COMPLETE

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN No. 625767

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	3a. USQ Required?	4. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	John M. Conner, Characterization Plans, Coordination and Reports, R2-12, 373-2711	[] Yes [X] No	10/26/95
	5. Project Title/No./Work Order No. Tank 241-C-203	6. Bldg./Sys./Fac. No. N/A	7. Approval Designator Q
	8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-WM-DP-112, Rev. 0	9. Related ECN No(s). N/A	10. Related PO No. N/A

11a. Modification Work	11b. Work Package No.	11c. Modification Work Complete	11d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	N/A	N/A Cog. Engineer Signature & Date	N/A Cog. Engineer Signature & Date

12. Description of Change

This ECN is being generated in order to update/add additional information to the existing document.

13a. Justification (mark one)

Criteria Change	[]	Design Improvement	[]	Environmental	[]	Facility Deactivation	[]
As-Found	[]	Facilitate Const	[]	Const. Error/Omission	[]	Design Error/Omission	[X]

13b. Justification Details

This ECN will assist in the completion of the documentation process for this document.

14. Distribution (include name, MSIN, and no. of copies)

See attached distribution sheet.

RELEASE STAMP

OFFICIAL RELEASE BY WHC

DATE OCT 31 1995

Sta. 4

3

A-7900-013-2 (11/94) GEF095

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1) ECN-625767

15. Design Verification Required	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
[] Yes	Additional	[] $	Additional	[] $	Improvement	[]
[X] No	Savings	[] $	Savings	[] $	Delay	[]

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	Spares Multiple Unit Listing	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	Operational Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]	Tickler File	[]
Environmental Report	[]	Inspection Plan	[]		[]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision
N/A		

20. Approvals

	Signature	Date		Signature	Date
OPERATIONS AND ENGINEERING			ARCHITECT-ENGINEER		
Cog. Eng. J.M. Conner	J.M. Conner	10-27-95	PE		
Cog. Mgr. J.G. Kristofzski	John Kristofzski	10/31/95	QA		
QA W.A. Hendricksen	W.A. Hendricksen	10/27/95	Safety		
Safety			Design		
Environ.			Environ.		
Other			Other		
Program Support A.D. Rice	Ann D. Rice	10-27-95			
			DEPARTMENT OF ENERGY		
			Signature or a Control Number that tracks the Approval Signature		
			ADDITIONAL		

RELEASE AUTHORIZATION

Document Number:	WHC-SD-WM-DP-112, REV 1
Document Title:	Revised Final Report for Tank 241-C-203, Auger Samples 95-AUG-020 and 95-AUG-021
Release Date:	10/31/95

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara Broz 10/31/95

Kara Broz

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SUPPORTING DOCUMENT

1. Total Pages 126

2. Title	3. Number	4. Rev No.
Revised Final Report for Tank 241-C-203, Auger Samples 95-AUG-020 and 95-AUG-021	WHC-SD-WM-DP-112	1

5. Key Words	6. Author
Revised Final Report, Final Report, Final, Tank 241-C-203, Tank C-203, C-203, C Farm, Auger Sample, 95-AUG-020, 95-AUG-021	Name: John M. Conner Signature: J M Conner Organization/Charge Code 75310/N4G4C

7. Abstract

N/A

8. RELEASE STAMP

OFFICIAL RELEASE BY WHC (3)
DATE OCT 31 1995
Sta. 4

A-6400-073 (08/94) WEF124

RECORD OF REVISION	(1) Document Number WHC-SD-WM-DP-112	Page A

(2) Title
Revised Final Report for Tank 241-C-203, Auger Samples 95-AUG-020 and 95-AUG-021

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release (5) Cog. Engr.	(6) Cog. Mgr. Date
0	(7) Initially released 05/18/95 on EDT-612156.	J.M. Conner	J.G. Kristofzski
RS 1	Incorporate per ECN-625767.	J.M. Conner	J.G. Kristofzski
		JM Conner	JG Kristofzski 10/31/95

A-7320-005 (08/91) WEF168

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-112, REV. 1

ANALYTICAL SERVICES

REVISED FINAL REPORT FOR TANK 241-C-203, AUGER SAMPLES 95-AUG-020 AND 95-AUG-021

Date Printed: OCTOBER 23, 1995

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PART I

WHC-SD-WM-DP-112, REV. 1

REVISED FINAL REPORT FOR TANK 241-C-203, AUGER SAMPLES 95-AUG-020 AND 95-AUG-021

NARRATIVE

REVISED FINAL REPORT FOR TANK 241-C-203, AUGER SAMPLES 95-AUG-020 AND 95-AUG-021

ANALYTICAL SUMMARY

Two auger samples from tank 241-C-203 (C-203) were received at the 222-S Laboratories and underwent safety screening analyses, consisting of differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), and total alpha activity. No notification limits were exceeded for the analyses. Two samples were submitted for a density determination at the request of Characterization Plant Engineering.

SCOPE

This document is the revised final report for the tank C-203 auger samples collected on April 5, 1995 (samples 95-AUG-20 and 95-AUG-021). This revision was necessary as two subsamples were re-digested and rerun for total alpha. Each auger sample was received, extruded, and analyzed by the 222-S Laboratories in accordance with the Tank Characterization Plan (TCP) referenced below. Part I of this report contains the updated narrative discussing the analyses, updated data summary tables, photocopies of the hot cell logbook pages, and the laboratory worklists and raw data for the additional sample preparation and total alpha analyses.

Part II of this report (beginning on page 36) consists of the original 45-day/final report in its entirety. This section contains the original narrative and data tables, photographs of the extruded auger samples, the auger sample chain-of-custody forms, and the worklists and raw data for the DSC, TGA, density, and original total alpha analyses.

SAMPLE RECEIPT, EXTRUSION, AND SUBSAMPLING

95-AUG-020

Sample 95-AUG-020 was collected from riser 7 (east coordinate) of tank C-203 using a 20-inch auger sampler. The sample was taken on April 5, 1995 at 0943 hours. It was received into the 222-S Laboratories on April 6 and extruded on April 7. The sampler was almost completely full. A total of 493.21 grams of solid material were collected, with no drainable liquid. The samples appeared to be yellow/cream colored overlaid with brown to dark brown sludge. Upon subsampling (and incidental mixing), the material appeared brown. The auger sample was divided into half segments for analyses. Archive samples of each half segment have been retained in the hot cell.

95-AUG-021

Sample 95-AUG-021 was collected from riser 7 (west coordinate) of tank C-203 using a 20-inch auger sampler. The sample was taken on April 5, 1995 at 1135 hours. It was received into the 222-S Laboratories on April 6 and extruded on April 7. The auger was completely full. A total of 627.69 grams of solid material were collected, with no drainable liquid. The solids ranged from a yellow/cream color to dark brown. More yellow material was noticed on the upper half than on the lower half of the auger. Upon subsampling (and incidental mixing), the material appeared brown. The auger sample was divided into half segments for analyses. Archive samples of each half segment have been retained in the hot cell.

ANALYTICAL RESULTS

Analytical results are presented in the data summary tables, with the applicable notification limits shaded.

DSC (Energetics Content)

DSC analyses were performed under a nitrogen atmosphere using either procedure LA-514-113, Rev. B-1 (Mettler instrument) or procedure LA-514-114, Rev. B-0 (Perkin-Elmer instrument). The results are given in the data summary tables. Exotherms were detected for all four samples and their duplicates. The exotherms ranged from 30.82 to 97.33 J/g on a dry weight basis, or approximately 6 to 20 percent of the safety screening limit of 481 J/g. The relative percent differences (RPDs) between sample and duplicate results ranged from 1.04 to 6.38 on a dry weight basis. These results are within the TCP target of 10%. The three Laboratory Measurement Control System (LMCS) control standards exhibited recoveries of between 94.27 and 99.82 percent, which were within the program's specified accuracy control limits of 90 to 110 percent recovery.

TGA (Moisture Content)

Weight percent water was performed under a nitrogen atmosphere using either procedure LA-560-112, Rev. A-2 (Mettler instrument), or procedure LA-514-114, Rev. B-0 (Perkin-Elmer instrument). Results for the four samples and their duplicates ranged in value from 30.98 to 52.12 percent water by weight. Results for sample S95T000807 exceeded the RPD target of 10%. A triplicate analysis was performed, resulting in a determination of 39.79 weight percent water, compared to 41.04% and 33.26% for the sample and duplicate. The triplicate result does not appear in the summary tables, but is included in the raw data.

There was a significant variation in results between samples, with upper half samples being drier than lower half samples. All samples were well above the safety screening minimum of 17 weight percent. Three LMCS control standards were run for these TGA analyses and exhibited recoveries ranging from 96.77 to 99.70 percent, which were within the program's specified accuracy control limits of 90 to 110 percent.

Total Alpha Activity

Analyses for total alpha activity were performed on four samples (S95T000800, S95T000804, S95T000808, and S95T000812). Samples were prepared by fusion using procedure LA-549-141, Revisions C-2 and D-0, and analyses were performed using procedure LA-508-101, Rev. D-2. A duplicate sample was performed on each sample. Due to the poor sample reproducibility and spike recovery, the samples were rerun. Rerun results for samples S95T000808 and S95T000812 were retained, with the original results being rejected. However, the results of the rerun for samples S95T000800 and S95T000804 were less satisfactory than the original results (poorer spike recovery). Therefore, the original results for these samples were retained, and the results of the rerun were rejected.

Results ranged from 0.55 to 2.83 μCi/g. The RPDs for samples S95T000800 and S95T000804 were 9.90% and 18.5%, respectively The TCP target value is 10%.

The RPDs for samples S95T000808 and S95T000812 from auger 95-AUG-020 were exceptionally high; 91.8% and 101% respectively. The chemist speculated that perhaps the duplicate samples were inadvertently mislabeled. If this assumption were correct, the sample and duplicate results would match much more closely (recalculated RPDs would be 4.33% and 16.8%). Given the possible error, subsamples were redigested and counted. The results appear in the summary tables as samples S95T001259 and S95T001261. The RPDs for these re-digested samples were 10.7 and 2.54%, respectively.

A total of three control standards were run, with recoveries of between 91.89 and 92.57%, all within the TCP target of 90 to 110%. A spike was performed on sample S95T000800, with a recovery of 68.4%. This is outside of the TCP target recovery of 90 to 110%. Spike recoveries for alpha have typically been below the target criterion, particularly when solids can be observed on the sample mount (solids will be self-shielding to some extent). A spike was also run on sample S95T001259, with a recovery of 79.30%, which is within the method control limits.

Density

Characterization Plant Engineering requested a density determination on several auger samples. Their need was to verify that a Safety Analysis Report for Packaging (SARP-002) limit on the volume of waste allowed to be shipped in an auger sampler was not exceeded. The density was determined by procedure LO-160-103, Rev. A-7. Subsamples were centrifuged in a tared, graduated centrifuge cone. Two samples were submitted for density determination, with the results being 1.72 and 1.51 g/mL. These results are presented in the data summary tables.

Project Coordinator - John M. Conner

REFERENCE Schreiber, R. D., 1995, WHC-SD-WM-TP-306, Revision 0, "*Tank 241-C-203 Tank Characterization Plan*, dated March 6, 1995.

SAMPLE DATA SUMMARY

Revised Final Report for Auger Samples 95-AUG-020/021
C-203

CORE NUMBER: n/a
SEGMENT #: 95-AUG-020

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%
S95T000811			% Water by TGA on Perkin Elmer	%	17.00	110.0	96.96	n/a	30.98	31.78	31.38	2.55	n/a	n/a	n/a
S95T000811			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	481.0	94.27	n/a	34.91	33.19	34.05	5.05	n/a	n/a	n/a
S95T000811			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	50.87	48.37	49.62	5.04	n/a	n/a	n/a
S95T000812		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.01	91.89	<4.46e-03	8.87e-01	2.710	1.798	101	n/a	1.01e-02	5.1
S95T001261		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.01	92.47	<6.55e-03	2.330	2.390	2.360	2.54	n/a	1.49e-02	3.1

L Lower Half of Segment: 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%
S95T000807			% Water by TGA on Perkin Elmer	%	17.00	110.0	96.96	n/a	41.04	33.26	37.15	20.9	n/a	n/a	n/a
S95T000807			DSC Exotherm on Perkin Elmer	Joules/g	-1.0e+03	481.0	94.27	n/a	20.36	19.10	19.73	6.39	n/a	n/a	n/a
S95T000807			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	32.85	30.82	31.84	6.38	n/a	n/a	n/a
S95T000808		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.01	91.89	<4.46e-03	2.830	1.050	1.940	91.8	n/a	1.07e-02	3.0
S95T001259		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.01	92.47	<6.55e-03	7.08e-01	7.88e-01	7.48e-01	10.7	79.30	1.47e-02	5.8

=> Limit violated
=> Selected Limit

WHC-SD-WM-DP-112, REV. 1

Revised Final Report for Auger Samples 95-AUG-020/021
C-203

CORE NUMBER: n/a
SEGMENT #: 95-AUG-021

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%
S95T000798			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.720	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T000799			% Water by TGA using Mettler	%	17.00	110.0	99.54	n/a	33.67	36.66	35.16	8.50	n/a	n/a	n/a
S95T000799			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	66.02	64.32	65.17	2.61	n/a	n/a	n/a
S95T000799			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	99.82	n/a	42.80	41.70	42.25	2.60	n/a	n/a	n/a
S95T000800		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.01	92.57	<3.00e-03	1.440	1.590	1.515	9.90	68.40	6.91e-03	3.1

L Lower Half of Segment: 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%
S95T000802			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.510	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T000803			% Water by TGA using Mettler	%	17.00	110.0	99.54	n/a	52.12	49.03	50.58	6.11	n/a	n/a	n/a
S95T000803			DSC Exotherm Dry Calculated	Joules/g Dry	-1.0e+03	481.0	n/a	n/a	97.33	96.32	96.82	1.04	n/a	n/a	n/a
S95T000803			DSC Exotherm using Mettler	Joules/g	-1.0e+03	481.0	99.82	n/a	48.10	47.60	47.85	1.04	n/a	n/a	n/a
S95T000804		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.01	92.57	<3.00e-03	6.62e-01	5.50e-01	6.06e-01	18.5	n/a	6.47e-03	4.3

=> Limit violated
=> Selected Limit

WHC-SD-WM-DP-112, REV. 1

HOT CELL LOG BOOK

WHC-SD-WM-DP-112, REV. 1

NOTEBOOK/LOGBOOK UNCLASSIFIED COVERSHEET

SECTION I

CONTROLLED COPY

MAR 2 2 1995

RETURN TO UNCLASSIFIED DOCUMENT CONTROL

Notebook No. WHC-N-1141 1

Date of Issue 3-22-95 Copy 1

Title 241-C-203

Author L K Fuller

If continued from another notebook give the notebook number

This is a Controlled Notebook. The assigned custodian is responsible for this book. When the book is completed, contact your Records Management Specialist for a Retention Schedule. Complete Section II of this form and return the Notebook to Unclassified Document Control, A4-18.

Responsible Custodian	Payroll No.	MSIN	Date Assigned
L K Fuller		T6-31	MAR 2 2 1995

SECTION II

Complete this section prior to returning notebook to Unclassified Document Control, A4-18

Abstract: (Give brief description of notebook contents)

Period Covered: (Inclusive dates - Month/Day/Year)

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Custodian's Signature and Date

Retention Schedule:	Specialist Concurrence Name	Custodian's Manager's Name

BD-6001-256 (10/93)

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6

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

COPY

(1) Shipment Number 200W-08-TF (2) Sample Number 95-AUG-020 (3) Supervisor R.J. PRAZNIK / 373-7751

(4) Tank C203 (5) Riser R7, EAST COORD. (6) Cask Serial Number C1038

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5	<.5
Side Dose Rate	.8	.5
Bottom Dose Rate	<0.5	<.5
Smearable Contamination (Alpha)	<20	<20
(Beta-Gamma)	<1K	<1K
RCT* (Signature)	[illegible]	[illegible]

(8) Shipment Description	
A. Work Package Number	ES-95-00011-0
B. Cask Seal Number	#1028
C. Date and Time Sample Removed from Tank	4-5-95 / 0943hrs
D. Expected Liquid Content	5%
E. Expected Solid Content	95%
F. Dose Rate Through Drill String	25mR/hr
G. Expected Sample Length	19"

(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
C203 R/7 EAST coord	222S LAB	DA KRAHN DA Krahn	4-6-95/10:25	
(17) Relinquished By (Sign and PRINT)		(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
DA Krahn DA KRAHN		[illegible]	4-6-95 10:25	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
Jubal D. Helms Jubal D Helms		[illegible] E E Dubbs	4-6-95 1110	
(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 - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

WHC-SD-WM-DP-112, REV. 1

C 203 95-AUG-020 Riser 7 EC 4/7/95

PC John M Conner
LABCORE SAMPLE # S95T000702
Worklist # 1006

Tape # 1 C-Farm

Balance checks:

20 g = 19.99 g 500g = 499.98 g

Hot cell temp. & humidity

Temp = 83.2 °F Humidity 20 %

Solids Description:

All flutes mostly full of sample material. Material appeared dark brown on auger. When scraped onto tray, much of underlying material appeared yellow - cream colored.

Overall, bottom-half material was a lighter shade of brown than upper half.

Subsampled into two half segments, divided at flute #9.

Keith Fuller

8

4/7/95 C 203 95-AUG-020 R 7

C-203 95-AUG-020 R-7 Lower HALF SOLIDS
Lower half subsampled into Jar 6715.

238.99 g of solids.

Flutes 9-18

Final	462.55	gm
Initial	223.56	gm
Net	238.99	gm

Upper half subsampled into Jar 6716.

254.22 g of solids

Flutes 1-8

Final	478.99	gm
Initial	224.77	gm
Net	254.22	gm

Totals:

JAR # 6715	238.99	grams
JAR # 6716	254.22	grams
	493.21	grams

Keith Fulk

C203 95-AUG-020 R7 4/7/95
PHOTOGRAPH

C203 95-AUG-020 (Riser 7) EC

COPY

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200W-08-TE (2) Sample Number 95-AUG-021 (3) Supervisor R.J. Pranzik / 373-7751

(4) Tank C203 (5) Riser 7 West COORD. (6) Cask Serial Number C1022

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5	<.5
Side Dose Rate	.5	.5
Bottom Dose Rate	<0.5	<.5
Smearable Contamination (Alpha)	<20	<20
(Beta-Gamma)	<1K	<1K
RCT* (Signature)	[signature]	[signature]

(8) Shipment Description	
A. Work Package Number	ES-95-00011-0
B. Cask Seal Number	#1029
C. Date and Time Sample Removed from Tank	4-5-95 / 1135hrs
D. Expected Liquid Content	5%
E. Expected Solid Content	95%
F. Dose Rate Through Drill String	17 mR/hr
G. Expected Sample Length	15"

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

Keith Fuller 4/4/95

(10) Field Comments

(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
C203 R/7 West COORD.	222S-LABS	DA Krahn DA KRAHN	4-6-95/1025	
(17) Relinquished By (Sign and PRINT)		(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
DA Krahn DA KRAHN		[signature]	4-6-95 10:25	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
[signature] CE Byrd		EE Dubes EE Dubes	4-6-95	
(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 - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-6001-326 (03/94)

WHC-SD-WM-DP-162, REV. 1

C 203 95-AUG-021 riser 7 w.c. 4/11/95

P.C. : John Conner 373-5743
Labcore # : S95T000699 Worklist # 1005
Tape # 1 C Farm

Balance check: 20 = 19.99 gm 500 = 499.98 gm

Hot Cell Temp = 78.9 °F Humidity = 20%

Liner Liquid: Auger (N/A)

Sample Description:

Auger Completely full. Solids were dark brown. Noticed yellow material on flute #8.

Subsampled into upper and lower half segments.
Bottom half, flutes 9-18: medium to dark brown.
Consistency is soft, wet, and damp. Homogeneous throughout.

Upper half (Flutes 1-8): Dark brown, wet solids.
Underlying material is yellow interspersed w/ dark brown.

~~Upper~~ RKT
4/11/95

4/11/95 C203 95-AUG-021

Subsampling:

* C-203- 95-AUG-021 upper half solids

Jar 6781 250 mL jar

Final wt 592.49 g
Initial wt 226.26 g
Net wt 366.23 g

* C-203 95-AUG-021 lower half solids

Jar 6780 250 mL jar

Final wt 486.55 g
Initial wt 225.09 g
Net wt 261.46 g

Total:

Jar	6781	366.23 g
Jar	6780	261.46 g
Total		627.69 g

Keith Tullu
4/11/95

C-203 95-AUG-021 Rian 7 (w.c.)

C-203 95-AUG-021 4/1/95
PHOTOGRAPH

April 10, 95

HOMOGENIZATION & SUBSAMPLING

C203 95 AUG-020 (UPPER HALF) R-7

JAR# 6716 (250ml)
Initial wt. 478.60 gram
Final wt. 399.01
Net wt. 79.59

JAR# 6871 (20ml)
Initial wt 26.92 gram
Final wt. 35.03
Net wt. 8.11

Archive 595T000813
Jar# 6920 (40ml)
Initial wt. 25.09 gram
Final wt. 93.35
Net wt. 68.26

- Transferred 8.11 gram into Jar# 6871, which was submitted to the lab for analysis: DSC/TGA, Fusion, AT.
- Transferred 68.26 gram into Jar# 6920 (40ml), which is now a archive sample.

C203 95 AUG-020 (LOWER HALF) R-2

JAR# 6715 (250ml)
Initial wt. 462.45 gram
Final wt. 379.52
Net wt. 82.93

JAR# 6870 (20ml)
Initial wt. 27.16 gram
Final wt. 37.86
Net wt. 10.70

Archive 595T000809
JAR# 6919 (40ml)
Initial wt. 25.16 gram
Final wt. 94.43
Net wt. 69.27

- Transferred 10.70 gram into Jar# 6870 (20ml), which was submitted to the lab: DSC/TGA, Fusion, AT
- Transferred 69.27 gram into Jar# 6919 (40ml) which is now a Archive Sample.

