Stu.4 (3)

JUL 12 1996

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16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

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2	1	Cog.Eng. G. L. Miller	[signature]	7/12/96							
2	1	Cog. Mgr. C. T. Narquis	[signature] for	7/12/96							
2	1	QA	[signature]	7/12/96							
2	1	Production Planning & Control A.D. Rice	[signature]	7-12-96							

18.	19.	20.	21. DOE APPROVAL (if required)
L. R. Webb [signature] 7/12/96 Signature of EDT Originator Date	Authorized Representative for Receiving Organization Date	C. T. Narquis [signature] for Cognizant Manager Date 7-12-96	Ctrl. No. [] Approved [] Approved w/comments [] Disapproved w/comments

BD-7400-172-2 (04/94) GEF097

"45-DAY SAFETY SCREENING RESULTS FOR TANK 241-U-101, GRAB SAMPLES 1U-96-1 THROUGH 1U-96-4

G. L. Miller
Westinghouse Hanford Company, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

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Abstract: N/A

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7/12/96
Date

DATE: STA: 4 RELEASE ID: JUL 12 1996
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Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-190, REV. 0

ANALYTICAL SERVICES

45-DAY SAFETY SCREENING RESULTS FOR TANK 241-U-101, GRAB SAMPLES 1U-96-1 THROUGH 1U-96-4

Project Coordinator: GEORGE L. MILLER

Prepared for the U.S. Department of Energy
Office of Environmental Restoration
and Waste Management

by

Westinghouse Hanford Company
Box 1970
Richland, Washington

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NARRATIVE

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222-S ANALYTICAL SERVICES

45 DAY SAFETY SCREENING RESULTS FOR TANK 241-U-101 SAMPLES 1U-96-1 THROUGH 1U-96-4

This document is the 45 Day Safety Screening Report for grab samples taken from tank 241-U-101 risers 1 and 7 between May 29, 1996 and May 30, 1996. Analyses were performed in accordance with the Tank Sampling and Analysis Plan (TSAP) for this tank (T. M. Brown, 1996) and the Safety Screening Data Quality Objective (DQO) (Dukelow, et al. 1995).

Notification limits were not exceeded for differential scanning calorimetry (DSC) or total alpha (AT) analyses for any of the samples, consequently immediate notifications were not necessary and were not made.

Appearance and Sample Handling

Table 1 identifies the samples that were taken, the tank risers from which they were taken, the date that the samples were collected, and the date that the samples were received at the lab. It also associates the original customer sample number with corresponding laboratory sample numbers and provides a description of sample appearance and an estimate of the bulk density of the solids.

Attachment 1, pages 11 and 12, provides a graphical cross-reference for relating the tank farm customer identification numbers with the 222-S Laboratory sample numbers. The subsamples generated in the laboratory for analysis are identified in the diagram with the associated analyses performed on the subsamples.

Table 1: Sample and Appearance Information for Tank 241-U-101 Grab Samples

Customer Sample Number	Laboratory Sample Number	Sample Type	Date Sampled	Date Received	Riser Number	Sampling Elevation (in.)*	Volume % Solids	Density of Solids (g/ml)**	Sample Description
1U-96-FB	S96T003309	Field Blank	5/30/96	5/30/96	7	216	Not Analyzed	Not Analyzed	Clear colorless liquid; no solids; no organic layer
1U-96-1	S96T003272	Supernate & sludge	5/30/96	5/30/96	7	0	<2	Insufficient Sample	Clear yellow colored liquid; large settled solid chunks (pea gravel size) with a small amount of fine precipitate; no organic layer
1U-96-2	S96T003306	Supernate & sludge	5/30/96	5/30/96	7	0	<2	Insufficient Sample	Clear yellow colored liquid; large settled solid chunks (pea gravel size) with a small amount of fine precipitate; no organic layer
1U-96-3	S96T003307	Supernate & sludge	5/29/96	5/29/96	1	0	11	Insufficient Sample	Clear yellow colored liquid; a few very large settled solid chunks (½" gravel size) with a small amount of fine precipitate; no organic layer
1U-96-4	S96T003308	Supernate & sludge	5/29/96	5/29/96	1	0	29	1.60	Clear yellow colored liquid; no large settled solid chunks but with a significant amount of sand sized solids; no organic layer

* Sample elevation is measured from tank bottom to mouth of the sample bottle

** Density of solids was determined after having removed large gravel-sized solid particles.

Analytical Results Summary

The data summary table, Table 3, included in this report displays the safety screening analytical results and applicable action limits associated for each subsample.

Differential Scanning Calorimetry (DSC)

The DSC data indicated that none of the five liquid samples and none of the four solid samples exceeded the notification limit of 480 joules/g on a dry weight basis. As a consequence, no secondary analyses have been requested for analysis.

