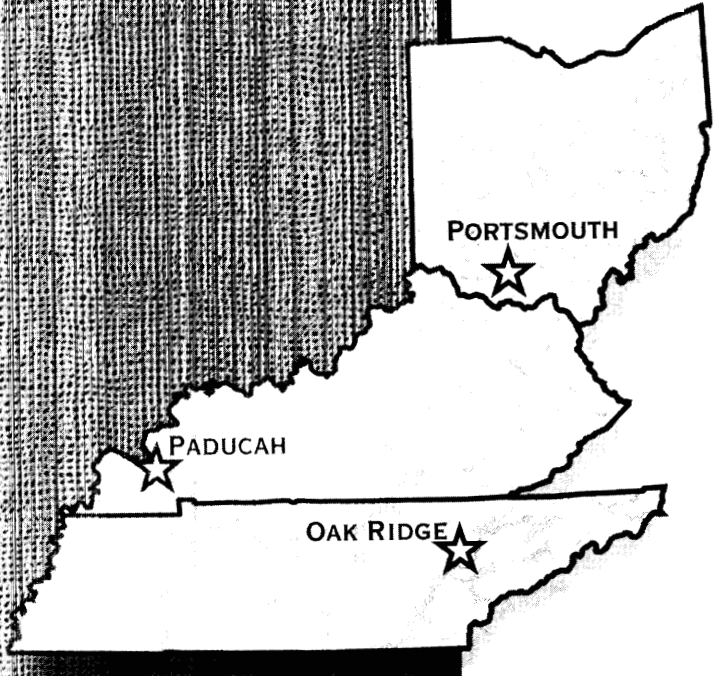
Received
2/5/02 CB

BJC/PAD-276

ENVIRONMENTAL MANAGEMENT
& ENRICHMENT FACILITIES
MANAGEMENT AND INTEGRATION CONTRACT

Final Inventory/Characterization Report for the C-337-36 Department of Energy Material Storage Area at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky

D-180336-0001



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

PERSON REQUESTING RELEASE T. J. ELLINGTON TELEPHONE NO. 441 5290

MAILING ADDRESS C743-02 DIVISION OR ORGANIZATION WESKEM

DATE BY WHICH RELEASE IS REQUIRED 8-16-01

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SIGNATURE: T. J. Ellington DATE: 8-16-01

DOCUMENT DESCRIPTION (TO BE COMPLETED BY REQUESTER)

DOCUMENT NUMBER BJC/PAD-276 PAGES 52

DOCUMENT TITLE FINAL INVENTORY/CHARACTERIZATION REPORT FOR THE C337-36 DEPT OF ENERGY MATERIAL STORAGE AREA AT PGDP.

AUTHORS(S) (INDICATE OMER DIVISIONS OR ORGANIZATIONS, IF APPLICABLE)

DOCUMENT TYPE (SEE DOC. PREP. GUIDE, CHS. 1 AND 2. FOR DEFINITIONS OF DOCUMENT TYPES): ☐ DRAWING ☐ PHOTO

☒ FORMAL REPORT ☐ PROGRESS REPORT ☐ INFORMAL REPORT ☐ ABSTRACT ☐ CORRESPONDENCE ☐ OTHER VISUALS

☐ JOURNAL ARTICLE (IDENTIFY JOURNAL):

☐ ORAL PRESENTATION (IDENTIFY MEETING, SPONSOR, LOCATION, DATE):

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TECHNICAL INFORMATION OFFICER SIGNATURE B. K. Wallace / TIO DATE 8-16-01

SENT TO OSTI ☐ YES ☒ NO

REMARKS:

KN-878 (5-7-93)

BJC/PAD-276

Final Inventory/Characterization Report for the C-337-36 Department of Energy Material Storage Area (DMSA) at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky Date Completed June 25,2001

Date Issued – August. 2001

Prepared by
WESKEM, LLC
Under subcontract 23900-BA-RMOO5F
Prepared for the
US Department of Energy
Office of Environmental Management

BECTEL 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

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7. HP SMEAR AND AIR SAMPLE ACTIVITY REPORT

8. IH SAMPLING DATA

ACRONYMS

1. DMSA – Department of Energy Materials Storage Area
2. DOE – Department of Energy
3. EPA – Environmental Protection Agency
4. HP – Health Physics
5. IH – Industrial Hygiene
6. Lc – Level Sub C
7. LLW – Low Level Waste
8. NCS – Nuclear Criticality Safety
9. QA – Quality Assurance
10. QC – Quality Control
11. KCRA – Resource Conservation and Recovery Act
12. RFD – Request for Disposal
13. SAA – Satellite Accumulation
14. SME – Subject Matter Expert
15. TSCA – Toxic Substance Control Act

EXECUTIVE SUMMARY

The DMSA C-337-36 field activities began on June 21,2001 and were completed on June 25,2001. There were two (2) low level waste (LLW) items identified and inventoried. Items marked "DMSA 331-15" originated in C-331-15 but were moved by USEC to C-337-36 prior to our initial entry.

LLW

The LLW inventory included wooden pallets, miscellaneous wood pieces, and trash. These materials are located in sealand containers. The total volume was 2451 ft^3. All items had barcode labels and DMSA inventory tags placed on them and remain in the DMSA.

The Health Physics (HP) surveys conducted included smear samples, direct readings, and air samples. According to the radiological survey results, all areas surveyed were less than Level Sub C (Lc). Because Lc is the lowest level of contamination the instruments can detect based on area background, there were no highest or lowest results.

The Industrial Hygiene **(M)** analytical data was reviewed and there were no irregularities or excessiveness in the data. The laboratory QA/QC data package has also been reviewed and found to be adequate.

DMSA C-337-36 INVENTORY

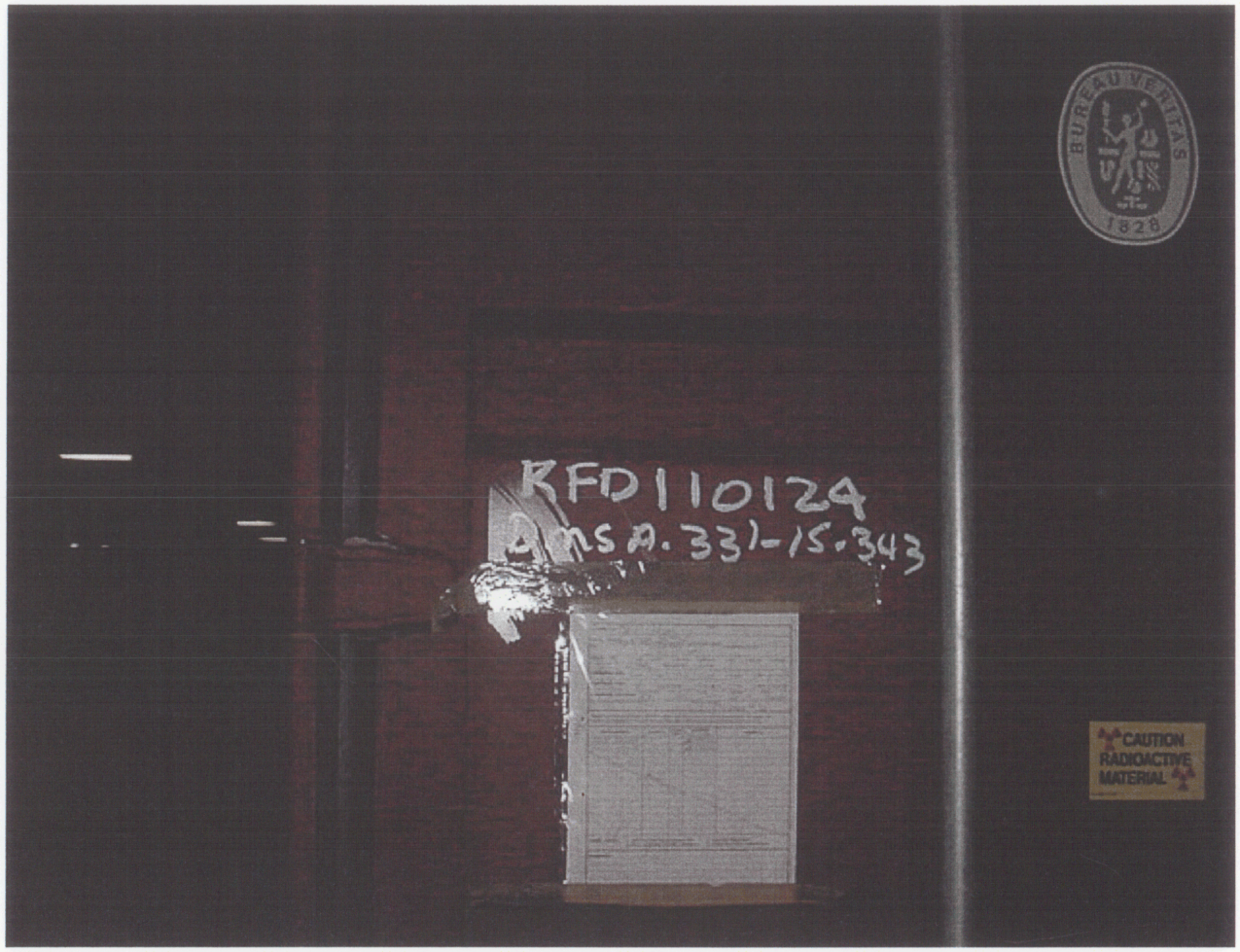
C-337-36 DMSA INVENTORY							
Description	**Original RFD #**	**Material Classification**	**Column #**	**Barcode**	**# Items**	**Volume Cubic Feet**	**Material Transferred to USEC**
Pallets, misc/wood pieces	110123	LLW	Zone1	DMSA 0100123		1171	No
Wooden pallets and trash	110124	LLW	Zone 1	DMSA0100124		1280	No

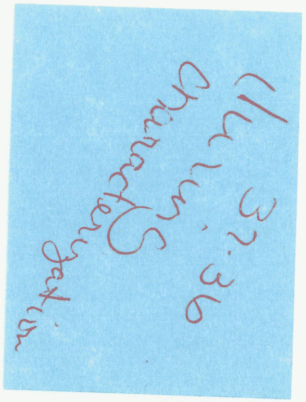
*Changes only apply to RFD numbers listed