April 13, 95

HOMOGENIZATION & SUBSAMPLING

C203 95-AUG-21 (LOWER HALF) R-7

JAR # 6780 (250 ml.)
Initial wt. 486.29 grams
Final wt. 413.05
Net wt. 73.24

Archive 595T000805

JAR # 6968 (20 ml)
Initial wt. 27.97 grams
Final wt. 35.44
Net wt. 7.47

JAR # 7160 (40 ml.)
Initial wt. 25.27 grams
Final wt. 86.96
Net wt. 61.69

- Transferred 27.97 grams into jar # 6968 (20 ml.), which was submitted to the lab for analysis: DSC/TGA, Fusion, AT.
- Transferred 61.69 grams into jar # 7160 (40 ml.), which is now an Archive sample.

C203 95-AUG-21 (UPPER HALF) R-7

JAR # 6781 (250 ml.)
Initial wt. 592.26 grams
Final wt. 514.19
Net wt. 78.07

Archive 595T000801

JAR # 6969 (20 ml.)
Initial wt. 27.29 grams
Final wt. 32.81
Net wt. 5.52

JAR # 7161 (40 ml.)
Initial wt. 25.38 grams
Final wt. 93.89
Net wt. 68.51

- Transferred 27.29 grams into jar # 6969 (20 ml.), which was submitted to the lab for analysis: DSC/TGA, Fusion, AT.
- Transferred 78.07 grams into jar # 7161 (40 ml.), which is now an Archive sample.

May 11, 1995

Homogenization + Subsampling
C-203 95-Aug-021
Bulk Density

Jar # 6780 (250mL)
Initial WT 395.24 g
Final WT. 380.41 g
Net WT. 14.83 g

Tube
~~Jar~~ # 6780 (15mL) S95T000802
Initial WT 7.75
Final WT. 21.76
Net WT. 14.01

note * This sample is A resample
Transferred 14.01 gms into Centrifuge tube # 6780 And
Centrifuged sample for 1hr. @ 5000 rpm.
The Volume wa 9.25 mL And Bulk Density was 1.51 g/mL

Tank C-203 95-Aug-021
Bulk Density

Jar # 6780 (250 ml)
Initial WT. 412.81 g
Final WT. 395.30 g
Net WT. 17.51 g

Tube # 6780 (15mL) S95T000802
Initial WT. 7.60 g
Final WT. 23.01 g
Net WT. 15.41 g

Transferred 15.41 into Centrifuge tube # 6780
Centrifuged sample for 1hr. @ 5000 rpm.
Centrifuge tube broke Need to resample

Dan Campbell 5/11/95

May 11, 1995

Homogenization + Subsampling
C-203 95-Aug-021
Bulk Density

Jar #6781 (250 mL) ~~5957000798~~ 5/11/95
Initial WT. 513.95 g
Final WT. 495.89 g
Net WT. 18.10 g

Tube #6781 (15 mL) 5957000798
Initial WT 7.70 g
Final WT 24.00 g
Net WT 16.30 g

Transferred 16.30 gms Sample into Centrifuge Tube #6781 and Centrifuged sample for 1hr @ 5000 rpm. The Volume was 9.5 mL and Bulk Density was 1.72 g/mL.

Alan Campbell 5/11/95

SAMPLE PREPARATIONS

LABCORE Data Entry Template for Worklist# 1870

Analyst: TMM **Instrument:** FUS01 AL110606 **Book #** N/A

Method: LA-549-141 Rev/Mod 0-0

Worklist Comment: C-203 FUSION - 1258->1259, 1260->1261; PUT DOSE W/COMMENTS

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	250ml		N/A	g/L
95000056	C-203	2 SAMPLE	S95T001259	0 F	FUSION01	SOLID	N/A	2.2032		g/L
		.5508g → 250ml								
95000056	C-203	3 DUP	S95T001259	0 F	FUSION01	SOLID	2.2032	2.2004	N/A	g/L
		.5501g → 250ml								
95000056	C-203	4 SAMPLE	S95T001261	0 F	FUSION01	SOLID	N/A	2.1612		g/L
		.5403g → 250ml								
95000056	C-203	5 DUP	S95T001261	0 F	FUSION01	SOLID	2.1612	2.2112	N/A	g/L
		.5528g → 250ml								

Final page for worklist # 1870

Teresa Murphy 7-24-95
Analyst Signature **Date**

Data entry
Darlene K McFarland 7-25-95
Analyst Signature **Date**

Data Entry Comments:
Blank - 20ml HCl, 20ml HNO_3, <1% solids. Sample & dup 1259 - 20ml HCl, 20ml HNO_3, <1% solids. Dose rate - 3.5 mrad. Sample & dup 1261 - 20ml HCl, 20ml HNO_3, <1% solids. Dose rate - 6 mrad. HPT was Scott Corbaley.

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.

Bertram Griffin II 7-25-95

RADIOCHEMICAL ANALYSES

RUSH

LABCORE Data Entry Template for Worklist# 1902

Analyst: AKL **Instrument:** AB00 15 UB26872 **Book #** 132652

Method: LA-508-101 Rev/Mod D-2 WHC-SD-WM-DP-112, REV 1

Worklist Comment: Use .050 mL sample size. Use .100 mL A-SPK. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	0.15			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	4	SAMPLE	S95T001259	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	4	SAMPLE	S95T001259	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	5	DUP	S95T001259	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	5	DUP	S95T001259	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000056	C-203	6	SPK	S95T001259	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	7	SAMPLE	S95T001261	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	7	SAMPLE	S95T001261	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	8	DUP	S95T001261	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	8	DUP	S95T001261	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error

Final page for worklist # 1902

G Lewis 7-25-95
Analyst Signature Date

Sharon L Udell 7-26-95
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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

AT : LA-508-101 (D-2)
LA-548-101 (A-3) LIQUIDS

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		15	15
STANDARD	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4044	4182
1902	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.8	0.8
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		134.000	138.600
Sample #	Sample Concentration in µCi/L		2.54E-02	BOOK#
WORKLIST#1902	Replicate Concentration in µCi/L		2.62E-02	132B52
Instrument Code				
WB26872	Average Concentration in µCi/L		2.5797E-02	
Analyst				
AKL				
Date				
07/25/95				
Time				
03:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG
ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)
ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L
Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/mL	(Average) =	2.58E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.1%	1.61E-07 µCi/mL

Data Entry by: Sharon Goldson Date: 07/26/95
Approved by: [signature] Date: 7/26/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP- 112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			BLANK	REPLICATE
Type	DETECTOR NUMBER		15	15
BLANK	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	3	4
1902	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.8	0.8
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.2032	2.2032
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.381	0.381
Sample #	Sample Concentration in µCi/g	<	6.55E-03	BOOK#
S95T1259	Replicate Concentration in µCi/g	<	6.55E-03	
Instrument Code				
WB26872	Maximum Concentration in µCi/g	<	6.5468E-03	
Analyst				
AKL				
Date				
07/25/95				
Time				
03:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 6.55E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.				1.47E-02 µCi/g
RELATIVE COUNTING ERROR		=	51.9%	

Data Entry by:	Shawn L. Hayes	Date:	07/26/95
Approved by:	[illegible]	Date:	7/26/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112 REV. 1

AT : LA-508-101 (D-2)
LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1327	1195
1902	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.8	0.8
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.2032	2.2032
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		43.433	39.033
Sample #	Sample Concentration in µCi/g		7.46E-01	BOOK#
S95T1259	Replicate Concentration in µCi/g		6.71E-01	
Instrument Code				
WB26872	Average Concentration in µCi/g		7.0843E-01	
Analyst				
AKL				
Date				
07/25/95				
Time				
03:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	7.08E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	5.8%	1.47E-02 µCi/g

Data Entry by: Shyam [illegible] Date: 07/26/95

Approved by: [illegible] Date: 7/26/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP- 112, REV. 1

AT : LA-508-101 (D-2)
LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
DUPLICATE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1332	1463
1902	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.8	0.8
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.2004	2.2004
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		43.600	47.967
Sample #	Sample Concentration in µCi/g		7.50E-01	BOOK#
S95T1259	Replicate Concentration in µCi/g		8.25E-01	
Instrument Code				
WB26872	Average Concentration in µCi/g		7.8760E-01	
Analyst				
AKL				
Date				
07/25/95				
Time				
03:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	7.88E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	5.5%	1.47E-02 µCi/g

Data Entry by: [signature] Date: 07/26/95

Approved by: [signature] Date: 7/26/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		15	15
SPIKE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	58332	56794
1902	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.8	0.8
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.050	0.050
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.2032	2.2032
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Sample #	SPIKE VALUE in µCi/L	(SVal)	44.785	44.785
S95T1259	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.238	0.238
Instrument Code	SAMPLE + SPIKE µCi/g	(S+S)	3.34E+01	3.25E+01
WB26872	AVERAGE or MAXIMUM µCi/g from FORM C		7.0843E-01	
Analyst	BOOK#		112B43	
AKL				
Date				
07/25/95				
Time				
03:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

PERCENT SPIKE RECOVERY = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/SVol)/(DF/SS/Dg/L)))/SVal)*100

RESULT **AVG. PERCENT SPIKE RECOVERY = 79.3%**

Data Entry by: Sharon L. Gabler		Date:	26-Jul-95
Approved by:		Date:	7/26/95

Form 508101_X Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP- 112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	3978	4040
1902	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.8	0.8
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1612	2.1612
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		131.800	133.867
Sample #	Sample Concentration in µCi/g		2.31E+00	BOOK#
S95T1261	Replicate Concentration in µCi/g		2.34E+00	
Instrument Code				
WB26872	Average Concentration in µCi/g		2.3265E+00	
Analyst				
AKL				
Date				
07/25/95				
Time				
03:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	2.33E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.1%	1.49E-02 µCi/g

Data Entry by: Shirley J. Cable Date: 07/26/95

Approved by: [illegible] Date: 7/26/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP- 112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4282	4156
1902	COUNT TIME in MINUTES	(CT)	30	30
AT or TS ?	BACKGROUND in cpm	(BKG)	0.8	0.8
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.2112	2.2112
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		141.933	137.733
Sample #	Sample Concentration in µCi/g		2.43E+00	BOOK#
S95T1261	Replicate Concentration in µCi/g		2.36E+00	
Instrument Code				
WB26872	Average Concentration in µCi/g		2.3938E+00	
Analyst				
AKL				
Date				
07/25/95				
Time				
03:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	2.39E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.1%	1.46E-02 µCi/g

Data Entry by: Sharon Hatch Date: 07/26/95

Approved by: [illegible] Date: 7/26/95

Form 508101_C Rev. 1.3

Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

PART II

WHC-SD-WM-DP-112, REV. 0

ANALYTICAL SERVICES

45-DAY SAFETY SCREEN RESULTS AND FINAL REPORT FOR TANK 241-C-203, AUGER SAMPLES 95-AUG-020 AND 95-AUG-021

Date Printed: MAY 17, 1995

WHC-SD-WM-DP-112, REV. 0

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NARRATIVE

45-DAY SAFETY SCREEN RESULTS AND FINAL REPORT FOR TANK 241-C-203, AUGER SAMPLES 95-AUG-020 AND 95-AUG-021

ANALYTICAL SUMMARY

Two core samples from tank 241-C-203 (C-203) were received at the 222-S Laboratories and underwent safety screening analysis, consisting of differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), and total alpha activity. No notification limits were exceeded for the analyses. Two samples were submitted for a density determination at the request of Characterization Plant Engineering.

SCOPE

This document serves as the 45-day report deliverable for the tank C-203 auger samples collected on April 5, 1995 (samples 95-AUG-20 and 95-AUG-021). As no secondary analyses were required and no other analyses have been requested, this document also serves as the final report for C-203 auger sampling. Each sample was received, extruded, and analyzed by the 222-S Laboratories in accordance with the Tank Characterization Plan (TCP) referenced below. Included in this report are the primary safety screening results (DSC, TGA, and alpha) and density results. The worklists and raw data are included in this report. Photographs of the auger samples were taken during extrusion and, although not included in this report, are available.

SAMPLE RECEIPT, EXTRUSION, AND SUBSAMPLING

95-AUG-020

Sample 95-AUG-020 was collected from riser 7 (east coordinate) of tank C-203 using a 20-inch auger sampler. The sample was taken on April 5, 1995 at 0943 hours. It was received into the 222-S Laboratories on April 6 and extruded on April 7. The sampler was almost completely full. A total of 493.21 grams of solid material were collected, with no drainable liquid. The samples appeared to be yellow/cream colored overlaid with brown to dark brown sludge. Upon subsampling (and incidental mixing), the material appeared brown. The auger sample was divided into half segments for analyses. Archive samples of each half segment have been retained in the hot cell. The subsamples are identified in Table 1.

95-AUG-021

Sample 95-AUG-021 was collected from riser 7 (west coordinate) of tank C-203 using a 20-inch auger sampler. The sample was taken on April 5, 1995 at 1135 hours. It was received into the 222-S Laboratories on April 6 and extruded on April 7. The auger was completely full. A total of 627.69 grams of solid

material were collected, with no drainable liquid. The solids ranged from a yellow/cream color to dark brown. More yellow material was noticed on the upper half than on the lower half of the auger. Upon subsampling (and incidental mixing), the material appeared brown. The auger sample was divided into half segments for analyses. Archive samples of each half segment have been retained in the hot cell. The subsamples are identified in Table 1.

Table 1. Sample Identification

LABCORE #	Sample Description	Analysis
S95T000699	95-AUG-020 (riser 7-east) auger sample	extrusion
S95T000702	95-AUG-021 (riser 7-west) auger sample	extrusion
S95T000798	95-AUG-021 upper half	density
S95T000799	95-AUG-021 upper half, direct analysis	DSC/TGA
S95T000800	95-AUG-021 upper half, fusion/digest	Total alpha
S95T000801	95-AUG-021 upper half, archive	archive
S95T000802	95-AUG-021 lower half	density
S95T000803	95-AUG-021 lower half, direct analysis	DSC/TGA
S95T000804	95-AUG-021 lower half, fusion/digest	Total alpha
S95T000805	95-AUG-021 lower half, archive	archive
S95T000806	95-AUG-020 lower half	n/a
S95T000807	95-AUG-020 lower half, direct analysis	DSC/TGA
S95T000808	95-AUG-020 lower half, fusion/digest	Total alpha
S95T000809	95-AUG-020 lower half, archive	archive
S95T000810	95-AUG-020 upper half	n/a
S95T000811	95-AUG-020 upper half, direct analysis	DSC/TGA
S95T000812	95-AUG-020 upper half, fusion/digest	Total alpha
S95T000813	95-AUG-020 upper half, archive	archive

ANALYTICAL RESULTS

Analytical results are presented in Tables 2 and 3, with the applicable notification limits shaded.

DSC (Energetics Content)

DSC analyses were performed under a nitrogen atmosphere using either procedure LA-514-113, Rev. B-1 (Mettler instrument) or procedure LA-514-114, Rev. B-0 (Perkin-Elmer instrument). The results are given in Tables 2 and 3. Exotherms were detected for all four samples and their duplicates. The exotherms ranged from 30.82 to 97.33 J/g on a dry weight basis, or approximately 6 to 20 percent of the safety screening limit of 481 J/g. The relative percent differences (RPDs) between sample and duplicate results ranged from 1.04 to 6.38 on a dry weight basis. These results are within the TCP target of 10%. The three Laboratory Measurement Control System (LMCS) control standards exhibited recoveries of between 94.27 and 99.82 percent, which were within the program's specified accuracy control limits of 90 to 110 percent recovery.

TGA (Moisture Content)

Weight percent water was performed under a nitrogen atmosphere using either procedure LA-560-112, Rev. A-2 (Mettler instrument), or procedure LA-514-114, Rev. B-0 (Perkin-Elmer instrument). Results for the four samples and their duplicates ranged in value from 30.98 to 52.12 percent water by weight. Results for sample S95T000807 exceeded the RPD target of 10%. A triplicate analysis was performed, resulting in a determination of 39.79 weight percent water, compared to 41.04% and 33.26%. The triplicate result does not appear in the summary tables, but is included in the raw data.

There was a significant variation in results between samples, with upper half samples being drier than lower half samples. All samples were well above the safety screening minimum of 17 weight percent. Three LMCS control standards were run for these TGA analyses and exhibited recoveries ranging from 96.77 to 99.70 percent, which were within the program's specified accuracy control limits of 90 to 110 percent.

Total Alpha Activity

Analyses for total alpha activity were performed on four samples (S95T000800, S95T000804, S95T000808, and S95T000812). Samples were prepared by fusion using procedure LA-549-141, Rev. C-2, and analyses were performed using procedure LA-508-101, Rev. D-2. A sample duplicate was performed on each sample. Due to the poor sample reproducibility and spike recovery, the samples were rerun. Rerun results for samples S95T000808 and S95T000812 were retained, with the original results being rejected. However, the results of the rerun for samples S95T000800 and S95T000804 were less satisfactory than the original results (poorer spike recovery). Therefore, the original results for these samples were retained, and the results of the rerun were rejected.

Sample and duplicate results ranged from 0.55 to 2.83 μCi/g. The RPDs for samples S95T000800 and S95T000804 were 9.90% and 18.5%, respectively The TCP

target value is 10%. The RPDs for samples S95T000808 and S95T000812 were exceptionally high; 91.8% and 101% respectively. The chemist speculated that perhaps the duplicate samples were inadvertently mislabeled. If this assumption were correct, the sample and duplicate results would match much more closely (recalculated RPDs would be 4.33% and 16.8%).

Two control standards were run, with recoveries of 92.57 and 91.89%, within the TCP target of 90 to 110%. A spike was performed on sample S95T000800, with a recovery of 68.4%. This is outside of the TCP target recovery of 90 to 110%. Spike recoveries for alpha have typically been below the target criterion, particularly when solids can be observed on the sample mount (solids will be self-shielding to some extent).

The above problems were considered, but deemed not significant enough to warrant another set of digestions and analyses since the results were far below the safety screening limit of 41 μCi/g (highest sample result is only 7% of the limit).

Density

Characterization Plant Engineering requested a density determination on several auger samples. Their need was to verify that a Safety Analysis Report for Packaging (SARP-002) limit on the volume of waste allowed to be shipped in an auger sampler was not exceeded. The density was determined by procedure LO-160-103, Rev. A-7. Subsamples were centrifuged in a tared, graduated centrifuge cone. Two samples were submitted for density determination, with the results being 1.72 and 1.51 g/mL. These results are presented in Tables 2 and 3.

REFERENCE Schreiber, R. D., 1995, WHC-SD-WM-TP-306, Revision 0, "*Tank 241-C-203 Tank Characterization Plan*, dated March 6, 1995.

WHC-SD-WM-DP-112, REV. 0

SAMPLE DATA SUMMARY

SAFETY SCREENING AND FINAL RESULTS FOR AUGERS 95-AUG-020/21
C-203

TABLE 2

CORE NUMBER: n/a
SEGMENT #: '95-AUG-020

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%
S95T000811			% Water by TGA on Perkin Elmer	%	17.000	110.000	97.45	n/a	30.98	31.78	31.38	2.55	n/a	n/a	n/a
S95T000811			DSC Exotherm on Perkin Elmer	Joules/g	None	None	94.27	n/a	34.91	33.19	34.05	5.05	n/a	n/a	n/a
S95T000811			DSC Exotherm Dry Calculated	Joules/g Dry	-999.000	481.010	n/a	n/a	50.87	48.37	49.62	5.04	n/a	n/a	n/a
S95T000812		F	Alpha of Digested Solid	uCi/g	-999.000	41.010	91.89	<4.46e-03	8.87e-01	2.71e+0	1.80e+00	101	n/a	1.00e-02	5.1

L Lower Half of Segment: 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%
S95T000807			% Water by TGA on Perkin Elmer	%	17.000	110.000	97.45	n/a	41.04	33.26	37.15	20.9	n/a	n/a	n/a
S95T000807			DSC Exotherm on Perkin Elmer	Joules/g	None	None	94.27	n/a	20.36	19.1	19.73	6.39	n/a	n/a	n/a
S95T000807			DSC Exotherm Dry Calculated	Joules/g Dry	-999.000	481.010	n/a	n/a	32.85	30.82	31.84	6.38	n/a	n/a	n/a
S95T000808		F	Alpha of Digested Solid	uCi/g	-999.000	41.010	91.89	<4.46e-03	2.830	1.05e+0	1.94e+00	91.8	n/a	1.10e-02	3.0

=> Limit violated
=> Selected Limit

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SAFETY SCREENING AND FINAL RESULTS FOR AUGERS 95-AUG-020/21
C-203

TABLE 3

CORE NUMBER: n/a
SEGMENT #: 95-AUG-021

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%
S95T000798			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.720	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T000799			% Water by TGA using Mettler	%	17.000	110.000	99.54	n/a	33.67	36.66	35.16	8.50	n/a	n/a	n/a
S95T000799			DSC Exotherm Dry Calculated	Joules/g Dry	-999.000	481.010	n/a	n/a	66.02	64.32	65.17	2.61	n/a	n/a	n/a
S95T000799			DSC Exotherm using Mettler	Joules/g	-999.000	481.010	99.82	n/a	42.80	41.7	42.25	2.60	n/a	n/a	n/a
S95T000800		F	Alpha of Digested Solid	uCi/g	-999.000	41.010	92.57	<3.00e-03	1.440	1.59	1.52e+00	9.90	68.40	7.00e-03	3.1

Lower Half of Segment: 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%
S95T000802			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.510	n/a	n/a	n/a	n/a	5.00e-01	n/a
S95T000803			% Water by TGA using Mettler	%	17.000	110.000	99.54	n/a	52.12	49.03	50.58	6.11	n/a	n/a	n/a
S95T000803			DSC Exotherm Dry Calculated	Joules/g Dry	-999.000	481.010	n/a	n/a	97.33	96.32	96.82	1.04	n/a	n/a	n/a
S95T000803			DSC Exotherm using Mettler	Joules/g	-999.000	481.010	99.82	n/a	48.10	47.6	47.85	1.04	n/a	n/a	n/a
S95T000804		F	Alpha of Digested Solid	uCi/g	-999.000	41.010	92.57	<3.00e-03	6.62e-01	5.50e-1	6.06e-01	18.5	n/a	6.00e-03	4.3

