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To Distribution	From Characterization Plans, Coordination and Reports	Page 1 of 2
		Date: 06/19/95
Project Title/Work Order WHC-SD-WM-DP-132, Rev. 0, "45-Day Safety Screen Results and Final Report for Tank 241-C-202, Auger Samples 95-AUG-026 and 95-AUG-027"		EDT NO.: EDT-612162
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY
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K. L. Silvers	P7-27		X

U.S. Department of Energy, RL

C. A. Babel	S7-54	X	
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J. H. Baldwin	T6-06	X	
R. J. Cash	S7-15	X	
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J. G. Kristofzski	T6-06	X	
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		Date: 06/19/95
Project Title/Work Order WHC-SD-WM-DP-132, Rev. 0, "45-Day Safety Screen Results and Final Report for Tank 241-C-202, Auger Samples 95-AUG-026 and 95-AUG-027"		EDT NO.: EDT-612162
		ECN NO.: N/A

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ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT No 612162

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2	1	Cog.Eng. J.H. Baldwin	<i>John Baldwin</i>	6/16/95	TE-07						
2	1	Cog. Mgr. J.G. Kristofzski	<i>J.G. Kristofzski</i>	6/16/95	TE-04						
2	1	QA E. W. Miller	<i>E.W. Miller</i>	6/16/95	WT-16						
		Safety									
		Env.									
18.		19.		20.		21. DOE APPROVAL (if required) Ctrl. No.					
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Document Number: WHC-SD-WM-DP-132, REV 0

Document Title: 45-Day Safety Screen Results and Final Report for Tank 241-C-202, Auger Samples 95-AUG-026 and 95-AUG-027

Release Date: 6/19/95

**This document was reviewed following the
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WHC Information Release Administration Specialist:

Kara M. Broz

June 19, 1995

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6. Author

Name: John H. Baldwin

Signature

Organization/Charge Code 75310/MDR21

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WHC-SD-WM-DP-132, REV. 0

ANALYTICAL SERVICES

45-DAY SAFETY SCREEN RESULTS AND FINAL REPORT FOR TANK 241-C-202,
AUGER SAMPLES 95-AUG-026 AND 95-AUG-027

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NARRATIVE

45-DAY SAFETY SCREEN RESULTS FOR TANK 241-C-202,
AUGER SAMPLES 95-AUG-026 AND 95-AUG-027

ANALYTICAL SUMMARY

Two auger samples from tank 241-C-202 (C-202) were received at the 222-S Laboratories and underwent safety screening analysis, consisting of differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), and total alpha activity. Two samples were submitted for energetics determination by DSC. Within the triplicate analyses of each sample, one of the results for energetics exceeded the notification limit. The sample and duplicate analyses for both augers exceeded the notification limit for TGA. As required by the Tank Characterization Plan, the appropriate notifications were made within 24 hours of official confirmation that the limits were violated.

SCOPE

This document serves as the 45-day report deliverable for the tank C-202 auger samples collected on May 5, 1995 (samples 95-AUG-026 and 95-AUG-027). Each sample was received, extruded, and analyzed by the 222-S Laboratories in accordance with the Tank Characterization Plan (TCP) referenced below. Included in this report are the primary safety screening results (DSC, TGA, and total alpha) and copies of all DSC and TGA raw data scans as requested in the TCP. A photograph of the auger sample 95-AUG-026 was taken during extrusion and, is included in this report. Photographs of auger sample 95-AUG-027 did not turn out although video of the extrusion is available.

Although one of three DSC tests and the TGA tests violated the limits, it was decided not to proceed with secondary analyses due to insufficient sample remaining and the similarities of this tank to other C-Farm 200 series tanks (tank transfer histories are similar and tanks C-201 and C-204 exceeded the DSC limit. Tank C-201 had low moisture content by TGA also).

SAMPLE RECEIPT, EXTRUSION, AND SUBSAMPLING

95-AUG-026

Sample 95-AUG-026 was collected from riser 7 (east coordinate) of tank C-202 using a 20-inch auger sampler. The sample was taken on May 5, 1995 at 1100 hours. It was received into the 222-S Laboratories on May 8 and extruded on May 9. Upon extrusion, a total of 6.35 grams of solid material was collected, with no drainable liquid. The tank waste solids were dry and powdery. The solids were grey to brown in color with some yellow colored solids intermixed. No material was available for archive due to the small sample size. Subsamples are identified in Table 1.

95-AUG-027

Sample 95-AUG-027 was collected from riser 7 (west coordinate) of tank C-204 using a 20-inch auger sampler. The sample was taken on May 5, 1995 at 1145 hours. It was received into the 222-S Laboratories on May 8 and extruded on May . A total of 2.19 grams of solid material were collected, with no drainable liquid. The tank waste solids were dry and powdery. The solids were grey to brown in color with some yellow colored solids intermixed. No material was available for archive due to the small sample size. Subsamples are identified in Table 1.

Table 1. C-202 Subsample Identification

Sample ID	Sample Description	Analyses
S95T000900	95-AUG-026 extrusion, Whole Segment	extrusion
S95T000901	95-AUG-027 extrusion, Whole Segment	extrusion
S95T000902	95-AUG-026 whole segment solids, direct analysis	DSC/TGA
S95T000903	95-AUG-026 whole segment fusion	fusion/alpha
S95T000904	95-AUG-027 whole segment solids, direct analysis	DSC/TGA
S95T000905	95-AUG-027 whole segment fusion	fusion/alpha

ANALYTICAL RESULTS

Analytical results are summarized in Tables 3 and 4, with the applicable notification limits shaded. For tests where more than one replicate was performed, the results are presented in a another table for clarity (e.g. Table 2). The summary tables (created electronically from the laboratory sample management program) only include sample and duplicate results.

DSC (Energetics Content)

DSC analyses were performed under a nitrogen atmosphere using procedure LA-514-113, Rev. B-1. Exotherms exceeding the notification limit of 481 J/g were detected for both samples. The duplicate and triplicate results did not exceed the notification limit for either sample although a final value was not achieved.

The control standard run along with these samples exhibited a recovery of 101.2 percent, within the program's specified accuracy control limits of 90 to 110 percent recovery.

Reproducible results for samples S95T000902 and S95T000904 were not obtained. The exotherms continued through 500°C (a baseline was not re-established). This behavior was also observed for Tank C-204. The standards which were run with these samples exhibited acceptable recovery (within 10% of the accepted true value). The empirical observation is that this is a real event.

The DSC analyzer can only integrate between fixed points on the graph; therefore, since the scans did not return to baseline, these data can only be reported as minimum values. Both samples (S95T000902 and S95T000904) were run in triplicate. The largest exotherm on sample S95T000902 was >548.0 J/g (dry basis). The largest exotherm on sample S95T000904 was >613.0 J/g (dry basis). As the scans for these samples did not return to baseline, the RPD's calculated in Table 3 are not applicable. The sample mean and standard deviation were also not calculated for these samples because only "greater than" values were obtained. The DSC results for samples S95T000902 and S95T000904 are presented in Table 2. The variability of the results is potentially explained by the non-homogeneity of the sample at the small sample size used for the DSC. Although the sample was finely ground to homogenize as completely as possible, there would still be considerable non-homogeneity for small solid granular samples such as these.

