This document was too large to scan as a whole document, therefore it required breaking into smaller sections.

Document number: SD-WM-DP-074

Section 2 **of** 8

Title: 216 Day Final Report for Tank 241-SY-103 Push Mode Core 62

Date: 08-11-95 **Revision:** A000

Originator: A D Rice
Co: WHC

Recipient:
Co:

References: EDT-612158

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PART II

WHC-SD-WM-DP-074, REV. 0

ANALYTICAL SERVICES

POJECT: 90 DAY SECONDARY SAFETY SCREEN RESULTS
FOR TANK
241-SY-103, CORE 62

DATE: DECEMBER 20, 1995

54-7600-075

Hanford Operations and Engineering Contractor for the US Department of Energy

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NARRATIVE

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR TANK 241-SY-103 CORE 62

Summary

This is the 90 day report for SY-103, core 62, and contains results for the secondary safety screen analyses. Also included are the results of the lithium and bromide analyses. Sample S94T000127, a sample of the hydrostatic head fluid (HHF) used during sampling, was analyzed for Li and Br.

One core sample from tank SY-103, core 62, which was composed of fifteen (15) segments, was received by the 222-S laboratories. This core sample underwent Safety Screening Analysis (DSC, TGA, and Alpha Total) in accordance with references (1) (2) and (3) below. The lower half of segments 13 (S94T000091) and 14 (S94T000092) exceeded the DSC limit of 523 joules/g (dry). In accordance with (1) below, this prompted secondary analyses (Total Organic Carbon and CN) for these samples. The RSST analysis was not requested, and therefore was not performed.

Also included in this report are the results for Li and Br analyses. Analysis for Li is performed whenever hydrostatic head fluid (HHF) is used during sampling operations. The HHF is a solution of 0.3 M LiBr and purified water. The LiBr is added to test for HHF intrusion into the sample. If Li is detected at levels above the limit (100 ug/g) the sample is analyzed for bromide. The presence of both Li and Br in a sample indicates that HHF is present in the sample. Segment 15 of tank SY-103 appears to have been contaminated with HHF based on Li and Br results. The Li results for the solid (S94T000098) fraction of segment 15 exceeded the 100ug/g limit. The Li result on the liquid fraction was less than detectable. This could be due to the presence of phosphate in the sample. Lithium phosphate is relatively insoluble and may have been filtered out prior to analysis. A Br analysis was run on the liquid fraction of segment 15 to confirm the presence of HHF. Bromide was detected at a level consistent with the lithium result in the solid. Based on these results, the segment 15 sample suffered significant intrusion of HHF.

Analytical Results

Total Organic Carbon

The Total Organic Carbon (TOC) analysis was performed using LA-342-100. The results for both samples were below the notification limit of 30000 ugC/g. Difficulty was encountered with sample S94T000092. The large difference between sample and duplicate results was due to a lack of sample homogeneity, which was observed with previous analyses on this sample. TOC results also appear for sample S94T000028. This analysis was not required, but was performed on request of the project coordinator as a screening tool to check for the presence of organic material in the sample. The results were well below the notification limit.

Cyanide
The cyanide (CN) analysis was performed using LA-695-102. Both samples were well below the notification limit of 31000 ug/g. The difference between sample and duplicate results for sample S94T000092 was due to the lack of sample homogeneity, as mentioned above.

Lithium by ICP
The Lithium analysis was performed using LA-505-151. No analytical problems were noted. Two samples from segment 15 (S94T000098, S94T000113) exceeded the notification limit of 100 ug/g.

Bromide by IC
The bromide analysis was performed using LA-533-105. No analytical problems were noted.

Submitted By: A. D. Rice

Attachments 1) Summary Data Tables (16-Pages)

References:

(1) WHC-SD-WM-TP-197, REV. 0, "Tank 241-SY-103 Tank Characterization Plan," dated July 28, 1994, Westinghouse Hanford Company, Richland, WA 99352

(2) Internal Memo 7E720-94-127, "Clarifications to Tank 241-SY-103 Tank Characterization Plan," dated August 15, 1994, Westinghouse Hanford Company, Richland, WA. 99352

(3) Internal Memo 7E720-94-128, "Format I Reporting Requirement," dated August 15, 1994, Westinghouse Hanford Company, Richland, WA. 99352

SAMPLE DATA SUMMARY

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62
SEGMENT #: n/a

SEGMENT PORTION: Hydrostatic Head Fluid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000127			Bromide by Ion Chromatograph	ug/mL	n/a	1200.000	102.1	n/a	2.47E04	2.46E04	2.46e+04	0.41	n/a	1.000	n/a
S94T000127	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	n/a	1.93E3	1.93e+03	1.93e+03	0.00	n/a	1.010	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62

SEGMENT #: 1

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000005	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<1.00e-02	LDL	LDL	n/a	n/a	n/a	95.100	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000009	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.001	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62

SEGMENT #: 2

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000012	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<1.00e-02	LDL	LDL	n/a	n/a	n/a	52.100	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000016	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.001	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62
SEGMENT #: 3

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000021	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<2.10e-01	LDL	LDL	n/a	n/a	n/a	52.100	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000026	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.001	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62
SY-103

CORE NUMBER: 62
SEGMENT #: 4

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000028			TOC by Persulfate/Coulometry	ug/g	n/a	30000.000	90.67	106.000	4.53e+3	1.87E+3	3.20e+03	83.1	n/a	153.000	n/a
S94T000029	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<2.10e-01	LDL	LDL	n/a	n/a	n/a	51.700	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000033	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.001	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62
SY-103

CORE NUMBER: 62
SEGMENT #: 5

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000037	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<1.10e-01	LDL	LDL	n/a	n/a	n/a	63.500	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000041	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.002	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62
SY-103

CORE NUMBER: 62
SEGMENT #: 6

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000064	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<1.10e-01	LDL	LDL	n/a	n/a	n/a	62.100	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000109	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.002	LDL	LDL	n/a	n/a	n/a	6.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62
SY-103

CORE NUMBER: 62
SEGMENT #: 7

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000065	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<1.10e-01	LDL	LDL	n/a	n/a	n/a	60.700	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000110	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.001	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62
SY-103

CORE NUMBER: 62
SEGMENT #: 8

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000066	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<2.10e-02	LDL	LDL	n/a	n/a	n/a	81.100	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000111	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.001	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62
SEGMENT #: 9

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000067	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	0.210	LDL	LDL	n/a	n/a	n/a	60.400	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000112	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.001	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62
SY-103

CORE NUMBER: 62
SEGMENT #: 10

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000069	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<1.10e-01	LDL	LDL	n/a	n/a	n/a	63.800	n/a

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000068	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	0.210	LDL	LDL	n/a	n/a	n/a	57.500	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62
SEGMENT #: 11

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000119	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	2.443	LDL	LDL	n/a	n/a	n/a	64.100	n/a

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000094	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<2.10e-01	LDL	LDL	n/a	n/a	n/a	95.800	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62
SY-103

CORE NUMBER: 62
SEGMENT #: 12

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000120	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	2.443	LDL	LDL	n/a	n/a	n/a	64.700	n/a

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000095	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<1.10e-01	LDL	LDL	n/a	n/a	n/a	54.100	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62
SEGMENT #: 13

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000121	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	7.642	LDL	LDL	n/a	n/a	n/a	66.200	n/a

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000091			Cyanide Dry - Calculated w TGA	ug/g Dry Wt	n/a	31000.000	n/a	n/a	43.03	44.76	43.90	3.94	n/a	0.020	n/a
S94T000091			Cyanide by Microdist. & Spec.	ug/g	n/a	n/a	91.32	n/a	25.3	27.2	26.25	7.24	n/a	0.300	n/a
S94T000091			TOC by Persulfate/Coulometry	ug/g	n/a	30000.000	93.67	20.900	1.12e4	1.04e+4	1.08e+04	7.41	n/a	400.000	n/a
S94T000096	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<2.10e-01	LDL	LDL	n/a	n/a	n/a	96.100	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62

SEGMENT #: 14

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000122	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	7.642	LDL	LDL	n/a	n/a	n/a	60.400	n/a

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000092			Cyanide Dry - Calculated w TGA	ug/g Dry Wt	n/a	31000.000	n/a	n/a	153.2	161.5	157.3	5.28	n/a	0.020	n/a
S94T000092			Cyanide by Microdist. & Spec.	ug/g	n/a	n/a	105.6	n/a	9.10e+1	9.43e+1	9.27e+01	3.56	82.80	6.640	n/a
S94T000092			TOC by Persulfate/Coulometry	ug/g	n/a	30000.000	93.67	20.900	6.48e3	1.41e+4	1.03e+04	74.1	n/a	400.000	n/a
S94T000097	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<1.10e-01	LDL	LDL	n/a	n/a	n/a	58.600	n/a

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90 DAY SECONDARY SAFETY SCREEN RESULTS FOR SY-103 CORE 62

SY-103

CORE NUMBER: 62
SEGMENT #: 15

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000098	F		Lithium -ICP-Fusion	ug/g	n/a	100.000	n/a	<2.10e-01	2.08e3	1.81e3	1.94e+03	13.9	n/a	120.000	n/a

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err %
S94T000104			Bromide by Ion Chromatograph	ug/mL	n/a	1200.000	103.0	n/a	1.93E4	1.89E4	1.91e+04	2.09	98.60	1.000	n/a
S94T000113	D		Lithium-ICP-Acid Dil.	ug/mL	n/a	100.000	n/a	0.001	LDL	LDL	n/a	n/a	n/a	11.000	n/a

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PART III

WHC-SD-WM-DP-074, REV. 0

ANALYTICAL SERVICES

216 DAY SECONDARY SAFETY SCREEN RESULTS FOR TANK 241-SY-103, CORE 62

DATE: AUGUST 4, 1995

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NARRATIVE

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Summary

This is the final report for SY-103, core 62, and contains results for the solid stratum composites, the drainable liquid, and liner liquid samples.

One core sample from tank SY-103, core 62, which was composed of fifteen (15) segments, was received by the 222-S laboratories. This core sample underwent Safety Screening Analysis (DSC, TGA, and Alpha Total) and analysis for secondary tests in accordance with references (1) (2) and (3) below, and reported in reference (4) below. The lower half of segments 13 (S94T000091) and 14 (S94T000092) exceeded the DSC limit of 523 joules/g (dry). In accordance with (1) above, this prompted secondary analyses (Total Organic Carbon and CN) for these samples. The RSST analysis was not requested, and therefore was not performed. The analysis for Li and Br indicated that segment 15 of core 62 had suffered significant intrusion of hydrostatic head fluid. These results were reported in reference (5) below.

Sample Compositing

Following extrusion of the last segment from core 62, guidance was sought from the Tank Waste Safety Program for the assignment of solid sample stratum and for the compositing of drainable liquids. This guidance was provided in reference (6) below. Four solid sample stratum were identified. The first would be composed of segment 1 solids alone, and was identified as stratum A. Stratum B would be a composite of solids from segments 2 through 8, stratum C would be solids from segment 9 alone, and stratum D would be a composite of solids from segments 10 through 14. Segment 15 analyses were placed on hold.

The composition of the stratum B composite is shown below. Stratum B was composed of the "snow cone" ice solids. At extrusion segments 2 and 3 did not contain enough solid sample to provide for both safety screening and the composite sample, so they do not appear in the composite. A homogenized subsample of this composite was provided to the laboratory for analysis.

Stratum B Composite

Segment	Mass	Percent
4	18.7 g	23.0
5	24.2 g	29.8
6	17.3 g	21.3
7	10.9 g	13.4
8	10.1 g	12.5

The composition of the stratum D composite is shown below. Stratum D was composed of the red to brown solid sludge. Following sampling for safety screening analyses and archive requirements, the remaining contents of each

sample jar was used to create the composite. A homogenized subsample of this composite was provided to the laboratory for analysis.

Stratum D Composite

Segment	Mass	Percent
10	183 g	18.3
11	246 g	24.6
12	167 g	16.7
13	239 g	24.0
14	163 g	16.4

The drainable liquid (DL) was to be analyzed as follows. Segments 1 and 8 would be analyzed separately, and segments 2-7 would be composited for analysis. The Tank Waste Safety Program also requested additional analyses for the drainable liquid samples, and to perform the same suite of analyses on the liner liquid (LL) samples. This was communicated to the lab in a revision to the tank characterization plan (reference (7) below).

The drainable liquid composite sample was prepared by withdrawing 2.0 ml, without disturbing any settled solids, from the sample jars of segments 2-7. Each segment contributed equally (16.7 %) to the composite. The entire sample was provided to the laboratory for analysis.

While attempting to prepare a subsample of the segment 1 drainable liquid, the sample jar cracked at the base when grasped by the manipulator fingers. The vast majority of sample leaked out of the jar and was lost. The few remaining grams of sample were provided to the laboratory for analysis. A DSC, TGA, and acid preparation for ICP were performed, after which the sample was exhausted. No analyses associated with the water preparation or radiochemistry analyses were performed on this sample.

Analytical Results

Differential Scanning Calorimetry (DSC)

The DSC analysis was performed using LA-514-113 Rev. B-1. Results for stratum A and C solids were reported in the 45 day safety screening report (reference (4) below) as segment 1 lower half and segment 9 lower half respectively. For purposes of this final report, these samples are identified by stratum, not segment. Segments 1 and 9 drainable liquid results were first reported in reference (4) below, and reanalyzed for this report. The reanalysis results appear in this report, and are lower than the results in the 45 day report.

DSC analyses were performed on the composite stratum and drainable liquid samples. No analytical problems were noted, and the TCP precision and accuracy criteria were met in each case. The stratum "D" composite DSC results were basically in agreement with what was observed at the segment level (see tables in TGA section below). Stratum "B" estimated and observed

differed, most likely due to the heterogeneous behavior of the sample. The estimated average for the stratum and liquid composites is the grand average of the average values for each segment reported in the 45 day report (reference (4) below).

Thermal Gravimetric Analysis (TGA)
The TGA was performed using LA-560-112 Rev. A-2 (Mettler) and LA-514-114 Rev. B-0 (Perkin-Elmer). As with the DSC analysis, results for stratum A and C solids were reported in the 45 day safety screening report (reference (4) below) as segment 1 lower half and segment 9 lower half respectively. For purposes of this final report, these samples are identified by stratum, not segment. Segments 1 and 9 drainable liquid results were first reported in reference (4) below, and reanalyzed for this report. The reanalysis results appear in this report, and compare well with the 45 day report results.

Additional TGA analyses were performed on the composite stratum and all the drainable liquid samples. No analytical problems were noted, and the TCP precision and accuracy criteria were met in each case. The stratum B composite result was at the high end of the safety screen results reported for the individual segments. The stratum D composite result was lower than the individual segment safety screen results. This may be due to the additional handling and storage of the sample prior to analysis (see tables below). The stratum "B" result estimated from the individual segments is lower than the observed composite result. This would be due to the heterogeneous behavior of this sample. The estimated average for the stratum and liquid composites is the grand average of the average values for each segment reported in the 45 day report (reference (4) below).

DSC/TGA RESULTS FOR SOLID SAMPLES

	Stratum A	Stratum B	Stratum C	Stratum D
DSC (j/g)	118	169	174	159
DSC (estimated)	N/A	73	N/A	212
TGA (% moisture)	39.2	46.7	45.3	33.0
TGA (estimated)	N/A	26.4	N/A	41.9

DSC/TGA RESULTS FOR LIQUID SAMPLES

	DL Seg 1	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
DSC (j/g)	32	85	30	0	0
DSC (est)	N/A	179	N/A	N/A	N/A
TGA (%)	47	48	48	70	75
TGA (est)	N/A	48.9	N/A	N/A	N/A

pH
The pH analysis was performed using LA-212-103 Rev. B-3 for the solid samples, and LA-212-102 Rev. C-5 for the drainable and liner liquid samples. Both were analyzed direct (without preparation). No analytical problems were noted. The pH values for the stratum solids varied only slightly, ranging from 12.9 to 13.1. The drainable liquids pH was higher at 14.0, and the liner liquid samples had a pH of 13.6. There was insufficient sample to perform this analysis on the segment 1 drainable liquids, and the liner liquid samples could not be analyzed in duplicate for the same reason. All applicable quality control requirements were met. The raw data for worklist 985 (samples S95T000283 and S95T000285) could not be located and does not appear in this report.

OH
The OH analysis was performed using LA-211-102 Rev B-1, on a water digest preparation. The "snow cone" solids, as usual, presented the greatest challenge to analyze. The heterogeneous nature of this sample was evident in the large RPD of 78% between sample and duplicate preparations for the stratum B composite (S94T000279). The stratum A sample (S94T000267) also exceeded the 10% RPD limit, but to a much smaller degree. The RPD in this case was 13%. No analytical problems were noted for the stratum sludge solids or the drainable liquids. The TCP accuracy criteria was met in each case.

pH / OH CONCENTRATION SOLID SAMPLES

	Stratum A	Stratum B	Stratum C	Stratum D
pH	13.02	12.88	13.01	13.07
OH (ug/g)	15000	10500	20100	18400

pH / OH CONCENTRATION LIQUID SAMPLES

	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
pH	14.00	13.90	13.6	13.5
OH (ug/ml)	28600	29200	14600	12800

Cyanide (CN)
Cyanide results were reported reference (5) below. The raw data for these analyses has been supplied in this report.

Hexavalent Chromium (Cr VI)
The Cr VI analysis was performed using LA-265-101 Rev. A-2, on a water digest preparation. Stratum A and B Cr VI results were less than detectable. The results for Stratum C and D were slightly above the detection limit, at 63 ug/g and 151 ug/g average respectively. No analytical problems were noted, and the TCP precision and accuracy criteria were met in each case.

The drainable liquid and liner liquid samples contained only trace amounts of Cr VI, with values ranging from .0605 ug/ml to .110 ug/ml. Two samples (S95T00332 and S95T000335) exceeded the precision criteria of 20%. This was due to the very low concentration on the analyte, about two to three times the detection limit. The accuracy criteria was met in each case. For all the samples only a small portion of the total Cr concentration appears to be in the Cr VI form (see ICP results below).

Ion Chromatography (IC)
The IC analysis was performed using LA-533-105 Rev C-2, on a water digest preparation. Difficulty was encountered analyzing the "snow cone" ice solids from stratum A and B. The RPD values for these samples ranged from 4 to 60, substantiating the heterogeneous nature of these samples. See reference (4) below for a further discussion of these problems.

The solid sludge stratum (C and D), the drainable liquid (DL) and liner liquid (LL) samples were analyzed with only minor difficulty, and all met the precision and accuracy requirements. The formate spike recovery for the drainable liquid composite sample (S95T000332) was low at 13.9%. The analysis performed for formate provides results for acetate as well. Acetate results were not requested, but appear on the data summary tables.

Early in the project concerns were raised as to the composition of the "snow cone" ice solids. To quickly determine the major constituents of the sample a polarized light microscopy analysis (PLM) was performed. The PLM identified the crystals in the sample as primarily trisodium phosphate (TSP), with some sodium nitrate present. The phosphate concentration by IC is not high enough to identify the sample as primarily TSP. This is most likely due to the low solubility of phosphate. Any phosphate in the sample is likely to be in the solid phase, and thus seem most abundant by PLM. The concentration of phosphate was ten fold in the solids compared to the liquids.

AVERAGE CONCENTRATION (ug/g) SOLIDS

	Stratum A (Seg 1)	Stratum B (Seg 4-8)	Stratum C (Seg 9)	Stratum D (Seg 10-14)
Formate	2920	2750	3440	4960
Cl	6420	4520	7400	7030
F	333	<DL	397	1560
NO2	76500	55600	79900	81900
NO3	133000	356000	96400	98100
Oxalate	<DL	<DL	23200	20800
PO4	46100	19300	8440	15600
SO4	1710	1360	6380	7820

AVERAGE CONCENTRATION (ug/ml) LIQUIDS

	DL Seg 1	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
Formate	N/A	4240	4280	2100	2050
Br	N/A	<DL	<DL	16000	17600
Cl	N/A	11600	11400	4700	3870
F	N/A	<DL	<DL	<DL	<DL
NO2	N/A	143000	138000	49200	41400
NO3	N/A	179000	172000	66800	59200
Oxalate	N/A	<DL	<DL	<DL	<DL
PO4	N/A	3120	3180	2710	1700
SO4	N/A	<DL	<DL	3920	2560

A significant amount of bromide was detected in the liner liquid from segments 13 and 15. Based on available information, it appears that the liner liquid is composed, at least in part, of hydrostatic head fluid and core sample material (see ICP below).

ICP

The ICP analysis was performed using LA-505-151 Rev. D-1 and LA-505-161 Rev. A-1 on fusion and acid digest preparations for stratum samples, and an acid digest alone for the liquid samples. The stratum fusion results are identified as such in the analyte column, and with a "F" in the aliquot classification column (A#). The acid digest results are identified with an "A" in this column. The list of analytes for the liquid samples contains the additional elements as requested in reference (7) below. Uranium by ICP was not requested in the TCP, but appears in the liquid sample tables as a means of comparison with the laser method.

Very few problems were encountered with the ICP analysis. The RPD between sample and duplicate exceeded the TCP precision criteria of 15 percent for sample S94T000005 (Cr near detection limit), S94T000067 (Cr), and S94T000300 (Na). One sample/duplicate pair (S95T000326) had RPD values that ranged from 16 to 18 percent for most of the elements, indicating sample preparation or heterogeneity problems. Reanalysis was not performed because only a limited amount of liner liquid from segment 13 was available at extrusion, and the sample was used up.

A separate table (table 1) has been provided for ICP serial dilution results in lieu of spike results. Serial dilution data provides a good assessment of possible method interference, especially for the most abundant elements in the sample. The initial result has been compared to the result obtained from a further dilution of the sample. The two results should compare closely, as expressed by the relative percent deviation (RPD), if no significant interference is present. This is the case for the vast majority of data. A

few results exceeded 20 for RPD, but in these cases the element is near the detection limit. No significant interference appears in the ICP data for the major elements of interest.

The table below summarizes results for the most abundant elements in the stratum samples. The nickel results are significantly higher in the fusion preparation than the acid. This is most likely due to contamination from the nickel crucible in which the sample is fused. The sample is fused with potassium hydroxide, therefore the potassium result is invalid for the fusion preparation. Variation in the aluminum results for stratum "B" could be explained by the heterogeneous behavior of the samples. Most of the stratum "C" acid results are significantly lower than the fusion. The metals in question should be made soluble during the acid preparation as well as the fusion. There is no compelling reason why the fusion preparation would be more appropriate for these metals, as demonstrated by the stratum "D" results. Stratum "C" and "D" are similar in composition, being primarily or exclusively sludge material. The stratum "C" sample contained more liquid, however, and the sample would tend to stratify in storage. These results could be explained if the sample was not mixed thoroughly each time an aliquot was removed.

AVERAGE CONCENTRATION (ug/g) STRATUM SAMPLES
SELECTED ELEMENTS

	Stratum A	Stratum B	Stratum C	Stratum D
Al (f)	22200	12400	37500	39500
Al (a)	29200	27500	25300	35000
Cr (f)	59	<DL	5650	10200
Cr (a)	27	31	252	6550
Fe (f)	<DL	<DL	1460	2710
Fe (a)	<DL	48	77	2120
K (f)	N/A	N/A	N/A	N/A
K (a)	2910	2720	3040	3340
Na (f)	141000	212000	172000	140000
Na (a)	150000	161000	147000	187000
Ni (f)	1330	904	5420	793
Ni (a)	34	34	29	102

(f) fusion (a) acid

The table below summarizes results for the liquid samples. The drainable liquid results for segment 1 are about half of what would be expected based on

the other drainable liquid sample results. The samples were batched together and run at the same time, with the same dilution factor. Reanalysis of the segment 1 liquid was not possible because all the available sample was used. It is possible that the segment 1 results for ICP may not be representative due to the loss of the majority of the sample prior to analysis (see Sample Compositing section above). The silica results are quite possibly biased low due to its relative insolubility in acid. As discussed in the ICP section above, the liner liquid appears to be hydrostatic head fluid mixed with some fraction of core sample material.

AVERAGE CONCENTRATION (ug/ml) LIQUID SAMPLES
SELECTED ELEMENTS

	DL Seg 1	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
Al	24200	41400	37600	4740	3070
B	55	89	81	59	34
Ca	79	118	116	122	81
Cr	162	33	38	32	5
K	2320	3910	3570	1410	1200
Na	126000	212000	197000	101000	73200
Ni	29	49	48	24	26
P	863	1150	1165	1010	638
Si	67	79	116	77	86

The tables below compares the total Cr results by ICP with the Cr VI results. Only a small fraction (< 2 percent) of the total Cr is in the hexavalent form.

AVERAGE CONCENTRATION (ug/g) SOLID SAMPLES

	Stratum A	Stratum B	Stratum C	Stratum D
Total Cr	59	31	5650	10200
Cr VI	< 21	< 22	62.7	151

AVERAGE CONCENTRATION (ug/ml) LIQUID SAMPLES

	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
Total Cr	33	38	32	5
Cr VI	.060	.124	0.72	.096

The table below compares the calculated phosphate concentration based on the ICP phosphorus result with the phosphate data obtained from the IC for liquid samples. Phosphorus by ICP was not requested on the solid samples. The calculated ICP results will typically be greater than the IC data because the ICP results are derived from an acid digest which is effected to a lesser extent by phosphate solubility.

AVERAGE PHOSPHATE CONCENTRATION (ug/ml)

	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
PO4 (calculated)	3530	3570	3100	1960
PO4 (from IC)	3120	3180	2710	1700

Total Organic and Inorganic Carbon (TOC/TIC)
The Total Organic Carbon (TOC) and Inorganic Carbon (TIC) analysis was performed using procedure LA-342-100 Rev. A-0 for solid samples, and LA-344-105 Rev B-3 for liquid samples. No analytical problems were noted, although spike data was not obtained for these samples. All precision and accuracy requirements were met. The solid samples ranged from about 3000 to 5000 ug/g TOC for the "snow cone" ice solids, and 10,000 to 11,000 ug/g TOC for the sludge solids. The TIC results were 2000 to 3000 ug/g and 6000 to 9000 ug/g respectively. The drainable liquid samples contained about 10000 ug/g TOC, and the liner liquid samples about 4000 ug/g TOC. The TIC analysis was not requested for liquid samples.

AVERAGE CONCENTRATION (ug/g) SOLIDS

	Stratum A	Stratum B	Stratum C	Stratum D
TOC	4770	2660	9580	10600
TIC	2680	2020	6410	8800

AVERAGE CONCENTRATION (ug/ml) LIQUIDS

	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
TOC	9640	10000	4320	3880

Secondary analyses for segments 13 and 14 were reported in reference (5) below. The raw data for these analyses is contained in this report.

Tritium (H-3)
The H-3 analysis was performed using procedure LA-218-114 Rev. A-3 and A-4, on a water preparation. Tritium was less than detectable in all the stratum solid samples. The stratum "B" and "C" samples (S94T000279/280) were reanalyzed due to spike problems. The stratum "D" sample (S94T000281) was to

be reanalyzed due to low spike recovery. The reanalysis was not performed due to insufficient sample.

The liquid samples contained detectable levels of H-3, but spike recoveries indicated a matrix incompatibility. Each sample was analyzed a total of four times, with several samples exhibiting spike problems each time. The range of activity for the liquid samples was from 4.43E-03 uCi/ml to 1.82E-03 uCi/ml.

Total Alpha/Total Beta

The Alpha Total/Total Beta analysis was performed using LA-508-101 Rev. D-2 on a fusion preparation.

Total Alpha

Alpha results were for the most part at or below the detection limit. Both stratum samples which contained detectable alpha activity (S94T000067/300) exceeded the 10% precision limit. This is due primarily to the low activity, which results in poor counting precision. All liquid samples were below the detection limit. The TCP accuracy criteria of 10% was met in each case.

The table below provides the AT results and the results for the primary alpha emitting isotopes for the solid samples. The sum of the individual alpha emitters should approximate the AT result. No table is provided for the liquid samples because, with the exception of Am-241 in segment 8 and the segment 2-7 composite, these samples contained no alpha emitters above the detection limits. Results are the average when available, or the detection limit from the fusion result.

The most obvious feature of the data is the low concentration of alpha emitters in the waste. As expected, the plutonium and americium isotopes are most abundant. The sludge contains the majority of alpha activity, and the AT compares well with the individual isotopes. The Pu-238 result for the Stratum "B" sample is suspect for two reasons: first there was no Pu-239/240 detected (this isotope is usually more abundant than the Pu-238), and second because the AT result does not support this high a Pu-238 concentration. It is likely that the Pu-238 and Np-237 results for this sample are actually non-detects that, due to counting statistics at the detection limit, have been positively identified.

ALPHA TOTAL AND ALPHA CONTRIBUTING ISOTOPE ACTIVITY (uCi/g) FOR SOLIDS

	Stratum A	Stratum B	Stratum C	Stratum D
Alpha Total	<2.29E-01	<5.50E-03	7.30E-01	5.68E-01
Pu- 238	<4.23E-03	3.99E-03	<3.51E-01	1.62E-02
Pu-239/240	<4.23E-03	<2.78E-03	3.99E-01	6.23E-02
Np-237	<1.17E-02	1.45E-02	<1.25E-02	<1.49E-02
Am-241	<2.87E-02	<1.52E-02	5.48E-01	6.68E-01

Cm-243/244	<2.87E-02	<1.52E-02	<3.20E-01	<1.13E-01

For the discussion of the individual alpha emitting isotopes, see below.

Total Beta
One beta analysis exceeded the TCP precision criteria of 20%. The stratum "D" sample (S94T000300) was rerun, but this did not correct the problem. All other samples met the TCP precision and accuracy criteria. Beta activity was highest in the drainable liquid composite sample. Sludge samples (stratum "C" and "D") were the next highest, and the "snow cone" ice solids (stratum "A" and "B") and liner liquid samples the lowest in beta activity.

During the course of analysis for tank SY-103 the 222-S laboratory changed the manner in which the gross beta detectors were calibrated. Following the recommendation developed from the Sample Exchange and Evaluation Program, the beta detectors were calibrated using a Cs-137 source instead of Co-60. The Co-60 source had been used because it provided a measure of conservatism. This change took place after the analysis of the stratum solid samples. Therefore the total beta results, as they appear on the data tables for the stratum samples, are total beta (Co-60), and the liquid samples are total beta (Cs-137). The beta detectors are approximately 30 percent more efficient when the calibration is based on Cs-137. The average stratum results have been normalized to Cs-137 in the table below. This result more closely represents the beta activity in tank waste, which is dominated by Cs-137.

AVERAGE TOTAL BETA (uCi/g) FOR STRATUM SAMPLES
Co-60 VERSUS Cs-137 CALIBRATION

	Stratum A	Stratum B	Stratum C	Stratum D
TB (Co-60)	2.96E+02	1.70E+02	4.18E-02	4.32E+02
TB (Cs-137)	2.25E+02	1.29E+02	3.18E+02	3.29E+02

Gamma Energy Analysis (GEA)
The GEA was performed using procedure LA-548-121 Rev. D-1 on a fusion and water preparation for the stratum solid samples, and an acid dilution for the liquid samples. One sample, the stratum "B" water preparation (S94T000282) exceeded the TCP precision criteria of 20 percent, and is likely due to the heterogeneity issues discussed previously. All other samples met the TCP precision and accuracy criteria.

The TCP requested that Cs-137, Eu-154, and Co-60 be reported. As expected, Cs-137 was the dominant gamma emitting isotope in the waste. The Eu isotopes and Co-60 were for the most part less than detectable. Eu-155 was not requested by the TCP, but has been reported. The table below is a comparison of Cs-137 results obtained from the fusion and water preparations, and suggests that the vast majority of cesium in the waste is soluble in water. Also evident is that the Cs-137 activity is only slightly higher in the sludge than the "snow cone" ice solids. With the exception of stratum "D", which has

a significant Sr-90 contribution, the Cs-137 results follow the total beta results quite closely (see above).

AVERAGE CONCENTRATION (uCi/g) FOR SOLIDS

	Stratum A	Stratum B	Stratum C	Stratum D
Cs-137 (f)	2.40E+02	1.34E+02	2.94E+02	2.32E+02
Cs-137 (w)	2.26E+02	1.76E+02	2.58E+02	2.50E+02

(f) fusion (w) water digest + acid

The table below provides the average Cs-137 results for the liquid samples. The highest Cs-137 concentrations appear in the drainable liquid composite of segments 2-7 and the stratum "C" solids.

AVERAGE CONCENTRATION (uCi/ml) FOR LIQUIDS

	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
Cs-137	4.23E+02	3.74E+02	6.27E+01	1.04E+02

Considered together, the Cs-137 and Sr-90 activity account for virtually all the radioactivity in both the solid and liquid samples. The alpha and soft beta emitters (I-129, H-3, Tc-99) are insignificant on a curie to curie basis.

Iodine 129 (I-129)
The I-129 analysis was performed using procedure LA-378-103 Rev. B-3 and B-4. The first version of the TCP called for I-129 analysis on both a fusion and a water preparation for solid samples. The TCP revision called for a water dilution analysis for the liquid samples. Only two samples (DL composite and DL segment 8) contained detectable amounts of I-129. All others were less than detectable. All precision and accuracy requirements were met. The water preparation of solid samples required reanalysis due to low standard recovery. Results do not appear for stratums "A", "B", and "C" because there was insufficient sample for the retest. The liquid samples were run numerous times, until the available sample was exhausted. The results were less than detectable each time, but were typically rejected due to low carrier recovery. No spikes were performed due to the use of a carrier.

Strontium 90 (Sr-90)
The Sr-90 analysis was performed using procedure LA-220-101 Rev. D1 on a fusion and water (acid added) preparation for the solid samples, and a water dilution with acid added for the liquid samples. Samples S94T000282 and S94T000283 were reanalyzed due to poor precision. Reanalysis substantiated the heterogeneous nature of the water preparations. Sample S94T000282 was the stratum composite "B" "snow cone" ice sample, which has proved heterogeneous on numerous occasions. Sample S95T000328 was reanalyzed due to poor precision. The reanalysis produced acceptable precision results. The

remainder of samples met all precision and accuracy criteria. The method uses a carrier, so no spikes were performed.

The tables below demonstrate that the majority of Sr-90 activity is found in the sludge samples, and that only a fraction (<10%) of the Sr-90 in the sludge samples appears to be soluble in water and dilute acid.

AVERAGE CONCENTRATION (uCi/g) SOLIDS

	Stratum A	Stratum B	Stratum C	Stratum D
Sr-90 (f)	1.81E+00	1.12E+00	3.20E+01	3.49E+01
Sr-90 (w)	1.76E+00	1.30E+00	2.16E+00	2.16E+00

(f) fusion (w) water digest + acid

AVERAGE CONCENTRATION (uCi/ml) LIQUIDS

	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
Sr-90	2.99E+00	2.40E+00	1.90E-01	3.22E-01

Strontium values must be multiplied by two when comparing to gross beta (total beta) results because Sr-90 is in equilibrium with Y-90 in tank wastes, and only Sr-90 is reported.

Technetium 99 (Tc-99)

The Tc-99 analysis was performed using procedure LA-438-101 Rev. D-2 on a fusion preparation for the solid samples, and a water digest with acid added for the liquid samples. Analysis of a water preparation for the solid samples was requested, but sample availability problems precluded the analyses for stratums "A" and "B". For stratums "C" and "D" the fusion preparations results were higher than the water preparations. The average results ranged from 1.34E-01 to 2.44E-01 uCi/g for solid samples, and from 1.61E-01 to 3.21E-02 uCi/ml for liquid samples. All samples met the precision and accuracy requirements.

Neptunium 237 (Np-237)

The Np-237 analysis was performed using procedure LA-933-141 Rev. H-0 and H-1, on fusion and water preparations for the solid samples, and on a water dilution with acid added for the liquid samples. All results were less than detectable, with the exception of S94T000299 sample only (1.45E-02 uCi/g) and S95T000331 duplicate only (8.79E-04 uCi/ml). The accuracy criteria was met in each case with the exception of S94T000005, S94T000268, and S94T000300. These samples had standard recoveries in the 70 percent range, which is not uncommon for this procedure. Precision requirements were not applicable due to non-detection. A number of reruns were performed to produce spike recoveries of 80 percent or better, which historically has been difficult for this procedure to achieve.

Americium 241 (Am-241) and Curium 243/244 (Cm-243/244)
The Am-241 Cm-243/244 analysis was performed using procedure LA-953-103 Rev. A-1 and A-2, on fusion and water preparations for the solid samples, and on a water dilution with acid added for the liquid samples. The TCP requested analysis for Cm-242, but the 222-S laboratory does not have a procedure to analyze for this isotope. The procedure specified in the TCP (LA-503-156) was superseded by the above procedure.

Am-241
Samples ranged in average activity from 3.09E-03 to 6.68E-01 uCi/g for solids, and from 1.75E-03 to 2.00E-03 uCi/ml for liquids. About half the Am-241 results were less than detectable. The precision criteria was exceeded for samples S94T000067 and S94T000283. This is due in part, or in whole, to the presence of the analyte at levels only slightly above the detection limit. The counting statistics in this region are poor, contributing significantly to the lack of precision. Reanalyses were performed but did not result in acceptable precision results. The accuracy criteria was met in every case. The method uses a tracer, so no spikes were performed.

Cm-243/244
All results for Cm-243/244 were less than detectable. The precision requirement does not apply due to the non-detection of the analyte. A curium standard is not used in the procedure, but based on the americium standard the accuracy criteria was met in every case. The method uses a tracer, so no spikes were performed.

Plutonium 238 and PU-239/240 (Pu-238 239/240)
The Pu-238 239/240 analysis was performed using procedure LA-503-156 Rev. D-1 on fusion and water preparations for the solid samples, and on a water dilution with acid added for the liquid samples.

Pu-238
Only three samples exhibited Pu-238 activity above the detection limit. They were sample S94T000284 (5.07E-04 uCi/g) and S94T000299 (3.99E-03), and S94T000300 (1.62E-02 average). All other Pu-238 results were less than detectable. The TCP precision criteria was met in each case. A Pu-238 standard is not used in the procedure, so the accuracy results are the same as for Pu-239/240 below.

Pu-239/240
The Pu-239/240 precision criteria was exceeded for samples S94T000283 and S94T000330. This is due in part, or in whole, to the presence of the analyte at levels only slightly above the detection limit. The counting statistics in this region are poor, contributing significantly to the lack of precision. Reanalyses were performed but did not result in acceptable precision results. The accuracy criteria was met with the exception of S94T000229, S94T000283, S94T000284, and S94T000300. The standard recovery in each case met the laboratory internal quality control limits, so reruns were not performed. The preparation blank for sample S94T000067 showed Pu-238/239 contamination. The source is unknown, and this blank appeared clean for all other analyses. The method uses a tracer, so no spikes were performed.

The Pu-239/240 results for solid samples are provided in the table below, which demonstrates that Pu-239/240 is detectable only in the sludge samples, and only a small fraction appears to be soluble in water and dilute acid.

AVERAGE CONCENTRATION (uCi/g) SOLIDS

	Stratum A	Stratum B	Stratum C	Stratum D
Pu-239/240 (f)	<4.23E-03	<2.78E-03	3.99E-01	6.23E-02
Pu-239/240 (w)	<3.33E-04	<4.32E-04	5.86E-04	9.41E-04

(f) fusion (w) water digest + acid

Uranium by Laser Phosphorescence

The uranium analysis was performed using procedure LA-925-009 Rev. A-0 on a fusion preparation for the solid samples, and on a water dilution with acid added for the liquid samples. The procedure referenced in the TCP (LA-925-007) was superseded by the procedure above.

The uranium results are presented in the tables below. A meaningful comparison with ICP results for the liquid samples could not be made due to the relative insensitivity of the ICP compared to the laser method. Three samples exceeded the TCP precision criteria (S94T000005, S95T000328, S95T000331). This was due to the presence of the analyte at levels slightly above the detection limit. One batch of samples (S94T000299/300) was rerun due to poor spike recovery. The TCP accuracy criteria was met in each case.

As the tables indicate, significant concentrations of uranium were found in the sludge solids alone. Only trace amounts were detected in the liquids or "snow cone" ice solids. The tables contain the U-238 concentrations in uCi/g derived from the elemental uranium result. This calculation assumes that all the elemental uranium is present as U-238.

AVERAGE CONCENTRATION (ug/g) SOLIDS

	Stratum A	Stratum B	Stratum C	Stratum D
Uranium	7.05	<.02	626	776
U-238 uCi/g*	2.37E-06	N/A	2.10E-04	2.61E-04

*calculated

AVERAGE CONCENTRATION (ug/ml) LIQUIDS

	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
Uranium	2.82	3.93	5.59	5.23
U-238 uCi/ml*	9.48E-07	1.14E-06	1.88E-06	1.76E-06

*calculated

Physical Tests

The majority of physical tests were performed by the Pacific Northwest Laboratory (PNL) and will be appended to this report when available. Bulk density was performed at the 222-S laboratory using procedure LO-160-103. Duplicate results were not performed because the test requires 20-25 grams of material, which in some cases was not available. The tables below summarize the results.

BULK DENSITY (g/ml) SOLIDS

	Stratum A	Stratum B	Stratum C	Stratum D
bulk density	1.59	1.51	1.51	1.57

BULK DENSITY (g/ml) LIQUIDS

	DL Seg 2-7	DL Seg 8	LL Seg 13	LL Seg 15
bulk density	1.47	1.47	not avail.	1.16

Blind Sample Results

The TCP requested blind results for three analyses; TIC/TOC, IC, and ICP. Presented below are the results from the Water Pollution Performance Evaluation Study.

ICP BLIND RESULTS (ug/l)

	Reported	True	Evaluation	Study ID
Al	568	610	Acceptable	WP033
Ca	87.8	89.0	Acceptable	WP033
Cr	527	529	Acceptable	WP033
Fe	1290	1300	Acceptable	WP033
K	13.7	14.0	Acceptable	WP033
Na	95.2	94.2	Acceptable	WP033
Ni	1070	1080	Acceptable	WP033
Zn	722	726	Acceptable	WP033

IC BLIND RESULTS (mg/l)

	Reported	True	Evaluation	Study ID
Chloride	168	170	Acceptable	WP033
Fluoride	4.03	4.00	Acceptable	WP033
Sulphate	108	110	Acceptable	WP033

Nitrate	.880	.860	Acceptable	WP033

TOC BLIND RESULTS (mg/l)

	Reported	True	Evaluation	Study ID
TOC	17.9	35	Not Accept	WP033
TOC	44.0	44.0	Acceptable	WP032
TOC	79.0	82.0	Acceptable	WP031
TOC	8.25	14.0	Not Accept	WP030

References:

(1) WHC-SD-WM-TP-197, REV. 0, "Tank 241-SY-103 Tank Characterization Plan", dated July 28, 1994, Westinghouse Hanford Company, Richland, WA 99352

(2) Internal Memo 7E720-94-127, "Clarifications to Tank 241-SY-103 Tank Characterization Plan, Westinghouse Hanford Company, Richland, WA. 99352, dated 8/15/94.

(3) Internal Memo 7E720-94-128, "Format I Reporting Requirement", Westinghouse Hanford Company, Richland, WA. 99352, dated 8/15/94.

(4) Internal Memo 9457549 "45 Day Safety Screen Results for Tank 241-SY-103, Core 62", November 7, 1994, Westinghouse Hanford Company, Richland, WA 99352.

(5) Internal Memo "90 Day Safety Screen Results for Tank 241-SY-103, Core 62", December 20, 1994, Westinghouse Hanford Company, Richland, WA 99352.

(6) DSI from G.D. Johnson to J.G. Kristofzski, "Tank SY-103 Core 62 Sample Composite Preparation and Analysis Instruction", dated October 18, 1994.

(7) WHC-SD-WM-TP-197, REV. 0B, "Tank 241-SY-103 Tank Characterization Plan", dated March 9, 1995, Westinghouse Hanford Company, Richland, WA 99352

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SAMPLE DATA SUMMARY

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216 Day Final Report: Results for Stratum Composites
SY-103

CORE NUMBER: 62
SEGMENT #: 1

SEGMENT PORTION: Stratum A

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000004			% Water by TGA using Mettler	%	100.2	n/a	40.92	37.44	39.18	8.88	n/a	1.00e-02	n/a
S94T000004			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	174.8	211.6	193.2	19.0	n/a	1.00e-03	n/a
S94T000004			DSC Exotherm using Mettler	Joules/g	102.3	n/a	103.3	132.4	117.8	24.7	n/a	n/a	n/a
S94T000005	F		Uranium by Phosphorescence	ug/g	99.24	1.370	7.830	6.270	7.050	22.1	104.0	1.310	n/a
S94T000005	F		Alpha of Digested Solid	uCi/g	110.2	<2.29e-01	< 2.29e-1	<2.29E-1	n/a	n/a	108.2	5.48e-01	500
S94T000005	F		Am-241 by Extraction	uCi/g	107.1	<2.48e-02	< 2.87e-2	<2.81E-2	n/a	n/a	n/a	2.87e-02	23.0
S94T000005	F		Cm-243/244 by Extraction	uCi/g	n/a	<2.48e-02	< 2.87e-2	<2.81E-2	n/a	n/a	n/a	2.87e-02	65.4
S94T000005	F		Beta in Liquid Samples	uCi/g	91.36	<1.050	308.0	285.0	296.5	7.76	89.80	1.880	1.7
S94T000005	F		Cesium-137 by GEA	uCi/g	98.40	3.28e-01	239.0	242.0	240.5	1.25	n/a	3.28e-01	1.05
S94T000005	F		Iodine-129 Waste Tank Samples	uCi/g	100.0	<8.03e-02	< 5.02e-2	<4.71e-2	n/a	n/a	n/a	5.02e-02	n/a
S94T000005	F		Aluminium -ICP-Fusion	ug/g	98.60	3.20e-01	2.23e+04	2.22e+04	2.22e+04	0.45	n/a	226.0	n/a
S94T000005	F		Calcium -ICP-Fusion	ug/g	101.4	2.97e-01	< 452	177.0	n/a	n/a	n/a	452.0	n/a
S94T000005	F		Chromium -ICP-Fusion	ug/g	102.2	6.00e-03	64.50	54.20	59.35	17.4	n/a	45.20	n/a
S94T000005	F		Iron -ICP-Fusion	ug/g	101.2	3.02e-01	< 226	30.20	n/a	n/a	n/a	226.0	n/a
S94T000005	F		Potassium -ICP-Fusion	ug/g	96.60	-1.40e-02	n/a	n/a	n/a	n/a	n/a	1.36e+03	n/a
S94T000005	F		Sodium -ICP-Fusion	ug/g	97.40	3.880	1.41e+05	1.41e+05	1.41e+05	0.00	n/a	452.0	n/a
S94T000005	F		Nickel -ICP-Fusion	ug/g	101.8	6.660	1.33e+03	1.33e+03	1.33e+03	0.00	n/a	90.50	n/a
S94T000005	F		Zinc -ICP-Fusion	ug/g	103.6	1.50e-02	< 45.2	4.280	n/a	n/a	n/a	45.20	n/a
S94T000005	F		Zirconium -ICP-Fusion	ug/g	99.80	1.00e-01	< 45.2	-2.59e+00	n/a	n/a	n/a	45.20	n/a
S94T000005	F		Lithium -ICP-Fusion	ug/g	98.00	<1.00e-02	LDL	LDL	n/a	n/a	n/a	95.10	n/a
S94T000005	F		Np237 by TTA Extraction	uCi/g	73.28	<9.32e-03	< 1.17e-2	<9.29e-3	n/a	n/a	63.70	1.95e-02	490.6
S94T000005	F		Pu-238 by Ion Exchange	uCi/g	n/a	1.03e-02	< 4.23e-3	<3.67e-3	n/a	n/a	n/a	4.23e-03	12.5
S94T000005	F		Pu-239/240 by Ion Exchange	uCi/g	97.89	<9.05e-03	< 4.23e-3	<3.67e-3	n/a	n/a	n/a	4.23e-03	13.2
S94T000005	F		Strontium-89/90 High Level	uCi/g	99.11	2.95e-02	1.680	1.940	1.810	14.4	n/a	9.76e-04	1.0
S94T000005	F		Technetium-99 Liq. Scint.	uCi/g	85.06	<2.48e-02	1.91e-01	1.75e-01	1.83e-01	8.74	85.00	2.50e-02	4.14
S94T000006			Bulk Density of Sample	g/mL	n/a	n/a	1.590	n/a	n/a	n/a	n/a	5.00e-01	n/a
S94T000265			pH on SST Samples	pH	100.2	n/a	13.01	13.04	13.02	0.23	n/a	1.00e-02	n/a
S94T000265			TOC by Persulfate/Coulometry	ug/g	90.67	32.50	4.92e+03	4.62e+03	4.77e+03	6.29	n/a	80.00	n/a
S94T000265			TIC by Acid/Coulometry	ug/g	97.83	2.200	2.68e+03	2.68e+03	2.68e+03	0.00	n/a	5.000	n/a
S94T000266	A		Aluminium -ICP-Acid Digest	ug/g	97.60	2.60e-02	2.89e+04	2.94e+04	2.92e+04	1.72	n/a	17.60	n/a
S94T000266	A		Calcium -ICP-Acid Digest	ug/g	101.2	2.10e-02	109.0	108.0	108.5	0.92	n/a	35.10	n/a
S94T000266	A		Chromium -ICP-Acid Digest	ug/g	95.80	1.10e-02	27.00	27.90	27.45	3.28	n/a	3.510	n/a
S94T000266	A		Iron -ICP-Acid Digest	ug/g	96.60	4.40e-02	< 17.6	<17.6	n/a	n/a	n/a	17.60	n/a
S94T000266	A		Potassium -ICP-Acid Digest	ug/g	121.0	2.150	2.89e+03	2.93e+03	2.91e+03	1.37	n/a	105.0	n/a
S94T000266	A		Sodium -ICP-Acid Digest	ug/g	99.20	1.14e-01	1.50e+05	1.49e+05	1.50e+05	0.67	n/a	70.20	n/a
S94T000266	A		Nickel -ICP-Acid Digest	ug/g	94.60	7.00e-03	33.40	35.50	34.45	6.10	n/a	7.020	n/a
S94T000266	A		Zinc -ICP-Acid Digest	ug/g	91.20	6.00e-03	19.40	19.10	19.25	1.56	n/a	3.510	n/a
S94T000266	A		Zirconium -ICP-Acid Digest	ug/g	96.40	7.00e-03	< 3.51	<3.51	n/a	n/a	n/a	3.510	n/a
S94T000267	W		OH- by Pot. Titration	ug/g	99.36	<60300.0	1.40e+04	1.59e+04	1.50e+04	12.7	n/a	5.99e+03	n/a
S94T000267	W		Chromium (VI) by Spec.	ug/g	100.6	<2.29e-01	< 21.9	<21.9	n/a	n/a	107.9	21.90	n/a
S94T000267	W		Tritium By Lachat	uCi/g	92.36	<4.21e-04	< 4.15e-4	<4.21E-4	n/a	n/a	88.80	4.21e-04	5.49
S94T000267	W		Bromide by Ion Chromatograph	ug/g	97.38	<1.000	< 95.8	<95.8	n/a	n/a	94.40	95.80	n/a
S94T000267	W		Chloride by IC - Dionex 4000i	ug/g	95.73	1.188	5.79e+03	7.05e+03	6.42e+03	19.6	72.70	19.20	n/a

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Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000267		W	Fluoride by IC - Dionex 4000i	ug/g	94.82	<1.00e-01	300.0	366.0	333.0	19.8	65.80	9.590	n/a
S94T000267		W	Nitrite by IC - Dionex 4000i	ug/g	96.21	<1.000	6.86e+04	8.44e+04	7.65e+04	20.7	102.1	95.80	n/a
S94T000267		W	Nitrate by IC - Dionex 4000i	ug/g	96.19	<1.000	1.61e+05	1.05e+05	1.33e+05	42.1	103.5	95.80	n/a
S94T000267		W	Oxalate by IC - Dionex 4000i	ug/g	94.81	<1.000	< 95.8	<95.8	n/a	n/a	101.4	95.80	n/a
S94T000267		W	Phosphate by IC - Dionex 4000i	ug/g	97.09	<1.000	6.03e+04	3.19e+04	4.61e+04	61.6	65.90	95.80	n/a
S94T000267		W	Sulfate by IC - Dionex 4000i	ug/g	95.83	<1.000	1.58e+03	1.84e+03	1.71e+03	15.2	95.60	95.80	n/a
S94T000267		W	Acetate by IC - Dionex 4000i	ug/g	95.90	<1.000	n/a	n/a	n/a	n/a	n/a	1.000	n/a
S94T000267		W	Formate by IC - Dionex 4000i	ug/g	91.67	<1.000	2.83e+03	3.00e+03	2.92e+03	5.83	108.3	96.00	n/a
S94T000268		R	Am-241 by Extraction	uCi/g	99.58	<2.67e-03	3.19e-03	2.98e-03	3.09e-03	6.81	n/a	2.58e-03	13.2
S94T000268		R	Cm-243/244 by Extraction	uCi/g	n/a	<2.67e-03	< 2.58e-3	<2.45e-3	n/a	n/a	n/a	2.58e-03	42.9
S94T000268		R	Cobalt-60 by GEA	uCi/g	97.06	<2.99e-03	< 1.07e-2	<9.75e-3	n/a	n/a	n/a	2.99e-03	na
S94T000268		R	Cesium-137 by GEA	uCi/g	94.64	<6.90e-03	241.0	210.0	225.5	13.7	n/a	6.90e-03	.16
S94T000268		R	Europium-154 by GEA	uCi/g	n/a	<6.39e-03	< 5.03e-2	<4.33e-2	n/a	n/a	n/a	6.39e-03	na
S94T000268		R	Europium-155 by GEA	uCi/g	n/a	<7.00e-03	< 1.78e-1	<1.67e-1	n/a	n/a	n/a	7.00e-03	na
S94T000268		R	Np237 by TTA Extraction	uCi/g	72.18	<2.22e-03	< 2.22e-3	<2.22E-3	n/a	n/a	87.10	4.63e-03	101
S94T000268		R	Pu-238 by Ion Exchange	uCi/g	n/a	<3.51e-04	< 3.33e-4	<3.00e-4	n/a	n/a	n/a	3.33e-04	11.4
S94T000268		R	Pu-239/240 by Ion Exchange	uCi/g	98.59	<3.51e-04	< 3.33e-4	<3.00e-4	n/a	n/a	n/a	3.33e-04	10.1
S94T000268		R	Strontium-89/90 High Level	uCi/g	91.89	2.10e-02	1.840	1.680	1.760	9.09	n/a	2.14e-02	4.7

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216 Day Final Report: Results for Stratum Composites
SY-103

CORE NUMBER: 62
SEGMENT #: 4-8

SEGMENT PORTION: Stratum Composite B

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000273			% Water by TGA on Perkin Elmer	%	98.28	n/a	46.81	46.55	46.68	0.56	n/a	n/a	n/a
S94T000273			pH on SST Samples	pH	100.2	n/a	12.85	12.92	12.88	0.54	n/a	1.00e-02	n/a
S94T000273			DSC Exotherm using Mettler	Joules/g	100.2	n/a	170.3	167.1	168.7	1.90	n/a	n/a	n/a
S94T000273			TOC by Persulfate/Coulometry	ug/g	90.67	32.50	2.40e+03	2.91e+03	2.66e+03	19.2	n/a	80.00	n/a
S94T000273			TIC by Acid/Coulometry	ug/g	97.83	2.200	2.00e+03	2.05e+03	2.02e+03	2.47	n/a	5.000	n/a
S94T000276		A	Aluminium -ICP-Acid Digest	ug/g	97.60	2.60e-02	2.75e+04	2.75e+04	2.75e+04	0.00	n/a	9.670	n/a
S94T000276		A	Calcium -ICP-Acid Digest	ug/g	101.2	2.10e-02	202.0	187.0	194.5	7.71	n/a	19.30	n/a
S94T000276		A	Chromium -ICP-Acid Digest	ug/g	95.80	1.10e-02	31.10	31.00	31.05	0.32	n/a	1.930	n/a
S94T000276		A	Iron -ICP-Acid Digest	ug/g	96.60	4.40e-02	47.10	49.70	48.40	5.37	n/a	9.670	n/a
S94T000276		A	Potassium -ICP-Acid Digest	ug/g	121.0	2.150	2.68e+03	2.75e+03	2.72e+03	2.58	n/a	58.00	n/a
S94T000276		A	Sodium -ICP-Acid Digest	ug/g	99.20	1.14e-01	1.59e+05	1.63e+05	1.61e+05	2.48	n/a	96.70	n/a
S94T000276		A	Nickel -ICP-Acid Digest	ug/g	94.60	7.00e-03	34.30	33.70	34.00	1.76	n/a	3.870	n/a
S94T000276		A	Zinc -ICP-Acid Digest	ug/g	91.20	6.00e-03	36.60	36.40	36.50	0.55	n/a	1.930	n/a
S94T000276		A	Zirconium -ICP-Acid Digest	ug/g	96.40	7.00e-03	< 1.93	<1.93	n/a	n/a	n/a	1.930	n/a
S94T000279		W	OH- by Pot. Titration	ug/g	99.36	<60300.0	1.46e+04	6.42e+03	1.05e+04	77.8	n/a	6.05e+03	n/a
S94T000279		W	Chromium (VI) by Spec.	ug/g	100.6	<2.29e-01	< 22.1	<22.1	n/a	n/a	108.4	22.10	n/a
S94T000279		W	Tritium By Lachat	uCi/g	93.80	<4.66e-04	< 4.73E-4	<4.72E-4	n/a	n/a	87.20	4.66e-04	5.60
S94T000279		W	Bromide by Ion Chromatograph	ug/g	97.38	<1.000	< 96.8	<97.1	n/a	n/a	97.40	96.80	n/a
S94T000279		W	Chloride by IC - Dionex 4000i	ug/g	95.73	1.188	5.88e+03	3.17e+03	4.52e+03	59.9	96.80	19.40	n/a
S94T000279		W	Fluoride by IC - Dionex 4000i	ug/g	94.82	<1.00e-01	267.0	<9.713	n/a	n/a	71.70	9.680	n/a
S94T000279		W	Nitrite by IC - Dionex 4000i	ug/g	96.21	<1.000	7.17e+04	3.96e+04	5.56e+04	57.7	100.0	96.80	n/a
S94T000279		W	Nitrate by IC - Dionex 4000i	ug/g	96.19	<1.000	2.47e+05	4.65e+05	3.56e+05	61.2	101.2	96.80	n/a
S94T000279		W	Oxalate by IC - Dionex 4000i	ug/g	94.81	<1.000	< 96.8	<97.1	n/a	n/a	101.4	96.80	n/a
S94T000279		W	Phosphate by IC - Dionex 4000i	ug/g	97.09	<1.000	2.32e+04	1.54e+04	1.93e+04	40.4	97.50	96.80	n/a
S94T000279		W	Sulfate by IC - Dionex 4000i	ug/g	95.83	<1.000	1.62e+03	1.09e+03	1.36e+03	39.1	94.20	96.80	n/a
S94T000279		W	Acetate by IC - Dionex 4000i	ug/g	95.90	<1.000	n/a	n/a	n/a	n/a	n/a	1.000	n/a
S94T000279		W	Formate by IC - Dionex 4000i	ug/g	91.67	<1.000	2.70e+03	2.80e+03	2.75e+03	3.64	91.70	96.80	n/a
S94T000282		R	Am-241 by Extraction	uCi/g	99.58	<2.67e-03	< 2.88e-3	<2.50e-3	n/a	n/a	n/a	2.88e-03	14.2
S94T000282		R	Cm-243/244 by Extraction	uCi/g	n/a	<2.67e-03	< 2.88e-3	<2.50e-3	n/a	n/a	n/a	2.88e-03	52.5
S94T000282		R	Cobalt-60 by GEA	uCi/g	107.4	<2.91e-03	< 1.01E-2	6.26e-03	n/a	n/a	n/a	2.91e-03	NA
S94T000282		R	Cesium-137 by GEA	uCi/g	103.1	<6.56e-03	221.0	130.0	175.5	51.9	n/a	6.56e-03	.16
S94T000282		R	Europium-154 by GEA	uCi/g	n/a	<7.97e-03	< 4.72E-2	<2.67e-2	n/a	n/a	n/a	7.97e-03	NA
S94T000282		R	Europium-155 by GEA	uCi/g	n/a	<6.96e-03	< 1.72E-1	<1.32e-1	n/a	n/a	n/a	6.96e-03	NA
S94T000282		R	Np237 by TTA Extraction	uCi/g	80.17	<2.42e-03	< 2.42e-3	<2.51e-3	n/a	n/a	72.60	5.04e-03	109.9
S94T000282		R	Pu-238 by Ion Exchange	uCi/g	n/a	<3.51e-04	< 3.13E-4	<4.32e-4	n/a	n/a	n/a	3.13e-04	100
S94T000282		R	Pu-239/240 by Ion Exchange	uCi/g	98.59	<3.51e-04	< 3.13E-4	<4.32e-4	n/a	n/a	n/a	3.13e-04	11.8
S94T000282		R	Strontium-89/90 High Level	uCi/g	93.69	1.67e-03	1.650	9.54e-01	1.302	53.5	n/a	2.10e-03	1.5
S94T000299		F	Uranium by Phosphorescence	ug/g	108.5	<2.12e-02	< 2.12e-2	<2.03e-2	n/a	n/a	n/a	2.12e-02	n/a
S94T000299		F	Alpha of Digested Solid	uCi/g	97.60	<3.27e-03	< 4.51e-3	<5.50e-3	n/a	n/a	87.80	7.52e-03	500
S94T000299		F	Am-241 by Extraction	uCi/g	102.5	<5.79e-02	< 1.52e-2	<1.47e-2	n/a	n/a	n/a	1.52e-02	19.2
S94T000299		F	Cm-243/244 by Extraction	uCi/g	n/a	<5.79e-02	< 1.52e-2	<1.47e-2	n/a	n/a	n/a	1.52e-02	113.2
S94T000299		F	Beta in Liquid Samples	uCi/g	90.06	3.20e-01	179.0	162.0	170.5	9.97	87.50	2.38e-01	.8
S94T000299		F	Cobalt-60 by GEA	uCi/g	105.4	<2.09e-02	< 2.35e-2	<2.27e-2	n/a	n/a	n/a	2.09e-02	na