=> Limit violated
=> Selected Limit

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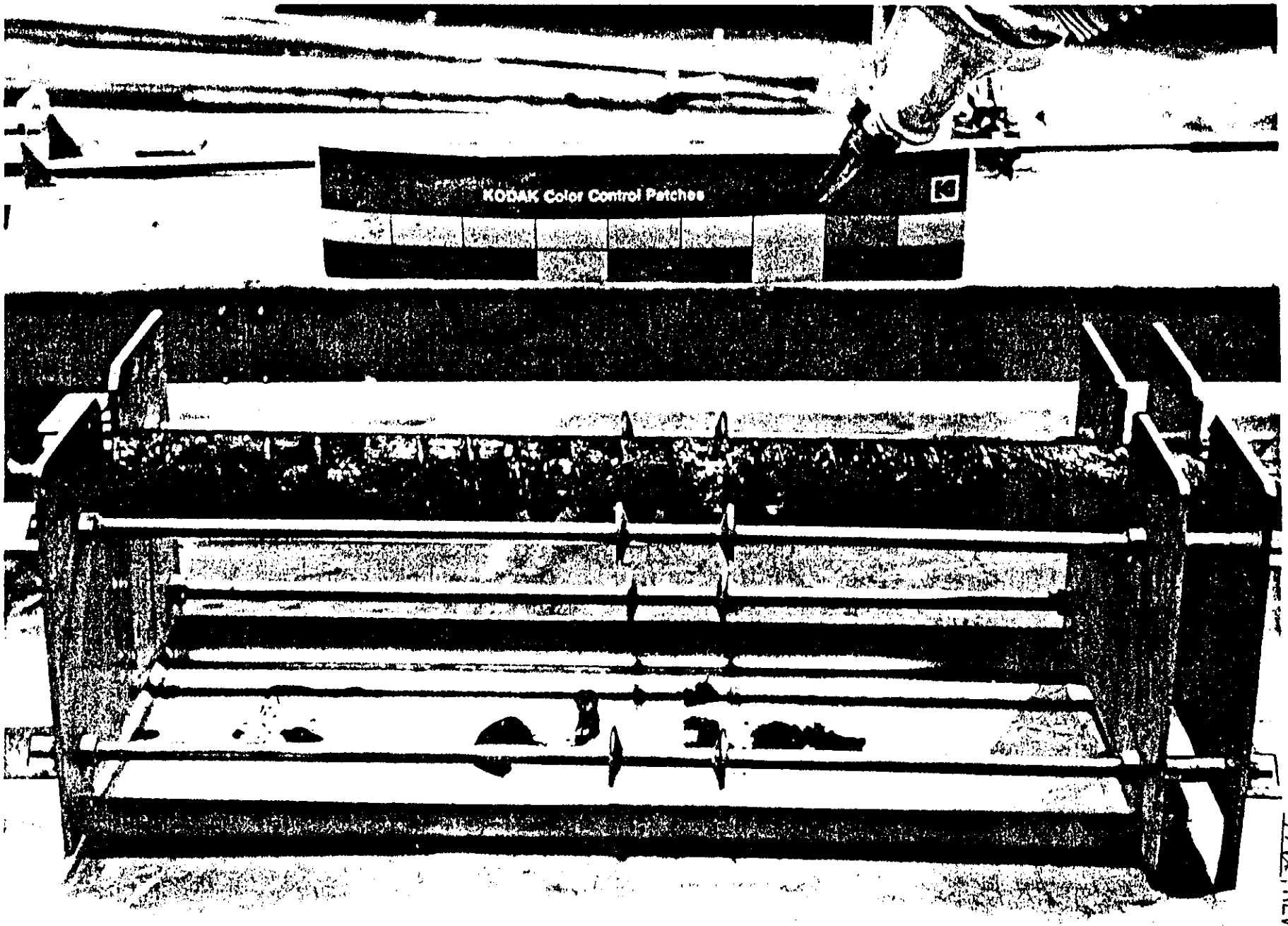
PHOTOGRAPHS

C-203 95-AUG-020 (riser 7) EC

C-203 95-AUG-021 Riser 7 (W.C.)



WHC-SD-WM-DP-112, REV. 0

CHAIN OF CUSTODY FORMS

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200W-08-TE (2) Sample Number 95-AUG-021 (3) Supervisor R.J. Prazniк / 373-7751

(4) Tank C203 (5) Riser 7 West COORD. (6) Cask Serial Number C1022

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5	<.5
Side Dose Rate	.5	.5
Bottom Dose Rate	<0.5	<.5
Smearable Contamination (Alpha)	<20	<20
(Beta-Gamma)	<1K	<1K
RCT* (Signature)	[illegible]	[illegible]

(8) Shipment Description

A. Work Package Number	ES-95-00011-0
B. Cask Seal Number	#1029
C. Date and Time Sample Removed from Tank	4-5-95 / 1135hrs
D. Expected Liquid Content	5%
E. Expected Solid Content	95%
F. Dose Rate Through Drill String	17 mR/hr
G. Expected Sample Length	15"

(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
C203 R/7 West COORD.	222S-LABS	DA Krahn, DA KRAHN	4-6-95/1025	
(17) Relinquished By (Sign and PRINT)		(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
DA Krahn DA KRAHN		[illegible]	4-6-95 10:25	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
[illegible]		EE Dubes EE Dubes	4-6-95	
(25) Relinquished By (Sign and PRINT)		(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

(18) 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

Recipient of Sample - Pink - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 DC-0001-326 (03/

WHC-SD-WM-DP-112, REV. 1

04/06/95 12:02 ☎509 372 2929 WESTINGHOUSE ←→ LAB DATA MGMT

COPY

CHAIN-OF-CUSTODY RECORD FOR AUGER SAMPLING

(1) Shipment Number 200W-08-TF (2) Sample Number 95-AUG-020 (3) Supervisor R.J. Peaznik / 373-7757

(4) Tank C203 (5) Riser R7, EAST COORD. (6) Cask Serial Number C1038

Radiation Survey Data:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5	<.5
Side Dose Rate	.8	.5
Bottom Dose Rate	<0.5	<.5
Smearable Contamination (Alpha)	<20	<20
(Beta-Gamma)	<1K	<1K
RCT* (Signature)	GM Brewer	[illegible]

(8) Shipment Description	
A. Work Package Number	ES-95-00011-0
B. Cask Seal Number	#1028
C. Date and Time Sample Removed from Tank	4-5-95 / 0943hrs
D. Expected Liquid Content	5%
E. Expected Solid Content	95%
F. Dose Rate Through Drill String	25 mR/hr
G. Expected Sample Length	19"

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

50

(10) Field Comments

(32) Laboratory Comments

WHC-SD-WM-DP-112, REV 1

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
C203 R7 EAST coord	2225 LAB	DA KRAHN DA Krahn	4-6-95 / 10:25	
(17) Relinquished By (Sign and PRINT)		**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
DA Krahn DA KRAHN		[illegible]	4-6-95 10:25	
(21) Relinquished By (Sign and PRINT)		**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
Jubal D. Helms Jubal D Helms		[illegible]	4-6-95 1110	
(25) Relinquished By (Sign and PRINT)		**(26) Received By (Sign and PRINT)**	**(27) Date/Time**	**(28) Receiver Comments**

(18) 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

Director of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling, F7-12 Goldenrod - Tank Farm Operations, T4-01 BC-0001-326 (03/9

WHC-SD-WM-DP-112, REV. 0

SAMPLE ANALYSES RESULTS

LABCORE Data Entry Template for Worklist# 1005

Analyst: EC **Instrument:** BA000 _____ **Book #** NA

Method: LO-160-103 Rev/Mod A-7 WHC-SD-WM-DP-112, REV. 1

Worklist Comment: C-203 95-AUG-021 Riser 7 Extrusion

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	499.98	N/A	
95000056	C-203	3	SAMPLE	S95T000699	0		DLIQVOL1	SOLID	N/A	0		mL
95000056	C-203	4	SAMPLE	S95T000699	0		DLIQWT01	SOLID	N/A	0		g
95000056	C-203	5	SAMPLE	S95T000699	0		EST.G/ML	SOLID	N/A	0		g/mL
95000056	C-203	6	SAMPLE	S95T000699	0		EXTRUD01	SOLID	N/A	Complete		
95000056	C-203	7	SAMPLE	S95T000699	0		LLIQWT01	SOLID	N/A	0		g
95000056	C-203	8	SAMPLE	S95T000699	0		NOTEBOOK	SOLID	N/A	WHC-N-1141		
95000056	C-203	9	SAMPLE	S95T000699	0		SLDVOL01	SOLID	N/A	627		mL
95000056	C-203	10	SAMPLE	S95T000699	0		SLDWT-01	SOLID	N/A	627		g
95000056	C-203	11	SAMPLE	S95T000699	0		ORGVOL01	SOLID	N/A	0		mL

Final page for worklist # 1005

[signature] 4-12-95
Analyst Signature Date

[signature] 4-12-95
Analyst Signature Date

Data Entry Comments:

Reviewed by ZKT 4/12/95

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# 1006

Analyst: EC **Instrument:** BA000 _____ **Book #** NA

Method: LO-160-103 Rev/Mod A-7 WHC-SD-WM-DP-112, REV. 1

Worklist Comment: C-203 95-AUG-020 Riser 7 Extrusion

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20g	19.99	N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500g	499.98	N/A	
95000056	C-203	3	SAMPLE	S95T000702	0		DLIQVOL1	SOLID	N/A	0		mL
95000056	C-203	4	SAMPLE	S95T000702	0		DLIQWT01	SOLID	N/A	0		g
95000056	C-203	5	SAMPLE	S95T000702	0		EST.G/ML	SOLID	N/A	0		g/mL
95000056	C-203	6	SAMPLE	S95T000702	0		EXTRUD01	SOLID	N/A	complete		
95000056	C-203	7	SAMPLE	S95T000702	0		LLIQWT01	SOLID	N/A	0		g
95000056	C-203	8	SAMPLE	S95T000702	0		NOTEBOOK	SOLID	N/A	WHC-N-1141		
95000056	C-203	9	SAMPLE	S95T000702	0		SLDVOL01	SOLID	N/A	493		mL
95000056	C-203	10	SAMPLE	S95T000702	0		SLDWT-01	SOLID	N/A	493		g
95000056	C-203	11	SAMPLE	S95T000702	0		ORGVOL01	SOLID	N/A	0		mL

Final page for worklist # 1006

EC 4-10-95
Analyst Signature Date

EC 4-10-95
Analyst Signature Date

Data Entry Comments:

Reviewed by
RK Fuller 4/12/95

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# 1276

Analyst: SC Instrument: BA000 _____ Book # NA

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

Worklist Comment: U-202, C-101, and C-203 Archives WHC-SD-WM-DP-112, REV. 1

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	499.72	N/A	
95000043	U-202	3	SAMPLE	S95T000604 603	0	X	6687 ARCHIV01	6913	SOLID	N/A	77.12		g
95000048	C-101	4	SAMPLE	S95T000825	0	X	ARCHIV01	7151	SOLID	N/A	8.47		g
95000048	C-101	5	SAMPLE	S95T000829	0	X	ARCHIV01	6909	SOLID	N/A	63.56		g
95000048	C-101	6	SAMPLE	S95T000833	0	X	ARCHIV01	6908	SOLID	N/A	57.86		g
95000048	C-101	7	SAMPLE	S95T000821	0	X	ARCHIV01	6893	LIQUID	N/A	28.23		g
95000056	C-203	8	SAMPLE	S95T000801	0	X	ARCHIV01	7161	SOLID	N/A	68.51		g
95000056	C-203	9	SAMPLE	S95T000805	0	X	ARCHIV01	7160	SOLID	N/A	61.69		g
95000056	C-203	10	SAMPLE	S95T000809	0	X	ARCHIV01	6919	SOLID	N/A	69.27		g
95000056	C-203	11	SAMPLE	S95T000813	0	X	ARCHIV01	6920	SOLID	N/A	68.26		g

Final page for worklist # 1276

Analyst Signature 5-1-95 Date

Analyst Signature 5-1-95 Date

Data Entry Comments:

reviewed by [illegible] 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# 1322

Analyst: ABB **Instrument:** BA000 _____ **Book #** NA

Method: LO-160-103 Rev/Mod A-7 WHC-SD-WM-DP-112 REV. 1

Worklist Comment: C-101 and C-203 Bulk Density Determinations

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	499.98	N/A	
95000056	C-203	3	SAMPLE	S95T000798	0	6781	BLKDEN01	SOLID	N/A	1.72		g/mL
95000056	C-203	4	SAMPLE	S95T000802	0	6780	BLKDEN01	SOLID	N/A	1.51 ~~0~~ ABB	5/4/95	g/mL
95000048	C-101	5	SAMPLE	S95T000826	0	6936	BLKDEN01 104	SOLID	N/A	1.84		g/mL
95000048	C-101	6	SAMPLE	S95T000830	0	6937	BLKDEN01 104	SOLID	N/A	1.73		g/mL

Final page for worklist # 1322

Analyst Signature Date 5-4-95

Analyst Signature Date 5-4-95

Data Entry Comments:

reviewed by ABB 5-4-95

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# 1173

Analyst: CAM **Instrument:** FUS01 C-2 **Book #** _____

Method: LA-549-141 Rev/Mod C-2

WHC-SD-WM-DP-112, REV. 1

Worklist Comment: C-203 FUSION - 799->800, 803->804

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				FUSION01	SOLID	250ml		N/A	g/L
95000056	C-203	2	SAMPLE	S95T000800 .4965g → 250ml	0	F	FUSION01	SOLID	N/A	1.9860		g/L
95000056	C-203	3	DUP	S95T000800 .4795g → 250ml	0	F	FUSION01	SOLID	1.9860	1.9180	N/A	g/L
95000056	C-203	4	SAMPLE	S95T000804 .5306g → 250ml	0	F	FUSION01	SOLID	N/A	2.1224		g/L
95000056	C-203	5	DUP	S95T000804 .5387g → 250ml	0	F	FUSION01	SOLID	2.1224	2.1548	N/A	g/L

Final page for worklist # 1173

Teresa Murphy 5-2-95
Analyst Signature Date

[illegible] 5-2-95
Analyst Signature Date

Data Entry Comments: Scale calibrated 200/100/100. Samples & dups have <.190 solids. Dose rate is 2mRad/hr HPT is Darrel Bertrand Griffin II 5-2-95 Nanes

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# 1174

Analyst: lmh **Instrument:** FUS01 AL11066 **Book #** _____

Method: LA-549-141 Rev/Mod C-2 WHC-SD-WM-DP-112, REV. 1

Worklist Comment: C-203 FUSION - 807->808, 811->812

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	250ml	250ml	N/A	g/L
95000056	C-203	2 SAMPLE	S95T000808	0 F	FUSION01	SOLID	N/A	2.0712		g/L
			.5178g → 250 ml							
95000056	C-203	3 DUP	S95T000808	0 F	FUSION01	SOLID	2.0712	2.1844	N/A	g/L
			.5461g → 250 ml							
95000056	C-203	4 SAMPLE	S95T000812	0 F	FUSION01	SOLID	N/A	2.1900		g/L
			.5475g → 250 ml							
95000056	C-203	5 DUP	S95T000812	0 F	FUSION01	SOLID	2.1900	2.1652	N/A	g/L
			.5413g → 250 ml							

Final page for worklist # 1174

[signature] 4-27-95
Analyst Signature Date

Bertrand Huff II 5-1-95
Analyst Signature Date

Data Entry Comments:
OTR : 1 mrad/hr
HPT : Jim Evens BHII 5-1-95

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.

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LABCORE Data Entry Template for Worklist# 1216

Analyst: KRM **Instrument:** DSC01 **Book #** 12N14-A

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

Worklist Comment: Please run C-203 DSC under N2. bdv WHC-SD-WM-DP-112, REV. 1

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	SOLID	28.45	28.4	N/A	Joules/g
95000056	C-203	2 SAMPLE	S95T000799	0		DSC-01	SOLID	N/A	42.8		Joules/g
95000056	C-203	3 DUP	S95T000799	0		DSC-01	SOLID	42.8	41.7	N/A	Joules/g
95000056	C-203	4 SAMPLE	S95T000803	0		DSC-01	SOLID	N/A	48.1		Joules/g
95000056	C-203	5 DUP	S95T000803	0		DSC-01	SOLID	48.1	47.6	N/A	Joules/g

Final page for worklist # 1216

5-8-95 5-8-95

Analyst Signature **Date** **Analyst Signature** **Date**

Verified by Blandina Valenzuela 5/9/95

S95T000799 - produced two endotherms one at 106.2°C with a delta H of 845.5 J/g and the second at 283.2°C with a delta H of 43.7 J/g.

Data Entry Comments: S95T000803 produced two endotherms one at 112.8°C with a delta H of 761.8 J/g and the second at 283.1°C with a delta H of 48.1 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.

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SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 60 TO 64.

DSC STD 12N14-A

6.632 mg

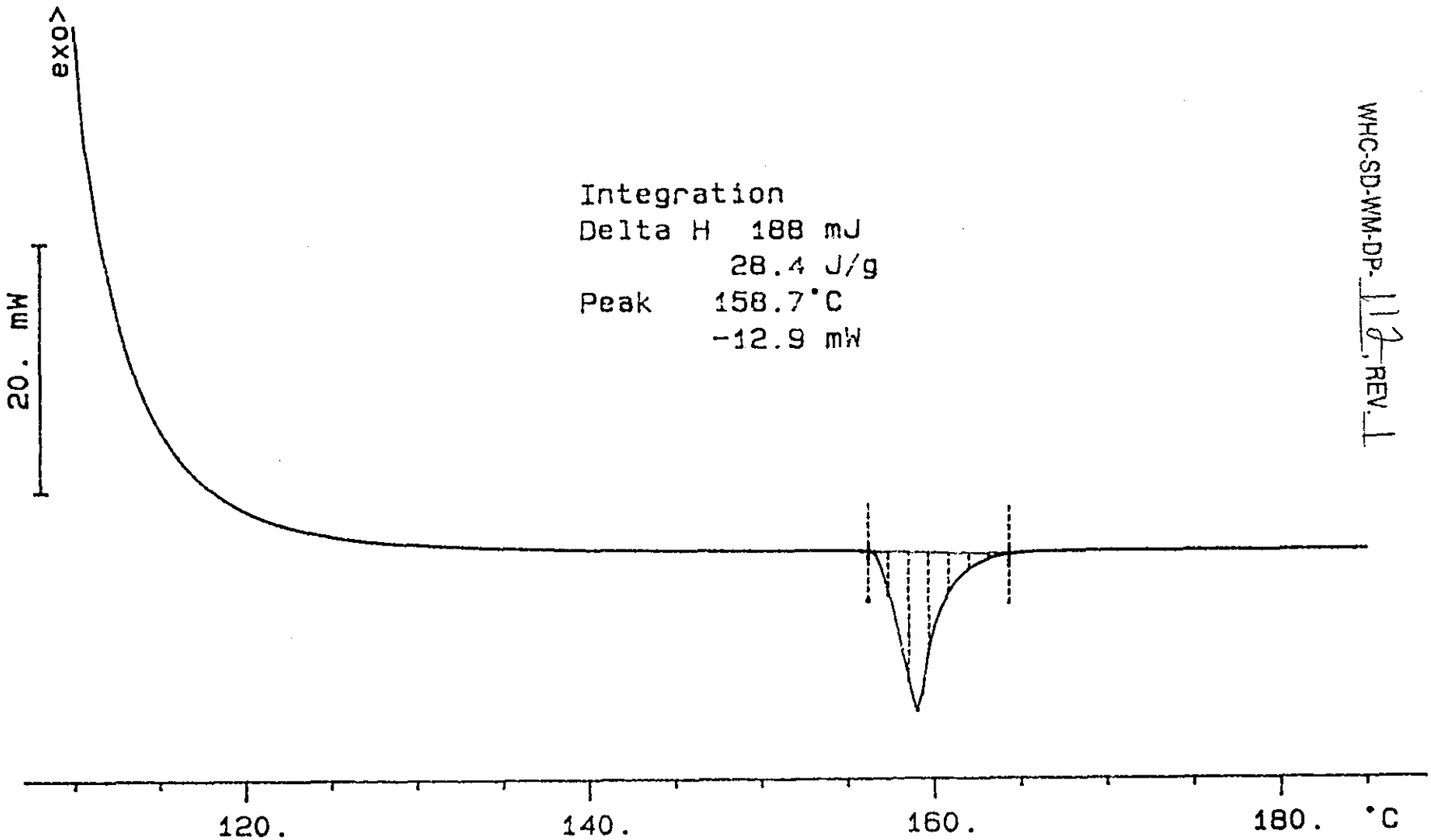
Rate: 10.0 °C/min

File: 00014.001

Ident: 0.0

DSC METTLER 08-May-95

222-S Laboratory



WHC-SD-WM-DP-112, REV. 1

5-8-95

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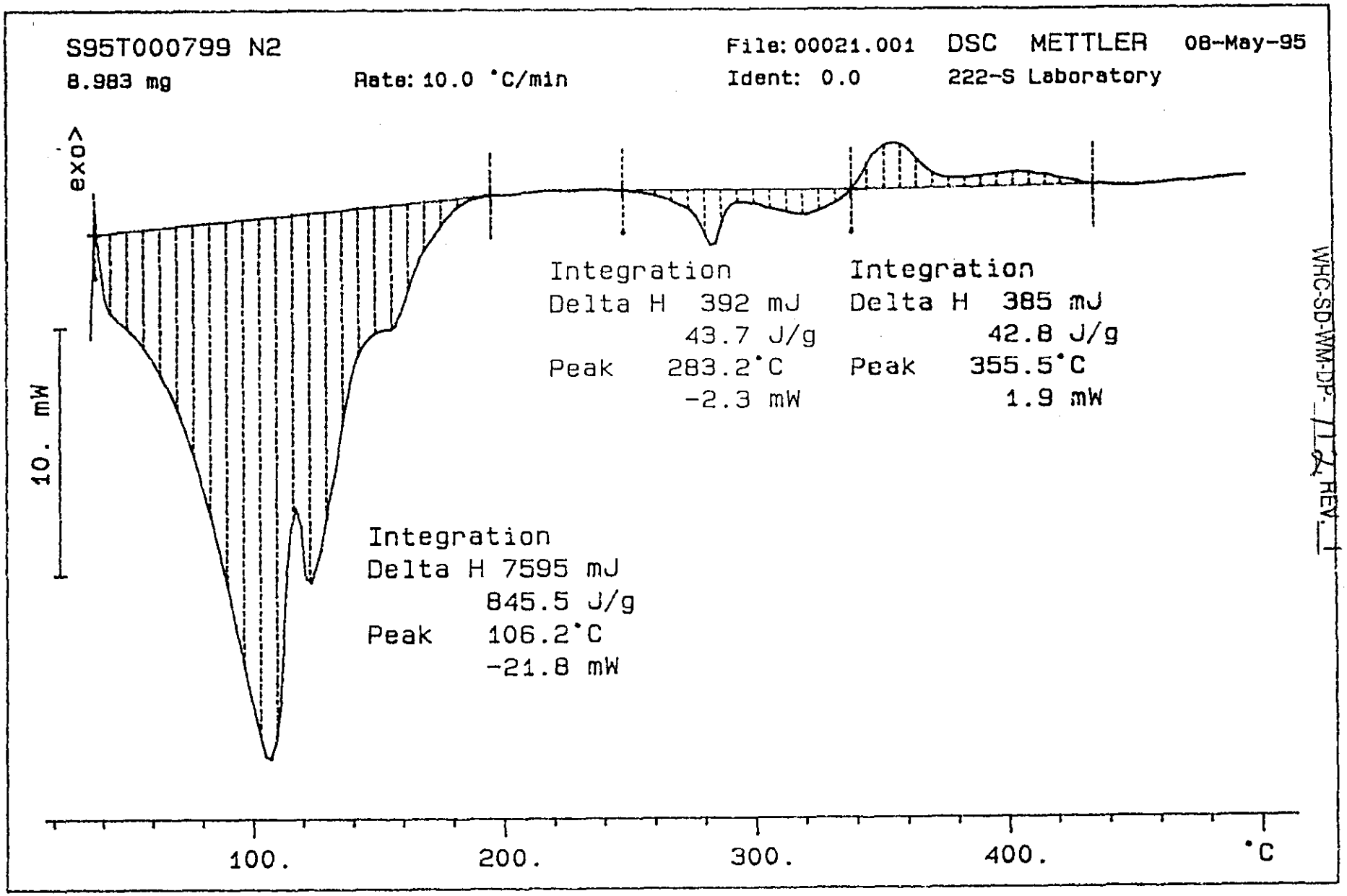