13

14

15


BUREAU VERITAS
1828
CAUTION
RADIOACTIVE
MATERIAL
RFD110124
NSA.331-15.343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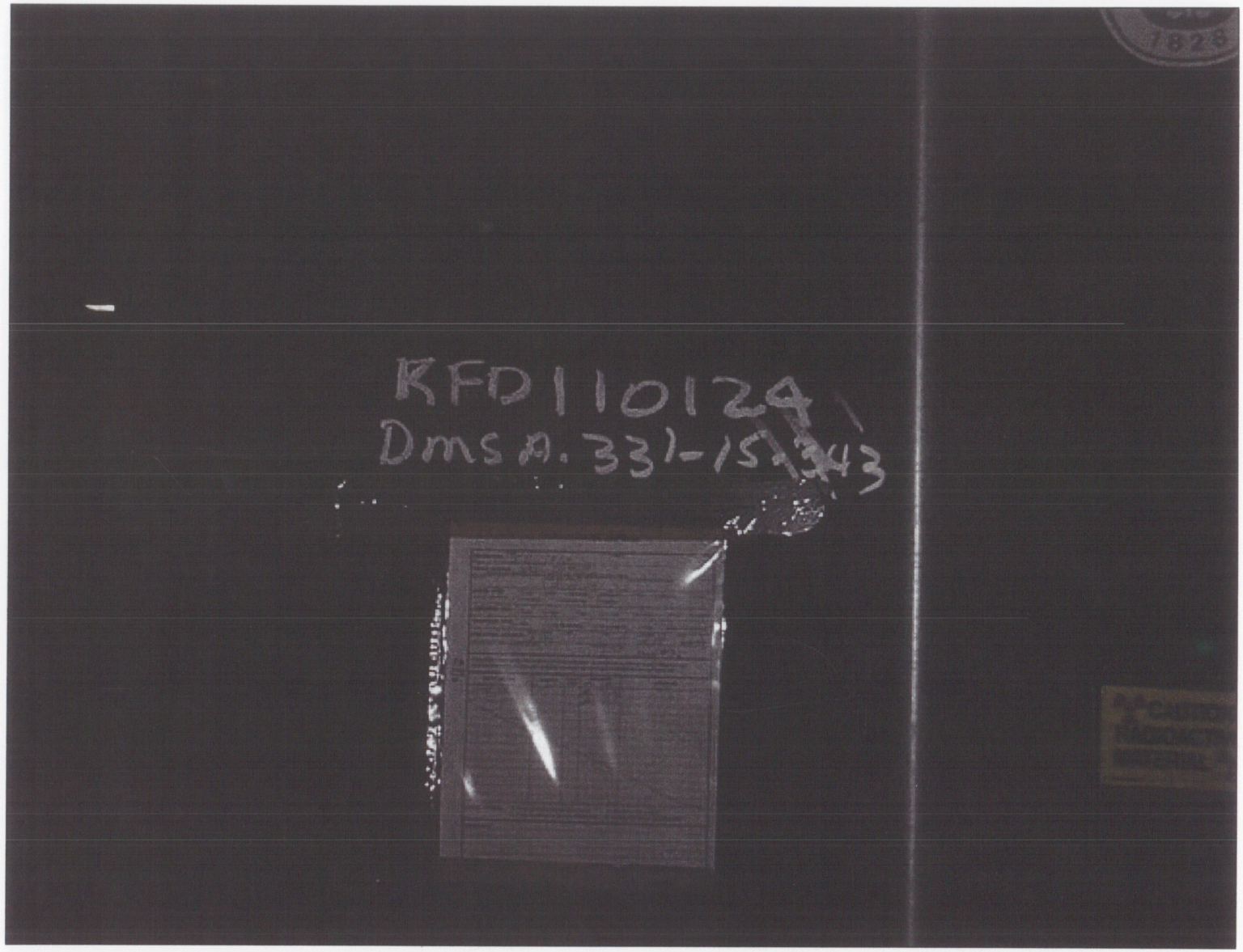
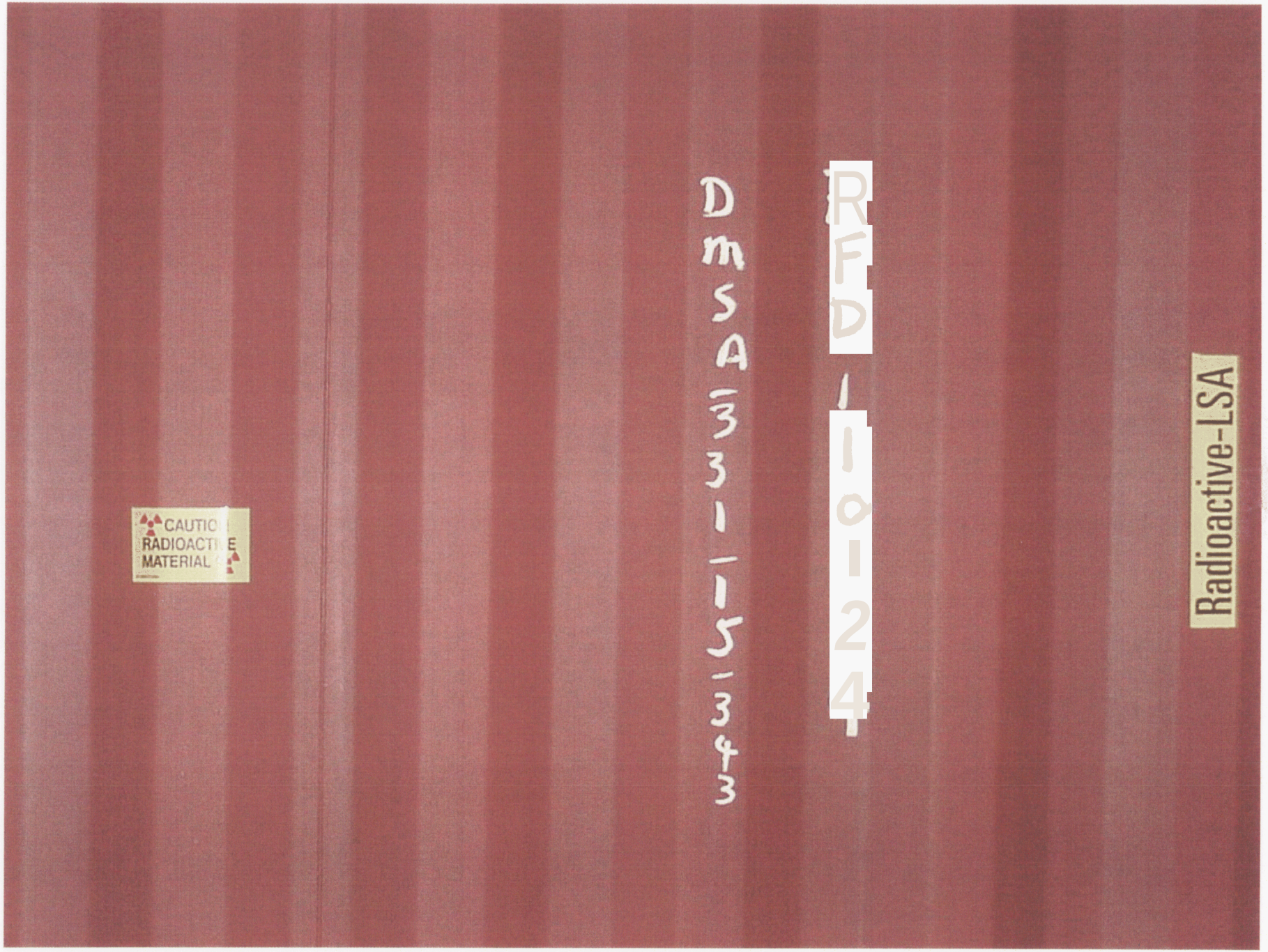
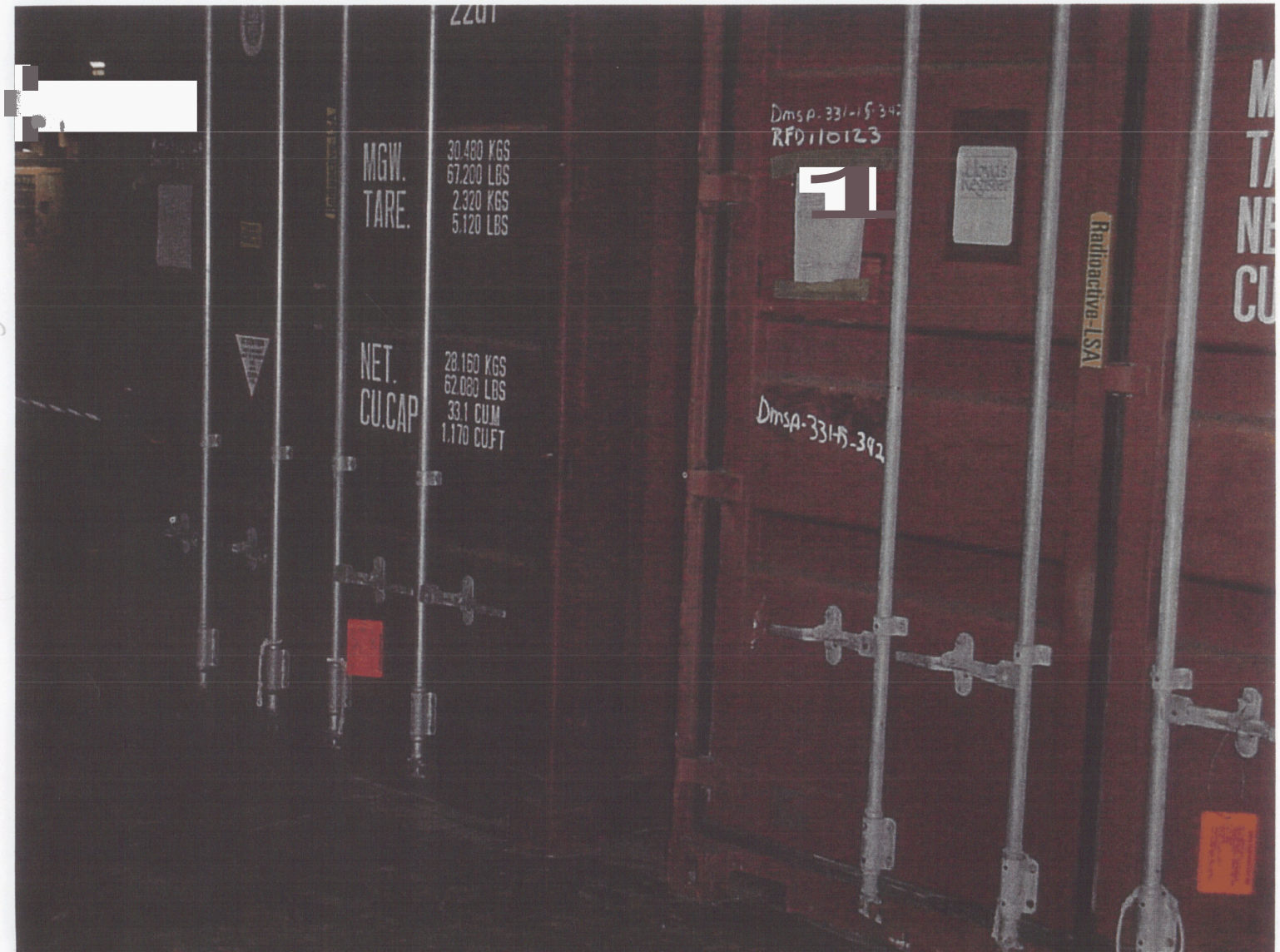
Unauthorized photo


KFD110124
DMSA.331-157343

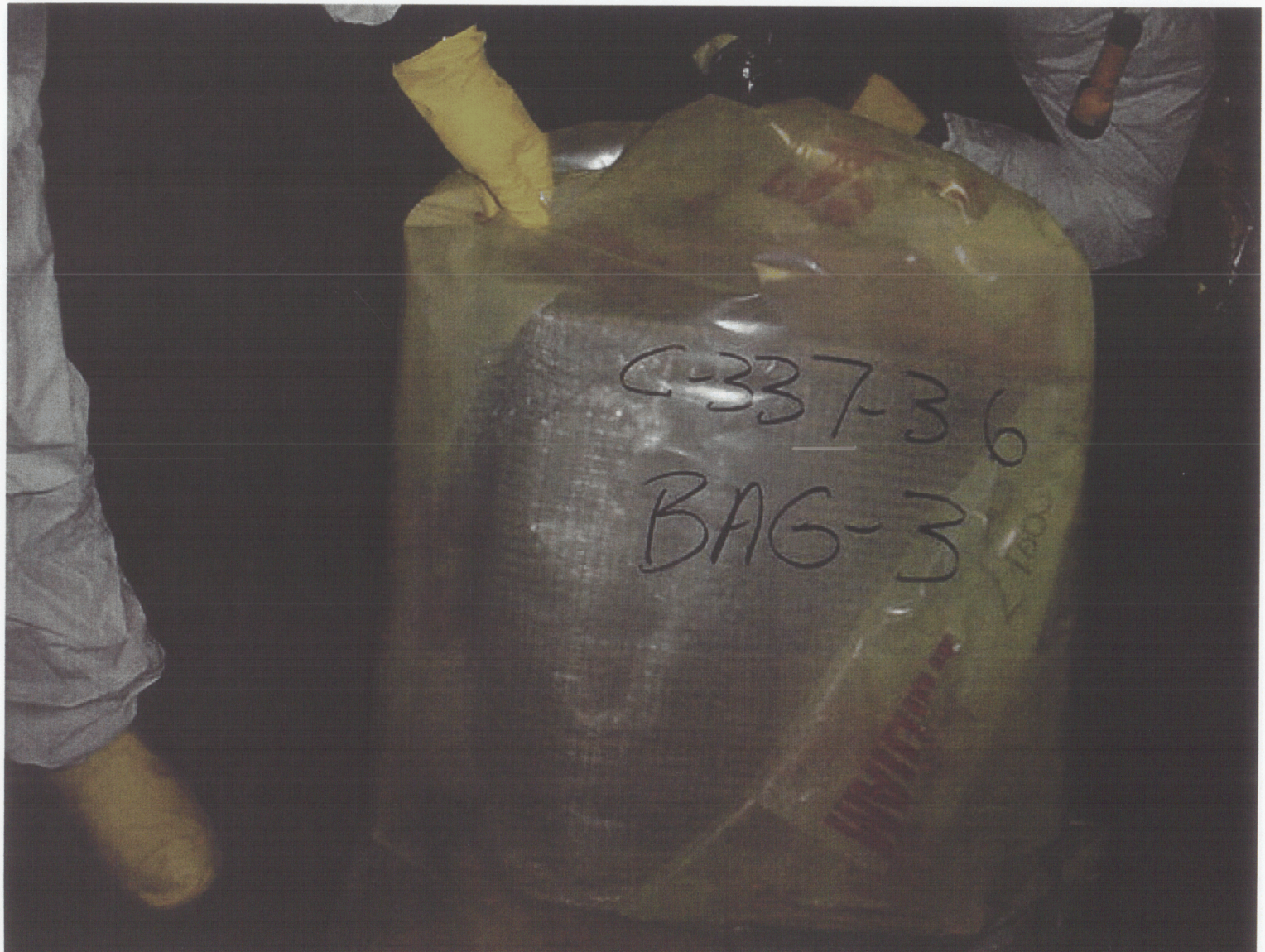

Radioactive-LSA
RFD-110124
DMSA331-1513-43
CAUTION
RADIOACTIVE
MATERIAL


22G1
MGW. 30.480 KGS 67.200 LBS
TARE. 2.320 KGS 5.120 LBS
NET. 28.160 KGS 62.080 LBS
CU.CAP 33.1 CUM 1.170 CUFT
Dmsp-331-15-392
RFD110123
Radioactive-LSA
Dmsp-331-15-392