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Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000299		F	Cesium-137 by GEA	uCi/g	96.94	<3.97e-02	139.0	128.0	133.5	8.24	n/a	3.97e-02	.49
S94T000299		F	Europium-154 by GEA	uCi/g	n/a	<3.63e-02	< 5.98e-2	<6.02e-2	n/a	n/a	n/a	3.63e-02	na
S94T000299		F	Europium-155 by GEA	uCi/g	n/a	<4.58e-02	< 3.29e-1	<3.08e-1	n/a	n/a	n/a	4.58e-02	na
S94T000299		F	Iodine-129 Waste Tank Samples	uCi/g	107.9	<1.04e-01	< 1.68e-1	<3.09e-1	n/a	n/a	n/a	1.68e-01	na
S94T000299		F	Aluminium -ICP-Fusion	ug/g	98.20	5.80e-01	1.30e+04	1.19e+04	1.24e+04	8.84	n/a	287.0	n/a
S94T000299		F	Calcium -ICP-Fusion	ug/g	102.0	4.58e-01	< 573	<548	n/a	n/a	n/a	3.000	n/a
S94T000299		F	Chromium -ICP-Fusion	ug/g	101.3	8.91e-02	< 95.3471	<93.1904	n/a	n/a	n/a	95.30	n/a
S94T000299		F	Iron -ICP-Fusion	ug/g	101.2	3.42e-01	< 287	<274	n/a	n/a	n/a	1.00e-01	n/a
S94T000299		F	Potassium -ICP-Fusion	ug/g	100.0	6.10e-02	n/a	n/a	n/a	n/a	n/a	5.00e-01	n/a
S94T000299		F	Sodium -ICP-Fusion	ug/g	98.00	3.870	2.23e+05	2.01e+05	2.12e+05	10.4	n/a	1.000	n/a
S94T000299		F	Nickel -ICP-Fusion	ug/g	100.8	2.090	1.27e+03	539.0	904.5	80.8	n/a	2.000	n/a
S94T000299		F	Zinc -ICP-Fusion	ug/g	102.8	-2.20e-02	< 57.3	LDL	n/a	n/a	n/a	57.30	n/a
S94T000299		F	Zirconium -ICP-Fusion	ug/g	99.60	6.70e-02	< 57.3	LDL	n/a	n/a	n/a	57.30	n/a
S94T000299		F	Np237 by TTA Extraction	uCi/g	81.27	<1.87e-02	1.45e-02	<2.40e-2	n/a	n/a	83.20	2.47e-02	102.5
S94T000299		F	Pu-238 by Ion Exchange	uCi/g	n/a	<2.90e-03	< 2.42e-3	3.99e-03	n/a	n/a	n/a	2.42e-03	10.9
S94T000299		F	Pu-239/240 by Ion Exchange	uCi/g	112.7	<2.90e-03	< 2.42e-3	<2.78e-3	n/a	n/a	n/a	2.42e-03	8.6
S94T000299		F	Strontium-89/90 High Level	uCi/g	89.29	1.49e-03	1.110	1.140	1.125	2.67	n/a	2.53e-03	2.1
S94T000299		F	Technetium-99 Liq. Scint.	uCi/g	104.1	3.60e-02	1.26e-01	1.67e-01	1.47e-01	28.0	n/a	3.06e-02	5.45
S95T000739			Bulk Density of Sample	g/mL	n/a	n/a	1.510	n/a	n/a	n/a	n/a	5.00e-01	n/a

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216 Day Final Report: Results for Stratum Composites
SY-103

CORE NUMBER: 62
SEGMENT #: 9

SEGMENT PORTION: Stratum C

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000058			% Water by TGA using Mettler	%	99.20	n/a	46.03	44.64	45.34	3.07	n/a	1.00e-02	n/a
S94T000058			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	321.5	316.3	318.9	1.63	n/a	1.00e-01	n/a
S94T000058			DSC Exotherm using Mettler	Joules/g	104.7	n/a	173.5	175.1	174.3	0.92	n/a	n/a	n/a
S94T000067	F		Uranium by Phosphorescence	ug/g	98.26	1.810	649.0	602.0	625.5	7.51	123.0	1.310	n/a
S94T000067	F		Alpha of Digested Solid	uCi/g	91.61	<2.12e-01	8.71e-01	5.89e-01	7.30e-01	38.6	99.10	4.28e-01	53.3
S94T000067	F		Am-241 by Extraction	uCi/g	100.8	<1.58e-01	6.13e-01	4.84e-01	5.48e-01	23.5	n/a	1.44e-01	6.1
S94T000067	F		Cm-243/244 by Extraction	uCi/g	n/a	<1.58e-01	< 1.44e-1	<3.20e-1	n/a	n/a	n/a	1.44e-01	25.3
S94T000067	F		Beta in Liquid Samples	uCi/g	91.36	3.070	430.0	406.0	418.0	5.74	87.80	2.280	1.6
S94T000067	F		Cesium-137 by GEA	uCi/g	98.47	4.49e-01	293.0	296.0	294.5	1.02	n/a	4.49e-01	.93
S94T000067	F		Iodine-129 Waste Tank Samples	uCi/g	100.0	<6.02e-02	< 6.22e-2	<8.22e-2	n/a	n/a	n/a	6.22e-02	n/a
S94T000067	F		Aluminium -ICP-Fusion	ug/g	98.60	2.90e-01	3.89e+04	3.61e+04	3.75e+04	7.47	n/a	275.0	n/a
S94T000067	F		Calcium -ICP-Fusion	ug/g	101.4	2.50e-01	808.0	LDL	n/a	n/a	n/a	549.0	n/a
S94T000067	F		Chromium -ICP-Fusion	ug/g	102.2	2.90e-02	6.23e+03	5.07e+03	5.65e+03	20.5	n/a	54.90	n/a
S94T000067	F		Iron -ICP-Fusion	ug/g	101.2	9.00e-02	1.56e+03	1.36e+03	1.46e+03	13.7	n/a	275.0	n/a
S94T000067	F		Potassium -ICP-Fusion	ug/g	96.60	-1.40e-02	n/a	n/a	n/a	n/a	n/a	5.49e+03	n/a
S94T000067	F		Sodium -ICP-Fusion	ug/g	97.40	4.650	1.77e+05	1.66e+05	1.72e+05	6.41	n/a	549.0	n/a
S94T000067	F		Nickel -ICP-Fusion	ug/g	101.8	10.40	4.96e+03	5.87e+03	5.42e+03	16.8	n/a	110.0	n/a
S94T000067	F		Zinc -ICP-Fusion	ug/g	103.6	2.00e-02	< 54.9	14.10	n/a	n/a	n/a	54.90	n/a
S94T000067	F		Zirconium -ICP-Fusion	ug/g	99.80	1.22e-01	< 54.9	135.0	n/a	n/a	n/a	54.90	n/a
S94T000067	F		Lithium -ICP-Fusion	ug/g	100.6	2.10e-01	LDL	LDL	n/a	n/a	n/a	60.40	n/a
S94T000067	F		Np237 by TTA Extraction	uCi/g	85.40	<1.18e-02	< 1.01e-2	<1.25e-2	n/a	n/a	82.70	2.13e-02	145.4
S94T000067	F		Pu-238 by Ion Exchange	uCi/g	n/a	<3.15e-01	< 2.01e-1	<3.51e-1	n/a	n/a	n/a	2.01e-01	100
S94T000067	F		Pu-239/240 by Ion Exchange	uCi/g	102.1	3.90e-01	3.79e-01	4.19e-01	3.99e-01	10.0	n/a	2.01e-01	5.3
S94T000067	F		Strontium-89/90 High Level	uCi/g	99.11	7.39e-02	34.90	29.10	32.00	18.1	n/a	1.09e-03	.2
S94T000067	F		Technetium-99 Liq. Scint.	uCi/g	86.72	1.56e-02	2.28e-01	2.25e-01	2.27e-01	1.32	82.00	1.53e-02	3.5
S94T000077			Bulk Density of Sample	g/mL	n/a	n/a	1.510	n/a	n/a	n/a	n/a	5.00e-01	n/a
S94T000274			pH on SST Samples	pH	100.2	n/a	13.04	12.98	13.01	0.46	n/a	1.00e-02	n/a
S94T000274			TOC by Persulfate/Coulometry	ug/g	89.33	33.80	1.00e+04	9.15e+03	9.58e+03	8.88	n/a	80.00	n/a
S94T000274			TIC by Acid/Coulometry	ug/g	97.00	4.500	6.45e+03	6.37e+03	6.41e+03	1.25	n/a	5.000	n/a
S94T000277	A		Aluminium -ICP-Acid Digest	ug/g	97.60	2.60e-02	2.64e+04	2.42e+04	2.53e+04	8.70	n/a	24.50	n/a
S94T000277	A		Calcium -ICP-Acid Digest	ug/g	101.2	2.10e-02	110.0	107.0	108.5	2.77	n/a	49.00	n/a
S94T000277	A		Chromium -ICP-Acid Digest	ug/g	95.80	1.10e-02	265.0	240.0	252.5	9.90	n/a	4.900	n/a
S94T000277	A		Iron -ICP-Acid Digest	ug/g	96.60	4.40e-02	80.90	74.50	77.70	8.24	n/a	24.50	n/a
S94T000277	A		Potassium -ICP-Acid Digest	ug/g	121.0	2.150	3.18e+03	2.90e+03	3.04e+03	9.21	n/a	147.0	n/a
S94T000277	A		Sodium -ICP-Acid Digest	ug/g	99.20	1.14e-01	1.53e+05	1.41e+05	1.47e+05	8.16	n/a	98.00	n/a
S94T000277	A		Nickel -ICP-Acid Digest	ug/g	94.60	7.00e-03	30.20	27.60	28.90	9.00	n/a	9.800	n/a
S94T000277	A		Zinc -ICP-Acid Digest	ug/g	91.20	6.00e-03	8.080	7.860	7.970	2.76	n/a	4.900	n/a
S94T000277	A		Zirconium -ICP-Acid Digest	ug/g	96.40	7.00e-03	< 4.90	<4.90	n/a	n/a	n/a	4.900	n/a
S94T000280	W		OH- by Pot. Titration	ug/g	99.36	<60300.0	2.00e+04	2.02e+04	2.01e+04	1.00	n/a	6.11e+03	n/a
S94T000280	W		Chromium (VI) by Spec.	ug/g	101.9	<2.29e-01	61.70	63.70	62.70	3.19	100.6	20.76	n/a
S94T000280	W		Tritium By Lachat	uCi/g	93.80	<4.66e-04	< 4.69E-4	<4.74E-4	n/a	n/a	95.00	5.00e-04	5.40
S94T000280	W		Bromide by Ion Chromatograph	ug/g	97.90	<1.000	< 97.8	<97.8	n/a	n/a	99.00	97.80	n/a
S94T000280	W		Chloride by IC - Dionex 4000i	ug/g	96.40	<2.00e-01	7.44e+03	7.36e+03	7.40e+03	1.08	104.1	19.60	n/a

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Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000280		W	Fluoride by IC - Dionex 4000i	ug/g	94.64	<1.00e-01	376.0	418.0	397.0	10.6	67.40	9.780	n/a
S94T000280		W	Nitrite by IC - Dionex 4000i	ug/g	96.40	<1.000	7.91e+04	8.07e+04	7.99e+04	2.00	102.8	97.80	n/a
S94T000280		W	Nitrate by IC - Dionex 4000i	ug/g	97.23	<1.000	9.54e+04	9.74e+04	9.64e+04	2.07	99.10	97.80	n/a
S94T000280		W	Oxalate by IC - Dionex 4000i	ug/g	95.43	<1.000	2.31e+04	2.33e+04	2.32e+04	0.86	100.8	97.80	n/a
S94T000280		W	Phosphate by IC - Dionex 4000i	ug/g	96.70	<1.000	8.37e+03	8.52e+03	8.44e+03	1.78	98.60	97.80	n/a
S94T000280		W	Sulfate by IC - Dionex 4000i	ug/g	95.99	<1.000	6.38e+03	6.38e+03	6.38e+03	0.00	95.00	97.80	n/a
S94T000280		W	Acetate by IC - Dionex 4000i	ug/g	97.54	<1.000	341.0	394.0	367.5	14.4	72.20	98.00	n/a
S94T000280		W	Formate by IC - Dionex 4000i	ug/g	95.00	<1.000	3.25e+03	3.62e+03	3.44e+03	10.8	123.3	98.00	n/a
S94T000283		R	Am-241 by Extraction	uCi/g	87.55	<2.50e-03	5.18e-03	3.18e-03	4.18e-03	47.8	n/a	2.45e-03	9.5
S94T000283		R	Cm-243/244 by Extraction	uCi/g	n/a	<2.50e-03	< 2.45e-3	<2.28e-3	n/a	n/a	n/a	2.45e-03	36.5
S94T000283		R	Cobalt-60 by GEA	uCi/g	97.06	<2.99e-03	< 1.15e-2	<1.23e-2	n/a	n/a	n/a	2.99e-03	na
S94T000283		R	Cesium-137 by GEA	uCi/g	94.64	<6.90e-03	249.0	267.0	258.0	6.98	n/a	6.90e-03	.16
S94T000283		R	Europium-154 by GEA	uCi/g	n/a	<6.39e-03	< 5.05e-2	<5.95e-2	n/a	n/a	n/a	6.39e-03	na
S94T000283		R	Europium-155 by GEA	uCi/g	n/a	<7.00e-03	< 1.83e-1	<1.90e-1	n/a	n/a	n/a	7.00e-03	na
S94T000283		R	Np237 by TTA Extraction	uCi/g	80.17	<2.42e-03	< 3.50e-3	<2.45e-3	n/a	n/a	73.80	5.09e-03	291.7
S94T000283		R	Pu-238 by Ion Exchange	uCi/g	n/a	<7.94e-04	< 6.76e-4	<4.30e-4	n/a	n/a	n/a	6.76e-04	100
S94T000283		R	Pu-239/240 by Ion Exchange	uCi/g	113.4	<7.94e-04	7.00e-04	4.72e-04	5.86e-04	38.9	n/a	6.76e-04	9.6
S94T000283		R	Strontium-89/90 High Level	uCi/g	93.69	1.67e-03	1.880	2.430	2.155	25.5	n/a	2.08e-03	1.4
S95T000295		R	Technetium-99 Liq. Scint.	uCi/g	101.2	<1.75e-03	1.68e-01	1.60e-01	1.64e-01	4.88	n/a	1.76e-03	1.65

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216 Day Final Report: Results for Stratum Composites
SY-103

CORE NUMBER: 62
SEGMENT #: 10-14

SEGMENT PORTION: Stratum Composite D

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000271			Bulk Density of Sample	g/mL	n/a	n/a	1.570	n/a	n/a	n/a	n/a	5.00e-01	n/a
S94T000275			% Water by TGA on Perkin Elmer	%	98.28	n/a	32.13	33.85	32.99	5.21	n/a	n/a	n/a
S94T000275			pH on SST Samples	pH	100.2	n/a	13.08	13.05	13.07	0.23	n/a	1.00e-02	n/a
S94T000275			DSC Exotherm using Mettler	Joules/g	100.2	n/a	156.3	160.7	158.5	2.78	n/a	n/a	n/a
S94T000275			TOC by Persulfate/Coulometry	ug/g	89.33	33.80	1.03e+04	1.08e+04	1.06e+04	4.74	n/a	80.00	n/a
S94T000275			TIC by Acid/Coulometry	ug/g	97.00	4.500	8.66e+03	8.95e+03	8.80e+03	3.29	n/a	5.000	n/a
S94T000278		A	Aluminium -ICP-Acid Digest	ug/g	97.60	2.60e-02	3.48e+04	3.52e+04	3.50e+04	1.14	n/a	43.00	n/a
S94T000278		A	Calcium -ICP-Acid Digest	ug/g	101.2	2.10e-02	355.0	346.0	350.5	2.57	n/a	85.90	n/a
S94T000278		A	Chromium -ICP-Acid Digest	ug/g	95.80	1.10e-02	6.50e+03	6.60e+03	6.55e+03	1.53	n/a	8.590	n/a
S94T000278		A	Iron -ICP-Acid Digest	ug/g	96.60	4.40e-02	2.11e+03	2.12e+03	2.12e+03	0.47	n/a	43.00	n/a
S94T000278		A	Potassium -ICP-Acid Digest	ug/g	121.0	2.150	3.31e+03	3.38e+03	3.34e+03	2.09	n/a	258.0	n/a
S94T000278		A	Sodium -ICP-Acid Digest	ug/g	99.20	1.14e-01	1.88e+05	1.86e+05	1.87e+05	1.07	n/a	172.0	n/a
S94T000278		A	Nickel -ICP-Acid Digest	ug/g	94.60	7.00e-03	102.0	101.0	101.5	0.99	n/a	17.20	n/a
S94T000278		A	Zinc -ICP-Acid Digest	ug/g	91.20	6.00e-03	23.70	23.20	23.45	2.13	n/a	8.590	n/a
S94T000278		A	Zirconium -ICP-Acid Digest	ug/g	96.40	7.00e-03	58.20	55.00	56.60	5.65	n/a	8.590	n/a
S94T000281		W	OH- by Pot. Titration	ug/g	99.36	<60300.0	1.81e+04	1.88e+04	1.84e+04	3.79	n/a	5.94e+03	n/a
S94T000281		W	Chromium (VI) by Spec.	ug/g	101.9	<2.29e-01	154.0	148.0	151.0	3.97	100.6	21.75	n/a
S94T000281		W	Tritium By Lachat	uCi/g	93.80	<4.66e-04	NA	NA	n/a	n/a	n/a	1.00e-04	NA
S94T000281		W	Bromide by Ion Chromatograph	ug/g	97.90	<1.000	< 95.1	<96.1	n/a	n/a	88.80	95.10	n/a
S94T000281		W	Chloride by IC - Dionex 4000i	ug/g	96.40	<2.00e-01	7.08e+03	6.98e+03	7.03e+03	1.42	93.50	19.00	n/a
S94T000281		W	Fluoride by IC - Dionex 4000i	ug/g	94.64	<1.00e-01	1.55e+03	1.57e+03	1.56e+03	1.28	84.30	9.510	n/a
S94T000281		W	Nitrite by IC - Dionex 4000i	ug/g	96.40	<1.000	8.06e+04	8.32e+04	8.19e+04	3.17	102.1	95.10	n/a
S94T000281		W	Nitrate by IC - Dionex 4000i	ug/g	97.23	<1.000	9.72e+04	9.90e+04	9.81e+04	1.83	97.60	95.10	n/a
S94T000281		W	Oxalate by IC - Dionex 4000i	ug/g	95.43	<1.000	2.07e+04	2.08e+04	2.08e+04	0.48	90.70	95.10	n/a
S94T000281		W	Phosphate by IC - Dionex 4000i	ug/g	96.70	<1.000	1.55e+04	1.58e+04	1.56e+04	1.92	88.40	95.10	n/a
S94T000281		W	Sulfate by IC - Dionex 4000i	ug/g	95.99	<1.000	7.77e+03	7.88e+03	7.82e+03	1.41	88.00	95.10	n/a
S94T000281		W	Acetate by IC - Dionex 4000i	ug/g	97.54	<1.000	3.16e+03	3.10e+03	3.13e+03	1.92	100.6	95.00	n/a
S94T000281		W	Formate by IC - Dionex 4000i	ug/g	95.00	<1.000	4.83e+03	5.09e+03	4.96e+03	5.24	90.10	95.00	n/a
S94T000284		R	Am-241 by Extraction	uCi/g	87.55	<2.50e-03	7.87e-03	<2.37e-3	n/a	n/a	n/a	2.51e-03	6.6
S94T000284		R	Cm-243/244 by Extraction	uCi/g	n/a	<2.50e-03	< 2.51e-3	<2.37e-3	n/a	n/a	n/a	2.51e-03	24.6
S94T000284		R	Cobalt-60 by GEA	uCi/g	97.06	<2.99e-03	< 1.14e-2	2.28e-02	n/a	n/a	n/a	2.99e-03	na
S94T000284		R	Cesium-137 by GEA	uCi/g	94.64	<6.90e-03	250.0	251.0	250.5	0.40	n/a	6.90e-03	.15
S94T000284		R	Europium-154 by GEA	uCi/g	n/a	<6.39e-03	< 5.47e-2	<5.37e-2	n/a	n/a	n/a	6.39e-03	na
S94T000284		R	Europium-155 by GEA	uCi/g	n/a	<7.00e-03	< 1.81e-1	<1.83e-1	n/a	n/a	n/a	7.00e-03	na
S94T000284		R	Np237 by TTA Extraction	uCi/g	80.17	<2.42e-03	< 2.60e-3	<3.59e-3	n/a	n/a	80.40	4.95e-03	500
S94T000284		R	Pu-238 by Ion Exchange	uCi/g	n/a	<7.94e-04	5.07e-04	<3.95e-4	n/a	n/a	n/a	3.72e-04	7.1
S94T000284		R	Pu-239/240 by Ion Exchange	uCi/g	113.4	<7.94e-04	9.41e-04	<3.95e-4	n/a	n/a	n/a	3.72e-04	100
S94T000284		R	Strontium-89/90 High Level	uCi/g	91.89	2.10e-02	2.210	2.100	2.155	5.10	n/a	2.11e-02	4.3
S94T000300		F	Uranium by Phosphorescence	ug/g	108.5	<2.12e-02	818.0	735.0	776.5	10.7	n/a	2.12e-02	n/a
S94T000300		F	Alpha of Digested Solid	uCi/g	97.60	<3.27e-03	6.01e-01	5.35e-01	5.68e-01	11.6	82.60	5.18e-03	4.1
S94T000300		F	Am-241 by Extraction	uCi/g	102.5	<5.79e-02	7.11e-01	6.25e-01	6.68e-01	12.9	n/a	1.02e-01	6.9
S94T000300		F	Cm-243/244 by Extraction	uCi/g	n/a	<5.79e-02	< 1.02e-1	<1.13e-1	n/a	n/a	n/a	1.02e-01	22.5
S94T000300		F	Beta in Liquid Samples	uCi/g	108.2	9.83e-02	496.0	368.0	432.0	29.6	98.20	1.62e-01	.4

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Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000300		F	Cobalt-60 by GEA	uCi/g	105.4	<2.09e-02	5.21e-02	4.58e-02	4.90e-02	12.9	n/a	2.09e-02	23.21
S94T000300		F	Cesium-137 by GEA	uCi/g	96.94	<3.97e-02	268.0	196.0	232.0	31.0	n/a	3.97e-02	.29
S94T000300		F	Europium-154 by GEA	uCi/g	n/a	<3.63e-02	7.97e-01	7.12e-01	7.54e-01	11.3	n/a	3.63e-02	15.8
S94T000300		F	Europium-155 by GEA	uCi/g	n/a	<4.58e-02	< 7.21e-1	6.55e-01	n/a	n/a	n/a	4.58e-02	na
S94T000300		F	Iodine-129 Waste Tank Samples	uCi/g	107.9	<1.04e-01	< 1.46e-1	<5.25e-2	n/a	n/a	n/a	1.46e-01	na
S94T000300		F	Aluminium -ICP-Fusion	ug/g	98.98	5.427	3.97e+04	3.94e+04	3.96e+04	0.85	n/a	242.0	n/a
S94T000300		F	Calcium -ICP-Fusion	ug/g	102.0	4.58e-01	< 395	LDL	n/a	n/a	n/a	395.0	n/a
S94T000300		F	Chromium -ICP-Fusion	ug/g	101.3	8.91e-02	1.07e+04	9.70e+03	1.02e+04	10.2	n/a	48.40	n/a
S94T000300		F	Iron -ICP-Fusion	ug/g	100.0	4.319	2.86e+03	2.55e+03	2.70e+03	11.3	n/a	242.0	n/a
S94T000300		F	Potassium -ICP-Fusion	ug/g	100.0	6.10e-02	NA	n/a	n/a	n/a	n/a	1.18e+03	n/a
S94T000300		F	Sodium -ICP-Fusion	ug/g	98.00	3.870	1.61e+05	1.20e+05	1.40e+05	29.2	n/a	395.0	n/a
S94T000300		F	Nickel -ICP-Fusion	ug/g	100.8	2.090	654.0	932.0	793.0	35.1	n/a	79.00	n/a
S94T000300		F	Zinc -ICP-Fusion	ug/g	102.8	-2.20e-02	< 39.5	LDL	n/a	n/a	n/a	39.50	n/a
S94T000300		F	Zirconium -ICP-Fusion	ug/g	99.60	6.70e-02	< 39.5	LDL	n/a	n/a	n/a	39.50	n/a
S94T000300		F	Np237 by TTA Extraction	uCi/g	71.07	9.26e-03	< 1.49e-2	<1.20e-2	n/a	n/a	82.00	1.55e-02	129
S94T000300		F	Pu-238 by Ion Exchange	uCi/g	n/a	<2.90e-03	1.55e-02	1.69e-02	1.62e-02	8.64	n/a	8.15e-03	4.5
S94T000300		F	Pu-239/240 by Ion Exchange	uCi/g	112.7	<2.90e-03	6.67e-02	5.79e-02	6.23e-02	14.1	n/a	8.15e-03	2.6
S94T000300		F	Strontium-89/90 High Level	uCi/g	89.29	1.49e-03	37.50	32.20	34.85	15.2	n/a	8.66e-03	.7
S94T000300		F	Technetium-99 Liq. Scint.	uCi/g	104.1	3.60e-02	2.42e-01	2.46e-01	2.44e-01	1.64	n/a	1.50e-02	3.6
S95T000291		W	Iodine-129 Waste Tank Samples	uCi/g	114.8	<2.29e-02	< 2.34e-2	<2.23e-2	n/a	n/a	n/a	2.34e-02	n/a
S95T000296		R	Technetium-99 Liq. Scint.	uCi/g	101.2	<1.75e-03	1.42e-01	1.27e-01	1.35e-01	11.2	n/a	1.78e-03	1.79

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216 Day Final Report: Results for Drainable Liquids
SY-103

CORE NUMBER: 62
SEGMENT #: 1

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000281			Tot. Organic Carbon by Coul.	ug/mL	99.67	<5.000	n/a	n/a	n/a	n/a	n/a	5.000	n/a
S95T000281			% Water by TGA using Mettler	%	99.32	n/a	47.40	46.04	46.72	2.91	n/a	n/a	n/a
S95T000281			pH Direct	pH	99.46	n/a	n/a	n/a	n/a	n/a	n/a	1.00e-02	n/a
S95T000281			DSC Exotherm using Mettler	Joules/g	103.7	n/a	32.90	31.70	32.30	3.72	n/a	n/a	n/a
S95T000323		B	Aluminium -ICP-Acid Adjust	ug/mL	96.40	1.50e-02	2.42e+04	2.41e+04	2.42e+04	0.41	n/a	21.00	n/a
S95T000323		B	Boron -ICP-Acid Adjust	ug/mL	94.60	1.00e-03	56.80	52.60	54.70	7.68	n/a	21.00	n/a
S95T000323		B	Barium -ICP-Acid Adjust	ug/mL	94.20	0.00e+00	< 21.0	<21	n/a	n/a	n/a	21.00	n/a
S95T000323		B	Bismuth -ICP-Acid Adjust	ug/mL	92.80	-2.30e-02	< 42.0	<42	n/a	n/a	n/a	42.00	n/a
S95T000323		B	Calcium -ICP-Acid Adjust	ug/mL	98.00	1.70e-02	82.70	74.90	78.80	9.90	n/a	42.00	n/a
S95T000323		B	Chromium -ICP-Acid Adjust	ug/mL	96.80	-0.00e+00	162.0	161.0	161.5	0.62	n/a	4.200	n/a
S95T000323		B	Iron -ICP-Acid Adjust	ug/mL	95.20	5.00e-03	49.80	50.10	49.95	0.60	n/a	21.00	n/a
S95T000323		B	Potassium -ICP-Acid Adjust	ug/mL	100.2	7.40e-02	2.32e+03	2.31e+03	2.32e+03	0.43	n/a	210.0	n/a
S95T000323		B	Lithium -ICP-Acid Adjust	ug/mL	94.20	-0.00e+00	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000323		B	Sodium -ICP-Acid Adjust	ug/mL	94.40	-3.00e-03	1.27e+05	1.26e+05	1.26e+05	0.79	n/a	42.00	n/a
S95T000323		B	Nickel -ICP-Acid Adjust	ug/mL	96.40	-7.00e-03	30.70	27.90	29.30	9.56	n/a	8.400	n/a
S95T000323		B	Phosphorus -ICP-Acid Adjust	ug/mL	95.20	3.00e-03	860.0	866.0	863.0	0.70	n/a	84.00	n/a
S95T000323		B	Silicon -ICP-Acid Adjust	ug/mL	88.20	1.20e-02	67.80	66.90	67.35	1.34	n/a	21.00	n/a
S95T000323		B	Uranium -ICP-Acid Adjust	ug/mL	192.2	-1.40e-02	< 210	<210	n/a	n/a	n/a	210.0	n/a
S95T000323		B	Zinc -ICP-Acid Adjust	ug/mL	94.60	1.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000323		B	Zirconium -ICP-Acid Adjust	ug/mL	95.60	0.00e+00	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a

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216 Day Final Report: Results for Drainable Liquids
SY-103

CORE NUMBER: 62
SEGMENT #: 2-7

SEGMENT PORTION: Drainable Liquid Composite

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000282			Tot. Organic Carbon by Coul.	ug/mL	99.67	<5.000	9.68e+03	9.61e+03	9.64e+03	0.73	n/a	105.0	n/a
S95T000282			% Water by TGA using Mettler	%	99.32	n/a	48.52	48.34	48.43	0.37	n/a	n/a	n/a
S95T000282			pH Direct	pH	99.32	n/a	13.99	14.02	14.00	0.21	n/a	1.00e-02	n/a
S95T000282			DSC Exotherm using Mettler	Joules/g	103.7	n/a	86.60	83.50	85.05	3.64	n/a	n/a	n/a
S95T000324	B		Aluminium -ICP-Acid Adjust	ug/mL	96.40	1.50e-02	4.05e+04	4.22e+04	4.14e+04	4.11	n/a	21.00	n/a
S95T000324	B		Boron -ICP-Acid Adjust	ug/mL	94.60	1.00e-03	86.50	90.80	88.65	4.85	n/a	21.00	n/a
S95T000324	B		Barium -ICP-Acid Adjust	ug/mL	94.20	0.00e+00	< 21.0	<21.0	n/a	n/a	n/a	21.00	n/a
S95T000324	B		Bismuth -ICP-Acid Adjust	ug/mL	92.80	-2.30e-02	< 42.0	<42.0	n/a	n/a	n/a	42.00	n/a
S95T000324	B		Calcium -ICP-Acid Adjust	ug/mL	98.00	1.70e-02	119.0	117.0	118.0	1.69	n/a	42.00	n/a
S95T000324	B		Chromium -ICP-Acid Adjust	ug/mL	96.80	-0.00e+00	32.60	33.90	33.25	3.91	n/a	1.00e-02	n/a
S95T000324	B		Iron -ICP-Acid Adjust	ug/mL	95.20	5.00e-03	< 21.0	<21.0	n/a	n/a	n/a	21.00	n/a
S95T000324	B		Potassium -ICP-Acid Adjust	ug/mL	100.2	7.40e-02	3.82e+03	4.00e+03	3.91e+03	4.60	n/a	210.0	n/a
S95T000324	B		Lithium -ICP-Acid Adjust	ug/mL	94.20	-0.00e+00	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000324	B		Sodium -ICP-Acid Adjust	ug/mL	94.40	-3.00e-03	2.08e+05	2.15e+05	2.12e+05	3.31	n/a	42.00	n/a
S95T000324	B		Nickel -ICP-Acid Adjust	ug/mL	96.40	-7.00e-03	50.10	47.60	48.85	5.12	n/a	8.400	n/a
S95T000324	B		Phosphorus -ICP-Acid Adjust	ug/mL	95.20	3.00e-03	1.12e+03	1.17e+03	1.14e+03	4.37	n/a	84.00	n/a
S95T000324	B		Silicon -ICP-Acid Adjust	ug/mL	88.20	1.20e-02	77.90	81.00	79.45	3.90	n/a	21.00	n/a
S95T000324	B		Uranium -ICP-Acid Adjust	ug/mL	192.2	-1.40e-02	< 210	<210	n/a	n/a	n/a	210.0	n/a
S95T000324	B		Zinc -ICP-Acid Adjust	ug/mL	94.60	1.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000324	B		Zirconium -ICP-Acid Adjust	ug/mL	95.60	0.00e+00	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000328	D		Uranium by Phosphorescence	ug/mL	93.03	1.98e-01	2.400	3.240	2.820	29.8	98.20	2.96e-02	n/a
S95T000328	D		Alpha in Liquid Samples	uCi/mL	91.76	<2.52e-02	< 2.52e-2	<2.52e-2	n/a	n/a	93.00	5.74e-02	72.3
S95T000328	D		Beta in Liquid Samples	uCi/mL	103.5	<1.09e-01	419.0	429.0	424.0	2.36	107.3	1.20e-01	0.4
S95T000328	D		Am-241 by Extraction	uCi/mL	88.27	<1.59e-03	1.67e-03	1.82e-03	1.75e-03	8.60	n/a	7.77e-04	8.9
S95T000328	D		Cm-243/244 by Extraction	uCi/mL	n/a	<1.59e-03	< 7.77e-4	<1.04e-3	n/a	n/a	n/a	7.77e-04	29.8
S95T000328	D		Cobalt-60 by GEA	uCi/mL	104.0	<5.32e-04	< 1.95e-2	<1.69e-2	n/a	n/a	n/a	5.32e-04	na
S95T000328	D		Cesium-137 by GEA	uCi/mL	100.0	<8.02e-04	424.0	422.0	423.0	0.47	n/a	8.02e-04	0.15
S95T000328	D		Europium-154 by GEA	uCi/mL	n/a	<1.33e-03	< 8.02e-2	<8.28e-2	n/a	n/a	n/a	1.33e-03	na
S95T000328	D		Europium-155 by GEA	uCi/mL	n/a	<1.18e-03	< 2.58e-1	<2.58e-1	n/a	n/a	n/a	1.18e-03	na
S95T000328	D		Tritium By Lachat	uCi/mL	100.0	<6.95e-05	2.42e-03	2.26e-03	2.34e-03	6.84	73.00	6.95e-05	2.32
S95T000328	D		Np237 by TTA Extraction	uCi/mL	82.92	<4.12e-04	< 8.34e-4	<5.93e-4	n/a	n/a	85.50	8.63e-04	126.8
S95T000328	D		Pu-238 by Ion Exchange	uCi/mL	n/a	<5.90e-05	< 6.12E-5	<6.32e-5	n/a	n/a	n/a	6.12e-05	100.0
S95T000328	D		Pu-239/240 by Ion Exchange	uCi/mL	93.75	<5.90e-05	< 6.12E-5	<6.32e-5	n/a	n/a	n/a	6.12e-05	3.1
S95T000328	D		Strontium-89/90 High Level	uCi/mL	94.55	<9.58e-02	2.910	3.060	2.985	5.03	n/a	9.82e-02	6.0
S95T000328	D		Technetium-99 Liq. Scint.	uCi/mL	96.68	7.23e-04	1.54e-01	1.71e-01	1.63e-01	10.5	n/a	5.31e-04	0.99
S95T000332	V		OH- by Pot. Titration	ug/mL	99.38	<4167.0	2.93e+04	2.79e+04	2.86e+04	4.90	n/a	4.17e+03	n/a
S95T000332	V		Chromium (VI) by Spec.	ug/mL	102.2	<3.90e-02	6.760	5.350	6.055	23.3	105.4	3.939	n/a
S95T000332	V		Iodine-129 Waste Tank Samples	uCi/mL	81.65	<5.91e-04	< 4.78e-4	1.91e-04	n/a	n/a	n/a	4.78e-04	n/a
S95T000332	V		Bromide by Ion Chromatograph	ug/mL	100.0	<40.80	< 4.08e3	<4.08e3	n/a	n/a	94.30	4.08e+03	n/a
S95T000332	V		Chloride by IC - Dionex 4000i	ug/mL	101.9	<5.100	1.17e+04	1.15e+04	1.16e+04	1.72	112.0	510.0	n/a
S95T000332	V		Fluoride by IC - Dionex 4000i	ug/mL	96.79	<3.060	< 3.06e2	<3.06e2	n/a	n/a	81.80	306.0	n/a
S95T000332	V		Nitrite by IC - Dionex 4000i	ug/mL	93.51	<40.80	1.45e+05	1.41e+05	1.43e+05	2.80	98.30	4.08e+03	n/a
S95T000332	V		Nitrate by IC - Dionex 4000i	ug/mL	102.2	<51.00	1.83e+05	1.75e+05	1.79e+05	4.47	108.0	5.10e+03	n/a

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Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000332		V	Oxalate by IC - Dionex 4000i	ug/mL	91.68	<25.50	< 2.55e3	<2.55e3	n/a	n/a	93.20	2.55e+03	n/a
S95T000332		V	Phosphate by IC - Dionex 4000i	ug/mL	96.32	<30.60	3.23e+03	3.02e+03	3.12e+03	6.72	96.70	3.06e+03	n/a
S95T000332		V	Sulfate by IC - Dionex 4000i	ug/mL	101.7	<40.80	< 4.08e3	<4.08e3	n/a	n/a	99.90	4.08e+03	n/a
S95T000332		V	Acetate by IC - Dionex 4000i	ug/mL	99.84	<2.00e-01	1.37e+03	1.33e+03	1.35e+03	2.96	41.20	220.0	n/a
S95T000332		V	Formate by Ion Chromatograph	ug/mL	103.2	<2.00e-01	4.28e+03	4.21e+03	4.24e+03	1.65	13.90	220.0	n/a
S95T000740			Bulk Density of Sample	g/mL	n/a	n/a	1.470	n/a	n/a	n/a	n/a	5.00e-01	n/a

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216 Day Final Report: Results for Drainable Liquids
SY-103

CORE NUMBER: 62
SEGMENT #: 8

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S94T000082			Bulk Density of Sample	g/mL	n/a	n/a	1.470	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T000283			Tot. Organic Carbon by Coul.	ug/mL	99.67	<5.000	1.01e+04	9.98e+03	1.00e+04	1.20	n/a	105.0	n/a
S95T000283			% Water by TGA using Mettler	%	98.83	n/a	47.65	47.85	47.75	0.42	n/a	n/a	n/a
S95T000283			pH Direct	pH	99.46	n/a	13.90	n/a	n/a	n/a	n/a	1.00e-02	n/a
S95T000283			DSC Exotherm using Mettler	Joules/g	95.96	n/a	29.20	31.40	30.30	7.26	n/a	n/a	n/a
S95T000325		B	Aluminium -ICP-Acid Adjust	ug/mL	99.60	-6.00e-03	3.72e+04	3.80e+04	3.76e+04	2.13	n/a	21.00	n/a
S95T000325		B	Boron -ICP-Acid Adjust	ug/mL	98.20	5.00e-03	81.10	81.10	81.10	0.00	n/a	21.00	n/a
S95T000325		B	Barium -ICP-Acid Adjust	ug/mL	97.60	0.00e+00	< 21.0	<21.0	n/a	n/a	n/a	21.00	n/a
S95T000325		B	Bismuth -ICP-Acid Adjust	ug/mL	101.6	1.00e-02	< 42.0	<42.0	n/a	n/a	n/a	42.00	n/a
S95T000325		B	Calcium -ICP-Acid Adjust	ug/mL	103.8	8.00e-03	116.0	115.0	115.5	0.87	n/a	42.00	n/a
S95T000325		B	Chromium -ICP-Acid Adjust	ug/mL	102.4	-0.00e+00	37.10	37.90	37.50	2.13	n/a	4.200	n/a
S95T000325		B	Iron -ICP-Acid Adjust	ug/mL	101.2	1.00e-03	< 21.0	<21.0	n/a	n/a	n/a	21.00	n/a
S95T000325		B	Potassium -ICP-Acid Adjust	ug/mL	97.60	-9.20e-02	3.50e+03	3.64e+03	3.57e+03	3.92	n/a	210.0	n/a
S95T000325		B	Lithium -ICP-Acid Adjust	ug/mL	98.20	1.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000325		B	Sodium -ICP-Acid Adjust	ug/mL	98.20	6.00e-03	1.95e+05	1.99e+05	1.97e+05	2.03	n/a	42.00	n/a
S95T000325		B	Nickel -ICP-Acid Adjust	ug/mL	100.6	-6.00e-03	47.40	48.80	48.10	2.91	n/a	8.400	n/a
S95T000325		B	Phosphorus -ICP-Acid Adjust	ug/mL	100.4	-1.10e-02	1.15e+03	1.18e+03	1.16e+03	2.58	n/a	84.00	n/a
S95T000325		B	Silicon -ICP-Acid Adjust	ug/mL	93.20	1.90e-02	117.0	116.0	116.5	0.86	n/a	21.00	n/a
S95T000325		B	Uranium -ICP-Acid Adjust	ug/mL	97.40	4.70e-02	< 210	<210	n/a	n/a	n/a	2.10e+05	n/a
S95T000325		B	Zinc -ICP-Acid Adjust	ug/mL	103.2	-1.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000325		B	Zirconium -ICP-Acid Adjust	ug/mL	99.00	4.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000329		D	Uranium by Phosphorescence	ug/mL	93.03	1.98e-01	4.060	3.800	3.930	6.62	101.0	2.96e-02	n/a
S95T000329		D	Alpha in Liquid Samples	uCi/mL	93.91	<8.68e-02	< 5.19e-2	<8.11e-2	n/a	n/a	102.0	1.06e-01	500.0
S95T000329		D	Beta in Liquid Samples	uCi/mL	105.3	<1.91e-01	365.0	348.0	356.5	4.77	110.2	2.41e-01	0.6
S95T000329		D	Am-241 by Extraction	uCi/mL	88.27	<1.59e-03	2.09e-03	1.91e-03	2.00e-03	9.00	n/a	1.10e-03	8.9
S95T000329		D	Cm-243/244 by Extraction	uCi/mL	n/a	<1.59e-03	< 1.10e-3	<1.14e-3	n/a	n/a	n/a	1.10e-03	29.5
S95T000329		D	Cobalt-60 by GEA	uCi/mL	104.0	<5.32e-04	2.72e-02	2.38e-02	2.55e-02	13.3	n/a	5.32e-04	32.01
S95T000329		D	Cesium-137 by GEA	uCi/mL	100.0	<8.02e-04	380.0	368.0	374.0	3.21	n/a	8.02e-04	0.16
S95T000329		D	Europium-154 by GEA	uCi/mL	n/a	<1.33e-03	<7.98e-02	<7.32e-2	n/a	n/a	n/a	1.33e-03	n/a
S95T000329		D	Europium-155 by GEA	uCi/mL	n/a	<1.18e-03	< 2.44e-1	<2.42e-1	n/a	n/a	n/a	1.18e-03	n/a
S95T000329		D	Tritium By Lachat	uCi/mL	100.0	<6.95e-05	3.16e-04	3.32e-03	1.82e-03	165	2.16e+03	6.95e-05	4.67
S95T000329		D	Np237 by TTA Extraction	uCi/mL	82.92	<4.12e-04	< 7.89e-4	<4.42e-4	n/a	n/a	81.60	8.63e-04	141.3
S95T000329		D	Pu-238 by Ion Exchange	uCi/mL	n/a	<5.90e-05	< 6.41E-5	<6.51e-5	n/a	n/a	n/a	6.41e-05	15.7
S95T000329		D	Pu-239/240 by Ion Exchange	uCi/mL	93.75	<5.90e-05	6.80e-05	7.28e-05	7.04e-05	6.82	n/a	6.41e-05	8.7
S95T000329		D	Strontium-89/90 High Level	uCi/mL	91.89	<3.69e-02	2.500	2.300	2.400	8.33	n/a	5.21e-02	6.0
S95T000329		D	Technetium-99 Liq. Scint.	uCi/mL	96.68	7.23e-04	1.44e-01	1.49e-01	1.46e-01	3.41	n/a	5.60e-04	1.05
S95T000333		V	OH- by Pot. Titration	ug/mL	99.38	<4167.0	2.96e+04	2.89e+04	2.92e+04	2.39	n/a	4.17e+03	n/a
S95T000333		V	Chromium (VI) by Spec.	ug/mL	102.2	<3.90e-02	< 3.939	12.40	n/a	n/a	n/a	3.939	n/a
S95T000333		V	Iodine-129 Waste Tank Samples	uCi/mL	81.65	<5.91e-04	1.90e-04	1.93e-04	1.91e-04	1.57	n/a	5.91e-04	34.0
S95T000333		V	Bromide by Ion Chromatograph	ug/mL	100.0	<40.80	< 4.08e3	<4.08e3	n/a	n/a	n/a	4.08e+03	n/a
S95T000333		V	Chloride by IC - Dionex 4000i	ug/mL	101.9	<5.100	1.17e+04	1.10e+04	1.14e+04	6.17	n/a	510.0	n/a
S95T000333		V	Fluoride by IC - Dionex 4000i	ug/mL	96.79	<3.060	< 3.06e2	<3.06e2	n/a	n/a	n/a	306.0	n/a
S95T000333		V	Nitrite by IC - Dionex 4000i	ug/mL	93.51	<40.80	1.43e+05	1.34e+05	1.38e+05	6.50	n/a	4.08e+03	n/a

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Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000333		V	Nitrate by IC - Dionex 4000i	ug/mL	102.2	<51.00	1.78e+05	1.67e+05	1.72e+05	6.38	n/a	5.10e+03	n/a
S95T000333		V	Oxalate by IC - Dionex 4000i	ug/mL	91.68	<25.50	< 2.55e3	<2.55e3	n/a	n/a	n/a	2.55e+03	n/a
S95T000333		V	Phosphate by IC - Dionex 4000i	ug/mL	96.32	<30.60	3.38e+03	2.98e+03	3.18e+03	12.6	n/a	3.06e+03	n/a
S95T000333		V	Sulfate by IC - Dionex 4000i	ug/mL	101.7	<40.80	< 4.08e3	<4.08e3	n/a	n/a	n/a	4.08e+03	n/a
S95T000333		V	Acetate by IC - Dionex 4000i	ug/mL	99.84	<2.00e-01	1.32e+03	1.34e+03	1.33e+03	1.50	n/a	220.0	n/a
S95T000333		V	Formate by Ion Chromatograph	ug/mL	103.2	<2.00e-01	4.23e+03	4.34e+03	4.28e+03	2.57	n/a	220.0	n/a

216 Day Final Report: Results for Liner Liquids
SY-103

CORE NUMBER: 62
SEGMENT #: 13

SEGMENT PORTION: Liner Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000284			Tot. Organic Carbon by Coul.	ug/mL	99.67	<5.000	4.36e+03	4.27e+03	4.32e+03	2.09	n/a	105.0	n/a
S95T000284			% Water by TGA using Mettler	%	98.83	n/a	69.58	69.48	69.53	0.14	n/a	n/a	n/a
S95T000284			pH Direct	pH	99.32	n/a	13.63	N/A	n/a	n/a	n/a	1.00e-02	n/a
S95T000284			DSC Exotherm using Mettler	Joules/g	95.96	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T000326		B	Aluminium -ICP-Acid Adjust	ug/mL	99.60	-6.00e-03	5.15e+03	4.32e+03	4.74e+03	18.5	n/a	21.00	n/a
S95T000326		B	Boron -ICP-Acid Adjust	ug/mL	98.20	5.00e-03	63.00	54.30	58.65	14.7	n/a	21.00	n/a
S95T000326		B	Barium -ICP-Acid Adjust	ug/mL	97.60	0.00e+00	< 21.0	<21.0	n/a	n/a	n/a	21.00	n/a
S95T000326		B	Bismuth -ICP-Acid Adjust	ug/mL	101.6	1.00e-02	< 42.0	<42.0	n/a	n/a	n/a	42.00	n/a
S95T000326		B	Calcium -ICP-Acid Adjust	ug/mL	103.8	8.00e-03	136.0	109.0	122.5	22.0	n/a	42.00	n/a
S95T000326		B	Chromium -ICP-Acid Adjust	ug/mL	102.4	-0.00e+00	35.00	29.70	32.35	16.1	n/a	4.200	n/a
S95T000326		B	Iron -ICP-Acid Adjust	ug/mL	101.2	1.00e-03	< 21.0	<21.0	n/a	n/a	n/a	21.00	n/a
S95T000326		B	Potassium -ICP-Acid Adjust	ug/mL	97.60	-9.20e-02	1.56e+03	1.26e+03	1.41e+03	21.3	n/a	210.0	n/a
S95T000326		B	Lithium -ICP-Acid Adjust	ug/mL	98.20	1.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000326		B	Sodium -ICP-Acid Adjust	ug/mL	98.20	6.00e-03	1.10e+05	9.27e+04	1.01e+05	17.1	n/a	42.00	n/a
S95T000326		B	Nickel -ICP-Acid Adjust	ug/mL	100.6	-6.00e-03	25.60	22.10	23.85	14.7	n/a	8.400	n/a
S95T000326		B	Phosphorus -ICP-Acid Adjust	ug/mL	100.4	-1.10e-02	1.10e+03	916.0	1.01e+03	18.3	n/a	84.00	n/a
S95T000326		B	Silicon -ICP-Acid Adjust	ug/mL	93.20	1.90e-02	83.60	70.30	76.95	17.3	n/a	21.00	n/a
S95T000326		B	Uranium -ICP-Acid Adjust	ug/mL	97.40	4.70e-02	< 210	<210	n/a	n/a	n/a	210.0	n/a
S95T000326		B	Zinc -ICP-Acid Adjust	ug/mL	103.2	-1.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000326		B	Zirconium -ICP-Acid Adjust	ug/mL	99.00	4.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000330		D	Uranium by Phosphorescence	ug/mL	93.03	1.98e-01	5.780	5.400	5.590	6.80	115.0	2.96e-02	n/a
S95T000330		D	Alpha in Liquid Samples	uCi/mL	93.91	<8.68e-02	< 8.11e-3	<5.19e-3	n/a	n/a	107.7	1.06e-02	500.0
S95T000330		D	Beta in Liquid Samples	uCi/mL	105.3	<1.91e-01	72.00	68.90	70.45	4.40	109.3	2.41e-02	0.4
S95T000330		D	Am-241 by Extraction	uCi/mL	82.41	<7.43e-04	< 1.00e-3	<8.09e-4	n/a	n/a	n/a	1.00e-03	11.3
S95T000330		D	Cm-243/244 by Extraction	uCi/mL	n/a	<7.43e-04	< 1.00e-3	<8.09e-4	n/a	n/a	n/a	1.00e-03	52.5
S95T000330		D	Cobalt-60 by GEA	uCi/mL	104.0	<5.32e-04	< 2.58e-3	4.08e-03	n/a	n/a	n/a	5.32e-04	na
S95T000330		D	Cesium-137 by GEA	uCi/mL	100.0	<8.02e-04	62.20	63.20	62.70	1.59	n/a	8.02e-04	0.12
S95T000330		D	Europium-154 by GEA	uCi/mL	n/a	<1.33e-03	< 1.31e-2	<1.29e-2	n/a	n/a	n/a	1.33e-03	na
S95T000330		D	Europium-155 by GEA	uCi/mL	n/a	<1.18e-03	< 3.14e-2	<3.14e-2	n/a	n/a	n/a	1.18e-03	na
S95T000330		D	Tritium By Lachat	uCi/mL	100.0	<6.95e-05	3.19e-03	2.85e-03	3.02e-03	11.3	536.4	6.95e-05	2.06
S95T000330		D	Np237 by TTA Extraction	uCi/mL	91.19	<7.89e-04	< 7.59e-4	<4.87e-4	n/a	n/a	81.90	8.63e-04	153.2
S95T000330		D	Pu-238 by Ion Exchange	uCi/mL	n/a	<7.67e-05	< 7.13e-5	<6.17e-5	n/a	n/a	n/a	7.13e-05	9.1
S95T000330		D	Pu-239/240 by Ion Exchange	uCi/mL	96.90	<7.67e-05	1.05e-04	8.49e-05	9.50e-05	21.2	n/a	7.13e-05	5.9
S95T000330		D	Strontium-89/90 High Level	uCi/mL	91.89	<3.69e-02	1.77e-01	2.03e-01	1.90e-01	13.7	n/a	5.12e-02	29.6
S95T000330		D	Technetium-99 Liq. Scint.	uCi/mL	96.68	7.23e-04	3.09e-02	3.34e-02	3.21e-02	7.78	n/a	5.75e-04	2.25
S95T000334		V	OH- by Pot. Titration	ug/mL	99.38	<4167.0	1.42e+04	1.50e+04	1.46e+04	5.48	n/a	4.17e+03	n/a
S95T000334		V	Chromium (VI) by Spec.	ug/mL	102.2	<3.90e-02	64.70	78.80	71.75	19.7	n/a	3.939	n/a
S95T000334		V	Iodine-129 Waste Tank Samples	uCi/mL	92.51	<5.64e-04	< 4.88e-4	<6.44e-4	n/a	n/a	n/a	5.64e-04	n/a
S95T000334		V	Bromide by Ion Chromatograph	ug/mL	103.5	<8.00e-01	1.56e+04	1.63e+04	1.60e+04	4.39	n/a	1.68e+03	n/a
S95T000334		V	Chloride by IC - Dionex 4000i	ug/mL	103.2	<1.00e-01	4.14e+03	4.20e+03	4.17e+03	1.44	n/a	210.0	n/a
S95T000334		V	Fluoride by IC - Dionex 4000i	ug/mL	97.86	<6.00e-02	322.0	<1.26e2	n/a	n/a	n/a	126.0	n/a
S95T000334		V	Nitrite by IC - Dionex 4000i	ug/mL	97.59	<8.00e-01	4.86e+04	4.98e+04	4.92e+04	2.44	n/a	1.68e+03	n/a
S95T000334		V	Nitrate by IC - Dionex 4000i	ug/mL	102.2	<1.000	6.47e+04	6.88e+04	6.68e+04	6.14	n/a	2.10e+03	n/a

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000334		V	Oxalate by IC - Dionex 4000i	ug/mL	92.87	<5.00e-01	< 1.05e3	<1.05e3	n/a	n/a	n/a	1.05e+03	n/a
S95T000334		V	Phosphate by IC - Dionex 4000i	ug/mL	96.12	<6.00e-01	2.56e+03	2.86e+03	2.71e+03	11.1	n/a	1.26e+03	n/a
S95T000334		V	Sulfate by IC - Dionex 4000i	ug/mL	103.7	<8.00e-01	3.83e+03	4.00e+03	3.92e+03	4.34	n/a	1.68e+03	n/a
S95T000334		V	Acetate by IC - Dionex 4000i	ug/mL	n/a	n/a	716.0	757.0	736.5	5.57	n/a	220.0	n/a
S95T000334		V	Formate by Ion Chromatograph	ug/mL	n/a	n/a	2.08e+03	2.13e+03	2.10e+03	2.38	n/a	220.0	n/a

216 Day Final Report: Results for Liner Liquids
SY-103

CORE NUMBER: 62
SEGMENT #: 15

SEGMENT PORTION: Liner Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000262			Bulk Density of Sample	g/mL	n/a	n/a	1.160	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T000285			Tot. Organic Carbon by Coul.	ug/mL	99.67	<5.000	3.81e+03	3.96e+03	3.88e+03	3.86	n/a	105.0	n/a
S95T000285			% Water by TGA using Mettler	%	99.34	n/a	75.35	74.73	75.04	0.83	n/a	n/a	n/a
S95T000285			pH Direct	pH	99.46	n/a	13.50	n/a	n/a	n/a	n/a	1.00e-02	n/a
S95T000285			DSC Exotherm using Mettler	Joules/g	107.2	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S95T000327		B	Aluminium -ICP-Acid Adjust	ug/mL	99.60	-6.00e-03	3.08e+03	3.06e+03	3.07e+03	0.65	n/a	21.00	n/a
S95T000327		B	Boron -ICP-Acid Adjust	ug/mL	98.20	5.00e-03	33.20	34.40	33.80	3.55	n/a	21.00	n/a
S95T000327		B	Barium -ICP-Acid Adjust	ug/mL	97.60	0.00e+00	< 21.0	<21.0	n/a	n/a	n/a	21.00	n/a
S95T000327		B	Bismuth -ICP-Acid Adjust	ug/mL	101.6	1.00e-02	< 42.0	<42.0	n/a	n/a	n/a	42.00	n/a
S95T000327		B	Calcium -ICP-Acid Adjust	ug/mL	103.8	8.00e-03	75.20	86.40	80.80	13.9	n/a	42.00	n/a
S95T000327		B	Chromium -ICP-Acid Adjust	ug/mL	102.4	-0.00e+00	5.490	5.240	5.365	4.66	n/a	4.200	n/a
S95T000327		B	Iron -ICP-Acid Adjust	ug/mL	101.2	1.00e-03	< 21.0	<21.0	n/a	n/a	n/a	21.00	n/a
S95T000327		B	Potassium -ICP-Acid Adjust	ug/mL	97.60	-9.20e-02	1.20e+03	1.19e+03	1.20e+03	0.00	n/a	210.0	n/a
S95T000327		B	Lithium -ICP-Acid Adjust	ug/mL	98.20	1.00e-03	69.10	68.70	68.90	0.58	n/a	4.200	n/a
S95T000327		B	Sodium -ICP-Acid Adjust	ug/mL	98.20	6.00e-03	7.34e+04	7.30e+04	7.32e+04	0.55	n/a	42.00	n/a
S95T000327		B	Nickel -ICP-Acid Adjust	ug/mL	100.6	-6.00e-03	26.60	26.10	26.35	1.90	n/a	8.400	n/a
S95T000327		B	Phosphorus -ICP-Acid Adjust	ug/mL	100.4	-1.10e-02	635.0	640.0	637.5	0.78	n/a	84.00	n/a
S95T000327		B	Silicon -ICP-Acid Adjust	ug/mL	93.20	1.90e-02	84.10	88.90	86.50	5.55	n/a	21.00	n/a
S95T000327		B	Uranium -ICP-Acid Adjust	ug/mL	97.40	4.70e-02	< 210	<210	n/a	n/a	n/a	210.0	n/a
S95T000327		B	Zinc -ICP-Acid Adjust	ug/mL	103.2	-1.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000327		B	Zirconium -ICP-Acid Adjust	ug/mL	99.00	4.00e-03	< 4.20	<4.20	n/a	n/a	n/a	4.200	n/a
S95T000331		D	Uranium by Phosphorescence	ug/mL	93.03	1.98e-01	4.640	5.820	5.230	22.6	116.0	2.96e-02	n/a
S95T000331		D	Alpha in Liquid Samples	uCi/mL	93.91	<8.68e-02	< 4.61e-3	<6.94e-3	n/a	n/a	98.00	1.06e-02	196.0
S95T000331		D	Beta in Liquid Samples	uCi/mL	105.3	<1.91e-01	110.0	115.0	112.5	4.44	109.0	2.41e-02	0.3
S95T000331		D	Am-241 by Extraction	uCi/mL	82.41	<7.43e-04	< 1.12e-3	<1.83e-3	n/a	n/a	n/a	1.12e-03	20.0
S95T000331		D	Cm-243/244 by Extraction	uCi/mL	n/a	<7.43e-04	< 1.12e-3	<1.83e-3	n/a	n/a	n/a	1.12e-03	74.2
S95T000331		D	Cobalt-60 by GEA	uCi/mL	104.0	<5.32e-04	< 4.76e-3	<4.72e-3	n/a	n/a	n/a	5.32e-04	na
S95T000331		D	Cesium-137 by GEA	uCi/mL	100.0	<8.02e-04	104.0	104.0	104.0	0.00	n/a	8.02e-04	0.1
S95T000331		D	Europium-154 by GEA	uCi/mL	n/a	<1.33e-03	< 2.32e-2	<2.28e-2	n/a	n/a	n/a	1.33e-03	na
S95T000331		D	Europium-155 by GEA	uCi/mL	n/a	<1.18e-03	< 4.08e-2	<4.06e-2	n/a	n/a	n/a	1.18e-03	na
S95T000331		D	Tritium By Lachat	uCi/mL	100.0	<6.95e-05	6.89e-03	1.98e-03	4.43e-03	111	20.90	6.95e-05	1.45
S95T000331		D	Np237 by TTA Extraction	uCi/mL	91.19	<7.89e-04	< 6.53e-4	8.79e-04	n/a	n/a	87.60	8.63e-04	217.8
S95T000331		D	Pu-238 by Ion Exchange	uCi/mL	n/a	<7.67e-05	< 6.57e-5	<6.10e-5	n/a	n/a	n/a	6.57e-05	100.0
S95T000331		D	Pu-239/240 by Ion Exchange	uCi/mL	96.90	<7.67e-05	< 6.57e-5	<6.10e-5	n/a	n/a	n/a	6.57e-05	100.0
S95T000331		D	Strontium-89/90 High Level	uCi/mL	91.89	<3.69e-02	3.25e-01	3.18e-01	3.22e-01	2.18	n/a	5.18e-02	19.5
S95T000331		D	Technetium-99 Liq. Scint.	uCi/mL	96.68	7.23e-04	4.28e-02	3.90e-02	4.09e-02	9.29	n/a	6.35e-04	2.03
S95T000335		V	OH- by Pot. Titration	ug/mL	99.38	<4167.0	1.30e+04	1.27e+04	1.28e+04	2.33	n/a	4.17e+03	n/a
S95T000335		V	Chromium (VI) by Spec.	ug/mL	102.2	<3.90e-02	8.180	11.00	9.590	29.4	n/a	3.939	n/a
S95T000335		V	Iodine-129 Waste Tank Samples	uCi/mL	92.51	<5.64e-04	< 4.58e-4	<5.82e-4	n/a	n/a	n/a	5.64e-04	n/a
S95T000335		V	Bromide by Ion Chromatograph	ug/mL	103.5	<8.00e-01	1.76e+04	1.75e+04	1.76e+04	0.57	n/a	1.69e+03	n/a
S95T000335		V	Chloride by IC - Dionex 4000i	ug/mL	103.2	<1.00e-01	3.86e+03	3.88e+03	3.87e+03	0.52	n/a	210.0	n/a
S95T000335		V	Fluoride by IC - Dionex 4000i	ug/mL	97.86	<6.00e-02	< 1.26e2	<1.26e2	n/a	n/a	n/a	126.0	n/a
S95T000335		V	Nitrite by IC - Dionex 4000i	ug/mL	97.59	<8.00e-01	4.15e+04	4.14e+04	4.14e+04	0.24	n/a	1.68e+03	n/a

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000335		V	Nitrate by IC - Dionex 4000i	ug/mL	102.2	<1.000	5.93e+04	5.92e+04	5.92e+04	0.17	n/a	2.10e+03	n/a
S95T000335		V	Oxalate by IC - Dionex 4000i	ug/mL	92.87	<5.00e-01	< 1.05e3	<1.05e3	n/a	n/a	n/a	1.05e+03	n/a
S95T000335		V	Phosphate by IC - Dionex 4000i	ug/mL	96.12	<6.00e-01	1.68e+03	1.72e+03	1.70e+03	2.35	n/a	1.26e+03	n/a
S95T000335		V	Sulfate by IC - Dionex 4000i	ug/mL	103.7	<8.00e-01	2.55e+03	2.57e+03	2.56e+03	0.78	n/a	1.68e+03	n/a
S95T000335		V	Acetate by IC - Dionex 4000i	ug/mL	n/a	n/a	705.0	692.0	698.5	1.86	n/a	220.0	n/a
S95T000335		V	Formate by Ion Chromatograph	ug/mL	n/a	n/a	2.09e+03	2.01e+03	2.05e+03	3.90	n/a	220.0	n/a

ICP Serial Dilution Results for SY-103
TABLE 1

Analyte	Result	S94T000005	S94T000067	S94T000266	S94T000276	S94T000277
	Sample	22344	38867	28890	27472	26367
Al	Dilution	22370	38876	29683	30047	26677
	%RPD	0.1	0.02	2.7	9.0	1.2
	Sample	<452	808	108	202	110
Ca	Dilution	<452	1322	113	213	111
	%RPD	n/a	48.26	4.5	5.3	0.9
	Sample	64	6232	27	31.1	265
Cr	Dilution	<266	6160	27.1	34	265
	%RPD	n/a	1.2	0.4	8.9	0.0
	Sample	<266	1558	<25	47.1	80.9
Fe	Dilution	<266	1676	<25	52.9	81.4
	%RPD	n/a	7.3	n/a	11.6	0.6
	Sample	140554	176722	149563	159233	152584
Na	Dilution	145010	183580	152803	162990	158222
	%RPD	3.1	3.8	2.1	2.3	3.6
	Sample	3769784	1382397	3145	2684	3176
K	Dilution	3917609	1430161	2886	3272	3260
	%RPD	3.8	3.4	8.6	19.7	2.6
	Sample	1322	4962	33.5	34.3	30.2
Ni	Dilution	1015	4971	36.00	36.1	29.5
	%RPD	26.3	0.2	7.2	5.1	2.3
	Sample	<45.2	<54.9	19.4	36.6	8.08
Zn	Dilution	<45.2	<54.9	14.6	33.2	<9.80
	%RPD	n/a	n/a	28.2	9.7	n/a
	Sample	<45.2	<54.9	<3.51	<1.93	<9.80
Zr	Dilution	<45.2	<54.9	<3.51	<1.93	<9.80
	%RPD	n/a	n/a	n/a	n/a	n/a

RPD (Relative Percent Difference) = (ABS(Sample - Serial Dilution))/[(Sample +Serial Dilution)/2] X 100

Analyte	Result	S94T000278	S94T000299	S94T000300
	Sample	34849	12963	39700 *
Al	Dilution	35466	13603	n/a
	%RPD	1.8	4.8	n/a
	Sample	355	<573	<395
Ca	Dilution	359	<573	<395
	%RPD	1.1	n/a	n/a
	Sample	6498	<95 *	1.07e4 *
Cr	Dilution	6544	n/a	n/a
	%RPD	0.7	n/a	n/a
	Sample	2108	<287	2.36e3 *
Fe	Dilution	2141	<287	n/a
	%RPD	1.6	n/a	n/a
	Sample	187767	222827	161134
Na	Dilution	195876	201210	163512
	%RPD	4.2	10.2	1.5
	Sample	3315	7935912	5658910
K	Dilution	3640	8322849	5739238
	%RPD	9.3	4.8	1.4
	Sample	102	1271	653
Ni	Dilution	109	1310	608.00
	%RPD	6.6	3.0	7.1
	Sample	23.7	<57	<39.5
Zn	Dilution	20	<57	<39.5
	%RPD	16.9	n/a	n/a
	Sample	58.2	<57	<39.5
Zr	Dilution	63	<57	<39.5
	%RPD	7.9	n/a	n/a

RPD (Relative Percent Difference) = (ABS(Sample - Serial Dilution))/[(Sample +Serial Dilution)/2] X 100

* The sample results reported are rerun values. No serial dilution was run.