Table 2. Summary of Calculated Dry DSC Results for S95T000902 and S95T000904

Sample	Result	Duplicate	Triplicate	Mean	Std. Dev.
S95T000902	>548	>192	>326	n/a	n/a
S95T000904	>613	>223	>312	n/a	n/a

TGA (Moisture Content)

Weight percent water is calculated from weight loss by TGA. These analyses were performed under a nitrogen atmosphere using procedure LA-560-112, Rev. A-2. The percent water was below the notification limit of 17% for both samples. Notification is required when percent water is less than 17%. Results for the two samples and their duplicates ranged in value from 4.88 to 6.96 percent water by weight. The TGA results for sample S95T000902 and sample S95T000904 are presented in Tables 3 and 4.

The control standard run with these analyses, exhibited recovery of 99.31 percent, which was within the program's specified accuracy control limits of 90 to 110 percent.

Total Alpha Activity

Analyses for total alpha activity were performed on two samples. Samples were prepared by fusion using procedure LA-549-141, Rev. C-3, and analyses were performed using procedure LA-508-101, Rev. D-2. A sample duplicate was performed on each sample. All results ranged from 7.94 to 10.20 $\mu\text{Ci/g}$. The RPD for sample S95T000905 exceeded the TCP target of 10%. As all results were below the safety screening limit of 41 $\mu\text{Ci/g}$ by a factor of approximately 4 or more, reruns were deemed unnecessary.

The control standard was run with a recovery of 95.4% and within the TCP target of 90 to 110%. A spike was performed on sample S95T000905, with a recovery of 88.8%. This is outside of the TCP target recovery of 90 to 110%. Spike recoveries for alpha have typically been below the target criterion. The laboratory is addressing this situation. Since the sample results were below the action limit, the poor spike recovery did not necessitate further testing (this method is for screening purposes - highly accurate results are not required below the limit).

REFERENCE Schreiber, R. D., 1995, WHC-SD-WM-TP-305, Revision 0, "*Tank 241-C-202 Tank Characterization Plan*", dated March 6, 1995.

Responsible Project Coordinator: J. H. Baldwin

WHC-SD-WM-DP-132, REV. 0

SAMPLE DATA SUMMARY

45 DAY SAFETY SCREEN RESULTS FOR AUGERS 95-AUG-026/027
C-202

CORE NUMBER: n/a
SEGMENT #: 95-AUG-026

TABLE 3

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000902			% Water by TGA using Mettler	%	17.000	101.000	99.31	n/a	5.390	4.88	5.135	9.93	n/a	n/a	n/a
S95T000902			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000	481.000	n/a	n/a	> 548	>192	n/a	n/a	n/a	1.00e-04	n/a
S95T000902			DSC Exotherm using Mettler	Joules/g	None	None	101.2	n/a	> 511.2	>178.7	n/a	n/a	n/a	n/a	n/a
S95T000903	F		Alpha of Digested Solid	uCi/g	-1.000	41.000	95.40	<2.42e-02	7.990	7.94e+0	7.96e+00	0.63	91.60	5.00e-02	3.9

=> Limit violated
=> Selected Limit

WHC-SD-WM-DP-132, REV. 0

45 DAY SAFETY SCREEN RESULTS FOR AUGERS 95-AUG-026/027
C-202

CORE NUMBER: n/a
SEGMENT #: 95-AUG-027

Table 4

SEGMENT PORTION: W Whole Segment

Sample#	R	A#	Analyte	Unit	Action Limits		Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
					Lower	Upper									
S95T000904			% Water by TGA using Mettler	%		101.000	99.31	n/a	6.960	6.49	6.725	6.99	n/a	n/a	n/a
S95T000904			DSC Exotherm Dry Calculated	Joules/g Dry	-1.000		n/a	n/a	> 613	>223	n/a	n/a	n/a	1.00e-04	n/a
S95T000904			DSC Exotherm using Mettler	Joules/g	None	None	101.2	n/a	> 581.8	>212.0	n/a	n/a	n/a	n/a	n/a
S95T000905	F		Alpha of Digested Solid	uCi/g	-1.000		95.40	<2.42e-02	10.20	8.43e+0	9.31e+00	19.0	88.80	5.40e-02	3.6

=> Limit violated
=> Selected Limit

WHC-SD-WM-DP-132, REV. 0

WHC-SD-WM-DP-132, REV. 0

CHAIN OF CUSTODY FORMS

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 200 W 08 TF (2) Sample Number 95-AUG-026 (3) Supervisor JAMES SICKELS
 (4) Tank C-202 (5) Riser 7 EAST (6) Cask Serial Number 1001C

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	A. Work Package Number	<u>ES-95-00007/0</u>
Side Dose Rate	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	B. Cask Seal Number	<u>1032</u>
Bottom Dose Rate	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	C. Date and Time Sample	<u>5-5-95 11:00 AM</u>
Smearable Contamination	<u>4.20 dpm/100cm²</u> (Alpha)	<u>4.20 dpm/100cm²</u> (Alpha)	<u>4.20 dpm/100cm²</u> (Alpha)	Removed from Tank	<u>5-5-95 11:00 AM</u>
	<u>21K dpm/100cm²</u> (Beta-Gamma)	<u>21K dpm/100cm²</u> (Beta-Gamma)	<u>21K dpm/100cm²</u> (Beta-Gamma)	D. Expected Liquid Content	<u>10%</u>
RCT*	<u>[Signature]</u> (Signature)	RCT*	<u>[Signature]</u> (Signature)	E. Expected Solid Content	<u>90%</u>
				F. Dose Rate Through Drill String	<u>3.5 mR/hr</u>
				G. Expected Sample Length	<u>8"</u>

(9) INFORMATION (Include statement of laboratory tests to be performed.)