19

20

21



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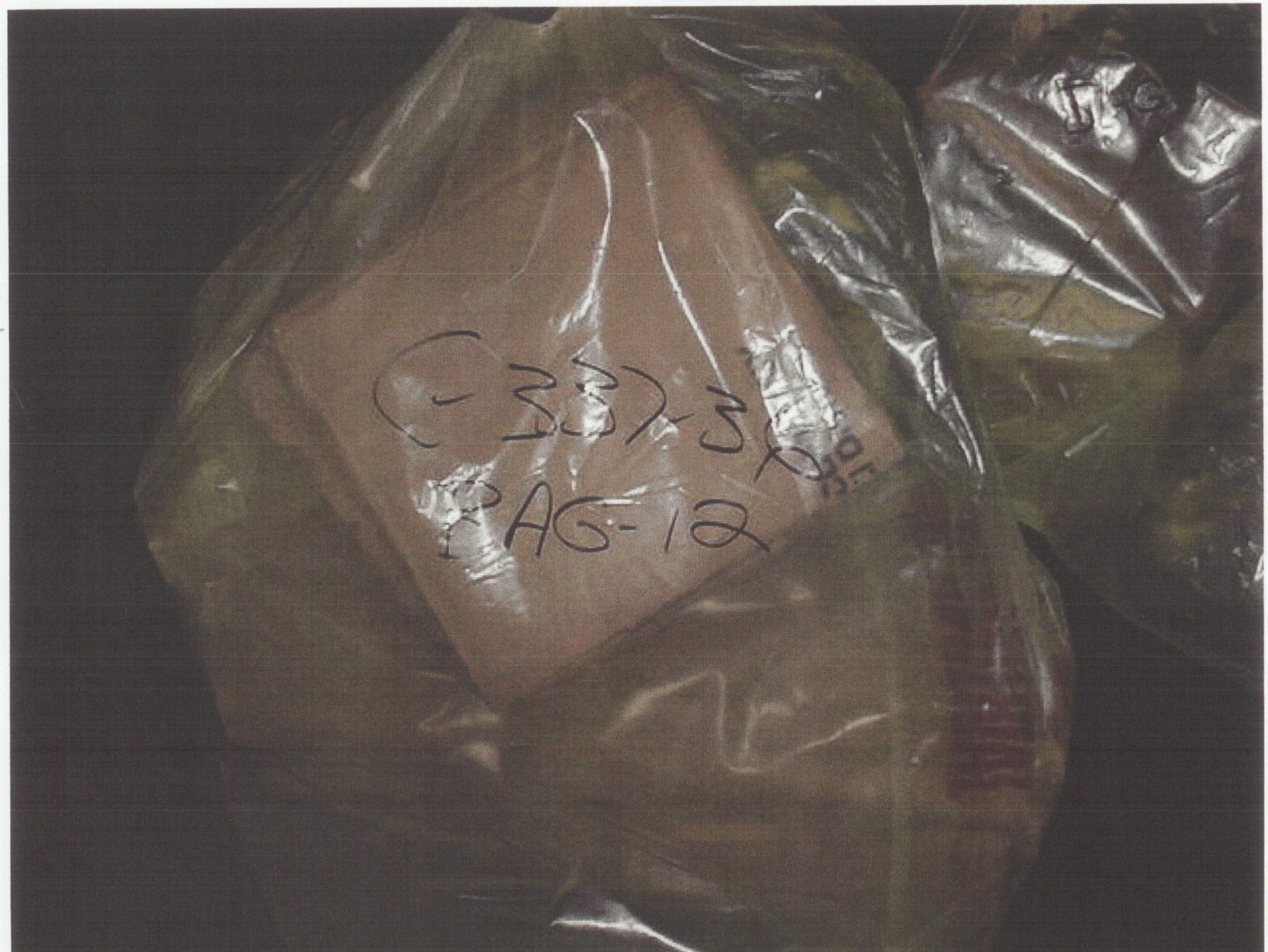


RFD REPORT

Inventoy By DMSA No.

Curr. Zone	RFD #	Barcode #	Description	Vol. ft3	llw	tsca	rcra	mix	asb	fis	lnd	Gen. Date	Char. Date	Transferred To
C-337-36														
	110123	DMSAOI00123	PALLETS, MISC WOOD PIECES	1171	☑	☐	☐	☐	☐	☐	☐	6/25/01	6/25/01	
	110124	DMSA0100124	WOODEN PALLETS AND TRASH	1280	☑	☐	☐	☐	☐	☐	☐	6/25/01	6/25/01	
Summary for C-337-36			(2 RFDs)	2451 Ft3										

Grand Total (2 RFDs) 2451 Total Ft3

RFD FORMS

DOE

LLW

RFD

Document ID Number 110123

Request For Disposal

Generation Process Information (Completed by Generator)

W1. Generator's Name (Print)	W2. Badge No.	W3. Generator's Phone No.	W3. Mail Stop	W5. Charge No. / WC
Kevin Jones	702542	441-5287	C-743-T-1	

W6. Generator's Company	W7. Corp Owner	W8. Origin Site	W9. Origin Facility	W10. Origin Area	W11. Rad Area?
Wesken	DOE	PGDP	C-337	C-337-36	☑ Yes ☐ No

W12. Number of Items	W13. Process Category (GCC)	W14. Process Activity Code	W15. AWA Number	W16. Physical Form
1	LEG	A93	N/A	Solid

W17. Material Type(s)	W18. Holding Site	W19. Holding Facility	W20. Holding Area	W21 RFD Attachment
MT013	PGDP	C-337	C-337-36	☑ A ☐ B ☐ C

	Yes	No		Yes	No		Yes	No		Yes	No
W22 Biological		✓	W25 Const Debris		✓	W28 Non-Friable Asbestos		✓	W31 DMSA	✓	
W23 Accountable		✓	W26 Classified		✓	W29 TRU Waste		✓			
W24. Carcinogen		✓	W27. Friable Asbestos		✓	W30 CERCLA		✓			

Waste Description / Comments

W33. Generation Plan No.	W34. Generator's Signature	Date
	[signature]	6-25-01

P1. Pick-up Site	P2. Pick-up Facility	P3. Pick-up Room/Area

P4. PPE Requirements

P5. Container-Labeling Requirements

___ RCRA	___ PCB	___ DET PCB (<50ppm & source <50ppm)	___ RAD	___ DOE
___ FISSILE	___ NCS EXEMPT	___ RD CONFIDENTIAL	___ ACID	___ USEC
___ FLAMMABLE	___ COMBUSTIBLE	___ OXIDIZER	___ BASE	___ WESKEM
___ ASBESTOS	___ REACTIVE	___ TRANSURANIC	___ NON-HAZ	

P6. Additional Handling Instructions

Verify labeling & perform inventory

Reference FWR	5979
Origin Date	
PCB Start Date	
RCRA Start Date	

P7. Waste Coordinator (Issued By)	Badge	Date	P8. Disposal/Storage Completed By	Badge	Date
Dave Ross	31871	7/24/01	Jeff Seaton	704274	8-6-01
P9. Field Supervisor	**Badge**	**Date**	**P10. Data Processing Completed By**	**Badge**	**Date**
Gary Hines	38755	8/6/01			

P11. Waste Item Information

Waste Item No. ~~110123~~ 8/6/01 110123-01

Container No. (Barcode) DMSA 0100123

Weight 7160 LBS

Location and Grid DMSA 337-36 Zone 1

Container Size 1171 ft3 est.

P12. Operator Comments

Low Level Waste remains in DMSA until DOE approval for LLW remediation.

CF-515a (03/01)

DMSA

received 6-26-01

LOW-LEVEL RADIOACTIVE WASTE

ATTACHMENT A

DOCUMENT ID NUMBER 110123

PROHIBITED ITEMS

A1 PYROPHORIC MATERIALS -OTHER THAN RADIOACTIVE FORMS OF ISOTOPES	A2 ACTIVE CHELATING AGENTS	A3 TRU RADIOISOTOPES >100 nCi/g	A4 EXPLOSIVE MATERIALS
☐ YES ☑ NO	☐ YES ☑ NO	☐ YES ☑ NO	☐ YES ☑ NO
A5. ETILOGICAL AGENTS	A6. IGNITION SOURCES	A7. FREE LIQUIDS (Unless Wastewater)	A8. RCRA WASTE / A9. TSCA WASTE
☐ YES ☑ NO	☐ YES ☑ NO	☐ YES ☑ NO	☐ YES ☑ NO / ☐ YES ☑ NO

A10. WASTE VARIANCE REQUEST NUMBER(S)

A11 CHELATING AGENTS	A12 ION EXCHANGE RESINS	A13 DETECTABLE PCB (Concen And Source <50 ppm)	A14 WASTEWATER
YES ☑ NO	☐ YES ☑ NO	☐ YES ☑ NO CONC ppm	☐ YES

DOCUMENT TYPE	DOCUMENT NUMBER
R1. ANALYSIS SAMPLE ID NO.	
R2. PROCESS KNOWLEDGE FORM NO #0757	

R3 FISSILE CONTENT (Wt% U-235)	R4 GRAMS U-235	R5 NCS EXEMPT	R5 CHEMICAL FORM
		☑ YES ☐ NO	

OOCUMENT TYPE	DOCUMENT NUMBER
0 1 ANALYSIS SAMPLE ID NO	
O2 PROCESS KNOWLEDGE FORM NO	

RADIATION DATA FROM HEALTH PHYSICS SURVEY SURFACE CONTAMINATION (Data Supplied by HP)

R7. HP SURVEY REQUIRED

☐ YES ☐ NC

dpm/100cm2	R9. FIXED (Alpha) dpm/100cm2
R10 TRANSFERABLE (Beta/Gamma) dpm/100cm2	R11. FIXED (Beta/Gamma) dpm/100cm2
R12 EXTERNAL DOSE/PACKAGE CONTACT MREM/HR	R13 DOSE RATE MREM/HR @ METERS (B/G)
R14 HP SIGNATURE	R15 SURVEY NUMBER

UCN 20700 PAGE 3

WASTE ITEM **CONTAINER** LOG

10. ITEM/CONTAINER	DOCUMENT ID NUMBER
1 OF 1	110123

11. WASTE ITEM ID NO	12. ORIGIN DATE	13. RCRA ACCUMULATION START DATE	14. PCB DATE TO STORAGE
110123-01	6·25·01	N/A	N/A

15. WASTE MATERIAL PLACED IN (Or Removed From) CONTAINER	16. QUANTITY	17. DEPOSITOR INITIAL	17. DEPOSITOR DATE	18. COMMENTS (If Waste is removed from **container,** then final disposition must **be noted.)**
Sealand	1	KJ	6·25·01	DMSA 337-36·342
(Wooden Pallets,				
Misc. Wood Pieces)				50 Wooden Pallets
				& Misc Wood Pieces
				wrapped AS 1 Item.