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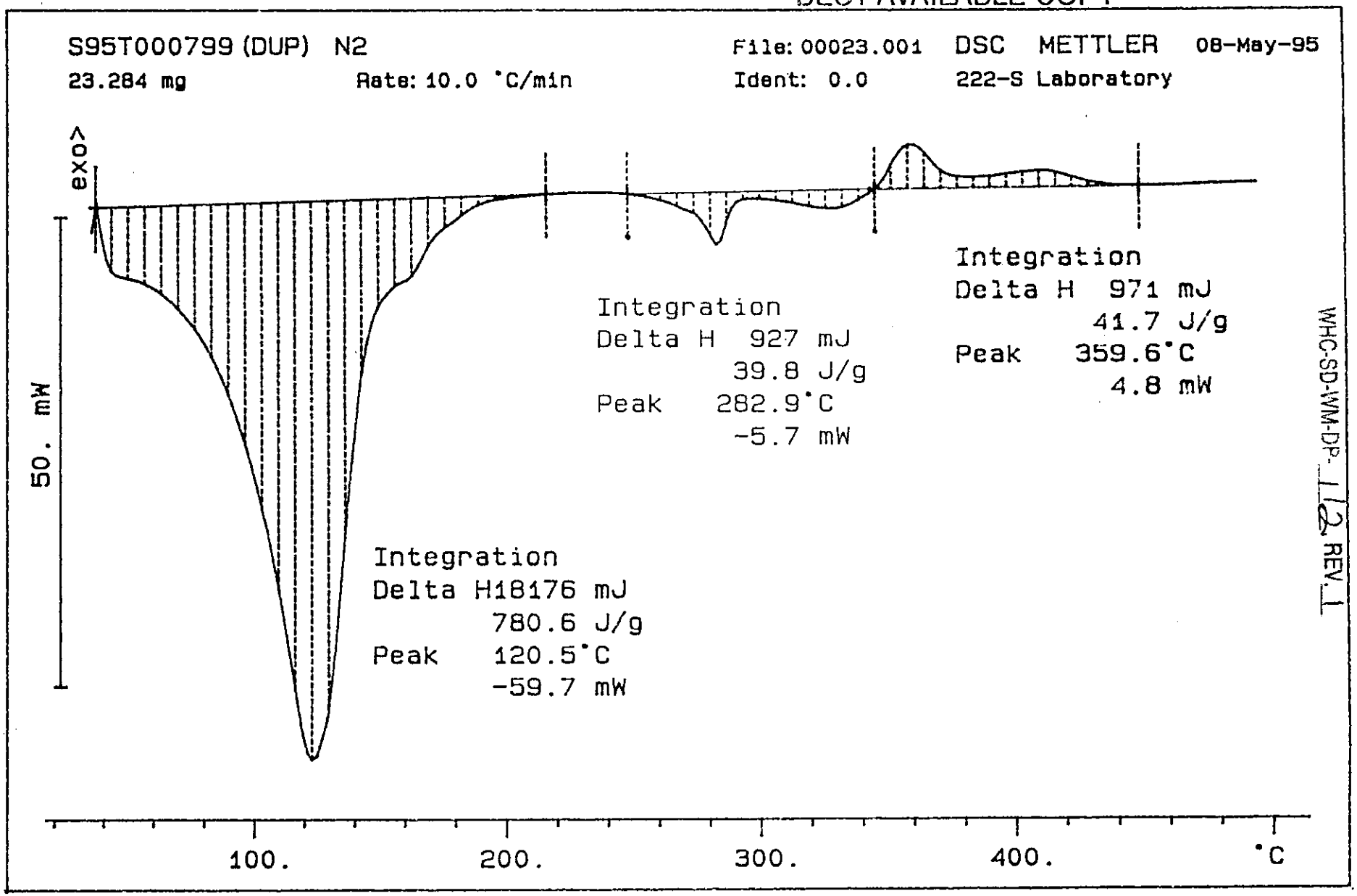

WHC-SD-WM-DP-112 REV. 1

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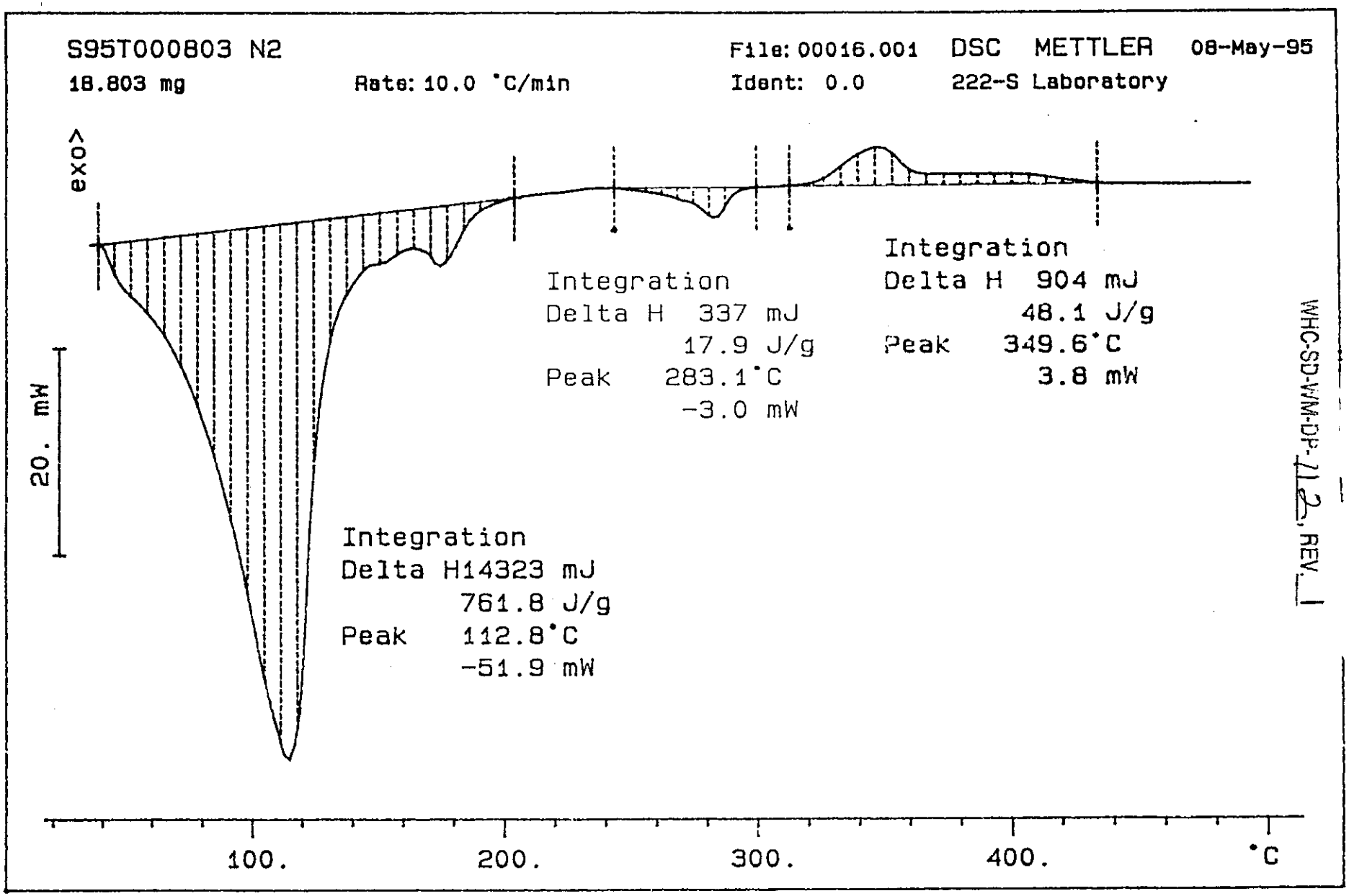

WHC-SD-WM-DP-112, REV. 1

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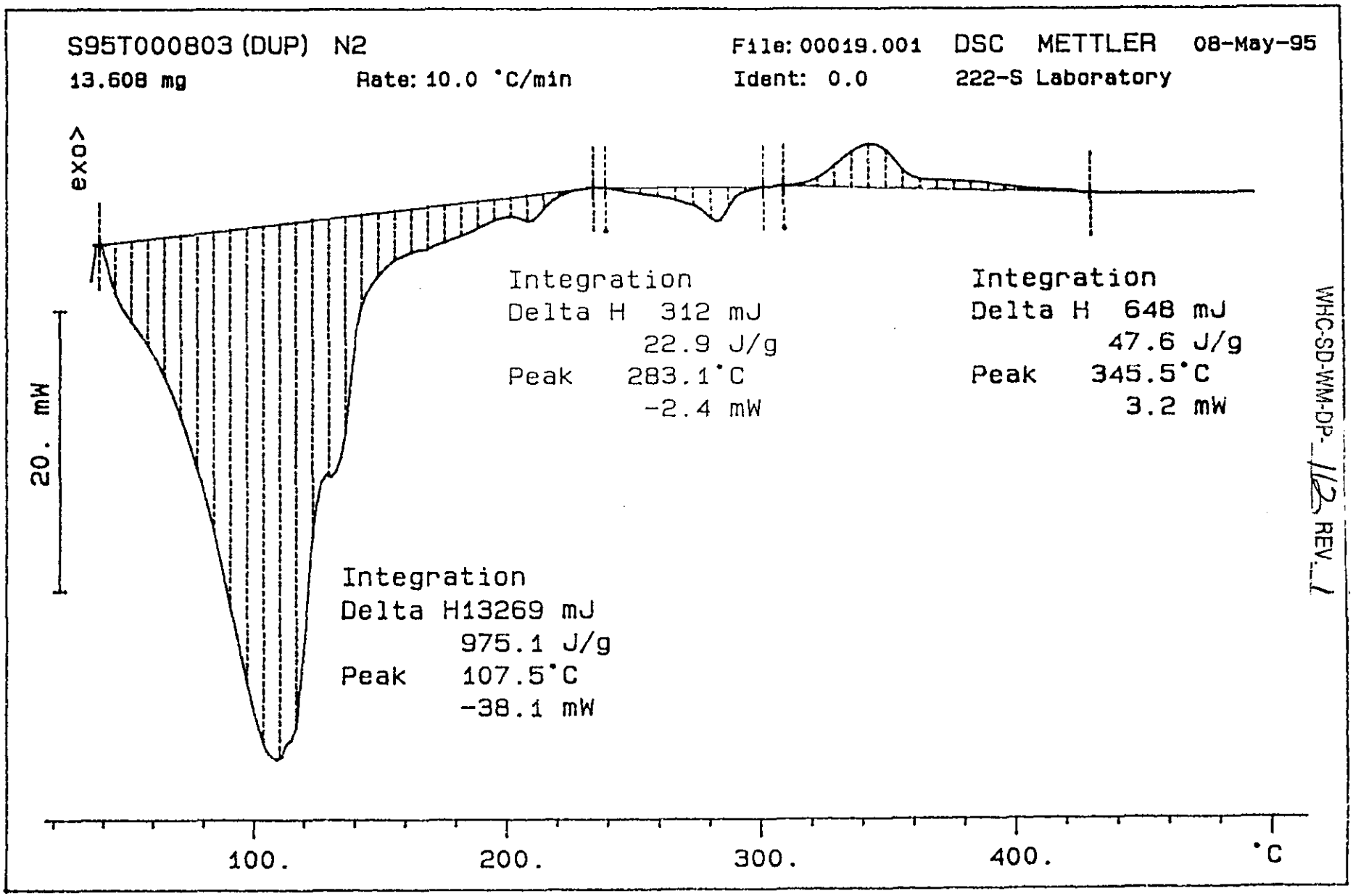

WHC-SD-WM-DP-112 REV. 1

LABCORE Data Entry Template for Worklist# 1217

Analyst: KRM **Instrument:** DSC01 03 **Book #** 12N14-A

5/11/95 BDV

Method: LA-514-114 Rev/Mod B-0

Worklist Comment: Please run C-203 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-03	SOLID	28.45	26.82	N/A	Joules/g
95000056	C-203	2 SAMPLE	S95T000807	0		DSC-03	SOLID	N/A	20.36		Joules/g
95000056	C-203	3 DUP	S95T000807	0		DSC-03	SOLID	20.36	19.1	N/A	Joules/g
95000056	C-203	4 SAMPLE	S95T000811	0		DSC-03	SOLID	N/A	34.91		Joules/g
95000056	C-203	5 DUP	S95T000811	0		DSC-03	SOLID	34.91	33.19	N/A	Joules/g

Final page for worklist # 1217

See attached for signatures 5/11/95

Analyst Signature Date

Analyst Signature Date

S95T000807 produced two endotherms one at 105.7°C with a delta H of 807.9 J/g and the second at 283.3°C with a delta H of 11.8 J/g.

Data Entry Comments: S95T000811 produced two endotherms one at 117.1°C with a delta H of ~~32.7 J/g~~ 522.2 J/g and the second at 288.8°C with a delta H of 32.7 J/g.

5/11/95 BDV 5/11/95

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

LABCORE Data Entry Template for Worklist# 1217

Analyst: KRM **Instrument:** DSC01 **Book #** 12N14A

Method: ~~LA-514-113 Rev/Mod~~ LA 514-114/B-0

Worklist Comment: Please run C-203 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
95000056	C-203	2 SAMPLE	S95T000807	0		DSC-01	SOLID	N/A			Joules/g
95000056	C-203	3 DUP	S95T000807	0		DSC-01	SOLID			N/A	Joules/g
95000056	C-203	4 SAMPLE	S95T000811	0		DSC-01	SOLID	N/A			Joules/g
95000056	C-203	5 DUP	S95T000811	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 1217

5-8-95

Analyst Signature Date

Analyst Signature Date

Data Entry Comments: Other instrument was used.

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.

Curve 1: DSC
File info: ind050801 Mon May 8 16:38:15 1995
Sample Weight: 6.687 mg
Indium at 10c/min

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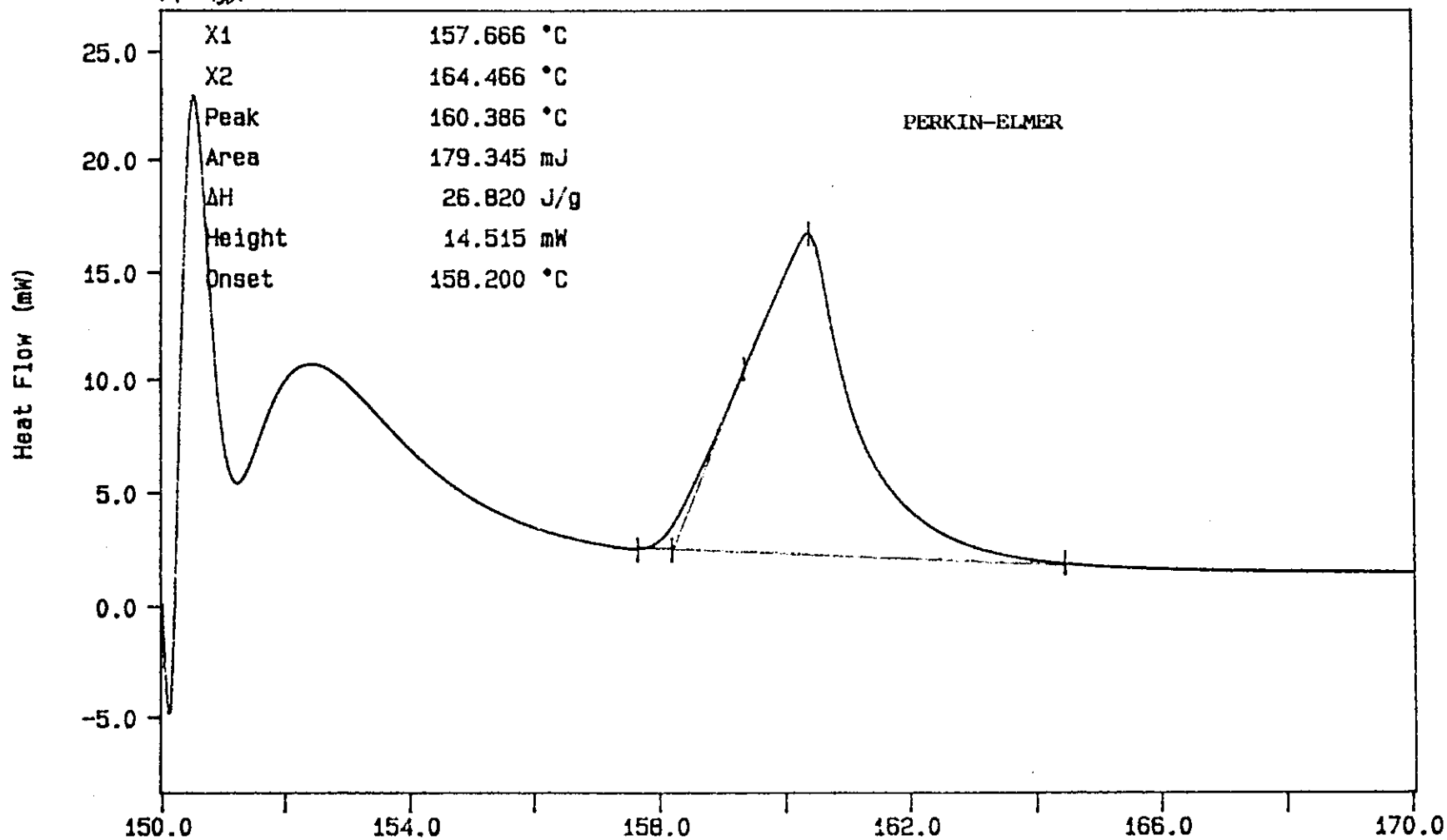
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 67 TO 71.