ICP Serial Dilution Results for SY-103
TABLE 1 (continued)

Analyte	Result	S95T000323	S95T000324	S95T000325	S95T000326	S95T000327
	Sample	24220	40480	37170	5151	3077
Al	Dilution	24460	40650	37670	5255	3153
	%RPD	1.0	0.4	1.3	2.0	2.4
	Sample	56.85	86.05	81.06	6295	33.21
B	Dilution	54.37	83.79	90.57	6115	35.59
	%RPD	4.5	2.7	11.1	2.9	6.9
	Sample	<21	<21	<21	<21	<21
Ba	Dilution	<21	<21	<21	<21	<21
	%RPD	n/a	n/a	n/a	n/a	n/a
	Sample	<42	<42	<42	<42	<42
Bi	Dilution	<42	<42	<42	<42	<42
	%RPD	n/a	n/a	n/a	n/a	n/a
	Sample	82.69	119.4	115.5	135.5	75.22
Ca	Dilution	94.7	132.7	129.7	160.3	82.3
	%RPD	13.5	10.6	11.6	16.8	9.0
	Sample	161.8	32.62	37.08	34.95	5.489
Cr	Dilution	163.6	33.34	37.75	35.59	5.735
	%RPD	1.1	2.2	1.8	1.8	4.4
	Sample	49.76	<21	<21	<21	<21
Fe	Dilution	54.8	<21	<21	<21	<21
	%RPD	9.6	n/a	n/a	n/a	n/a
	Sample	2324	3820	3495	1558	1188
K	Dilution	2184	3632	3644	1689	1365
	%RPD	6.2	5.0	4.2	8.1	13.9
	Sample	<4.2	<4.2	<4.2	<4.2	<4.2
Li	Dilution	<4.2	<4.2	<4.2	<4.2	<4.2
	%RPD	n/a	n/a	n/a	n/a	n/a
	Sample	126800	208340	194600	109500	73370
Na	Dilution	131100	215310	202900	112800	76900
	%RPD	3.3	3.3	4.2	3.0	4.7
	Sample	30.71	50.09	47.39	25.64	26.63
Ni	Dilution	<8.4	42.29	36.30	20.34	24.94
	%RPD	200.0	16.9	26.5	23.1	6.6
	Sample	860	1123	1150	1098	635
P	Dilution	862	1118	1158	1116	643.7
	%RPD	0.2	0.4	0.7	1.6	1.4
	Sample	67.8	77.9	116.8	83.6	84.14
Si	Dilution	98.9	102.5	145.2	83.6	84.14
	%RPD	37.3	27.3	21.7	0.0	0.0
	Sample	<210	<210	<210	<210	<210
U	Dilution	<210	<210	<210	<210	<210
	%RPD	n/a	n/a	n/a	n/a	n/a
	Sample	<4.2	<4.2	<4.2	<4.2	<4.2
Zn	Dilution	<4.2	<4.2	<4.2	<4.2	<4.2
	%RPD	n/a	n/a	n/a	n/a	n/a
	Sample	<4.2	<4.2	<4.2	<4.2	<4.2
Zr	Dilution	<4.2	<4.2	<4.2	<4.2	<4.2
	%RPD	n/a	n/a	n/a	n/a	n/a

RPD (Relative Percent Difference) = (ABS(Sample - Serial Dilution))/[(Sample +Serial Dilution)/2] X 100

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CHAIN OF CUSTODY

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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-001 (2) Sample Number 94-005 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 1 (7) Core 062 (8) Cask Serial Number C1017

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	5.5 mr/HR	<1 mr/hr
Side Dose Rate	50 mr/HR	50 mr/hr
Bottom Dose Rate	20 mr/HR	30 mr/hr
Smearable Contamination	<det (Alpha)	<20 (Alpha)
	<det (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	2W-94-0183-W
B. Cask Seal Number	2404
C. Sampler Serial Number	94-097
D. Date and Time Sampler Unseated	8-19-94, 1033
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2 R/HR
H. Expected Sample Length	411

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

Characterize per WHC-SD-WM-TP-197

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(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	2225	D.C. Hartley	8/22/94, 1000	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D.C. Hartley		Dan O. Dunbar	8/22/94 1000	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Dan O. Dunbar		Sandra Cobb	08-22-94 1030	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

SINGLE SHELL TANK LOG BOOK		№ 146
Laboratory ID No. 94-005	Date Received 08-22-94	Time Received 1015
Delivered by (*Signature*)		
Sample Custodian (*Signature*) Sandra Cobb		
HPT (*Signature*)		Dose Rate 50 mR/hr
Date Sampled 08-19-94	Time Sampled 1053	Seal #2404
Tank ID No. 241-SY-103	Core ID No. ~~Core 62 Segment 1~~	
Chain of Custody No. N/A	Sample Location 1-E	
Customer Notified of Arrival:	Date	Time

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date Received	Time Received
94-005	[illegible]		08-22-94	1100
Sample Custodian Signature Sandra Cobb		Sample Returned: Date		Time

Sample Fraction		Disposal Method	Date	Time
Solids No.:	Jar No.:			
H_2O No:				
Fusion No.				
Acid No.				

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time

FINAL SAMPLE DISPOSAL		
Method	Date	Time
Customer Notified of Disposal:	Date	Time
Sample Custodian (*Signature*)		

BD-6000-627 (01/91)

CASK CHECK-IN LIST

DATE/TIME RECEIVED 08-22-94 1000 SAMPLE ID 94-005

PROJECT/TANK 241-SY-103 CLIENT Tank Farms

SHIPPING CONTAINER ID NUMBER C1017 SHIPPING NUMBER SP-94-001

1. Condition of shipping container good
2. Custody seal on container intact Yes [✓] No [ ]
3. Custody seal dated and signed Yes [✓] No [ ]
4. Appropriate sample number showing on custody seal Yes [✓] No [ ]
5. Custody seal ID number 2404
6. Chain of Custody document accounted for Yes [✓] No [ ]
7. Are any anomalies present Yes [ ] No [✓]
8. If anomalies identified, have appropriate personnel been informed

   Yes [ ] No [ ]

Printed Name Sandra Cobb

Signature Sandra Cobb

Date/Time 08-22-94 1145

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-001 (2) Sample Number 94-006 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 2 (7) Core 062 (8) Cask Serial Number C1024

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5 mr/HR	<1 mr/hr
Side Dose Rate	54 mr/HR	50 mr/hr
Bottom Dose Rate	16 mr/HR	18 mr/hr
Smearable Contamination (Alpha)	<det.	<20
(Beta-Gamma)	<det.	<1000
RCT* (HPT) (Signature)	J. Mitovich	Dan Sm

(10) Shipment Description

A. Work Package Number	2W-94-083-W
B. Cask Seal Number	2402
C. Sampler Serial Number	94-001
D. Date and Time Sampler Unseated	8-19-94, 1414
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2.2 R/HR
H. Expected Sample Length	19'

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

341 WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	222S	D C Hartley	8/22/94 1000	
(18) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D C Hartley		Dan O. Dunkley	8/22/94 1000	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Dan O. Dunkley		Sandra Cobb	08-22-94 1000	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☐ Yes ☐ No

DISTRIBUTION: W - Office of Sample Management Yellow - Recipient of Sample Pink - Co npling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC- 309 (02/94)

WHC-SD-WM-TP-197, Rev. 0

SINGLE SHELL TANK LOG BOOK			№ 147
Laboratory ID No. 94-006		Date Received 08-22-94	Time Received 1020
Delivered by (*Signature*)			
Sample Custodian (*Signature*)			
HPT (*Signature*)			Dose Rate 50 mr/hr
Date Sampled 08-19-94		Time Sampled 1414	Seal # 2402
Tank ID No. 241-SY-103		Core ID No. [redacted]	
Chain of Custody No. N/A		Sample Location 1-E	
Customer Notified of Arrival:		Date	Time
Lab ID No. 94-006	Technician/Receiver Signature	Payroll No.	Date Received 08-22-94	Time Received 1100
Sample Custodian Signature		Sample Returned: Date	Time

Sample Fraction		Disposal Method	Date	Time
Solids No.:	Jar No.:			
H_2O No:				
Fusion No.				
Acid No.				

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time

FINAL SAMPLE DISPOSAL		
Method	Date	Time
Customer Notified of Disposal:	Date	Time
Sample Custodian (*Signature*)		

BD-6000-627 (01/91)

CASK CHECK-IN LIST

DATE/TIME RECEIVED 08 22 94 SAMPLE ID 94-006

PROJECT/TANK 241-SY-103 CLIENT Tank Farms

SHIPPING CONTAINER ID NUMBER C1024 SHIPPING NUMBER SP-94-001

1. Condition of shipping container good
2. Custody seal on container intact Yes [✓] No [ ]
3. Custody seal dated and signed Yes [✓] No [ ]
4. Appropriate sample number showing on custody seal Yes [✓] No [ ]
5. Custody seal ID number 2402
6. Chain of Custody document accounted for Yes [✓] No [ ]
7. Are any anomalies present Yes [ ] No [✓]
8. If anomalies identified, have appropriate personnel been informed

   Yes [ ] No [ ]

Printed Name Sandra Cobb

Signature Sandra Cobb

Date/Time 08-22-94 1000

SINGLE SHELL TANK LOG BOOK			№ 148
Laboratory ID No. 94-007		Date Received 8-25-94	Time Received 1110
Delivered by (*Signature*)			
Sample Custodian (*Signature*)			
HPT (*Signature*)			Dose Rate 65 mR/hr
Date Sampled 8-23-94		Time Sampled 1024	Seal # 2403
Tank ID No. 241-SY-103		Core ID No. segment 3, 062 Riser # 14A	
Chain of Custody No. 241-SY-103		Sample Location	
Customer Notified of Arrival:		Date	Time

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date Received	Time Received
Sample Custodian Signature		Sample Returned: Date		Time

Sample Fraction		Disposal Method	Date	Time
Solids No.:	Jar No.:			
H_2O No:				
Fusion No.				
Acid No.				

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time

FINAL SAMPLE DISPOSAL		
Method	Date	Time
Customer Notified of Disposal:	Date	Time
Sample Custodian (*Signature*)		

BD-6000-627 (01/91)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-002 (2) Sample Number 94-007 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 3 (7) Core 062 (8) Cask Serial Number 1009C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5 mR/hr.	0.5 mR/hr
Side Dose Rate	60 mR/hr.	65 mR/hr
Bottom Dose Rate	17 mR/hr.	13 mR/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm/100cm² (Alpha)
	<1K dpm/100cm² (Beta-Gamma)	<1K dpm/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) S.H. Landos (Signature)

(10) Shipment Description	
A. Work Package Number	2W-94-00183/W
B. Cask Seal Number	2403
C. Sampler Serial Number	94-114
D. Date and Time Sampler Unseated	8-23-94, 10:24
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2.2 R/HR.
H. Expected Sample Length	19 11

(11) INFORMATION (include statement of laboratory tests to be performed.)

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(12) Field Comments

This Sample remained in the Core barrel in the tank for 3 full days

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D. Hartley D. Hartley	8/25/94 0845	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D. Hartley D. Hartley		James R. Fechaty James Fechaty	8-25-94 0845	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
James R. Fechaty James R. Fechaty		T. Raguin	1110 8-25-94	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC 309 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-002 (2) Sample Number 94-008 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 4 (7) Core 062 (8) Cask Serial Number C1049

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.05 mR/hr	0.5 mR/hr
Side Dose Rate	37 mR/hr	42 mR/hr
Bottom Dose Rate	16 mR/hr	15 mR/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm/100cm² (Alpha)
	<1 kdpm/100cm² (Beta-Gamma)	<1 kdpm/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) S.N. (Signature)

(10) Shipment Description

A. Work Package Number	2W-94-00183/W
B. Cask Seal Number	2448
C. Sampler Serial Number	94-115
D. Date and Time Sampler Unseated	8-23-94, 1430
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2R/HR
H. Expected Sample Length	19"

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

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(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D. Hartley	8/25/94 0845	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D Hartley		Janice L Fluhrty	8-25-94 0845	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Janice L Fluhrty			8-25-94 1120	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

SINGLE SHELL TANK LOG BOOK			№ 149
Laboratory ID No. 94-008		Date Received 8-25-94	Time Received 1120
Delivered by (*Signature*)			
Sample Custodian (*Signature*)			
HPT (*Signature*)			Dose Rate 2 mR/hr
Date Sampled 8-23-94		Time Sampled 1430	Unit # 2448
Tank ID No. 241-SY-103		Core ID No. 062	Segment # 4 Riser # 14A
Chain of Custody No. 241-SY-103		Sample Location	
Customer Notified of Arrival:		Date	Time

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date Received	Time Received
Sample Custodian Signature		Sample Returned: Date		Time

Sample Fraction		Disposal Method	Date	Time
Solids No.:	Jar No.:			
H_2O No:				
Fusion No.				
Acid No.				

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time

FINAL SAMPLE DISPOSAL		
Method	Date	Time
Customer Notified of Disposal:	Date	Time
Sample Custodian (*Signature*)		

BD-6000-627 (01/91)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-003 (2) Sample Number 94-009 (3) Supervisor D.E. Melville

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 5 (7) Core 62 (8) Cask Serial Number C 1039

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.5 mR/hr	.5 mR/hr
Side Dose Rate	43 mR/hr	40 mR/hr
Bottom Dose Rate	15 mR/hr	16 mR/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 DPM/100cm² (Alpha)
	<1000 dpm/100cm² (Beta-Gamma)	<1000 DPM/100cm² (Beta-Gamma)
RCT* (HPT)	T.W. Graff (Signature)	J. Valerio Jr. (Signature)

(10) Shipment Description

A. Work Package Number	2W-94-00183/W
B. Cask Seal Number	~~3450~~ 2450
C. Sampler Serial Number	94-095
D. Date and Time Sampler Unseated	9/8/94, 1338
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2.2 R/hr.
H. Expected Sample Length	19"

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

Characterization WHC-SD-WM-TP-197

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(12) Field Comments None

(34) Laboratory Comments None

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY Farm	222S.	D.E. Melville	9/9/94 1500	None.

(19) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D.E. Melville	DO Dudley	9/9/94 1500	N/A

(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
		9-9-94 1530	N/A

(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

WHC-SD-WM-DP-074, REV. 0

(1 C)

SINGLE SHELL TANK LOG BOOK		№ 150
Laboratory ID No. 94-009	Date Received 9-9-94	Time Received 1530
Delivered by (*Signature*) Dan O. Dudley		
Sample Custodian (*Signature*) N. Lapsins	WHC-SD-WM-DP-074, REV. 0	
HPT (*Signature*) Joe Valdez Jr.		Dose Rate 40 MR/HR
Date Sampled 9-8-94	Time Sampled 1338	
Tank ID No. 241-SY-103	Core ID No. 62 Riser 14A seal #2450	
Chain of Custody No. 241-SY-103	Sample Location 1-C	
Customer Notified of Arrival:	Date	Time

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date Received	Time Received
Sample Custodian Signature		Sample Returned: Date		Time

Sample Fraction		Disposal Method	Date	Time
Solids No.:	Jar No.:			
H_2O No:				
Fusion No.				
Acid No.				

Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time
Lab ID No.	Technician/Receiver Signature	Payroll No.	Date	Time
Sample Custodian Signature		Sample Returned: Date		Time

FINAL SAMPLE DISPOSAL		
Method	Date	Time
Customer Notified of Disposal:	Date	Time
Sample Custodian (*Signature*)		

BD-6000-627 (01/91)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-004 (2) Sample Number 94-010 (3) Supervisor D Hartley

(4) Tank 10354 (5) Riser 14A (6) Segment 6 (7) Core 062 (8) Cask Serial Number 1007C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.5	.5
Side Dose Rate	45	40
Bottom Dose Rate	18	10
Smearable Contamination	<20/100cm² (Alpha)	<20/100cm² (Alpha)
	<1000/100cm² (Beta-Gamma)	<1000/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) P Campbell (Signature)

(10) Shipment Description

A. Work Package Number	2W-94-00183/co
B. Cask Seal Number	3606
C. Sampler Serial Number	94-118
D. Date and Time Sampler Unseated	9-13-94, 1240
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2.5 R/HR
H. Expected Sample Length	19"

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

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(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	222S	D Hartley D Hartley		

(19) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA Katsel PA Katsel	KAREN C. LEE	9/15/94 1900	

(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN C. LEE	MICHAEL A. COOK	9/15/94 1930	

(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

BC-6000-309 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-004 (2) Sample Number 94-011 (3) Supervisor D. Hartley

(4) Tank 103 SY (5) Riser 14A (6) Segment 7 (7) Core 062 (8) Cask Serial Number C1029

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.5	.5
Side Dose Rate	60	60
Bottom Dose Rate	17	10
Smearable Contamination	<20/100cm² (Alpha)	<20/100cm² (Alpha)
	<1000/100 cm² (Beta-Gamma)	<1000/100 cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	2W9400183/02
B. Cask Seal Number	3607
C. Sampler Serial Number	94-116
D. Date and Time Sampler Unseated	9-13-94/1438
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2 R/hr
H. Expected Sample Length	19"

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

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(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	222S	D C Hartley		
(19) Relinquished By (Sign and PRINT)		**(20) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
PA Katsel		KAREN C. LEE	9/15/94 1900	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
KAREN C. LEE		MICHAEL A. COOK	9/15/94 1930	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

BC-6000-309 (02/94)

WHC-SD-WM-DP-074, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-004 (2) Sample Number 94-012 (3) Supervisor D. Hartley

(4) Tank 241SY103 (5) Riser 14A (6) Segment 8 (7) Core 062 (8) Cask Serial Number 1008C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	>.5	.5
Side Dose Rate	60	70
Bottom Dose Rate	19	10
Smearable Contamination	<20/100cm² (Alpha)	<20/100cm² (Alpha)
	<1000/100cm² (Beta-Gamma)	<1000/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) JCampbell (Signature)

(10) Shipment Description	
A. Work Package Number	2W9400/83/W
B. Cask Seal Number	3616
C. Sampler Serial Number	94-100
D. Date and Time Sampler Unseated	9-13-94/1817
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2R/HR.
H. Expected Sample Length	19"

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

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(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D C Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
P A Katsel		KAREN C. LEE	9/15/94 1900	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN C. LEE		MICHAEL A. COOK	9/15/94 1930	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

WHC-SD-WM-DP-074, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-005 (2) Sample Number 94-013 (3) Supervisor D. Hartley

(4) Tank 241S4103 (5) Riser 14A (6) Segment 9 (7) Core 062 (8) Cask Serial Number C1042

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	>.5	.5
Side Dose Rate	35	38
Bottom Dose Rate	18	10
Smearable Contamination	<20 dpm/100 cm2 (Alpha)	<20/100 cm2 (Alpha)
	<1000 dpm/100cm2 (Beta-Gamma)	<1000/1000 m2 (Beta-Gamma)
RCT* (HPT) (Signature)	T. Craft	P. Campbell

(10) Shipment Description	
A. Work Package Number	2W940018 3/W
B. Cask Seal Number	3609
C. Sampler Serial Number	94-108
D. Date and Time Sampler Unseated	9-13-94, 1923
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.9 R/hr
H. Expected Sample Length	19"

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

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WHC-SD-WM-DP-074, REV. 0

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241S4103	222S	DC Hartley		
(19) Relinquished By (Sign and PRINT)		**(20) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
PA Katsel		KC Lee	9/15/94 2030	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
KC Lee		MICHAEL A. COOK	9/15/94 2045	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTIC White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-005 (2) Sample Number 94-014 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 10 (7) Core 062 (8) Cask Serial Number 1005C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	> 0.5	.5
Side Dose Rate	38	45
Bottom Dose Rate	15	15
Smearable Contamination	< 20 dpm/100cm² (Alpha)	< 20/100cm² (Alpha)
	< 1000 dpm/100cm² (Beta-Gamma)	< 1000/100cm² (Beta-Gamma)
RCT* (HPT)	T.M. Cook (Signature)	Campbell (Signature)

(10) Shipment Description	
A. Work Package Number	2601940083/W
B. Cask Seal Number	3608
C. Sampler Serial Number	94-113
D. Date and Time Sampler Unseated	9-13-94, 2029
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	4 R/hr
H. Expected Sample Length	19"

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

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WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	2225	D.C. Hartley DC Hartley		
(19) Relinquished By (Sign and PRINT)		**(20) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
PA Katsel PA Katsel		KC Lee KC LEE	9/15/94 2030	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
KC Lee KC LEE		MICHAEL A. COOK	9/15/94 2045	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

WHC-SD-WM-DP-074, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-006 (2) Sample Number 94-015 (3) Supervisor D. Hartley

(4) Tank 241SY103 (5) Riser 14A (6) Segment 11 (7) Core 062 (8) Cask Serial Number C1046

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	9/19/94 .05 mr/hr	.5 mR/HR
Side Dose Rate	.35 mr/hr	35 mR/HR
Bottom Dose Rate	22 mr/hr	19 mR/HR
Smearable Contamination	<20/100cm² (Alpha)	<20 DPM/100cm² (Alpha)
	<1K/100cm² (Beta-Gamma)	<1K/100cm² (Beta-Gamma)
RCT* (HPT)	RMeat (Signature)	S.N. Le LANDOS (Signature)

(10) Shipment Description	
A. Work Package Number	2W99-0083/W
B. Cask Seal Number	2438
C. Sampler Serial Number	94-111 9-16-94
D. Date and Time Sampler Unseated	9-16-94 0953
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	6.9R/hr
H. Expected Sample Length	19"

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

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WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	2225	DC Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA Katsel		KAREN LEE	9/19/94 1345	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN LEE		N CAPIERS	9/19/94 1415	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

BC-6000-309 (02/94)

WHC-SD-WM-DP-074, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-006 (2) Sample Number 94-016 (3) Supervisor DCHartley

(4) Tank 241S403 (5) Riser 14A (6) Segment 12 (7) Core 062 (8) Cask Serial Number 1011C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.07 mr/hr	.05
Side Dose Rate	48 mr/hr	35 mR/HR
Bottom Dose Rate	18 mr/hr	21 mR/HR
Smearable Contamination	<20/100cm² (Alpha)	<20dpm/100cm² (Alpha)
	<1K/100cm² (Beta-Gamma)	<1K/100cm² (Beta-Gamma)
RCT* (HPT)	RWW (Signature)	RCT* (HPT) S.N. LANDOE (Signature)

(10) Shipment Description

A. Work Package Number 2W94-00183/W

B. Cask Seal Number 2439

C. Sampler Serial Number 94-105

D. Date and Time Sampler Unseated ~~9-16-94~~ 9/16/94 1101

E. Expected Liquid Content 30%

F. Expected Solid Content 70%

G. Dose Rate Through Drill String 1.7R/HR

H. Expected Sample Length 19"

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

WHC-SD-WM-TP-197

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WHC-SD-WM-DP-074, REV. 0

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241S403	222S	DCHartley DC Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA Katsel PA Katsel		KAREN LEE	9/19/94 0945 ~~9/20/94~~ 1345	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN LEE		N. LAPIERS	9/19/94 1445	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☒ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

CHAIN OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-006 (2) Sample Number 94-017 (3) Supervisor D. Hartley

(4) Tank 241SY103 (5) Riser 14A (6) Segment 13 (7) Core 062 (8) Cask Serial Number C1038

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	9/19/94 .05 mR/hr	0.5 mR/hr
Side Dose Rate	36 mR/hr	34 mR/hr
Bottom Dose Rate	22 mR/hr	18 mR/hr
Smearable Contamination	<20/100cm² (Alpha)	<20dpm/100cm² (Alpha)
	<1K/100cm² (Beta-Gamma)	<1K dpm/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) S-N. LANDOE (Signature)

(10) Shipment Description

A. Work Package Number	JW9400183/W
B. Cask Seal Number	2440
C. Sampler Serial Number	94-098
D. Date and Time Sampler Unseated	9-16-94, 1239
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.8 R/hr
H. Expected Sample Length	191

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

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WHC-SD-WM-TP-197

WHC-SD-WM-DP-074, REV.0

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D C Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA KATSEL		KAREN LEE	9/19/94 1345	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN LEE		LAPIERS	9/19/94 1415	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-007 (2) Sample Number 94-018 (3) Supervisor D. Hartley

(4) Tank 241SY103 (5) Riser 14A (6) Segment 14 (7) Core 062 (8) Cask Serial Number C1022

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.05 mr/hr	<.05 MR/HR
Side Dose Rate	43 mr/hr	41 MR/HR
Bottom Dose Rate	21 mr/hr	26 MR/HR
Smearable Contamination	<2dpm/100cm² (Alpha)	<2dpm/100cm² (Alpha)
	<1dpm/100cm² (Beta-Gamma)	<1dpm β/100cm² (Beta-Gamma)
RCT* (HPT)	RMH (Signature)	S.N. (Signature)

(10) Shipment Description

A. Work Package Number	2W9400183/W
B. Cask Seal Number	2432
C. Sampler Serial Number	94-109
D. Date and Time Sampler Unseated	9-16-94, 1147, 9/19/94
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.8 R/HR
H. Expected Sample Length	191"

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

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WHC-SD-WM-TP-197

WHC-SD-WM-DP-074, REV. 0

(12) Field Comments

(34) Laboratory Comments

Universal Sampler

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D. Hartley D. Hartley	9-21-94 0945	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA KATSEL		K. LEE	9/21/94 1000	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN LEE		Sandra Cobb	09-21-94 1015	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

BC-6000-309 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-007 (2) Sample Number 94-019 (3) Supervisor D Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 15 (7) Core 002 (8) Cask Serial Number 1003

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.05 mr/hr	<.05 mr/hr
Side Dose Rate	25 mr/hr	19 mr/hr
Bottom Dose Rate	15 mr/hr	14 mr/hr
Smearable Contamination	<20 dpm/100 cm² (Alpha)	<20 dpm/100 cm² (Alpha)
	<1K dpm/100 cm² (Beta-Gamma)	<1K dpm/100 cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	2W9400183/W
B. Cask Seal Number	2433
C. Sampler Serial Number	94-103
D. Date and Time Sampler Unseated	9-19-94, 1304
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.5 R/hr
H. Expected Sample Length	19"

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

359

WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

Universal Sampler

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	222S	D Hartley D Hartley	9-21-94 0440	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PAKATSEL		K LEE	9/21/94 1000	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
		Sandra Cobb Sandra Cobb	09-21-94	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43

BC-6000-309 (02/94)

WHC-SD-WM-DP-074, REV. 0

LOGBOOK

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RECORD COPY NOT FOR CIRCULATION FEB 1 1 1994 RECEIVED WHC BCSR DOCUMENT CONTROL	NOTEBOOK NUMBER: WHC-N-911 1 DATE OF ISSUE: 2-11-94 SERIES AND COPY: 1 TITLE (INDICATE SUBJECT CONTENT): 241-SY-103

AUTHOR(S) - DEPARTMENT AND SECTION

R.K. Fuller

222-S Laboratory - Hot Cell Operations

PERIOD COVERED (INCLUSIVE - MONTH, DAY, YEAR)

FROM TO

IF CONTINUED FROM ANOTHER NOTEBOOK, GIVE NOTEBOOK NUMBER

IF CONTINUED IN ANOTHER NOTEBOOK, GIVE NOTEBOOK NUMBER

ROUTE TO	P.R. NO.	LOCATION	ROUTE DATE	SIGNATURE & DATE
R.K. Fuller		76-31	FEB 1 1 1994	Keith Fuller 5/18/94

Table of Contents 5/18/94 1

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1-4	Table of Contents
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9	Chain of Custody - 94-AUG-001
10	Extruded Segment Description Sheet - Riser 22A
11	SY-103 - Riser 22A Continued
12	SY-103 - Riser 22A Continued
13	SY-103 - Riser 14A - Chain of Custody
14	SY-103 - Riser 14A - Extrusion Sheet
15	SY-103 - Riser 14A - Continued
16	SY-103 - Risers 22A/14A photography
17	SY-103 - Risers 22A/14A photography
18	SY-103 - Risers 22A - photograph
19	SY-103 - Riser 14A - photograph
20	SY-103 Riser 7B - Chain of Custody
21	SY-103 Riser 7B - Extruded Seg. Desc. Sheet
22	SY-103 Riser 7B - Extrusion information
~~23~~	~~SY-103 Risers 22A, 14A, 7B lab samples~~ RK 7 6/13/94
23	SY-103 Riser 7B - Photographs
24	SY-103 Risers 22A, 14A, and 7B lab samples
25	SY-103 Riser 7B - Photograph

NOTE: pages 2,3, 4, 34, 45, 66, 67, 80, and 81 are pages that were intentionally left blank, therefore not included in the data package.

Tank 241-SY-103
Hot Cell Work Plan

I. Overview

A. Waste tank 241-SY-103 sampling will consist of 3 auger samples. The samples will be taken from risers 7B, 14A, and 22A.

B. This hot cell work plan is based upon Tank 241-SY-103 Tank Characterization Plan (WHC-SD-WM-TP-197).

C. Auger samples will be loaded into 1-E2 hot cell in accordance with procedure LO-160-101, Core Segment Receipt and Preparation. The auger sample will be prepared for the 222-S Laboratory in accordance with procedure LO-160-103, Core Segment Extrusion Process and Sample Preparation and this work plan.

II. General Comments

A. The cognizant scientist may deviate from this hot cell work plan should unforseen circumstances arise. All deviations shall 1) be recorded in the laboratory notebook WHC-N-911 and 2) relayed to the project coordinator.

B. The auger cask and liner will be recieved in the vertical position and should not be tilted past the horizontal position. A pre-job meeting will be held to discuss sample handling and special equipment/tools used to process the auger sample.

C. The SY-103 auger samples will not be homogenized. The primary purpose of this sampling event is the determination of the maximum net exothermic energy in crust samples.

D. Per section 6.2 of the TCP, TOC/TIC analyses will be performed if sufficient sample is ~~available~~ available RK 6/9/94 after subsampling for DSC/TGA.

E. If the net exothermic energy of tank SY-103 is greater than 140 cal/g on a dry weight basis, analyses for radionuclides will be done. These analyses will be perform on a water and fusion digest.

Radiochemistry analyses to include:

GEA-(Cs-137, I-129, Am-241)
Sr-90
Pu-239/240
Np-237
Tc-99

Keith Fullw 1/15/94

F. If DSC/TGA data shows the net exothermic energy in the tank to be less than 140 cal/g, but the "in tank" camera shows a dry crust ring in the tank, the radiochemistry analyses will still be performed.

III. Sample Handling and Sample Breakdown

NOTE: Hot Cell technicians will ensure that vials are tare weighed.

NOTE: Hot Cell technicians will apply labels with next available jar number. Clear tape will be used to cover and protect the labels on jars. Use appropriate covering for jars to minimize decontamination when loaded out of hot cell.

NOTE: Hot Cell technicians will log all appropriate information about jars/vials into logbook WHC-N-754. Record the date, jar number, jar size, tare weight, tank number, customer i.d.

NOTE: Hot Cell technicians will log all appropriate information on archive samples in logbook WHC-N-755. Record the date, jar number, jar size, tare weight, tank number, customer i.d.

A. Pre-job Preparation

1. Check out video equipment and ensure battery is charged.

2. Obtain new Super-VHS tape and label SY-103.

3. Obtain polaroid and print film.

4. Prepare the following jars:

Quantity	Jar Size
3	125 mL
3	250 mL
4	40 mL
10	20 mL

5. Complete dry run of workplan through new hot cells under direction of hot cell chemist.

Keith Fuller 6/15/94

B. Sample Processing

1. Contact Norton G. McDuffie, Flammable Gas Safety Program, prior to loading auger sample into Hot Cells. (373-2653)

2. Load liner containing auger sample into hot cell.

3. Using the auger extraction tool, remove auger sample and sleeve from the liner.

4. Disconnect auger extraction tool from auger assembly. (Additional manipulator support or equipment/tools may be necessary to accomplish this task.)

5. Remove sleeve from the auger sample.

NOTE: In addition to the 35 mm camera, the video camera will be used to photograph the auger sample. Use a new Super-VHS Tape for recording that has been labelled 241-SY-103.

6. Photograph sample on the auger according to LO-160-103.

7. Record film exposure numbers in the laboratory notebook.

8. Record visual characteristics of solids including color, consistency, homogeneity, and texture according to LO-160-103.

9. If drainable liquid is present, decant liquid into a separate jar and record jar number information in logbook.

10. If hard dry crust layer of material exist on the top section of the auger, subsample for DSC/TGA according to scientist instructions.

11. Record jar number information in logbook for each subsample.

12. Remove crust portion of sample according to directions provided by the lead scientist and place in appropriate container.

13. Record jar number information in logbook.

14. Subsample remaining solids for DSC/TGA. (Per section 4.1 of the TCP, obtain two subsamples for DSC/TGA. These samples will be analyzed in duplicate.)

15. Record jar number information in logbook for each subsample.

16. Remove remaining solids and place in jar.

Keith Fuller 6/15/94

IV. Chemist/Project Coordinator/Hot Cell Technicians

1. Project Coordinator and Hot Cell Chemist will complete RSA's for samples to be submitted to laboratory.

2. Project Coordinator will submit the RSA's to Lab Leader and and recieve a laboratory number for each sample.

3. Project Coordinator will return original RSA's to Hot Cell Chemist after laboratory numbers have been issued.

4. Hot Cell Technicians will submit samples to laboratory.

5. Project Coordinator will review cards and assign priority before release to laboratory.

6. Chemist will finalize Hot Cell notebook (WHC-N-911) and fax copies to Ruth Schreiber (TWRS).

7. Hot Cell Technicians will follow up on submitting camera film Hot Cell Chemist.

8. Hot Cell chemist will transfer film to PNL photography for development.

Cognizant Scientist Keith Fuller Date 6/2/94

Project Coordinator [signature] Date 6/3/94

Keith Fuller 6/15/94

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 33783 (2) Sample Number 94-AUG-001 (3) Supervisor B. PRAZNIK

(4) Tank 10354 (5) Riser 22A (6) Cask Serial Number C1046

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<.5 mR/hr	<0.5 mR/hr
Side Dose Rate	5 mR/hr	2.5 mR/hr
Bottom Dose Rate	<.5 mR/hr	<0.5 mR/hr
Smearable Contamination (Alpha)	< 220 dpm/100cm²	< 220 dpm/100cm²
(Beta-Gamma)	< 2200 dpm/100cm²	< 2200 dpm/100cm²
RCT* (Signature)	85552	CBell

(8) Shipment Description

A. Work Package Number 2W-93-1125

B. Cask Seal Number 2297

C. Date and Time Sample Removed from Tank 6-2-94, 1530

D. Expected Liquid Content 20%

E. Expected Solid Content 80%

F. Dose Rate Through ~~Drill String~~ SLEEVING 1040 mR/hr

G. Expected Sample Length 8'

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

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(10) Field Comments

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(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
10354R22A	2225	D.C. Hartley, DC Hartley	6/3/94, 1000	

(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
D.C. Hartley, DC Hartley	T. Lopez	6-3-94 1015	

(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(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?	(29) Seal Intact Upon Receipt?	(30) Seal Data Consistent with this Record? Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

WHC-SD-WM-DP-074, REV. 0

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Keith Fuller 6/15/94

Tank 241-SY-103
Extruded Segment Description Sheet

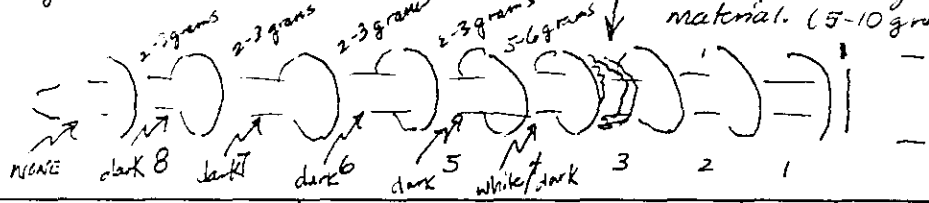
Sample 94-AUG-001 Riser 22A Core _____ Segment _____

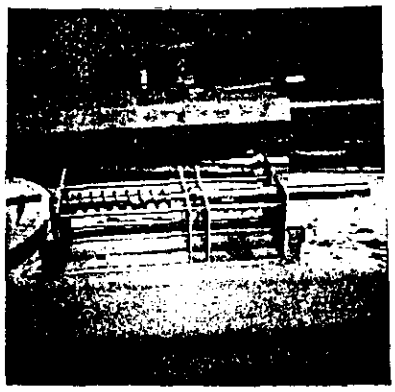
General Description of Sample: (1) Problems removing Auger because static bonding spring became kinked.

#1 - Small amount of white material
#2 - slightly more white material than #1
#3 - White material (5-10 g estimate)
#4 - Dark material mixed with white material
#5 - Small amount of dark material ~ 1.0 gram
#6 - Small amount of dark material ~ 2-3 gram (est)
#7 - 2-3 grams dark material
#8 - 2-3 grams dark material

white crust material on #3
#3 contains largest amount of material. (5-10 grams) est

Sketch:





Sampler Efficiency		Drainable Liquid Density	
Volume of Sampler	NA	Total Weight	NA
%Volume of Air	NA	Total Volume	NA
%Volume of Liquid	NA	Density	NA
%Volume of Solids	NA	Turbidity	NA
Comments:	Auger Sample	Comments:	Insufficient sample (4-5 ml)

Solids		Liner Liquid		Drainable Liquid	
Color	White → dark brown	Collection Jar	NA	Collection Jar	NA
Consistency		Gross Wt.	NA	Gross Wt.	NA
Homogeneity	unhomogenious	Tare Wt.	NA	tare Wt.	NA
Texture	Crusty / Somewhat dry	Net Wt.	NA	Net Wt.	NA
Penetrometer	NA	No. Phases	NA	No. Phases	NA

Cognizant Scientist: Keith Fuller 6/7/94 [signature] 6/7/94

Reviewed By: [signature] 6/15/94

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SY-103 Riser 22A (cont) 6/7/94 11

(1) Used exposures #3 and #4 for photography.
(2) No sample contained inside the sleeve.
(3) Inverted liner:
  (a) ~ 4-5 mL liner liquid collected
  (b) Viewed inside of liner with flashlight. Liner contained no solid material. Slight discoloration on bottom of liner.

(4) Balance check: 20 grams weight = 20.06 grams
500 grams weight = 499.69 grams

20mL Vial # 6007 * Contains white crust / dry from flute #2. For DSC/TGA analysis.
DSC/TGA * Customer I.D. R22AF2
20 mL * Material dry and flaky.
* 1.17 grams weighed
* Sub sampled off flute #2

20mL Vial # 6009 * Contains white crust / dry caulk material
* Customer I.D. R22AF3
DSC/TGA * 1.03 grams weighed
20mL * Subsampled off flute #3

20mL Vial #6010 * Contains dark material / sticky
* Customer I.D. R22AF6
DSC/TGA * Subsampled off flute #6
20mL * 0.99 grams

20mL Vial # 6011 * contains brown / dark material sticky
* Customer I.D. R22AF7
DSC/TGA * Subsampled off flute #7
20mL * 0.97 grams

Keith Fuller
6/7/94

12 6/7/94 SY-103 Riser 22A (continued)

jar # 6021 (125mL) 137.65 gross wt
129.65g tare wt
8.00g net wt

* Contains dark material from SY-103 Riser 22A Flutes #4 - #8. (JAR # 6021 - 125mL)

jar # 6022 (125mL) 138.48 g gross wt
130.13 g tare wt
8.35 g net wt

* Contains Crust material from SY-103 Riser 22A Flutes # 1 - # 3. (JAR # 6022 - 125 mL)

Briefly:

(1) Removed approximately 20 grams total off Auger from SY-103 riser 22A.
(2) Subsampled white crust for DSC/TGA
20mL Vial # 6007 } duplicate samples
20mL Vial # 6009 }
(3) Subsampled dark brown material for DSC/TGA
20mL Vial # 6010 } duplicate samples.
20mL Vial # 6011 }
(4) Inverted liner to recover contents and only 4-5mL of liquid drained onto extrusion tray. Unable to recovery liquid
(5) No solids present in the liner.
(6) Sample ranged from a white crust material (similar to discolored white caulk) to a dark brown material on flutes #4 → #8. White material was removed from flutes #1 → #3.

Keith Fuller
6/7/94

Keith Fuller 6/15/94

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 43663 (2) Sample Number 94-AUG-002 (3) Supervisor B. PRAZNIK COPY

(4) Tank 103-SY (5) Riser 14A (6) Cask Serial Number C# 1043

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<.5 mR/hr	<.5 mR/hr
Side Dose Rate (mR)	1.5 mR/hr	<.5 mR/hr
Bottom Dose Rate	<.5 mR/hr	<.5 mR/hr
Smearable Contamination	<20 dpm (LD) (Alpha)	<20 dpm (LD) (Alpha)
	<1000 dpm (LD) (Beta-Gamma)	<1000 DPM (LD) (Beta-Gamma)
RCT* (Signature)	25552	RCT* (Signature)

(8) Shipment Description	
A. Work Package Number	2W-93-1125
B. Cask Seal Number	3756
C. Date and Time Sample Removed from Tank	6-6-94 / 1400hrs
D. Expected Liquid Content	20%
E. Expected Solid Content	80%
F. Dose Rate Through Drill String	60mr
G. Expected Sample Length	8"

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

371

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
103-SY-R14A	222 S	R.J. PRAZNIK	6-7-94 / 0945	

(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
David F. Wohlwend		6-7-94 / 1035	

(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(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?	(29) Seal Intact Upon Receipt?	(30) Seal Data Consistent with this Record?		
☐	☑ Yes ☐ No	Shipment No. ☑ Yes ☐ No	Cask Seal No. ☑ Yes ☐ No	Sample No. ☑ Yes ☐ No

6/7/94 Chain of Custody SY-103 Riser 14A 13

WHC-SD-WM-DP-074, REV. 0

14 6-1-94 Auger Sample

Keith Fuller 6/15/94

Tank 241-SY-103
Extruded Segment Description Sheet

Sample 94-AUG-002 Riser 14 A Core _____ Segment _____

General Description of Sample:
(1) Removed auger from liner. Auger sleeve was not kinked
(2) Set Auger in auger stand.
(3) Sample contained mostly on flute #2. Auger slipped into position on the auger stand and sample fell from auger onto tray.
(4) Estimate about 15 grams total material on auger.

Sketch:

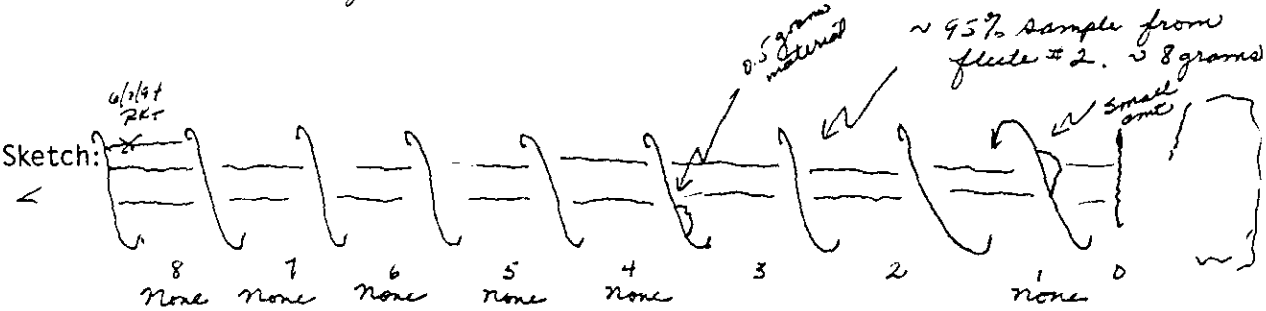
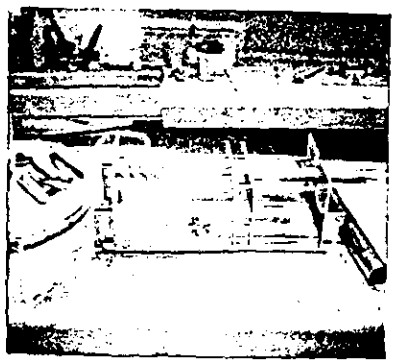


Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler Na	Total Weight NA
	%Volume of Air	Total Volume
	%Volume of Liquid	Density
	%Volume of Solids	Turbidity
	Comments: Auger Sample	Comments:

Solids	Liner Liquid	Drainable Liquid
Color White → dark brown	Collection Jar N/a	Collection Jar NA
Consistency	Gross Wt.	Gross Wt.
Homogeneity inhomogeneous	Tare Wt.	tare Wt.
Texture Crusty 6/9/94 RKF	Net Wt.	Net Wt.
Penetrometer NA	No. Phases	No. Phases

Cognizant Scientist: Keith Fuller 6/7/94

Reviewed By: [signature] 6/15/94

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SY-103 Riser 14A continued 6-7-94 15

1.) No problem removing sleeve from auger.
2) Sample material fell off Auger onto sample tray when auger slipped into position on auger stand. Sample material remained directly below flute #2.
3) Crust material (light brown → white, caulk material)
4) Approximately 95% of material contained on flute #2.
5) Approximately 1 ml liquid retained in liner.
6) Used exposures 5 & 6 for photography.

Subsample

20 ml Vial # 6028 - Customer R14AF2A
* subsample for DSC/TGA
DSC/TGA * material subsampled off auger.
* light in weight, somewhat fluffy
* Removed from flute # 2.

0.78 grams

20 ml Vial # 6029 - Customer i.d. R14AF2B
* Subsample for DSC/TGA
DSC/TGA * material subsample off sample tray
* Material fell from flute #2.
* Material - sticky, Caulk like. -
1.07 grams

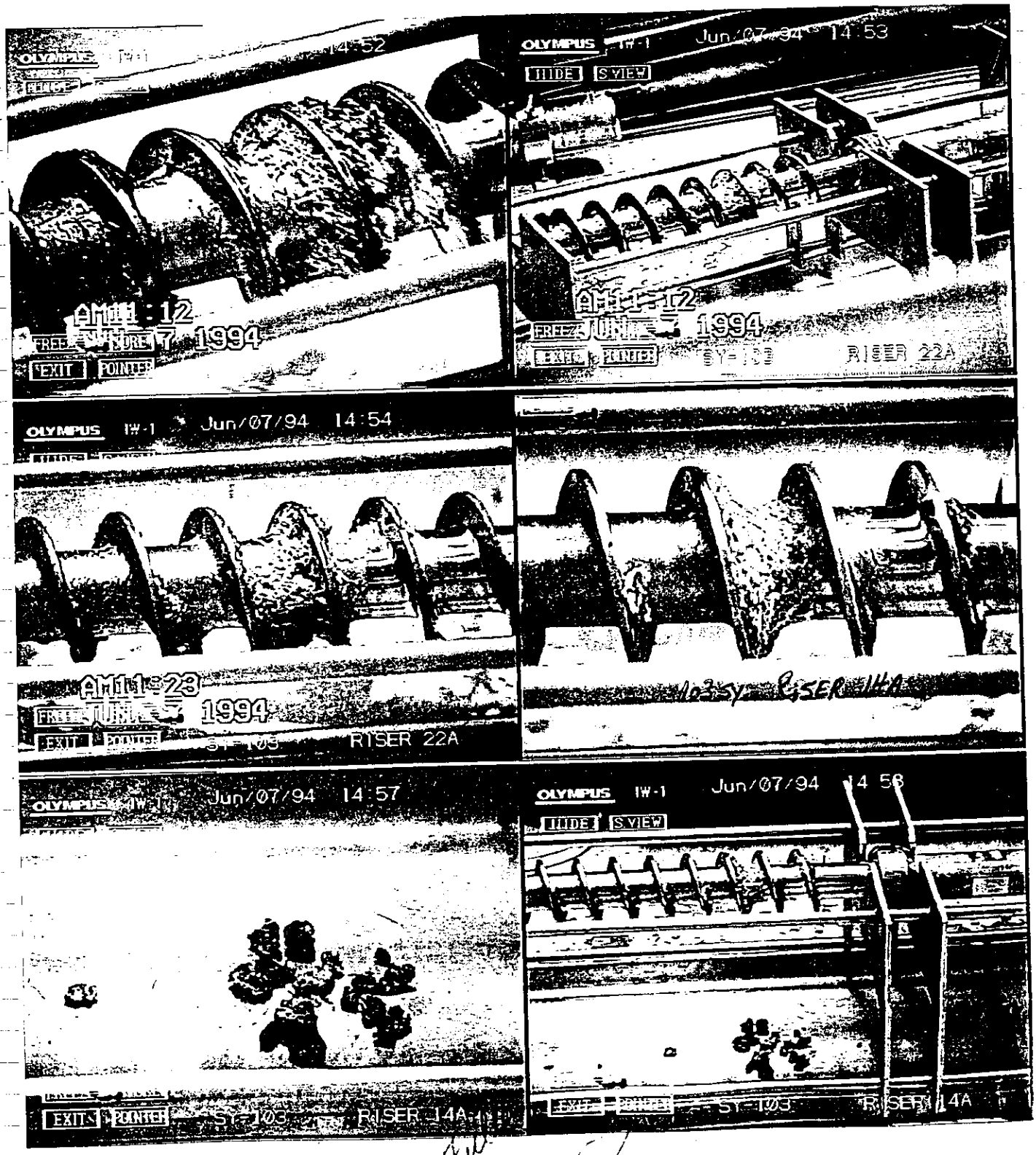
20 ml Vial # 6030 - Additional sample
* Contains material (remaining) after DSC/TGA subsample.
* 7.20 grams collected

7) Collected approximately 10 grams total.

Keith Fuller 6/7/94

6/7/94
16

241-SY-103 Riser 22A and 14A



Keith Bell 6/7/94

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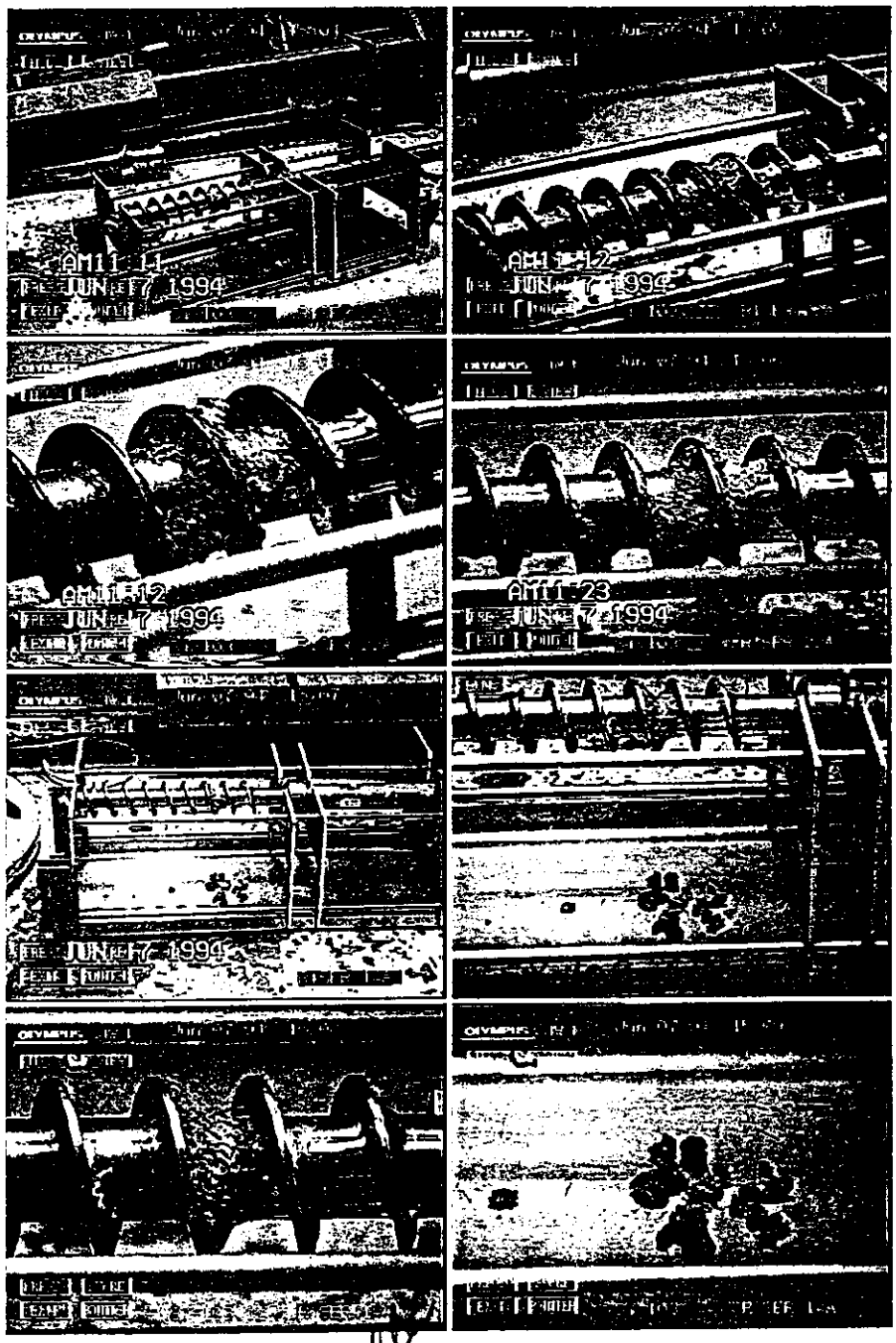
241-SY-103 Riser 22A and 14A 6/7/94 17



6/7/94

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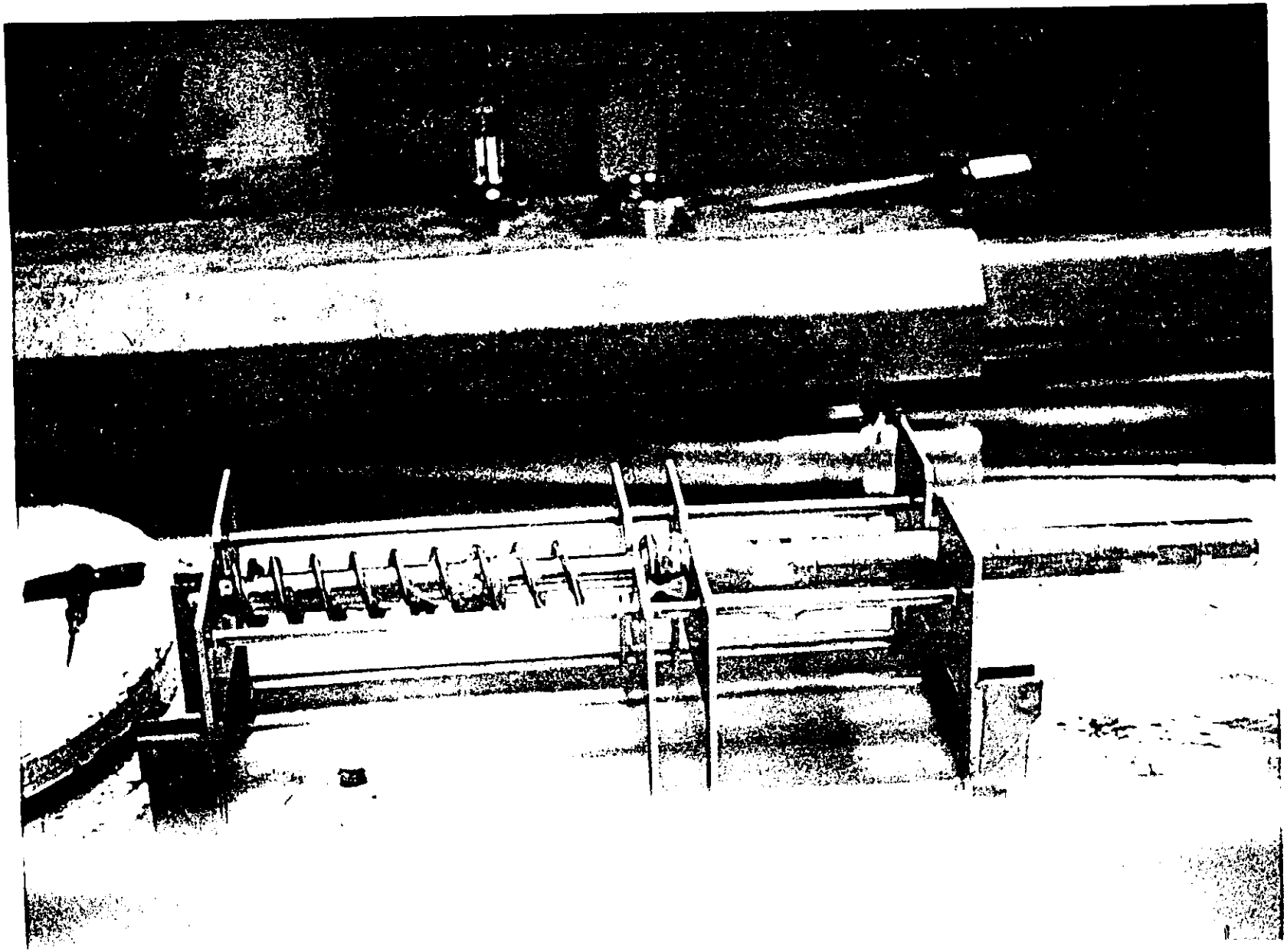
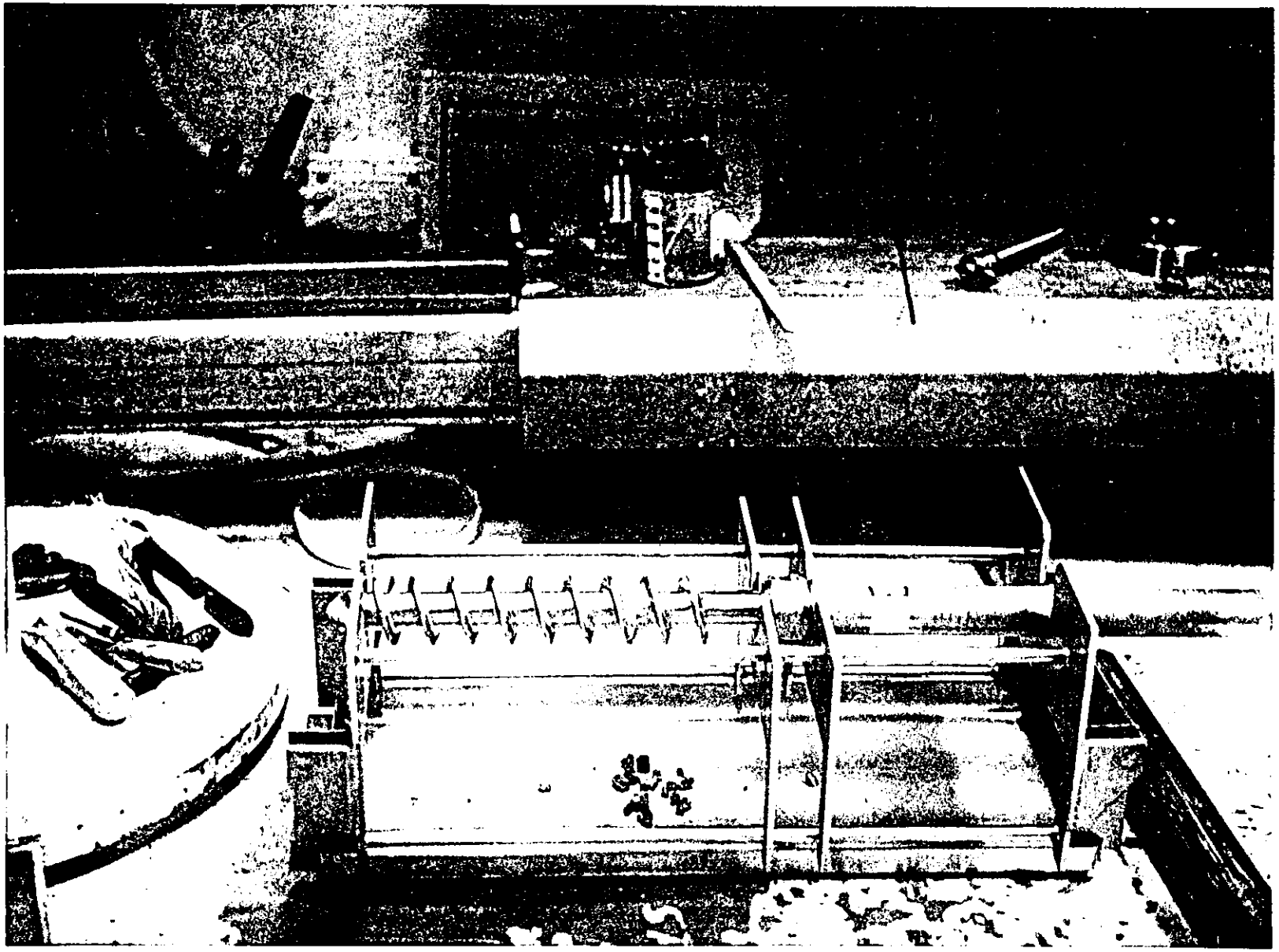
SY-103 RISER 22.1



SY-103 RISER 14A



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20

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 35192 (2) Sample Number 94-AUG-003 (3) Supervisor B. Praznik

(4) Tank 103-SY (5) Riser 7B (6) Cask Serial Number C# 1054

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Side Dose Rate	2 mR/hr	2 mR/hr
Bottom Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Smearable Contamination	<D (Alpha)	<D (Alpha)
	<D (Beta-Gamma)	<D (Beta-Gamma)
RCT*	Crystal Cobb (Signature)	SN (Signature)

(8) Shipment Description	
A. Work Package Number	2W-93-01125-W
B. Cask Seal Number	3764
C. Date and Time Sample Removed from Tank	6-8-94/1300
D. Expected Liquid Content	20%
E. Expected Solid Content	80%
F. Dose Rate Through Drill String	40 mR/hr.
G. Expected Sample Length	8"

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

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
103-SY-R7B	2225 LAB	R.S. Praznik	6-9-94/1245	
(17) Relinquished By (Sign and PRINT)		(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
David P. Wohlwend		N. Lapcis	6-9-94 1330	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)	(23) Date/Time	(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?	(29) Seal Intact Upon Receipt?	(30) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

Keith Fuller 6/9/94 3775

6/9/94

WHC-SD-WM-DP-074, REV. 0

Keith Fuller 6/15/94

6/9/94

Tank 241-SY-103

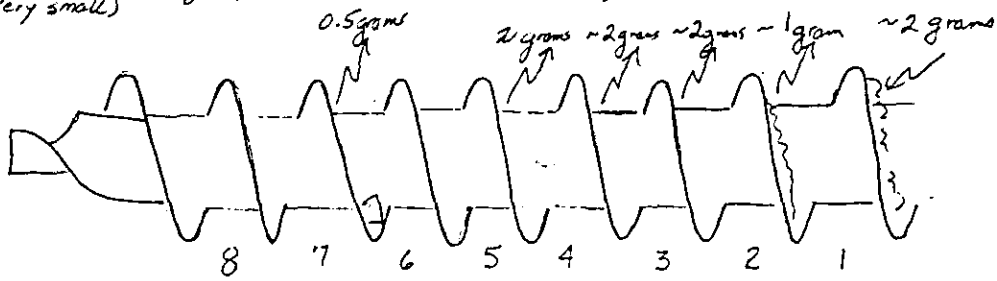
Extruded Segment Description Sheet

20 grams = 20.00 grams
500 grams = 499.88 grams

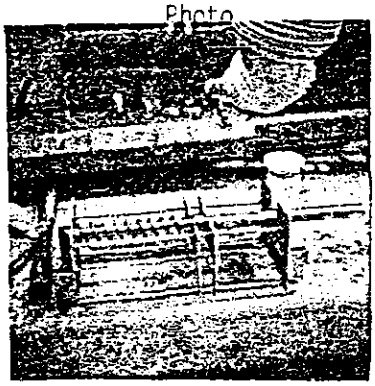
Sample 94-AUG-003 Riser 713 Core _____ Segment _____

General Description of Sample: (1) Removed auger from liner (used 5/8" pin)
(2) Sleeve removed easily.
(3) Placed auger on auger stand
(4) Sample visible on flutes 1, 2, 3, 4, 6.
(5) Estimate approx. 10-15 grams of material.
(6) Noticed a small piece (very small) of tape or plastic on the auger.