19. CONTAINER ID NO (Barcode)	20. ACCURATE MATERIALS	21. QUANTITY	22. DEPOSITOR	23. DEPOSITOR DATE	24. CONTAINER VOLUME	25. UNITS
DMSA0100123					1171 Ft.3	

26. GROSS WEIGHT	27. UNITS	28. INNER CONTAINER ID	29. [illegible]	30. TARE SEAL NUMBER

31. CONTAINER OWNER REPRESENTATIVE SIGNATURE: [illegible]

DATE: 6·25·01

32. [illegible]

DOE Material Storage Area (DMSA) Item - NCS Characterization Form

ITEM	INITIAL CHARACTERIZATION	ANALYTICAL CHARACTERIZATION: ^{235}U Assay Analysis	^{235}U Mass Analysis	Subcritical Mass Limits	NDA Radiation Surveys	NCS CLASSIFICATION
Item: 10123 Description: SEALAND CONTAINER Independent Confirmations: Person #1: [illegible] Date: 6-26-01 Person #2: [illegible] Date: 6-26-01 Other Information: Bldg: C337 G-F 33-39 DMSA: C337-36 Other: N.A	Historical Documentation: Process Knowledge: Visual Inspections Completed: ___ External Surfaces Inspection ___ Internal Surfaces Inspection Completed By: Date:	Sample A: ___ % ^{235}U ___ 1 sigma (% ^{235}U) ___ 2 sigma (% ^{235}U) ___ Total (^{235}U + 2 sigma) Sample B: ___ % ^{235}U ___ 1 sigma (% ^{235}U) ___ 2 sigma (% ^{235}U) ___ Total (^{235}U + 2 sigma)	Sample A: ___ g ^{235}U Sample B: ___ g ^{235}U	___ kg ^{235}U ___ Moderated Limits ___ Hydrated Limits	Sample A: Date & Time Performed: ___/___/___ ___am ___pm Date & Time Results Rec'd: ___/___/___ ___am ___pm Assumed Assay: ___ % ^{235}U Mass: ___ g ^{235}U Submitted By: Date: Sample B: Date & Time Performed: ___/___/___ ___am ___pm Date & Time Results Rec'd: ___/___/___ ___am ___pm Assumed Assay: ___ % ^{235}U Mass: ___ g ^{235}U Submitted By: Date:	Initial Classification: ✓ NCS-Exempt ___ Spacing-Controlled ___ Singularity-Contingent DMSA Inspector: [illegible] Date: 6-26-01 NDA Expert: (If NDA is performed) Date: Independent Verifications: Person #1: Date: Person #2: Date: Reclassification: (If needed) ___ NCS-Exempt ___ Spacing-Controlled ___ Singularity-Contingent DMSA Inspector: Date: NDA Expert: (If NDA is performed) Date: Independent Verifications: Person #1: Date: Person #2: Date: N.A
	N.A.			N.A		

Comments: NCS EXEMPT BY PREVIOUS CHARACTERIZATION (DMSA# 331-~~26~~ 15 342) [illegible] 6-27-01

REFER TO ATTACHED SHEETS FOR DETAILED SPECIFIC INFORMATION

Approved to Release To:	I have independently confirmed the identification and description for this NCS-Exempt or Spacing-Controlled Item against the written instructions and find this information to match.	I have independently confirmed the destination for this NCS-Exempt or Spacing-Controlled Item against the written instructions and find this information to match.
Further NCS Characterization of this Item does not contain Singularity-Contingent Mass NDA Expert #: Date: NDA Expert #: Date: N.A	Independent Person #1: Date: Independent Person #2: Date:	Independent Person #1: Date: Independent Person #2: Date:

Rev. 3 - 1/2000

DMSA - Charact ation Form

Item Number: DMSA-331-15-342 Building: 331 DMSA #: 331-15

Item Description: SEA LAND CONTAINER

Origin: PGDP Owner Status: DOE Capital Equipment ID:

Analytical Data

Initial Characterization

Operating History

☒ No NCS Concerns (Not Process Equipment)

☐ Independent Verification Form (verifying no NCS concerns due to equipment has never been exposed to process gas) is completed and attached

Visual Inspection

☐ Independent Verification Form (verifying visual inspection detected no visible uranium contamination) is completed and attached.

Assay

Assay Assumed: 0

☐ Sample Request and Receipt Form Issued

☐ Assay Smear Samples Complete

☐ Independent Verification of Assay form completed and attached.

Assay wt%U-235: 0

Mass

☐ NDA Requested

☐ NDA Complete

Group Number

Sample A:

Assay Used: 0

Pounds U: 0

U-235 (g): 0

Sample B:

Assay Used: 0

Pounds U: 0

U-235(g): 0

NCS Classification

☒ NCS-Exempt

☐ LS

☐ UH

☐ PEH

☐ GEN-20

Characterization Completed By:

Name: HC Anderson

Badge #: C50051 4

Date: 7-27-00

☐ RCRA or TSCA Issues Identified

Comments: U. A.

☒ Item relocated New Location: Building: C337

DMSA #: 36

☐ NMCA Exempt - No visible contamination or U-235 activity is too low to quantify

Completed By (Initials): Date:

Date Printed: Tuesday, April 25, 2000

110123

PGDP CONTAINER LOG SHEET

GENERATOR: NAME: JR WALK | GROUP:

WASTE SOURCE: DMSA 331#15
IDENTIFY MAJOR GENERATION SOURCE BY APPLICABLE WORK GROUP, SYSTEM OR CAPITAL PROJECT

RFD No: | CONTAINER / DRUM No: 331-15-34-2 | CONTAINER GROSS WEIGHT:

WASTE TYPE: (CHECK ALL THAT APPLY)
☐ Liquid ☑ Solid ☐ Semi-Solid ☑ Radioactive ☐ PCB ☐ Hazardous ☐ Asbestos
☐ Transuranic ☐ Compressed Gas ☐ Classified

CONTAINER SIZE: ☐ 5 gal ☐ 30 gal ☐ 55 gal ☐ 4 x 4 feet ☐ 5 x 5 feet ☑ Other SEALAND

CONTAINER TYPE: ☐ 6HA1 ☐ 1A1 (non removable head) ☐ 1A2 (removable head) ⊙ Pallet ☑ Other SEALAND

CONTAINER LOCATION:

BLDG. NUMBER	UNIT	CELL	COLUMN	FLOOR
C-337	—	—	EB-33	GROUND

ACCUMULATION START / GENERATION DATE | STORAGE LOCATION

WASTE MATERIAL	QUANTITY	CAUSE CODE	DEPOSITOR INITIAL	DEPOSITOR DATE	COMMENTS
WOOD PALLETS			JRW	7/27/00	
MISC WOOD			JRW	7/27/00	
	FULL				

CAUSE CODES:
1 - PRODUCTION PROCESS/SERVICE
2 - SPILL CLEANUP / DECON / REMEDIAL
3 - ON-SITE TREATMENT
4 - CONSTRUCTION / DEMOLITION

COMMENTS:

GP-17963
(10-15-98)

110123

DOE

LLW

RFD

Document ID Number: 110124

W1. Generator's Name (Print)	W2. Badge No.	W3. Generator's Phone No.	W3. Mail Stop	W5. Charge No. / WO
Kevin Jones	702542	441-5287	C-743-T-1	

W6. Generator's Company	W7. Corp Owner	W8. Origin Site	W9. Origin Facility	W10. Origin Area	W11. Rad Area?
WesKem	DOE	PGDP	C-337	C-337-36	☑ Yes ☐ No

W12. Number of Items	W13. Process Category (GCC)	W14. Process Activity Code	W15. AWA Number	W16. Physical Form
1	LEG	A93	N/A	Solid

W17. Material Type(s)	W18. Holding Site	W19. Holding Facility	W20. Holding Area	W21 RFD Attachment
MT013	PGDP	C-337	C-337-36	

Waste Subcategories (Check all that apply)

	Yes	No		Yes	No		Yes	No		Yes	No
W22. Biological		✓	W25. Const. Debris						W21. DMSA		
						W29. TRU Waste		✓			

Sealand
(64 Wooden

W34. Generator's Signature

Date 6-25-0

4. PPE Requirements

P5. Container-Labeling Requirements

FISSILE — PCB — DET PCB (<50ppm & source <50ppm) — RAD — USEC
FLAMMABLE — NCS EXEMPT — HYDROGEN — ACID — DOE
ASBESTOS — COMBUSTIBLE — OXIDIZER — BASE — WESKEM
REACTIVE — TRANSURANIC — NON-HAZ

6. Additional Handling Instructions

Verify labeling & perform inventory

Reference FWR 5979

Origin Date

PCB Start Date

RCRA Start Date

	Badge	Date		Badge	Date
7. Waste Coordinator (Issued By) Glenn Ross	31871	7/24/01	P8. Disposal/Storage Completed By	304274	8-6-01
9. Field Supervisor Gary Hines	34255	8/6/01	P10. Data Processing Completed By		

11. Waste Item Information

Waste Item No. 110124-01
Container No. (Barcode) DMSA 0100124
Weight 7725 LBS
Location and Grid DMSA 337-36 ZONE 1
Container Size 1170 ft³

P12. Operator Comments

Low Level Waste remains in DMSA until DOE approval for LLW remediation.

F-515a (03/01)

DMSA

received 6-26-01

WASTE ITEM CONTAINER LOG

10. ITEM/CONTAINER			DOCUMENT ID NUMBER
1 OF 1			110124
11 WASTE ITEM ID NO	12 ORIGIN DATE	13 RCRA ACCUMULATION START DATE	14 PCB DATE TO STORAGE
110124-01	6-25-01	N/A	N/A

15. WASTE MATERIAL PLACED IN (Or Removed From) CONTAINER	16 QUANTITY	17. DEPOSITOR INITIAL	17. DEPOSITOR DATE	18. COMMENTS (If Waste is removed from container, then final disposition must be noted.)
Sealand (64 Wooden Pallets & 12 BAGS of Misc. trash.)	1	KJ	6-25-01	DMSA 337-36-343 Entire Contents wrapped AS 1 Item. 12 BAGS Consolidated to 9 BAGS.

19 CONTAINER ID NO (Barcode) DMSA 0100124	20 SECONDARY MATERIAL	QUANTITY	TYPE	22 DMC KA FORM	23 EST NET VOLUME 128.0 Cf	24 BRIEF
25 GROSS WEIGHT	26 TARE	27 PROCESS CONTAINER TYPE		28 OUTER CONTAINER TYPE	29 TARE SEAL NUMBER	
30 CONTAINER CLOSURE STATUS					DATE 6-25-01	
31 SIGNATURE						

DOE Material Storage Area (DMSA) Item - NCS Characterization Form

ITEM	INITIAL CHARACTERIZATION	ANALYTICAL CHARACTERIZATION: ^{235}U Assay Analysis	^{235}U Mass Analysis	Subcritical Mass Limits	NDA Radiation Surveys	NCS CLASSIFICATION
RSD #: 110124 Description: SEA (AND) CONTAINER Independent Confirmation: Person #1: [illegible] Date: 6-26-01 Person #2: [illegible] Date: 6-27-01 Other Information: Bldg: C337.G-F 33-34 Room: C337.36 Origin: N/A	Historical Documentation: Process Knowledge: Visual Inspections Completed: ____ External Surfaces Inspection ____ Internal Surfaces Inspection Completed By: Date: N.A.	Sample A: ___ % ^{235}U ___ 1 sigma (% ^{235}U) ___ 2 sigma (% ^{235}U) ___ Total (^{235}U + 2 sigma) Sample B: ___ % ^{235}U ___ 1 sigma (% ^{235}U) ___ 2 sigma (% ^{235}U) ___ Total (^{235}U + 2 sigma)	Sample A: ___ g ^{235}U Sample B: ___ g ^{235}U	___ kg ^{235}U ___ Moderated Limits NA	Sample A: Date & Time Performed: __/__/__ __am __pm Date & Time Results Rec'd: __/__/__ __am __pm Assumed Assay: ___ % ^{235}U Mass: ___ g ^{235}U Submitted By: Date: Sample B: Date & Time Performed: __/__/__ __am __pm Date & Time Results Rec'd: __/__/__ __am __pm Assumed Assay: ___ % ^{235}U Mass: ___ g ^{235}U Submitted By: Date:	Initial Classification: ✓ NCS-Exempt ___ Spacing-Controlled ___ Singularly-Contingent DMSA Inspector: [illegible] Date: 6-26-01 NDA Expert: (if NDA is performed) Date: Independent Verifications: Person #1: Date: Person #2: Date: Reclassification: (if needed) ___ NCS-Exempt ___ Spacing-Controlled ___ Singularly-Contingent DMSA Inspector: Date: NDA Expert: (if NDA is performed) Date: Independent Verifications: Person #1: Date: Person #2: Date: N/A

Comments: NCS EXEMPT BY PREVIOUS CHARACTERIZATION (DMSA # 331-~~30~~ 15-343).

REFER TO ATTACHED SHEETS FOR DETAILED SPECIFIC INFORMATION EWW 6-27-01

Approved to Relocate To: Further NCS Characterization is required. Item does not contain Singularly-Contingent mass. NDA Expert: Date: NDA Expert: Date: N/A	I have independently confirmed the identification and description for this NCS-Exempt or Spacing-Controlled Item against the written instructions and find this information to match. Independent Person #1: Date: Independent Person #2: Date:	I have independently confirmed the destination for this NCS-Exempt or Spacing-Controlled Item against the written instructions and find this information to match. Independent Person #1: Date: Independent Person #2: Date:

110124

DMSA - Characterization Form

Item Number: DMSA-331-15-343 Building: 331 DMSA #: 331-15

Item Description: SEA LAND CONTAINER

Origin: PGDP Owner Status: DOE Capital Equipment ID:

Initial Characterization

Operating History

- [x] No NCS Concerns (Not Process Equipment)
- [ ] Independent Verification Form (verifying no NCS concerns due to equipment has never been exposed to process gas) is completed and attached.