10

(10) Field Comments	(32) Laboratory Comments

(11) Point of Origin <u>C-202 R# 7</u>	(12) Destination <u>2225 LABS</u>	(13) Sender Name (Sign and PRINT) <u>JAMES SICKELS</u>	(14) Date/Time <u>5-8-95 10:40</u>	(15) Sender Comments
(17) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(18) Received By (Sign and PRINT) <u>[Signature]</u>	(19) Date/Time <u>5-8-95 10:40</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>[Signature]</u>	(22) Received By (Sign and PRINT) <u>N LAPIERS</u>	(23) Date/Time <u>5-8-95 1100</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments	

(16) Seal Intact Upon Release? ☒ Yes ☐ No	(29) Seal Intact Upon Receipt? ☒ Yes ☐ No	(30) Seal Data Consistent with this Record? Shipment No. ☒ Yes ☐ No Cask Seal No. ☒ Yes ☐ No Sample No. ☒ Yes ☐ No
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COPY

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200 W O R T F (2) Sample Number 95-AUG-27 (3) Supervisor JAMES SICKELS
 (4) Tank C-202 (5) Riser 7 WEST (6) Cask Serial Number 1008C

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u>2.5 mR/hr</u>	<u>2.5 mR/hr</u>	<u>20.5 mR/hr</u>	A. Work Package Number	<u>ES-95-00007/0</u>
Side Dose Rate	<u>2.5 mR/hr</u>	<u>2.5 mR/hr</u>	<u>20.5 mR/hr</u>	B. Cask Seal Number	<u>1033</u>
Bottom Dose Rate	<u>2.5 mR/hr</u>	<u>2.5 mR/hr</u>	<u>20.5 mR/hr</u>	C. Date and Time Sample	<u>5-5-95 11:45 AM</u>
Smearable Contamination	<u>220 Dpm/100cm²</u> (Alpha)	<u>220 Dpm/100cm²</u> (Alpha)	<u>220 Dpm/100cm²</u> (Alpha)	Removed from Tank	<u>5-5-95 11:45 AM</u>
	<u>21K Dpm/100cm²</u> (Beta-Gamma)	<u>21K Dpm/100cm²</u> (Beta-Gamma)	<u>21K Dpm/100cm²</u> (Beta-Gamma)	D. Expected Liquid Content	<u>10%</u>
RCT*	<u>James Sickels</u> (Signature)	RCT*	<u>CR</u> (Signature)	E. Expected Solid Content	<u>90%</u>
				F. Dose Rate Through Drill String	<u>2.5 mR/hr</u>
				G. Expected Sample Length	<u>8"</u>

(9) INFORMATION (Include statement of laboratory tests to be performed.)

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin <u>C-202</u>	(12) Destination <u>222 S LALS</u>	(13) Sender Name (Sign and PRINT) <u>James Sickels</u> <u>JAMES SICKELS</u>	(14) Date/Time <u>5-8-95</u> <u>10:40</u>	(15) Sender Comments
(17) Relinquished By (Sign and PRINT) <u>James Sickels</u>	(18) Received By (Sign and PRINT) <u>James Sickels</u>	(19) Date/Time <u>5-8-95</u> <u>10:40</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>James Sickels</u>	(22) Received By (Sign and PRINT) <u>N. Lapiers</u>	(23) Date/Time <u>5-8-95</u> <u>1100</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments	

(16) Seal Intact Upon Release? ☒ Yes ☐ No	(29) Seal Intact Upon Receipt? ☒ Yes ☐ No	(30) Seal Data Consistent with this Record? Shipment No. ☒ Yes ☐ No Cask Seal No. ☒ Yes ☐ No Sample No. ☒ Yes ☐ No
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WHC-SD-WM-DP-132, REV. 0

CORRESPONDENCE

Author: J P Sederburg at ~WHC140

Date: 6/13/95 4:24 PM

Priority: Normal

TO: John H Baldwin at ~WHC121

CC: Nicholas W (Nick) Kirch

CC: David A Turner at ~WHC117

CC: J P Sederburg

Subject: AUGER SAMPLES FROM TANK C-202.

WHC-SD-WM-DP-132, REV. 0

----- Message Contents -----

This memo is being transmitted to address the question:

What additional analyses need to be performed (if any) using the material that currently remains from recent auger sampling of tank 241-C-202?

Based upon the facts:

- o All of the C-Farm 200 series tanks (C-201, 2, 3, and 4) contain waste from "HOT-SEMIWORKS" sent in the late 1950s to mid 1960s,
- o Most of these four tanks show exothermic behavior (some more than others),
- o Most of these tanks have a tendency to be fairly dry (except C-204),
- o The in-tank-photos look similar for all four tanks, and
- o Insufficient material exists from tank C-202.

I recommend that:

- 1) You proceed as planned with issuing the 45 Day Report for tank C-202, and

- 2) No further analyses of the waste from tank C-202 be performed,

until more thought can be put into questions like:

What will the added data tell us that we don't already know?

How much will the added analyses cost us vs. the benefit gained from the data?

What will we do different if we have the added data?

If you have any questions about this memo please call me at 373-3327.

Author: Andrew D Rice at ~WHC168

Date: 5/26/95 1:01 PM

Priority: Normal

Subject: Notification: Tank C-202 DSC/TGA Limits Exceeded

WHC-SD-WM-DP-132, REV. 0

----- Message Contents -----

This notification is in accordance with WHC-SD-WM-TP-305 "Tank 241-C-202 Tank Characterization Plan", which requires written notification when sample results exceed the limits specified in the above document. Verbal notification was made to the East Area Tank Farms Shift Manager on 3/25/95.

95-AUG-026

Sample ID	Analysis	Result	Duplicate	Triplicate	Limit
S95T000902	TGA(%)	5.39	4.88	n/a	<17
S95T000902	DSC(J/g dry)	>539	>188	>320	>481

95-AUG-027

Sample ID	Analysis	Result	Duplicate	Triplicate	Limit
S95T000904	TGA(%)	6.96	6.49	n/a	<17
S95T000904	DSC(J/g dry)	>624	>227	>317	>481

These samples were run under a nitrogen purge. The DSC results are listed as "greater than" because the instrument did not return to the baseline at the end of the analysis.

Questions concerning these samples should be directed to AD Rice, 373-5878.

WHC-SD-WM-DP-132, REV. 0

PHOTOGRAPHS

C-202

95-AUG-026

5/8/95

WHC-SD-WM-DP-132, REV. 0

HOT CELL LOGBOOK

NOTEBOOK/LOGBOOK UNCLASSIFIED COVERSHEET			
SECTION I CONTROLLED COPY MAR 22 1995 RETURN TO UNCLASSIFIED DOCUMENT CONTROL	Notebook No. <u>WHC-M-1140</u> <u>1</u>		
	Date of Issue <u>3-22-95</u>		Copy <u>1</u>
	Title <u>241-C-202</u>		
Author <u>RK Fuller</u>	If continued from another notebook give the notebook number		
This is a Controlled Notebook. The assigned custodian is responsible for this book. When the book is completed, contact your Records Management Specialist for a Retention Schedule. Complete Section II of this form and return the Notebook to Unclassified Document Control, A4-18.			
SECTION II			
Responsible Custodian	Payroll No.	MSIN	Date Assigned
<u>RK Fuller</u>	<u>[REDACTED]</u>	<u>T6-31</u>	<u>MAR 22 1995</u>
SECTION II			
Complete this section prior to returning notebook to Unclassified Document Control, A4-18			
Abstract:	(Give brief description of notebook contents)		
Period Covered:	(Inclusive dates - Month/Day/Year) _____		
Certification Statement:	This notebook does ☐ does not ☐ contain any Quality Assurance Record Material (as described in Section 9.0 of WHC-CM-3-5) and has been verified to be a complete and legible record.		
Custodian's Signature and Date			
Retention Schedule:	Specialist Concurrence Name	Custodian's Manager's Name	

pages 2 through 5 have been intentionally left blank.