Sketch:



Photo



Sampler Efficiency		Drainable Liquid Density	
Volume of Sampler	NA	Total Weight	NA
%Volume of Air		Total Volume	
%Volume of Liquid		Density	
%Volume of Solids		Turbidity	
Comments:	Auger Sample	Comments:	None

Solids		Liner Liquid		Drainable Liquid	
Color	White, Gray	Collection Jar	NA	Collection Jar	NA
Consistency	Crumbly	Gross Wt.		Gross Wt.	
Homogeneity	inhomogeneous	Tare Wt.		tare Wt.	
Texture	hard, crusty	Net Wt.	None	Net Wt.	
Penetrometer	NA	No. Phases	NA	No. Phases	

Cognizant Scientist: Keith Fuller 6/9/94

Reviewed By: Kirk L. Koch 6/15/94

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22 Sy-103 Riser 7B (continued) 6/9/94

1. No problem removing sleeve from auger. Static bonding spring was visible before removing sleeve.
2. Sample appears hard and crumbly. Some material fell from auger onto auger tray.
3. Sample color ranges from white to light gray.
4. Used exposures 7 and 8 for photography.
5. Subsampling information:
   a) Will subsample material off auger for DSC/TGA
   b) Will subsample material off sample tray for DSC/TG
   c) Remaining material will be archived in a 20 mL V.

6. Vial # 6031 (20 mL) - 1.10 grams sample weight
   - For DSC/TGA analysis
   - Customer I.D. R7B-A - sampled off tray
7. Vial # 6032 (20 mL) - 1.21 grams sample weight
   - For DSC/TGA analysis
   - Customer I.D. R7B-B - sampled off auger
8. Vial # 6033 (20 mL) - 8.38 grams
   - Archive material - ~~R7B COMP~~ RK7 6/14/94
     R7BC1

9. No liner liquid present
10. No solid sample held up in liner.
11. Collected approximately 11 grams material.

Keith Fuller

Sy-103 Riser 7B (Continued) 6/9/94 23

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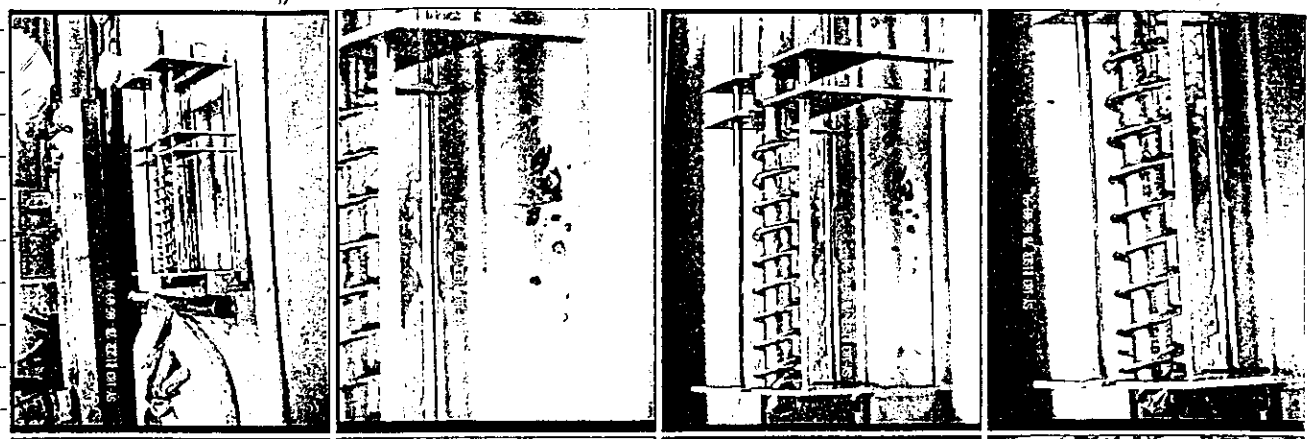
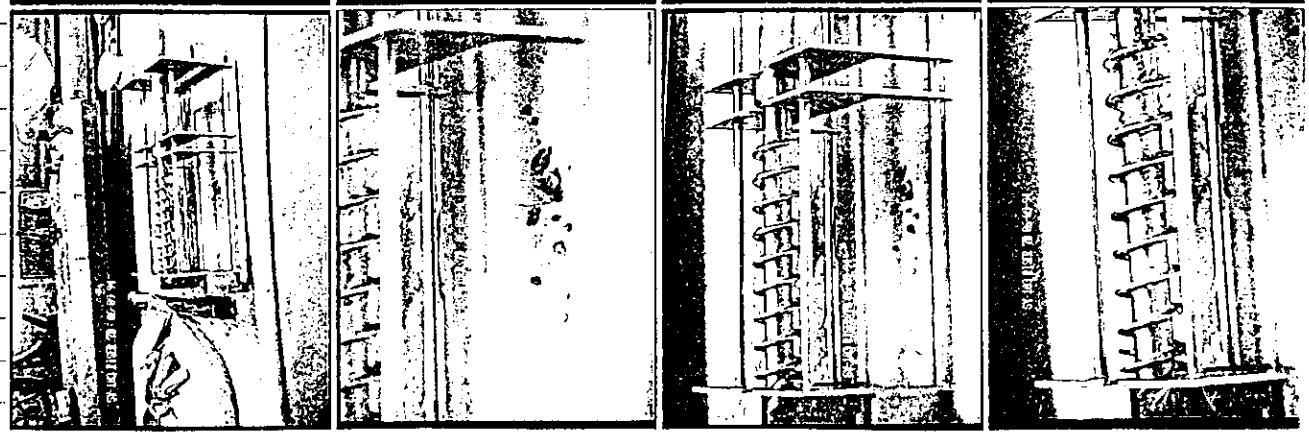
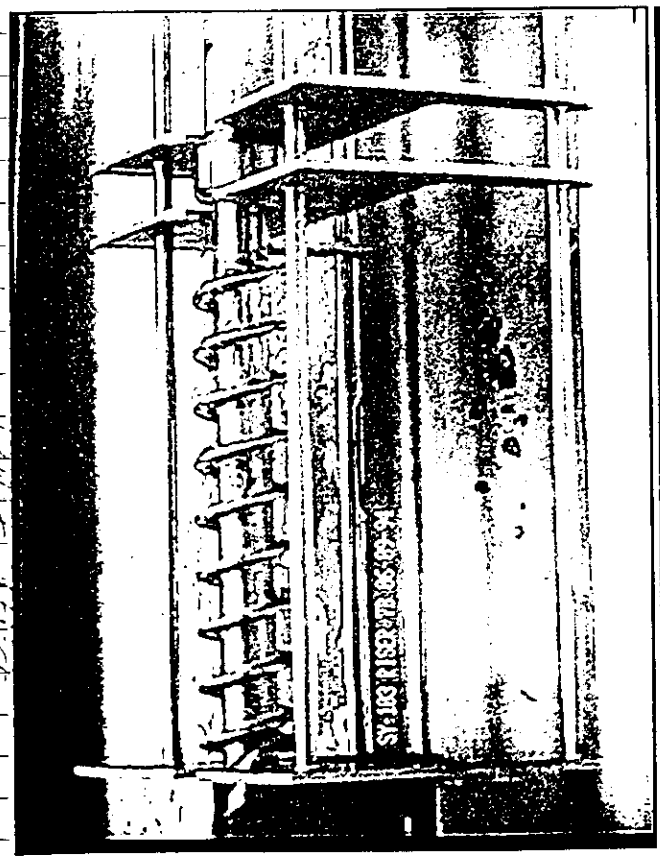
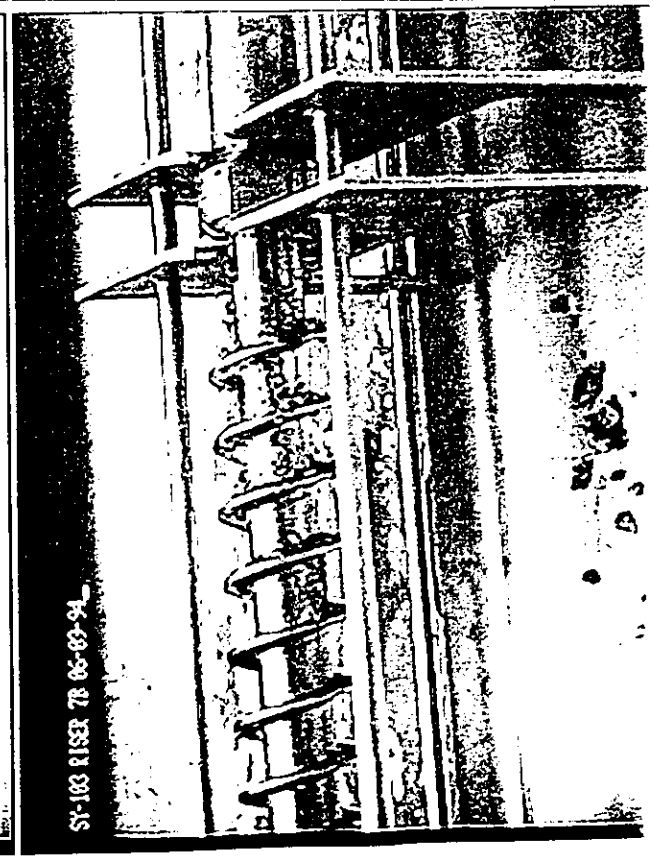
SY 103 RISER 7B





6/15/94





24 6/13/94 Sample Information

SY-103

Customer i.d.	Vial #	Laboratory i.d.	RSA #
R22AF2	6007	R5372	1952
R22AF3	6009	R5373	1952
R22AF6	6010	R5374	1952
R22AF7	6011	R5375	1952
R14AF2A	6028	R5376	1952
R14AF2B	6029	R5377	1952
R7B-A	6031	R5398	1958
R7B-B	6032	R5399	1958

Keith Fuller 6/13/94

SY-103 RISER 7B

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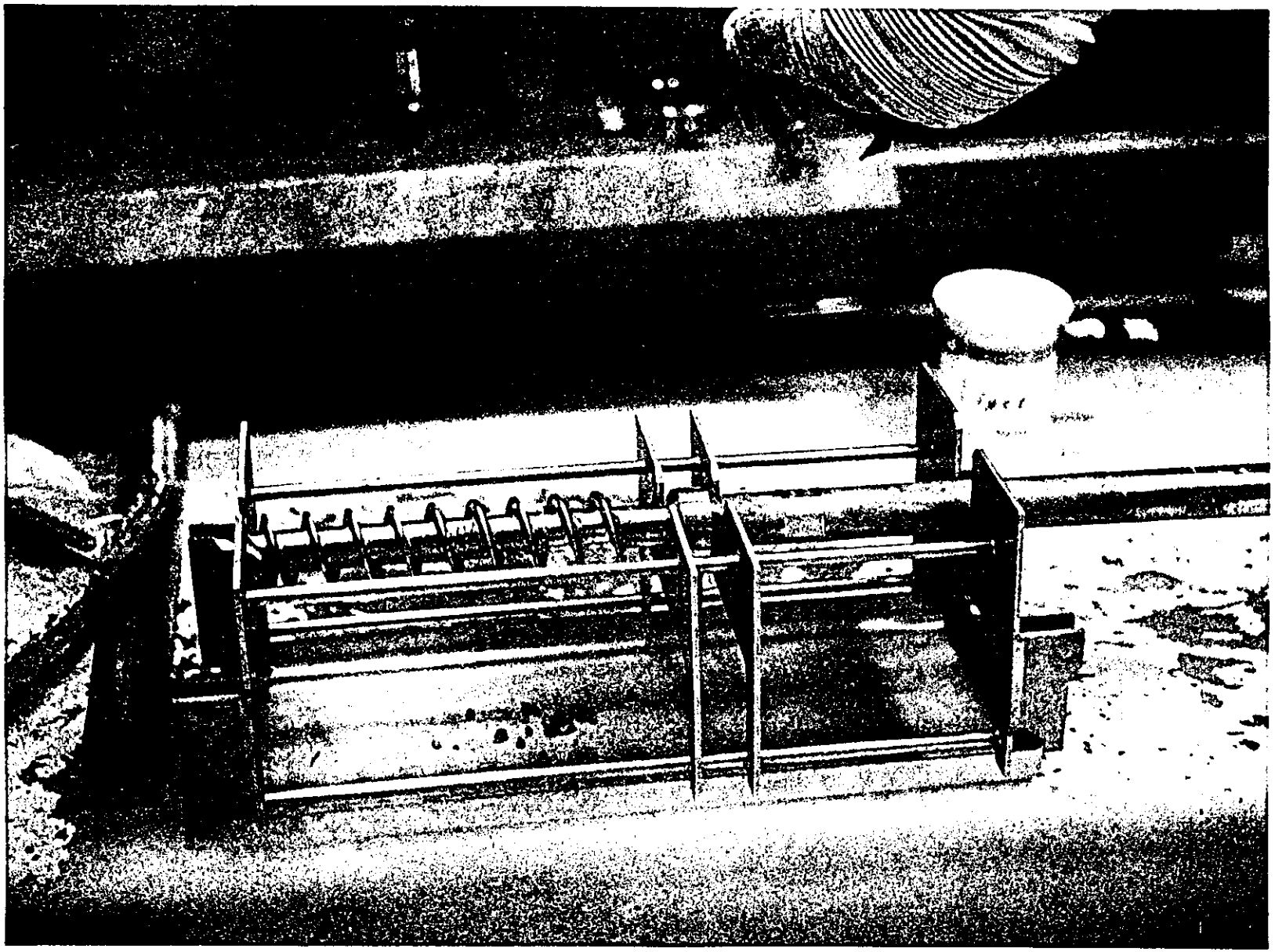


26 6/14/94

Vial/jar# 6022 - Customer id ~~R22 COMP~~ RK7 6/14/94 R22AC1
- will submitt for TOC/TIC

Vial/jar# 6030 - Customer id R14AC1
- will submitt for TOC/TIC

Vial/jar# 6033 - Customer id R7BC1
- will submitt for TOC/TIC

Vial/jar# 6021 - Customer id R22AC2
- will submitt for TOC/TIC

8/10/94

Information on samples above regarding customer id:

example: R22 A C 1

Riser
Riser #
Riser # letter
Composite

Keith Fuller
8/10/94

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-001 (2) Sample Number 94-005 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 1 (7) Core 062 (8) Cask Serial Number 017

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	5.5 mr/HR	<1 mr/hr
Side Dose Rate	50 mr/HR	50 mr/hr
Bottom Dose Rate	20 mr/HR	30 mr/hr
Smearable Contamination	<det (Alpha)	<20 (Alpha)
	<det (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number 2W-94-0183-W

B. Cask Seal Number 2404

C. Sampler Serial Number 94-097

D. Date and Time Sampler Unseated 8-19-94, 1033

E. Expected Liquid Content 30%

F. Expected Solid Content 70%

G. Dose Rate Through Drill String 2 R/HR

H. Expected Sample Length 411

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

Characterize per WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

COPY

WHC-SD-WM-DP-074, REV. 0

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	2225	D.C. Hartley	8/22/94 1000	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D.C. Hartley		Dan O. Dunley	8/22/94 1000	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Dan O. Dunley		Sandra Cobb	08-22-94 1030	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

8/22/94

27

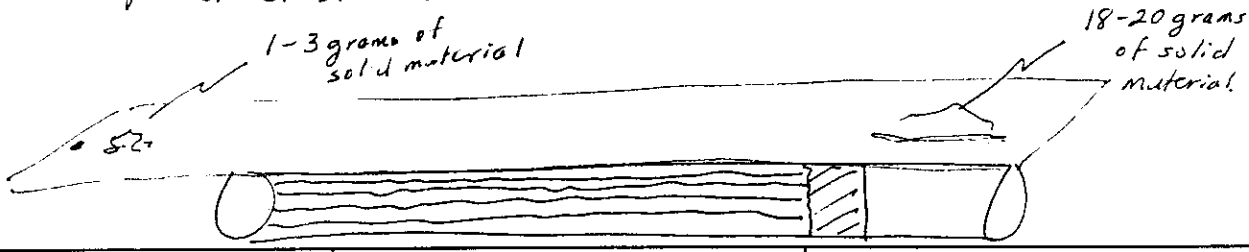
Tank 241-SY-103
Extruded Segment Description Sheet

20.00g = 19.99g
500.00g = 499.72g

Sample 94-005 Riser 14A Core 62 Segment 1

General Description of Sample:
(1) 8:42 am - preparing for extrusion
(2) 8:48 am - No Liner liquid
(3) 8.54 am - closed (valve orientation)
(4) 8:59 am - cut Cables (valve closed)
(5) Extruded sample - ~ 300 mL of drainable liquid
- ~ 20 grams of solids
(6) Solids were wet/slushy. Resembled ice crystals. Appears to be a very wet crust material.

Sketch:



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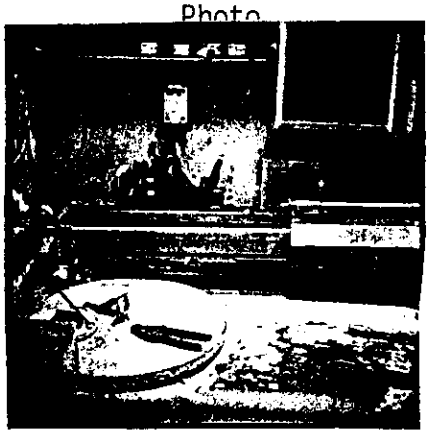


Sampler Efficiency	Drainable Liquid Density
Volume of Sampler 309 mL	Total Weight 399.35 grams
%Volume of Air 8.7 %	Total Volume 262 mL
%Volume of Liquid 84.8 %	Density 1.524 g/mL
%Volume of Solids ~~0.09~~ 6.5 % RKF 8/24/94	Turbidity Turbid
Comments:	Comments: Volume was measured using approx volume in new 250 mL jar.

Solids	Liner Liquid	Drainable Liquid
Color dirty ice	Collection Jar NA	Collection Jar 6038
Consistency Applesauce Chunky	Gross Wt.	Gross Wt. 626.13 grams
Homogeneity Homogeneous	Tare Wt.	tare Wt. 226.78 grams
Texture Chunky RKF 8/24/94	Net Wt.	Net Wt. 399.35 grams
Penetrometer	No. Phases	No. Phases 1

Cognizant Scientist: Keith Fuller 8/24/94

Reviewed By:

BEST AVAILABLE COPY

(1) Drainable liquid 226.78 grams jar 6038 (tare weight)
(see page 28 for drainable liquid..

(2) 9:43 a.m. Opened valve
(3) 9:50 a.m. Extrusion begins
(4) 9:53 a.m. Extrusion Complete

a. Collected approx. 300 mL of drainable liquid
- brown liquid
- Volume measured close to 262 mLs.

(b) Collected solids for safety screen jAR #6056 (20mL)

29.84 grams (20 mL) gross weight
26.62 grams (20mL) tare weight
9:59am 3.22 grams net weight jAR # 6056 (20mL)

10:02 am Photography begins
10:03 am Polaroid start
10:10 am Photography complete

10:15am 6025 ~~mb~~ RKF 8/24/94 jAR # 40mLs

58.12 grams gross weight 6025 Vial # (40mL)
39.24 grams tare weight 6025 Vial # (40mL)
18.88 grams ~~gro~~ RKF 8/24/94 net weight

Collecting remaining solids of Core 62 segment #1

Used exposures #1 and #2 on roll.
exposure #3 blank

SY-103 CORE 62 SEGMENT #1

BEST AVAILABLE COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-001 (2) Sample Number 94-006 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 2 (7) Core 062 (8) Cask Serial Number 2402

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5 mr/HR	<1 mr/hr
Side Dose Rate	5 mr/HR	50 mr/hr
Bottom Dose Rate	16 mr/HR	18 mr/hr
Smearable Contamination	<det. (Alpha)	<20 (Alpha)
	<det. (Beta-Gamma)	<1000 (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	2W-94-083-W
B. Cask Seal Number	2402
C. Sampler Serial Number	94-001
D. Date and Time Sampler Unseated	8-19-94, 1414
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2.2 R/HR
H. Expected Sample Length	19'

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

WHC-SD-WM-TP-197

389

COPY

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	2225	DC Hartley	8/22/94 1000	
(18) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
DC Hartley			8/22/94 1000	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
			08-22-94 1000	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☐ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

32

Temp. inside Hot Cell 79.5 °F
% Humidity 20.0 %

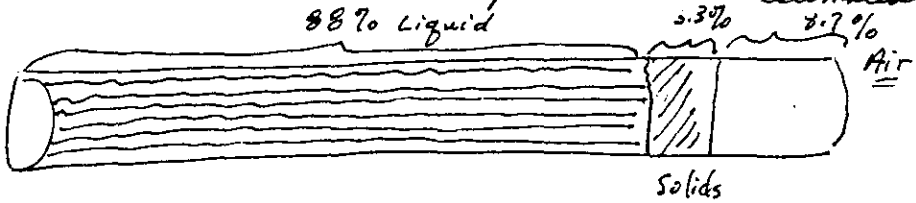
Tank 241-SY-103
Extruded Segment Description Sheet

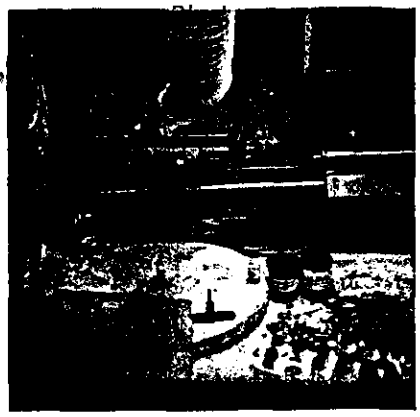
20.30g - 19.79g
500.00g = 499.72g

Sample 94-006 Riser 14 A Core 62 Segment 2

General Description of Sample:
① 1:17 pm - Collected less than 5mL of liner liquid (Did not retain)
② 1:31 pm - Valve closed before cutting cables
③ 1:30 pm - Valve closed after cutting cable
④ 1:41 pm - Removed Spring stops.
⑤ 1:45 pm - Opened valve. Completely fill drainable liquid jar. (6013 jar #)
- Replaced drainable liquid jar #6013 (full) with 6019. (tare weight)
- 6019 tare weight - 222.65 grams
- Color of drainable liquid is medium brown and turbid.
⑥ Extruded sample. No solids were extruded, however solid material, similar to snow cone ice were observed on the tray. total solids estimated to be less than 10 grams.

Sketch:





Sampler Efficiency		Drainable Liquid Density	
Volume of Sampler	309 mL	Total Weight	408.9 grams
%Volume of Air	8.7%	Total Volume	272 mLs
%Volume of Liquid	88.0%	Density	1.50 g/mL
%Volume of Solids	3.3%	Turbidity	
Comments:		Comments:	Info from jar #6013 and #6019.

Solids		Liner Liquid		Drainable Liquid	
Color	colorless	Collection Jar	NA	Collection Jar	6013
Consistency	snow cone ice	Gross Wt.		Gross Wt.	617.45
Homogeneity	Homogeneous	Tare Wt.		tare Wt.	226.89
Texture	chunky	Net Wt.		Net Wt.	390.56
Penetrometer		No. Phases		No. Phases	

Cognizant Scientist: Keith Fuller 8/24/94

390

Reviewed By:

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SY-103 Core 62 Segment #2 8/24/94

6019 jar # Drainable liquid #2
Core 62 segment #2 drainable liquid #2.
240.99 g gross weight
222.65 g tare weight
18.34 g net weight

2:15pm. 6060 Vial # (20 mL vial)
Core 62 segment # 2 solids

9.59 grams net weight

Drainable Liquid Core 62 Segment #2

jar #1 6013 (250 mL)

net weight 390.56 grams
Approx Volume 260 mLs

Estimated density = 1.50 g/mL

jar #2 6019 (250 mL)

net weight 18.34 grams
Approx Volume 12.0 mLs

Approx density = 1.50 g/mL

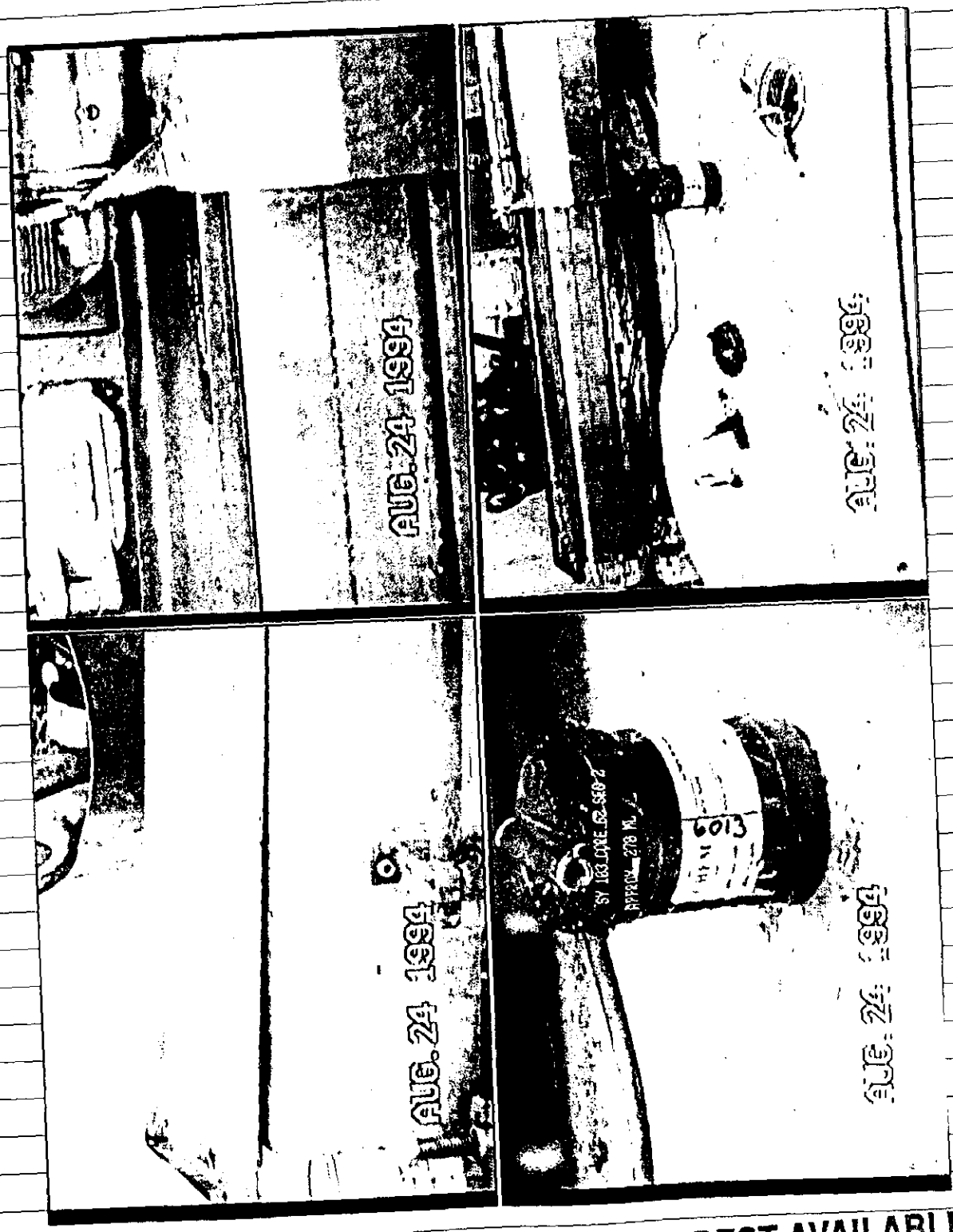
Two jars were used to collect drainable liquid because the first jar (6013) was completely filled.

Total Weight of Drainable Liquid = 408.9 grams
Total Volume of Drainable Liquid = ~~274~~ 272 mLs 8/21/94 RKT

Estimated density = 1.50 g/mL

Used exposures ~~7 & 8.~~ RKT 8/24/94 6 & 7
exposures 4, 5, & Voided
RKT 8/24/94

SY-103 CORE 62 SEGMENT #2



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COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-002 (2) Sample Number 94-007 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 3 (7) Core 067 (8) Cask Serial Number 1009C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.5 mR/hr.	0.5 mR/hr
Side Dose Rate	60 mR/hr.	65 mR/hr
Bottom Dose Rate	17 mR/hr.	13 mR/hr
Smearable Contamination (Alpha)	<20 dpm/100cm²	<20 dpm/100cm²
(Beta-Gamma)	<1K dpm/100cm²	<1K dpm/100cm²
RCT* (HPT) (Signature)	[signature]	S.H. Landon

(10) Shipment Description	
A. Work Package Number	2W-94-00183/W
B. Cask Seal Number	2403
C. Sampler Serial Number	94-114
D. Date and Time Sampler Unseated	8-23-94, 10:24
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2.2 R/HR.
H. Expected Sample Length	19"

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

393 WHC-SD-WM-TP-197

(12) Field Comments

This Sample remained in the Core barrel in the tank for 3 full days

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D Hartley D Hartley	8/25/94 0845	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D Hartley D Hartley		James R. Fuhrhardt James Fuhrhardt	8-25-94 0845	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
James R. Fuhrhardt James R. Fuhrhardt		[signature]	1110 8-25-94	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

Temp. inside Hot Cell 79.0°F
% Humidity 33.0%

August 26, 94 37

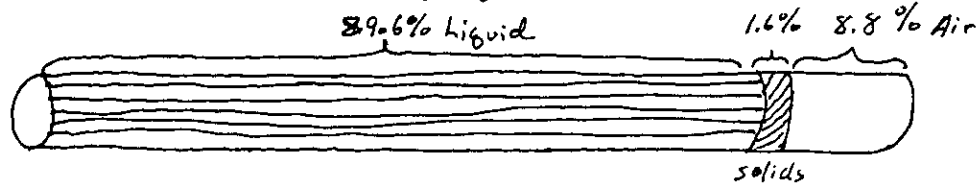
Tank 241-SY-103
Extruded Segment Description Sheet

20.00 gram = 19.99g
500.00 gram = 499.65g

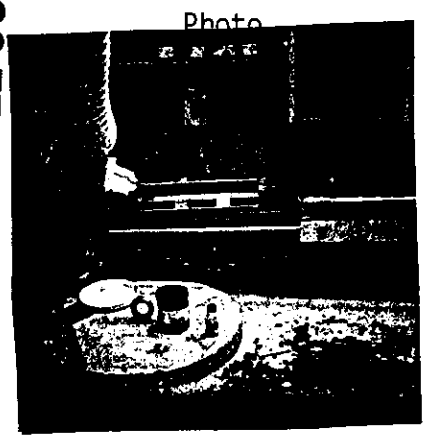
Sample 94-007 Riser 14A Core 062 Segment 3

General Description of Sample:
① 1215pm - collected less than 5mL of Liner liquid (Did not retain).
② 1217pm - Valve closed before cutting cables.
③ 1222pm - Valve closed After cutting cables.
④ 1225pm - Opened valve. Slightly overfilled Liquid Jar (6039 JAR*)
- Turbid and medium brown in color (Drainable Liquid).
⑤ 1242pm - Collecting solids for safty screening, using vial 6061 (20mL)
Solids resemble wet salt similar to ice.
⑥ We Lost 10 to 20 ml of Drainable liquid.
⑦ Safty screening solids vial #6061 - gross wt - 32.67 grams
Tare wt - 26.86 grams
Net wt - 5.81 grams

Sketch:



Photo



Sampler Efficiency	Drainable Liquid Density
Volume of Sampler 309 mL	Total Weight 397.83 grams
%Volume of Air 8.8%	Total Volume 262 mLs
%Volume of Liquid 89.6%	Density 1.52 g/mL
%Volume of Solids 1.6%	Turbidity
Comments: estimated Lost of 15mL of solution/estimate a total of 277mL liquid in sampler.	Comments: Turbid, color - medium to Dark brown in Color.

Solids	Liner Liquid	Drainable Liquid
Color colorless	Collection Jar NA	Collection Jar 6039
Consistency crushed ice	Gross Wt.	Gross Wt. 619.77 grams
Homogeneity Homogeneous	Tare Wt.	tare Wt. 221.94 grams
Texture chunky	Net Wt.	Net Wt. 397.83 grams
Penetrometer	No. Phases	No. Phases

Cognizant Scientist: [signature]

Reviewed By: Keith Fuller 8/20/94

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38 August 26, 1994 SY103 CORE 62 SEG. 3#

1. USED EXPOSURES (8) and (9)

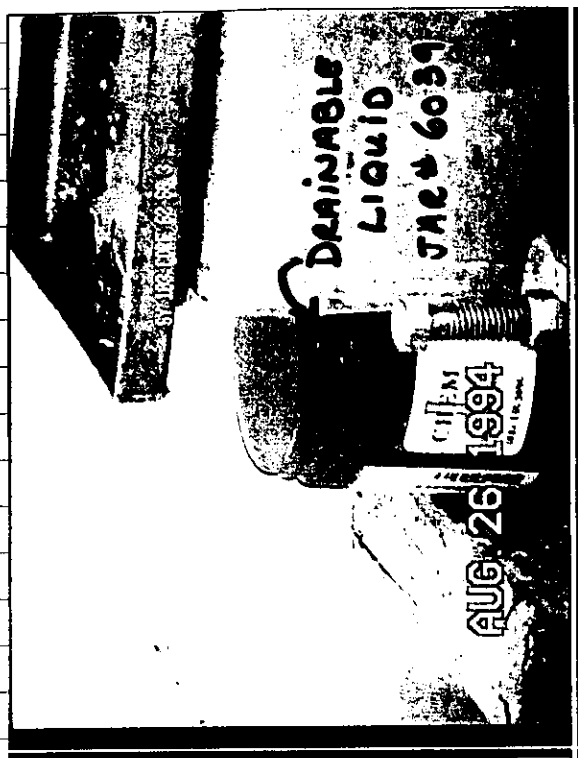
2. Recap. Jar Information:

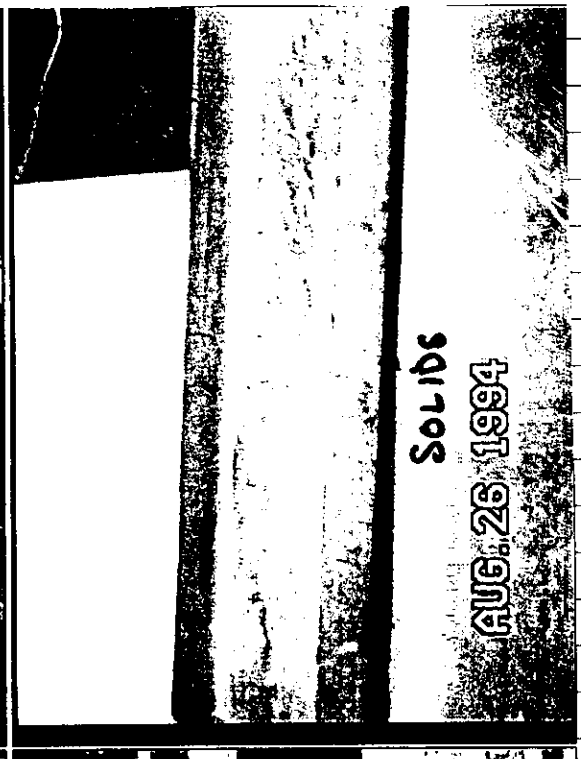
Jar (6039#) Drainable Liq. (262mL) 397.83 grams (wet)

vial (6061#) Safty Screening Solids 5.81 grams

Keith Fuller
9/1/94

SY-103 CORE 62 SEGMENT #3





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40

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-002 (2) Sample Number 94-008 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 4 (7) Core 062 (8) Cask Serial Number C1049

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.05 mR/hr	0.5 mR/hr
Side Dose Rate	37 mR/hr	42 mR/hr
Bottom Dose Rate	16 mR/hr	15 mR/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 dpm/100cm² (Alpha)
	<1 kdpm/100cm² (Beta-Gamma)	<1 kdpm/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	2W-94-00183/W
B. Cask Seal Number	2448
C. Sampler Serial Number	94-115
D. Date and Time Sampler Unseated	8-23-94, 1430
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2R/HR
H. Expected Sample Length	19"

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

397 WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D. Hartley	8/25/94 0845	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D Hartley		Thomas R. Fleharty	8-25-94 0845	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Thomas R. Fleharty			1120 8-25-94	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

WHC-SD-WM-DP-074, REV. 0

(02/94)

Temp inside Hot Cell 78.2 °F 8/26/94 41
%Humidity 36 %

Tank 241-SY-103
Extruded Segment Description Sheet

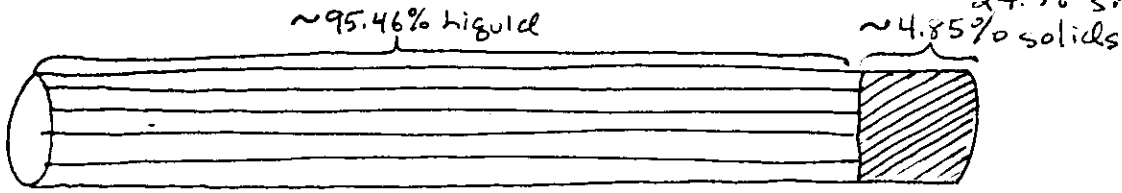
20.00 gram = 19.99 g
500.00 gram = 499.6 g

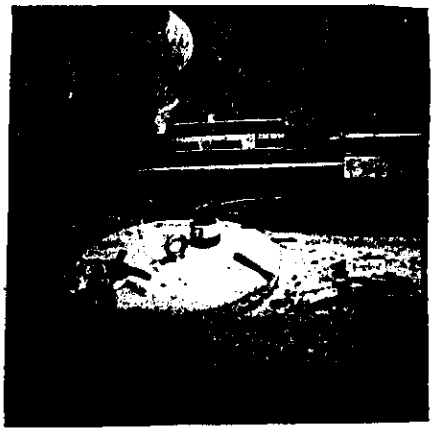
Sample 94-008 Riser 14A Core 062 Segment 4

General Description of Sample:
1. 1410 pm - collected less than 5 mL of Liner Liquid (Did not retain).
2. 1411 pm - valve closed before cutting cable
3. 1417 pm - valve closed after cutting cables
4. 1425 pm - valve open. JAR (6020#)
   - Drainable Liquid Turbid, Medium ~~Brown~~ Brown in Color
5. 1435 pm - second JAR (~~6040~~ 6041) used to collect Drainable Liquid. 8-24-94 ABB
6. Solids appear to be salt crystals with the appearance of Dirty ice.
7. Still screening solids vial # 6062 Gross - 34.00 grams, Tare - 26.43 grams, Net 7.57 grams

Remaining Solids Gross 154.98 grams, vial # 6067 Tare 130.42 grams, Net ~~25.56~~ 24.56 grams ABB 8/24/94

Sketch:





Sampler Efficiency		Drainable Liquid Density	
Volume of Sampler	309 mL	Total Weight	396.49 grams
%Volume of Air	0 %	Total Volume	~295 mLs
%Volume of Liquid	95.46%	Density	1.34 g/mL
%Volume of Solids	4.85%	Turbidity	
Comments:	approximate volumes. Estimate 100% recovery.	Comments:	Turbid, medium Brown in color.

Solids		Liner Liquid		Drainable Liquid	ABB
Color	Light Brown	Collection Jar	NA	Collection Jar	6020 / ~~6040~~ 6041
Consistency	snowcone ice	Gross Wt.		Gross Wt.	443.80 / 398.54
Homogeneity	Homogeneous	Tare Wt.		tare Wt.	219.85 / 226.0
Texture	Chunky	Net Wt.		Net Wt.	223.95 / 172.54
Penetrometer		No. Phases		No. Phases	

Cognizant Scientist: [signature]

Reviewed By: Keith Fuller 8/30/94

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42 August 26, 1994

1. Safty Screening Solids

Gross weight 34.00 grams
Tare weight 26.43 grams Vial # 6062 (1450 p.m)
net weight 7.57 grams

NOTE: USED EXPOSURE 10 and 11 (ADB 9-12-94)

2. Remaining Solids

Gross weight 154.98 grams
Tare weight 130.42 grams Vial # 6067 (1511)
Net weight 24.56 grams

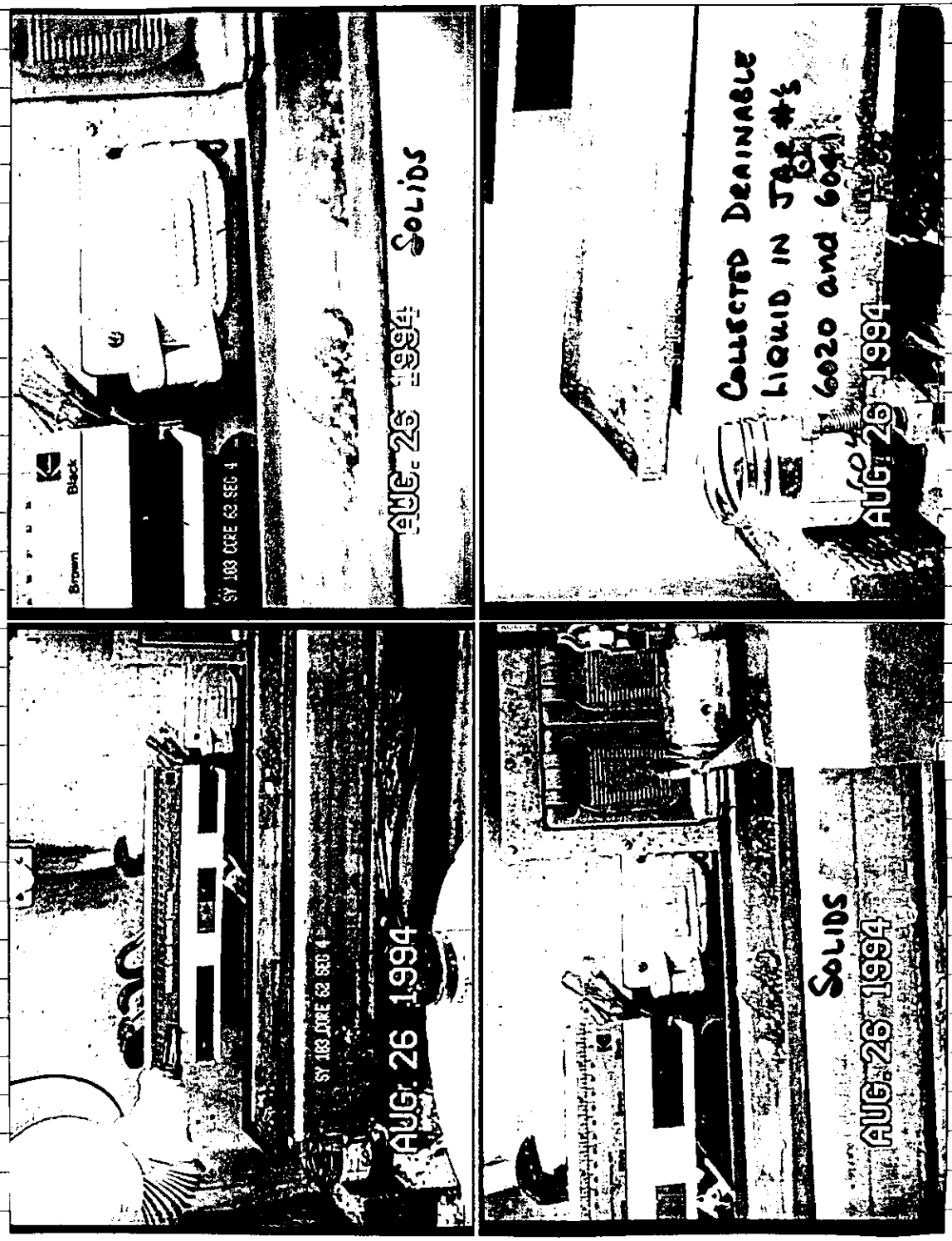
3. 6041# 140 ml } Total volume of Drainable Liquid
6020# 155 ml }
295 ml

4. Recap JAR information:

JAR (6020#)	Drainable Liq. (155 mL)	223.95 grams (net)
JAR (6041#)	Drainable Liq. (140 mL)	172.54 grams (net)
vial (6062#)	Safty Screening Solids	7.57 grams
vial (6067#)	Remaining Solids	24.56 grams

Keith Fuller 9/1/94

SY-103 CORE 62 SEGMENT #4



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20.00 grams 19.78 grams
500.00 grams 499.61 grams

1. Subsampling Drainable Liquids:

JAR (6038#) Core 62 seg 1# SY103
vial (6026#) 38.67 grams (Tare weight) 66.20 grams (Gross weight)
Transferred ≈ 20 ml out of JAR (6038#) to vial (6026#), 27.53 grams (Net weight)

JAR (6013#) Core 62 seg 2# SY103
vial (6027) 39.70 grams (Tare weight) 82.22 grams (Gross weight)
Transferred ≈ 20 ml out of JAR (6013#) to vial (6027), 42.52 grams (Net weight)

JAR (6039#) Core 62 seg 3# SY103
vial (6068) 38.69 grams (Tare weight) 76.21 grams (Gross weight)
Transferred ≈ 20 ml out of JAR (6039#) to vial (6068), 37.52 grams (Net weight)

Jar (6020#) Core 62 seg 4# SY103
Jar (6041#) Core 62 seg 4# SY103
vial (6069) 38.53 grams (Tare weight) 64.53 (Gross weight)
Transferred ≈ 0 ml out of JAR (6020#) and 20 ml out of JAR (6041#) to vial (6069)
25.60 grams (Net weight)

09/12/94

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-003 (2) Sample Number 94-009 (3) Supervisor D.E. Melville

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 5 (7) Core 62 (8) Cask Serial Number 1039

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.5 mR/hr	.5 mR/hr
Side Dose Rate	43 mR/hr	40 mR/hr
Bottom Dose Rate	15 mR/hr	16 mR/hr
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20 DPM/100 CM² (Alpha)
	<1000 dpm/100cm² (Beta-Gamma)	<1000 DPM/100 CM² (Beta-Gamma)
RCT* (HPT)	T.W. Graff (Signature)	RCT* (HPT) J. Yokely Jr. (Signature)

(10) Shipment Description

A. Work Package Number 2W-94-00183/W

B. Cask Seal Number ~~3450~~ 2450

C. Sampler Serial Number 94-095

D. Date and Time Sampler Unseated 9/8/94, 1338

E. Expected Liquid Content 30%

F. Expected Solid Content 70%

G. Dose Rate Through Drill String 2.2 R/hr.

H. Expected Sample Length 19"

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

Characterization WHC-SD-WM-TP-197

402

(12) Field Comments None

(34) Laboratory Comments None

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY Farm	222S.	D.E. Melville	9/9/94 1500	None.

(19) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
D.E Melville	DO Dudley	9/9/94 1500	N/A

(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
		9-9-94 1530	N/A

(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?
☒ Yes ☐ No	☑ 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 - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

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WHC-SD-WM-DP-074, REV. 0

TEMP INSIDE HOT CELL 78.5°F 9/12/94 47
% Humidity 20.0

Tank 241-SY-103
Extruded Segment Description Sheet

20.00g vam - 20.15g
500.00g vam = 500.00gr

Sample 94-009 Riser 14A Core 62 Segment 5

General Description of Sample:
① 1235 - collected less than 5 mls of Liner Liquid (Did not retain).
② 1240 - valve closed before cutting cables.
③ 1242 - valve closed after cutting cables, 1245 - removed spring stops, 1246 inserted push rod into quadrant latch, 1248 opened sampler valve, collected drainable liq. in JAR 6040# - 255 ml
Drainable liq. Turbid and medium Brown, 1251 started extrusion process,
Note: collecting remaining Drainable fluid in JAR ~~6042~~ 6103# - 15 ml
ABB 9/12/94
④ 1252 - Solids appear to be crystal with the appearance of dirty ice.
⑤ Safety screening vials - 6064# Gross - N/A
Tare -
Net - 3 grams
Note: extruded about 1/2 inch of solid.

Remaining solids Gross ~~33~~ N/A
VIAL 6104# Tare
Net 33.41 grams
ABB 9/12/94

Sketch:

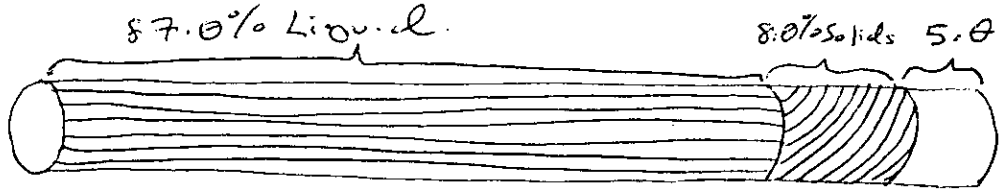
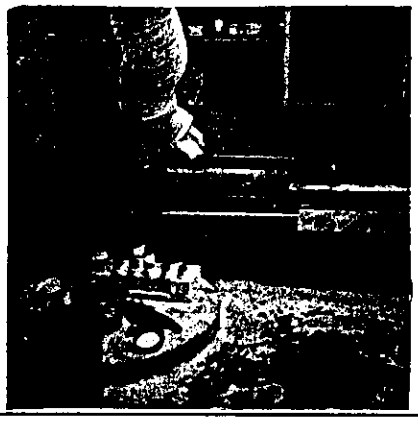


Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler 309 mL	Total Weight 397.41
	%Volume of Air 5.0%	Total Volume 270.0 ml
	%Volume of Liquid ~~87.38%~~ 87.0% ABB 9-12-94	Density 1.48 g/ml
	%Volume of Solids 8.0%	Turbidity
	Comments: Sampler efficiency @ 95% recovery	Comments: Turbid, medium Brown in color

Solids	Liner Liquid	Drainable Liquid
Color Light Brown	Collection Jar NA	Collection Jar 6040# / ~~6042~~ 6103# ABB 9/12/94
Consistency Snowcone ice	Gross Wt.	Gross Wt. 603.99gr / 151.25grm
Homogeneity Homogeneous	Tare Wt.	tare Wt. 226.60 grams ~~226.~~ ABB 9/12/94
Texture Chunky	Net Wt.	Net Wt. 377.39gr / 20.02gr.
Penetrometer	No. Phases	No. Phases

Cognizant Scientist: 9/12/94

Reviewed By: Keith Fulla RKF 9/13/94 9/13/94

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48 September 12, 94

1. Used Exposure 12.

2. Safty Screening Solids:

vial 6064# ≈ 3.0 grams

3. Remaining Solids:

vial 6104# ≈ 33.91 grams

4. Total volume of Drainable Liquid:

vial 6040# ≈ 255 ml
vial 6103# ≈ 15 ml
Total → 270 ml

5. Recap Jar Information:

vial	(6064#)	Safty screening solids	3.0 grams
JAR	(6104#)	Remaining solids	33.91 grams
JAR	(6040#)	Drainable Liquid (255ml)	377.39 grams ~~337~~ AAB 9/12/94
JAR	(6103#)	Drainable Liquid (15ml)	20.02 grams

6. SAMPLE INFORMATION:

Collected approximately 270mls of drainable Liquid. Drainable Liquid was turbid and medium brown in color. There appeared to be no organic phase as viewed through hot cell windows. Total weight of drainable Liquid was 397.41 grams. Density estimated to be 1.48 g/ml.

The solids settled next to the sampler valve and were extruded just before the sampler piston became visible. Collected approximately 36 grams of solid material. Solids were wet/slushy, crystalline, and resembled dirty ice crystals. Consistency of sample was similar to snow cone ice. The solids material took up about 1.5 inches of the sampler volume which is estimated to be 25 mls.

SY 103 CORE 62 SEGMENT 5#

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WHC-SD-WM-DP-074, REV. 0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-004 (2) Sample Number 94-010 (3) Supervisor D. Hartley

(4) Tank 10354 (5) Riser 14A (6) Segment 6 (7) Core 062 (8) Cask Serial Number 1007C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.5	.5
Side Dose Rate	45	40
Bottom Dose Rate	18	10
Smearable Contamination	<20/100cm² (Alpha)	<20/100cm² (Alpha)
	<1000/100cm² (Beta-Gamma)	<1000/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) P Campbell (Signature)

(10) Shipment Description	
A. Work Package Number	2W-94-00183/02
B. Cask Seal Number	3606
C. Sampler Serial Number	94-118
D. Date and Time Sampler Unseated	9-13-94, 1240
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2.5 R/HR
H. Expected Sample Length	19"

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

WHC-SD-WM-TP-197

406

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241540 3	222S	D. Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA Katsel		KAREN C. LEE	9/15/94 1900	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN C. LEE		MICHAEL A. COOK	9/15/94 1930	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

Temp inside Hot Cell 78°F 9/16/94
% Humidity 36%

Tank 241-SY-103
Extruded Segment Description Sheet

90.0 grams - 19.99 grams
500.0 grams - 499.78 grams

Sample 94-010 Riser 14A Core 62 Segment 6

General Description of Sample:
① 1015 - collected About 10 ml of Liner Liquid Vial #6070 - 14.11 grams/10 ml
② 1018 - valve closed before cutting cables.
③ 1000 - valve closed after cutting cables. 1025 Removed spring stops. 1029 insert push rod into guide hatch. 1033 open valve and collecting Drainable Liquid in Jar # 6042 - 260 ml Drainable Liquid turbid and medium brown. 1035 - started extrusion process
④ 1038 - solids appear to be crystals with the appearance of Dirty ice.
⑤ Sadly screening vials - 6063# 36.64 gr. Gross
2860 gr. Tare
8.04 gm Net
NOTE: EXTRUDED ABOUT 1.5 inch of solids.
remaining solids vial 6102# Gross 153.07 grams Tare 126.83 grams Net 26.24 grams.
⑥ Liner Liquid collected in 6070# vial
NOTE: Program Contacted, can not attend.

Sketch:

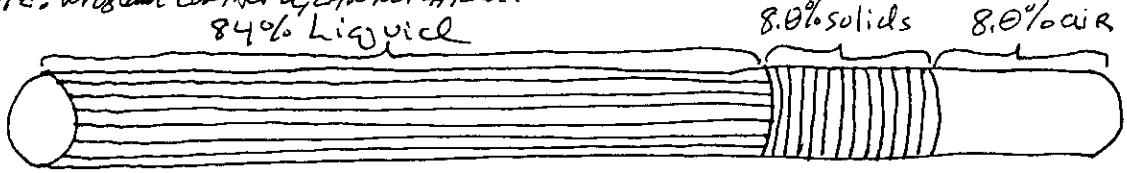

Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler 309 ml	Total Weight 385.23 grams
	%Volume of Air 8.0%	Total Volume 260.0 ml
	%Volume of Liquid 84.0%	Density 1.48
	%Volume of Solids 8.0%	Turbidity
	Comments: 92% recovery	Comments: Turbid, medium brown in color.

Solids	Liner Liquid	Drainable Liquid
Color Light Brown	Collection Jar 6070	Collection Jar 6042
Consistency Snowcone ice	Gross Wt. 52.91	Gross Wt. 609.27
Homogeneity Homogenous	Tare Wt. 38.80	tare Wt. 224.04
Texture Chunky	Net Wt. 14.11	Net Wt. 385.23
Penetrometer	No. Phases	No. Phases

Cognizant Scientist: [signature] Sept 16, 94

Reviewed By: Keith Fuller 9/20/94

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52 September 16, 1994

1. Used exposure #4

2. Safty screening Solids:

vial #6063 ≈ 8.04 gram

3. Remaining Solids:

vial #6102 ≈ 26.24 gram

4. Total Volumn of Drainable Liquid

vial #6042 ≈ 260 ml

≈ 385.23 gram

5. Liner Liquid

vial #6070 ≈ 10 ml

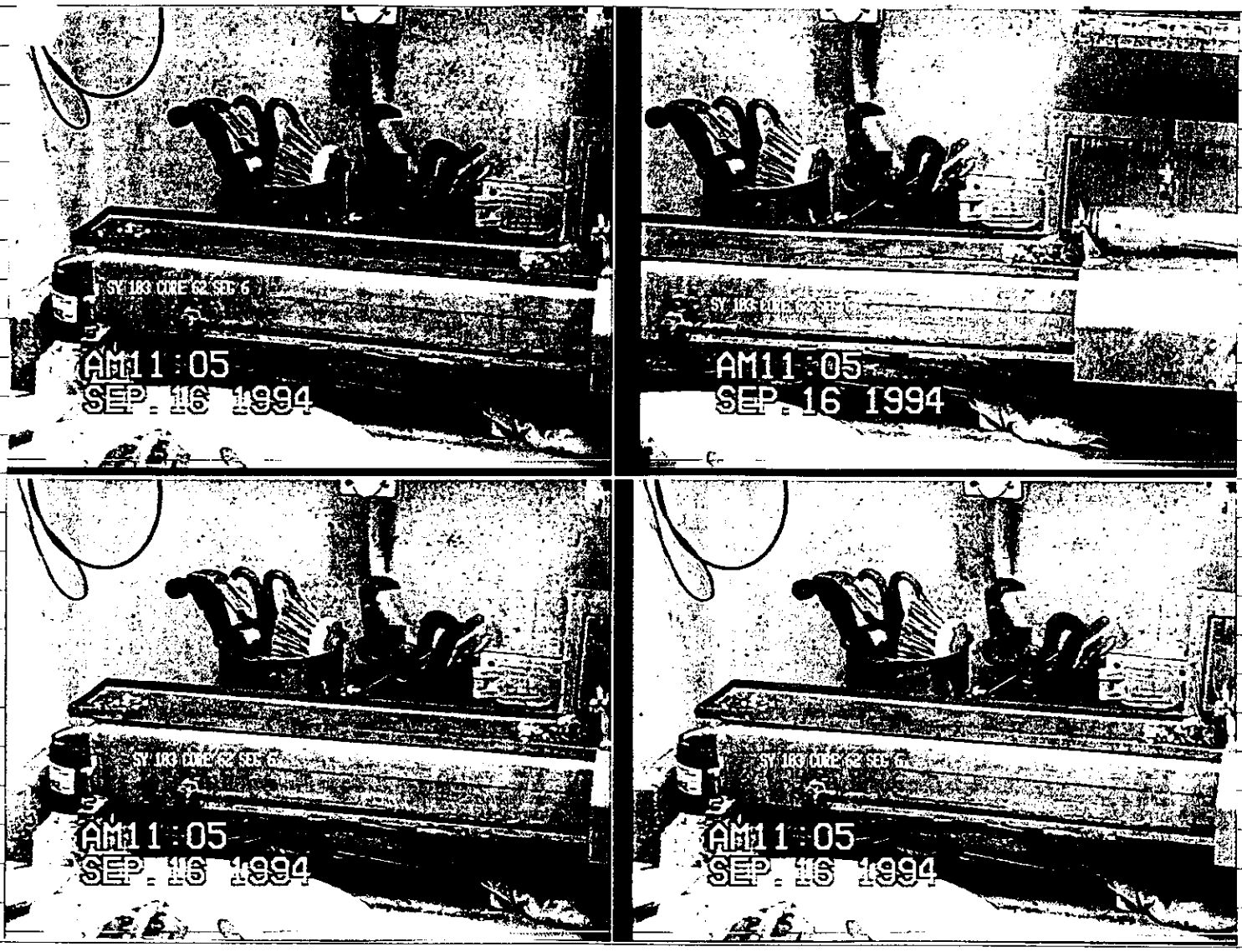
≈ 14.11 gram

6. Recap Jar Information:

vial (#~~6023~~ 6063) ~~[illegible]~~ 9-16-94	Safty screening Solids	8.04 gram
JAR (#6102) (125 ml)	Remaining Solids	26.24 gram
JAR (#6042) (250 ml)	Drainable Liquid	385.23 gram
vial (#6070) (40 ml)	Liner Liquid	14.11 gram

Arthur B. Benoff 09/29/94

SY103 CORE 62 SEGMENT 6#



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09/29/94

COPY

54

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-004 (2) Sample Number 94-011 (3) Supervisor D. Hartley

(4) Tank 103 SY (5) Riser 14A (6) Segment 7 (7) Core 062 (8) Cask Serial Number C102-9

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.5	.5
Side Dose Rate	60	60
Bottom Dose Rate	17	10
Smearable Contamination	<20/100cm² (Alpha)	<20/100cm² (Alpha)
	<1000/100 cm² (Beta-Gamma)	<4000/100 cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number 2W9400185/02

B. Cask Seal Number 3607

C. Sampler Serial Number 94-116

D. Date and Time Sampler Unseated 9-13-94 1438

E. Expected Liquid Content 50%

F. Expected Solid Content 70%

G. Dose Rate Through Drill String 2 R/hr

H. Expected Sample Length 19'

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

410 WHC-SD-WM-TP-~~Draft~~ 197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D C Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
P A Katsel		KAREN C. LEE	9/15/94 1900	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN C. LEE		MICHAEL A. COOK	9/15/94 1930	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release? ☒ Yes ☐ No

(31) Seal Intact Upon Receipt? ☒ Yes ☐ No

(32) Seal Data Consistent with this Record?