Visual Inspection

- [ ] Independent Verification Form (verifying visual inspection detected no visible uranium contamination) is completed and attached.

Analytical Data

Assay

- [ ] Assay Assumed: 0
- [ ] Sample Request and Receipt Form Issued
- [ ] Assay Smear Samples Complete
- [ ] Independent Verification of Assay form completed and attached.

Assay wt%U-235: 0

N/A

Mass

- [ ] NDA Requested
- [ ] NDA Complete

Group Number

Sample A:

Assay Used: 0
Pounds U: 0
U-235 (g): 0

Sample B:

Assay Used: 0
Pounds U: 0
U-235(g): 0

N/A

NCS Classification

- [x] NCS-Exempt
- [ ] LS
- [ ] UH
- [ ] PEH
- [ ] GEN-20

Characterization Completed By:

Name: HC Anderson

Badge #: C520514

Date: 7-27-00

- [ ] RCRA or TSCA Issues Identified N/A

Comments:

- [x] Item relocated New Location: Building: C337 DMSA #: 36

- [ ] NMCA Exempt - No visible contamination or U-235 activity is too low to quantify

Completed By (Initials): Date:

PGDP CONTAINER LOG SHEET

GENERATOR:	NAME: T R WALK	GROUP:	
WASTE SOURCE: DMSA 331 #15 (IDENTIFY MAJOR GENERATION SOURCE BY APPLICABLE WORK GROUP, SYSTEM OR CAPITAL PROJECT)			
RFD No:	CONTAINER / DRUM No: 331-15-343	CONTAINER GROSS WEIGHT	

WASTE TYPE: (CHECK ALL THAT APPLY) ☐ Liquid ☑ Solid ☐ Semi-Solid ☑ Radioactive ☐ PCB ☐ Hazardous ☐ Asbestos ☐ Transuranic ☐ Compressed Gas ☐ Classified

CONTAINER SIZE: ☐ 5 gal ☐ 30 gal ☐ 55 gal ☐ 4 x 4 feet ☐ 5 x 5 feet ☑ Other SEALAND

CONTAINER TYPE: ☐ 6HA1 ☐ 1A1 (non-removable head) ☐ 1A2 (removable head) ☐ Pallet ☑ Other SEALAND

CONTAINER LOCATION:	BLDG. NUMBER	UNIT	CELL	COLUMN	FLOOR
	C-337	—	—	EB-34	GROUND

ACCUMULATION START / GENERATION DATE	STORAGE LOCATION:
	C-337 - DMSA #36

Depositor's initials certify that material is properly described; all equipment containing liquids, refrigerant, and hazardous components have been properly managed; and all procedural requirements have been met.

WASTE MATERIAL	QUANTITY	CAUSE CODE	DEPOSITOR INITIAL	DEPOSITOR DATE	COMMENTS
WOOD PALLETS			TRW	7/27/00	
MISC WOOD			TRW	7/27/00	
	FULL				

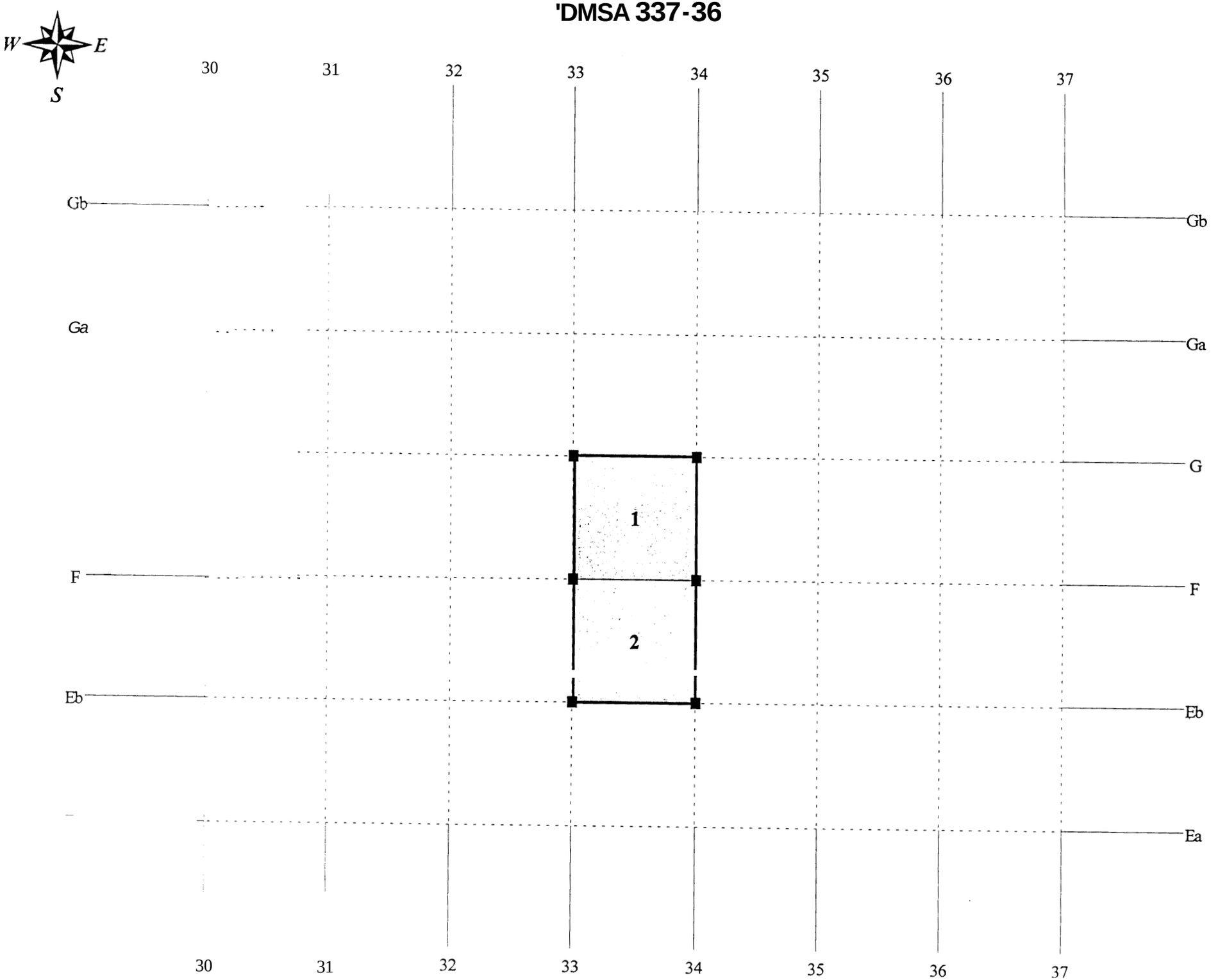
CAUSE CODES: 1 - PRODUCTION PROCESS/SERVICE 2 - SPILL CLEANUP / DECON / REMEDIAL 3 - ON-SITE TREATMENT 4 - CONSTRUCTION / DEMOLITION

COMMENTS

CP-17963
(10-15-98)

ZONE MAP

'DMSA 337-36



SME INSPECTION

DMSA SUBJECT MATTER EXPERT (SME) INSPECTION

DMSA NO.: 337-36

NOTE: Final-based on entry inspection 06/08/01

DATE:

RFD NUMBER	DMSA	CONTENTS	FROM ZONE	TO ZONE	RCRA CHAR	RCRA METAL	RCRA VOA	RCRA SVOA	PCB	ASB	WIPE	LIQUID	SOLID	SLUDGE	NO SAMPLING REQUIRED	NCS CONTROLLED	Comments
110123	C337-36	Pallets, misc/wood pieces	1	1											X	No RCRA or PCB constituents	
110124	C-337-36	Wooden pallets and trash	1	1											X	No RCRA or PCB constituents	

HP SURVEY

Radiological Survey Form

Survey No.: 01-ER-842-S Date: 6-26-01 Time: 1120 RWP NO: 01-DOE-46-S

Location of Survey – General (Site/Bldg.)/Specific (Room/Area): C-337 OMSA #36 @ Column # 6-34

Purpose of Survey: Job Coverage / Boundary / SOP Material Description: RCRA/TSCA Roll Bag Inspection

COPY

Technician: John McKee / [illegible] Badge: 636100 Technician: TA Lowe / [illegible] Badge: 704869

Model #: Ludlum 2221	Serial #: 99131	Cal. due date: 6-27-01	Probe Model #: 43-5	CF Pt.: 8.46	CF Plane: 16.92
Model #: Ludlum-3	Serial #: 106173	Cal. due date: 8-4-01	Probe Model #: 44-9	CF Pt.: 4.25	CF Plane: 27.44
Model #:	Serial #:	Cal. due date:	Probe Model #:	CF Pt.:	CF Plane:
Model #:	Serial #:	Cal. due date:	Probe Model #:	CF Pt.:	CF Plane: N/A
Model #: N/A	Serial #: N/A	Cal. due date: N/A	α CF: N/A	βγ CF: N/A	
Model #:	Serial #:	Cal. due date:	α CF:	βγ CF:	

Tennelec: Yes ____ No ✓ (If yes, see attached results)

Smear or Item No.	Sample Location	BKGD α / L_c	Removable α dpm/100cm²	BKGD α / L_c	Total α dpm/100cm²	BKGD βγ / L_c	Removable β,γ dpm/100cm²	BKGD βγ / L_c	Total β,γ dpm/100cm²	Remarks
1-12	Internal of (12) Bags of Radioactive Waste	1 / 19.71	< Lc	1 / 39.42	< Lc	45 / 66.48	< Lc	45 / 428.81	< Lc	Not a 100% Surface Survey
13-20	CA Boundary		< Lc		N/A		< Lc		N/A	N/A
21	SOP		< Lc				< Lc			

COMMENTS: NA NA

Released to ____

HP Supervisor Review: Signature/ Date: 7-2-2001

Radiological Survey Form

Survey No.: 01-ER-847-S Date: 6/26/01 Time: 1630 RWP NO: 01-DDE-46-S

Location of Survey – General (Site/Bldg.)/Specific (Room/Area): C-337 DMSA C337-36

Purpose of Survey: DOWNPOST

Material Description: N/A

COPY

Technician: DA Lowis / [signature] Badge: 704869 Technician: John McGee / [signature] Badge: 636(08)

Model #: Ludlum 3	Serial #: 106193	Cal. due date: 8-4-01	Probe Model #: 44-9	CF Pt.: ~~4.56~~ 4.25 (6/26/01)	CF Plane: 27.44
Model #: Ludlum 2221	Serial #: 99131	Cal. due date: 6-27-01	Probe Model #: 43-5	CF Pt.: 8.46	CF Plane: 16.92
Model #: N	Serial #: N	Cal. due date: N	Probe Model #: N	CF Pt.: N	CF Plane: N
Model #: A	Serial #: A	Cal. due date: A	Probe Model #: A	CF Pt.: A	CF Plane: A
			α CF: N	β/γ CF: N	
			α CF: A	β/γ CF: A	

Tennelec: Yes ____ No ____ (If yes, see attached results)

Smear or Item No.	Sample Location	BKGD α / L_c	Removable α dpm/100cm²	BKGD α / L_c	Total α dpm/100cm²	BKGD β/γ / L_c	Removable β,γ dpm/100cm²	BKGD β/γ / L_c	Total β,γ dpm/100cm²	Remarks
1-18	FLOOR	2 / 27.88	<Lc		N	45 / 66.48	<Lc		N	N/A
19-26	SCALAND	2 / 27.88	<Lc		A	45 / 66.488	<Lc		A	DMSA # C 371-15 - (342 & 343) RFD# 110123 & 110124
					N					
					A					

COMMENTS: N/A

Released to: N/A

PAD/RCO-081 (Page 1 of 3) Rev. 1 (2/01)

HP Supervisor Review: [signature] / 7-9-2001
Signature/ Date

HP SMEAR AND AIR SAMPLE ACTIVITY REPORT

RECORD COPY KLR 8/9/01

AIR SAMPLE CALCULATION WORKSHEET

PAGE 1 OF 3

SURVEY INFORMATION SAMPLING RCT NAME M. Morin SIGNATURE M. Morin BADGE 60737

Purpose of Survey: General Area - Low Vol Building/Location: C337-36 DMSA col G33

Survey #: 01- ER - 801 -A RWP #: 01-DOE- 46-S A -A Work Description: Initial entry DMSA

SAMPLING INSTRUMENTATION

Model: ~~HD-29A~~ AVS-28A MRV-1023CV BuckHF BuckIH SKC BZA TFIA HVP-3800AFC

Serial No.: 5496 Cal. Due Date: 7-8-01

MEDIA DESCRIPTION

Filter Media: What41 – 4 inch MF What-41 – 8x10 inch (AA)