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200408TF (2) Sample Number 95-AUG-026 (3) Supervisor JAMES SICKELS
 (4) Tank C-202 (5) Riser 7EAST (6) Cask Serial Number 1001C

COPY

6
 5-5-95
 C-202 95-AUG-026 Riser #7 EAST

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description
Over Top Dose Rate	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	A. Work Package Number <u>ES-95-00007/0</u>
Side Dose Rate	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	B. Cask Seal Number <u>1032</u>
Bottom Dose Rate	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	<u>4.5 mR/hr</u>	C. Date and Time Sample Removed from Tank <u>5-5-95 11:00 AM</u>
Smearable Contamination	<u>4.20 dpm/100cm²</u> (Alpha)	<u>4.20 dpm/100cm²</u> (Alpha)	<u>4.20 dpm/100cm²</u> (Alpha)	D. Expected Liquid Content <u>10%</u>
	<u>4.1K dpm/100cm²</u> (Beta-Gamma)	<u>4.1K dpm/100cm²</u> (Beta-Gamma)	<u>4.1K dpm/100cm²</u> (Beta-Gamma)	E. Expected Solid Content <u>90%</u>
RCT*	<u>James Sickels</u> (Signature)	RCT*	<u>CBew</u> (Signature)	F. Dose Rate Through Drill String <u>3.5 mR/hr</u>
				G. Expected Sample Length <u>8"</u>

(9) INFORMATION (Include statement of laboratory tests to be performed.)

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin <u>C-202 R#7</u>	(12) Destination <u>2225 LABS</u>	(13) Sender Name (Sign and PRINT) <u>James Sickels</u>	(14) Date/Time <u>5-8-95 10:40</u>	(15) Sender Comments
(17) Relinquished By (Sign and PRINT) <u>James Sickels</u>	(18) Received By (Sign and PRINT) <u>James Sickels</u>	(19) Date/Time <u>5-8-95 10:40</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>James Sickels</u>	(22) Received By (Sign and PRINT) <u>N LAPIERS</u>	(23) Date/Time <u>5-8-95 1100</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments	

(16) Seal Intact Upon Release? ☒ Yes ☐ No	(29) Seal Intact Upon Receipt? ☒ Yes ☐ No	(30) Seal Data Consistent with this Record?	
		Shipment No. ☒ Yes ☐ No	Cask Seal No. ☒ Yes ☐ No
			Sample No. ☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

C-202 95-AUG-026 Riser # 7 EAST 05-09-95

20g = 19.99 500g = 499.98 (Balance checks)

P.C. ANDREW RICE
 LABCORE # S95T000900
 WORKLIST # 1364

TAPE #1-A C-FARM

Hot cell Temperature & Humidity

Temperature = 79.3°F Humidity 37%

EXTRUSION Description:

VERY DRY - SMALL AMOUNT OF SAMPLE ON TIP OF SAMPLER

FLUTES 1-16 WERE CLEAN:

NO MATERIAL ADHERE TO AUGER.

COLOR OF SOLIDS RANGE FROM LIGHT BROWN TO BLACK WITH
 YELLOW SOLIDS MIXED IN.

SOLIDS RANGED FROM A FINE POWDER TO 1cm (IN CHUNKS).

SAMPLE DESCRIPTION (SOLIDS)

C-202-95-AUG-026 Riser # 7 EAST

VIAL # 7172

VIAL SIZE 40ml

FINAL WT. ~~31.34~~ 31.34 grams 8/16/95

INITIAL WT. 25.19 grams

NET WT. 6.35 grams

6.35 8/16/95

C-202- 75-AUG-026 Riser #7 EAST

05-09-95

C-202 95-AUG-026 Riser #7 EAST

05-09-95

C-202

95-AUG-026

5/9/95

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200 W OR TF (2) Sample Number 95-AUG-27 (3) Supervisor JAMES SICKELS
 (4) Tank C-202 (5) Riser 7 WEST (6) Cask Serial Number 1008C

COPY

Radiation Survey Data:		(7) FIELD	(31) LABORATORY	(8) Shipment Description	
Over Top Dose Rate	<u>4.5 mR/hr</u>	<u>20.5 mR/hr</u>		A. Work Package Number	<u>ES-95-00007/0</u>
Side Dose Rate	<u>4.5 mR/hr</u>	<u>20.5 mR/hr</u>		B. Cask Seal Number	<u>1033</u>
Bottom Dose Rate	<u>4.5 mR/hr</u>	<u>20.5 mR/hr</u>		C. Date and Time Sample	<u>5-5-95 11:45 AM</u>
Smearable Contamination	<u>220 Dpm/100cm²</u> (Alpha)	<u>220 Dpm/100cm²</u> (Alpha)		Removed from Tank	<u>10%</u>
	<u>21K Dpm/100cm²</u> (Beta-Gamma)	<u>21K Dpm/100cm²</u> (Beta-Gamma)		D. Expected Liquid Content	<u>90%</u>
RCT*	<u>James Sickels</u> (Signature)	RCT*	<u>CRB</u> (Signature)	E. Expected Solid Content	<u>2.5 mR/hr</u>
				F. Dose Rate Through Drill String	<u>8"</u>
				G. Expected Sample Length	

(9) INFORMATION (Include statement of laboratory tests to be performed.)

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin <u>C-202</u>	(12) Destination <u>222 SLALS</u>	(13) Sender Name (Sign and PRINT) <u>James Sickels</u>	(14) Date/Time <u>5-8-95 10:40</u>	(15) Sender Comments
(17) Relinquished By (Sign and PRINT) <u>James Sickels</u>	(18) Received By (Sign and PRINT) <u>Chris E. Boyd</u>	(19) Date/Time <u>5-8-95 10:40</u>	(20) Receiver Comments	
(21) Relinquished By (Sign and PRINT) <u>Chris E. Boyd</u>	(22) Received By (Sign and PRINT) <u>N. LAPIERS</u>	(23) Date/Time <u>5-8-95 1100</u>	(24) Receiver Comments	
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments	
(16) Seal Intact Upon Release? ☒ Yes ☐ No		(29) Seal Intact Upon Receipt? ☒ Yes ☐ No		(30) Seal Data Consistent with this Record? ☒ Yes ☐ No
Shipment No. ☒ Yes ☐ No		Cask Seal No. ☒ Yes ☐ No		Sample No. ☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

C-202 95-AUG-027 Riser # 7 WEST 0509-95

C-202 95-AUG-027 Riser #7 WEST 05-09-95

Balance checks 20g = 19.99 500g = 499.98

P.C. ANDREW RICE

LABCORE # S95T000901

WORKLIST # 1365

TAPE #1-A C-FARM

Hot cell Temperature 79.3°F Humidity 37%

Extrusion Description:

Sample was Brown with yellow solids mixed.