12N14-A 5/9/95 BDV



N2 exotherm down
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

KR Monteith
Westinghouse Hanford Co.
222-S Lab
Mon May 8 16:58:19 1995

5-8-95

WHC-SD-WM-DP-112 REV. 1

67

Curve 1: DSC
File info: sam050801 Mon May 8 18:08:24 1995
Sample Weight: 19.280 mg
S95T000807, 10C/min

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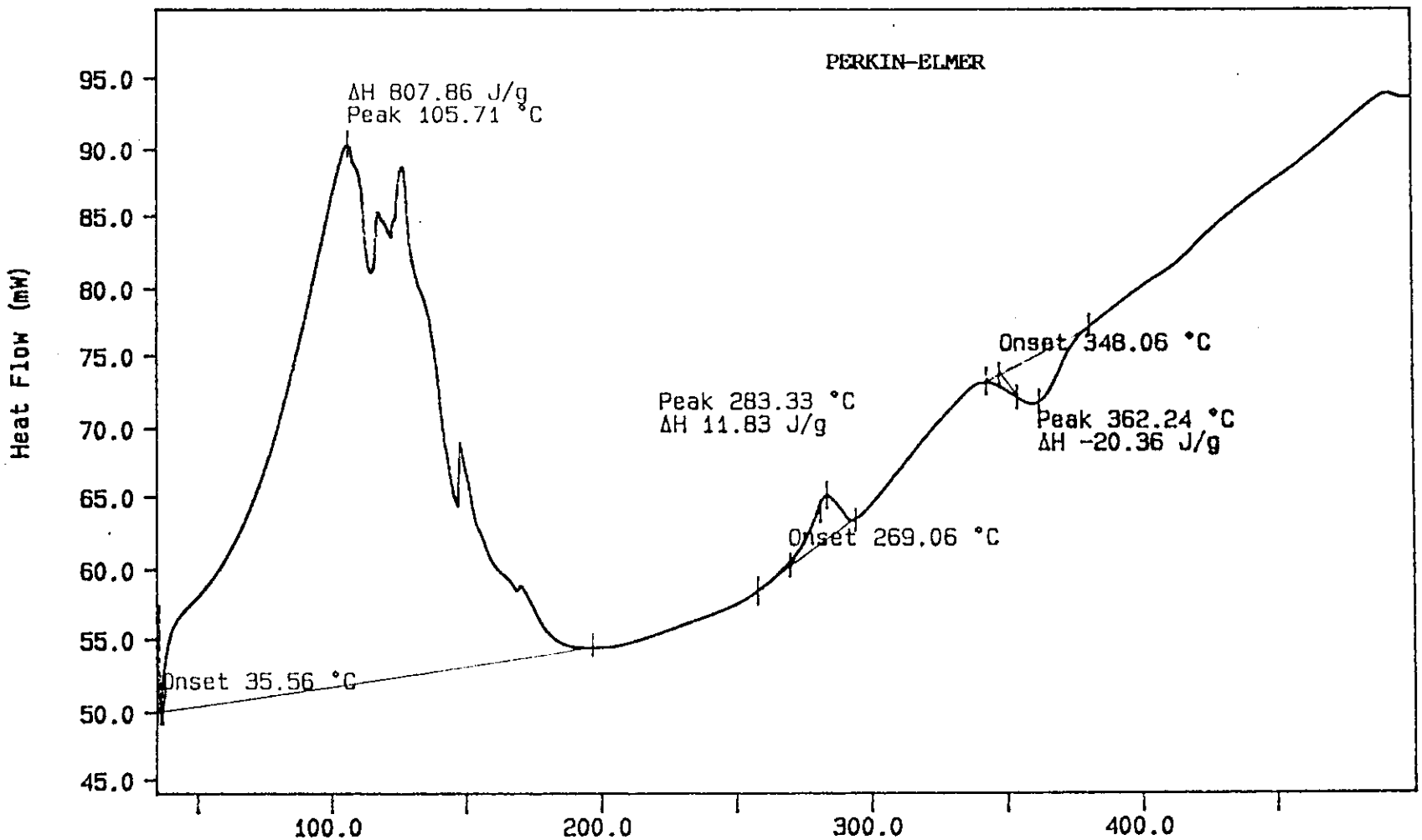

exotherm down, nitrogen purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

KR Monteith
Westinghouse Hanford Co.
222-S Lab
Tue May 9 07:54:38 1995

WHC-SD-WM-DP-112 REV. 1

Curve 1: DSC
File info: sam050802 Mon May 8 19:05:44 1995
Sample Weight: 15.470 mg
S95T000807(dup). 10C/min

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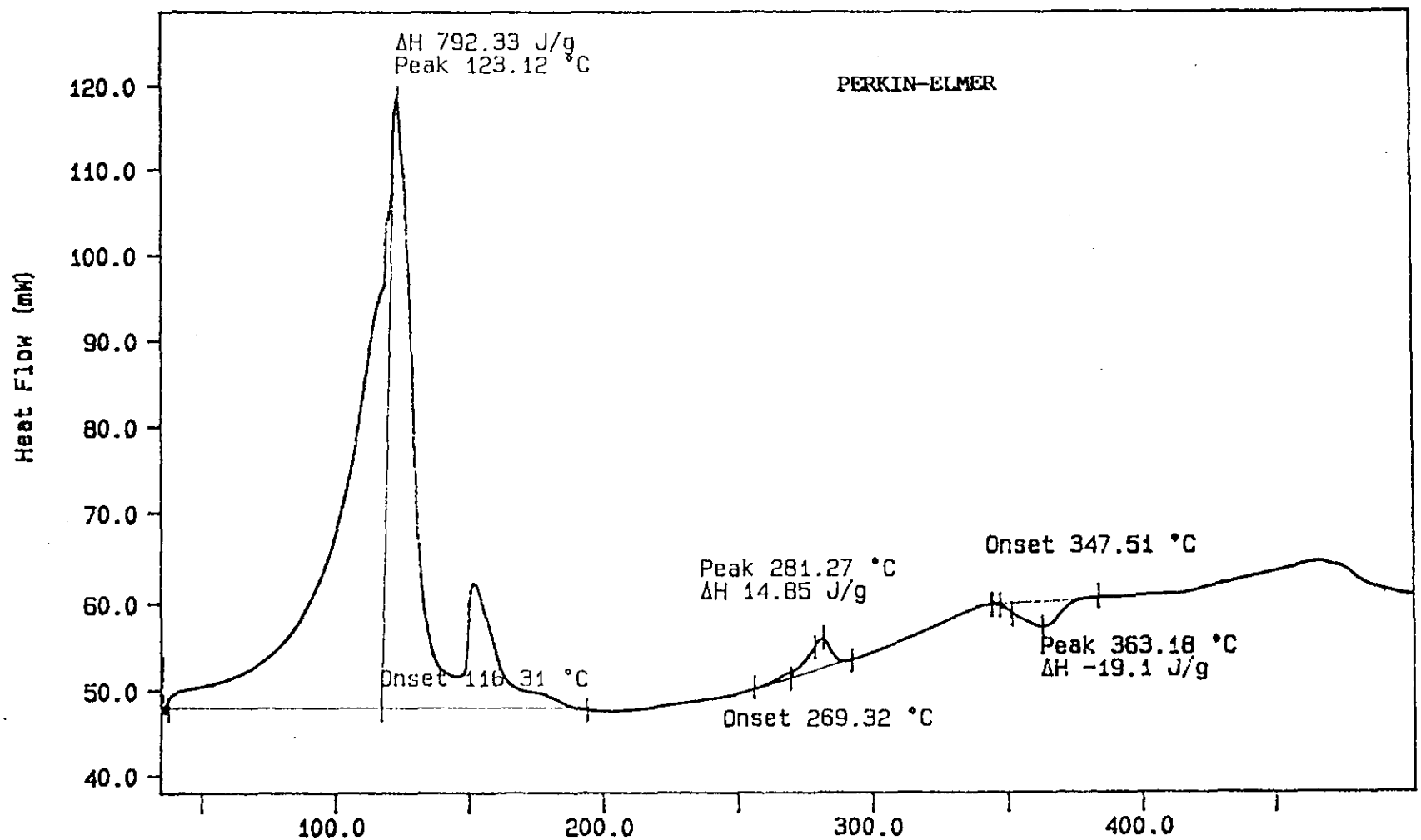

exotherm down, nitrogen purge gas
TEMP1: 30.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

KR Monteith
Westinghouse Hanford Co.
222-S Lab
Tue May 9 07:46:10 1995

WHC-SD-WM-DP-112 REV. 1

Curve 1: DSC
File info: sam050803 Mon May 8 20:19:51 1995
Sample Weight: 15.619 mg
S95T000811, 10C/min

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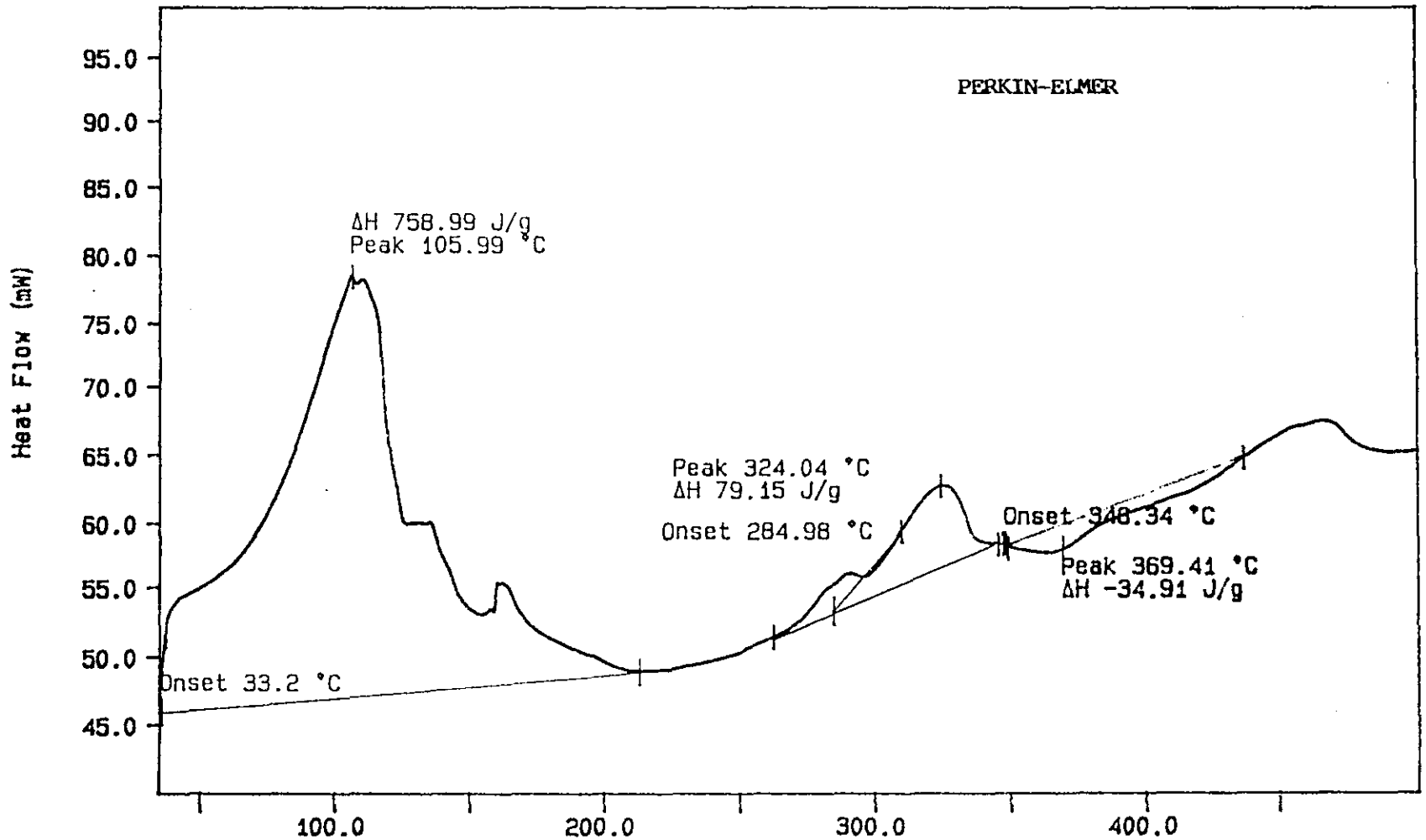

exotherm down, nitrogen purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

KR Monteith
Westinghouse Hanford Co.
222-S Lab
Wed May 10 13:52:38 1995

WHC-SD-WM-DP-162, REV. 1

Curve 1: DSC
File info: sam050804 Mon May 8 22:10:41 1995
Sample Weight: 20.110 mg
S95T000811(dup), 10C/min

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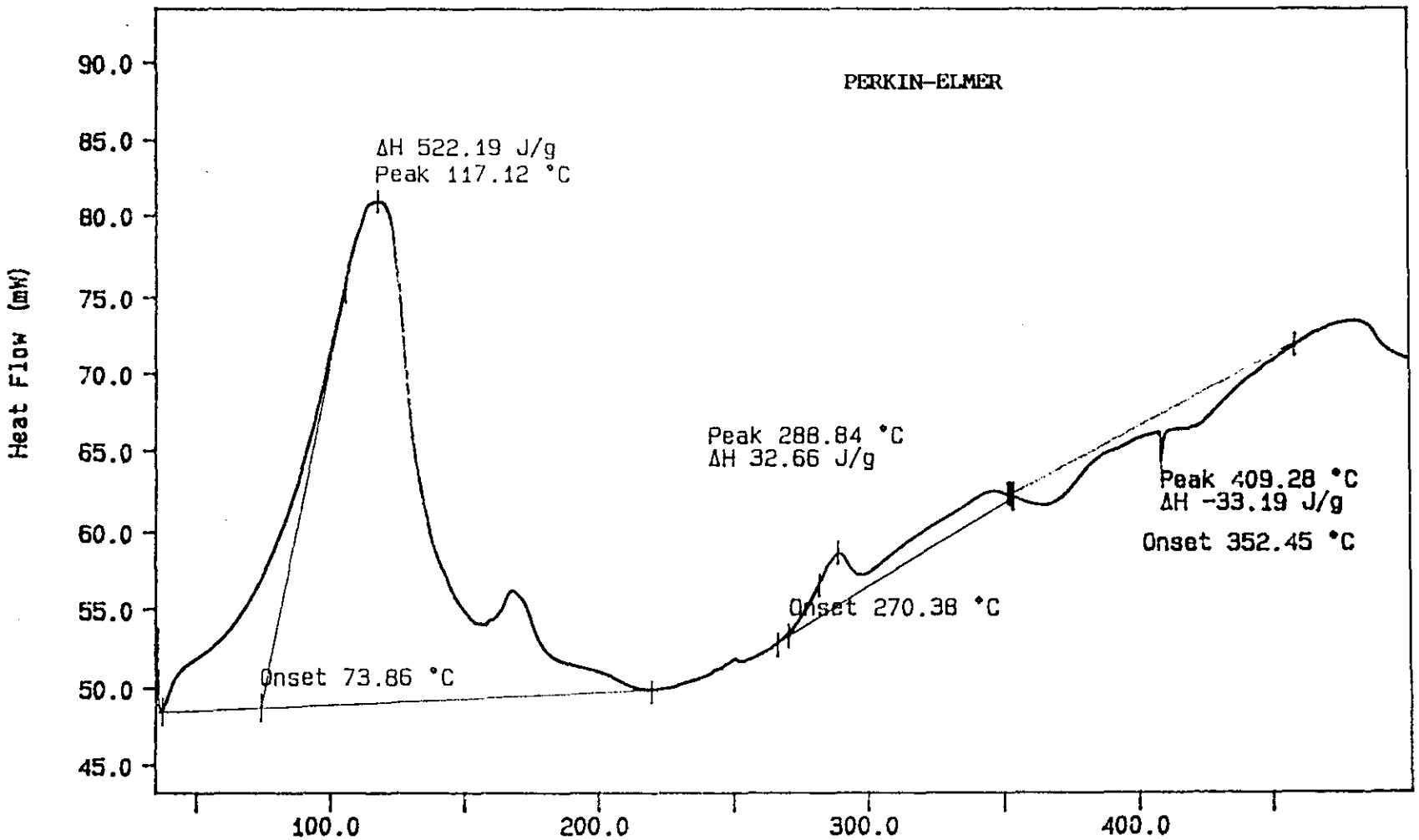

exotherm down, nitrogen purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

KH Monteith
Westinghouse Hanford Co.
222-S Lab
Wed May 10 13:59:14 1995

WHC-SD-WM-DP-112 REV 1

LABCORE Data Entry Template for Worklist# 1401

Analyst: BDV **Instrument:** DSC0 2 **Book #** —

Method: LA-514-113 Rev/Mod —

Worklist Comment: Calculated dry DSC for C-203. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
95000056	C-203	1	SAMPLE	S95T000799	0		DSC-02	SOLID	N/A	66.02		Joules/g Dry
95000056	C-203	2	DUP	S95T000799	0		DSC-02	SOLID	~~64.32~~ 66.02 5/15/95 BDV	64.32	N/A	Joules/g Dry
95000056	C-203	3	SAMPLE	S95T000803	0		DSC-02	SOLID	N/A	97.33		Joules/g Dry
95000056	C-203	4	DUP	S95T000803	0		DSC-02	SOLID	97.33	96.32	N/A	Joules/g Dry
95000056	C-203	5	SAMPLE	S95T000807	0		DSC-02	SOLID	N/A	32.85		Joules/g Dry
95000056	C-203	6	DUP	S95T000807	0		DSC-02	SOLID	32.85	30.82	N/A	Joules/g Dry
95000056	C-203	7	SAMPLE	S95T000811	0		DSC-02	SOLID	N/A	50.87		Joules/g Dry
95000056	C-203	8	DUP	S95T000811	0		DSC-02	SOLID	50.87	48.37	N/A	Joules/g Dry

Data entered + verified by

Final page for worklist # 1401

Blandina Valenzuela 5/15/95
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

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

C-203

CALCULATED DRY DSC			
SAMPLE NO.	DSC RESULT (J/g)	TGA RESULT (% water)	DRY DSC RESULT
S95TD00799	42.8	35.17	66.02
799D	41.7	35.17	64.32
803	48.1	50.58	97.33
803D	47.6	50.58	96.32
807	20.36	38.03 Avg's 3 #	32.85
807D	19.1	38.03 Avg's 3 #	30.82
811	34.91	31.38	50.87
811D	33.19	31.38	48.37

LABCORE Data Entry Template for Worklist# 1237

Analyst: KRM **Instrument:** TGA01 **Book #** 42N8A

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

Worklist Comment: Please run C-203 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.19	58.92	N/A	%
95000056	C-203	2 SAMPLE	S95T000799	0		TGA-01	SOLID	N/A	33.67		%
95000056	C-203	3 DUP	S95T000799	0		TGA-01	SOLID	33.67	36.66	N/A	%
95000056	C-203	4 SAMPLE	S95T000803	0		TGA-01	SOLID	N/A	52.12		%
95000056	C-203	5 DUP	S95T000803	0		TGA-01	SOLID	52.12	49.03	N/A	%

Final page for worklist # 1237

5-8-95

Analyst Signature Date

Analyst Signature Date

Verified by Blandina Valenzuela 5/9/95

Data Entry Comments: S95T000799 produced another weight loss step of 10.31% at 327.0
S95T000803 produced a second weight loss step of 6.91% at 331.0°C

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 75 TO 79.

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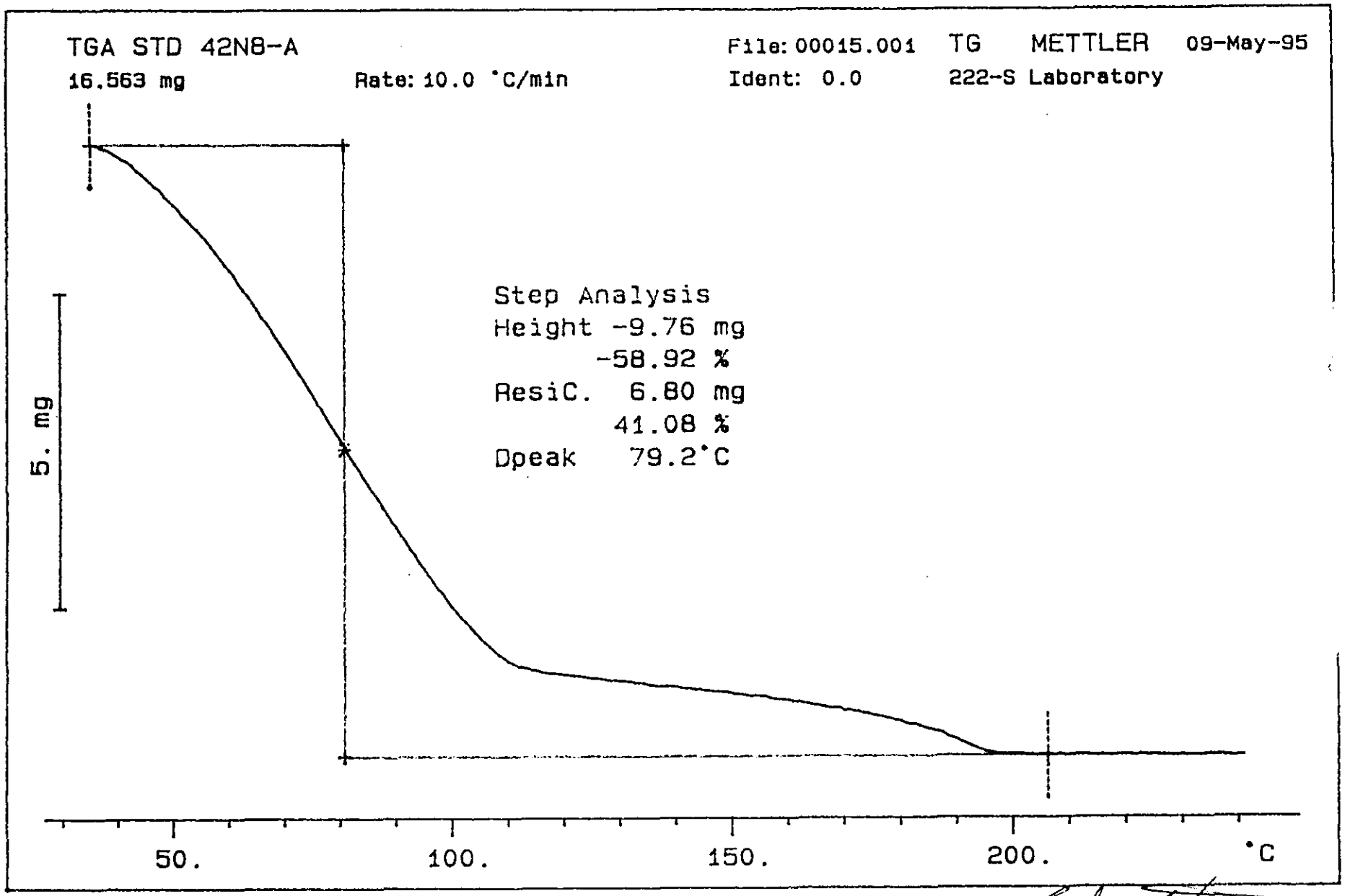
WHC-SD-WM-DP-112 REV. 1