NOTE: 1 CFM = 28.32 LPM

Start Date	Start Time	Start Flow CFM / (LPM)	Stop Date	Stop Time	Stop Flow CFM / (LPM)	Flow Duration (Minutes) †	Average Flow Rate (LPM)	Total Air Volume (L)
061901	1340	45	62101	1000	062101 ~~1000~~ 43	2660	44	117040

Area Posted as ARA?	Were Respirators Worn?	Respirator Type and Protection Factor? (N/A)	
Yes (No)	Yes (No)	APR (50) PAPR or Supplied Air Hood (1000) SCBA (10000) Airline or Supplied Air Full Face (2000)	Lapel Worn By: N/A Badge Number:

LABORATORY INFORMATION LAB RCT NAME Chris Malis SIGNATURE Chris Malis BADGE 703516

INSTRUMENTATION USED		Serial #:	Cal Due Date:	Alpha Efficiency	Beta Efficiency
Tennelec Series 2 / Series 5	Ludlum 2929 / Berthold LB770	36643	12-6-01	0.27	0.40
Tennelec Series 2 / Series 5	Ludlum 2929 / Berthold LB770	NA			

ANALYSIS INFORMATION

DATE	TIME	Type	Bkg. Time (Minutes)	Counter Lc (DPM)	Counter MDA (DPM)	Sample Count Time (Minutes)	Gross Sample (CPM)	Bkg. (CPM)	Net Sample (CPM)	Net Sample (DPM) *	Error 2σ (DPM)
6-25-01	1446	Alpha	30	0.45	1.41	20	2.91	0.07	2.84	10.51	2.85
		Beta	30	1.49	3.32	20	12.88	1.57	11.31	28.28	4.22
NA		Alpha									
		Beta									

ANALYSIS RESULTS CALCULATED BY: NAME Julie Woods SIGNATURE Julie Woods BADGE 703511

Alpha DAC (µCi/ml)	Posting Level (µCi/ml)	Concentration (µCi/ml)	Concentration (% DAC)
2E-12	5E-13	6.08E-14	3.04
Beta DAC (µCi/ml)	**Posting Level (µCi/ml)**	**Concentration (µCi/ml)**	**Concentration (% DAC)**
6 E-08	~~1.5 E-08~~	1.15E-13	1.91E-4

† **(Lapels Only) Sample did not run for minimum time of 120 minutes. Detector MDA @ this run time may exceed 10% of DAC.**

Alpha MDC (µCi/ml) = 8.16E-15 **Beta MDC** (µCi/ml) = 1.34E-14

* **Send samples > 100 DPM Alpha *to* the laboratory for isotopic analysis.**

** **Notify Operations Support Manager or designee when 10% of DAC is exceeded.**

Reviewed By: WC Healy Date: 6-26-01

SEC RadCon Alliance - Paducah

3:06:44P

Survey Number 01-ER-801-A

Smear and Air Sample Activity Report

6/25/01

Batch ID:	20 Minute Air Samples - 200106251404			**Acquisition Date:**	6/25/01
Group ID:	C	**Device Serial Number:**	36643	**Acquisition Time: (minutes)**	20.0
Device Name:	Tennelec Series 5				
Selected Geometry:	Swipe/Smear			**Operating Voltage: (volts)**	1,387.0

Cal due 12-6-01

Efficiency Factors			Daily 30 Minute Background CPM		Batch Critical Level DPM	
Alpha Efficiency -	0.27	± 0.00	**Alpha Background (CPM) -**	0.07	**Alpha Lc -**	**0.45**
Beta Efficiency -	0.40	± 0.01	**Beta Background (CPM) -**	1.57	**Beta Lc -**	1.49

Sample ID	Quantity	Alpha DPM (DPM)	2σ	Alpha MDA (DPM)	Beta DPM (DPM)	2σ	Beta MDA (DPM)
200106251404 30-C3	0.00	**10.51**	2.85	1.41	**28.28**	4.22	3.32

COPY

Count Room Review: Chu Mah

Sampling Tech Review: NA

LOW VOLS/LAPEL BZA AIR SAMPLE CALCULATIONS

Survey Number	01-ER-801-A
Start Date/Time	6/19/01 13:40
End Date/Time	6/21/01 10:00
	1/1/0020:20

Days Elapsed	1	1440
Hours Elapsed	20	1200
Minutes Elapsed	20	20
Total Minutes		2660

Start Flow LPM	45
Stop Flow LPM	43
Average Flow	44.00
Total Volume Air (L)	117040.00

Activity in dpm-Alpha	10.51
Activity in dpm-Beta	28.28
Volume in L	117040.00
Volume in mL	117040000.00

Alpha Activity by 4.74E-7	4.98174E-06
arV (.7)(1)(Volume in mL)	81928000

Beta Activity by 4.74E-7	1.34047E-05
arV (1)(1)(Volume in mL)	117040000

Alpha Concentration in microCi/mL	6.08E-14
% 2e-12 (Based on Np-237)	3.04E+00
% 1e-10 (Drum Mountain)	6.08E-02
% 1.1e-11 (Tc-99 Tank)	5.53E-01
For a Different Percent DAC Enter DAC Value Below	
1.10E-11	5.53E-01

Beta Concentration in microCi/mL	1.15E-13
% 6E-8 (Based on Th-234)	1.91t-04
For a Different Percent DAC Enter DAC Value Below	
6.00E-08	1.91E-04

Use This for Calculating Minimum Detectible Concentration in MicroCi/mL

Enter Alpha MDA	1.41
Alpha MDA*4.74E-7	6.6834E-07
arV (.7)(1)(Vol. In mL)	81928000
Alpha MDC in microCi/mL	8.16E-15

Enter Beta MDA	3.32
Beta MDA*4.74E-7	1.57368E-06
arV (1)(1)(Vol. In mL)	117040000
Beta MDC in microCi/mL	1.34E-14

COPY

Use This For Calculating +/- 2 Sigma on Air Samples Counted on 2929's

	ALPHA	BETA
Gr Sample Count Rate,cpm		
Gr Sample Count Time,min		300
Bkgr. Count Rate, cpm		
Bkgr Count Time, min.		
Counter Efficiency %		
+/- 2 Sigma, dpm	#DIV/0!	#DIV/0!

NOTES:

DATA TO BE ENTERED GOES IN

RESULTS ARE DISPLAYED IN

Printed Name: Julie Woods

Signature & Date: Julie Woods 6/26/01

AIR SAMPLE CALCULATION WORKSHEET

RECORD COPY 8/9/01 PAGE 1 OF 4

SURVEY INFORMATION SAMPLING RCT NAME M. Morin SIGNATURE M. Morin BADGE 60737

Purpose of Survey: Job Coverage - Lapel Building/Location: C 337-36 DMSA

Survey #: 01- ER - 802 -A RWP #: 01-DOE- 46 - S Work Description: Initial Entry - RMA only

SAMPLING INSTRUMENTATION

Model: ☐HD-29A ☐AVS-28A ☐ MRV-1023CV ☑ BuckHF ☐ BuckIH ☐ SKC BZA ☐ TFIA ☐ HVP-3800AFC

Serial No.: 953034 Cal. Due Date: 7-20-01

MEDIA DESCRIPTION

Filter Media: ☐ What-41 – 4 inch ☐ MF ☐ What-41 – 8x10 inch ☑ AA

NOTE: 1 CFM = 28.32 LPM

Start Date	Start Time	Start Flow CFM / LPM	Stop Date	Stop Time	Stop Flow CFM / LPM	Flow Duration (Minutes) †	Average Flow Rate (LPM)	Total Air Volume (L)
6/21/01	0930	6.62	6/21/01	10:10	6.62	40	6.62	264.80

Area Posted as ARA?	Were Respirators Worn?	Respirator Type and Protection Factor? ☑ N/A	
☐ Yes ☑ No	☐ Yes ☑ No	☐ APR (50) ☐ PAPR or Supplied Air Hood (1000) ☐ SCBA (10000) ☐ Airline or Supplied Air Full Face (2000)	**Lapel Worn By:** M. Morin **Badge Number:** 60737

		Serial #:	Cal Due Date:	Alpha Efficiency	Beta Efficiency
INSTRUMENTATION USED ☐Tennelec Series 2 / Series 5	☑ Ludlum 2929 ☐ Berthold LB770	126115	5-15-02	.3545	.3319
INSTRUMENTATION USED ☐Tennelec Series 2 / Series 5	☐ Ludlum 2929 ☐ Berthold LB770	N/a			

DATE	TIME	Type	Bkg. Time (Minutes)	Counter Lc (DPM)	Counter MDA (DPM)	Sample Count Time (Minutes)	Gross Sample (CPM)	Bkg. (CPM)	Net Sample (CPM)	Net Sample (DPM)	Error 2 σ (DPM)
6-27-01	0800	Alpha	480	0.29	0.60	300	0.67	0.70	-0.03	-0.08	0.34
		Beta	480	2.38	4.79	300	45.14	42.67	2.47	7.44	2.95
DATE	TIME	Type	Bkg Time (Minutes)	Counter Lc (DPM)	Counter MDA (DPM)	Sample Count Time (Minutes)	Gross Sample (CPM)	Bkg (CPM)	Net Sample (CPM)	Net Sample (DPM) *	Error 2 σ (DPM)
NA		Alpha									
		Beta									

COPY

Julie Wo

Alpha DAC (µCi/ml) $2E^{-12}$	Posting Level (µCi/ml) $5E^{-13}$	concentration (µCi/ml) $-2.05E^{-13}$	Concentration (% DAC) ** ∅
Beta DAC (µCi/ml) 6 E-08	Posting Level (µCi/ml) 1 5 E-08	Concentration (µCi/ml) $1.33E^{-11}$	Concentration (% DAC) ** $2.22E^{-2}$

† ☐ **(Lapels Only) Sample did not run for minimum time of 120 minutes.** Detector **MDA @ this run time may exceed** 10% of **DAC.**

Alpha MDC (µCi/ml) = $1.53E^{-12}$ **Beta** MDC (µCi/ml) = $8.57E^{-12}$

* **Send samples > 100 DPM Alpha to the laboratory for isotopic analysis.**

** Notify Operations Support Manager or designee when 10% of DAC is exceeded.

2nd count α 202

B,γ 13541

Reviewed By: [illegible] Date: 7-2-01

PAD/RCO-037 **Rev** 8 (Use Current Version)

VW 1710

"Recount"

LOW VOLS/LAPEL BZA AIR SAMPLE CALCULATIONS

Survey Number	01-ER-802-A
Start Date/Time	6/21/01 9:30
End Date/Time	6/21/01 10:10
	1/0/00 0:40
Days Elapsed	
Hours Elapsed	
Minutes Elapsed	
Total Minutes	

Start Flow LPM	6.62
Stop Flow LPM	6.62
Average Flow	6.62
Total Volume Air (L)	264.80

Activity in dpm-Alpha	-0.08
Activity in dpm-Beta	7.44
Volume in L	264.80
Volume in mL	264800.00
Alpha Activity by 4.74E-7	-3.792E-08
arV (.7)(1)(Volume in mL)	185360
Beta Activity by 4.74E-7	3.52656E-06
arV (1)(1)(Volume in mL)	264800

Alpha Concentration in microCi/mL	-2.05E-13
% 2e-12 (Based on Np-237)	-1.02E+01
% 1e-10 (Drum Mountain)	-2.05E-01
% 1.1e-11 (Tc-99 Tank)	-1.86E+00
For a Different Percent DAC Enter DAC Value Below	
1.10E-11	-1.86E+00
Beta Concentration in microCi/mL	1.33E-11
% 6E-8 (Based on Th-234)	2.22E-02
For a Different Percent DAC Enter DAC Value Below	
6.00E-08	2.22E-02

Use This for Calculating Minimum Detectible Concentration in MicroCi/mL

Enter Alpha MDA	0.6	Enter Beta MDA	4.79
Alpha MDA*4.74E-7	2.844E-07	Beta MDA*4.74E-7	2.27046E-06
arV (.7)(1)(Vol. In mL)	185360	arV (1)(1)(Vol. In mL)	264800
Alpha MDC in microCi/mL	1.53E-12	Beta MDC in microCi/mL	8.57E-12

COPY

Use This For Calculating +/- 2 Sigma on Air Samples Counted on 2929's

	ALPHA		BETA
Gr Sample Count Rate, cpm	0.67	Gr Sample Count Rate,cpm	45.14
Gr Sample Count Time,min	300	Gr Sample Count Time,min	300
Bkgr. Count Rate, cpm	0.7	Bkgr. Count Rate, cpm	42.67
Bkgr Count Time, min.	480	Bkgr Count Time, min.	480
Counter Efficiency %	0.3545	Counter Efficiency %	0.3319
+/- 2 Sigma, dpm	0.34	+/- 2 Sigma, dpm	2.95