Shipment No. ☒ Yes ☐ No

Cask Seal No. ☒ Yes ☐ No

Sample No. ☒ Yes ☐ No

W-CSC-WM-TP-197

5-10

Temperature inside HOT Cell 78.0°F
% Humidity 36% 9-16-94

Tank 241-SY-103
Extruded Segment Description Sheet

20 gram - 19.99 gram
500 gram - 449.78 gram

Sample 94-011 Riser 14A Core 62 Segment 7

General Description of Sample:
① Collected about 7 ml of Liner Liquid @ 1400
② 1400 - valve closed before cutting cables
③ 1405 - valve closed after cutting cables, 1407 remove spring stops, 1408 Inserted push rod into guide latch, 1414 open valve and collected drainable Liquids in JAR #6111
262 ml Drainable Liquid was turbid and medium brown in color; 1416 started extrusion process.
④ 1420 - solids appear to be crystals and resemble snow cone ice and dirty in appearance
⑤ Safety Screening vials — #6065 gross 49.75 grams
Tare 27.40 grams
Net 22.35 grams
⑥ Liner Liquid Collected in vial #6071 @ 6.02 grams

NOTE: EXTRUDED ABOUT .5 inch of solids.

Sketch:

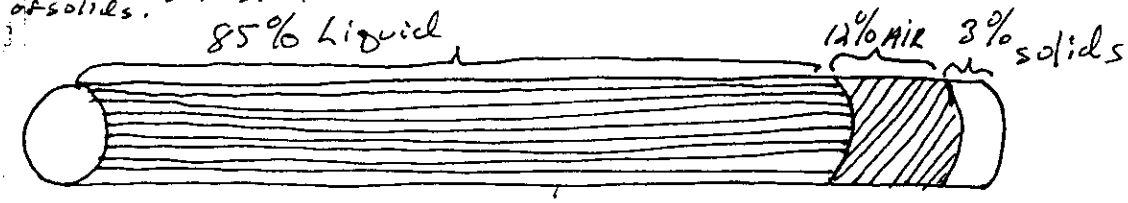
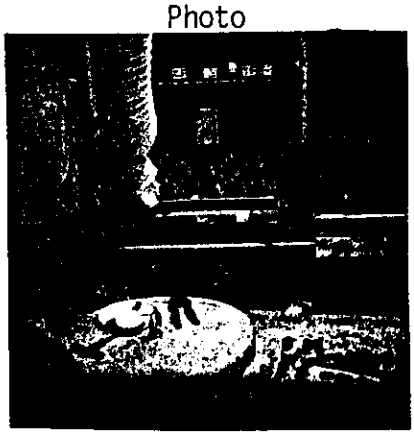


Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler 389 ml	Total Weight 402.03 gram
	%Volume of Air 12%	Total Volume 262 ml
	%Volume of Liquid 85%	Density 1.53 gr/ml
	%Volume of Solids 3%	Turbidity
	Comments: 88% recovery	Comments: Turbid, medium brown in color.

Solids	Liner Liquid	Drainable Liquid
Color Light Brown	Collection Jar 6071 #	Collection Jar 6111 #
Consistency Slushy ice	Gross Wt. 45.24 gram	Gross Wt. 623.36 gram
Homogeneity Homogeneous	Tare Wt. 39.22 gram	tare Wt. 221.33 gram
Texture Slushy	Net Wt. 6.02 gram	Net Wt. 402.03 gram
Penetrometer	No. Phases	No. Phases

Cognizant Scientist: [signature] Sept 16, 94

Reviewed By: Ruth Fuller 9/20/94

WHC-SD-WM-DP-074, REV. 0

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56 September 16, 1994

1. Used exposure #7

2. Safty screening solids:
vial #6065 ≈ 22.35 grams

3. Total volumn of Drainable Liquid:
vial #6111 ≈ 262 ml
≈ 402.03 grams

4. Liner Liquid
vial #6071 ≈ 7 ml
≈ 6.02 grams

5. Recap Jar Information:

vial #(~~6025~~ 6065) (20ml) Safty screening solids — 22.35 grams

jar #(6111) (250ml) Drainable Liquids — 402.03 grams

vial #(6071) (40ml) Liner Liquid — 6.02 gram

Arthur B. Beauty 09/29/94

SY 103 CORE 62 SEGMENT 7#

BEST AVAILABLE COPY

Arthur B. Beardy 04/24/94

WHC-SD-WM-DP-074, REV.0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-004 (2) Sample Number 94-012 (3) Supervisor D. Hartley

(4) Tank 241SY103 (5) Riser 14A (6) Segment 8 (7) Core 062 (8) Cask Serial Number 1008C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	>.5	.5
Side Dose Rate	60	70
Bottom Dose Rate	19	10
Smearable Contamination	<20/100cm² (Alpha)	<20/100cm² (Alpha)
	<1000/100cm² (Beta-Gamma)	<1000/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) JCampbell (Signature)

(10) Shipment Description	
A. Work Package Number	2W9400/83/W
B. Cask Seal Number	3616
C. Sampler Serial Number	94-100
D. Date and Time Sampler Unseated	9-13-94/1817
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	2R/HR
H. Expected Sample Length	19"

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

WHC-SD-WM-TP-197

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(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	D C Hartley		
(19) Relinquished By (Sign and PRINT)		**(20) Received By (Sign and PRINT)**	**(21) Date/Time**	**(22) Receiver Comments**
P A Katsel		KAREN C. LEE	9/15/94 1900	
(23) Relinquished By (Sign and PRINT)		**(24) Received By (Sign and PRINT)**	**(25) Date/Time**	**(26) Receiver Comments**
KAREN C. LEE		MICHAEL A. COOK	9/15/94 1930	
(27) Relinquished By (Sign and PRINT)		**(28) Received By (Sign and PRINT)**	**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

Temperature inside Hot Cell — 78.5 F
% Humidity — 38.0%

Sept 19, 94

Tank 241-SY-103
Extruded Segment Description Sheet

20 grams - 20.63
500 grams - 499.93

Sample 94-012 Riser 14A Core 62 Segment 8

General Description of Sample: ABB 9-19-94
1. ~~Collected less than 10ml of Liner Liquid~~ @ 1000 - collected 10ml of Liner Liquid.
2. 1015 valve closed before cutting cables.
3. 1018 valve closed after cutting cables, 1020 removed spring stops, 1022 Inserted push rod into quadralatch, 1025 open valve and collected drainable Liquids in JAR #6112 - sediment-solids suspended in slimy jello phase of Drainable Liquid.
4. 1030 - solids appear to be colorless and clear, resembling snow cone ice.
5. 1045 - vial #6066 - 3.79 grams collected sifting screening solids. Remaining solids, vial - 6079# 18.30 grams
6. Liner Liquid collected in vial #6078 - 10ml / 13.82 grams
7. Excess Drainable Liquid vial #6113# - 35ml / ~~273 grams~~ 49.5 gr

Note: Program notified/Answer machine.

Sketch:

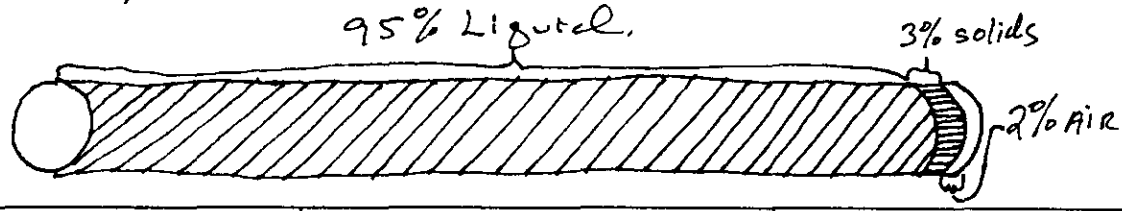
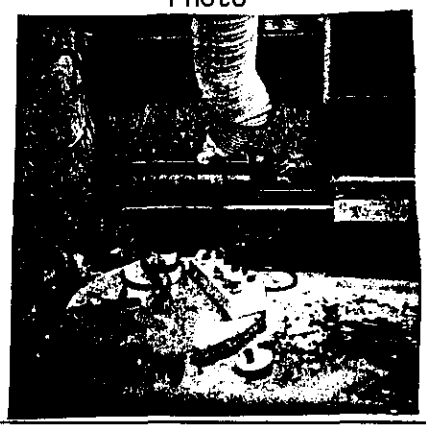


Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler 309 ml	Total Weight ~~878.39~~ 431.64 ABB 9-19-94
	%Volume of Air 2%	Total Volume 260 ml / ~~70 ml~~ 35 ml ABB 9-19-94
	%Volume of Liquid ~~84%~~ 95% ABB 9-14-94	Density ~~2.328 g/ml~~ 1.478 g/ml
	%Volume of Solids 3%	Turbidity
	Comments: 98% recovery	Comments: Turbid, medium brown in color / sediment Jello like phase

Solids	Liner Liquid	Drainable Liquid
Color clear/transparent	Collection Jar 6078	Collection Jar 6112#/6113#
Consistency ice crystals	Gross Wt. N/A	Gross Wt. 605.39 gr / 273 gr
Homogeneity Homogenous	Tare Wt. N/A	tare Wt. 223.25 grams / 223.54 gr
Texture snow cone ice	Net Wt. 13.82 grams	Net Wt. 382.14 gr / 49.5 gr
Penetrometer	No. Phases N/A	No. Phases

Cognizant Scientist: [signature] Sept 19, 1994

Reviewed By: Keith Fuller 9/20/94

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60 Sept 19, 94

1. Used exposure 10# & 11#

2. Safty screening solids:
vial #6066 ≈ 3.79 grams

3. Remaining solids:
vial # 6079 ≈ 18.30 grams

4. Total volume of Drainable Liquids:
vial # 6112 ≈ 260 ml / 382.14 gr
vial # 6113 ≈ 35 ml / 49.5 gr

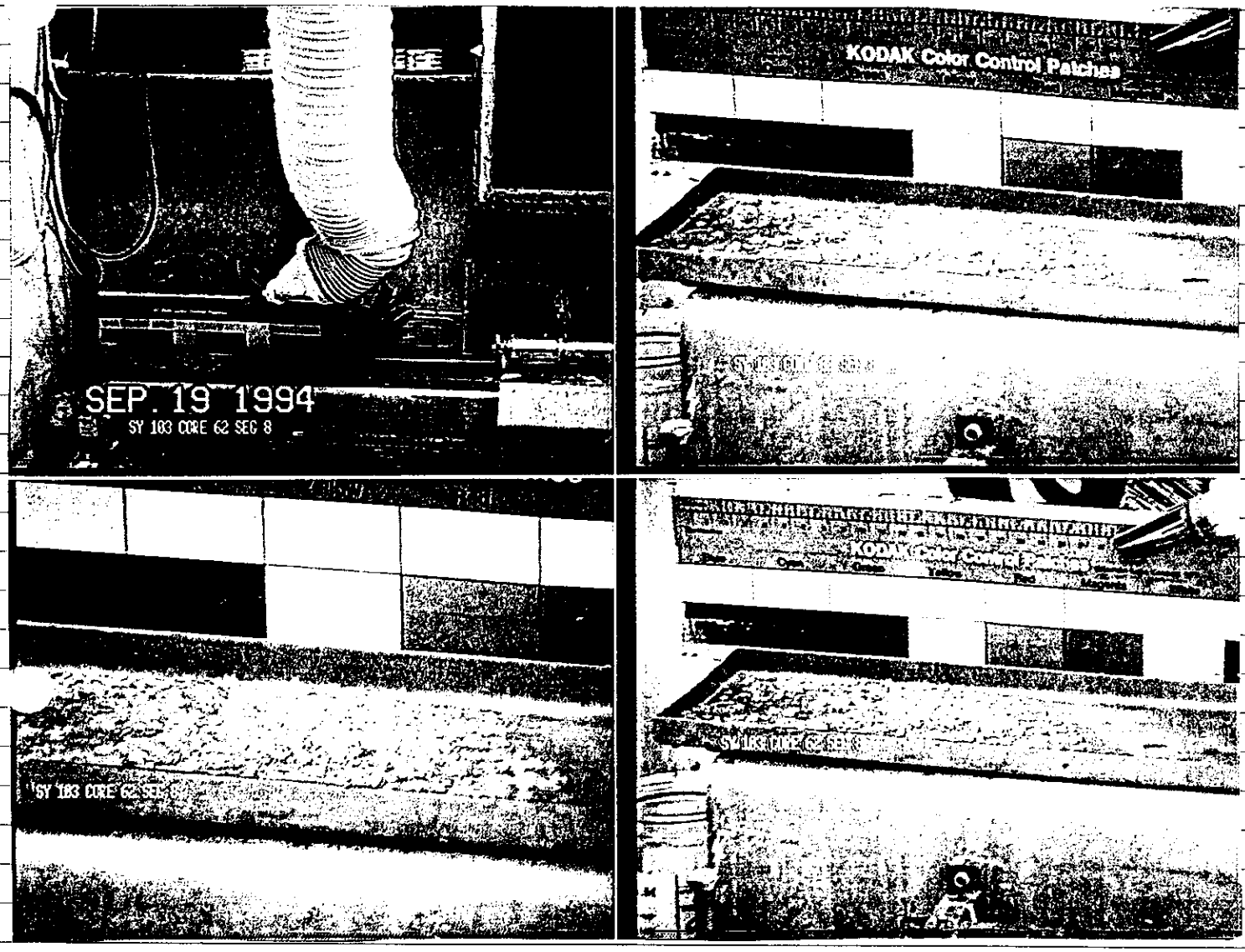
5. Liner Liquid:
vial # 6078 ≈ 10 ml / 13.82 gr.

6. Recap JAR information:

vial # 6066 (20ml)	safty screen solids	3.79 grams
vial # 6079 (20ml)	Remaining solids	18.30 grams
JAR # 6112 (250ml)	Drainable Liquids	382.14 grams
JAR # 6113 (250ml)	Drainable Liquids	13.82 grams.

Arthur B. Bandy 09/29/94

SY103 CORE 62 SEGMENT 8#



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Alan B. Brady 09/22/94

COPY 62

WHC-SD-WM-DP-074, REV.0

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-005 (2) Sample Number 94-013 (3) Supervisor D. Hartley

(4) Tank 241S4103 (5) Riser 14A (6) Segment 9 (7) Core 062 (8) Cask Serial Number C1042

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	>.5	.5
Side Dose Rate	35	38
Bottom Dose Rate	18	10
Smearable Contamination	<20 dpm/100 cm2 (Alpha)	<20/100 cm2 (Alpha)
	<1000 dpm/100cm2 (Beta-Gamma)	<1000/100cm2 (Beta-Gamma)
RCT* (HPT) (Signature)	T.W. Crafts	RCT* (HPT) (Signature) P.W. Phillips

(10) Shipment Description	
A. Work Package Number	2W9400183/W1
B. Cask Seal Number	3609
C. Sampler Serial Number	94-108
D. Date and Time Sampler Unseated	9-13-94, 1923
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1,910/hr
H. Expected Sample Length	19"

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

WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241S4103	222S	DC Hartley DC Hartley		
(19) Relinquished By (Sign and PRINT)	**(20) Received By (Sign and PRINT)**		**(21) Date/Time**	**(22) Receiver Comments**
PA Katsel PA Katsel	KC Lee KC Lee		9/15/94 2030	
(23) Relinquished By (Sign and PRINT)	**(24) Received By (Sign and PRINT)**		**(25) Date/Time**	**(26) Receiver Comments**
KC Lee KC Lee	MICHAEL A. COOK		9/15/94 2045	
(27) Relinquished By (Sign and PRINT)	**(28) Received By (Sign and PRINT)**		**(29) Date/Time**	**(30) Receiver Comments**

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

115

Temperature inside 177 Cell — 76.0 F
% Humidity — 35 %

Sept. 19, 94

Tank 241-SY-103
Extruded Segment Description Sheet

200 grams — 20.55
500 grams — 500.16

Sample 94-013 Riser 14A Core 62 Segment 9

General Description of Sample:
1. 1405 Collected less than 5 ml of liner liquid (Did not retain)
2. 1410 valve closed before cutting cables
3. 1420 valve closed after cutting cables, 1425 removed spring stops.
   1430 Inserted push rods into quadralatch, 1433. open valve and collected drainable liquids in Jar # 6114, 57.35 grams / 35 ml
4. 1435 - started extrusion; resembled runny chocolate pudding (solids). vial # 6080 33.15 grams
   - Drainable liquid intermittently pooled throughout sample on Tray.
   - 6115 # - 229.23 grams Tare used to collect remaining solids. — 27.06 tare
   363.09 Net grams — Remaining solids in vial 6115 # — 6.09 net grams (satisfactory) 6080 #
   369.18 gr Total solids recovered. / 250 ml volume.

NOTE: Call all Programs / Showed up.

Sketch:

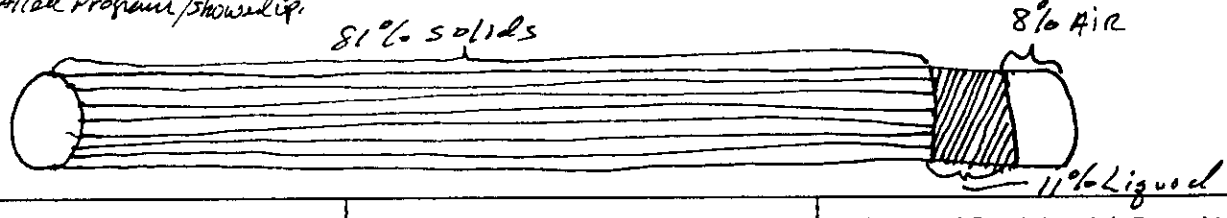

Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler 309 ml %Volume of Air ~~17~~ 8 % %Volume of Liquid 11 % %Volume of Solids ~~72~~ 81 % Comments: 83% recovery	Total Weight 57.35 grams. Total Volume 35 ml Density 1.64 g/ml Turbidity Comments: Dark Brown, did contain some solids.

Solids	Liner Liquid	Drainable Liquid
Color Dark Brown	Collection Jar N A	Collection Jar 6114 #
Consistency Dawcake batter / ~~Wet Brittle material~~	Gross Wt.	Gross Wt. 288.44 g
Homogeneity Homogenous	Tare Wt.	tare Wt. 233.09 g
Texture runny pudding	Net Wt.	Net Wt. 57.35 grams.
Penetrometer	No. Phases	No. Phases

Cognizant Scientist: [signature] Sept 19, 1994

Reviewed By: Keith Fuller 9/20/94

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64 Sept 19, 1994

1. Used exposure 1# & 2#

2. Safty screening solids:

vial # 6080 ≈ 6.09 grams

3. Remaining solids:

vial # 6115 ≈ 363.09 grams

4. Total volume of Drainable Liquids:

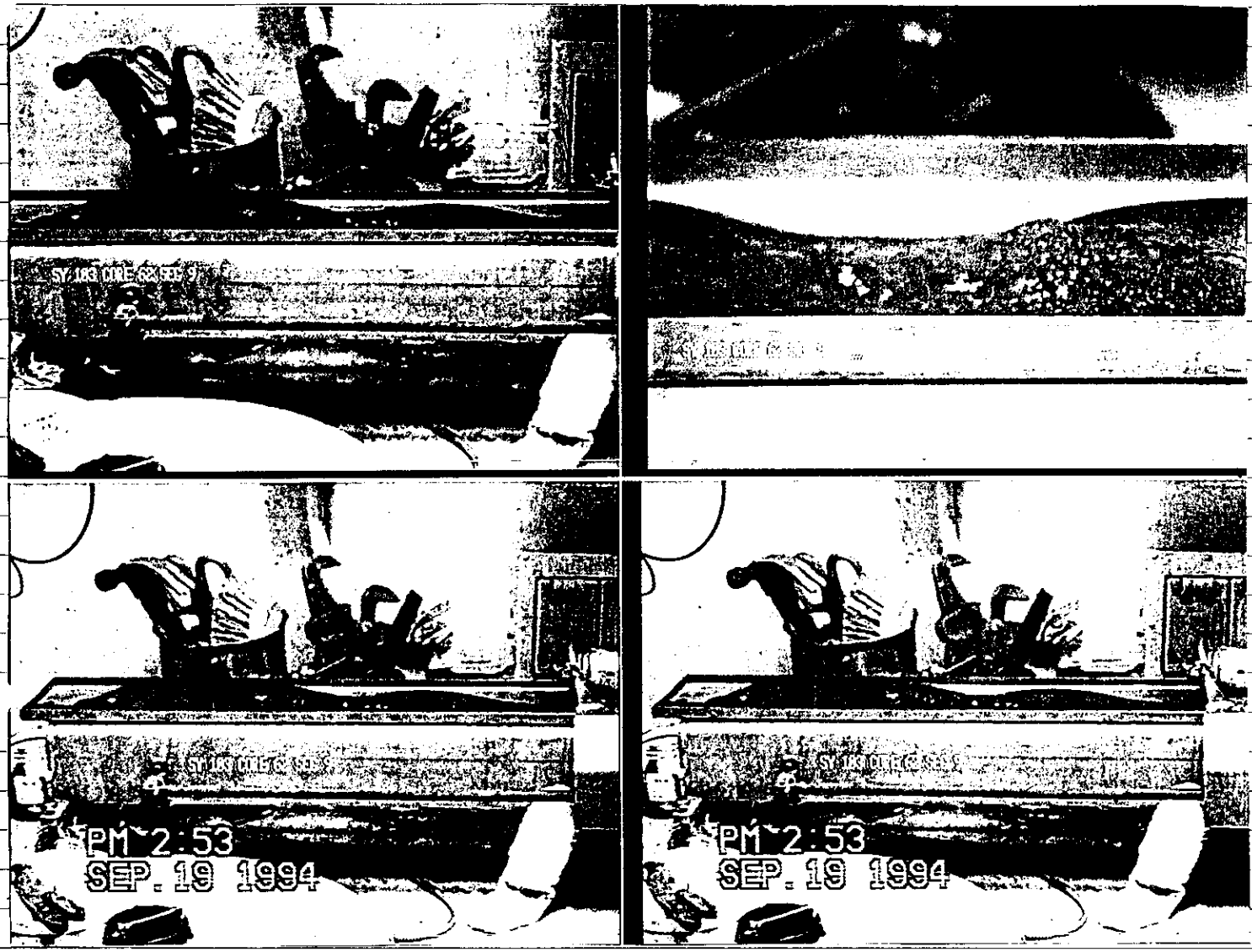
vial # 6114 ≈ 35ml / 57.35 grams.

5. Recap JAN information:

vial # 6080	(20ml)	safty screening solids	6.09 grams
vial # 6115	(250ml)	Remaining solids	363.09 grams
vial # 6114	(250ml)	Drainable Liquids	35ml / 57.35 grams

09/26/94

SY 103 CORE 62 SEGMENT 9#



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09/29/94

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-005 (2) Sample Number 94-014 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 10 (7) Core 06 (8) Cask Serial Number 1005C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	>0.5	.5
Side Dose Rate	38	45
Bottom Dose Rate	15	15
Smearable Contamination	<20 dpm/100cm² (Alpha)	<20/100cm² (Alpha)
	<1000 dpm/100cm² (Beta-Gamma)	<1000/100cm² (Beta-Gamma)
RCT* (HPT)	T.W. Cook (Signature)	RCT* (HPT) [illegible] (Signature)

(10) Shipment Description	
A. Work Package Number	2C1940183/W
B. Cask Seal Number	3608
C. Sampler Serial Number	94-113
D. Date and Time Sampler Unseated	9-13-94, 2029
E. Expected Liquid Content	70%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	17R/HR
H. Expected Sample Length	19.11

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

WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	222-S	D.C. Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
P.A. Katsel		K.C. Lee	9/15/94 2030	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
K.C. Lee		MICHAEL A. COOK	9/15/94 2045	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

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WM-C-SD-WM-TP-197

Tank 241-SY-103

Extruded Segment Description Sheet

20 grams - 20.06 gr
500 grams = 494.86 gr

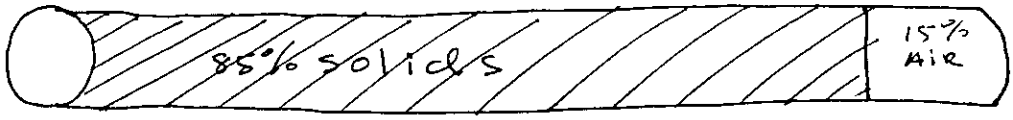
Sample 94-014 Riser 14A Core 62 Segment 10

General Description of Sample:

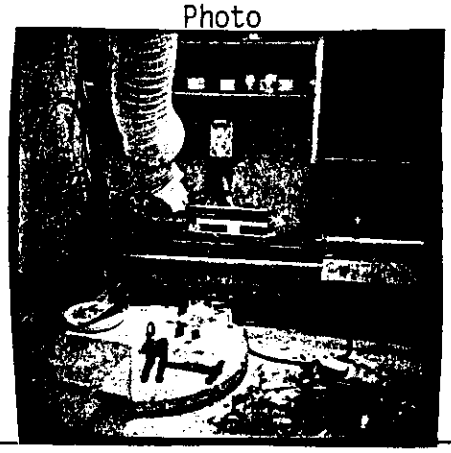
1. 0950 Collected less than 5 ml of ~~Drain~~ Liner Liquid. ~~SY~~ 9-20,94
2. 0955 valve closed before cutting cables.
3. 1005 valve closed after cutting cables. 1007 Removed spring stops
1010 Inserted push rod into quick disconnect open valve and collected Drainable Liq. Drainable liquids in Jar # 6116 N/A. gross - N/A Tare 223.78 net N/A
1016 - valve open, Drainable liquids:
1019 - started extrusion: solids well formed; first 9" kept its shape; the last 10" more watery and lost its shape while extruded.
- Retain upper + lower segment to compile for safty screening.

Liner half vial # 6084 gross N/A Tare N/A Net 3.48 gr } safty screen 1034-1038
upper half vial # 6086 gross N/A Tare N/A Net 3.48 gr } - 1040 - 1042
Jar # 6105 gross N/A Tare 126.12 Net 137.78 Shear strength
Jar # 6106 gross N/A Tare 129.04 Net 190.86 Core sample

Sketch:



Photo



Sampler Efficiency	Drainable Liquid Density
Volume of Sampler 309	Total Weight NA
%Volume of Air 15%	Total Volume
%Volume of Liquid 0	Density
%Volume of Solids 85%	Turbidity
Comments: 85% recovery	Comments: no drainable liquids

Solids	Liner Liquid	Drainable Liquid
Color Dark Brown	Collection Jar NA	Collection Jar 6116 # NA
Consistency mud	Gross Wt.	Gross Wt. 0
Homogeneity Homogenous	Tare Wt.	tare Wt. 223.78
Texture mud / gravel like (lower half / upper half)	Net Wt.	Net Wt. 0
Penetrometer	No. Phases	No. Phases

Cognizant Scientist: [signature] Sept 20, 94

Reviewed By: Keith Fuller 9/20/94

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70 Sept 20, 1994 Seg 10#

1. Used exposure # ~~4~~ # & 5# & 6# 9-20-94

2. 6047# (40ml) Safty Screening Archives - collect roughly 20 grams. 1042
Net wt 22.14 grams (Lower Half) - has shape, less water 1049

3. 6050# (40ml) Safty Screening Archives - collect roughly 20 grams 1049
Net wt 23.57 grams. (Upper half) - lost its shape, more water 1054

4. 6084# (20ml) Lower half Safty Screening Solids @ 3.40 grams

5. 6086# (20ml) Upper half Safty Screening Solids @ 3.40 grams

6. 6105# (125ml) Shear Strength Sample @ 137.78 grams

7. 6106# (125ml) facie (ope) @ 190.86 grams

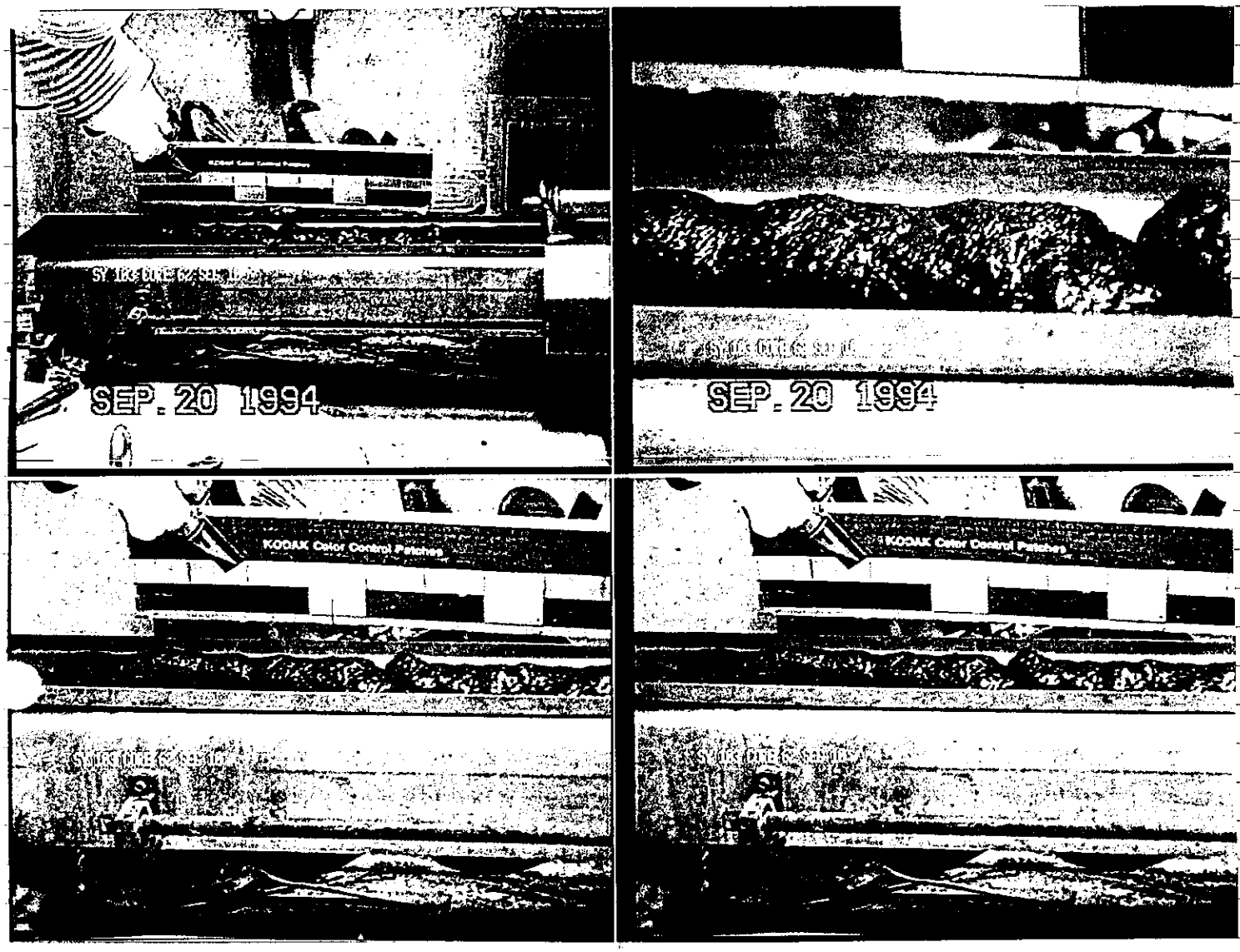
8. Total Solid recovered — 381.15 grams

9. Recap JAR information:

vial# 6084 (20ml)	Lower-half Safty Screening Solids	3.40 grams
vial# 6086 (20ml)	Upper-half Safty Screening Solids	3.40 grams
vial# 6047 (40ml)	Lower-half Safty Screening Archives	22.14 grams
vial# 6050 (40ml)	Upper-half Safty Screening Archives	23.57 grams
vial# 6105 (125ml)	Shear Strength Sample	137.78 grams
vial# 6106 (125ml)	facie sample	190.86 grams

Arlen B. Bendy 09/24/94

SY 103 CORE 62 SEGMENT 10#



04/29/94

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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-006 (2) Sample Number 94-015 (3) Supervisor D. Hartley

(4) Tank 241-SY-103 (5) Riser 14A (6) Segment 11 (7) Core 062 (8) Cask Serial Number C[illegible]

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	9/19/94 .05 mr/hr	.5 mR/HR
Side Dose Rate	.35 mr/hr	35 mR/HR
Bottom Dose Rate	22 mr/hr	19 mR/HR
Smearable Contamination	<20/100cm² (Alpha)	<20 DPM/100cm² (Alpha)
	<1K/100cm² (Beta-Gamma)	<1K/100cm² (Beta-Gamma)
RCT* (HPT)	RMeet (Signature)	S.N. Lee LANDON (Signature)

(10) Shipment Description

A. Work Package Number	2W94-00185/W
B. Cask Seal Number	2438
C. Sampler Serial Number	94-111 9-19-94
D. Date and Time Sampler Unseated	~~9-18-94~~ 0853
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	6.9 R/HR
H. Expected Sample Length	19"

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

426 WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-SY-103	2225	D Hartley D Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
P A Katsel PA Katsel		Karen Lee KAREN LEE	9/19/94 1345	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
Karen Lee KAREN LEE		Napier N Napiers	9/19/94 1415	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

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WHC-SD-WM-TP-197, REV. 0

% Humidity 20.0% Sept 21, 94 73

20 grams - 19.97 grams
500 grams - 499.90 grams

Tank 241-SY-103
Extruded Segment Description Sheet

Sample 94-015 Riser 14A Core 62 Segment 11

General Description of Sample:
① 1025 collected 10 ml of liner liquid. (Did retain in vial #6082 (20ml) Gross 42.32 Tare 27.45 Net 14.87
② 1030 valve closed before cutting cables.
③ 1035 valve closed after cutting cables. 1039 spring stops removed.
④ 1040 inserted push rod into guardalatch. 1058 valve open; 1100 started extrusion.

vial #6083 (20ml) Lower half Safty Screening sample 31.45 grams gross - 27.45 gram Tare = 4.00 grams Net
vial #6081 (20ml) upper half safty screening sample 34.54 grams gross - 27.48 grams Tare = 3.86 grams Net
vial #6048 (40ml) Lower half Archive safty screening 59.19 gross - 38.77 gm Tare = 20.42 net
vial #6049 (40ml) Upper half Archive safty screening 58.55 gross - 39.02 Tare = 19.53 net
vial #6107 (125) shear strength 261.86 gross - ~~130.18~~ Tare 131.18 - ABB 9-21-94 tare 130.18 net

Description of solid material: solids held its shape, recovered a full 19" segment; grayish brown in color. classic shape; paste like peanut butter.

Sketch: ~~vial #6107~~ ABB 9-21-94 vial # 6117# (250ml) 477.57 grams - 223.99 Tare = 253.58 net } one complete facie. Total wt of remaining solids.

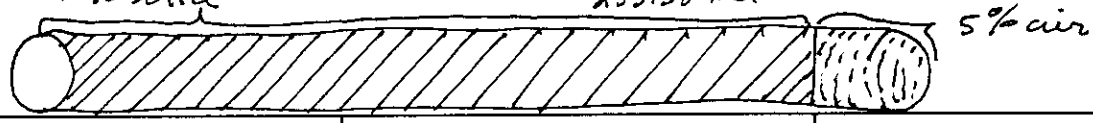
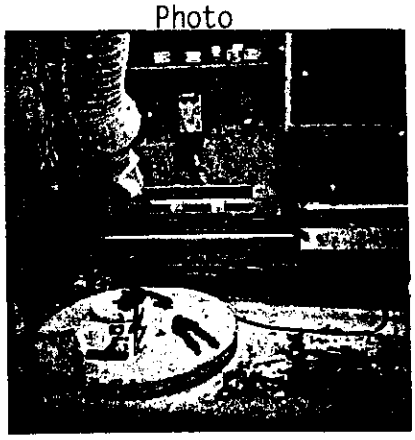


Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler 309	Total Weight N/A
	%Volume of Air 5%	Total Volume
	%Volume of Liquid 0	Density
	%Volume of Solids 95%	Turbidity
	Comments: 95% recovery	Comments: NO DRAINABLE liquids

Solids	Liner Liquid	Drainable Liquid
Color ~~blackish brown~~ grayish brown ABB 9-21-94	Collection Jar 6082	Collection Jar 6116#
Consistency thick paste	Gross Wt. 42.32	Gross Wt. 0
Homogeneity Homogenous	Tare Wt. 27.45	tare Wt. 223.76
Texture thick paste/peanut butter	Net Wt. 14.87	Net Wt. 0 N/A
Penetrometer	No. Phases 0	No. Phases 0 N/A

Cognizant Scientist: [signature] Sept 21, 94

Reviewed By: Keith Fuller

WHC-SD-WM-DP-074, REV. 0

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74 September 21, 94 Seg. 11#

1. Used exposures 8# & 9#

2. Recap Jar Information:

vial #6083 (20ml)	Lower half safty screening sample	4 grams
vial #6081 (20ml)	Upper half safty screening sample	3.86 grams
vial #6048 (40ml)	Lower half safty screeing Archive	20.42 grams
vial #6049 (40ml)	Upper half safty screening Archive	19.53 grams
vial #6107 (125ml)	Shear Strength Sample	130.18 grams
vial #6117 (250ml)	facie (end) sample	253.58 grams

3. Total Solids recovered ≅ 431.57 grams.

4 Liner Liquid:

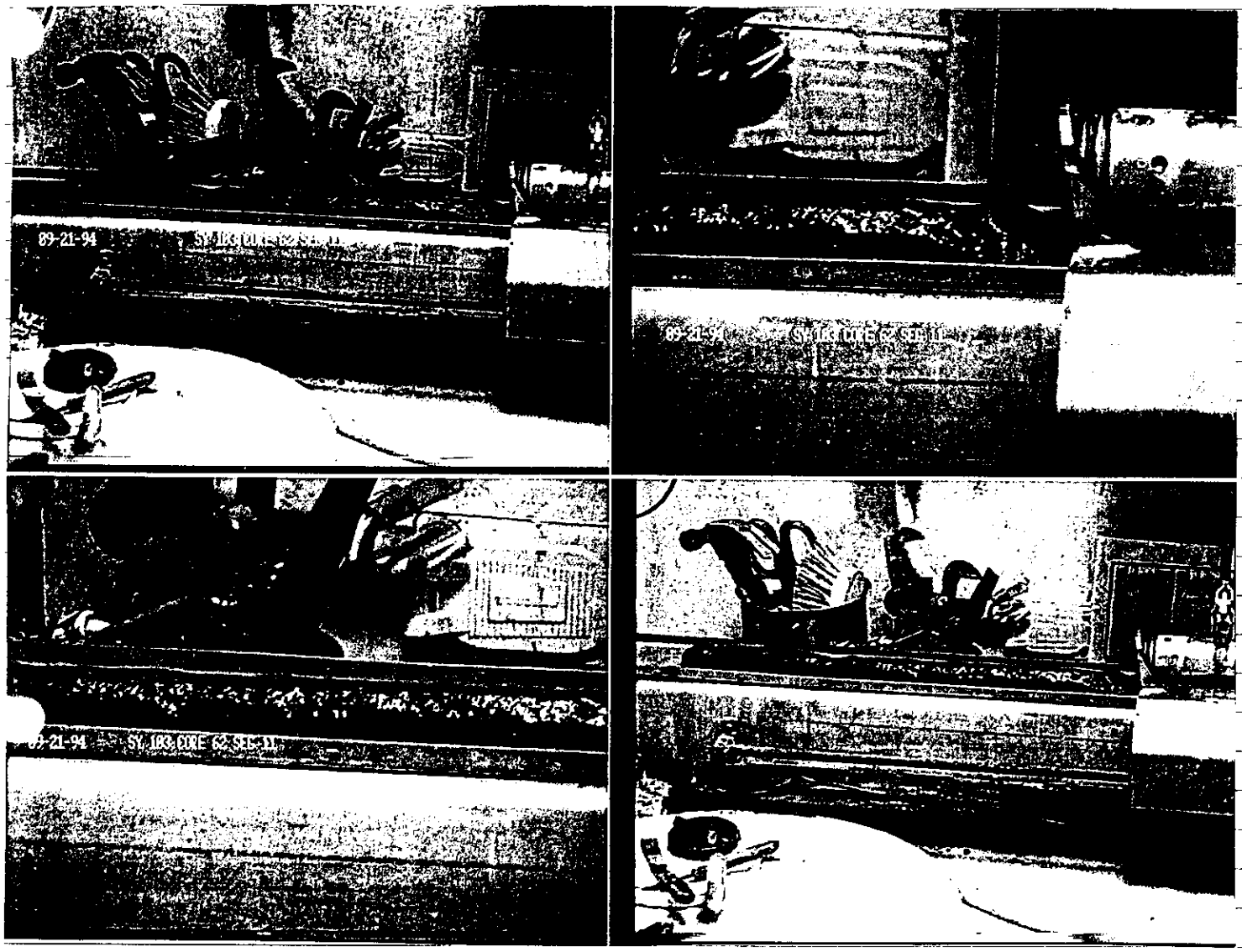
vial #6082 (20ml) Liner Liquid 10ml/14.87 grams
Description: Turbid and Dark brown with sedimentation (small lic).

5. Description of extruded solid:
Color of solids appeared grayish brown and held its shape; Consistency resembled thick paste or tooth paste. Sample was Homogenous throughout with no stratification with a texture resembling smooth peanut butter. No Drainable Liquids were observed, Overall sample (solids) recovery was (95%). Also surface of sample was pitted with no off gasing.

6. Samples That were Loaded out of 1E-2

1. vial 6064#	NS/250 mrad	T-handle // 20 mR/h	seg 5#
2. vial 6063#	NS/750 mrad	T-handle // 20 mr/h	seg 6#
3. vial 6065#	NS/1.750 rad	T-handle // 60 mR/h	seg 7#
4 vial 6066	NS/400 mrad	T-handle // 20 mr/h	seg 8#
5. vial 6080	NS/1 rad	T-handle // 35 mr/h	seg 9#

SY 103 CORE 62 SEGMENT 11#



09/29/94

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COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number SP-94-006 (2) Sample Number 94-016 (3) Supervisor D Hartley

(4) Tank 241SY103 (5) Riser 14A (6) Segment 12 (7) Core 062 (8) Cask Serial Number None

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	.07 mr/hr	.05
Side Dose Rate	48 mr/hr	3.5 mR/HR
Bottom Dose Rate	18 mr/hr	21 mR/HR
Smearable Contamination	<20/100cm² (Alpha)	<20dpm/100cm² (Alpha)
	<1K/100cm² (Beta-Gamma)	<1K/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) S. N. LANDOE (Signature)

(10) Shipment Description	
A. Work Package Number	2W94-00183/W
B. Cask Seal Number	2439
C. Sampler Serial Number	94-105
D. Date and Time Sampler Unseated	~~9-16-94~~ 01/1101
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.7R/HR
H. Expected Sample Length	19"

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

WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	2225	DC Hartley		
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA Katsel		KAREN LEE	9/19/94 0945 ~~9/20/94~~ 1345	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN LEE		N. LAPIERS	9/19/94 1445	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release? ☒ Yes ☐ No

(31) Seal Intact Upon Receipt? ☑ Yes ☐ No

(32) Seal Data Consistent with this Record?

Shipment No. ☑ Yes ☐ No

Cask Seal No. ☑ Yes ☑ No

Sample No. ☑ Yes ☐ No

Hot Cell Temperature (Inside) - 79.5 F
% Humidity - 20%

WHC-SD-WM-DP-076, REV.0
Sept. 22, 94 77

219 grams - 19.95 grams
569 grams = 499.74 grams

Tank 241-SY-103
Extruded Segment Description Sheet

Sample 94-016 Riser 14A Core 62 Segment 12

General Description of Sample:
① 1038 collected About 10ml of Liner Liquid-vial #6092 net 16.24 grams.
② 1043 valve closed before cutting cables. 1050 valve closed after cutting cables.
③ 1052 spring stops removed. 1055 Inserted push rod into guide/latch. 1115 valve open
④ 1117 started extrusion. No drainable liquids, Recovered a full 19" segment. Solids resembled to previous sample - Dark grayish brown. Kept its shape. Surface was pitted with no spring evidence
⑤ Lower half salty screening sample vial #(6085) gm N/A Tare N/A net 8.3 grams. (20ml vial).
Upper half salty screen sample vial #(6090) (20ml) net 8.1 grams
Upper half salty screen Archive vial #(6074) (40ml) net 28.55 grams.
Lower half salty screen Archive vial #(6073) (40ml) net 19.15 grams.
Shear strength JAR vial #(6125) (125ml) Net 142.40 grams.
FACIE vial #(6110) (25ml) net 175.90 grams. (25ml) AOB 9-22-94
Total solids recovered - 382.40 grams.

Sketch:

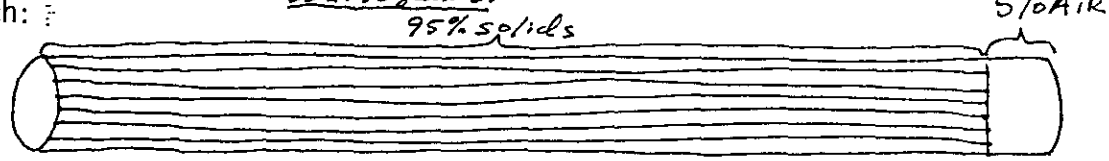

Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler 309	Total Weight NA
	%Volume of Air 5%	Total Volume
	%Volume of Liquid 0	Density
	%Volume of Solids 95%	Turbidity
	Comments: 95% recovery	Comments:

Solids	Liner Liquid	Drainable Liquid
Color Dark Grayish brown	Collection Jar 6092	Collection Jar 6116
Consistency Thick paste	Gross Wt. 0	Gross Wt. N/A
Homogeneity Homogenous	Tare Wt. 0	tare Wt. 223.89
Texture Tooth paste/peanut butter	Net Wt. 16.24 grams	Net Wt. N/A
Penetrometer	No. Phases	No. Phases

Cognizant Scientist: [signature] Sept 22 94

Reviewed By: Keith Fuller

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78 September 22, 1994 Seg. 12# WHC-SD-WM-DP-074, REV. 0

1. Used exposure 11# & 12#

2. JAK RECAP INFORMATION:

vial# 6085 (20ml)	Lower half safty screening sample	8.3 grams
vial# 6090 (20ml)	Upper half safty screening sample	8.1 grams
vial# 6074 (40ml)	Upper half safty screening Archive	28.55 grams
vial# 6073 (40ml)	Lower half safty screening Archive	19.15 grams
vial# 6125 (125ml)	Shear strength sample	142.40 grams
vial# 6110 (125ml)	Facie (one)	175.90 grams

3. Total solids recovered ≅ 382.40 grams

4. Liner Liquid:

vial# 6092 (20ml) Liner Liquid 10ml / 16.24 grams
Turbid and Dark brown in color with some sedimentation (like sand)

5. Description of extruded solids:
Dark grayish brown in color with a consistency of thick paste and Homogenous throughout the segment; Texture resembled toothpaste or soft peanut butter. Surface of extruded segment was pitted with no evidence of off gasing. Recovery was 95%.

6. Samples that were Loaded out of 1E-2.

1. vial# 6081	m/Rad 550	T-handle 13 mr/hr	Seg 11#
2. vial# 6083	m/Rad 800	T-handle 12 mr/hr	seg 11#
3. vial# 6084	m/Rad 400	T-handle 10 mr/hr	seg 10#
4. vial# 6086	m/Rad 500	T-handle 10 mr/hr	seg 10#

SY 103 CORE 62 SEGMENT 12#

04/29/94

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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-006 (2) Sample Number 94-017 (3) Supervisor D. Hartley

(4) Tank 241SY103 (5) Riser 14A (6) Segment 13 (7) Core 062 (8) Cask Serial Number

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	9/19/94 .05 mr/hr	0.5 mR/hr
Side Dose Rate	36 mr/hr	34 mR/hr
Bottom Dose Rate	22 mr/hr	18 mR/hr
Smearable Contamination	<20/100cm² (Alpha)	<20dpm/100cm² (Alpha)
	<1K/100cm² (Beta-Gamma)	<1K dpm/100cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) S.N. LANDOE (Signature)

(10) Shipment Description

A. Work Package Number	FW9400183/W
B. Cask Seal Number	2440
C. Sampler Serial Number	94-098
D. Date and Time Sampler Unseated	9-16-94, 1239
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.8 R/hr
H. Expected Sample Length	191

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

WHC-SD-WM-TP-197

43.1

(12) Field Comments

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241SY103	222S	DC Hartley		

(19) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA KATSEL	KAREN LEE	9/19/94 1345	

(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN LEE	LAPIERS	9/19/94 1415	

(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record? Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

Hot Cell temp = 79.9 °F 9/23/94
Hot Cell Humidity = 20.0 %

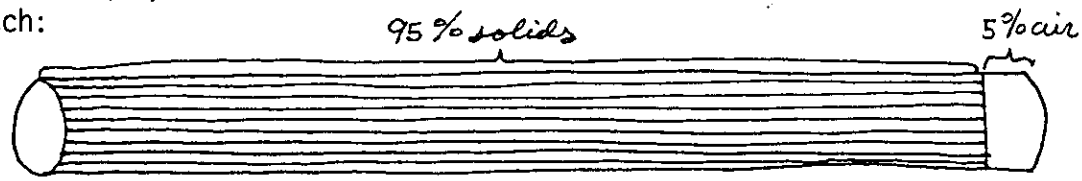
Tank 241-SY-103
Extruded Segment Description Sheet

20.00g = 19.94
500.00g = 499.80

Sample 94-017 Riser 14A Core ~~13~~ 62 RK7 9/23/94 Segment 13

General Description of Sample: ① Collected 33.92 grams of liner liquid in vial #6087.
② Valve closed before and after cutting cables.
③ Extruded sample
④ Lower safety screening vial # 6088 = 35.4 gross
~~27~~ RK7 9/23/94 27.0 g tare
8.4 grams
⑤ Upper safety screening vial # 6089 = 6.2 grams
⑥ Sample more damp at the top than bottom.
⑦ Lower safety screen archive sample vial # 6072 (40mL)
⑧ See page 84 –

Sketch:



Sampler Efficiency	Drainable Liquid Density
Volume of Sampler 309mL	Total Weight N/a
%Volume of Air 5%	Total Volume
%Volume of Liquid 0%	Density
%Volume of Solids 95%	Turbidity
Comments: Estimated Visually	Comments:

Solids	Liner Liquid	Drainable Liquid
Color grayish brown	Collection ~~Jar~~ Vial # 6087	Collection Jar 6116 N/a
Consistency Wet / Soft	Gross Wt. N/A	Gross Wt. N/A
Homogeneity Homogeneous	Tare Wt. N/A	tare Wt. 223.86 g N/a
Texture damp toothpaste	Net Wt. 33.92 grams	Net Wt. N/a
Penetrometer	No. Phases	No. Phases N/N

Cognizant Scientist: Keith Fuller 435

Reviewed By: [signature] Sept 29, 1994

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84 9/23/94. SY-103 Core 62 Segment # 13

① Liner liquid = Collected 33.92 grams of liner liquid in Vial # 6087

② Extrusion Solids - Extruded a complete 19" segment of grayish-brown solids. Solid sample was pitted on the outside. Sample was soft and wet. Sample was more wet at the top than bottom.

③ Lower Safety screening : Vial # 6088 (20 mL Vial size)
- Collected 8.4 grams net weight.

④ Upper Safety screening : Vial # 6089 (20 mL vial size)
- Collected 6.2 grams net weight

⑤ Lower Safety screen Vial #6072 (40 mL Vial size)
*ARCHIVE - 28.14 grams net weight

⑥ Upper Safety screen : Vial # 6075
*ARCHIVE - #6075 (40 mL Vial size)
- 24.56 grams net weight

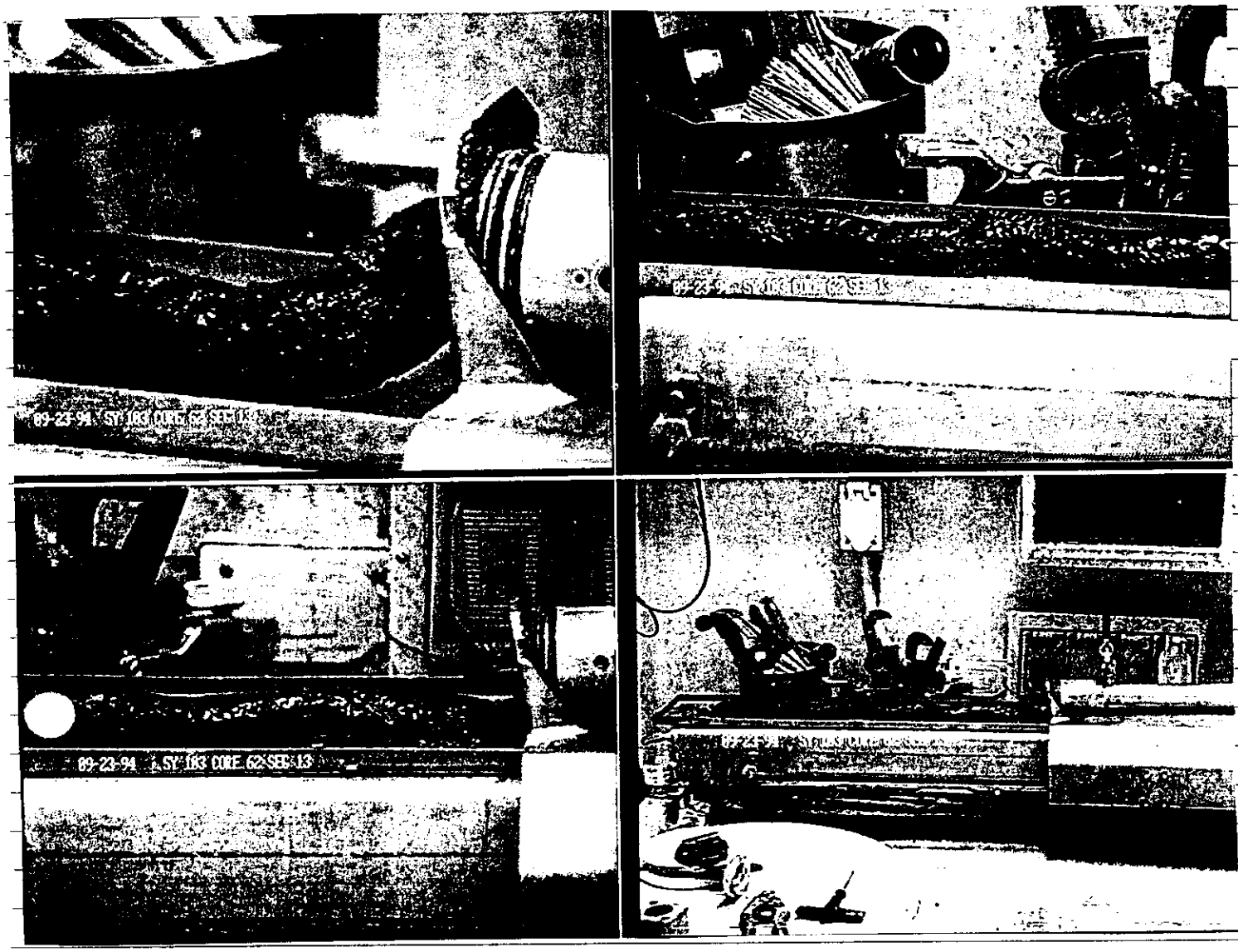
⑦ Reology Subsample (Shear Strength):
- Jar # 6126
- 116.53 grams net weight

⑧ Photography - new roll
- #1 Blank
- #2 Core 62 Segment # 13
- #3 Released too soon - bad
- #4 Core 62 Segment #13.

⑨ Collect Facie Solids (Remaining solids):
- Jar # 6116 (250 mL JAR)

470.87 g gross wt
223.86 g tare wt
247.01 g net wt

SY 103 CORE 62 SEGMENT 13#



Arthur B. Benoit 09/29/94

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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-007 (2) Sample Number 94-018 (3) Supervisor D. Hartley

(4) Tank 241S4103 (5) Riser 14A (6) Segment 14 (7) Core 062 (8) Cask Serial Number C1022

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.05 mr/hr	<.05 MR/HR
Side Dose Rate	43 mr/hr	41 MR/HR
Bottom Dose Rate	21 mr/hr	26 MR/HR
Smearable Contamination	<2dpm/100cm² (Alpha)	<20dpm/100cm² (Alpha)
	<1Kdpm/100cm² (Beta-Gamma)	<1Kdpm/100cm² (Beta-Gamma)
RCT* (HPT)	RMD (Signature)	S.N. (Signature)

(10) Shipment Description	
A. Work Package Number	2W940018 3/W
B. Cask Seal Number	2432
C. Sampler Serial Number	94-009
D. Date and Time Sampler Unseated	9-18-94, 1147,9-19
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.8 R/HR
H. Expected Sample Length	191'

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

WHC-SD-WM-TP-197

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(12) Field Comments

(34) Laboratory Comments

Universal Sampler

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241S4103	222S	D Hartley D Hartley	9-21-94 0945	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PA KATSEL		K. LEE	1000 9/21/94	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
KAREN LEE		Sandra Cobb	09-21-94 0:15	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

98

WM-CS-WM-C-074, REV.0

HOT CELL HUMIDITY = 20 %
HOT CELL TEMP = 78.8 °F

RKF 9/23/94

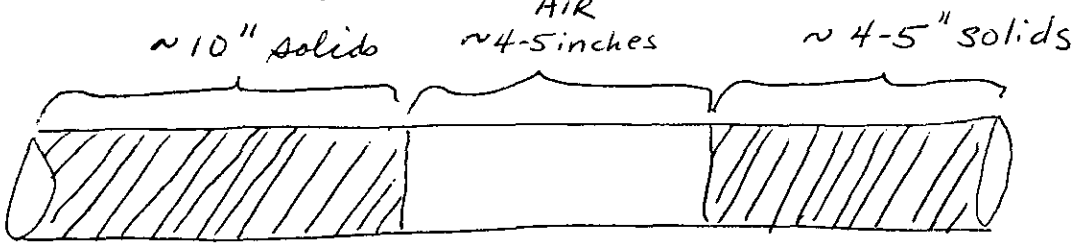
Tank 241-SY-103
Extruded Segment Description Sheet

20.00 = 19.92
500.00 = 499.90

Sample 94-018 Riser 14 A Core 62 Segment 14

General Description of Sample:
① Collected less than 5 mLs of liner liquid (Did not keep)
② Valve closed before and after cutting cables
③ Extruded sample
④ Extruded grayish-brown solids. Photograph will show ~~an~~ RKF 9/23/94 94"-5" gap in solids. Solids were wet and soft. After valve was opened, proceeded with extrusion. Approx. 10" of solids were extruded, followed by 5" of air, then 4 more inches of solids. No drainable liquid.