5-8-95

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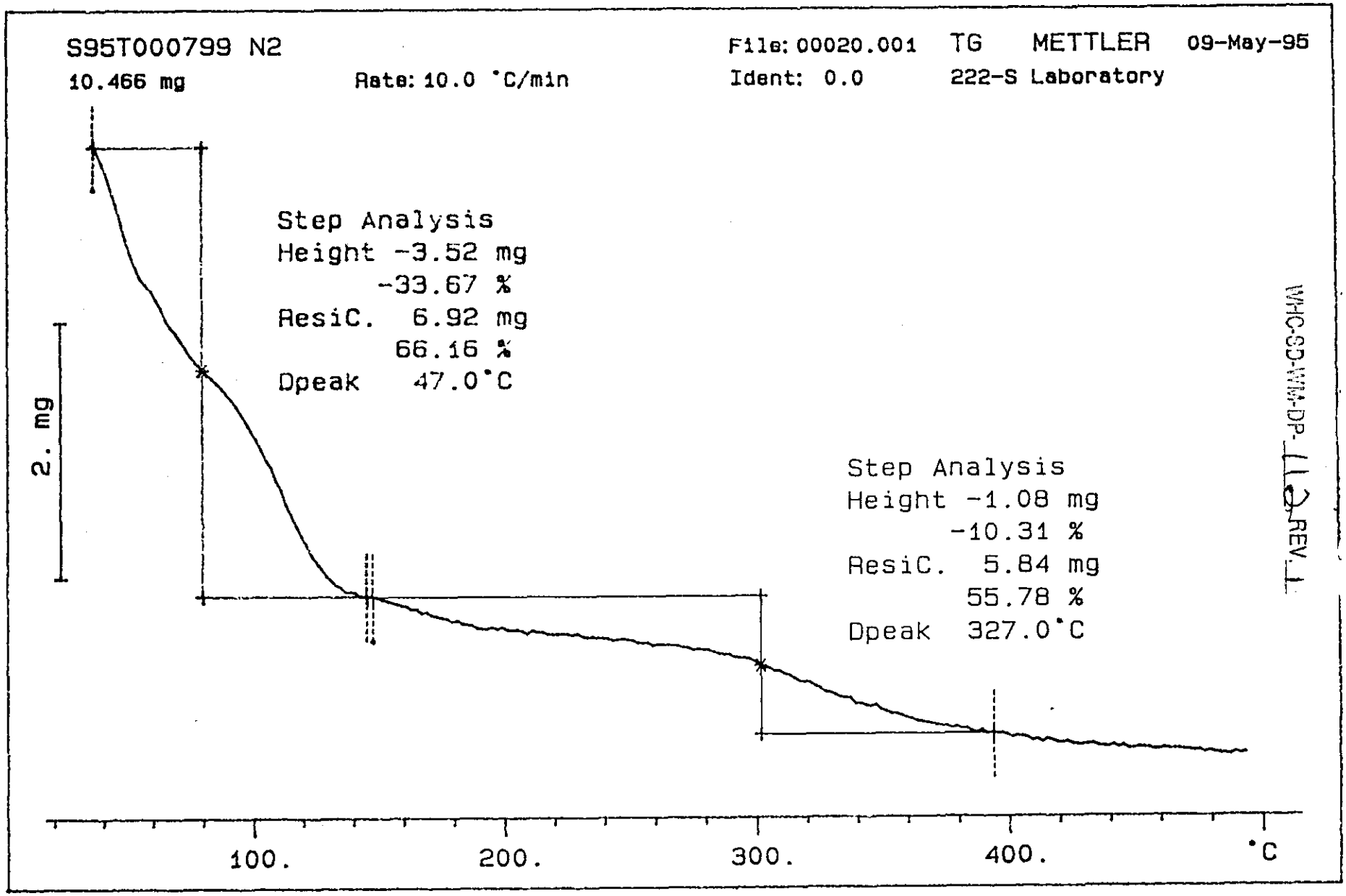

WHC-SD-WM-DP-[illegible] REV. 1

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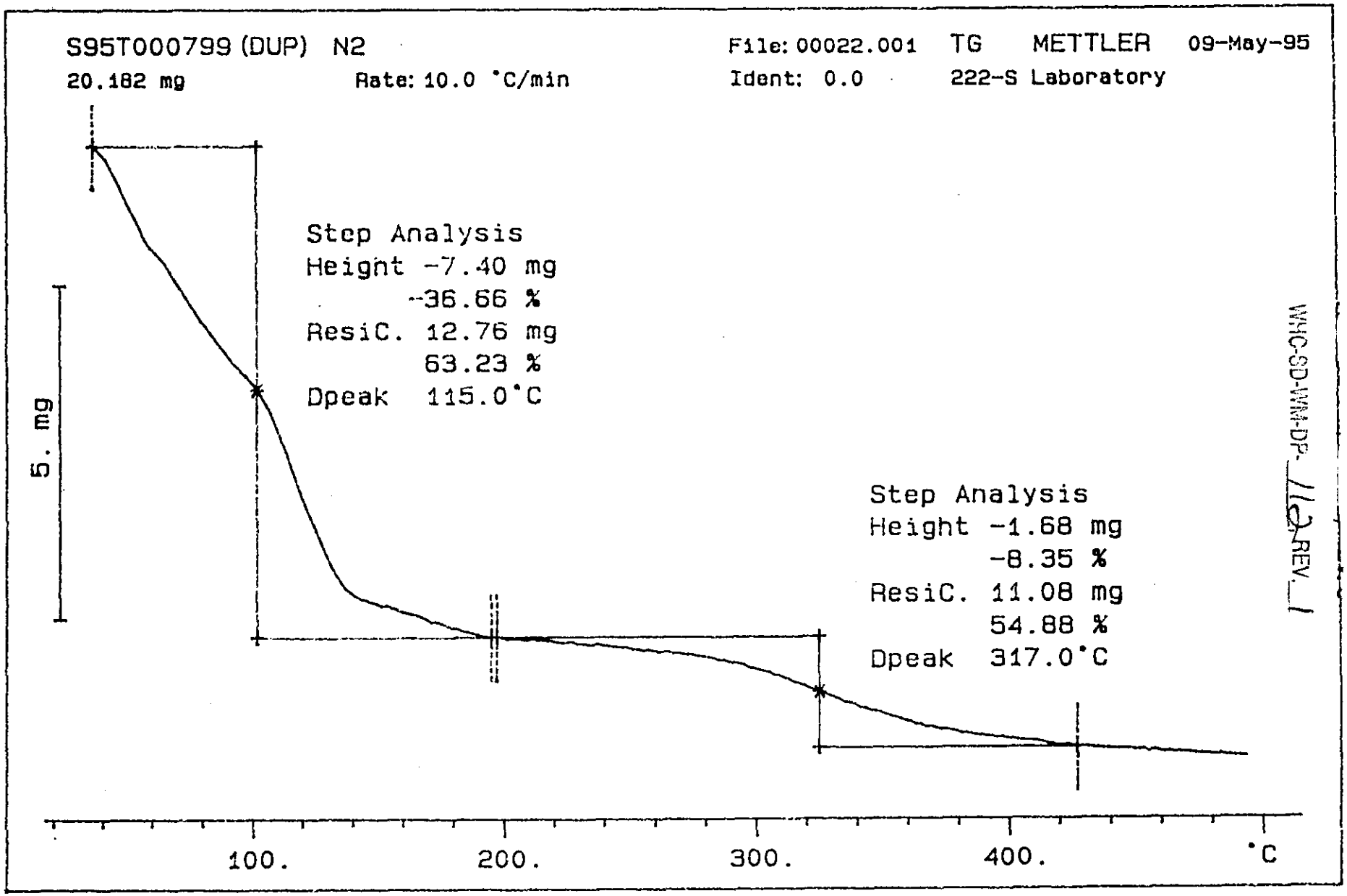

WHC-SD-WM-DP-112 REV. 1

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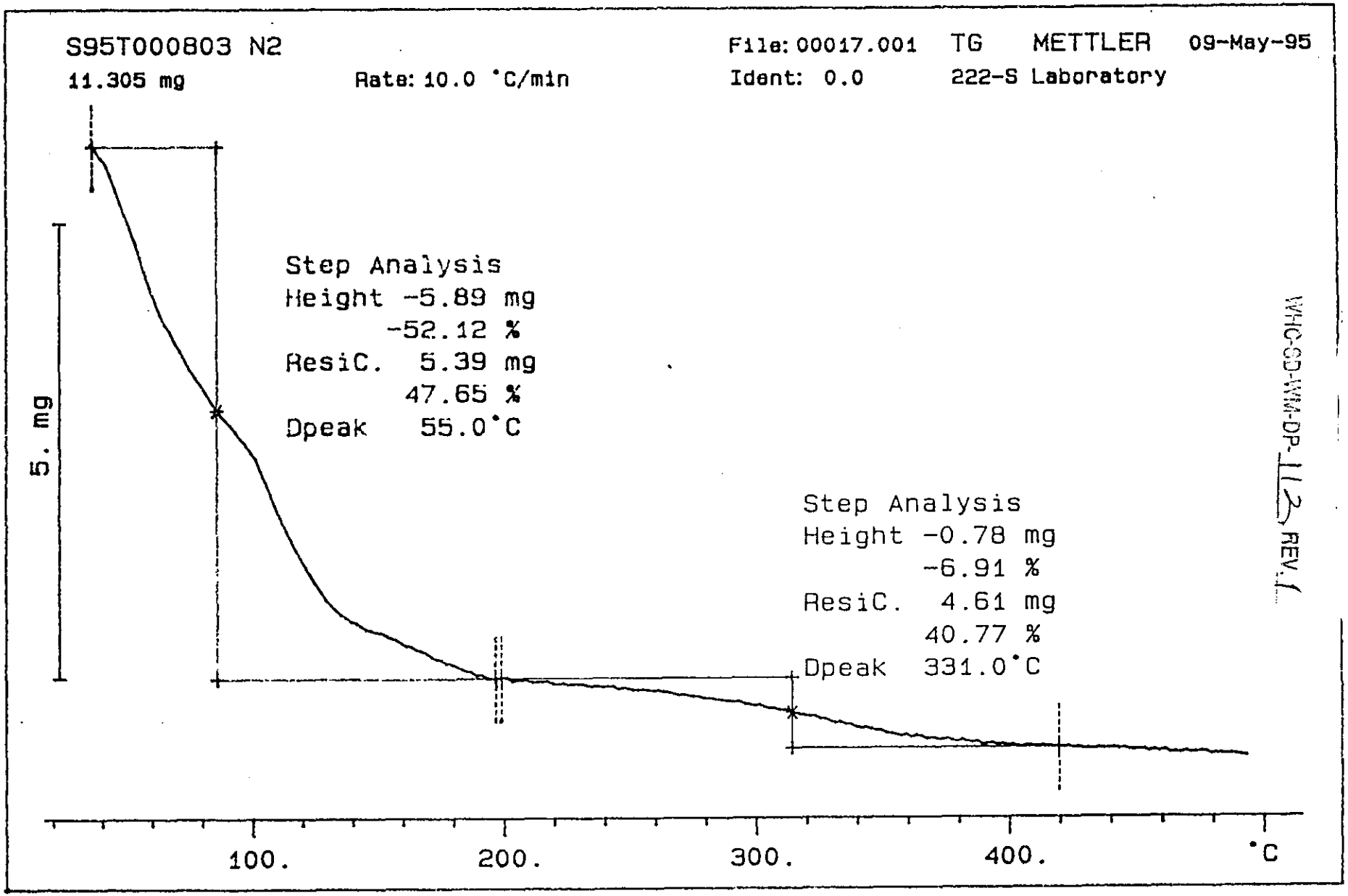

WHC-SD-WM-DP-112 REV. 1

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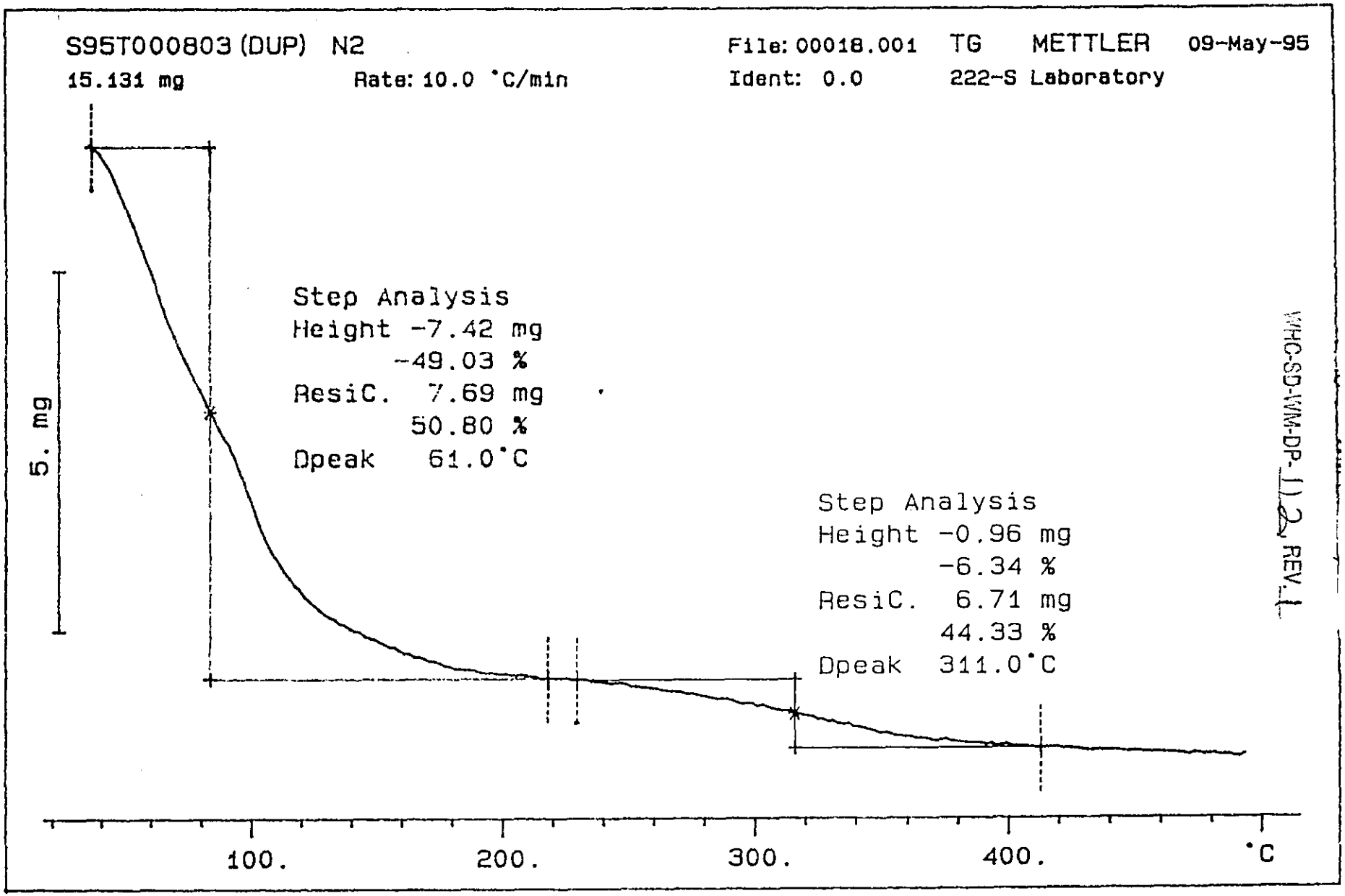


WHC-SD-WM-DP-112 REV. 1

worklistrpt Version 2.0 02/21/95
05/10/95 06:54

LABCORE Data Entry Template for Worklist# 1238

Analyst: KRM **Instrument:** TGA~~01~~ 03 5/11/95 BDV **Book #** 42N8-A

Method: LA-514-114 Rev/Mod B-0

Worklist Comment: Please run C-203 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-03	SOLID	59.19	57.39	N/A	%
95000056	C-203	2 SAMPLE	S95T000807	0		TGA-03	SOLID	N/A	41.04		%
95000056	C-203	3 DUP	S95T000807	0		TGA-03	SOLID	41.04	33.26	N/A	%
		4 STD				TGA-03	SOLID	59.19	57.68	N/A	%
95000056	C-203	5 TRIPL	S95T000807	0		TGA-03	SOLID	41.04	39.79	N/A	%
95000056	C-203	6 SAMPLE	S95T000811	0		TGA-03	SOLID	N/A	30.98		%
95000056	C-203	7 DUP	S95T000811	0		TGA-03	SOLID	30.98	31.78	N/A	%

Final page for worklist # 1238

See attached for other signatures 5/10/95
Analyst Signature Date

Susie M. Dalton 5-10-95
Analyst Signature Date

5-11-95

Verified by Blandina Valenzuela ~~5/10/95~~ 5/11/95 5/11/95 BDV

S95T000807 produced a second weight loss step of 5.95% at approximately 310°C. The triplicate for this sample was analyzed a couple of days after initial analysis, once chemist was able to look at the data.

S95T000811 produced a second weight loss step of 5.72% at approximately 310°C

Data Entry Comments:

S95000807 - Dark Brown, thick, creamy material

S95000811 - Dark Brown, thick, stiff material

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.

worklistrpt Version 2.0 02/21/95
04/27/95 09:15

LABCORE Data Entry Template for Worklist# 1238

Analyst: KRM **Instrument:** TGA01 **Book #** 42N8A

Method: ~~LA-560-112 Rev/Mod~~ LA514-114 / B-0

Worklist Comment: Please run C-203 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID			N/A	%
95000056	C-203	2 SAMPLE	S95T000807	0		TGA-01	SOLID	N/A			%
95000056	C-203	3 DUP	S95T000807	0		TGA-01	SOLID			N/A	%
95000056	C-203	4 SAMPLE	S95T000811	0		TGA-01	SOLID	N/A			%
95000056	C-203	5 DUP	S95T000811	0		TGA-01	SOLID			N/A	%

Final page for worklist # 1238

5-8-95

Analyst Signature Date

Analyst Signature Date

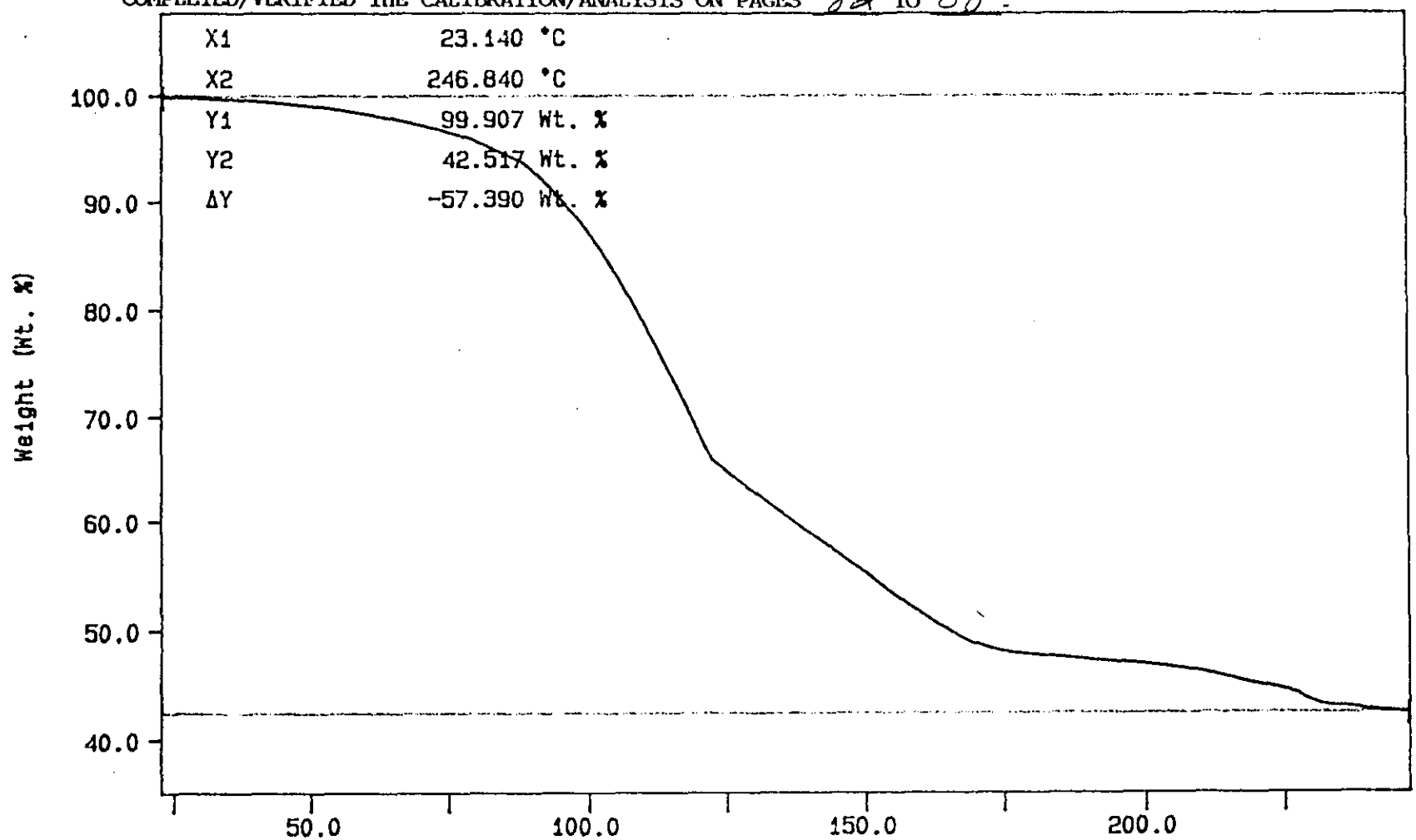
Data Entry Comments: Other instrument was used.

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.

Curve 1: TGA
File info: ter050801 Mon May 8 16:54:45 1995
Sample Weight: 16.157 mg
42N8A Terliq

BEST AVAILABLE COPY

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 82 TO 88.