NOTES:

DATA TO BE ENTERED GOES IN

RESULTS ARE DISPLAYED IN

Printed Name: Julie Woods

Signature & Date: Julie Woods 6/28/01

AIR SAMPLE CALCULATION WORKSHEET

PAGE 1 OF 2

SURVEY INFORMATION SAMPLING RCT NAME M. Morin SIGNATURE M. Morin BADGE 60737

Purpose of Survey: Job Coverage - Land Building/Location: C337-36 DMSA

Survey #: 01- ER - 802 -A RWP #: 01-DOC- 46.5 Work Description: Initial Entry - RMA only

SAMPLING INSTRUMENTATION

Model: **HD-29A** **AVS-28A** MRV-1023CV BuckHF
BuckIH SKC BZA TFIA HVP-3800AFC

MEDIA DESCRIPTION

Filter Media: What-41 – 4 inch MF
What-41 – 8x10 inch AA

Start Date	Start Time	Start Flow CFM / LPM	Stop Date	Stop Time	Stop Flow CFM / LPM	Flow Duration (Minutes) †	Average Flow Rate (LPM)	Total Air Volume (L)
6/21/01	0930	6.62	06/21/01	1010	6.62	40	6.62	264.80

Area Posted as ARA?	Were Respirators Worn?	Respirator Type and Protection Factor?	
Yes No	Yes No	APR (50) PAPR or Supplied Air Hood (1000) SCBA (10000) Airline or Supplied Air Full Face (2000) N/A	Lapel Worn By: M. Morin Badge Number: 60737

LABORATORY INFORMATION LAB RCT NAME Chris Malis SIGNATURE Chris Malis BADGE 703516

INSTRUMENTATION USED	Serial #:	Cal Due Date:	Alpha Efficiency	Beta Efficiency
Ludlum 2929 / Tennelec Series 2 / Series 5 / Berthold LB770	126115	5-15-02	.3545	.3319
Ludlum 2929 / Tennelec Series 2 / Series 5 / Berthold LB770	NA			

ANALYSIS INFORMATION

COPY

DATE	TIME	Type	Bkg. Time (Minutes)	Counter Lc (DPM)	Counter MDA (DPM)	Sample Count Time (Minutes)	Gross Sample (CPM)	Bkg. (CPM)	Net Sample (CPM)	Net Sample (DPM) *	Error 2 σ (DPM)
6-26-01	0800	Alpha	480	0.29	0.60	300	1.16	0.70	0.46	1.30	0.41
		Beta	480	2.38	4.79	300	45.89	42.67	3.22	9.70	2.96
NA		Alpha									
		Beta									

JM

Alpha DAC (µCi/ml)	Posting Level (µCi/ml)	Concentration (µCi/ml)	Concentration (% DAC) **
2E-12	5E-13	3.32E-12	1.66E+2 or 166%
Beta DAC (µCi/ml)	Posting Level (µCi/ml)	Concentration (µCi/ml)	Concentration (% DAC) **
6 E-08	1.5 E-08	1.74E-11	2.89E-2

† **(Lapels Only) Sample did not run for minimum time of 120 minutes. Detector MDA @ this run time may exceed 10% of DAC.**

Alpha MDC (µCi/ml) = 1.53E-12 **Beta MDC** (µCi/ml) = 8.57E-12

• **Send samples > 100 DPM Alpha to the laboratory for isotopic analysis.**

** Notify **Operations Support Manager or designee when 10% of DAC is exceeded.**

1st Count: Counts α 348 BX 13766

2nd Count: α 202 BX 1354

PAD/RCO-037 **Rev. 8 (Use Current Version)**

LOW VOLS/LAPEL BZA AIR SAMPLE CALCULATIONS

Survey Number	01-ER-802-A
Start Date/Time	6/21/01 9:30
End Date/Time	6/21/01 10:10
	1/0/00 0:40

Days Elapsed	0	0
Hours Elapsed	0	0
Minutes Elapsed	40	40
Total Minutes		40

Activity in dpm-Alpha	1.30
Activity in dpm-Beta	9.70
Volume in L	264.80
Volume in mL	264800 00
Alpha Activity by 4.74E-7	6.162E-07
arV (.7)(1)(Volume in mL)	185360
Beta Activity by 4.74E-7	4.5978E-06
arV (1)(1)(Volume in mL)	264800

Start Flow LPM	6.62
Stop Flow LPM	6.62
Average Flow	6.62
Total Volume Air (L)	264.80

Alpha Concentration in microCi/mL	3.32E-12
% 2e-12 (Based on Np-237)	1.66E+02
% 1e-10 (Drum Mountain)	3.32E+00
% 1.1e-11 (Tc-99 Tank)	3.02E+01
For a Different Percent DAC Enter DAC Value Below	
1.10E-11	3.02E+01
Beta Concentration in microCi/mL	1.74E-11
% 6E-8 (Based on Th-234)	

Use This for Calculating Minimum Detectible Concentration in MicroCi/mL

Enter Alpha MDA	0.6	Enter Beta MDA	4.79
Alpha MDA*4.74E-7	2.844E-07	Beta MDA*4.74E-7	2.27046E-06
arV (.7)(1)(Vol. In mL)	185360	arV (1)(1)(Vol. In mL)	264800
Alpha MDC in microCi/mL	1.53E-12	Beta MDC in microCi/mL	8.57E-12

Use This For Calculating +/- 2 Sigma on Air Samples Counted on 2929's

			BETA
Gr Sample Count Rate.cpm	1.16	Gr Sample Count Rate,cpm	45.89
Gr Sample Count Time,min	300	Gr Sample Count Time,min	300
Bkgr. Count Rate, cprn	0.7	Bkgr. Count Rate, cpm	42.671
Bkgr Count Time, min.	480	Bkgr Count Time, min.	4[illegible]
Counter Efficiency %	[illegible]	Counter Efficiency %	0.33
+/- 2 Sigma, dpm	0.41	+/- 2 Sigma, dpm	2.[illegible]

NOTES:

DATA TO BE ENTERED GOES IN

RESULTS ARE DISPLAYED IN

Printed Name: Julie Woods

Signature & Date: Julie Woods 6/27/01

AIR SAMPLE CALCULATION WORKSHEET

~~RECORD COPY~~ KLR 8/9/01

PAGE 1 OF 2

SURVEY INFORMATION SAMPLING RCT NAME John McGee SIGNATURE [illegible] BADGE 636101

Purpose of Survey: Job Coverage - IaAel Building/Location: C-337 DMSA # 36 @ column C-34

Survey #: 01- ER - 823 -A RWP #: 01-DOE- 46 - S Work Description: RCRA/TSCA Rad Bag Inspection

SAMPLING INSTRUMENTATION

Model: ☐HD-29A ☐AVS-28A ☐ MRV-1023CV ☐ BuckHF ☒ BuckIH ☐ SKC BZA ☐ TFIA ☐ HVP-3800AFC

Serial No.: 1838 Cal. Due Date: 7-13-01

MEDIA DESCRIPTION

Filter Media: ☐ What-41 – 4 inch ☒ MF ☐ What-41 – 8x10 inch ☐ AA

NOTE: 1 CFM = 28.32 LPM

Start Date	Start Time	Start Flow CFM / LPM	Stop Date	Stop Time	Stop Flow CFM / LPM	Flow Duration (Minutes) †	Average Flow Rate (LPM)	Total Air Volume (L)
6-26-01	1030	4.169	6-26-01	1110	4.35	40	4.2595	170.38

Area Posted as ARA?	Were Respirators Worn?	Respirator Type and Protection Factor? ☒ N/A	Lapel Worn By: Brad Story
☐ Yes ☒ No	☐ Yes ☒ No	☐ APR (50) ☐ SCBA (10000) O PAPR or Supplied Air Hood (1000) C Airline or Supplied Air Full Face (2000)	Badge Number: 704277

INSTRUMENTATION USED		Serial #:	Cal Due Date:	Alpha Efficiency	Beta Efficiency
☐Tennelec Series 2 / Series 5	☒ Ludlum 2929 O Berthold LB770	126134	3-21-02	.3478	.3732
INSTRUMENTATION USED		Serial #:	Cal Due Date:	Alpha Efficiency	Beta Efficiency
☐Tennelec Series 2 / Series 5	☐ Ludlum 2929 ☐ Berthold LB770	NA			

ANALYSIS INFORMATION

COPY

DATE	TIME	Type	Bkg. Time (Minutes)	Counter Lc (DPM)	Counter MDA (DPM)	Sample Count Time (Minutes)	Gross Sample (CPM)	Bkg. (CPM)	Net Sample (CPM)	Net Sample (DPM) *	Error 2σ (DPM)
6-29-01	0800	Alpha	480	0.21	0.42	300	0.30	0.32	-0.02	-0.06	0.23
		Beta	480	2.41	4.84	300	54.90	55.04	-0.14	-0.38	2.92
DATE	TIME	Type	Bkg. Time (Minutes)	Counter Lc (DPM)	Counter MDA (DPM)	Sample Count Time (Minutes)	Gross Sample (CPM)	Bkg. (CPM)	Net Sample (CPM)	Net Sample (DPM) *	Error 2σ (DPM)
NA		Alpha									
		Beta									

ANALYSIS RESULTS CALCULATED BY: NAME Julie Woods SIGNATURE Julie Woods BADGE 703511

Alpha DAC (µCi/ml)	Posting Level (µCi/ml)	Concentration (µCi/ml)	Concentration (% DAC) **
2E-12	5E-13	-2.38E-13	0
Beta DAC (µCi/ml)	**Posting Level (µCi/ml)**	**Concentration (µCi/ml)**	**Concentration (% DAC) ** **
6 E-08	1.5 E-08	-1.06E-12	0

† ☒ (Lapels Only) Sample did not run for minimum time of 120 minutes. Detector MDA @ this run time may exceed 10% of DAC.

Alpha MDC (µCi/ml) = 1.67E-12 Beta MDC (µCi/ml) = 1.35E-11

* Send samples > 100 DPM Alpha to the laboratory for isotopic analysis.

** Notify Operations Support Manager or designee when 10% of DAC is exceeded.

Counts ≥ 90

BK 16469

Reviewed By: NC Hodge Date: 7-2-01

PAD/RCO-037 Rev. 8 (Use Current Version)

KR 7/10

AIR SAMPLE CALCULATION WORKSHEET

RECORD COPY KLR 8/9/01

SURVEY INFORMATION SAMPLING RCT NAME John McBee SIGNATURE [signature] BADGE 636100

Purpose of Survey: General Area - Low Vol Building/Location: C-337 DMSA #36 @ Column 6-34

Survey #: 01- ER - 829 -A RWP #: 01-DOE- 46 - S Work Description: Material Movement / ARA/TSHA Inspection

SAMPLING INSTRUMENTATION	MEDIA DESCRIPTION
Model: ☒ HD-29A ☐ OAVS-28A ☐ MRV-1023CV ☐ BuckHF ☐ BuckIH ☐ SKC BZA ☐ TFIA ☐ HVP-3800AFC	Filter Media: ☐ What-41 – 4 inch ☐ MF ☐ What-41 – 8x10 inch ☒ AA
Serial No.: 5496 Cal. Due Date: 7-8-01	NOTE: 1 CFM = 28.32 LPM

Start Date	Start Time	Start Flow CFM / LPM	Stop Date	Stop Time	Stop Flow CFM / LPM	Flow Duration (Minutes) † 2435	Average Flow Rate (LPM)	Total Air Volume (L) 108357.50
6-25-01	1705	45	6-27-01	0940	44	~~2075~~ JW 7/3	44.5	~~92337.5~~ JW 7/

Area Posted as ARA?	Were Respirators Worn?	Respirator Type and Protection Factor7 ☒ N/A	
☐ Yes ☒ No	☐ Yes ☒ No	☐ APR (50) ☐ PAPR or Supplied Air Hood (1000) ☐ SCBA (10000) ☐ Airline or Supplied Air Full Face (2000)	Lapel Worn By: ____ Badge Number: N/A

INSTRUMENTATION USED	Serial #:	Cal Due Date:	Alpha Efficiency	Beta Efficiency
☒ Tennelec Series 2 / Series 5 ☐ Ludlum 2929 ☐ Berthold LB770	36643	12-6-01	0.27	0.40
INSTRUMENTATION USED ☐ Tennelec Series 2 / Series 5 ☐ Ludlum 2929 ☐ Berthold LB770	N/A	-		