Small amount of solids poured out of tip of Auger
before tip was removed.

Solids very dry.

No sample adhered to auger.

Collected sample into (ONE) 20ml vial.

Sample Description (Solids)

C-202 95-AUG-027 Riser #7 WEST

Solids:

Vial # 6978

Vial size 20ml

Final WT. 29.51 grams

Initial WT. 27.32 grams

Net WT. 2.19 grams

C-202 95-AUG-027 Riser # 7 WEST 05-09-95

C-202 95-AUG-027 Riser # 7 WEST 05-09-95
(photography)

C-202 95-AUG-027

May 9, 1995

HOMOGENIZATION & SUBSAMPLING

C202 95 AUG-026 Riser 7 east

- * Note: Vial # 7172 was used in process.
- Subsampled From Vial # 7172 into Vial # 6980, Collected 5.39 grams, Note: Pulverized sample with mortar and pestle; Rock was found in sample and disposed of.
- No Archive sample collected, Vial # 6980 submitted to Lab.

C202 95 AUG-027 Riser 7 West

- Pulverized sample in parent Jar, Parent Jar to be submitted to Lab: DSC, TGA, AT, Fusion.
- Note: No Archive sample collected.

John B. Brown
5-9-95

WHC-SD-WM-DP-132, REV. 0

SAMPLE HANDLING

LABCORE Data Entry Template for Worklist# 1364

Analyst: EC Instrument: BA000 Book # NA

Method: LO-160-103 Rev/Mod A-7

Worklist Comment: C-202 95-AUG-026 Riser 7 East Extrusion

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20g</u>	<u>19.99</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500g</u>	<u>499.98</u>	<u>N/A</u>	
95000070	C-202	3 SAMPLE	S95T000900	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
95000070	C-202	4 SAMPLE	S95T000900	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
95000070	C-202	5 SAMPLE	S95T000900	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
95000070	C-202	6 SAMPLE	S95T000900	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
95000070	C-202	7 SAMPLE	S95T000900	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
95000070	C-202	8 SAMPLE	S95T000900	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>WHC-N-1140</u>		
95000070	C-202	9 SAMPLE	S95T000900	0	SLDVOL01	SOLID	<u>N/A</u>	<u>6</u>		mL
95000070	C-202	10 SAMPLE	S95T000900	0	SLDWT-01	SOLID	<u>N/A</u>	<u>6</u>		g
95000070	C-202	11 SAMPLE	S95T000900	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 1364

EC 5-10-95
Analyst Signature Date

EC 5-10-95
Analyst Signature Date

Data Entry Comments:

*Reviewed by PK Fuller
5/10/95*

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1365

Analyst: EC Instrument: BA000 Book # NA

Method: LO-160-103 Rev/Mod A-7

Worklist Comment: C-202 95-AUG-27 Riser 7 West Extrusion

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20g</u>	<u>17.99</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500g</u>	<u>477.98</u>	<u>N/A</u>	
95000071	C-202	3 SAMPLE	S95T000901	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
95000071	C-202	4 SAMPLE	S95T000901	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
95000071	C-202	5 SAMPLE	S95T000901	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
95000071	C-202	6 SAMPLE	S95T000901	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
95000071	C-202	7 SAMPLE	S95T000901	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
95000071	C-202	8 SAMPLE	S95T000901	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>WIK-N-1140</u>		
95000071	C-202	9 SAMPLE	S95T000901	0	SLDVOL01	SOLID	<u>N/A</u>	<u>2</u>		mL
95000071	C-202	10 SAMPLE	S95T000901	0	SLDWT-01	SOLID	<u>N/A</u>	<u>2</u>		g
95000071	C-202	11 SAMPLE	S95T000901	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 1365

EC 5-10-95 EC
Analyst Signature Date

EC 5-10-95 EC
Analyst Signature Date

Data Entry Comments:

Reviewed by
R.K. 9/11/95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WHC-SD-WM-DP-132, REV. 0

SAMPLE PREPARATION

LABCORE Data Entry Template for Worklist# 1380

Analyst: QAM Instrument: FUS01 AL11006 Book # N/A

Method: LA-549-141 Rev/Mod C-3

Worklist Comment: C-202 FUSION - 902->903, 904->905; USE 0.25G->250ML ONLY

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	<u>250ml</u>		<u>N/A</u>	g/L
95000070	C-202	2 SAMPLE	S95T000903	0 F	FUSION01	SOLID	<u>N/A</u>	<u>1.0768</u>		g/L
		<u>-2692g -> 250ml</u>								
95000070	C-202	3 DUP	S95T000903	0 F	FUSION01	SOLID	<u>1.0768</u>	<u>1.0604</u>	<u>N/A</u>	g/L
		<u>-2651g -> 250ml</u>								
95000071	C-202	4 SAMPLE	S95T000905	0 F	FUSION01	SOLID	<u>N/A</u>	<u>.9816</u>		g/L
		<u>-2454g -> 250ml</u>								
95000071	C-202	5 DUP	S95T000905	0 F	FUSION01	SOLID	<u>.9816</u>	<u>1.0256</u>	<u>N/A</u>	g/L
		<u>-2564g -> 250ml</u>								

Final page for worklist # 1380

QAMurphy 5-26-95
Analyst Signature Date
DATA ENTERED

Bethann Griffin II 6-7-95
Analyst Signature Date

Data Entry Comments:

20ml HCl Samples & dups have 20% solids. Solids are
a rust brown. Clear liquid. BGF
Dose rate was 400mrad/hr HPT was Sig Chander. 6-7-95

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.

WHC-SD-WM-DP-132, REV. 0

PHYSICAL ANALYSES

LABCORE Data Entry Template for Worklist# 1377

Analyst: ADP Instrument: DSC0 1 Book # 12N14-A

Method: LA-514-113 Rev/Mod B-1

Worklist Comment: Please run C-202 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	<u>28.45</u>	<u>28.8</u>	<u>N/A</u>	Joules/g
95000070	C-202	2 SAMPLE	S95T000902	0	DSC-01	SOLID	<u>N/A</u>	<u>>511.2</u>		Joules/g
95000070	C-202	3 DUP	S95T000902	0	DSC-01	SOLID	<u>>511.2</u>	<u>>178.7</u>	<u>N/A</u>	Joules/g
95000070	C-202	4 TRIPL	S95T000902	0	DSC-01	SOLID	<u>>511.2</u>	<u>>303.9</u>	<u>N/A</u>	Joules/g
95000071	C-202	5 SAMPLE	S95T000904	0	DSC-01	SOLID	<u>N/A</u>	<u>>581.8</u>		Joules/g
95000071	C-202	6 DUP	S95T000904	0	DSC-01	SOLID	<u>>581.8</u>	<u>>212.0</u>	<u>N/A</u>	Joules/g
		7 STD			DSC-01	SOLID	<u>28.45</u>	<u>28.5</u>	<u>N/A</u>	Joules/g
95000071	C-202	8 TRIPL	S95T000904	0	DSC-01	SOLID	<u>>581.8</u>	<u>296.1</u> <u>298.3</u>	<u>N/A</u>	Joules/g