Sketch:



Sampler Efficiency		Drainable Liquid Density	
Volume of Sampler	309 mL	Total Weight	N/A
%Volume of Air	20%	Total Volume	
%Volume of Liquid	0%	Density	
%Volume of Solids	80%	Turbidity	
Comments:	80% recovery	Comments:	

Solids		Liner Liquid		Drainable Liquid	
Color	Grayish-brown	Collection Jar	N/a	Collection Jar	RKF 9/23/94 ~~0118~~ N/A
Consistency	wet and soft	Gross Wt.		Gross Wt.	N/A
Homogeneity	Homogeneous	Tare Wt.		tare Wt.	RKF 9/23/94 ~~22.10~~ N/A
Texture	pitted on outside	Net Wt.		Net Wt.	N/A
Penetrometer		No. Phases		No. Phases	N/A

Cognizant Scientist: Keith Fuller 9/23/94

Reviewed By: [signature] Sept 24, 1994

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88 9/23/94 SY-103 CORE 62 SEGMENT #14

① Subsampled for safety screen analyses: [UPPER]

- Vial # 6091 (20 mL vial size)
- 12.30 grams net weight

② Subsampled for safety screen analyses: [LOWER]

- Vial # 6093 (20 mL vial size)
- 18.89 grams net weight

③ Subsampled for safety screen archive [UPPER]

- Vial # 6076 (40 mL)
- 24.0 grams

④ Subsampled for safety screen archive [LOWER]

- Vial # 6077 (40 mL)
- 19.25 grams

⑤ Subsampled for Rheology / Shear Strength

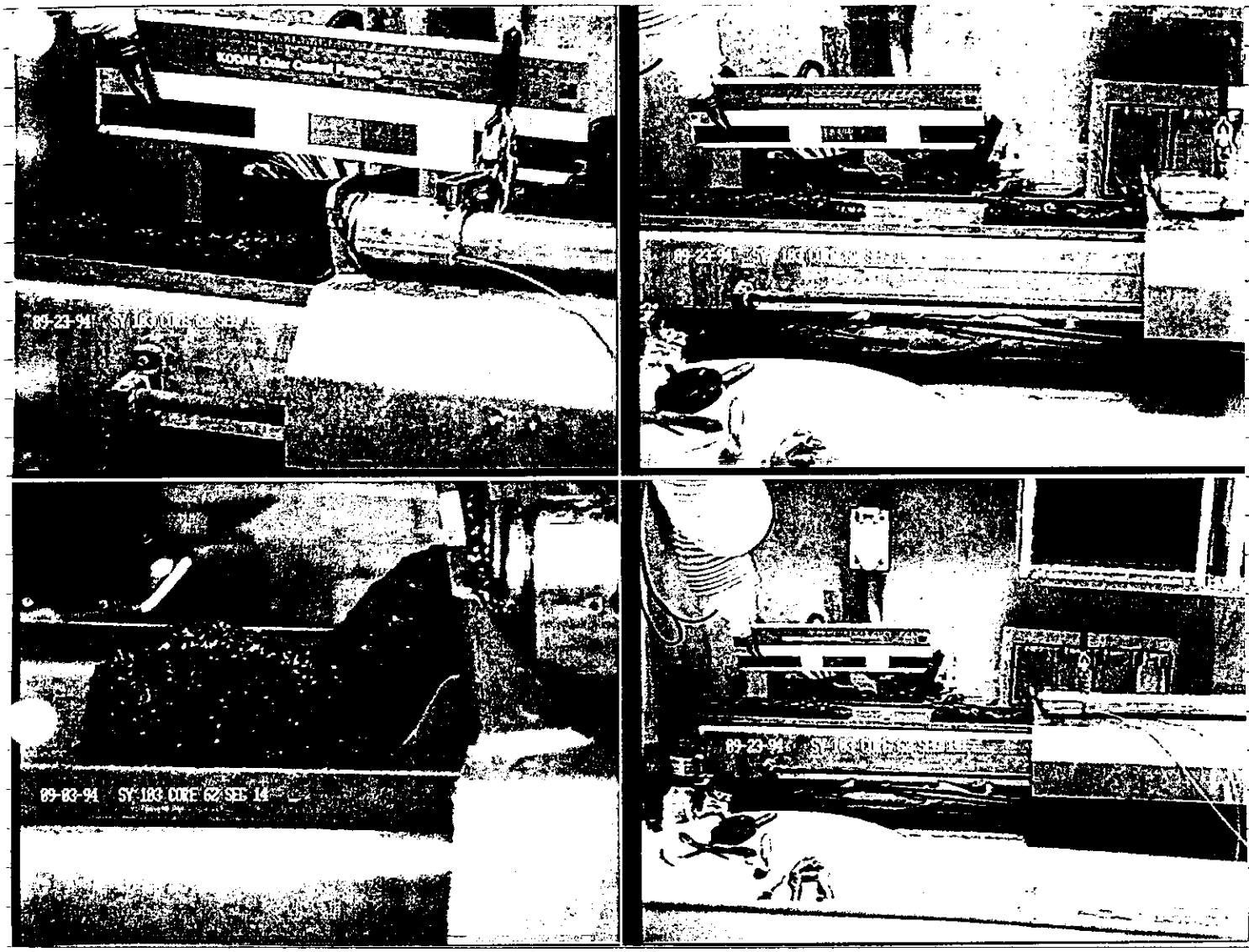
- ~~Jar # 6126 (125 mL)~~ RK 9/23/94
-
- Jar # 6146 (125 mL)
- 111.05 grams net weight collected

⑥ Subsampled Remaining solids (Facie Solids)

- Jar # 6118 (250 mL)
- 392.6 g gross weight of jar # 6118
- 224.4 g tare weight of Jar # 6118

168.2 g net weight of Jar # 6118

SY 103 CORE 62 SEGMENT 14#



09/29/94

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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number SP-94-007 (2) Sample Number 94-019 (3) Supervisor D Hartley

(4) Tank 241-AY-103 (5) Riser 14A (6) Segment 15 (7) Core 062 (8) Cask Serial Number 1003C

Radiation Survey Data:	(9) FIELD	(33) LABORATORY
Over Top Dose Rate	<.05 mr/hr	<.05 mr/hr
Side Dose Rate	25 mr/hr	19 mr/hr
Bottom Dose Rate	15 mr/hr	14 mr/hr
Smearable Contamination	<20 dpm/100 cm² (Alpha)	<20 dpm/100 cm² (Alpha)
	<1K dpm/100 cm² (Beta-Gamma)	<1K dpm/100 cm² (Beta-Gamma)
RCT* (HPT)	(Signature)	RCT* (HPT) (Signature)

(10) Shipment Description

A. Work Package Number	2419400183/W
B. Cask Seal Number	2433
C. Sampler Serial Number	94-103
D. Date and Time Sampler Unseated	9-19-94, 1304
E. Expected Liquid Content	30%
F. Expected Solid Content	70%
G. Dose Rate Through Drill String	1.5 R/hr
H. Expected Sample Length	19"

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

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WHC-SD-WM-TP-197

(12) Field Comments

(34) Laboratory Comments

Unusual Sample

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
241-AY-103	222S	D Hartley D Hartley	9-21-94 0940	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
PAKATSEL		KLEE	9/21/94 1000	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
		Sandra Cobb Sandra Cobb	09-21-94	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?	(31) Seal Intact Upon Receipt?	(32) Seal Data Consistent with this Record?		
		Shipment No.	Cask Seal No.	Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-85 Goldenrod - Tank Farm Operations, S4-43 BC-6000-309 (02/94)

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WHC-SD-WM-DP-074, REV. 0

Hot Cell Temp = 79.8 °F 9/26/94
Hot Cell Humidity = 20%

Tank 241-SY-103
Extruded Segment Description Sheet

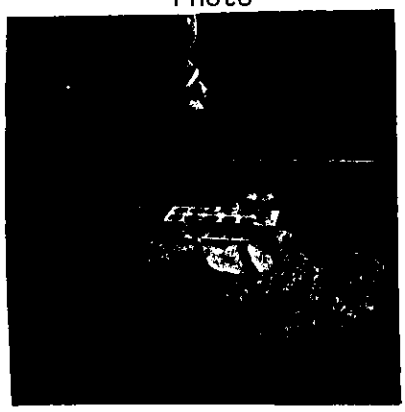
20.00 = 19.98 g
500.00 = 499.78 g

Sample 94-019 Riser 14A Core 62 Segment 15

General Description of Sample:
1. Collected 48.6 grams of liner liquid in jar # 6108 (125 mL jar size) ~ 40 mls to 50 mls.
2. Valve closed before and after cutting cables
3. Opened sampler valve and liquid sample spewed onto the wall of hot cell. Estimate about 10-20 mls of liquid was lost
4. Collect about 125 mls of drainable liquid. Dark brown liquid.
5. Collected safety screen solid (1 sample)
6. Collected remaining solids (1 sample) about 1" of solids extruded.
7. ~~Opted to collect all solids in 20 ml~~ RKFuller 9/26/94

Sketch:

BEST AVAILABLE COPY

Photo	Sampler Efficiency	Drainable Liquid Density
	Volume of Sampler 309 mL	Total Weight 164.1 g
	%Volume of Air 48	Total Volume est ~125 mL
	%Volume of Liquid RKF 9/26/94 ~~47~~ 47	Density est ~1.31 g/mL
	%Volume of Solids RKF 9/26/94 ~~47~~ 5	Turbidity dark brown
	Comments: 52%	Comments: Looks like watered down solid sample.

Solids	Liner Liquid	Drainable Liquid
Color Dark brown	Collection Jar 6108 (light brown tan clear/~~colorless~~ RKF 9/26/94)	Collection Jar # 6120
Consistency does not hold shape	Gross Wt. 179.4	Gross Wt. 386.6 grams
Homogeneity Homogeneous	Tare Wt. 130.8 g	tare Wt. 222.5 grams
Texture watery	Net Wt. 48.6 g	Net Wt. 164.1 grams
Penetrometer	No. Phases 1	No. Phases 1

Cognizant Scientist: Keith Fuller 9/26/94

Reviewed By: [signature] Sep 27, 1994

92 9/26/94 SY-103 C62 Segment #15

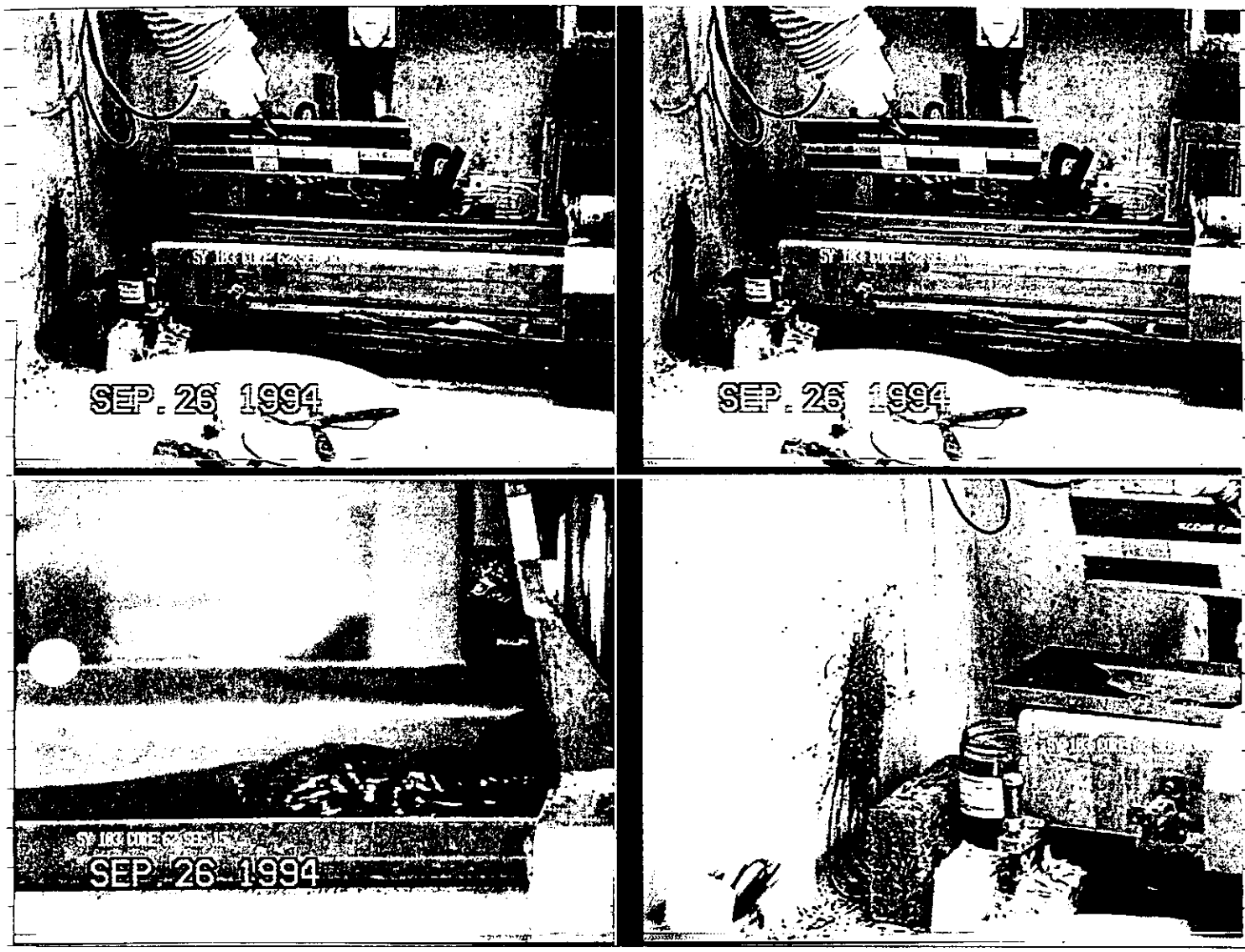
* 6096 Vial # (20 mL vial size)
  - collected safety screen solids
  - 4.93 grams

* 6169 Vial # (40 mL vial size)
  - collected remaining solids - 4.52 grams

* Exposure #8 blank
  #9 C62 segment #15 - Void
  #10 C62 segment #15
  #11 C62 segment #15 RET 9/26/94

* Solids collected are dark brown and very runny, wet. Difficult to subsampled. Easier to push sample into drainable liquid jar than to subsample into 40 mL vial.

SY 103 CORE 62 SEGMENT 15#



09/26/94

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94 7/3/94 Samples submitted to lab.

Vial #	Sample #	Rad Reading	Comment

Arlen B. Benny Oct 05, 94

20.00 grams - 19.91
500.00 grams - 499.12

October 04, 94 95

1. Subsampling Drainable Liquids:

Jar (#6040) Core 62 seq #5 SY103
vial (#6100) grams (Tare weight) grams (Gross weight)
Transferred ≈ 20 ml out of jar #6040 to vial # , 25.93 grams (Net weight)

Jar (#6042) Core 62 seq #6 SY103 50.90 ABB 10-04-94
vial (#6097) 17.01 grams (Tare weight) ~~53.28~~ grams (Gross weight)
Transferred ≈ 20 ml out of jar #6042 to vial # 6097, ~~36.27~~ grams (Net weight)
33.89 ABB 10-04-94

Jar (#6111) Core 62 seq #7 SY103
vial (#6098) grams (Tare weight) grams (Gross weight)
Transferred ≈ 20 ml out of jar #6111 to vial # 6098, 28.21 grams (Net weight)

Jar (#6112) Core 62 seq #8 SY103
vial (#6099) grams (Tare weight) grams (Gross weight)
Transferred ≈ 20 ml out of jar #6112 to vial # 6099, 23.20 grams (Net weight)

Jar (#6114) Core 62 seq #9 SY103
vial (#6174) grams (Tare weight) grams (Gross weight)
Transferred ≈ 35 ml out of jar #6114 to vial # , 17.80 grams (Net weight)

Jar (#6120) Core 62 seq #15 SY103
vial (#6101) grams (Tare weight) grams (Gross weight)
Transferred ≈ 20 ml out of jar #6120 to vial #6101, 21.37 grams (Net weight)

These samples were submitted to the Lab on Oct 05, 94
HPT: Scott Loudenback

Sample no.#	vial no.#	Dose Reading:	Window open	Window closed
S94T000105	6097		1100 mrad	400 mrad
S94T000040	6100		900 mrad	300 mrad
S94T000106	6098		1200 mrad	300 mrad
S94T000104	6101		350 mrad	100 mrad
S94T000107	6099		1R	200 mrad
S94T000108	6174		500 mrad	150 mrad

96 20 grams - 20.00 Hot Cell Temp - 78.9% Nov. 09, 94
500 grams - 500.01 % Humidity - 20.0%

JAN 6164# (125ml) 137.89 grams Tare weight.

JAN 6067# (18.69 grams) transferred into JAN #6164.
Dirty white, syrupy.
JAN 6104# (24.19 grams.) transferred into JAN #6164.
apple sauce color.
JAN 6102# (17.26 grams) transferred into JAN #6164
Apple Sauce, look Dark, Dirty brown in color.
JAN 6065# (10.94 grams) transferred into JAN #6164
syrupy, Dirty brown
JAN 6075# (10.05 grams) transferred into JAN # 6164
apple sauce

20 grams - 19.98 grams Hot Cell Temp - 78.6°F Nov. 10, 94
500 grams - 499.89 grams % Humidity - 20%
1). Composit - JAN # 6164 (125ml) (STRATUM B#)
Vial # 7003 - (27.90 grams), Transferred (7.68 grams) out of JAN # 6164 to vial # 7003.
Total amount of sample in vial # 7003 → 34.58 gr - 27.90 gr ≅ 7.68 grams

2.) Transfer some sample out of vial # 6025 (40ml) into (STRATUM A#)
vial # 7004 (20ml). 27.99 grams (mass of vial - empty).
Total amount transferred into vial # 7004 (20ml) → 35.32 gr - 27.99 gr ≅ 7.33 grams

3.) Transferring JAN (#6106, #6117, #6110, #6116, #6118) into JAN # 6257
ⓐ #6106 - settled into Two phases. Top Liquid, bottom Dark & black. 182.97 grams
ⓑ #6117 - Two phases, Top Liquid, bottom Dark & black. 245.76 grams
ⓒ #6110 - Two phases Top Liquid, bottom Dark & black. 167.22 grams
ⓓ #6116 - Two phases, Top Liquid, bottom Dark & black. 239.29 grams
ⓔ #6118 - Two phases, Top Liquid, bottom Dark & black. 163.46 grams.
JAN # 6257 ≅ 998.70 grams

4.) (STRATUM D#) subsampled from 6257#
vial # 6187 (20ml) — 8.70 grams

5.) (STRATUM C#) subsampled from 6115# Two phases: Liq / Dark Black.
vial # 6183 (20ml) — 6.86 grams

Nov. 11, 1994

97

20 grams - 19.97 grams
500 grams - 499.83 grams

Hot Cell Temp - 78.8 °F
% Humidity - 28.0 %

Transferring samples into archive vials:

1.) Transferred 3.69 grams out of Jar # 6067 into Vial # 7028 (40ml). For archiving. Jar #6067 (125ml) is now decomissioned. (SY103 Seg. 4)

2.) Transferred 7.51 grams out of Jar # 6104 into Vial # 7029 (40ml). For archiving. Jar #6104 (125ml) is now decomissioned. (SY103 Seg. 5)

3.) Transferred 6.72 grams out of Jar # 6102 into Vial # 7035 (40ml). For archiving. Jar #6102 (125ml) is now decomissioned. (SY103 Seg. 6)

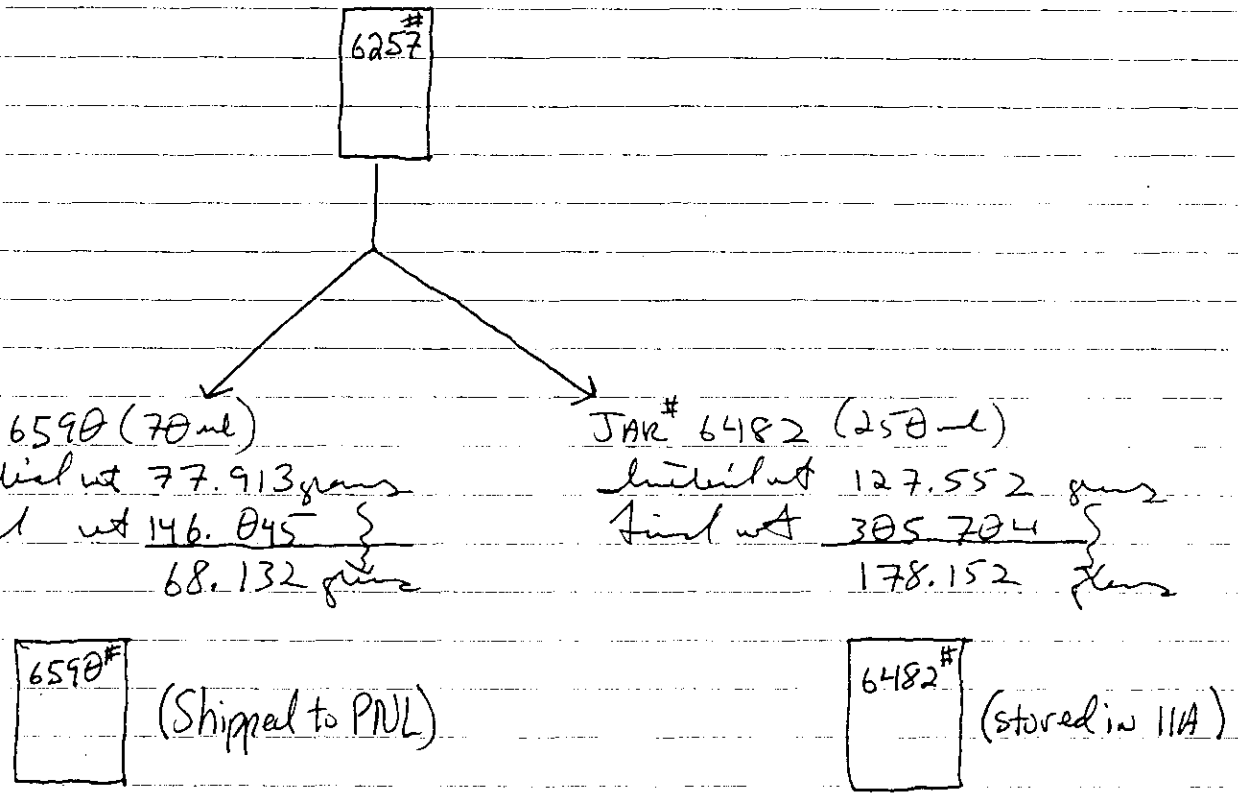
11/11/94

WHC-SD-WM-DP-074, REV. 0

98 Feb. 09, 1995 Hot Cell Temp - 76.5°F 20 grams: 19.999 grams
% Humidity - 20% 500 grams: 499.974 grams

Shipment Prep of S9103 To PNL:

(A) JAR# 6257 (1000 ml)
initial weight - 751.51 grams
final weight - 517.20
net weight - 234.31



(B) Recap:

- Transferred 68.132 grams out of Jar# 6257 (1000 ml) into Jar# 6590 (70 ml)
- Transferred the rest of the material out of Jar# 6590 into Jar# 6482.
  Transferred 178.152 grams from Jar# 6257 into Jar# 6482.

Note: JAR # 6257 (1000) has been emptied and Destroyed.

(C) Shipment

Jar# 6590 (70 ml) has been prep. for shipment to PNL.

RH Fuller 2/23/95

Feb 09, 1995

SHIPMENTMENT TO PNL:

NOTE: SAMPLE PREP AND SHIPMENT WERE PERFORMED ON JAN 19, 1995. TRANSFERRED DATA FROM LOG BOOK 11A-13 (WHC-N-1091-1) TO THIS LOG BOOK.

Hot Cell temp: 79.3% 200 grams - 19990 grams
% Humidity: 20% 500 grams - 499.632 grams

Homogenized sample in Jar #6257 and SAMPLE PREP:
- Transferred 142.525 grams from Jar #6257 to Jar # 6553# (125ml-Tall)
- Transferred 142.527 grams from Jar # 6257 to Jar # 6148# (125ml-Tall)
- Transferred 143.460 grams from Jar # ~~6153~~ 6257 AND to Jar # 6153 (125ml-Tall)
- Transferred 141.645 grams from Jar # 6257 to Jar # 6552 (125ml-Tall)

NOTE: JAR # 6257 has been Destroyed on Feb 09, 1995

NOTE: Breakdown and Sample prep of samples for this shipment can be found in Log Book 11A-13 (WHC-N-1091-1) Pages 5 & 6.

SAMPLES Shipped On JAN 20 95:

JARS #	MASS OF SAMPLE	Dose	Core	Segment
6553#	142.53 grams	7R	62	10, 11, 12, 13, 14
6148#	142.53	11R		10, 11, 12, 13, 14
6552#	141.64	11R		10, 11, 12, 13, 14
6153#	143.46	9R	62	10, 11, 12, 13, 14
6105#	190.86 grams	8R	62	10
6125#	142.40	6R		12
6126#	116.53	5R		13
6146#	111.00	6R		14
6107#	130.18	8R	62	11

RK Fuller 2/23/95

100 Febusary 23rd 1995

Hot cell Temp. 75.7 Balance Check = 20g = 19.997g
Humidity 20% 500g = 499.984g.

Sy-103 Drainable Liquid Composite

Liquid Composite Jar # 6618 for Shipment to PNL was created from the following jars -

Transfer 15mL of drainable liquid sample from Seg. # 2, 3, 4, and 5 from each jar into # 6618. Some segment had 2 drainable liquid jars. #6019 250mL was added to 6013. (6019 - voided) Jar # 6020 was added to jar 6041 (6020 - voided) # 6103 was added to jar # 6040. (6103 - voided) this composite was completed and load out the same day 2/23/95 out of the Hot cell. And made Ready for Shipment To PNL.

JAR # 6013
Size - 250 mL
Initial wt. 572.23g.
final wt. 548.19g.
Net wt. 24.04g

JAR # 6039
Size - 250mL
Int. wt. 568.65g
final wt. 546.47g
Net wt. 22.18 g

Transfer 15mL →

Jar # 6041
Size - 250mL
Int. wt. 385.17g.
final wt. 362.99g
Net wt. 22.18g

Transfer 15mL →

JAR # 6618
Size 125 mL. TALL

Jar # 6040
Size 250 mL
Int. wt. 569.67g.
Final wt. 542.15 g
Net wt. 27.52g

Jar # 6042
Size 250mL.
Int. wt. 572.37g.
final wt. 549.81g.
Net wt. 22.56

Transfer 15mL →

Jar # 6111
Size 250mL
Int. wt. 571.55g
final wt. 547.27 g
Net wt. 24.28g

Transfer 15mL
From To

Jar # 6618
Int. wt. 144.91
Final wt. 278.10
Net wt. 133.19 g. was shipped.

S95T000180
LABCORE #

Keith Gulle 2/23/95

SY-103 Drainable Liquid Composite 2/28/95 101

The SY-103 Core 62 Drainable Liquid Composite (JAR #6149) for shipment to PNL was created from the following jars:

Segment #2	-	Jar # 6013	22.29 grams	(16.76%)
Segment #3	-	Jar # 6039	21.50 grams	(16.17%)
Segment #4	-	Jar # 6020	22.25 grams	(16.73%)
Segment #5	-	Jar # 6040	22.28 grams	(16.75%)
Segment #6	-	Jar # 6042	22.36 grams	(16.81%)
Segment #7	-	Jar # 6111	22.26 grams	(16.74%)

250mL 6013

Core 62 seg #2
JAR # 6013
initial wt = 562.70 g
final wt = 540.41 g
net wt = 22.29 grams

250mL 6039

Core 62 seg #3 (JAR # 6039)
initial wt = 546.12 g
final wt = 524.62 g
net wt = 21.50 g

250mL 6020

Core 62 Seg #4 (JAR # 6020)
initial wt = 563.47 g
final wt = 541.22 g
net wt = 22.25 g

250mL 6040

Core 62 Seg #5
JAR # 6040
initial wt: 560.16 g
final wt: 537.88 g
net wt: 22.28 g

6042

Core 62 Seg #6
JAR # 6042
Initial wt: 549.74 g
final wt: 527.38 g
net wt: 22.36 g

6111

Core 62 Seg #7
JAR # 6111
Initial wt: 546.89 g
Final wt: 524.63 g
net wt: 22.26 g

Transferred about 15 mLs from each segment Jar.

S95T000202. LABCORE #

JAR # 6149 (125mL - Tall)
Initial wt: 150.49 g
Final wt: 280.20 g
Net wt: 129.71 g

Keith Fuller 3/1/95

102 MARCH 8, 1995 SY-103 LIQUID SAMPLE COMPOSITES

CAL. WT.
20g = 20.004 g
500g = 499.954

SEG 1 J 6038 TO V 6613

final wt 32.040 g
initial wt 27.169 g
sample wt 4.871 g

J 6038 cracked at the base when gripped. Entire sample flowed on to hot cell floor. The few drops that remained in J 6038 were poured into V 6613. No drainable liquid sample remains for Seg 1

SEG 2-7 Seg 2 J 6013 TO V 6614

Seg 3 J 6039 final wt 44.852 g
Seg 4 J 6020 initial wt 27.247 g
Seg 5 J 6040 sample wt 17.605
Seg 6 J 6042
~~J 6039 TO V~~ ~~or~~ 3845
Seg 7 J 6111

2 mls from each jar were placed in V 6614, without disturbing any settled solids, using the mechanical pipettor. A new pipette tip was used each time.

SEG 8 J 6113 TO V 6615

final wt 41.977 g
initial wt 27.301 g
sample wt 14.676

10 mls of sample was transferred into V 6615, without disturbing any settled solids, using the mechanical pipettor.

SEG 13 v 6087 TO v 6616

LINER LIQUID

final wt 39.311 g
initial wt 27.345 g
Sample wt 11.966 g

10 mls was transferred to v 6616 w/o disturbing any settled solids, using the mechanical pipetter.

SEG 15 J 6108 TO v 6617

LINER LIQUID

final wT 38.215 g
initial wT 27.635 g
Sample wT 10.580 g

10 mls was transferred to v 6617 w/o disturbing any settled solids, using the mechanical pipetter.

VIAL/JAR	JAR INITIAL WT.	JAR FINAL WT.
6038 =	LOSS IN PROCESS - JAR BROKEN.	
6013 =	~~548.19g~~ RH 3/18/95 540.41g	537.23g
6039 =	~~546.47g~~ RH 3/18/95 524.62g	521.23g
6020 =	541.22g	538.04g
6040 =	537.88g	534.68g
6042 =	527.38g	~~524~~ RH 3/18/95 524.18g
6111 =	524.63g	520.89g
6113 =	273.0g	258.56g
6087 =		40.840g
6108 =	179.4g	168.43g

MARCH 29, 95

SUBSAMPLING INFO. FOR PNL SHIP

S4103/Core 62/ Seg #2
JAR# 6013 (250 ml)
15 ml x4
Initial wt. 536.54 grams
Final wt. 446.80
Net wt. 89.74

S4103/C-62/Seg # 3
JAR# 6039 (250 ml)
15 ml x4
Initial wt. 520.25 grams
Final wt. 431.71
Net wt. 88.54

15 ml x4
S4103/C-62/Seg # 4
Jar # 6020 (250 ml)
15 ml x4
Initial wt 537.48 grams
Final wt 452.39
Net wt 85.09

S4103/C-62/Seg # 5
Jar # 6040 (250 ml) grams
Initial wt 533.95
Final wt 444.78
Net wt 89.17

15 ml x4
S4103/C-62/Seg # 6
Jar # 6042 (250 ml)
15 ml x4
Initial wt 523.53 grams
Final wt. 434.49
Net wt 89.04

S4103/C-62/Seg # 7
Jar # 6111 (250 ml)
Initial wt 520.07 grams
Final wt. 430.95
Net wt. 89.12

① 6800 — JAR# 6800 (125 ml)
Initial wt 178.26 gram
Final wt 310.60
Net wt 132.34

② 6801 — JAR# 6801 (125 ml)
Initial wt 174.90 gram
Final wt 307.01
Net wt 132.11

③ 6802 — JAR# 6802 (125 ml)
Initial wt 176.15 gr
Final wt 308.85
Net wt 132.70

④ 6803 — JAR# 6803 (125 ml)
Initial wt. 176.85 gr
Final wt. 307.27
Net wt. 130.42

- Transferred 15 mls of sample from each segment into each Segment Composite Jar (1), (2), (3) and (4). Bring the volume up to (90 mls) in each seg. comp Jar. Each Jar has the same percentage of segments, therefore identical in composition.

	6013/#2	6039/#3	6020/4#	6040/#5	6042/6#	6111/#7	Total
* ① 6800	15 ml	15 ml	15 ml	15 ml	15 ml	15 ml	90 ml
* ② 6801	15 ml	15 ml	15 ml	15 ml	15 ml	15 ml	
* ③ 6802	15 ml	15 ml	15 ml	15 ml	15 ml	15 ml	
* ④ 6803	15 ml	15 ml	15 ml	15 ml	15 ml	15 ml	

* NOTE: These samples to be shipped to PNL.

SUBSAMPLING INFO.

SY103 Core 62 Sec #8

(RESAMPLE)

JAN# 6113 (250 ml)
Initial wt. 258.29 ~~ml~~ gram
Final wt. 243.57
Net wt. 14.72

Vial # 6818 (20 ml)
Initial wt. 27.41 gram
Final wt. 41.69
Net wt. 14.28

- Transferred 10 ml (14.28 gram) into Vial # 6818, which has been submitted to the lab.

SY103 Core 62 Sec #13 Liner Liq.

(RESAMPLE)

JAN# 6087 (20 ml)
Initial wt. 40.74 gram
Final wt. 33.40
Net wt. 7.34

Vial # 6823 (20 ml)
Initial wt. 27.40 gram
Final wt. 33.81
Net wt. 6.41

- Transferred all of the sample into Vial # 6823 which was about 6.41 grams; Parent JAN# 6087 has been Destroyed.

Arthur B. [illegible] 4/6/95

106

SUBSAMPLING INFO. April 5, 95
SY-103 Core 62 SEG #15

(RESAMPLE) JAR# 6108 (125 ml)
Initial wt. 167.89 gram
Final wt. 156.15
Net wt. 11.74

Vial # 6825 (20 ml)
Initial wt. 27.62 gram
Final wt. 38.74
Net wt. 11.12

- Transferred 10 mls (11.12 grams) into Vial # 6825, which has been submitted to the Lab for analysis.

(RESAMPLE) SY103 Core 62 Segs: 2, 3, 4, 5, 6 & 7. (Seg Comp)

JAR# 6013 (250 ml)
Initial wt 446.54 gram
(2) Final wt 443.57
Net wt 2.97
2ml

JAR# 6039 (250 ml)
Initial wt. 431.41 gram
(3) Final wt. 428.36
Net wt. 3.05
2ml

JAR# 6020 (250 ml)
Initial wt 452.23 gram
(4) Final wt 449.26
Net wt 2.97
2ml

JAR# 6040 (250 ml)
Initial wt. 444.64 gram
(5) Final wt. 441.54
Net wt. 3.1
2ml

JAR# 6042 (250 ml)
Initial wt. 434.35 gram
(6) Final wt. 431.41
Net wt. 2.94
2ml

JAR# 6111 (250 ml)
Initial wt. 430.76 gram
(7) Final wt 427.95
Net wt. 2.81
2ml

Vial 6826 (20 ml)
Initial wt. 27.41 gram
Final wt. 44.16
Net wt. 16.75

- Transferred 2ml out of each parent Jar into Vial # 6826 to create a Seg Composite which was submitted to the Lab.

April 11, 95 — 107

SUBSAMPLING INFORMATION:

SY103 SEGMENTS: 2, 3, 4, 5, 6 & 7.

15ml JAR# 6013 (250ml)
Initial wt. 443.77 gram
Final wt. 421.14
Net wt. 22.63

15ml JAR# 6039 (250ml)
Initial wt. 428.38 gr.
Final wt. 405.93
Net wt. 2145

15ml JAR# 6020 (250ml)
Initial wt ~~499~~ 499.52 gram
Final wt 427.26
Net wt. 22.24

15ml JAR# 6040 (250ml)
Initial wt. 441.73 gram
Final wt. 419.58
Net wt. 22.15

15ml Jar# 6042 (250ml)
Initial wt. 431.63 gram
Final wt. 409.36
Net wt. 22.27

15ml Jar# 6111 (250ml)
Initial wt. 428.18 gr
Final wt. 428.18
Net wt. 405.86

* JAR# 7095 (125ml)
Initial wt. 138.37 gram
Final wt. 271.11
Net wt. 132.74

- Using a Rainin Pipet, changing the tip (pipet) each time; 15 mls was transferred out of each JAR into JAR# 7095 (125ml).

* - The Total volume came to be 90ml (Jar# 7095)

* - The Total mass was @ 132.74 grams (Jar# 7095).

* - Density was calculated out to be 1.47 gram/ml (based on the Total vol. 90ml and Total mass of 132.74 grams).

Note: This sample (Seg: comp) is to be shipped to PNL.

Arthur B. Bond
4-11-95

108

April 18, 95

SUBSAMPLING

SY103 Core 62 SEG 4-9

JAN# 6164 (125 ml)
Initial wt. 210.27 gram
Final wt. 193.99
Net wt. 16.28

Centrifuge Tube
Initial 7.59 gram
Final 15.24
Net wt 7.65

5ml =

JAN# 6949 (20ml)
Initial wt 27.46 gram
Final wt 33.10
Net wt. 5.64

- Transferred 5.64 grams into Jar #6949; submitted to Lab for analysis: H2O prep, I-129, TC99.
- Transferred 7.65 grams into a centrifuge tube and centrifuged for one hour.
- Mass of Centrifuge Tube after centrifuging: w/stopper 15.13 grams, therefore obtaining a mass (wet) - 7.54 grams @ a volume of 5 ml. which gave a bulk Density of (1.51 gram/ml).
- Centrifuge tube was discarded after Bulk density was obtained.

Stephen G. Benard 4/18/95

April 15, 95 109

SUBSAMPLING

SY103 Core 62 SEG 1

Vial # 6025 (40ml)
Initial wt. 35.97 gram
Final wt. 27.60
Net wt. 8.37

Centrifuge Tube
* Initial wt 7.58 gram
Final wt. 14.12
Net wt 6.53

JAR # 6450 (20ml)
Initial wt 27.35 gram
Final wt. 31.89
Net wt. 4.54

- Transferred 6.53 gram into centrifuge tube, and centrifuged for one hour.
- Centrifuge tube was reweighed and volume recorded:
  - 13.97 gram, which gave a net sample wt. of – 6.37 gram.
  - Volume was observed to be (4 ml).
- * Bulk Density – 1.59 gram/ml

- Transferred 4.54 grams from centrifuge tube to Jar # 6450, which was submitted to the Laboratory for analysis: H2O Prep, Tc-99 & I-129.

Note: ~~JAR # 6450 (20ml)~~ ABB 4/18/95 JAR # 6025 (40ml) is pretty much empty, but PC A. Rice wants it stored in 11A Hot Cell.

Arlen B. Brown 4/18/95

April 25, 95

SUBSAMPLE
(SY103 Core [illegible] Liq)
BULK DENSITY

Jar # [illegible]
Initial wt 243.66 gram
Final wt 228.98
Net wt 14.68

Centrifuge Tube * Tube # 6113 (15 ml)
Initial wt. 7.61 gram
Final wt 22.35
Net wt. 14.74

- Transferred 14.74 grams into Centrifuge tube #6113, which was centrifuged for one hour at 5000 rpm's.
- The volume was Approximately @ 10 ml.
- Bulk Density was 1.47 grams/ml.
*- Note: Observed two layers of Solids below the Liq. Layer.

(SY103 Core 62 SEG-15 Liner Liq)
BULK DENSITY

Jar # 6108 (125 ml)
Initial wt. 155.52 grams
Final wt. 143.81
Net wt. 11.76

Centrifuge Tube Tube # 6108 (15 ml)
Initial wt. 155.57 gram
Final wt. 143.81
Net wt. 11.76

- Transferred 11.76 grams into Centrifuge tube # 6108, which was centrifuged for one hour @ 5000 rpm's.
- The volume was Approximately @ 10 ml.
- Bulk Density was @ 1.16 grams/ml.

April 26, 95

HOMOGENIZATION & SUBSAMPLING
SY103 Core 62 SEG: 10-14 (solid)
BULK DENSITY

Jar # 6482 (125 ml)
Initial wt. 305.47 gram
Final wt. 285.15
Net wt. 17.32

Centrifuge Tube 6482 (15 ml) (S94T00271)
Initial wt. 7.76 gram
Final wt 23.41
Net wt. 15.65

- Transferred 15.65 grams into a centrifuge tube, which was centrifuged for one hour at 5000 rpm.
- The volume was recorded @ 10.0 ml.
- Bulk Density: 1.56 g/ml

SY103 Core 62 SEG: 9 (solid)
BULK DENSITY

Jar # 6115 (250 ml)
Initial wt. 580.54 gram
Final wt. 565.24
Net wt. 15.30

Centrifuge Tube 6115 (15 ml) (S94T0000 77)
Initial wt. 7.67 gram
Final wt. 22.77
Net wt. 15.10

- Transferred 15.10 grams into a centrifuge tube, which was centrifuged for one hour at 5000 rpm.
- The volume was recorded @ 10.0 ml.
- Bulk Density: 1.51 g/ml

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PHOTOGRAPHS

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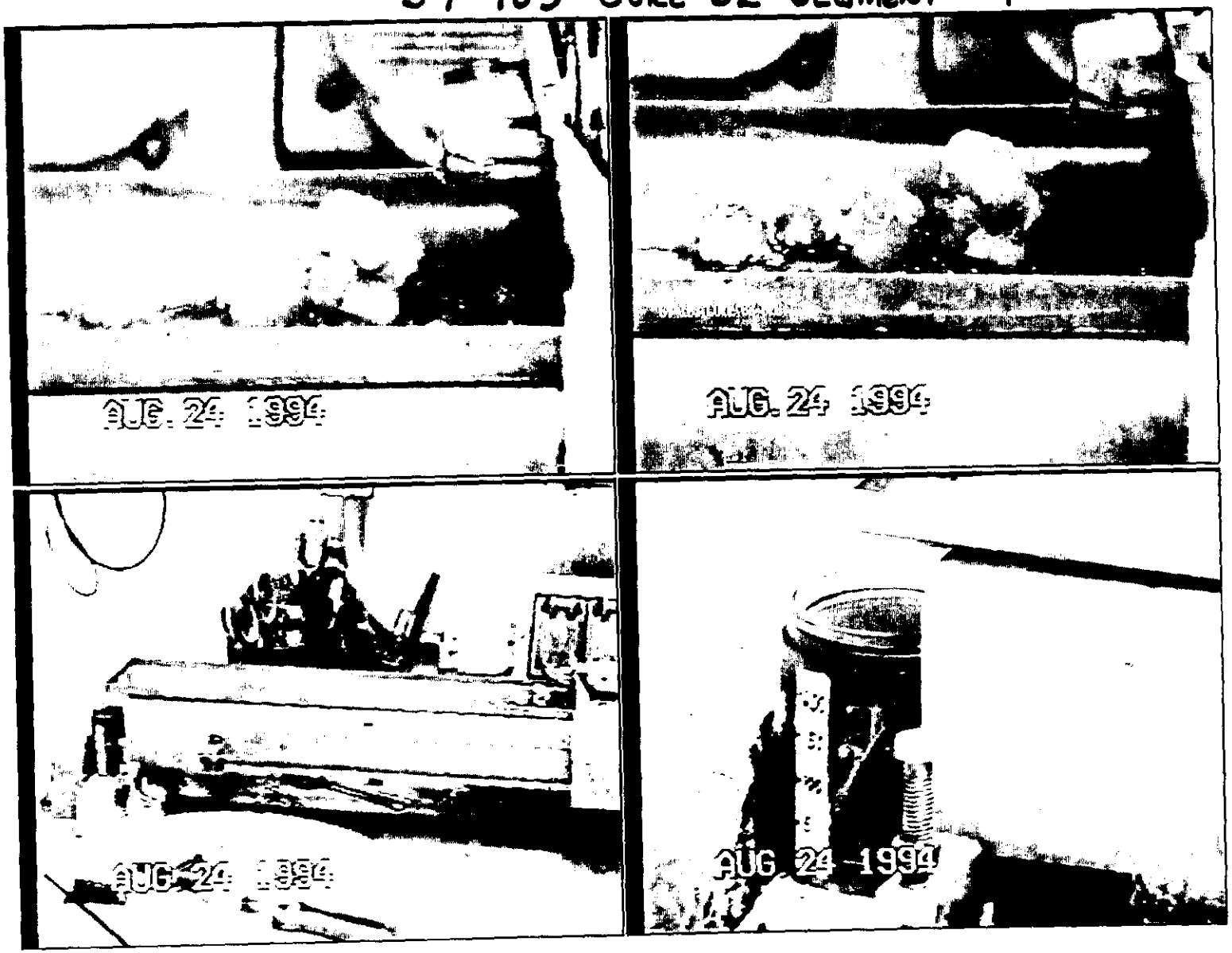
SY-103 CORE 62 SEGMENT #1



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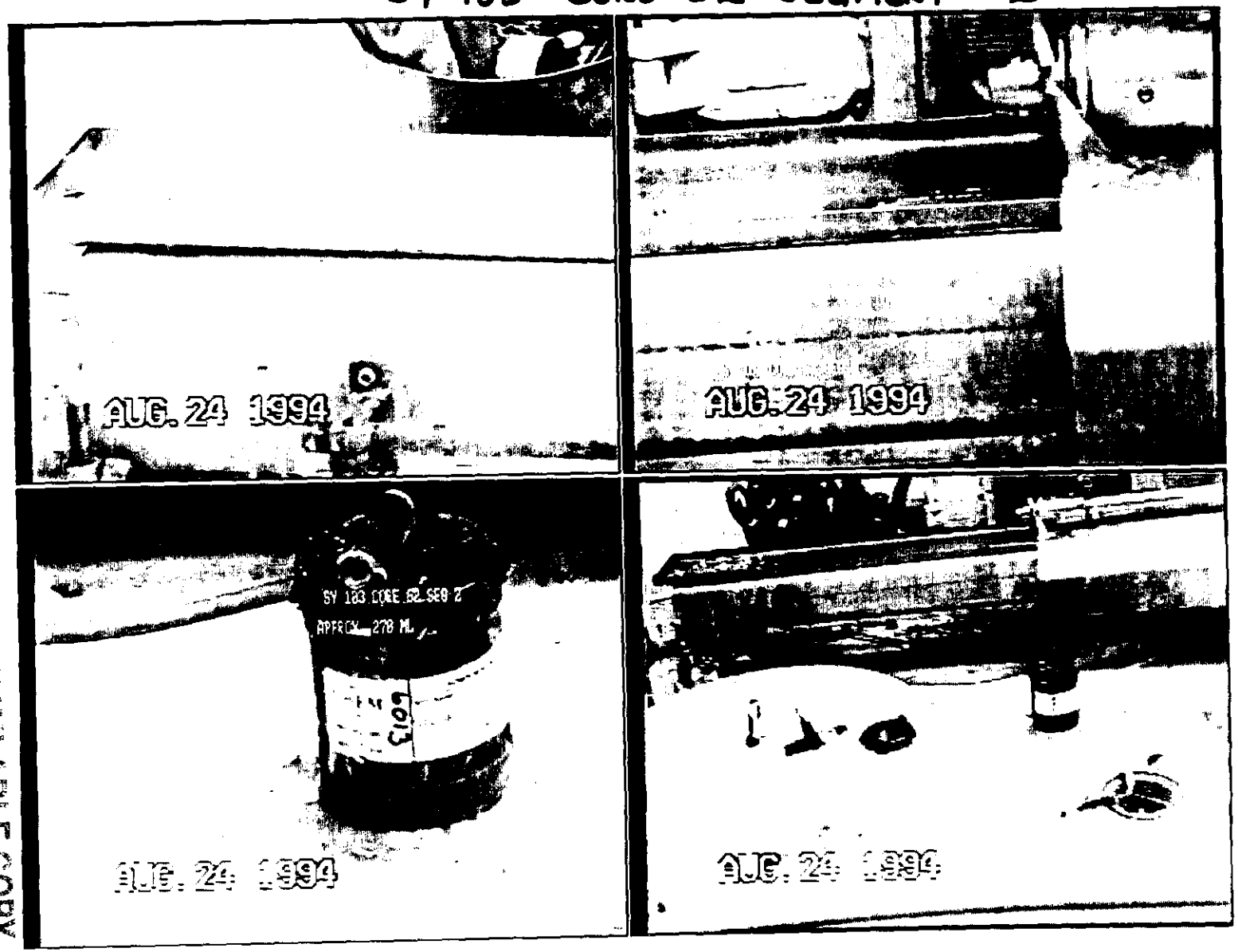
SY-103 CORE 62 SEGMENT #2



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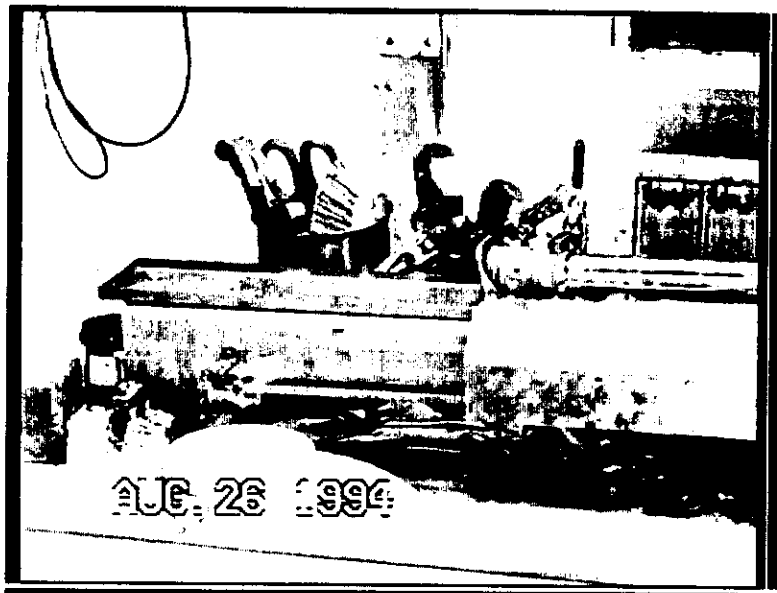
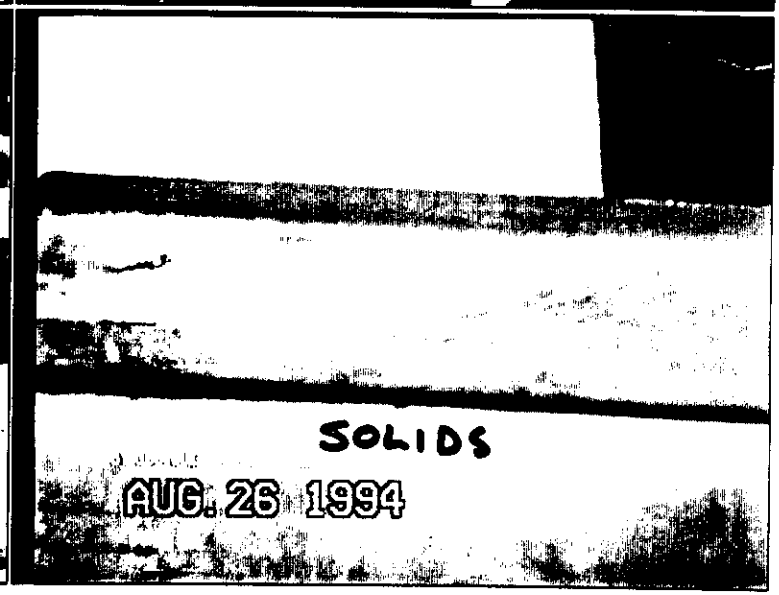
SY-103 CORE 62 SEGMENT #3



DRAINABLE LIQUID #6039



SOLIDS

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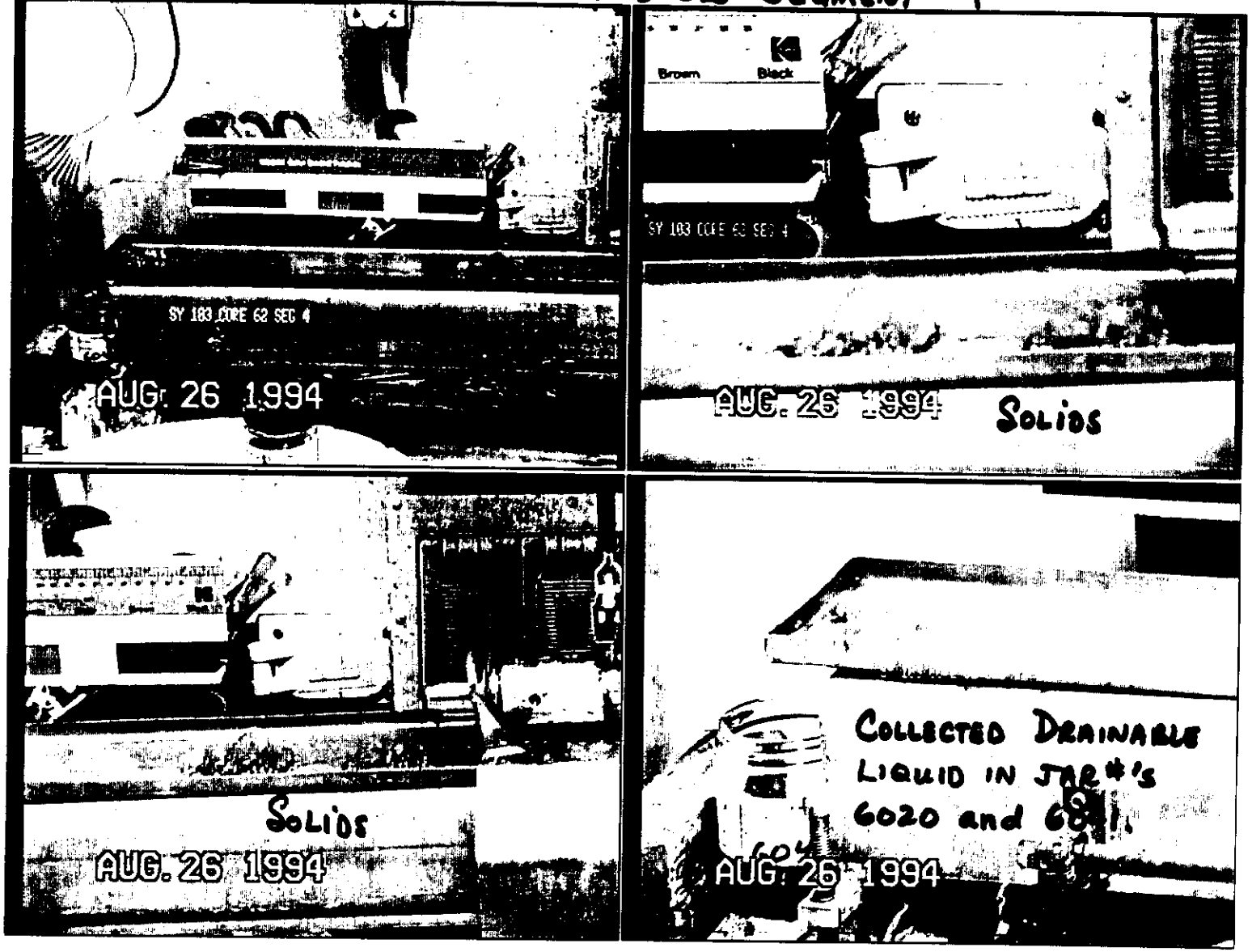
SY-103 CORE 62 SEGMENT #4



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SAMPLE HANDLING

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LABCORE Data Entry Template for Worklist# 6

Analyst: rkf EC **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: Worklist for Segment #1 only **WHC-SD-WM-DP-074, REV. 0**

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20	19.99	N/A	
2	INSTCHK02				EXTRUD01	SOLID	500	499.72	N/A	
3	SAMPLE	S94T000001	0		DLIQVOL1	SOLID	N/A	~~399.4~~ 262		mL
4	SAMPLE	S94T000001	0		DLIQWT01	SOLID	N/A	399.4		g
5	SAMPLE	S94T000001	0		EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000001	0		EST.G/ML	SOLID	N/A	1.524		g/mL
7	SAMPLE	S94T000001	0		LLIQWT01	SOLID	N/A	0		g
8	SAMPLE	S94T000001	0		NOTEBOOK	SOLID	N/A	WHC-N-911		
9	SAMPLE	S94T000001	0		SLDVOL01	SOLID	N/A	20		mL
10	SAMPLE	S94T000001	0		SLDWT-01	SOLID	N/A	22		g

Final page for worklist # 6

Analyst Signature _____ **Date** 10-14-94

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 7

Analyst: abb EC **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: Work list for segment #2 only WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20	19.99	N/A	
2	INSTCHK02				EXTRUD01	SOLID	50	499.72	N/A	
3	SAMPLE	S94T000002	0		DLIQVOL1	SOLID	N/A	272		mL
4	SAMPLE	S94T000002	0		DLIQWT01	SOLID	N/A	408.9		g
5	SAMPLE	S94T000002	0		EXTRUD01	SOLID	N/A	Complete		
6	SAMPLE	S94T000002	0		EST.G/ML	SOLID	N/A	1.50		g/mL
7	SAMPLE	S94T000002	0		LLIQWT01	SOLID	N/A	0		g
8	SAMPLE	S94T000002	0		NOTEBOOK	SOLID	N/A	WHC-N-911		
9	SAMPLE	S94T000002	0		SLDVOL01	SOLID	N/A	10		mL
10	SAMPLE	S94T000002	0		SLDWT-01	SOLID	N/A	9.59		g

Final page for worklist # 7

EHC
Analyst Signature

10-14-94
Date

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 8

Analyst: EC **Instrument:** BA002 **Method:** LO-160-103 A-6

Worklist Comment: Work list for core 62 segment 3 WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK			EXTRUD01	SOLID	20	19.99	N/A	
2	INSTCHK			EXTRUD01	SOLID	500	499.65	N/A	
3	SAMPLE	S94T000017	0	DLIQVOL1	SOLID	N/A	262		mL
4	SAMPLE	S94T000017	0	DLIQWT01	SOLID	N/A	397.8		g
5	SAMPLE	S94T000017	0	EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000017	0	LLIQWT01	SOLID	N/A	0		g
7	SAMPLE	S94T000017	0	NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000017	0	SLDVOL01	SOLID	N/A	5		mL
9	SAMPLE	S94T000017	0	SLDWT-01	SOLID	N/A	5.81		g
10	SAMPLE	S94T000017	0	EST.G/ML	SOLID	N/A	1.52		g/mL

Final page for worklist # 8

Analyst Signature **Date** 10-14-94

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 9

Analyst: EC **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: Core 62 segment 4 extrusion WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20	19.99	N/A	
2	INSTCHK02				EXTRUD01	SOLID	500	499.6	N/A	
3	SAMPLE	S94T000018	0		DLIQVOL1	SOLID	N/A	295		mL
4	SAMPLE	S94T000018	0		DLIQWT01	SOLID	N/A	396.5		g
5	SAMPLE	S94T000018	0		EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000018	0		LLIQWT01	SOLID	N/A	0		g
7	SAMPLE	S94T000018	0		NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000018	0		SLDVOL01	SOLID	N/A	15		mL
9	SAMPLE	S94T000018	0		SLDWT-01	SOLID	N/A	33		g
10	SAMPLE	S94T000018	0		EST.G/ML	SOLID	N/A	1.34		g/mL

Final page for worklist # 9

Analyst Signature _____ **Date** 10-19-94

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

complete

LABCORE Data Entry Template for Worklist# 18

Analyst: ABB **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: SY-103 Core 62 Segment #5

WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20	20.15	N/A	
2	INSTCHK02				EXTRUD01	SOLID	500	500.00	N/A	
3	SAMPLE	S94T000034	0		DLIQVOL1 ✓	SOLID	N/A	270		mL
4	SAMPLE	S94T000034	0		DLIQWT01 ✓	SOLID	N/A	397.4		g
5	SAMPLE	S94T000034	0		EXTRUD01 ✓	SOLID	N/A	complete		
6	SAMPLE	S94T000034	0		LLIQWT01 ✓	SOLID	N/A	<5		g
7	SAMPLE	S94T000034	0		NOTEBOOK ✓	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000034	0		SLDVOL01	SOLID	N/A	25		mL
9	SAMPLE	S94T000034	0		SLDWT-01	SOLID	N/A	36		g
10	SAMPLE	S94T000034	0		EST.G/ML ✓	SOLID	N/A	1.48		g/mL

Final page for worklist # 18

Keith Fuller
Analyst Signature

10-14-94
Date

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

COMPLETE

LABCORE Data Entry Template for Worklist# 23

Analyst: ABB **Instrument:** BA002 **Method:** LO-160-103 A-6

Worklist Comment: SY-103 Core 62 Segment #6 WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01			EXTRUD01	SOLID	20	19.99	N/A	
2	INSTCHK02			EXTRUD01	SOLID	500	499.78	N/A	
3	SAMPLE	S94T000042	0	DLIQVOL1	SOLID	N/A	260		mL
4	SAMPLE	S94T000042	0	DLIQWT01	SOLID	N/A	385.2		g
5	SAMPLE	S94T000042	0	EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000042	0	LLIQWT01	SOLID	N/A	14.11		g
7	SAMPLE	S94T000042	0	NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000042	0	SLDVOL01	SOLID	N/A	25		mL
9	SAMPLE	S94T000042	0	SLDWT-01	SOLID	N/A	34		g
10	SAMPLE	S94T000042	0	EST.G/ML	SOLID	N/A	1.48		g/mL

Final page for worklist # 23

Keith Fuller
Analyst Signature

9/19/94
Date

Data Entry Comments:
Entered data in lab core on 9/19/94.

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

COMPLETE

LABCORE Data Entry Template for Worklist# 20

Analyst: ABB **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: SY-103 Core 62 Segment #7 **WHC-SD-WM-DP-074, REV. 0**

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01			EXTRUD01	SOLID	20	19.99	N/A	
2	INSTCHK02			EXTRUD01	SOLID	500	499.78	N/A	
3	SAMPLE	S94T000043	0	DLIQVOL1	SOLID	N/A	262		mL
4	SAMPLE	S94T000043	0	DLIQWT01	SOLID	N/A	402.0		g
5	SAMPLE	S94T000043	0	EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000043	0	LLIQWT01	SOLID	N/A	6.02		g
7	SAMPLE	S94T000043	0	NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000043	0	SLDVOL01	SOLID	N/A	8		mL
9	SAMPLE	S94T000043	0	SLDWT-01	SOLID	N/A	22		g
10	SAMPLE	S94T000043	0	EST.G/ML	SOLID	N/A	1.53		g/mL

Final page for worklist # 20

Keith Fuller
Analyst Signature

9/19/94
Date

Data Entry Comments:
Entered data in labcore on 9/19/94

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

Complete.

LABCORE Data Entry Template for Worklist# 21

Analyst: ABB **Instrument:** BA002 **Method:** LO-160-103 HG

Worklist Comment: SY-103 Core 62 Segment #8 WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20	20.63	N/A	
2	INSTCHK02				EXTRUD01	SOLID	500	499.93	N/A	
3	SAMPLE	S94T000044	0		DLIQVOL1	SOLID	N/A	295		mL
4	SAMPLE	S94T000044	0		DLIQWT01	SOLID	N/A	431		g
5	SAMPLE	S94T000044	0		EXTRUD01	SOLID	N/A	Complete		
6	SAMPLE	S94T000044	0		LLIQWT01	SOLID	N/A	10		g
7	SAMPLE	S94T000044	0		NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000044	0		SLDVOL01	SOLID	N/A	8		mL
9	SAMPLE	S94T000044	0		SLDWT-01	SOLID	N/A	22		g
10	SAMPLE	S94T000044	0		EST.G/ML	SOLID	N/A	1.47		g/mL

Final page for worklist # 21

Keith Fuller
Analyst Signature

9/21/94
Date

Input data into computer on 9/20/94.
Review worklist on 9/21/94.