N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 250.0 C

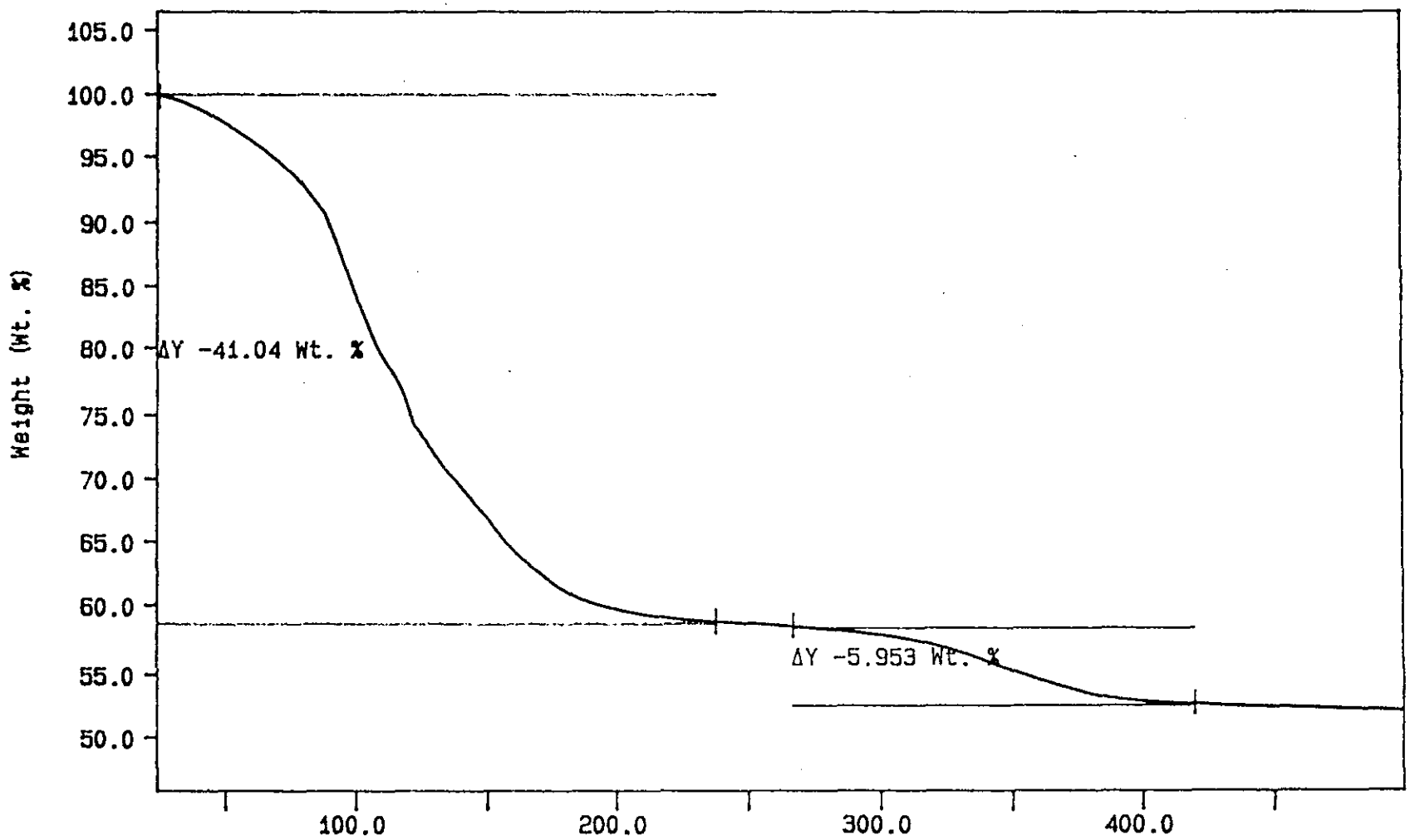
KR Monteith
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 8 17:17:01 1995

5-8-95

WHC-CD-WM-DP-112, REV. 1

Curve 1: TGA
File info: sam050801 Mon May 8 18:11:48 1995
Sample Weight: 14.481 mg
S95T000~~570 (DUP)~~. 10C/min
807

BEST AVAILABLE COPY



N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

KR Monteith
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 8 18:22:54 1995

WHC-SD-WM-DP-112 REV. 1

93

Curve 1: TGA
File info: sam050802 Mon May 8 19:18:11 1995
Sample Weight: 12.083 mg
S95T0008~~11~~07 (dup), 10C/min

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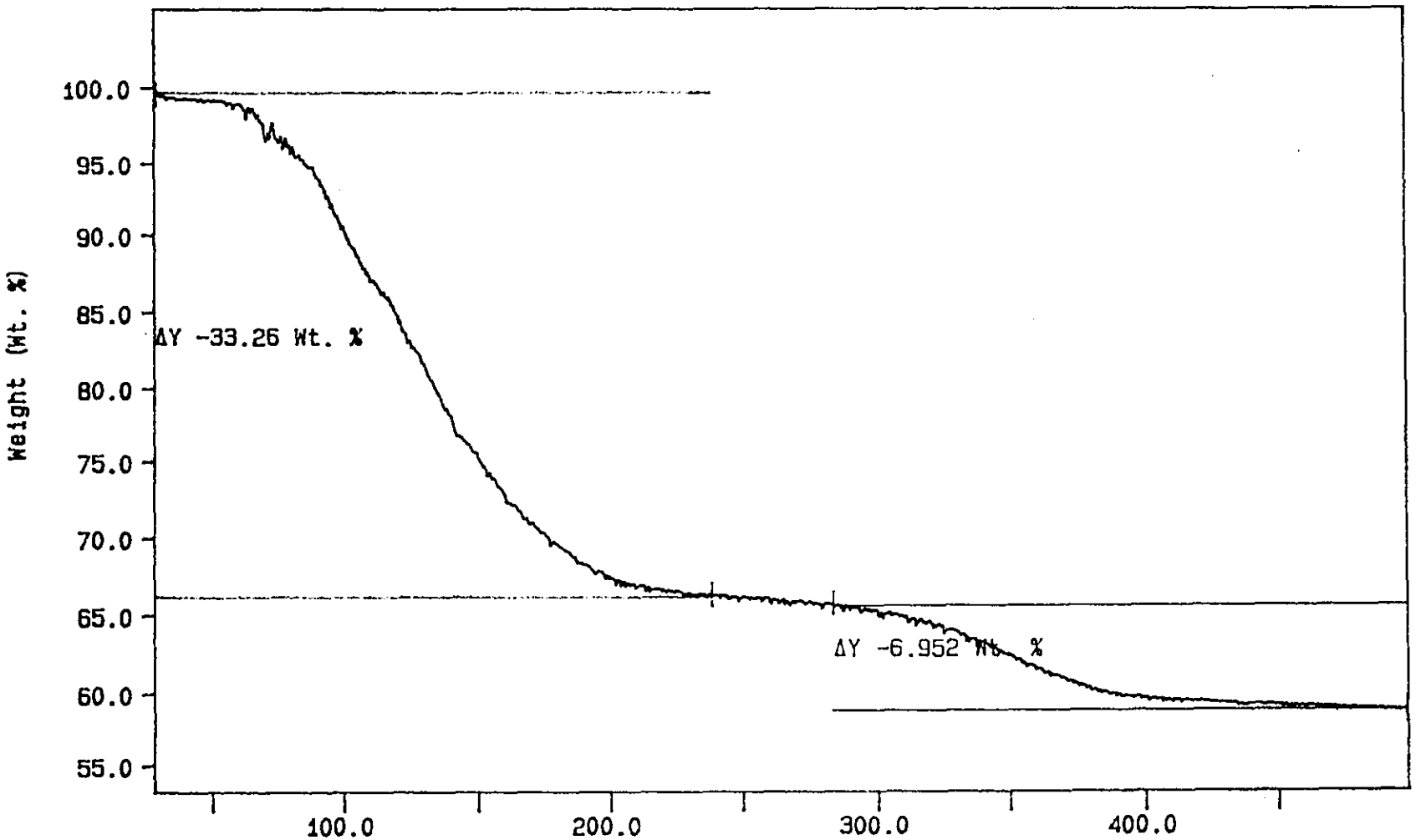


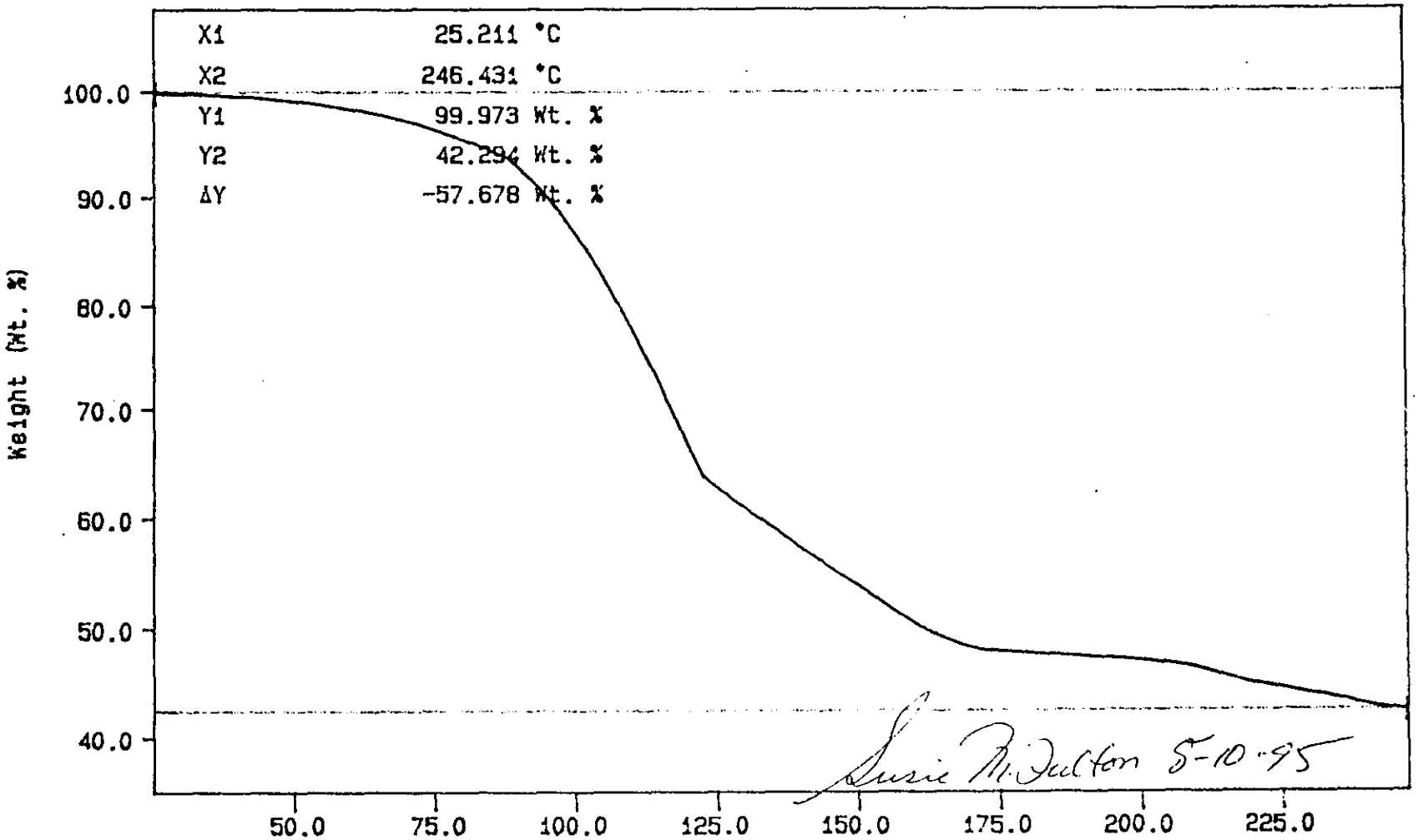
N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 800.0 C

KR Monteith
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 8 19:27:23 1995

WHC-SD-WM-DP-112 REV. 1

Curve 1: TGA
File info: TER051001 Wed May 10 08:19:56 1995
Sample Weight: 14.049 mg
42N8A Terliq

BEST AVAILABLE COPY



Susie M. Fulton 5-10-95

N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 250.0 C

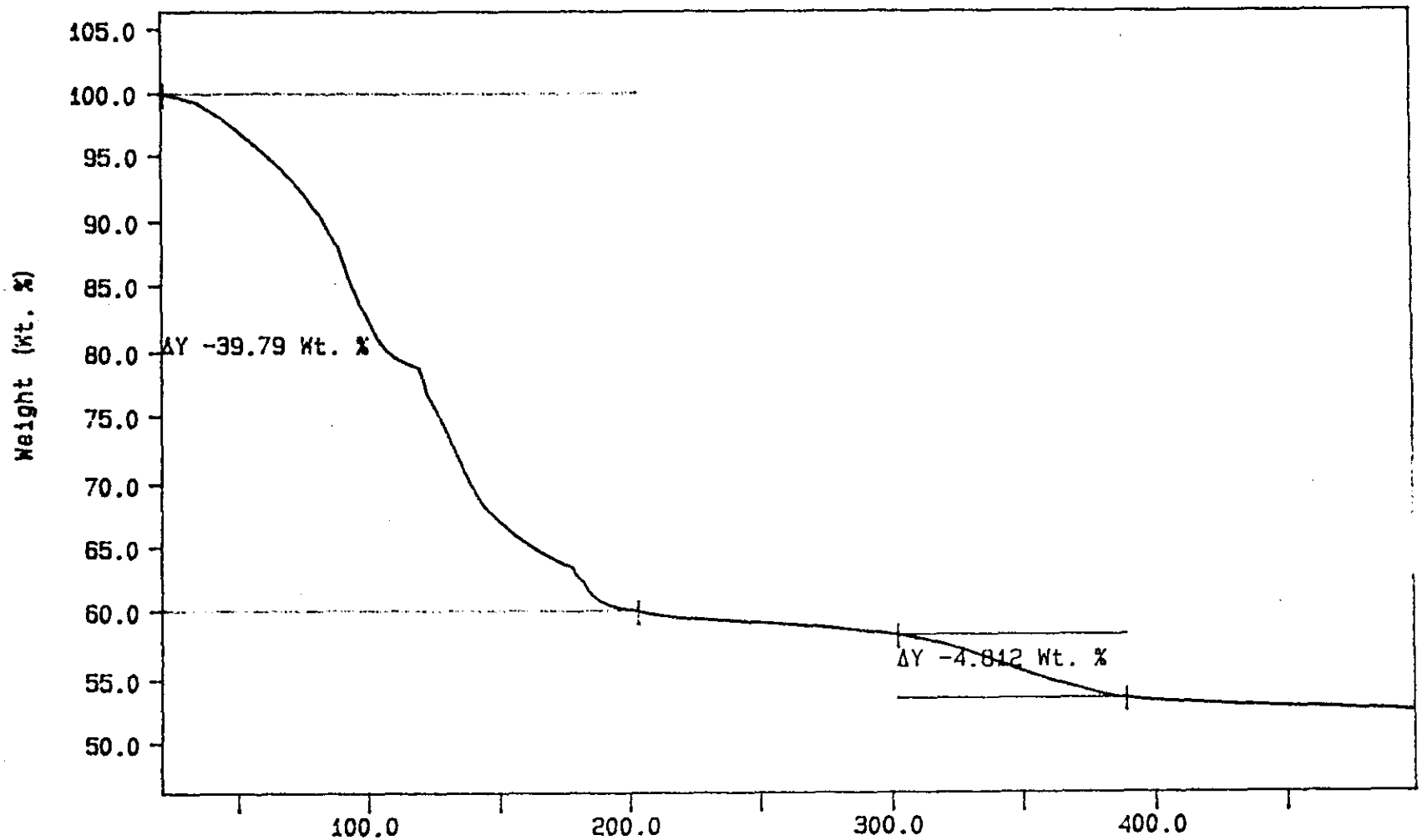
SM Fulton
PERKIN ELMER
222-S Lab
Wed May 10 08:40:45 1995

WHC-SD-WM-DP-112-REV. 1

85

Curve 1: TGA
File info: SAM051001 Wed May 10 09:48:38 1995
Sample Weight: 11.901 mg
S95T000807(TRIPL), 10C/min

BEST AVAILABLE COPY



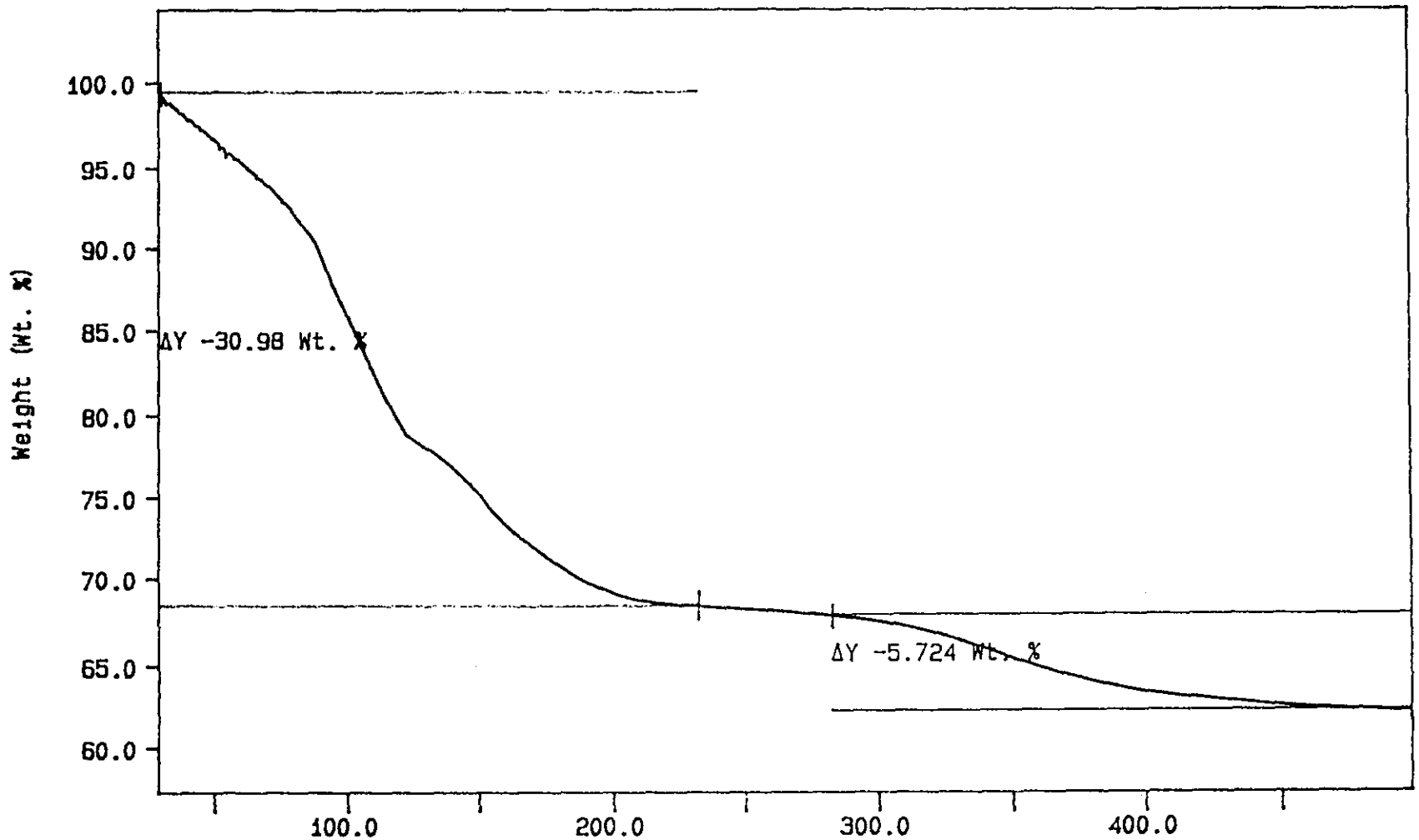
N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SM Fulton
PERKIN ELMER
222-S Lab
Wed May 10 10:08:25 1995

WHC-CD-WM-DP-112, REV. 1

Curve 1: TGA
File info: sam050803 Mon May 8 20:25:35 1995
Sample Weight: 14.450 mg
S95T000811, 10C/min

BEST AVAILABLE COPY



N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

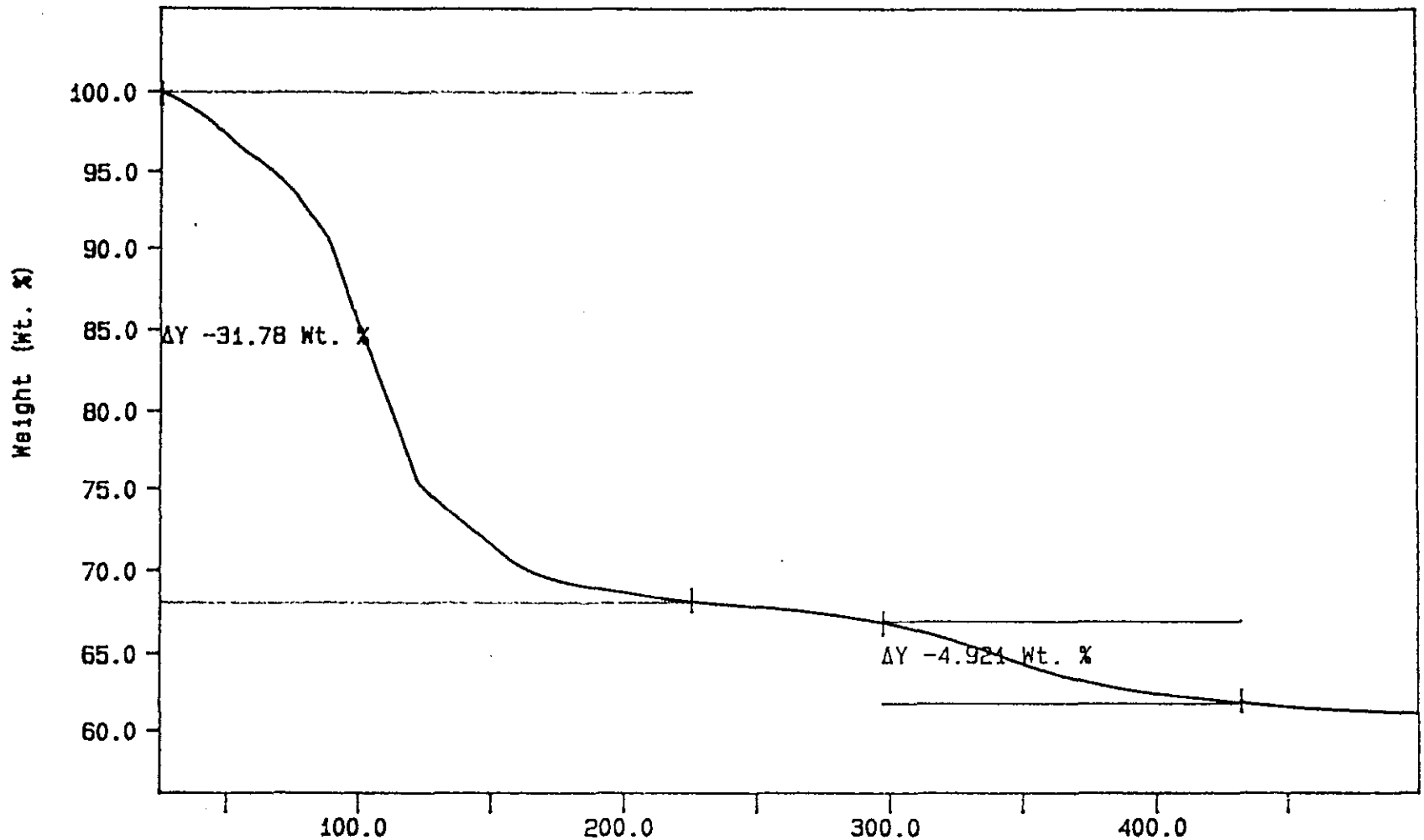
KR Monteith
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 8 21:11:26 1995