6/15/95
BOX

Final page for worklist # 1377

See attached for signatures
Analyst Signature _____ Date _____

L. Jones
Analyst Signature _____

5-24-95
Date _____

Verified by Blandina Valenzuela 5/25/95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1377

Analyst: ASP Instrument: DSC0 Book # 12N141A

Method: LA-514-113 Rev/Mod B1

Worklist Comment: Please run C-202 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
95000070	C-202	2 SAMPLE	S95T000902	0	DSC-01	SOLID	N/A			Joules/g
95000070	C-202	3 DUP	S95T000902	0	DSC-01	SOLID			N/A	Joules/g
95000071	C-202	4 SAMPLE	S95T000904	0	DSC-01	SOLID	N/A			Joules/g
95000071	C-202	5 DUP	S95T000904	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 1377

Analyst Signature

5-22-95
Date

Analyst Signature

Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 37 TO 44.

DSC STD 12N14-A

6.748 mg

Rate: 10.0 °C/min

File: 00063.001

DSC METTLER

21-May-95

Ident: 0.0

222-S Laboratory

exo

10. mW

Integration
Delta H 194 mJ
28.8 J/g
Peak 158.7°C
-13.7 mW

120.

140.

160.

180. °C

Anthony Kurator
5-21-95

WHC-SD-WM-DP-132, REV. 0

S95T000902 SAM N2
 11.705 mg
 Rate: 10.0 °C/min
 File: 00064.001 DSC METTLER 21-May-95
 Ident: 0.0 222-S Laboratory

S95T000902 DUP N2

16.716 mg

Rate: 10.0 °C/min

File: 00065.001

DSC METTLER

21-May-95

Ident: 0.0

222-S Laboratory

39

exo>

20. mW

Integration

Delta H 1110 mJ

66.4 J/g

Peak 117.0°C

-3.3 mW

Integration

Delta H 2987 mJ

178.7 J/g

Peak 366.1°C

5.5 mW

100.

200.

300.

400.

°C

S95T000902 TRIPL N2

12.882 mg

Rate: 10.0 °C/min

File: 00066.001

DSC METTLER

21-May-95

Ident: 0.0

222-S Laboratory

VOXS

40

20. mW

Integration

Delta H 1037 mJ

80.5 J/g

Peak 115.1 °C

-2.6 mW

Integration

Delta H 3915 mJ

303.9 J/g

Peak 362.2 °C

5.3 mW

100.

200.

300.

400.

°C

S95T000904 SAM N2
 12.691 mg
 Rate: 10.0 °C/min
 File: 00067.001 DSC METTLER 21-May-95
 Ident: 0.0 222-S Laboratory

S95T000904 (DUP) N2
 14.867 mg
 Rate: 10.0 °C/min
 File: 00068.001 DSC METTLER 21-May-95
 Ident: 0.0 222-S Laboratory

DSC STD 12N14-A N2

6.748 mg

Rate: 10.0 °C/min

File: 00073.001

DSC METTLER

22-May-95

Ident: 0.0

222-S Laboratory

exo >

5. mW

Integration

Delta H 192 mJ

28.5 J/g

Peak 158.6 °C

-13.0 mW

Blandina Valenzuela for ADP

5/23/95

120.

140.

160.

180.

°C

S94T000904 TRP N2
16.650 mg
Rate: 10.0 °C/min
File: 00074.001 DSC METTLER 22-May-95
Ident: 0.0 222-S Laboratory

LABCORE Data Entry Template for Worklist# 1517

Analyst: BDV Instrument: DSC0 1 Book # —

Method: LA-514-113 Rev/Mod —

Worklist Comment: Calculated dry DSC for C-202. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
95000070	C-202	1 SAMPLE	S95T000902	0	DSC-02	SOLID	<u>N/A</u>	<u>>548</u>		Joules/g Dry
95000070	C-202	2 DUP	S95T000902	0	DSC-02	SOLID	<u>>548</u>	<u>>192</u>	<u>N/A</u>	Joules/g Dry
95000070	C-202	3 TRIPL	S95T000902	0	DSC-02	SOLID	<u>>548</u>	<u>>326</u>	<u>N/A</u>	Joules/g Dry
95000071	C-202	4 SAMPLE	S95T000904	0	DSC-02	SOLID	<u>N/A</u>	<u>>613</u>		Joules/g Dry
95000071	C-202	5 DUP	S95T000904	0	DSC-02	SOLID	<u>>613</u>	<u>>223</u>	<u>N/A</u>	Joules/g Dry
95000071	C-202	6 TRIPL	S95T000904	0	DSC-02	SOLID	<u>>613</u>	<u>>312</u>	<u>N/A</u>	Joules/g Dry

Data entered + verified by

Final page for worklist # 1517

Blandina Valenzuela 6/13/95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

[illegible]

LABCORE Data Entry Template for Worklist# 1373

Analyst: SAF Instrument: TGA0 1 Book # 42 N8-17

Method: LA-560-112 Rev/Mod A-2

Worklist Comment: Please run C-202 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.19</u>	<u>58.78</u>	<u>N/A</u>	%
95000071	C-202	2 SAMPLE	S95T000904	0	TGA-01	SOLID	<u>N/A</u>	<u>6.96</u>		%
95000071	C-202	3 DUP	S95T000904	0	TGA-01	SOLID	<u>6.96</u>	<u>6.49</u>	<u>N/A</u>	%
95000070	C-202	4 SAMPLE	S95T000902	0	TGA-01	SOLID	<u>N/A</u>	<u>5.39</u>		%
95000070	C-202	5 DUP	S95T000902	0	TGA-01	SOLID	<u>5.39</u>	<u>4.88</u>	<u>N/A</u>	%

Final page for worklist # 1373

Susie M. Fulton 5-23-95
Analyst Signature Date

[Signature] 5-24-95
Analyst Signature Date

Verified by Blandina Valenzuela 5/25/95

Data Entry Comments:

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 48 TO 52.