Data Entry Comments: Complete

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 24

Analyst: ABB **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: SY-103 Core 62 Segment #9

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01			EXTRUD01	SOLID	20	20.55	N/A	
2	INSTCHK02			EXTRUD01	SOLID	500	500.16	N/A	
3	SAMPLE	S94T000045	0	DLIQVOL1	SOLID	N/A	35		mL
4	SAMPLE	S94T000045	0	DLIQWT01	SOLID	N/A	57		g
5	SAMPLE	S94T000045	0	EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000045	0	LLIQWT01	SOLID	N/A	<5		g
7	SAMPLE	S94T000045	0	NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000045	0	SLDVOL01	SOLID	N/A	250		mL
9	SAMPLE	S94T000045	0	SLDWT-01	SOLID	N/A	369		g
10	SAMPLE	S94T000045	0	EST.G/ML	SOLID	N/A	1.64		g/mL

Final page for worklist # 24

Keith Fuller
Analyst Signature

9/21/94
Date

WHC-SD-WM-DP-074, REV. 0

Data Entry Comments: Input data into labcore on 9/21/94

Units shown for QC (SPK) may not reflect the actual units.

complete 499.86

LABCORE Data Entry Template for Worklist# 26

Analyst: ABD **Instrument:** BA002 **Method:** LO-160-103 A-6

Worklist Comment: SY-103 Core 62 Segment #10 **WHC-SD-WM-DP-074, REV. 0**

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01			EXTRUD01	SOLID	20	20.06	N/A	
2	INSTCHK02			EXTRUD01	SOLID	500	499.86	N/A	
3	SAMPLE	S94T000046	0	DLIQVOL1	SOLID	N/A	N/A		mL
4	SAMPLE	S94T000046	0	DLIQWT01	SOLID	N/A	N/A		g
5	SAMPLE	S94T000046	0	EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000046	0	LLIQWT01	SOLID	N/A	<5		g
7	SAMPLE	S94T000046	0	NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000046	0	SLDVOL01	SOLID	N/A	260		mL
9	SAMPLE	S94T000046	0	SLDWT-01	SOLID	N/A	381		g
10	SAMPLE	S94T000046	0	EST.G/ML	SOLID	N/A	N/A		g/mL

Final page for worklist # 26

Keith Fuller
Analyst Signature

9/21/94
Date

Data Entry Comments: Input data into lab core on 9/21/94

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 28

Analyst: ABB **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: SY-103 Core 62 Segment #11 **WHC-SD-WM-DP-074, REV. 0**

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20	19.97	N/A	
2	INSTCHK02				EXTRUD01	SOLID	500	499.90	N/A	
3	SAMPLE	S94T000047	0		DLIQVOL1	SOLID	N/A	N/A		mL
4	SAMPLE	S94T000047	0		DLIQWT01	SOLID	N/A	N/A		g
5	SAMPLE	S94T000047	0		EXTRUD01	SOLID	N/A	Complete		
6	SAMPLE	S94T000047	0		LLIQWT01	SOLID	N/A	14.8		g
7	SAMPLE	S94T000047	0		NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000047	0		SLDVOL01	SOLID	N/A	293		mL
9	SAMPLE	S94T000047	0		SLDWT-01	SOLID	N/A	431		g
10	SAMPLE	S94T000047	0		EST.G/ML	SOLID	N/A	N/A		g/mL

Final page for worklist # 28

Keith Fuller
Analyst Signature

9/22/94
Date

Data Entry Comments: Complete Labcore entry 9/22/94 in a.m. – RKF

Units shown for QC (SPK) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 29

Analyst: EU **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: SY-103 Core 62 Segment #12 **WHC-SD-WM-DP-074, REV. 0**

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01			EXTRUD01	SOLID	20.00	19.95 g	N/A	
2	INSTCHK02			EXTRUD01	SOLID	500.00	499.74 g	N/A	
3	SAMPLE	S94T000048	0	DLIQVOL1	SOLID	N/A	N/A		mL
4	SAMPLE	S94T000048	0	DLIQWT01	SOLID	N/A	N/A		g
5	SAMPLE	S94T000048	0	EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000048	0	LLIQWT01	SOLID	N/A	16.2		g
7	SAMPLE	S94T000048	0	NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000048	0	SLDVOL01	SOLID	N/A	293		mL
9	SAMPLE	S94T000048	0	SLDWT-01	SOLID	N/A	382		g
10	SAMPLE	S94T000048	0	EST.G/ML	SOLID	N/A	N/A		g/mL

Final page for worklist # 29

Analyst Signature _____ **Date** 9-29-94

Data Entry Comments:

Entered data and comments on 9-29-94

Units shown for QC (SPK) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 30

Analyst: ABB **Instrument:** BA002 _____ **Method:** LO-160-103 A-6

Worklist Comment: SY-103 Core 62 Segment #13 WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20.00	19.94	N/A	
2	INSTCHK02				EXTRUD01	SOLID	500.00	499.80	N/A	
3	SAMPLE	S94T000049	0		DLIQVOL1	SOLID	N/A	N/A		mL
4	SAMPLE	S94T000049	0		DLIQWT01	SOLID	N/A	N/A		g
5	SAMPLE	S94T000049	0		EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000049	0		LLIQWT01	SOLID	N/A	33.9		g
7	SAMPLE	S94T000049	0		NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000049	0		SLDVOL01	SOLID	N/A	293		mL
9	SAMPLE	S94T000049	0		SLDWT-01	SOLID	N/A	429		g
10	SAMPLE	S94T000049	0		EST.G/ML	SOLID	N/A	N/A		g/mL

Final page for worklist # 30

Analyst Signature _____ **Date** 10-3-94

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 32

Analyst: ABB **Instrument:** BA002 _____ **Method:** LO-160-103 A-6 9/23/94

Worklist Comment: SY-103 Core 62 Segment #14

Seg	Type	Sample#	Rep Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01			EXTRUD01	SOLID	20.00	19.92	N/A	
2	INSTCHK02			EXTRUD01	SOLID	500.00	499.90	N/A	
3	SAMPLE	S94T000073	0	DLIQVOL1	SOLID	N/A	N/A		mL
4	SAMPLE	S94T000073	0	DLIQWT01	SOLID	N/A	N/A		g
5	SAMPLE	S94T000073	0	EXTRUD01	SOLID	N/A	Complete		
6	SAMPLE	S94T000073	0	LLIQWT01	SOLID	N/A	<5mL		g
7	SAMPLE	S94T000073	0	NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000073	0	SLDVOL01	SOLID	N/A	247		mL
9	SAMPLE	S94T000073	0	SLDWT-01	SOLID	N/A	353		g
10	SAMPLE	S94T000073	0	EST.G/ML	SOLID	N/A	N/A		g/mL

Final page for worklist # 32

Keith Fuller
Analyst Signature

WHC-SD-WM-DP-074, REV. 0

9/23/94
Date

Data Entry Comments: Completed Labcore entry on 9/26/94.

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 33

Analyst: EC **Instrument:** BA002 **Method:** LO-160-103 A6

Worklist Comment: SY-103 Core 62 Segment #15 WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20	19.98	N/A	
2	INSTCHK02				EXTRUD01	SOLID	500	499.78	N/A	
3	SAMPLE	S94T000074	0		DLIQVOL1	SOLID	N/A	125		mL
4	SAMPLE	S94T000074	0		DLIQWT01	SOLID	N/A	164		g
5	SAMPLE	S94T000074	0		EXTRUD01	SOLID	N/A	complete		
6	SAMPLE	S94T000074	0		LLIQWT01	SOLID	N/A	48.6		g
7	SAMPLE	S94T000074	0		NOTEBOOK	SOLID	N/A	WHC-N-911		
8	SAMPLE	S94T000074	0		SLDVOL01	SOLID	N/A	~~10~~ 15		mL
9	SAMPLE	S94T000074	0		SLDWT-01	SOLID	N/A	10		g
10	SAMPLE	S94T000074	0		EST.G/ML	SOLID	N/A	1.31		g/mL

Final page for worklist # 33

EC

Analyst Signature

10-3-94

Date

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 442

Analyst: _____ **Instrument:** BA000 _____ **Method:** LO-160-103 A-7

Worklist Comment: SY-103 Sample Shipment to PNL WHC-SD-WM-DP-074, REV. 0

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	INSTCHK01				EXTRUD01	SOLID	20	19.99	N/A	
2	INSTCHK02				EXTRUD01	SOLID	500	499.70	N/A	
3	SAMPLE	S95T000034	0	P	SHIP-PNL	SOLID	N/A	570.2		
4	SAMPLE	S95T000026	0	P	SHIP-PNL	SOLID	N/A	190.8		
5	SAMPLE	S95T000027	0	P	SHIP-PNL	SOLID	N/A	130.2		
6	SAMPLE	S95T000028	0	P	SHIP-PNL	SOLID	N/A	142.4		
7	SAMPLE	S95T000029	0	P	SHIP-PNL	SOLID	N/A	116.5		
8	SAMPLE	S95T000030	0	P	SHIP-PNL	SOLID	N/A	111.0		

Final page for worklist # 442

Analyst Signature **Date** Jan 23, 95

3) S95T000034 is a composite of Jars #6148, #6153, #6552 and #6553
4) S95T000026 is Jar #6105
5) S95T000027 is Jar #6107
6) S95T000028 is Jar #6125
7) S95T000029 is Jar #6126
8) S95T000030 is Jar #6146

Data Entry Comments:
Worklist Reviewed on 1/23/95.

Units shown for QC (SPK) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 615

Analyst: EC **Instrument:** BA000 _____ **Book #** _____

Method: LO-160-103 Rev/Mod A-1 WHC-SD-WM-DP-074, REV. 0

Worklist Comment: SY-103 Drainable Liquid Composite

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	19.99g	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	499.98g	N/A	
94000001	SY-103	3	SAMPLE	S95T000180	0	P	SHIP-PNL	LIQUID	N/A	133 g		

Final page for worklist # 615

EHC 3-1-95
Analyst Signature **Date**

Analyst Signature **Date**

See page 100 of WHC-N-911

Data Entry Comments: Completed review 3/1/95. RKT

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# 632

Analyst: FC **Instrument:** BA000 **Book #** _____

Method: LO-160-103 Rev/Mod A 7 WHC-SD-WM-DP-074, REV. 0

Worklist Comment: SY-103 Core 62 DL COMP Seg 2,3,4,5,6,7 Ship-PNL

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	20	19.99	N/A	
		2 INSTCHK02			EXTRUD01	SOLID	500	499.95	N/A	
94000001	SY-103	3 SAMPLE	S95T000202	0 P	SHIP-PNL	LIQUID	N/A	130	grams	

Final page for worklist # 632

Keith Fuller 2/28/95
Analyst Signature **Date**

E H L 3-1-95
Analyst Signature **Date**

See Composit worksheet for Jar # 6149.
See WHC-N-911 page 101 for additional information.

Data Entry Comments: Data validation Complete. RKF

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# 1155

Analyst: ABB **Instrument:** BA000 _____ **Book #** N/A

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

Worklist Comment: SY-103 C62 Segments:2-7(Ship-PNL)

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	200.0g	200.0g	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500.0g	499.99	N/A	
94000020	SY-103	3	SAMPLE	S95T000740	0		BLKDEN01	LIQUID	N/A	1.47		g/mL

Final page for worklist # 1155

Arlin B. Berry April 18, 1995
Analyst Signature **Date**

Reviewed & posted

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.

LABCORE Data Entry Template for Worklist# 1184

Analyst: ABB **Instrument:** BA000 _____ **Book #** N/A

Method: LO-160-103 Rev/Mod A7

Worklist Comment: SY-103 C62 SEG: 1 And SEG: 4 Thru 9. Bulk Density

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	20	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	49998	N/A	
94000001	SY-103	3	SAMPLE	S94T000006	0	V-6020	BLKDEN01	SOLID	N/A	1.59		g/mL
94000020	SY-103	4	SAMPLE	S95T000739	0	V-6164	BLKDEN01	SOLID	N/A	1.51		g/mL

Final page for worklist # 1184

Arthur B. Bandy April 23, 1995 — Analyst Signature — Date

Arthur B. Bandy April 23, 95 — Analyst Signature — Date

Reviewed by Arthur B. Bandy 4/28/95

Data Entry Comments:

Bulk Density LO-160-103 Appendix B

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# 1255

Analyst: ABD **Instrument:** BA000 **Book #** NA

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

Worklist Comment: SY-103 Core 62 Segments 8 and 15 (Bulk Density)

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	20	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	499.98	N/A	
94000001	SY-103	3	SAMPLE	S94T000082	0	6113	BLKDEN01	LIQUID	N/A	1.47		g/mL
94000001	SY-103	4	SAMPLE	S95T000262	0	6108	BLKDEN01	LIQUID	N/A	1.16		g/mL

Final page for worklist # 1255

Analyst Signature Date 4/27/95 Analyst Signature Date 4/27/95

Reviewed by 4/28/95

Data Entry Comments:

Bulk Density LO 160-103 App. B

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# 1257

Analyst: RDH **Instrument:** BA000 _____ **Book #** NA

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

Worklist Comment: SY-103 Core 62 SEG. 9 and SEG. 10-14. (BULK DENSITY)

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	20	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	499.98	N/A	
94000001	SY-103	3	SAMPLE	S94T000077	0	6115	BLKDEN01	SOLID	N/A	1.51		g/mL
94000020	SY-103	4	SAMPLE	S94T000271	0	6482	BLKDEN01	SOLID	N/A	1.57		g/mL

Final page for worklist # 1257

RD Hale 4/27/95
Analyst Signature **Date**

CD Hale 4/27/95
Analyst Signature **Date**

Reviewed by [illegible] 4/28/95

Data Entry Comments:

Bulk Density LO-160-103 App B.

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.

SY103

LABCORE Data Entry Template for Worklist# 1290

Analyst: ABB **Instrument:** BA000 **Book #** N/A

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

Worklist Comment: SY-103 and C-108 Subsample

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	20	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	499.98	N/A	
94000020	SY-103	3	SAMPLE	S94T000265	0		SUBSMPL1 6950	SOLID	N/A	4.54		g
94000020	SY-103	4	SAMPLE	S94T000273	0		SUBSMPL1 6949	SOLID	N/A	5.64		g
94000020	SY-103	5	SAMPLE	S94T000275	0		SUBSMPL1 6187	SOLID	N/A	8.70		g
94000020	SY-103	6	SAMPLE	S94T000274	0		SUBSMPL1 6183	SOLID	N/A	6.86		g
94000017	C-108	7	SAMPLE	S94T000334	0		SUBSMPL1 6344	SOLID	N/A	5.17		g

Final page for worklist # 1290

Analyst Signature 5-2-95 Date

Analyst Signature 5-2-95 Date

Data Entry Comments:

5/2/95

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# 1291

Analyst: ABB **Instrument:** BA000 **Book #** NA

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

Worklist Comment: Shipment Samples

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20	19.99	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500	499.70	N/A	
94000017	C-108	3	SAMPLE	S95T000179	0	P	6130 LANL SHIP-PNL 6612	SOLID	N/A	73.4		
94000012	C-103	4	SAMPLE	S95T000166	0	P	6367 SHIP-PNL 6521	SOLID	N/A	10.60		
95000017	TY-104	5	SAMPLE	S95T000244	0	P	6571 6476 LANL SHIP-PNL 7014	SOLID	N/A	76.94		
95000020	C-107	6	SAMPLE	S95T000860	0	P	6772 LANL SHIP-PNL 7150	SOLID	N/A	69.36		
95000023	C-107	7	SAMPLE	S95T000862	0	P	6773 LANL SHIP-PNL 7149	SOLID	N/A	71.77		
94000020	SY-103	8	SAMPLE	S95T000740	0	P	Slag Comp SHIP-PNL 7095	LIQUID	N/A	132.7		
94000012	C-103	9	SAMPLE	S94T000201	0	P	6539 SHIP-PNL 6770	LIQUID	N/A	34.52		
94000012	C-103	10	SAMPLE	S95T000050	0	P	6539 SHIP-PNL 6771	LIQUID	N/A	30.44		

Final page for worklist # 1291

5-2-95
Analyst Signature **Date**

5-2-95
Analyst Signature **Date**

Data Entry Comments:

Reviewed by ABB 5/3/95

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.

SAMPLE PREPARATIONS

WATER DIGESTIONS

LABCORE Data Entry Template for Worklist# 230

Analyst: lmh **Instrument:** H2O01 .5.2FC4495 **Method:** LA-504-101 /C-Q

Worklist Comment: SY-103 H2O DGST - 265->267, 273->279, 274->280, 275->281

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	BLNK-PREP				H2ODIG01	SOLID	50 ml	50 ml	N/A	g/L
2	SAMPLE	S94T000267	0	W	H2ODIG01	SOLID	N/A	10.4420		g/L
3	DUP	S94T000267	0	W	H2ODIG01	SOLID	10.4420	10.4420	N/A	g/L
4	SAMPLE	S94T000279	0	W	H2ODIG01	SOLID	N/A	10.3280		g/L
5	DUP	S94T000279	0	W	H2ODIG01	SOLID	10.3280	10.2960	N/A	g/L
6	SAMPLE	S94T000280	0	W	H2ODIG01	SOLID	N/A	10.2260		g/L
7	DUP	S94T000280	0	W	H2ODIG01	SOLID	10.2260	10.2280	N/A	g/L
8	SAMPLE	S94T000281	0	W	H2ODIG01	SOLID	N/A	10.5160		g/L
9	DUP	S94T000281	0	W	H2ODIG01	SOLID	10.5160	10.3960	N/A	g/L

WHC-SD-WM-DP-074, REV. 0

Final page for worklist # 230

Analyst Signature

Date 12-12-94

SAM (267) .5221g / .050l = (10.4420g/l)

DUP .5221g / .050l = (10.4420g/l)

SAM (279) .5164g / .050l = (10.3280g/l)

DUP .5148g / .050l = (10.2960g/l)

SAM (280) .5113g / .050l = (10.2260g/l)

DUP .5114g / .050l = (10.2280g/l)

SAM (281) .5258g / .050l = (10.5160g/l)

DUP .5198g / .050l = (10.3960g/l)

Data Entry Comments: Bertrand Griffin II 12-20-94

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 636

Analyst: [illegible] **Instrument:** H2O01 _____ **Book #** 3-15-95 NA

Method: LA-504-101 Rev/Mod C-0 **WHC-SD-WM-DP-074, REV. 0**

Worklist Comment: SY-103 WATER DIGEST - 93---> 157

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				@H2ODG02 H2ODIG01	SOLID	100 mL	100 mL	N/A	g/L
		1	BLNK-PREP				@H2ODG02 H2OICP01	SOLID	15.4	15.4	N/A	g/L
		1	BLNK-PREP				@H2ODG02 H2ORAD01	SOLID	15.4	15.4	N/A	g/L
94000001	SY-103	2	SAMPLE	S95T000157	0		@H2ODG02 H2ODIG01	SOLID	N/A	5.2380		g/L
.5238 g → .100 L (5.2380 g/L)												
94000001	SY-103	2	SAMPLE	S95T000157	0		@H2ODG02 H2OICP01	SOLID	N/A	5.1018 ~~15.4 mL~~	BJII 3-15-95	g/L
.4 mL of acid → 15 mL / TOTAL VOL = 15.4 mL												
94000001	SY-103	2	SAMPLE	S95T000157	0		@H2ODG02 H2ORAD01	SOLID	N/A	5.1018 ~~15.4 mL~~		g/L
.4 mL of acid → 15 mL, TOTAL VOL. = 15.4 mL												
94000001	SY-103	3	DUP	S95T000157	0		@H2ODG02 H2ODIG01	SOLID	5.2380	5.2450	N/A	g/L
.5245 g → .100 L (5.2450 g/L)												
94000001	SY-103	3	DUP	S95T000157	0		@H2ODG02 H2OICP01	SOLID	5.1018	5.1086	N/A	g/L
.4 mL of acid → 15 mL / TOTAL VOL. = 15.4 mL												
94000001	SY-103	3	DUP	S95T000157	0		@H2ODG02 H2ORAD01	SOLID	5.1018	5.1086	N/A	g/L
.4 mL of acid → 15 mL / TOTAL VOL. = 15.4 mL												

Final page for worklist # 636

[illegible] 3-8-95
Analyst Signature **Date**

Bertrand Griffin II 3-21-95
Analyst Signature **Date**

$$D.F. = \frac{15.4\,mL}{15\,mL} = 1.0267$$

Sample (Rad + ICP)

$$\frac{5.2380\,g/L}{1.0267} = 5.1018\,g/L$$

Dup (Rad + ICP)

$$\frac{5.2450\,g/L}{1.0267} = 5.1086\,g/L$$

Data Entry Comments: HPT was Sig Samples were dosed at 300 mrad

Bertrand Griffin II 3-21-95

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# 696

Analyst: LMH2 **Instrument:** H2O01 _____ **Book #** _____

Method: LA-504-101 Rev/Mod C-0

Worklist Comment: SY-103 H2O DGST-S94T000265->287 & 292, S94T000273->289 & 293

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP				H2ODIG01	SOLID	I.S.	I.S.	N/A	g/L
94000020	SY-103	2 SAMPLE	S95T000287	0	W	H2ODIG01	SOLID	N/A	I.S.		g/L
94000020	SY-103	3 DUP	S95T000287	0	W	H2ODIG01	SOLID	I.S.	I.S.	N/A	g/L
94000020	SY-103	4 SAMPLE	S95T000289	0	W	H2ODIG01	SOLID	N/A	I.S.		g/L
94000020	SY-103	5 DUP	S95T000289	0	W	H2ODIG01	SOLID	I.S.	I.S.	N/A	g/L
		6 BLNK-PREP				H2ORAD01	SOLID	I.S.	I.S.	N/A	g/L
94000020	SY-103	7 SAMPLE	S95T000292	0	R	H2ORAD01	SOLID	N/A	I.S.		g/L
94000020	SY-103	8 DUP	S95T000292	0	R	H2ORAD01	SOLID	I.S.	I.S.	N/A	g/L
94000020	SY-103	9 SAMPLE	S95T000293	0	R	H2ORAD01	SOLID	N/A	I.S.		g/L
94000020	SY-103	10 DUP	S95T000293	0	R	H2ORAD01	SOLID	I.S.	I.S.	N/A	g/L

Final page for worklist # 696

Selina Marie Hatfield 04/05/95 Bertrand Duff II 4-17-95
Analyst Signature **Date** **Analyst Signature** **Date**

Data Entry Comments: Insufficient sample on both
Unable to perform analysis <LMH 04/05/95>
Approval to place "I.S." in Labcore was given 4-17-95. Bertrand Duff II 4-17-95

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# 872

Analyst: Cmh **Instrument:** H2O01 AL11066 **Book #** N/A

Method: LA-504-101 Rev/Mod C-0 **WHC-SD-WM-DP-074, REV. 0**

Worklist Comment: SY-103 H20 DGST - S94T000275->291 & 296, S94T000274->295

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2ODIG01	SOLID	100 mL	100 mL	N/A	g/L
94000020	SY-103	2 SAMPLE	S95T000291	0 W	H2ODIG01	SOLID	N/A	5.2130 g/L		g/L
		0.5213 g -> .100 L = 5.213 g/L								
94000020	SY-103	3 DUP	S95T000291	0 W	H2ODIG01	SOLID	5.2130	5.3240	N/A	g/L
		0.5324 g -> .100 L = 5.324 g/L								
		4 BLNK-PREP			H2ORAD01	SOLID	15.4 mL	15.4 mL	N/A	g/L
		15.4								
94000020	SY-103	5 SAMPLE	S95T000295	0 R	H2ORAD01	SOLID	N/A	5.0842		g/L
		0.5220 g > .100 L → 15.4 mL CALC →								
94000020	SY-103	6 DUP	S95T000295	0 R	H2ORAD01	SOLID	5.0842	5.1757	N/A	g/L
		0.5317 g -> .100 L → 15.4 mL CALC →								
94000020	SY-103	7 SAMPLE	S95T000296	0 R	H2ORAD01	SOLID	N/A	5.0774		g/L
		15.4 mL / 15 mL = 1.0267 = 5.0774 g/L								
94000020	SY-103	8 DUP	S95T000296	0 R	H2ORAD01	SOLID	5.0774	5.1855	N/A	g/L
		15.4 mL / 15 mL = 1.0267 = 5.1855 g/L								

5.2130
+ 1.0267
= 5.0842 g/L

5.3240
1.0267
= 5.1787 g/L

Final page for worklist # 872

Analyst Signature Date 4-3-95

Bertrand Griffin II 4-4-95
Analyst Signature Date

Data Entry Comments: 16 mR/hr, HPT was Bob Clemons

Bertrand Griffin II

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.

SUPER RUSH RUSH

LABCORE Data Entry Template for Worklist# 1099

Analyst: lmh **Instrument:** H2O01 AL11066 **Book #** _____

Method: LA-504-101 Rev/Mod C-0 WHC-SD-WM-DP-074, REV. 0

Worklist Comment: RUSH - SY-103 WATER DIL.-282->332,283->333,284->334,285->335

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2ODIL01	LIQUID	100ml	100ml	N/A	DF
94000020	SY-103	2 SAMPLE	S95T000332	0 V	H2ODIL01	LIQUID	N/A	100		DF
	1 ml → 100ml									
94000020	SY-103	3 DUP	S95T000332	0 V	H2ODIL01	LIQUID	100	100	N/A	DF
	1ml → 100ml									
94000020	SY-103	4 SAMPLE	S95T000333	0 V	H2ODIL01	LIQUID	N/A	100		DF
	1ml → 100ml									
94000020	SY-103	5 DUP	S95T000333	0 V	H2ODIL01	LIQUID	100	100	N/A	DF
	1 ml → 100ml									
94000020	SY-103	6 SAMPLE	S95T000334	0 V	H2ODIL01	LIQUID	N/A	100		DF
	1ml → 100ml									
94000020	SY-103	7 DUP	S95T000334	0 V	H2ODIL01	LIQUID	100	100	N/A	DF
	1ml → 100ml									
94000020	SY-103	8 SAMPLE	S95T000335	0 V	H2ODIL01	LIQUID	N/A	100		DF
	1ml → 100ml									
94000020	SY-103	9 DUP	S95T000335	0 V	H2ODIL01	LIQUID	100	100	N/A	DF

Final page for worklist # 1099

4-12-95
Analyst Signature **Date**

Bertrand Griffin II 4-13-95
Analyst Signature **Date**

Data Entry Comments: OTR 80mrad p/hr
Jim Evens. HPT
Bertrand Griffin II 4-13-95

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.

540NM 0.000 A Reagent Blank
540NM 0.000 A

RHMcCown

540NM 0.366 A STANDARD #109N16-D
540NM 0.366 A

540NM -.001 A PREP BLANK
540NM -.001 A 1ML

595T000332
540NM 0.343 A SAMPLE 1ML
540NM 0.343 A + SPIKE 1ML
SPIKE # 109N16-D

540NM 540NM 0.009 A 595T000333
540NM 0.009 A 1ML

595T000333
540NM 0.018 540NM 0.016 A DUP.
540NM 0.016 A 1ML

540NM 0.012 A 595T000332
540NM 0.012 A 1ML

540NM 0.011 A 595T000332
540NM 0.011 A DUP.
1ML

RHMcCown

540NM 0.053 A 595T000334
540NM 0.053 A 1ML

595T000334
540NM 0.062 540NM 0.063 A DUP
540NM 0.064 A 1ML

RHMcCown

540NM 0.010 540NM 0.012 A
540NM 0.013 A 595T000335
540NM 0.013 A 1ML

540NM 0.015 A 595T000335
540NM 0.015 A DUP
1ML

ACID DIGESTION

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LABCORE Data Entry Template for Worklist# 203

LMH

Analyst: [signature] **Instrument:** ACD01 SnIF09495 **Method:** LA-505-159/B-2

Worklist Comment: SY-103 SOLID ACID DIGEST-265->266,273->276,274->277,275->278

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	BLNK-PREP				ACIDIG01	SOLID	100ml	100ml	N/A	g/L
2	STD-PREP				ACIDIG01	SOLID	~~100~~ 20	20	N/A	g/L
3	SAMPLE	S94T000266	0	A	ACIDIG01	SOLID	N/A	14.2380		g/L
4	DUP	S94T000266	0	A	ACIDIG01	SOLID	14.2380	14.2150	N/A	g/L
5	SAMPLE	S94T000276	0	A	ACIDIG01	SOLID	N/A	5.1730		g/L
6	DUP	S94T000276	0	A	ACIDIG01	SOLID	5.1730	5.0600	N/A	g/L
7	SAMPLE	S94T000277	0	A	ACIDIG01	SOLID	N/A	10.2000		g/L
8	DUP	S94T000277	0	A	ACIDIG01	SOLID	10.2000	11.6320	N/A	g/L
9	SAMPLE	S94T000278	0	A	ACIDIG01	SOLID	N/A	5.8190		g/L
10	DUP	S94T000278	0	A	ACIDIG01	SOLID	5.8190	5.8290	N/A	g/L

Final page for worklist # 203

[signature]
Analyst Signature

12-6-94
Date

266: Sample — 1.4238g / .250l = 5.6952g/l; .100l = 14.2380g/l

Dup — 1.4215g / .250l = 5.6860g/l; .100 = 14.2150g/l

276: .5173g / .250l = 2.0692g/l; .100 = 5.1730g/l

.5060g / .250l = 2.0240g/l; .100 = 5.0600g/l

277: Sample — 1.0200g / .100l = 10.2000g/l

Dup — 1.1632 / .100l = 11.6320g/l

278: .5819 / .100l = 5.8190g/l

.5829 / .100l = 5.8290

WHC-SD-WM-DP-074, REV. 0

Data Entry Comments:

Bertrand Griffin II
12-19-94

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 610

'30 mrad
HPT Bill Bishop

Analyst: [illegible] **Instrument:** ACD01 _____ **Method:** LA-505-159 /B-2 3-1-95

Worklist Comment: SY-103 ACID DIGEST OF FILTER - S95T000156 ← 118

Seg	Type	Sample#	Rep	Al	Test		Matrix	Actual (DF: 20)	Found (DF: 20)	DL	Unit
1	STD-PREP				@ACIDG01	ACIDIG01	SOLID	[illegible]	[illegible]	N/A	g/L
	5mL of each → 100mL						5mL →				
1	STD-PREP				@ACIDG01	~~ACDGFA01~~	SOLID	NA	NA	N/A	g/L
2	BLNK-PREP				@ACIDG01	ACIDIG01	SOLID	[illegible]	100mL	N/A	g/L
2	BLNK-PREP				@ACIDG01	~~ACDGFA01~~	SOLID	NA	NA	N/A	g/L
3	SAMPLE	S95T000156	0		@ACIDG01	ACIDIG01	SOLID	N/A	27.389g/L		g/L
	2.7359g → 100L = 27.389g/L										
3	SAMPLE	S95T000156	0		@ACIDG01	~~ACDGFA01~~	SOLID	N/A	NA		g/L
								2.5591			

Final page for worklist # 610

Analyst Signature Bertrand Dufour II

Date 3-6-95 3-10-95

WHC-SD-WM-DP-074, REV. 0

Data Entry Comments:

Units shown for QC (SPK) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 767

Analyst: [illegible] **Instrument:** ACD01 AL11066 **Book #** _____
BDII 4-20-95

Method: LA-505-158 Rev/Mod A-34 **WHC-SD-WM-DP-074, REV. 0**

Worklist Comment: SY-103 ACID DIL. - 282->328, 283->329, 284->330, 285->331
HPT was ~~Chuck Felder~~ 3-23-95 Jim Evans

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				ACIDIL01	LIQUID	50ml	50ml	N/A	DF
		2	STD-PREP				ACIDIL01	LIQUID	20	20	N/A	DF
			2.5ml → 50ml = DF of 20									
94000020	SY-103	3	SAMPLE	S95T000328	0	D	ACIDIL01	LIQUID	N/A	20		DF
			2.5ml → 50ml = DF of 20									
94000020	SY-103	4	DUP	S95T000328	0	D	ACIDIL01	LIQUID	20	20	N/A	DF
			2.5ml → 50ml = DF of 20									
94000020	SY-103	5	SAMPLE	S95T000329	0	D	ACIDIL01	LIQUID	N/A	20		DF
			2.5ml → 50ml = DF of 20									
94000020	SY-103	6	DUP	S95T000329	0	D	ACIDIL01	LIQUID	20	20	N/A	DF
			2.5ml → 50ml = DF of 20									
94000020	SY-103	7	SAMPLE	S95T000330	0	D	ACIDIL01	LIQUID	N/A	20		DF
			2.5ml → 50ml = DF of 20									
94000020	SY-103	8	DUP	S95T000330	0	D	ACIDIL01	LIQUID	20	20	N/A	DF
			2.5ml → 50ml = DF of 20									
94000020	SY-103	9	SAMPLE	S95T000331	0	D	ACIDIL01	LIQUID	N/A	20		DF
			2.5ml → 50ml = DF of 20									
94000020	SY-103	10	DUP	S95T000331	0	D	ACIDIL01	LIQUID	20	20	N/A	DF
			2.5ml → 50ml = DF of 20									

Final page for worklist # 767

[illegible] 3-22-95
Analyst Signature **Date**

Bertrand Griffin II 3-24-95
Analyst Signature **Date**

Data Entry Comments: Batch was dose rated at 150mrad
BGII 4-20-95

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# 768

Analyst: Cash **Instrument:** ACD01 AL11066 **Book #** _____

B.D.# 4-20-95

Method: LA-505-158 Rev/Mod A-B4 **WHC-SD-WM-DP-074, REV. 0**

Worklist Comment: SY-103 ACIDIG02-281->323,282->324,283->325,284->326,285->327
HPT: Chuck Felder

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			ACIDIG02	LIQUID	50mL	50mL	N/A	DF
		2 STD-PREP			ACIDIG02	LIQUID	20	20	N/A	DF
		2.5mL : 50mL = DF of 20								
94000020	SY-103	3 SAMPLE	S95T000323	0 B	ACIDIG02	LIQUID	N/A	20		DF
		2.5mL → 50mL DF of 20								
94000020	SY-103	4 DUP	S95T000323	0 B	ACIDIG02	LIQUID	20	20	N/A	DF
		2.5mL → 50mL = DF of 20								
94000020	SY-103	5 SAMPLE	S95T000324	0 B	ACIDIG02	LIQUID	N/A	20		DF
		2.5mL → 50mL = DF of 20								
94000020	SY-103	6 DUP	S95T000324	0 B	ACIDIG02	LIQUID	20	20	N/A	DF
		2.5mL → 50mL = DF of 20								
94000020	SY-103	7 SAMPLE	S95T000325	0 B	ACIDIG02	LIQUID	N/A	20		DF
		2.5mL → 50mL DF of 20								
94000020	SY-103	8 DUP	S95T000325	0 B	ACIDIG02	LIQUID	20	20	N/A	DF
		2.5mL → 50mL DF of 20								
94000020	SY-103	9 SAMPLE	S95T000326	0 B	ACIDIG02	LIQUID	N/A	20		DF
		2.5mL → 50mL DF of 20								
94000020	SY-103	10 DUP	S95T000326	0 B	ACIDIG02	LIQUID	20	20	N/A	DF
		2.5mL → 50mL DF of 20								
94000020	SY-103	11 SAMPLE	S95T000327	0 B	ACIDIG02	LIQUID	N/A	20		DF
		2.5mL → 50mL DF of 20								
94000020	SY-103	12 DUP	S95T000327	0 B	ACIDIG02	LIQUID	20	20	N/A	DF
		2.5mL → 50mL DF of 20								

Final page for worklist # 768

3-22-95
Analyst Signature **Date**

Bertrand Griffin II 3-24-95
Analyst Signature **Date**

Data Entry Comments: Batch was dose rated at 250 mrad
SJH 4-20-95

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.

FUSION DIGESTIONS

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LABCORE Data Entry Template for Worklist# 86

SY103 CA D

Analyst: EAL **Instrument:** FUS01 SN F04495 **Method:** LA-549-141 C-1

Worklist Comment: SY-103 - FUSION 72-->119, 85-->120

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	BLNK-PREP				FUSION01	SOLID	~~2L~~ EAL 10/17/94	—	N/A	g/L
2	SAMPLE	S94T000119	0	F	FUSION01	SOLID	N/A	2.1460g/l		g/L
3	DUP	S94T000119	0	F	FUSION01	SOLID	2.1460g/l	2.1165g/l	N/A	g/L
4	SAMPLE	S94T000120	0	F	FUSION01	SOLID	N/A	2.1255g/l		g/L
5	DUP	S94T000120	0	F	FUSION01	SOLID	2.1255g/l	2.1015g/l	N/A	g/L

Final page for worklist # 86

Analyst Signature

10/17/94
Date

WHC-SD-WM-DP-074, REV. 0

Sam 119 $\frac{.4292g}{.200\ell} = 2.1460g/\ell$

Sam 119 DUP $\frac{.4233g}{.200\ell} = 2.1165g/\ell$

SAM 120 $\frac{.4251g}{.200\ell} = 2.1255g/\ell$

SAM 120 DUP $\frac{.4203g}{.200\ell} = 2.1015g/\ell$

Data Entry Comments:
Use of 200ml volumetric flasks okay'd by Bert due to lack of 250ml vol.'s in stock. 10/17/94

Bertrand Huffin II 10-19-94

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 87

SY-103 CB

Analyst: SM **Instrument:** FUS01 S/N F04495 **Method:** LA-549-141 C-1

Worklist Comment: SY-103 - FUSION 88--> 121, 89--> 122

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	BLNK-PREP				FUSION01	SOLID	—	—	N/A	g/L
2	SAMPLE	S94T000121	0	F	FUSION01	SOLID	N/A	1.6628		g/L
3	DUP	S94T000121	0	F	FUSION01	SOLID	1.6628	1.8120	N/A	g/L
4	SAMPLE	S94T000122	0	F	FUSION01	SOLID	N/A	1.8212		g/L
5	DUP	S94T000122	0	F	FUSION01	SOLID	1.8212	1.8214	N/A	g/L

Final page for worklist # 87

Sonja Morris
Analyst Signature

10/17/94
Date

WHC-SD-WM-DP-074, REV. 0

Sample 121 $\frac{.4157\,g}{.250\,mL} = 1.6628\,g/L$

Sample 121 DUP $\frac{.4530\,g}{.250\,mL} = 1.8120\,g/L$

Sample 122 $\frac{.45539\,g}{.250\,mL} = 1.8212\,g/L$

Sample 122 Dup $\frac{.4531\,g}{.250\,g} = 1.8124\,g/L$

Data Entry Comments:

Bertrand Griffin II 10-19-94

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 204

Analyst: LMH **Instrument:** FUS01 SWF04495 **Method:** LA-549-141/C-1

Worklist Comment: SY-103 FUSION - 273->299, 275->300

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	BLNK-PREP				FUSION01	SOLID	2.5000	2.5000	N/A	g/L
2	SAMPLE	S94T000299	0	F	FUSION01	SOLID	N/A	1.7448		g/L
3	DUP	S94T000299	0	F	FUSION01	SOLID	1.7448	1.8240	N/A	g/L
4	SAMPLE	S94T000300	0	F	FUSION01	SOLID	N/A	2.5308		g/L
5	DUP	S94T000300	0	F	FUSION01	SOLID	2.5308	2.5332	N/A	g/L

Final page for worklist # 204

Analyst Signature 12-6-94 **Date**

WHC-SD-WM-DP-074, REV. 0

1) Sample .4362 g / .250 l (.7448 g/l)

DUP → .4500 / .250 l (1.8240 g/l)

Sample .6327 g / .250 l = (2.5308 g/l)

DUP .6383 g / .250 l = (2.5332 g/l)

Data Entry Comments:

Leonard Griffin II 12-13-94

Units shown for QC (SPK) may not reflect the actual units.

Page: 1

LABCORE Data Entry Template for Worklist# 534

Analyst: EAL **Instrument:** FUS01 AL 11066 **Method:** LA-549-141 C2

Worklist Comment: SY-103 FUSION - 273->299, 275->300 RERUN 1 20mm/hr Brian Parsons

Seg	Type	Sample#	Rep	Al	Test	Matrix	Actual	Found	DL	Unit
1	BLNK-PREP				FUSION01	SOLID	250	250	N/A	g/L
2	SAMPLE	S94T000299	1	F	FUSION01	SOLID	N/A	1.0488		g/L
3	DUP	S94T000299	1	F	FUSION01	SOLID	1.0488	1.0740	N/A	g/L
4	SAMPLE	S94T000300	1	F	FUSION01	SOLID	N/A	2.680		g/L
5	DUP	S94T000300	1	F	FUSION01	SOLID	2.680	2.0628	N/A	g/L

2-9-95

2.068

2.068

Final page for worklist # 534

Ellen Lambert
Analyst Signature

02/08/95
Date

30ml

299 $\frac{.2622}{.250} = 1.0488$ g/l

30ml

299 Dup $\frac{.2685}{.250} = 1.0740$ g/l

WHC-SD-WM-DP-074, REV. 0

300 DUP

50ml

$\frac{.5157}{.250} = 2.0628$ g/l

300

BII 2-13-95 50ml

$\frac{.5170}{.250} = 2.0680$ g/l

should be 2.068 g/L

Data Entry Comments: Sample 394T000273 was very low in volume so amount of .4-.6 was cut to .25-.30 EAL Sample 300 & Dup-green in color but clear.

Bertrand Griffin II 2-13-95

Units shown for QC (SPK) may not reflect the actual units.

INORGANIC ANALYSES

DIFFERENTIAL SCANNING CALORIMETRY

LABCORE Data Entry Template for Worklist# 725

Analyst: SMF **Instrument:** DSC01 **Book #** 12N14-A

Method: LA-514-113 Rev/Mod 13-1

WHC-SD-WM-DP-074, REV. 0

Worklist Comment: Please run SY-103 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID	28.45	29.5	N/A	Joules/g
94000020	SY-103	2	SAMPLE	S95T000281	0		DSC-01	LIQUID	N/A	32.9		Joules/g
94000020	SY-103	3	DUP	S95T000281	0		DSC-01	LIQUID	32.9	31.7	N/A	Joules/g
94000020	SY-103	4	SAMPLE	S95T000282	0		DSC-01	LIQUID	N/A	86.6		Joules/g
94000020	SY-103	5	DUP	S95T000282	0		DSC-01	LIQUID	86.6	83.5	N/A	Joules/g

Final page for worklist # 725

Susie M. Fulton 4-24-95
Analyst Signature **Date**

Analyst Signature **Date**

Entered & Verified 4/10/95. J M Fuge

595T000281 has a second exotherm of 34.1 J/g at 315°C and 36.1 J/g at 315°C in duplicate. There is an endotherm of 1237.5 J/g at 125°C and 1063.6 J/g at 123.7°C in duplicate.
595T000282 has an endotherm of ~~184.0~~ 1817.8 J/g at 121°C and 984.0 J/g at 121°C in the duplicate. ~~JMF~~ gmf 4/10/95

Data Entry Comments:
595T000281 sample is a thick clear liquid with about 50-40% suspended particles
595T000282 sample is a light yellow liquid

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.

DSC STD 12N14-A

6.525 mg

Rate: 10.0 °C/min

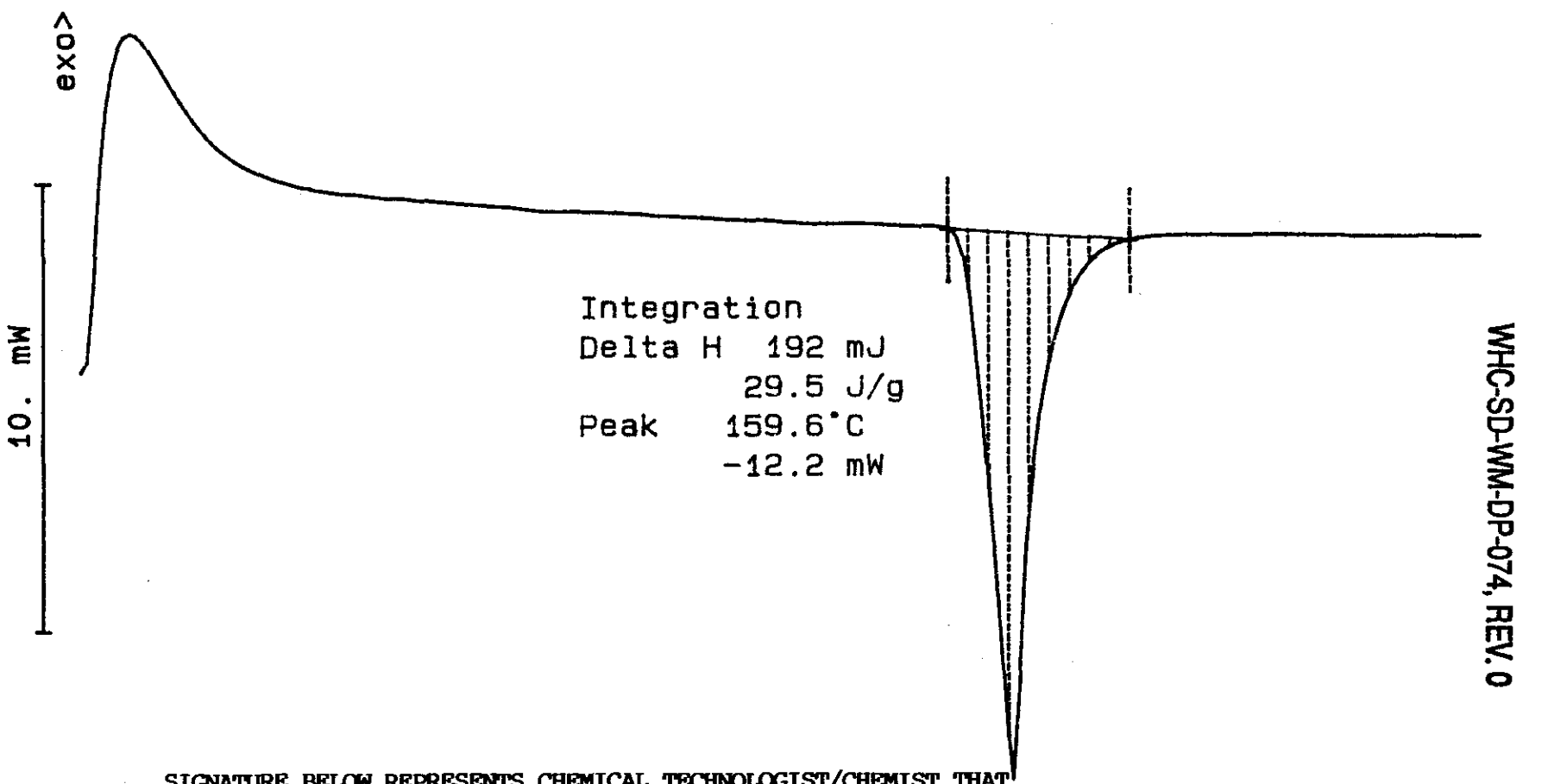
File: 00047.001

Ident: 0.0

DSC METTLER

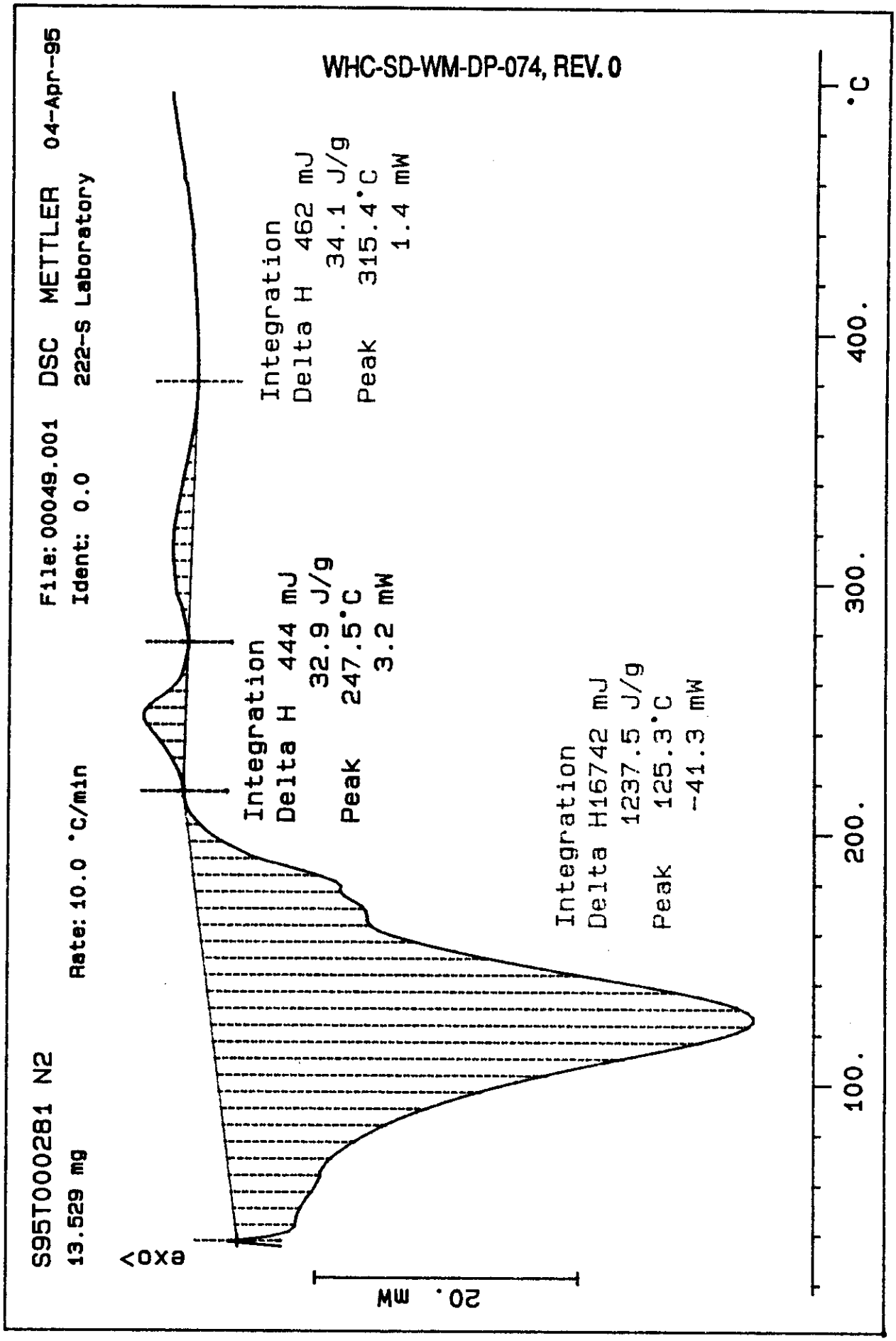
222-S Laboratory

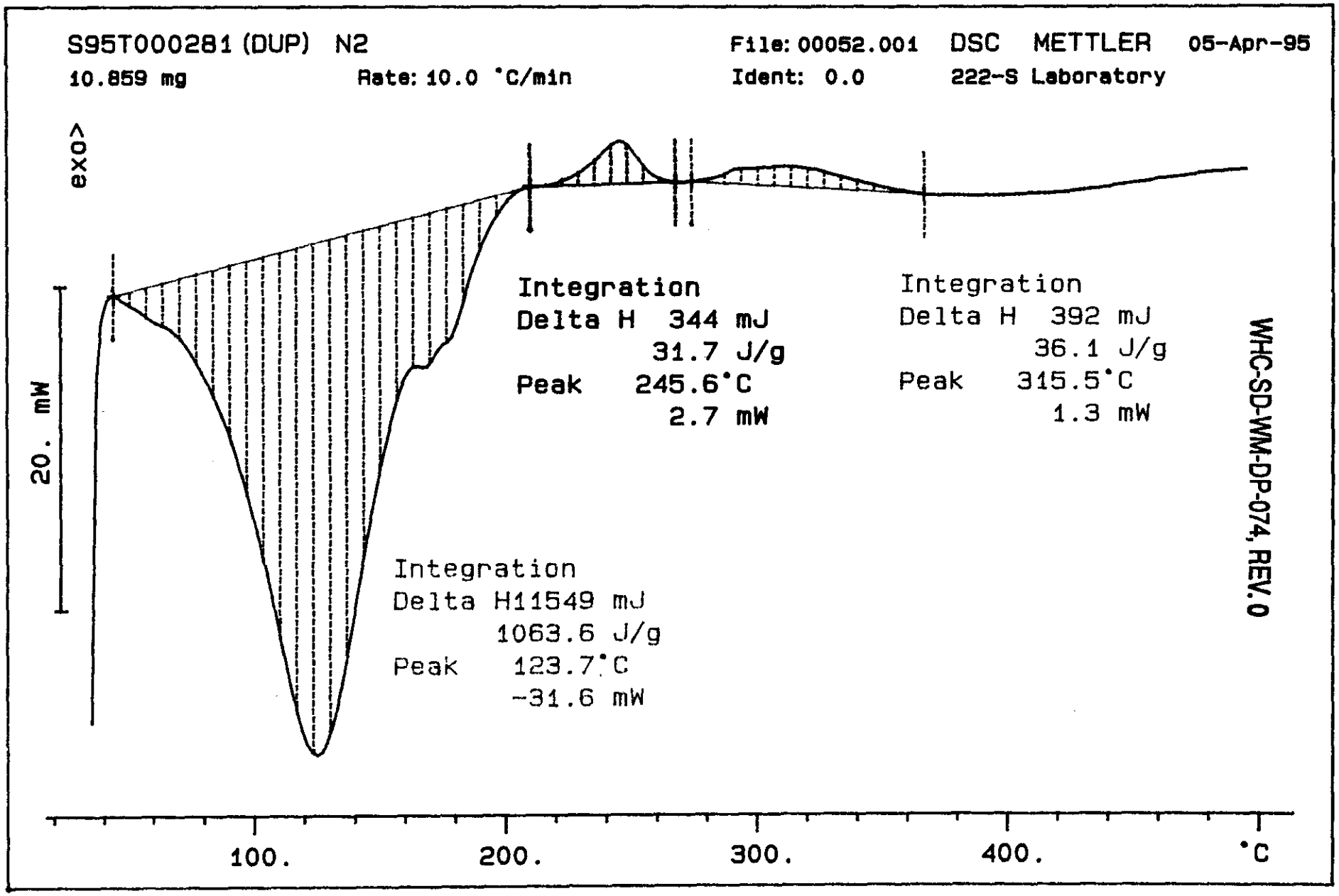
04-Apr-95



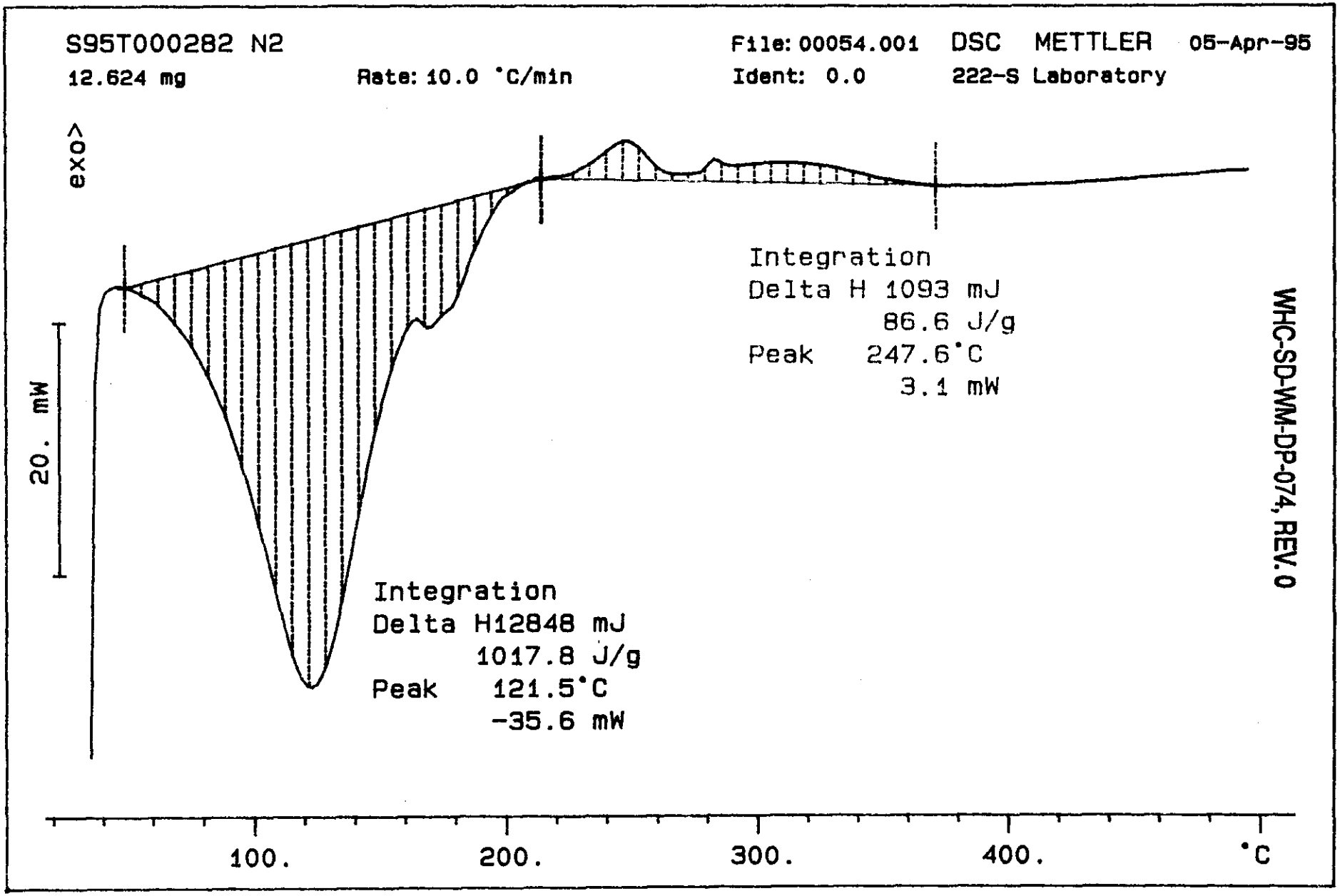
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 515 TO 519.

Susie M. Dalton 4-4-95

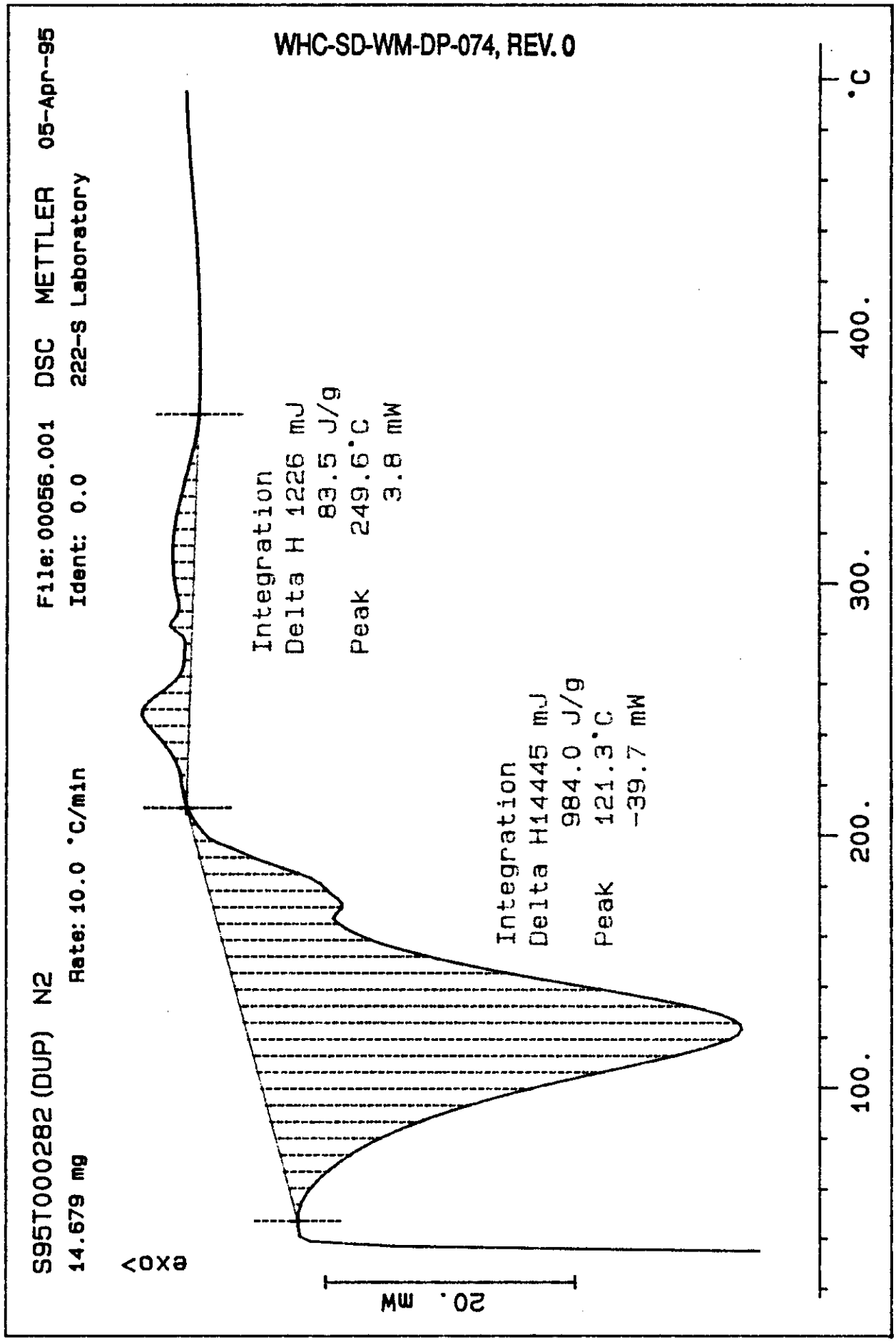

S95T000281 N2
13.529 mg
Rate: 10.0 °C/min
File: 00049.001 DSC METTLER 04-Apr-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 462 mJ
34.1 J/g
Peak 315.4°C
1.4 mW
Integration
Delta H 444 mJ
32.9 J/g
Peak 247.5°C
3.2 mW
Integration
Delta H16742 mJ
1237.5 J/g
Peak 125.3°C
-41.3 mW
exo>
20. mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-074, REV. 0



WHC-SD-WM-DP-074, REV. 0


S95T000282 (DUP) N2
14.679 mg
Rate: 10.0 °C/min
File: 00056.001 DSC METTLER 05-Apr-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 1226 mJ
83.5 J/g
Peak 249.6°C
3.8 mW
Integration
Delta H14445 mJ
984.0 J/g
Peak 121.3°C
-39.7 mW
exo>
20. mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 726

Analyst: SMF **Instrument:** DSC01 **Book #** 12N14A

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

WHC-SD-WM-DP-074, REV. 0

Worklist Comment: Please run SY-103 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID	28.45	27.3	N/A	Joules/g
94000020	SY-103	2	SAMPLE	S95T000283	0		DSC-01	LIQUID	N/A	29.2		Joules/g
94000020	SY-103	3	DUP	S95T000283	0		DSC-01	LIQUID	29.2	31.4	N/A	Joules/g
94000020	SY-103	4	DUP2	S95T000283	0		DSC-01	LIQUID	29.2	31.8	N/A	Joules/g
94000020	SY-103	5	SAMPLE	S95T000284	0		DSC-01	LIQUID	N/A	0		Joules/g
94000020	SY-103	6	DUP	S95T000284	0		DSC-01	LIQUID	0	0	N/A	Joules/g

Final page for worklist # 726

Jenn Fuge for Susie Fulton 4/11/95
Analyst Signature **Date**

Analyst Signature **Date**

See attached sheet for original signature

Entered + reviewed 4/11/95 - Jenn Fuge

Data Entry Comments: S95T000283 has a second exotherm at ~~321~~ 321 °C of 36.7 J/g; 31.2 J/g in duplicate; 33.6 J/g in duplicate 2. S95T000283 has an endotherm of 1247.9 J/g at 119 °C; 1049.5 J/g in duplicate; 1000.3 J/g in dup2. SMF 4/19/95

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.

S95T000284 has ~~two~~ endotherms 1424.5 J/g at 111 °C and 14.9 J/g at 265 °C; duplicate has 1336.4 J/g at 111 °C and 11.6 J/g at 265.4 °C.

LABCORE Data Entry Template for Worklist# 726

Analyst: SMH **Instrument:** DSC01 **Book #** 12119-A

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

WHC-SD-WM-DP-074, REV. 0

Worklist Comment: Please run SY-103 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID			N/A	Joules/g
94000020	SY-103	2	SAMPLE	S95T000283	0		DSC-01	LIQUID	N/A			Joules/g
94000020	SY-103	3	DUP	S95T000283	0		DSC-01	LIQUID			N/A	Joules/g
94000020	SY-103	4	SAMPLE	S95T000284	0		DSC-01	LIQUID	N/A			Joules/g
94000020	SY-103	5	DUP	S95T000284	0		DSC-01	LIQUID			N/A	Joules/g

Final page for worklist # 726

Susie M. Fulton 4-6-95

Analyst Signature **Date** **Analyst Signature** **Date**

Data Entry Comments: both samples are a light tan liquid with suspended light brown particles

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.