ANALYSIS INFORMATION

COPY

DATE	TIME	Type	Bkg. Time (Minutes)	Counter Lc (DPM)	Counter MDA (DPM)	Sample Count Time (Minutes)	Gross Sample (CPM)	Bkg. (CPM)	Net Sample (CPM)	Net Sample (DPM) *	Error 2σ (DPM)
7/2/01	1108	Alpha	30	0.32	1.15	20	0.50	0.03	0.47	1.73	1.20
		Beta	30	1.51	3.35	20	5.56	1.60	3.96	9.90	2.89
DATE	TIME	Type	Bkg.Time (Minutes)	Counter Lc (DPM)	Counter MDA (DPM)	Sample Count Time (Minutes)	Gross Sample (CPM)	Bkg. (CPM)	Net Sample (CPM)	Net Sample (DPM) *	Error 2σ (DPM)
N/A		Alpha									
		Beta									

ANALYSIS RESULTS

Alpha DAC (µCi/ml)	Posting Level (µCi/ml)	Concentration (µCi/ml)	Concentration (% DAC) **
1 E-12	5E-13	1.08E-14	5.41E-1
Beta DAC (µCi/ml)	Posting Level (µCi/ml)	Concentration (µCi/ml)	Concentration (% DAC) **
6 E-08	1 5 E-08	4.33E-14	7.22E-5

Reviewed By: [signature] Date: 7-6-01

PAD/RCO-037 Rev 8 (Use Current Version)

JW 7/10 8

SEC RadCon Alliance - Paducah

Survey Number 01-ER-B29-A

Smear and Air Sample Activity Report

7/2/01

Batch ID:	20 Minute Air Samples - 200107020849	**Acquisition Date:**	7/2/01
Group ID:	H **Device Serial Number:** 36643	**Acquisition Time: (minutes)**	20.0
Device Name:	Tennelec Series 5		
Selected Geometry:	Swipe/Smear	**Operating Voltage: (volts)**	1,387.0

Efficiency Factors			Daily 30 Minute Background CPM		Batch Critical Level DPM	
Alpha Efficiency -	0.27	± 0.00	**Alpha Background (CPM) -**	*0.03*	**Alpha Lc -**	0.32
Beta Efficiency -	0.40	± 0.01	**Beta Background (CPM) -**	1.60	**Beta Lc -**	1.51

Sample ID	Quantity	Alpha DPM (DPM)	2σ	Alpha MDA (DPM)	Beta DPM (DPM)	2σ	Beta MDA (DPM)
20010702084938-H8	0.00	1.73	1.20	1.15	9.90	2.89	3.35

COPY

Count Room Review: Kris Weaver

Sampling Tech Review: N/A

LOW VOLS/LAPEL BZA AIR SAMPLE CALCULATIONS

Survey Number	01-ER-829-A
Start Date/Time	6/25/01 17:05
End Date/Time	1/1/00 16:35

Days Elapsed	1	1440
Hours Elapsed	16	960
Minutes Elapsed	35	35
Total Minutes		2435

Start Flow LPM	45
Stop Flow LPM	44
Average Flow	44.50
Total Volume Air (L)	108357.50

Activity in dpm-Alpha	1.73
Activity in dpm-Beta	9.90
Volume in L	108357.50
Volume in mL	108357500.00
Alpha Activity by 4.74E-7	8.2002E-07
arV (.7)(1)(Volume in mL)	75850250
Beta Activity by 4.74E-7	4.6926E-06
arV (1)(1)(Volume in mL)	108357500

Alpha Concentration in microCi/mL	1.08E-14
% 2e-12 (Based on Np-237)	5.41E-01
% 1e-10 (Drum Mountain)	1.08E-02
% 1.1e-11 (Tc-99 Tank)	9.83E-02
For a Different Percent DAC Enter DAC Value Below	
1.10E-11	9.83E-02
Beta Concentration in microCi/mL	4.33E-14
% 6E-8 (Based on Th-234)	7.22E-05
For a Different Percent DAC Enter DAC Value Below	
6.00E-08	7.22E-05

Use This for Calculating Minimum Detectible Concentration in MicroCi/mL

Enter Alpha MDA	1.151	Enter Beta MDA	3.35
Alpha MDA*4.74E-7	5.451E-07	Beta MDA*4.74E-7	1.5879E-06
arV (.7)(1)(Vol. In mL)	75850250	arV (1)(1)(Vol. In mL)	108357500
Alpha MDC in microCi/mL	7.19E-15	Beta MDC in microCi/mL	1.47E-14

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Use This For Calculating +/- 2 Sigma on Air Samples Counted on 2929's

	ALPHA		BETA
Gr Sample Count Rate,cpm		Gr Sample Count Rate,cpm	
Gr Sample Count Time,min	300	Gr Sample Count Time,min	300
Bkgr. Count Rate, cpm		Bkgr. Count Rate, cpm	480
Bkgr Count Time, min.	480	Bkgr Count Time, min.	
Counter Efficiency %		Counter Efficiency %	
+/- 2 Sigma, dpm	#DIV/0!	+/- 2 Sigma, dpm	#DIV/0!

NOTES:

DATA TO BE ENTERED GOES IN

RESULTS ARE DISPLAYED IN

Printed Name: Julie Woods

Signature & Date: Julie Woods 7/3/01

IH SAMPLING DATA

07/26/01 08:05
373621PCBW01

Portsmouth Analytical Laboratory
Official Report

COPY

011920080

Customer Smpl Id: 373621PCBW01
Project:X-02-IH KCW005069B
Subproj Analyses:WIPE
Customer:N J SMITH

Matrix: WIPE
Protocol:NONE
Status: APPROVED
Location:

Sampled: 06/21/01 10:00:00
Received: 07/11/01 15:00:20
hecdcd: 07/25/01 23:59:00
Approved: 07/25/01 16:07:20

COC#: PADUCAH
Sample Desc:
Customer Comments:
Lab Smpl Comments:

Analy Meth:PORTS-XP4-TS-OA7033 | QC Batch:QC01204023 Test:PCBWIPE | Rpt Basis:Not **Corrected** | Date Approved
Prep Meth: | Analyzed:07/16/01 00:00:00 D K SCAGGS | Approverr P J **SPROUSE** | 07/25/01 16:06

Analyte Name	Result	+/-	Unit	Qual	Fn	LCR	Dilu	HT	CLF
PCB, Total	10		ug/wipe	U		10	1		

QC Batch Comments: The **calibration check** standards for 1254/1268 were above **acceptable** limits of *85%* to 115%. Since **the calibration check standards** for 1260 were within acceptable limits, **all** other QC recoveries were acceptable, and neither PCE *1254* or *PC6* 1268 were **present in these** samples these samples have not been retested.

EPA Qualifiers:

U - Analyte **analyzed** for but **undetected.** Analyte result was below the Limit of Quantitation (LOQ).

USEC PORTS Analytical Lab
P.O. Box 628 Piketon OH 45661 740-897-5702
Lab Director: Deborah K. Perez

***** END OF REPORT *****

Portsmouth Analytical Laboratory
Official Report

COPY

Customer Smpl Id: 3736Z2PCBW01
Project:X-02-IH KCW005069B
Subproj Analyses:WIPE
Customer:N J SMITH

Matrix: WIPE
Protocol:NONE
Status: **APPROVED**
Location:

Sampled: 06/21/01 10:07:00
Received: 07/11/01 15:00:00
Needed: *07/25/01* 23:59:00
Approved: 07/25/01 16:08:32

COC#: PADUCAH
Sample Desc:
Customer Comments:
Lab Smpl Comments:

Analy Meth:**PORTS-XP4-TS-OA7033** QC **Batch**:QC0120.4023 **Test**:PCBWIPE **Kpt** Basis:Not Corrected Date **Approved**
Prep **Meth:** Analyzed:07/16/01 00:00:00 D K SCAGGS ***Approver:*** P J **SPROUSE** *07/25/03* 16:08

Analyte Name	**Result**	+/-	Unit	Qual	Fn	LCR	Dilu	HT	CLF
PCB, **Total**	10		**ug/wipe**	U		10	1		

QC Batch Comments: **The calibration check standards for** 1254/1268 **were** above acceptable *limits* of 85% to 115%. **Since the calibration check standards for 1260 were within acceptable limits, all** other QC **recoveries** *were* **acceptable, and** neither PCB 1254 or **PCR** 1268 **were present** in **these samples** these **samples have not** been retested.

EPA Qualifiers:
U - Analyte **analyzed** for **but undetected.** Analyte result **was below the Limit** *of* Quantitation (LOQ).

USEC PORTS Analytical Lab
P.O. Box 628 Piketon OH 45661 740-897 5702
Lab Director: Deborah K. Perez
***** END OF REPORT *****

07/25/01 13:48
3736Z1METW01

Portsmouth Analytical Laboratory
Official Report

COPY

X011920072

Customer Smpl Id: 3736Z1METW01
Project:X-02-IH KCW005069B
Subprot Analyses:AIR
Customer:N J SMITH

Matrix: AIR
Protocol:NONE
Status: APPROVED
Location:

Sampled: 06/21/01 10:05:00
Received: 07/11/01 15:00:00
Needed: 07/25/01 23:59:00
Approved: 07/19/01 14:10:33

COC#: PADUCAH
Sample Desc:
Customer Comments:
Lab Smpl Comments:

Analy Meth:NIOSH-7300-2 QC Batch:QC01199032 Test:7300FILTER Rpt Basis:Not Corrected Date Approved
Prep Meth: Analyzed:07/16/01 00:00:00 E L SIMPSON Approver: E K GILBERT 07/19/01 14:10

Analyte Name	Result	+/-	Unit	Qual	Fn	LCR	Dilu	HT	CLF
Arsenic	0.332		ug/filter	U		0.337	1		
Barium	1.46		ug/filter			0.00676	1		
Beryllium	0.00334		ug/filter	U		0.00334	1		
Cadmium	0.0814		ug/filter	B		0.0256	1		
Chromium	1.28		ug/filter			0.147	1		
Lead	1.24		ug/filter	0		0.322	1		
Nickel	0.703		ug/filter			0.121	1		
Selenium	0.32		ug/filter	U		0.32	1		
Silver	0.039		ug/filter	U		0.039	1		
Thallium	0.35		ug/filter	U		0.35	1		

Comments: Ba not an approved element for NIOSH 7300, however analysis was performed per customer's request.

EPA Qualifiers:
B - Analyte result Less than the Practical Quantitation Limit (PQL) and greater than or equal to the Instrument Detection Limit (IDL).
U - Analyte analyzed for but undetected. Analyte result was below the Instrument Detection Limit (IDL).

USEC PORTS Analytical Lab
P.O. Box 628 Piketon OH 45661 740-897-5702
Lab Director: Deborah K. Perez
***** END OF REPORT *****

Portsmouth Analytical Laboratory
Official Report

COPY

Cusromer Smpl Id: 3736Z2METW01
Project:K-02-1H KCW005069B
Subproj Analyses:AIR
Customer:N J SMITH

Matrix: AIR
Protocol:NONE
Status: APPROVED
Cocations

Sampled: 06/21/01 10:07:00
Received: 07/11/01 15:00:42
Needed: 07/25/01 23:59:00
Approved: 07/19/01 14:12:39

COC#: PADUCAH
Sample Desc:
Customer Comments:
Lab Smpl Comments:

Analy Meth:NIOSH-7300-2 PC Batch:QC0119903Z Test:7300FILTER Rpt Basis:Not Corrected Date Approved
Prep Meth: Analyzed:07/16/01 00:00:00 E L SIMPSON Approver: E K GILBERT 07/19/01 14:12

Analyte Name	Result	+/-	Unit	Qual	Fn	LCR	Dilu	HT	CLF
Arsenic	0.332		ug/filter	U		0.332	1		
Barium	1.32		ug/filter			0.00676	1		
Beryllium	0.0046		ug/filter	B		0.00334	1		
Cadmium	0.0588		ug/filter	B		0.0256	1		
Chromium	0.901		ug/filter	B		0.147	1		
Lead	0.762		ug/filter	B		0.322	1		
Nickel	0.395		ug/filter	B		0.121	1		
Selenium	0.32		ug/filter	U		0.32	1		
Silver	0.039		ug/filter	U		0.039	1		
Thallium	0.35		ug/filter	U		0.35	1		

Comments: Ba not an approved element for NIOSH 7300, however analysis was performed per customer's request,

EPA Qualifiers:
B - Analyte result less than the Practical Quantitation Limit (PQL) and greater than or equal to the Instrument Detection Limit (IDL).
U - Analyte analyzed for but undetected. Analyte result was belou the Instrument Detection Limit (IDL).

USEC PORTS Analytical Lab
P.O. Box 628 Piketon OH 45661 740 837-5702
Lab Director: Deborah K. Perez

***** END OF REPORT *****