TGA STD 42N8-A
14.872 mg
Rate: 10.0 °C/min
File: 00076.001
Ident: 0.0
TG METTLER 23-May-95
222-S Laboratory

Step Analysis
Height -8.74 mg
-58.78 %
Resid. 6.13 mg
41.22 %
Dpeak 82.5°C

Lucie M. Fulton 5-23-95

File: 00078.001 TG MLTTHH 23-May-95
 Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

5051000304 1P
 11.186 mg

990 00090 (LWP) 12

15.869 mg

Rate: 10.0 °C/min

File: 00079.001 TG METTLER 23-May-95

Ident: 0.0

222-F Laboratory

50

mg

S95T000902 (DUP) N2
 29.104 mg
 Rate: 10.0 °C/min
 File: 00081.001 TG METTLER 23-May-95
 Ident: 0.0 222-S Laboratory

WHC-SD-WM-DP-132, REV. 0

RADIOCHEMICAL ANALYSES

LABCORE Data Entry Template for Worklist# 1546

Analyst: AKL Instrument: AB00 15 Book # 115452

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	. 87			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000070	C-202	4	SAMPLE	S95T000903	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000070	C-202	4	SAMPLE	S95T000903	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000070	C-202	5	DUP	S95T000903	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000070	C-202	5	DUP	S95T000903	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000070	C-202	6	SPK	S95T000903	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000071	C-202	7	SAMPLE	S95T000905	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000071	C-202	7	SAMPLE	S95T000905	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000071	C-202	8	DUP	S95T000905	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000071	C-202	8	DUP	S95T000905	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000071	C-202	9	SPK	S95T000905	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

Final page for worklist # 1546

A Lewis 6-12-95

Shaw LULL 6-14-95

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 1546

GROUP	PROJECT	S TYPE	SAMPLE#	R A -----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
Analyst Signature		Date			Analyst Signature			Date	

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
R = Replicate Number, A = Aliquot Code.

AT : LA-508-101 (D-2)

BATCH / WORK-LIST DATA INPUT

	Standard	Blank	Sample 1	Duplicate 1	Sample 2	Duplicate 2	Sample 3	Spike 1	Spike 2	Spike Dup 1	End Std
Work List #	1546	1546	1546	1546	1546	1546	1546	1546	1546	1546	1546
AT or TB	AT	AT	AT	AT	AT	AT	AT	AT	AT	AT	AT
Sample #	WRKLIST#1546	S95T903	S95T903	S95T903	S95T905	S95T905	S95T905	S95T903	S95T905	S95T903	S95T903
Analyst (initials & last name)	AK LEWIS	AK LEWIS	AK LEWIS	AK LEWIS	AK LEWIS	AK LEWIS	AK LEWIS	AK LEWIS	AK LEWIS	AK LEWIS	AK LEWIS
Date (m/d/y)	06/12/95	06/12/95	06/12/95	06/12/95	06/12/95	06/12/95	06/12/95	06/12/95	06/12/95	06/12/95	06/12/95
Time (h:m)	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM	12:15 PM
Standard Book Number	115B52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	115B52
Detector #	15	15	15	15	15	15	15	15	15	15	15
Dish Size (1, 2, or 5)	2	2	2	2	2	2	2	2	2	2	2
Matrix (LIQUID or SOLID)	LIQUID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	LIQUID
Sample Volume in mL	10.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
Dilution Factor	1	101	101	101	101	101	101	101	101	101	101
Digest Factor (DDF for Liquids) (D g/L for Solids)	1	1.0768	1.0768	1.0604	0.9816	1.0256	1.0768	0.9816	1.0768	0.9816	1.0768
Gross Counts	4007	10	2611	2793	3274	2629	58497	53027	52656	55672	52656
Replicate Gross Counts	3897	6	2805	2510	3003	2815	52656	55672	52656	55672	52656
Time Counted in minutes	30	30	30	30	30	30	30	30	30	30	30
Background in cpm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Spike Volume in mL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.1	0.1	0.1	N/A
Spike Dilution Factor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	1	1	N/A
Spike Book #	N/A	N/A	N/A	N/A	N/A	N/A	N/A	94B43	94B43	94B43	N/A
Spike Value in µCi/L (Decay Corrected)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.6397E+01	3.6397E+01	ERR	N/A

PRINT STD-BLK-J&M

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RETURN TO SELECTION MENU

RETURN

PRINT DATA INPUT

PRINT DATA INPUT

WHC-SD-WM-DP-132, REV. 0

Form Completed By:	Signature: <i>Sharon L. Upfal</i>	Date: 13-Jun-95
Chemist Approval:	Signature: <i>AK LEWIS</i>	Date: 6/13/95

508101WB Revision 1.0

WHC-SD-WM-DP-132, REV. 0

AT : LA-508-101 (D-2

STANDARD

		STANDARD	REPLICATE
Type	DETECTOR NUMBER	15	15
STANDARD	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	4007	3897
1546	COUNT TIME in MINUTES (CT)	30	30
AT or IB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	10.000	10.000
Test Code	DILUTION FACTOR (DF)	1	1
@AB-01	STANDARD BOOK NUMBER	115B52	115B52
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	133.267	129.600
Sample #	Concentration in $\mu\text{Ci/L}$ =	2.52E-02	
WRKLST#1546	Replicate Concentration in $\mu\text{Ci/L}$ =	2.45E-02	
Instrument Code			
WB26872	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$ =	2.4876E-02	
Analyst			
AK LEWIS	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/L}$ = $R_s \cdot 1000\text{mL/L} \cdot DF / (EFF \cdot SS \cdot 2220000\text{dpm}/\mu\text{Ci})$		
06/12/95	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L}$ / 1000mL/L		
Time	Relative Counting Error = $[(The Square Root of TC + BKG \cdot CT) / (TC - BKG \cdot CT)] \cdot 1.96 \cdot 100$		
12:15 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$	=	2.49E-05	DETECTION LEVEL
			1.05E-07 $\mu\text{Ci/mL}$
RELATIVE COUNTING ERROR	=	3.2%	

Data Entry by: <i>Sharon L. Hally</i>	Date: 06/13/95
Approved by: <i>[Signature]</i>	Date: 6/13/95
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AT : LA-508-101 (D-2)

SOLIDS

		BLANK	REPLICATE
Type	DETECTOR NUMBER	15	15
BLANK	DISH SIZE (1 , 2 , or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	10	6
1546	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	2.000	2.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.0768	1.0768
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.273	0.233
Sample #	Blank Concentration in $\mu\text{Ci/g}$	< 2.42E-02	
S95T903	Replicate Concentration in $\mu\text{Ci/g}$	< 2.07E-02	
Instrument Code			
WB26872	Maximum Concentration in $\mu\text{Ci/g}$	< 2.4238E-02	
Analyst			
AK LEWIS	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s \cdot 1000\text{mL/L} \cdot DF / (EFF \cdot SS \cdot \text{Dg/L} \cdot 2220000\text{dpm}/\mu\text{Ci})$		
06/12/95			
Time	Relative Counting Error = $[(The Square Root of TC + BKG \cdot CT) / (TC - BKG \cdot CT)] \cdot 1.96 \cdot 100$		
12:15 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$ (Maximum)	=	< 2.42E-02	DETECTION LEVEL
LESS THAN Value was Determined from Rmax.				4.95E-02
RELATIVE COUNTING ERROR		=	500.0%	$\mu\text{Ci/g}$

Data Entry by: <i>Sharon L. Udey</i>	Date: 06/13/95
Approved by: <i>[Signature]</i>	Date: 6/13/95
Form WB Rev. 1.0	508-1nn_WB & 548-10n_WB
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WHC-SD-WM-DP-132, REV. 0