DSC STD 12N14-A

6.340 mg

Rate: 10.0 °C/min

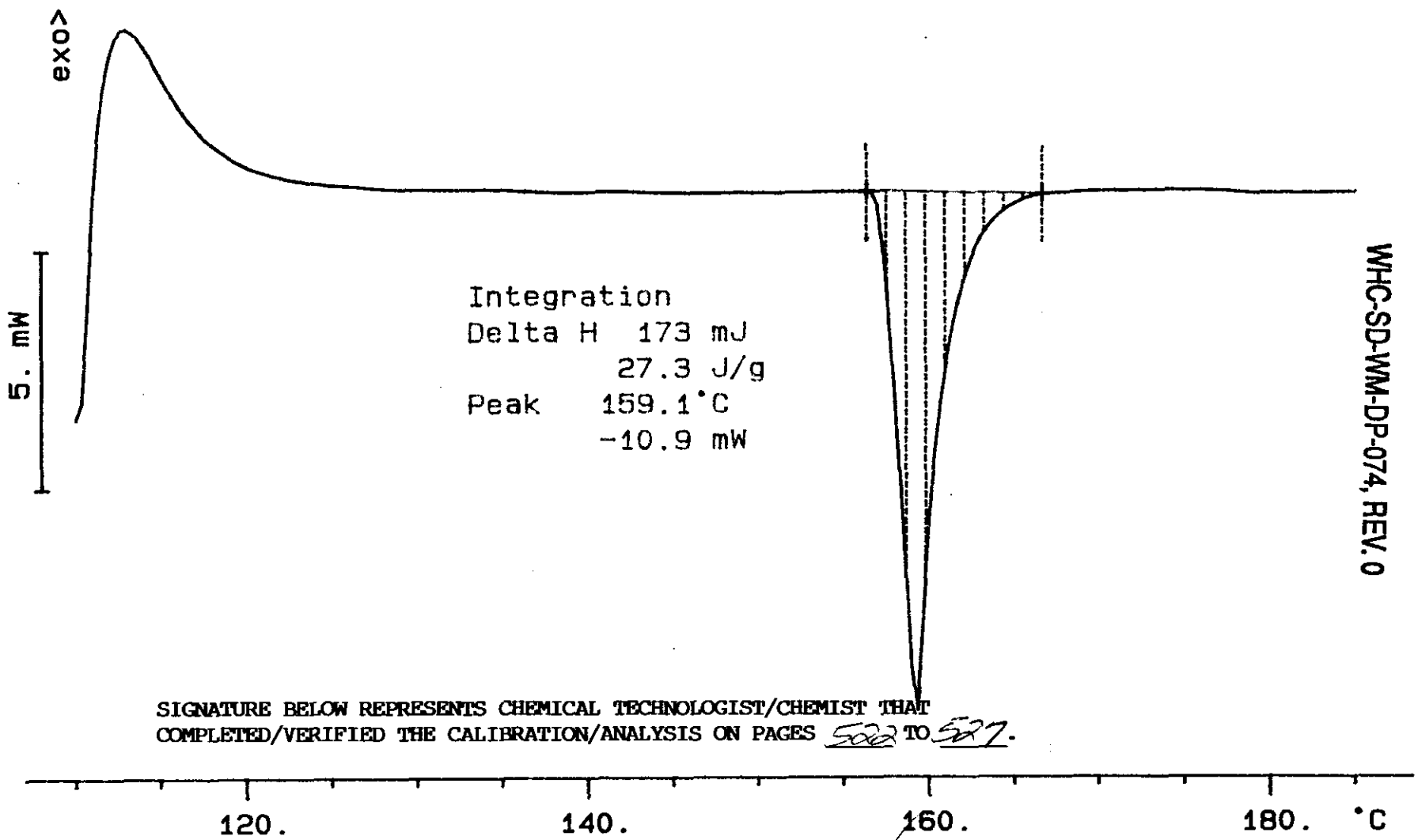
File: 00070.001

Ident: 0.0

DSC METTLER

222-S Laboratory

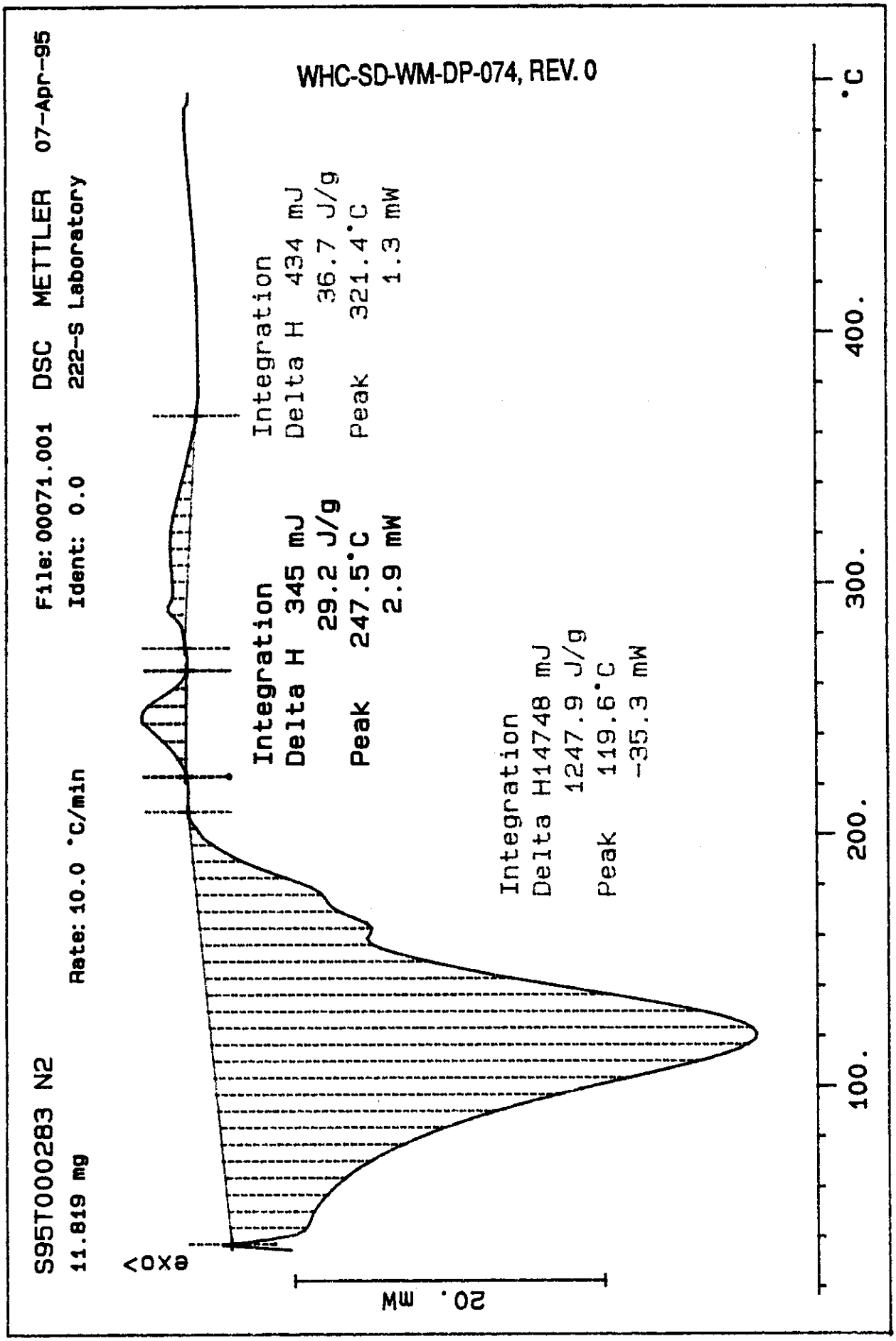
06-Apr-95

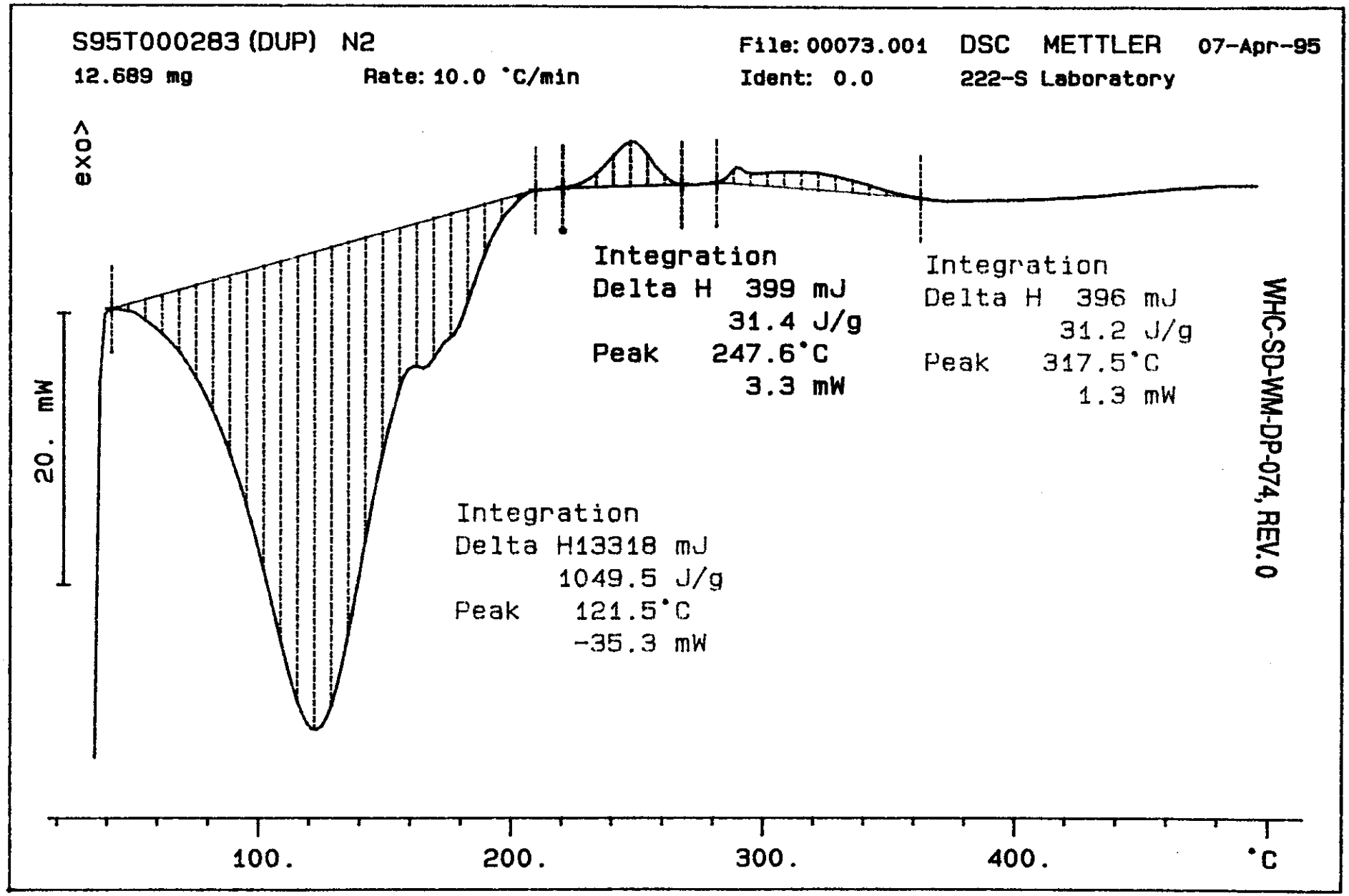


SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 522 TO 527.

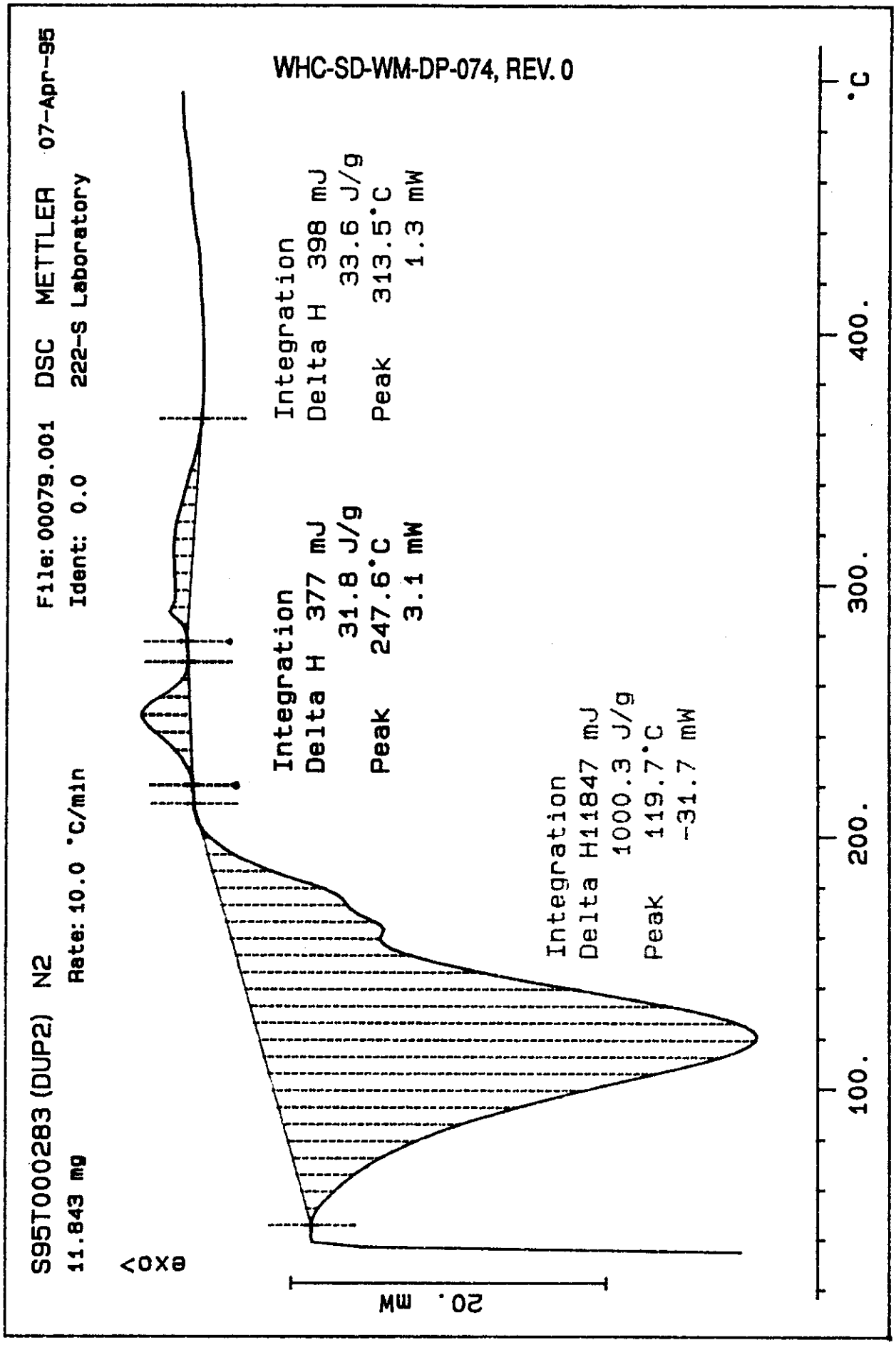
Jesse M. Dutton 4-6-95

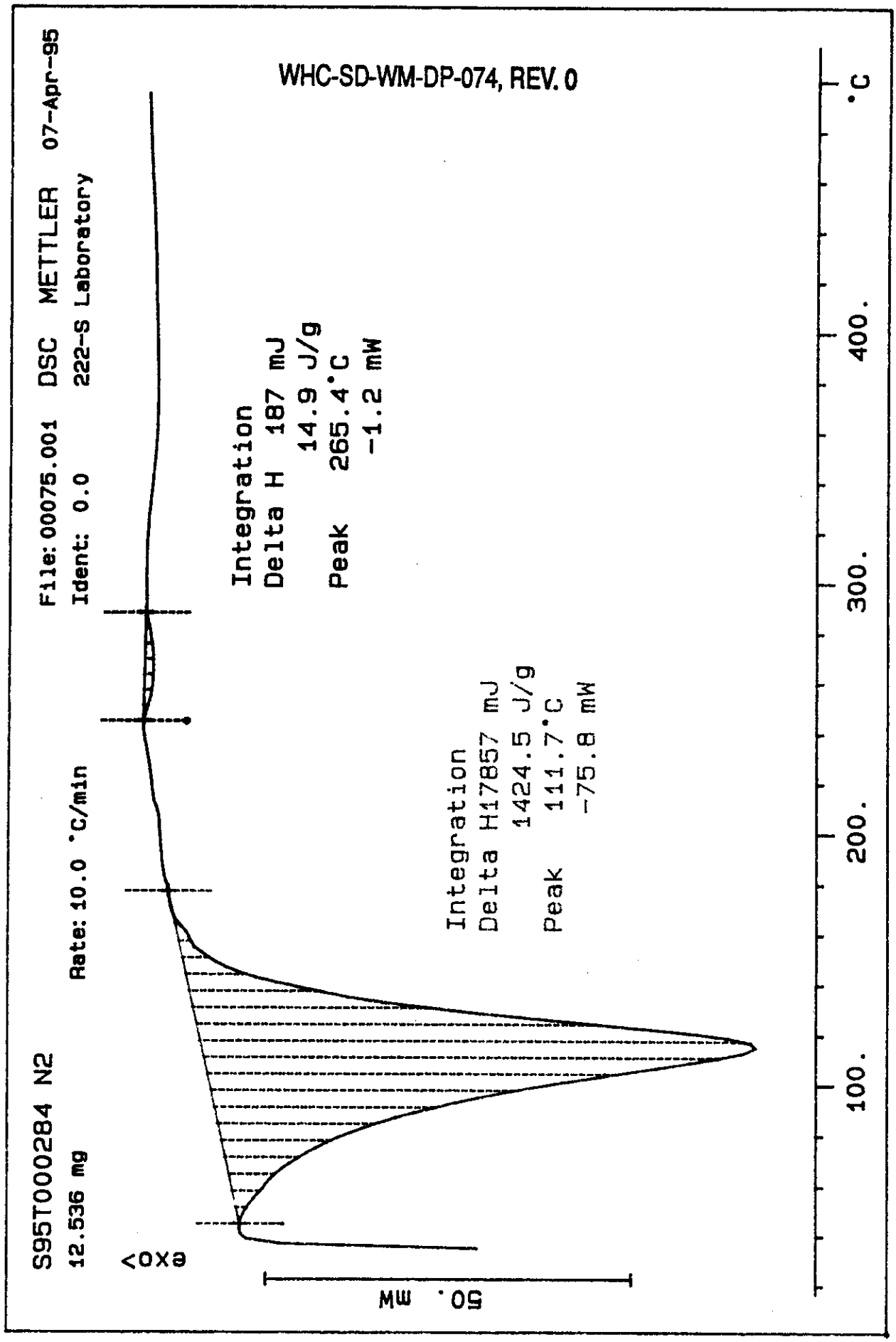
WHC-SD-WM-DP-074, REV. 0

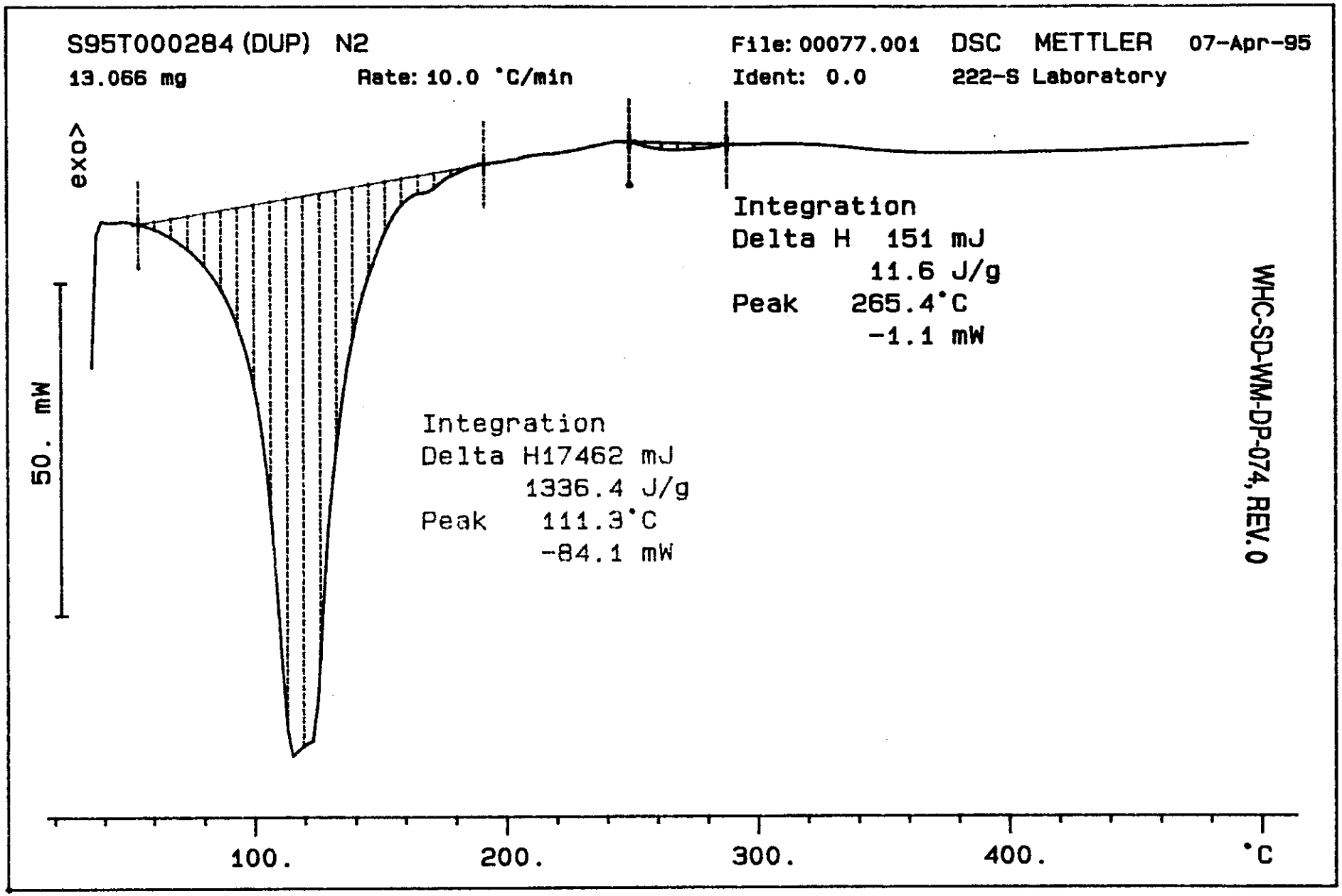

S95T000283 N2
11.819 mg
Rate: 10.0 °C/min
File: 00071.001 DSC METTLER 07-Apr-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 345 mJ
29.2 J/g
Peak 247.5°C
2.9 mW
Integration
Delta H 434 mJ
36.7 J/g
Peak 321.4°C
1.3 mW
Integration
Delta H14748 mJ
1247.9 J/g
Peak 119.6°C
-35.3 mW
exo>
20. mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-074, REV. 0


S95T000283 (DUP2) N2
11.843 mg
Rate: 10.0 °C/min
File: 00079.001 DSC METTLER 07-Apr-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 377 mJ
31.8 J/g
Peak 247.6°C
3.1 mW
Integration
Delta H 398 mJ
33.6 J/g
Peak 313.5°C
1.3 mW
Integration
Delta H11847 mJ
1000.3 J/g
Peak 119.7°C
-31.7 mW
exo>
20. mW
100.
200.
300.
400.
°C


S95T000284 N2
12.536 mg
Rate: 10.0 °C/min
File: 00075.001 DSC METTLER 07-Apr-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 187 mJ
14.9 J/g
Peak 265.4°C
-1.2 mW
Integration
Delta H17857 mJ
1424.5 J/g
Peak 111.7°C
-75.8 mW
exo>
50. mW
100.
200.
300.
400.
°C



WHC-SD-WM-DP-074, REV. 0

worklistrpt Version 2.0 02/21/95
03/21/95 09:09

LABCORE Data Entry Template for Worklist# 727

Analyst: SMF **Instrument:** DSC01 **Book #** 12N14-A

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

Worklist Comment: Please run SY-103 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	LIQUID	28.45	30.5	N/A	Joules/g
94000020	SY-103	2 SAMPLE	S95T000285	0		DSC-01	LIQUID	N/A	Ø		Joules/g
94000020	SY-103	3 DUP	S95T000285	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 727

Susie M. Sutton 4-5-95

Analyst Signature **Date** **Analyst Signature** **Date**

Verified 4/14/95 J. M. Fuge
& Entered

Data Entry Comments: Sample a clear liquid

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.

DSC STD 12N14-A

6.340 mg

Rate: 10.0 °C/min

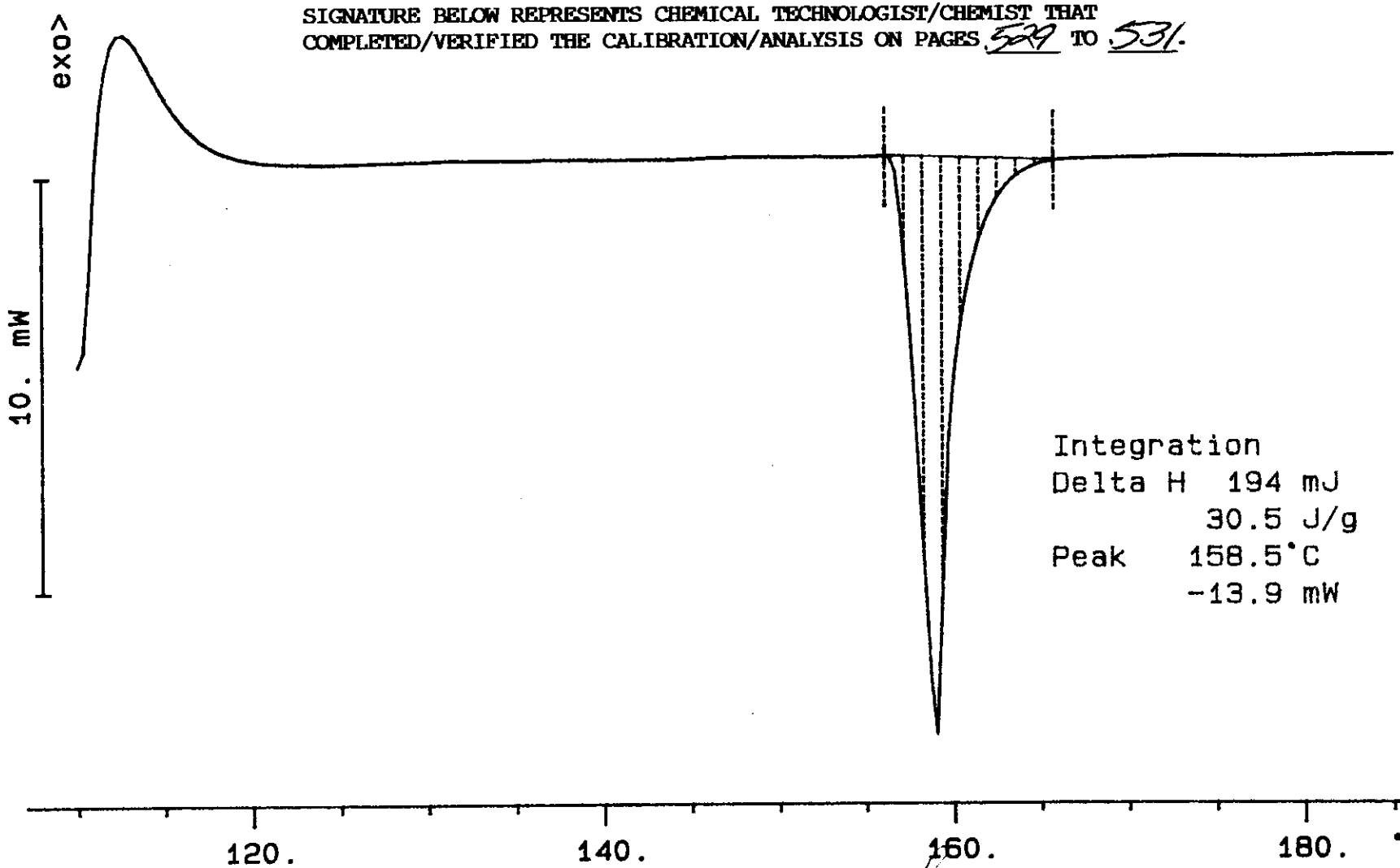
File: 00058.001

Ident: 0.0

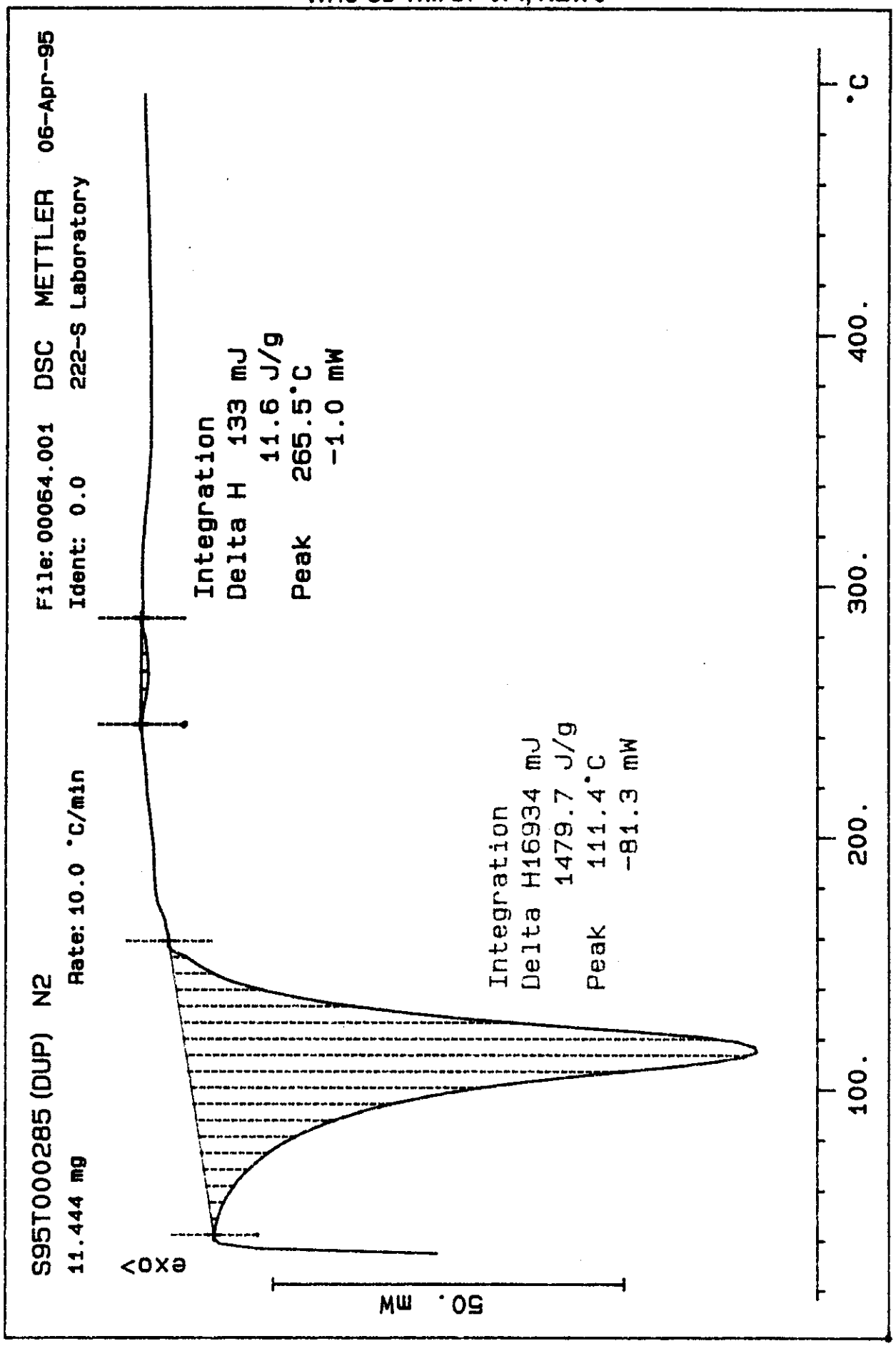
DSC METTLER 05-Apr-95

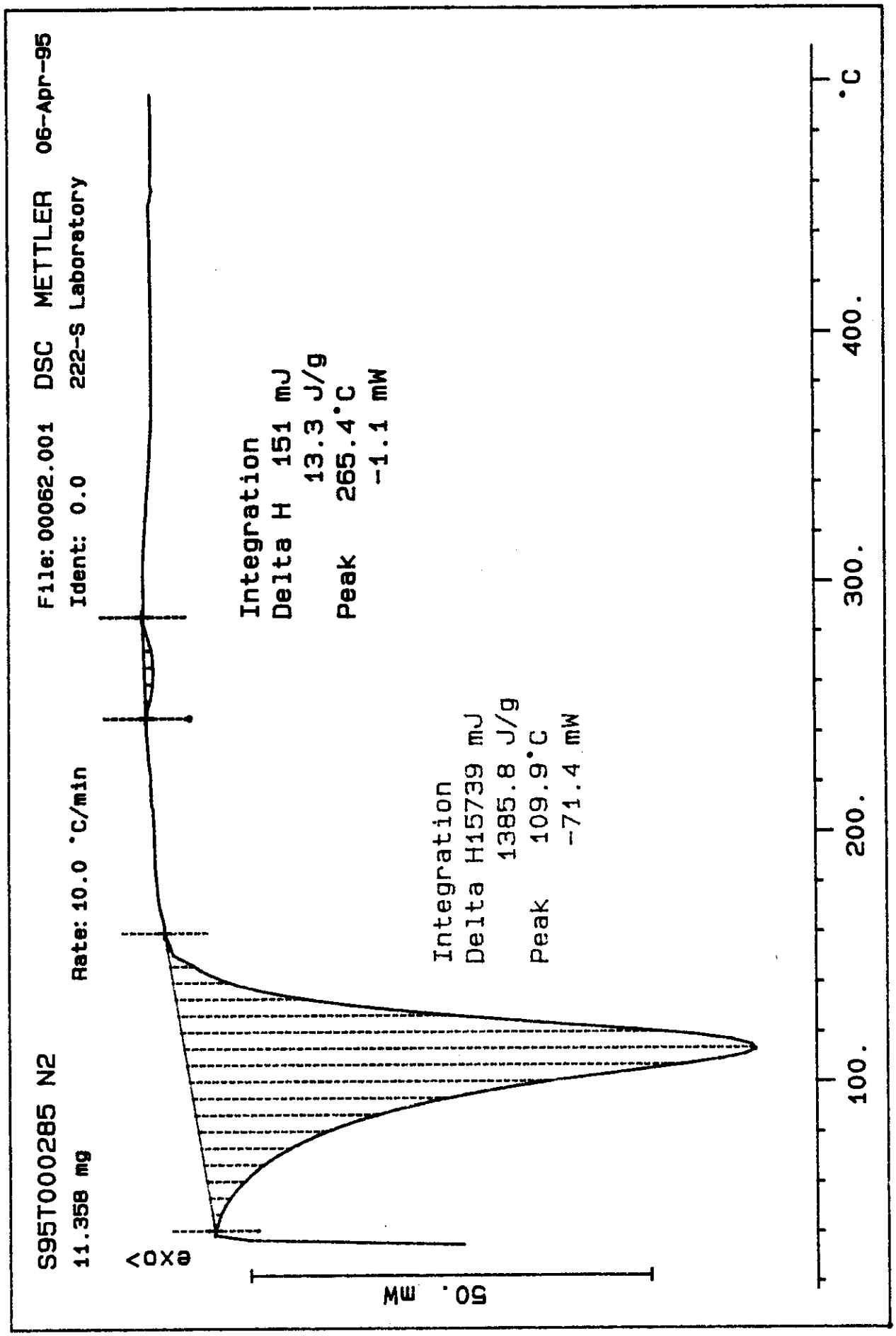
222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 529 TO 531.



Susie M. Fulton 4-5-95


S95T000285 (DUP) N2
11.444 mg
Rate: 10.0 °C/min
File: 00064.001 DSC METTLER 06-Apr-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 133 mJ
11.6 J/g
Peak 265.5°C
-1.0 mW
Integration
Delta H16934 mJ
1479.7 J/g
Peak 111.4°C
-81.3 mW
exo>
50. mW
100.
200.
300.
400.
°C


S95T000285 N2
11.358 mg
Rate: 10.0 °C/min
File: 00062.001 DSC METTLER 06-Apr-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 151 mJ
13.3 J/g
Peak 265.4°C
-1.1 mW
Integration
Delta H15739 mJ
1385.8 J/g
Peak 109.9°C
-71.4 mW
exo>
50. mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 1422

Analyst: RDM **Instrument:** DSC0 1 **Book #** 12 N14 - A

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

Worklist Comment: Please run SY-103 DSC under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID	28.45	29.2	N/A	Joules/g
94000020	SY-103	2	SAMPLE	S94T000273	0		DSC-01	SOLID	N/A	170.3		Joules/g
94000020	SY-103	3	DUP	S94T000273	0		DSC-01	SOLID	170.3	167.1	N/A	Joules/g
94000020	SY-103	4	SAMPLE	S94T000275	0		DSC-01	SOLID	N/A	156.3		Joules/g
		5	STD				DSC-01	SOLID	28.45	28.5	N/A	Joules/g
94000020	SY-103	6	DUP	S94T000275	0		DSC-01	SOLID	156.3	160.7	N/A	Joules/g

Final page for worklist # 1422

See attached for signatures 5/23/95 BDV
Analyst Signature **Date**

5-23-95
Analyst Signature **Date**

Verified by Blandina Valenzuela

Data Entry Comments: S94T000273 produced one endotherm at 112°C with a delta H of 1002.2 J/g. S94T000275 produced one endotherm at 116°C with a delta H of 874.2 J/g.

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# 1422

Analyst: [illegible] **Instrument:** DSC0 _____ **Book #** _____

Method: LA-514-113 Rev/Mod _____

Worklist Comment: Please run SY-103 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
94000020	SY-103	2	SAMPLE	S94T000273	0		DSC-01	SOLID	N/A			Joules/g
94000020	SY-103	3	DUP	S94T000273	0		DSC-01	SOLID			N/A	Joules/g
94000020	SY-103	4	SAMPLE	S94T000275	0		DSC-01	SOLID	N/A			Joules/g
94000020	SY-103	5	DUP	S94T000275	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 1422

[illegible]

Analyst Signature **Date**

Analyst Signature **Date**

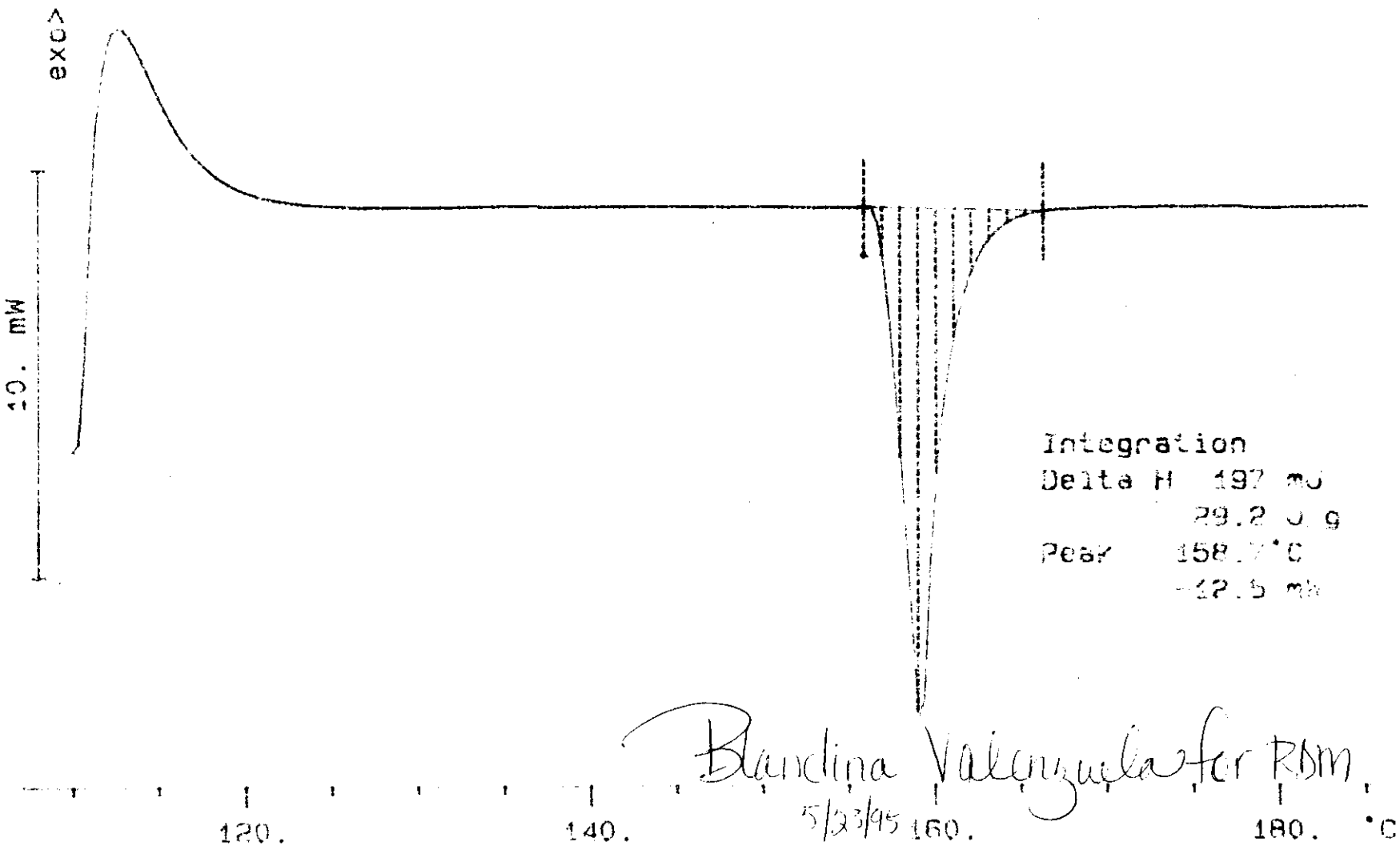
Data Entry Comments:

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.

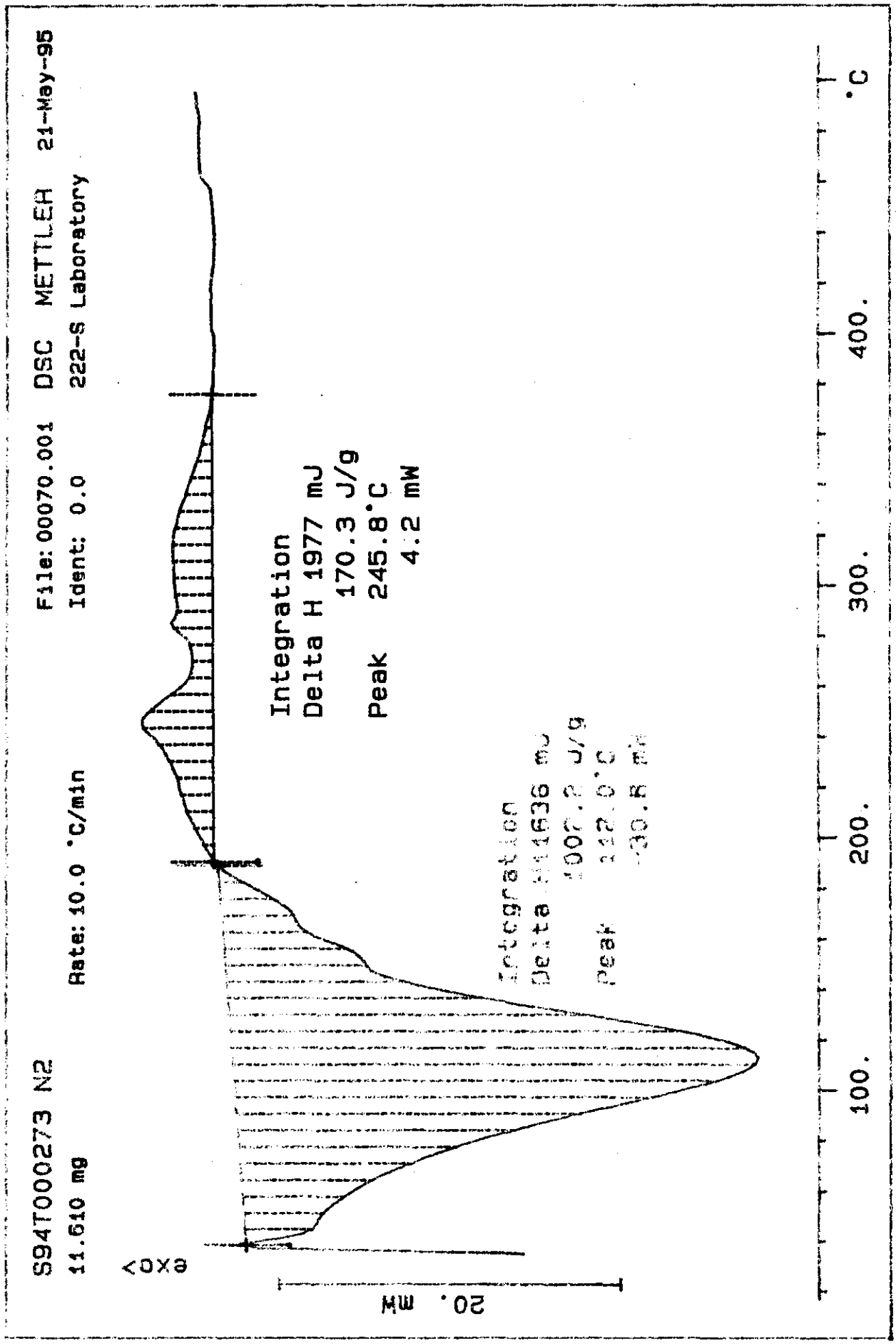
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 534 TO 539.

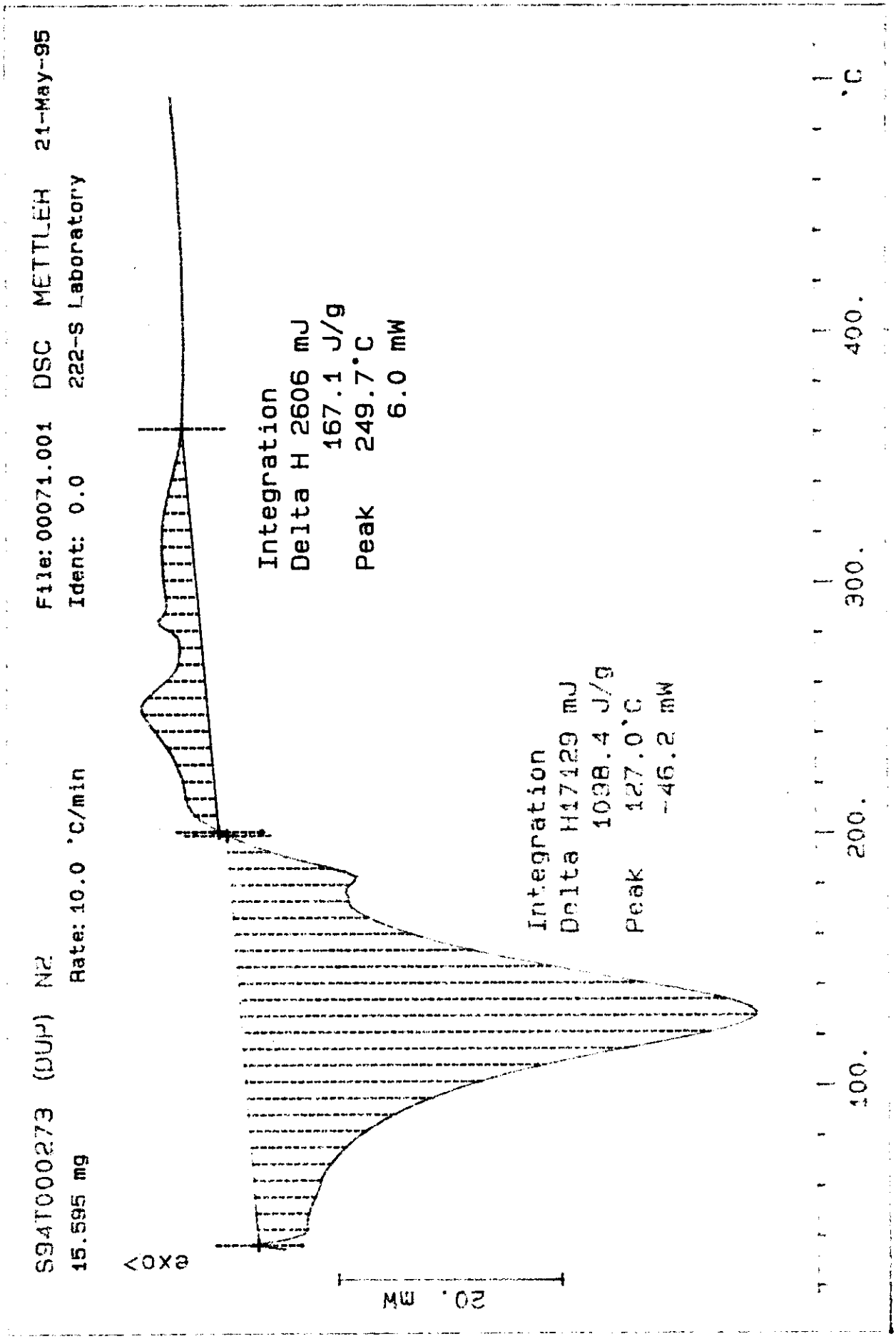
DSC STD 12N14-A File: 00069.001 DSC METTLER 21-May-95

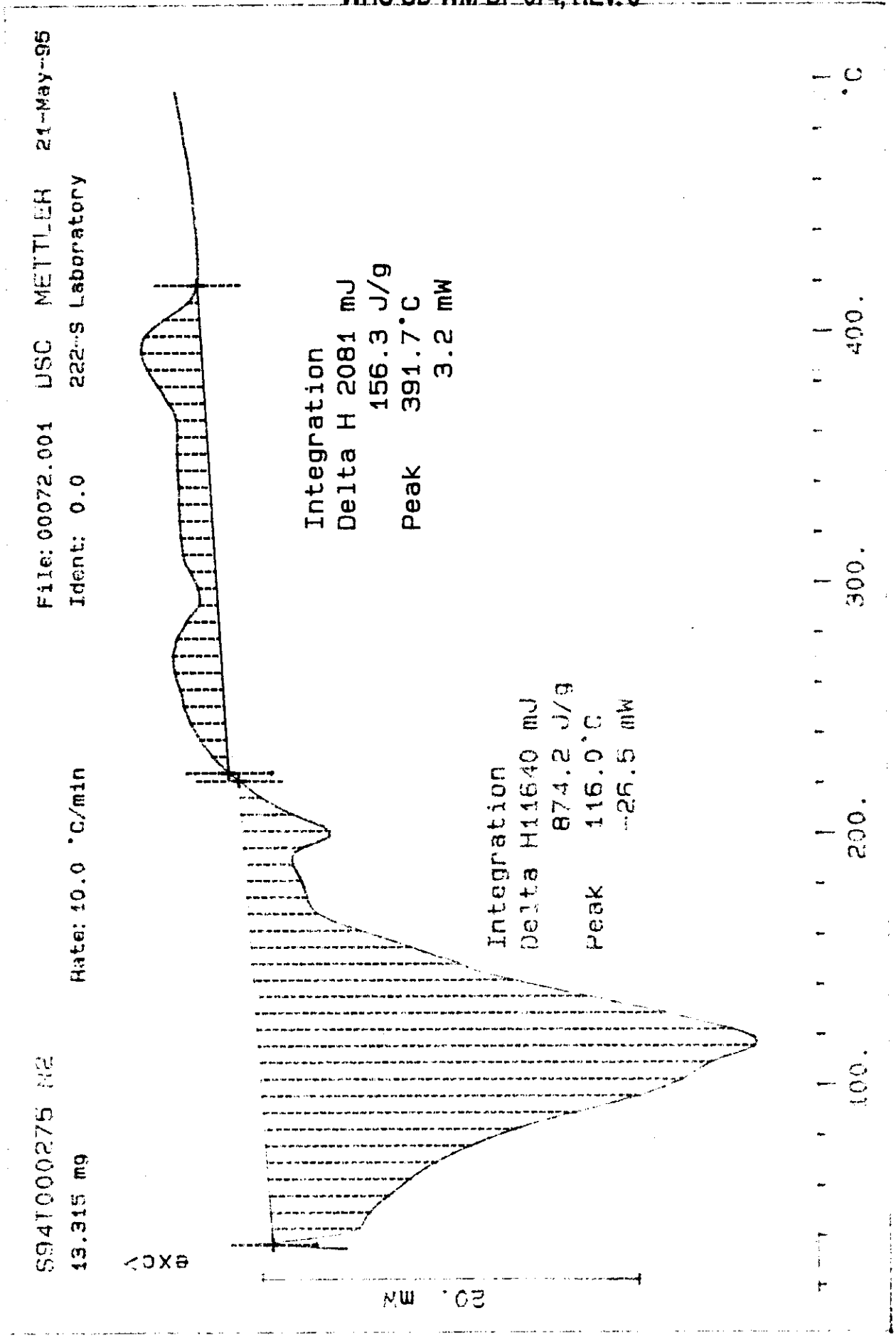
6.748 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory

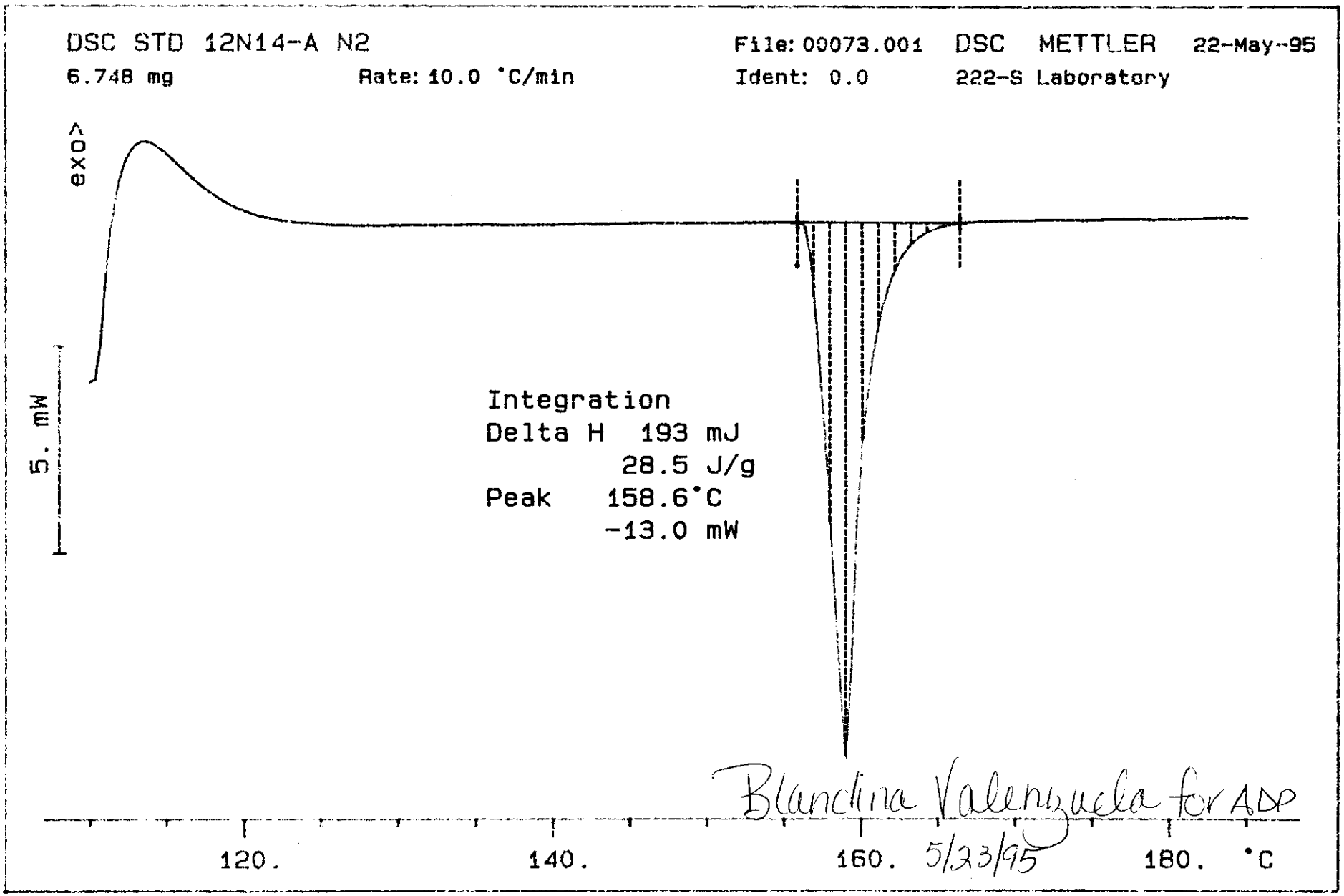


Blandina Valenzuela for RDM
5/23/95

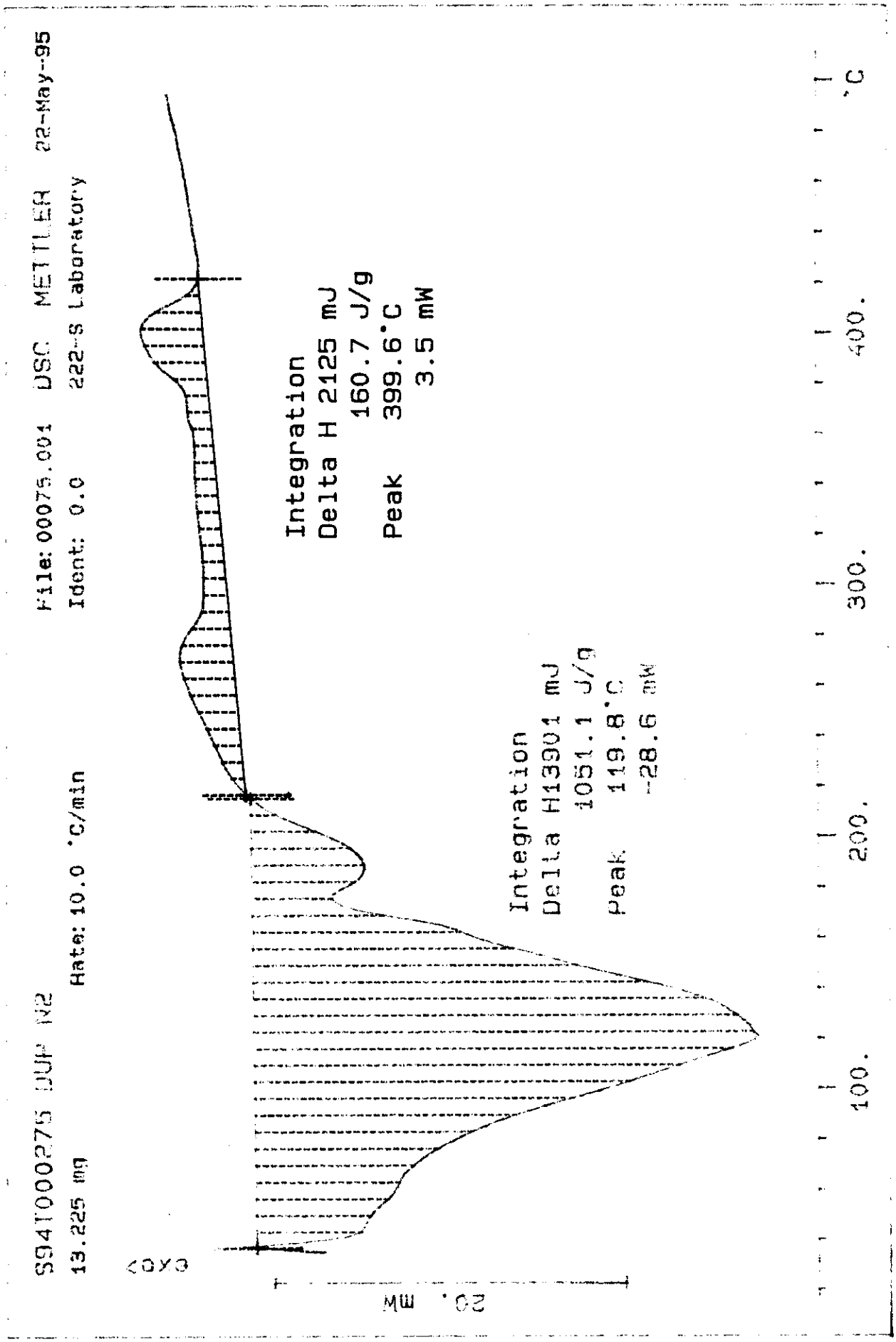

S94T000273 N2
11.610 mg
Rate: 10.0 °C/min
File: 00070.001
Ident: 0.0
DSC METTLER 21-May-95
222-S Laboratory
Integration
Delta H 1977 mJ
170.3 J/g
Peak 245.8°C
4.2 mW
Integration
Delta H 1636 mJ
Peak
exo>
20. mW
100.
200.
300.
400.
°C


S94T000273 (DUP) N2
15.595 mg
Rate: 10.0 °C/min
File: 00071.001 DSC METTLER 21-May-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 2606 mJ
167.1 J/g
Peak 249.7°C
6.0 mW
Integration
Delta H17129 mJ
1098.4 J/g
Peak 127.0°C
-46.2 mW
exo>
20. mW
100.
200.
300.
400.
°C


S94T000275 M2
13.315 mg
Rate: 10.0 °C/min
File: 00072.001 USC METTLER 21-May-95
Ident: 0.0 222-S Laboratory
Integration
Delta H 2081 mJ
156.3 J/g
Peak 391.7°C
3.2 mW
Integration
Delta H11640 mJ
874.2 J/g
Peak 116.0°C
-26.5 mW
20. mW
exo>
100.
200.
300.
400.
°C



Blanclina Valenzuela for ADP 5/23/95


S94T0002?5 DUP N2
13.225 mg
File: 00075.001 DSC METTLER 22-May-95
Rate: 10.0 °C/min
Ident: 0.0 222-S Laboratory
Integration
Delta H 2125 mJ
160.7 J/g
Peak 399.6°C
3.5 mW
Integration
Delta H13901 mJ
1051.1 J/g
Peak 119.8°C
-28.6 mW
EXO
20. mW
100.
200.
300.
400.
°C