WHC-SD-WM-DP-112, REV. 1

87

Curve 1: TGA
File info: sam050804 Mon May 8 22:08:15 1995
Sample Weight: 15.985 mg
S95T000811(dup).10C/min

BEST AVAILABLE COPY



N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

KR Monteith
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 8 22:21:23 1995

WHC-SD-WM-DP-112 REV. 1

worklistrpt Version 2.0 02/21/95
05/03/95 11:33

LABCORE Data Entry Template for Worklist# 1318

Analyst: TLL **Instrument:** AB00 14 W027807 **Book #** 107B52

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

Worklist Comment: Run under RWP 273 if dose rate warrants. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	273			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	4	SAMPLE	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	4	SAMPLE	S95T000800	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	5	DUP	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	5	DUP	S95T000800	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000056	C-203	6	SPK	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	7	SAMPLE	S95T000804	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	7	SAMPLE	S95T000804	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	8	DUP	S95T000804	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	8	DUP	S95T000804	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error

Final page for worklist # 1318

Lorna Miller 5/5/95
Analyst Signature Date

Sharon L Hall 5-8-95
Analyst Signature Date

Data Entry Comments: SPK recovery is out of limits. Batch will be rerun. [illegible] 5/9/95

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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) LIQUIDS

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		14	14
STANDARD	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4145	4193
1318	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		137.667	139.267
Sample #	Sample Concentration in µCi/L		2.73E-02	BOOK#
WRKLST#1318	Replicate Concentration in µCi/L		2.76E-02	107B52
Instrument Code				
WB27807	Average Concentration in µCi/L		2.7428E-02	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)			
05/05/95	ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L			
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
10:30 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/mL	(Average) =	2.74E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.1%	1.37E-07 µCi/mL

Data Entry by:	[signature]	Date:	05/08/95
Approved by:	[signature]	Date:	5/8/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			BLANK	REPLICATE
Type	DETECTOR NUMBER		14	14
BLANK	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	11	11
1318	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	1.986	1.986
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.301	0.301
Sample #	Sample Concentration in µCi/g	<	3.00E-03	BOOK#
S95T800	Replicate Concentration in µCi/g	<	3.00E-03	
Instrument Code				
WB27807	Maximum Concentration in µCi/g	<	3.0047E-03	
Analyst				
TLM				
Date				
05/05/95				
Time				
10:30 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 3.00E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.				6.91E-03 µCi/g
RELATIVE COUNTING ERROR		=	249.9%	

Data Entry by:	[signature]	Date:	05/08/95
Approved by:	[signature]	Date:	5/8/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4106	4582
1318	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	1.986	1.986
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		136.367	152.233
Sample #	Sample Concentration in µCi/g		1.36E+00	BOOK#
S95T800	Replicate Concentration in µCi/g		1.52E+00	
Instrument Code				
WB27807	Average Concentration in µCi/g		1.4393E+00	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/05/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
10:30 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	1.44E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.1%	6.91E-03 µCi/g

Data Entry by: Sharon L Hatch Date: 05/08/95

Approved by: [signature] Date: 5/8/95

Form 508101_C Rev. 1.3

WHC-SD-WM-DP- 112, REV. 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4761	4494
1318	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	1.918	1.918
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		158.200	149.300
Sample #	Sample Concentration in µCi/g		1.63E+00	BOOK#
S95T800	Replicate Concentration in µCi/g		1.54E+00	
Instrument Code				
WB27807	Average Concentration in µCi/g		1.5879E+00	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/05/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
10:30 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	1.59E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	2.9%	7.16E-03 µCi/g

Data Entry by: [signature] Date: 05/08/95

Approved by: [signature] Date: 5/8/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		14	14
SPIKE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	41929	42062
1318	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	1.986	1.986
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Sample #	SPIKE VALUE in µCi/L	(SVal)	36.372	36.372
S95T800	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
Instrument Code	SAMPLE + SPIKE µCi/g	(S+S)	1.39E+01	1.40E+01
WB27807	AVERAGE or MAXIMUM µCi/g from FORM C		1.4393E+00	
Analyst	BOOK#		94B43	
TLM				
Date				
05/05/95				
Time				
10:30 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

PERCENT SPIKE RECOVERY = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/SVol)/(DF/SS/Dg/L)))/SVal)*100

RESULT | AVG. PERCENT SPIKE RECOVERY = 68.4% |

Data Entry by: Shyron [illegible] Date: 08-May-95

Approved by: [illegible] Date: 5/8/95

Form 508101_X Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	2200	2089
1318	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1224	2.1224
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		72.833	69.133
Sample #	Sample Concentration in µCi/g		6.80E-01	BOOK#
S95T804	Replicate Concentration in µCi/g		6.45E-01	
Instrument Code				
WB27807	Average Concentration in µCi/g		6.6250E-01	
Analyst				
TLM				
Date				
05/05/95				
Time				
10:30 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	6.62E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	4.3%	6.47E-03 µCi/g

Data Entry by:	[signature]	Date:	05/08/95
Approved by:	[signature]	Date:	5/8/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1867	1750
1318	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.5	0.5
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1548	2.1548
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		61.733	57.833
Sample #	Sample Concentration in µCi/g		5.68E-01	BOOK#
S95T804	Replicate Concentration in µCi/g		5.32E-01	
Instrument Code				
WB27807	Average Concentration in µCi/g		5.4958E-01	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/05/95				
Time	Relative Counting Error = [ ](The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100			
10:30 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	5.50E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	4.7%	6.37E-03 µCi/g

Data Entry by:	[signature]	Date:	05/08/95
Approved by:	[signature]	Date:	5/8/95

Form 508101_C Rev. 1.3

WHC-SD-WM-DP-112, REV. 1

worklistrpt Version 2.0 02/21/95
05/09/95 13:57

RUSH

LABCORE Data Entry Template for Worklist# 1366

Analyst: LM **Instrument:** AB00 16 WB27806 **Book #** 107B52

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

Worklist Comment: Use a .050 mL sample size. Rerun #1. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	.13			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	4	SAMPLE	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	4	SAMPLE	S95T000800	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	5	DUP	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	5	DUP	S95T000800	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000056	C-203	6	SPK	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	7	SAMPLE	S95T000804	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	7	SAMPLE	S95T000804	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	8	DUP	S95T000804	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	8	DUP	S95T000804	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error

Final page for worklist # 1366

Teresa Mizel 5-10-95
Analyst Signature Date

Sharon L Walker 5-11-95
Analyst Signature Date

Data Entry Comments:
Data from 1st run (worklist 1318) will be used instead of this data. [illegible] 5/15/95

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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) LIQUIDS

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		16	16
STANDARD	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	3931	3718
1366	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		130.633	123.533
Sample #	Sample Concentration in µCi/L		2.80E-02	BOOK#
WORKLIST#1366	Replicate Concentration in µCi/L		2.64E-02	107B52
Instrument Code				
WB27806	Average Concentration in µCi/L		2.7208E-02	
Analyst				
TLM				
Date				
05/10/95				
Time				
10:15 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/mL	(Average) =	2.72E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.2%	1.35E-07 µCi/mL

Data Entry by: [signature] Date: 05/11/95

Approved by: [signature] Date: 5/11/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112 REV. 1

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

LA-548-101 (A-3) SOLIDS

			BLANK.	REPLICATE
Type	DETECTOR NUMBER		16	16
BLANK.	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1	2
1366	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	1.986	1.986
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.269	0.269
Sample #	Sample Concentration in µCi/g	<	5.81E-03	BOOK#
S95T800	Replicate Concentration in µCi/g	<	5.81E-03	
Instrument Code				
WB27806	Maximum Concentration in µCi/g	<	5.8093E-03	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/10/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
10:15 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 5.81E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.				1.36E-02 µCi/g
RELATIVE COUNTING ERROR		=	73.3%	

Data Entry by:	Shyron [illegible]	Date:	05/11/95
Approved by:	[illegible]	Date:	5/11/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1727	1872
1366	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	1.986	1.986
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		57.167	62.000
Sample #	Sample Concentration in µCi/g		1.23E+00	BOOK#
S95T800	Replicate Concentration in µCi/g		1.34E+00	
Instrument Code				
WB27806	Average Concentration in µCi/g		1.2846E+00	
Analyst				
TLM				
Date				
05/10/95				
Time				
10:15 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	1.28E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	4.8%	1.36E-02 µCi/g

Data Entry by: [signature] Date: 05/11/95

Approved by: [signature] Date: 5/11/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1944	2309
1366	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	1.918	1.918
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		64.400	76.567
Sample #	Sample Concentration in µCi/g		1.44E+00	BOOK#
S95T800	Replicate Concentration in µCi/g		1.71E+00	
Instrument Code				
WB27806	Average Concentration in µCi/g		1.5735E+00	
Analyst				
TLM				
Date				
05/10/95				
Time				
10:15 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	1.57E+00	DETECTION LEVEL
				1.41E-02 µCi/g
RELATIVE COUNTING ERROR		=	4.5%	

Data Entry by:	Shyron [illegible]	Date:	05/11/95
Approved by:	[illegible]	Date:	5/11/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		16	16
SPIKE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	27059	32081
1366	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.050	0.050
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	1.986	1.986
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Sample #	SPIKE VALUE in µCi/L	(SVal)	36.372	36.372
S95T800	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
Instrument Code	SAMPLE + SPIKE µCi/g	(S+S)	1.94E+01	2.30E+01
WB27806	AVERAGE or MAXIMUM µCi/g from FORM C		1.2846E+00	
Analyst	BOOK#		94B43	
TLM				
Date				
05/10/95				
Time				
10:15 AM				

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

PERCENT SPIKE RECOVERY = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/SVol)/(DF/SS/Dg/L)))/SVal)*100

RESULT AVG. PERCENT SPIKE RECOVERY = 54.5%

Data Entry by:	Shyron L Hoffman	Date:	11-May-95
Approved by:	[illegible]	Date:	5/11/95

Form 508101_X Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1041	1093
1366	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1224	2.1224
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		34.300	36.033
Sample #	Sample Concentration in µCi/g		6.92E-01	BOOK#
S95T804	Replicate Concentration in µCi/g		7.27E-01	
Instrument Code				
WB27806	Average Concentration in µCi/g		7.0947E-01	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/10/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
10:15 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	7.09E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	6.2%	1.27E-02 µCi/g

Data Entry by:	Sharon L Yoder	Date:	05/11/95
Approved by:	[illegible]	Date:	5/11/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1009	957
1366	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1548	2.1548
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		33.233	31.500
Sample #	Sample Concentration in µCi/g		6.60E-01	BOOK#
S95T804	Replicate Concentration in µCi/g		6.26E-01	
Instrument Code				
WB27806	Average Concentration in µCi/g		6.4316E-01	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/10/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
10:15 AM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	6.43E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	6.5%	1.25E-02 µCi/g

Data Entry by: [signature] Date: 05/11/95

Approved by: [signature] Date: 5/11/95

Form 508101_C Rev. 1.3

RUSH

worklistrpt Version 2.0 02/21/95
05/09/95 13:59

HC-SD-WM-DP-112 REV. 1

LABCORE Data Entry Template for Worklist# 1367

Analyst: ZMT **Instrument:** AB00 14 WB 27807 **Book #** 107 B52

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

Worklist Comment: Use a .050 mL sample size. Rerun #1. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	.30			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	4	SAMPLE	S95T000808	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	4	SAMPLE	S95T000808	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	5	DUP	S95T000808	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	5	DUP	S95T000808	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000056	C-203	6	SAMPLE	S95T000812	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	6	SAMPLE	S95T000812	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	7	DUP	S95T000812	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	7	DUP	S95T000812	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error

Final page for worklist # 1367

Teresa Mix 5-10-95
Analyst Signature Date

Sharon L Hulsbe 5-11-95
Analyst Signature Date

Data Entry Comments: High RPD values are consistent with original run. Indicates a problem with sample prep (possibly that the Duplicates were interchanged). [illegible] 5/15/95

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.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) LIQUIDS

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		14	14
STANDARD	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4212	4042
1367	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		140.100	134.433
Sample #	Sample Concentration in µCi/L		2.78E-02	BOOK#
WORKLIST#1367	Replicate Concentration in µCi/L		2.66E-02	107B52
Instrument Code				
WB27807	Average Concentration in µCi/L		2.7191E-02	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)			
05/10/95	ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L			
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
12:30 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/mL	(Average) =	2.72E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.1%	1.10E-07 µCi/mL

Data Entry by:	Sharon L Hylton	Date:	05/11/95
Approved by:	[illegible]	Date:	5/11/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			BLANK	REPLICATE
Type	DETECTOR NUMBER		14	14
BLANK	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	3	3
1367	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0712	2.0712
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.233	0.233
Sample #	Sample Concentration in µCi/g	<	4.46E-03	BOOK#
S95T808	Replicate Concentration in µCi/g	<	4.46E-03	
Instrument Code				
WB27807	Maximum Concentration in µCi/g	<	4.4634E-03	
Analyst				
TLM				
Date				
05/10/95				
Time				
12:30 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 4.46E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.				1.07E-02 µCi/g
RELATIVE COUNTING ERROR		=	113.2%	

Data Entry by: [signature] Date: 05/11/95

Approved by: [signature] Date: 5/11/95

Form 508101_C Rev. 1.3

Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4615	4287
1367	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0712	2.0712
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		153.533	142.600
Sample #	Sample Concentration in µCi/g		2.94E+00	BOOK#
S95T808	Replicate Concentration in µCi/g		2.73E+00	
Instrument Code				
WB27807	Average Concentration in µCi/g		2.8322E+00	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/10/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
12:30 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	2.83E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.0%	1.07E-02 µCi/g

Data Entry by:	Stephen [illegible]	Date:	05/11/95
Approved by:	[illegible]	Date:	5/11/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1777	1719
1367	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1844	2.1844
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		58.933	57.000
Sample #	Sample Concentration in µCi/g		1.07E+00	BOOK#
S95T808	Replicate Concentration in µCi/g		1.03E+00	
Instrument Code				
WB27807	Average Concentration in µCi/g		1.0513E+00	
Analyst				
TLM				
Date				
05/10/95				
Time				
12:30 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	1.05E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	4.8%	1.01E-02 µCi/g

Data Entry by:	Sharon L Upton	Date:	05/11/95
Approved by:	[signature]	Date:	5/11/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1482	1477
1367	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.19	2.19
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		49.100	48.933
Sample #	Sample Concentration in µCi/g		8.88E-01	BOOK#
S95T812	Replicate Concentration in µCi/g		8.85E-01	
Instrument Code				
WB27807	Average Concentration in µCi/g		8.8672E-01	
Analyst				
TLM	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/10/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
12:30 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	8.87E-01	DETECTION LEVEL
				1.01E-02 µCi/g
RELATIVE COUNTING ERROR		=	5.1%	

Data Entry by:	Sharon L Ugalde	Date:	05/11/95
Approved by:	[signature]	Date:	5/11/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
DUPLICATE	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4411	4480
1367	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1652	2.1652
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		146.733	149.033
Sample #	Sample Concentration in µCi/g		2.68E+00	BOOK#
S95T812	Replicate Concentration in µCi/g		2.73E+00	
Instrument Code				
WB27807	Average Concentration in µCi/g		2.7059E+00	
Analyst				
TLM				
Date				
05/10/95				
Time				
12:30 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	2.71E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.0%	1.02E-02 µCi/g

Data Entry by: Sharon L. Duffy Date: 05/11/95

Approved by: [signature] Date: 5/11/95

Form 508101_C Rev. 1.3

LABCORE Data Entry Template for Worklist# 1402

Analyst: _____ **Instrument:** AB00 _____ **Book #** _____

Method: LA-508-101 Rev/Mod 02

Worklist Comment: Re-entry of original data (Worklist ~~1366~~ 1318). SLF 5/15/95

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	4	SAMPLE	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	4	SAMPLE	S95T000800	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	5	DUP	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	5	DUP	S95T000800	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000056	C-203	6	SPK	S95T000800	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	7	SAMPLE	S95T000804	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	7	SAMPLE	S95T000804	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	8	DUP	S95T000804	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	8	DUP	S95T000804	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error

Final page for worklist # 1402

Analyst Signature Date

Analyst Signature Date 5/15/95

Data Entry Comments: Re-entry of Data from WL 1318 (see attached). 5/15/95

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

WHC-SD-WM-DP-112, REV. 0

THE FOLLOWING ANALYSES ARE INCLUDED IN THE DATA PACKAGE BUT THE RESULTS HAVE NOT BEEN REPORTED IN THE FINAL SUMMARY REPORTS.

worklistrpt Version 2.0 02/21/95
05/02/95 07:54

LABCORE Data Entry Template for Worklist# 1287

Analyst: SGH **Instrument:** AB00 16 WB27806 **Book #** 107653

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

Worklist Comment: If dose rate warrants, run under RWP 273. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG	.36			@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	4	SAMPLE	S95T000808	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	4	SAMPLE	S95T000808	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	5	DUP	S95T000808	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	5	DUP	S95T000808	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000056	C-203	6	SAMPLE	S95T000812	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000056	C-203	6	SAMPLE	S95T000812	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000056	C-203	7	DUP	S95T000812	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000056	C-203	7	DUP	S95T000812	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error

Final page for worklist # 1287

Analyst Signature 5-5-95 Date

Analyst Signature SGH 5-8-95 Date

DATA NOT USED IN PACKAGE

Data Entry Comments: RPD's for samples are out of control limits. Batch will be rerun. 5/9/95

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

WHC-CD-WM-DP- 112 REV. 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) LIQUIDS

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		16	16
STANDARD	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4443	4116
1287	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR	(DDF)	1	1
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		147.500	136.600
Sample #	Sample Concentration in µCi/L		3.16E-02	BOOK#
WRKLST#1287	Replicate Concentration in µCi/L		2.92E-02	107B52
Instrument Code				
WB27806	Average Concentration in µCi/L		3.0412E-02	
Analyst				
KGH	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF * DDF / (EFF * SS * 2220000dpm/µCi)			
05/05/95	ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L			
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/mL	(Average) =	3.04E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.1%	1.61E-07 µCi/mL

Data Entry by: S Lacom / Holden Date: 05/08/95

Approved by: [signature] Date: 5/8/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			BLANK	REPLICATE
Type	DETECTOR NUMBER		16	16
BLANK	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	11	2
1287	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0712	2.0712
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330
Sample #	Sample Concentration in µCi/g	<	6.82E-03	BOOK#
S95T808	Replicate Concentration in µCi/g	<	6.82E-03	
Instrument Code				
WB27806	Maximum Concentration in µCi/g	<	6.8222E-03	
Analyst				
KGH	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/05/95				
Time	Relative Counting Error = [ ](The Square Root of TC + BKG * CT) / (TC - BKG * CT)[ ] * 1.96 * 100			
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Maximum) =	< 6.82E-03	DETECTION LEVEL
LESS Than Value was Determined from Lc.				1.55E-02 µCi/g
RELATIVE COUNTING ERROR		=	150.8%	

Data Entry by:	[signature]	Date:	05/08/95
Approved by:	[signature]	Date:	5/8/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4815	4620
1287	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.0712	2.0712
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		159.900	153.400
Sample #	Sample Concentration in µCi/g		3.31E+00	BOOK#
S95T808	Replicate Concentration in µCi/g		3.17E+00	
Instrument Code				
WB27806	Average Concentration in µCi/g		3.2385E+00	
Analyst				
KGH	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/05/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	3.24E+00	DETECTION LEVEL
				1.55E-02 µCi/g
RELATIVE COUNTING ERROR		=	2.9%	

Data Entry by:	Sharon [illegible]	Date:	05/08/95
Approved by:	[illegible]	Date:	5/8/95

Form 508101_C Rev. 1.3

WHC-SD-WM-DP-112, REV. 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1786	1896
1287	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1844	2.1844
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		58.933	62.600
Sample #	Sample Concentration in µCi/g		1.16E+00	BOOK#
S95T808	Replicate Concentration in µCi/g		1.23E+00	
Instrument Code				
WB27806	Average Concentration in µCi/g		1.1911E+00	
Analyst				
KGH	Rs (Sample Count Rate) = (TC / CT) - BKG			
Date	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)			
05/05/95				
Time	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100			
02:00 PM	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	1.19E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	4.7%	1.47E-02 µCi/g

Data Entry by:	[signature]	Date:	05/08/95
Approved by:	[signature]	Date:	5/8/95

Form 508101_C Rev. 1.3

WHC-SD-WM-DP-112, REV.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	1566	1529
1287	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.19	2.19
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE		51.600	50.367
Sample #	Sample Concentration in µCi/g		1.01E+00	BOOK#
S95T812	Replicate Concentration in µCi/g		9.85E-01	
Instrument Code				
WB27806	Average Concentration in µCi/g		9.9682E-01	
Analyst				
KGH				
Date				
05/05/95				
Time				
02:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	9.97E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	5.1%	1.47E-02 µCi/g

Data Entry by:	[signature]	Date:	05/08/95
Approved by:	[signature]	Date:	5/8/95

Form 508101_C Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-112, REV. 1

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

LA-548-101 (A-3) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
DUPLICATE	DISH SIZE 1, 2, or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	4666	4395
1287	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS/L	(Dg/L)	2.1652	2.1652
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		154.933	145.900
Sample #	Sample Concentration in µCi/g		3.06E+00	BOOK#
S95T812	Replicate Concentration in µCi/g		2.89E+00	
Instrument Code				
WB27806	Average Concentration in µCi/g		2.9746E+00	
Analyst				
KGH				
Date				
05/05/95				
Time				
02:00 PM				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	(Average) =	2.97E+00	DETECTION LEVEL
RELATIVE COUNTING ERROR		=	3.0%	1.48E-02 µCi/g

Data Entry by: [signature] Date: 05/08/95

Approved by: [signature] Date: 5/8/95

Form 508101_C Rev. 1.3