AT : LA-508-101 (D-2) SOLIDS		SAMPLE 1	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE 1	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	2611	2805
1546	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	2.000	2.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.0768	1.0768
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	86.733	93.200
Sample #	Blank Concentration in $\mu\text{Ci/g}$	7.70E+00	
S95T903	Replicate Concentration in $\mu\text{Ci/g}$	8.27E+00	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/g}$	7.9856E+00	
Analyst			
AK LEWIS	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s \cdot 1000\text{mL/L} \cdot DF / (EFF \cdot SS \cdot Dg/L \cdot 2220000\text{dpm}/\mu\text{Ci})$		
06/12/95			
Time	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG \cdot CT) / (TC - BKG \cdot CT)] \cdot 1.96 \cdot 100$		
12:15 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$ (Average)	=	7.99E+00	DETECTION LEVEL
				4.95E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		=	3.9%	

Data Entry by: <i>Sharon L. Hefner</i>	Date: 06/13/95
Approved by: <i>[Signature]</i>	Date: 6/13/95

Form 508101WB Rev. 1.0

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WHC-SD-WM-DP-132, REV. 0

AT : LA-508-101 (D-2)

LIQUID/SOLIDS

		DUPLICATE 1	REPLICATE
Type	DETECTOR NUMBER	15	15
DUPLICATE 1	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	2793	2510
1546	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	2.000	2.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.0604	1.0604
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	92.800	83.367
Sample #	Blank Concentration in $\mu\text{Ci/g}$	8.36E+00	
S95T903	Replicate Concentration in $\mu\text{Ci/g}$	7.51E+00	
Instrument ID			
WB26872	Average Concentration in $\mu\text{Ci/g}$	7.9394E+00	
Analyst			
AK LEWIS	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
06/12/95			
Time	Relative Counting Error = $[(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
12:15 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	7.94E+00	DETECTION LEVEL
RELATIVE PERCENT DIFFERENCE (RPD)	=	0.6%	
RELATIVE COUNTING ERROR	=	3.9%	5.02E-02 $\mu\text{Ci/g}$

Data Entry by: <i>Sharon A. Hulse</i>	Date: 06/13/95
Approved by: <i>[Signature]</i>	Date: 6/13/95

Form 508101WB Rev. 1.0

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AT : LA-508-101 (D-2) SPIKED SAMPLE

		SPIKE 1	REPLICATE
Type	DETECTOR NUMBER	15	15
SPIKE 1	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	58497	52656
1546	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	2.000	2.000
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@ab-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.0768	1.0768
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Sample #	SPIKE BOOK NUMBER	94B43	94B43
S95T903	SPIKE VALUE in $\mu\text{Ci/L}$ (SVal)	3.6397E+01	3.6397E+01
Instrument Code	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.238	0.238
WB26872	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	1.73E+02	1.56E+02
Analyst	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	7.9856E+00	
AK LEWIS			
Date			
06/12/95	R_s (Sample Count Rate) = (TC / CT) - BKG		
Time	SAMPLE + SPIKE $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
12:15 PM	PERCENT SPIKE RECOVERY = $((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/SVol)/(DF/SS/Dg/L)))/(SVal)*100$		

AVG. PERCENT SPIKE RECOVERY = 91.6%

Data Entry by: <i>Sharon L. Hight</i>	Date: 13-Jun-95
Approved by: <i>AK LEWIS</i>	Date: 6/13/95

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WHC-SD-WM-DP-132, REV. 0

AT : LA-508-101 (D-2)

SOLIDS

		SAMPLE 2	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE 2	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	3274	3003
1546	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	2.000	2.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	0.9816	0.9816
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	108.833	99.800
Sample #	Blank Concentration in $\mu\text{Ci/g}$	1.06E+01	
S95T905	Replicate Concentration in $\mu\text{Ci/g}$	9.72E+00	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/g}$	1.0157E+01	
Analyst			
AK LEWIS	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
06/12/95			
Time	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
12:15 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$	(Average)	=	1.02E+01	DETECTION LEVEL
					5.43E-02 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR			=	3.6%	

Data Entry by: <i>Sharon L. Updegraff</i>	Date: 06/13/95
Approved by: <i>[Signature]</i>	Date: 6/13/95

Form 508101WB Rev. 1.0

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WHC-SD-WM-DP-132, REV. 0

AT : LA-508-101 (D-2)

SOLIDS

		DUPLICATE 2	REPLICATE
Type	DETECTOR NUMBER	15	15
DUPLICATE 2	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	2629	2815
1546	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE SIZE in mL (SS)	2.000	2.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.0256	1.0256
Matrix	EFFICIENCY FACTOR (EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	87.333	93.533
Sample #	Blank Concentration in $\mu\text{Ci/g}$	8.14E+00	
S95T905	Replicate Concentration in $\mu\text{Ci/g}$	8.72E+00	
Instrument Code			
WB26872	Average Concentration in $\mu\text{Ci/g}$	8.4278E+00	
Analyst			
AK LEWIS	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Date	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
06/12/95			
Time	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
12:15 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		

v RESULTS v

ALPHA TOTAL	in $\mu\text{Ci/g}$ (Average)	=	8.43E+00	DETECTION LEVEL
RELATIVE PERCENT DIFFERENCE	(RPD)	=	18.6%	
RELATIVE COUNTING ERROR		=	3.8%	5.19E-02 $\mu\text{Ci/g}$

Data Entry by: <i>Sharon L. Mayfield</i>	Date: 06/13/95
Approved by: <i>AK</i>	Date: 6/13/95
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WHC-SD-WM-DP-132, REV. 0

AT : LA-508-101 (D-2) SPIKED SAMPLE

		SPIKE 2	REPLICATE
Type	DETECTOR NUMBER	15	15
SPIKE 2	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	53027	55672
1546	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.3	0.3
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	2.000	2.000
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@ab-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	0.9816	0.9816
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Sample #	SPIKE BOOK NUMBER	94B43	94B43
S95T905	SPIKE VALUE in $\mu\text{Ci/L}$ (SVal)	3.6397E+01	3.6397E+01
Instrument Code	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.238	0.238
WB26872	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	1.72E+02	1.81E+02
Analyst	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	1.0157E+01	
AK LEWIS			
Date	Rs (Sample Count Rate) = (TC / CT) - BKG		
06/12/95	SAMPLE + SPIKE $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
Time	PERCENT SPIKE RECOVERY = (((S+S $\mu\text{Ci/g}$ - SAMPLE $\mu\text{Ci/g}$) * ((SDF/SVol)/(DF/SS/Dg/L)))/SVal)*10		
12:15 PM			

AVG. PERCENT SPIKE RECOVERY = 88.8%

Data Entry by: <i>Sharon J. Hulse</i>	Date: 13-Jun-95
Approved by: <i>[Signature]</i>	Date: 6/13/95

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