Percent recoveries for all standards were within the TSAP specified limits of 80 to 120 percent.

Except for one solid sample, all duplicate RPDs were within the limits specified in the TSAP (<30 for solids and <20 for liquids). For the solids from sample 1U-96-1 (S96T003468), the duplicate RPD was 200%. A rerun was not requested, however, because its calculated DSC (dry weight basis) of 29.4 Joules/gram was 16 times less than the notification limit.

The cognitive chemist noted that for the liquid fraction of samples 1U-96-2 (S96T003329), 1U-96-3 (S96T003330) and 1U-96-4 (S96T003331) sharp endotherm peaks were observed after the evaporation of water, indicating the possible melting or evaporation of a pure compound(s).

Thermogravimetric Analysis (TGA)

Average TGA results for the liquid fractions of the samples ranged from 71.72 to 77.73 percent water. For samples 1U-96-1 (S96T003328) and 1U-96-4 (S96T003331), percent moisture was calculated as the sum of two weight loss steps below 200 °C.

Average TGA results for the solid fractions of the samples ranged from 20.48 to 37.15 percent water. For samples 1U-96-1 (S96T003468) and 1U-96-2 (S96T003469), the thermograms have many small peaks which are due to laboratory vibrations seen at high scale expansion. Higher scale expansion was needed because only a small amount of sample was used (available) for these analyses.

Percent recoveries for all standards were within the TSAP specified limits of 80 to 120 percent.

All duplicate RPDs were within the limits specified in the TSAP (<30 for solids and <20 for liquids).

Density

Bulk density was determined on the original (as received) samples, which included both the liquid and solid fractions. These data are reported in the data summary tables ***(Table 3)***.

Density of the solids is presented in Table 1. Only sample 1U-96-4 (S96T003308) had a sufficient amount of solids to be characterized for density. This sample had a density of 1.60 g/ml..

Total Alpha (AT)

Results for total alpha (AT) indicate that none of the four liquid samples exceeded the TSAP specified notification limit of 41 µCi/g. The liquid sample having the greatest activity was 4 orders of magnitude less than the notification limit.

The TSAP, page 12, required a recalculation of the total alpha activity notification limit for solids when the solid density exceeded 1.5 g/ml. Using the TSAP formula and the density for sample 1U-96-4 of 1.6 g/ml, the recalculated notification limit for solids was 38.4 µCi/g. None of the four solid samples exceeded this limit. As a consequence, no secondary analyses have been requested for analysis.

Percent recoveries for all standards were within the TSAP specified limits of 70 to 130 percent.

The TSAP specified limit for duplicate RPDs was <20 percent. This limit was met for all samples. The TSAP required a duplicate analysis for each sample. Duplicate analyses were performed on all of the liquid samples, however only one duplicate was analyzed on the solid samples (1U-96-4 {S96T003604}) because there was an insufficient amount of sample to perform duplicate fusion preparations. Consequently a rerun cannot be performed on the other three solid samples.

The TSAP specified limit for spike recovery was 75 to 125 percent recovery. This limit was met for all samples.

Procedures

Table 2 lists the analytical procedures used for performing the sample analyses. Abbreviations for analyses are defined in the table notes.

Table 2: Analytical Procedures

Analysis	Sample Portion	Preparation Procedure +	Analysis Procedure
DSC	Supernate & Solids	N/A	LA-514-114 Rev. C-1 LA-514-113 Rev. C-1
TGA	Supernate & Solids	N/A	LA-514-114 Rev. C-1 LA-560-112 Rev. B-1
Sp.G.	Supernate	N/A	LA-510-112 Rev. C-3
V%SLD	Solids	N/A	LA-519-151 Rev. E-2
AT	Supernate & Solids	LA-549-141 Rev. F-0	LA-943-127 Rev. B-1

Abbreviations:
N/A = not applicable (these are direct samples)
DSC = differential scanning calorimetry
TGA = thermogravimetric analysis
Sp.G. = specific gravity
AT = total alpha
V%SLD = volume percent solids

References

Brown, T. M., 1996, *Tank 241-U-101 Grab Sampling and Analysis Plan*, WHC-SD-WM-TSAP-095, Rev. 0, Westinghouse Hanford Company, Richland, WA 99352.

Dukelow, G. T., J. W. Hunt, H. Babad, and J. E. Meacham, 1995, *Tank Safety Screening Data Quality Objective*, WHC-SD-WM-SP-004, Rev. 2, Westinghouse Hanford Company, Richland, WA 99352.

ATTACHMENT 1

U-101 SAMPLE BREAKDOWN

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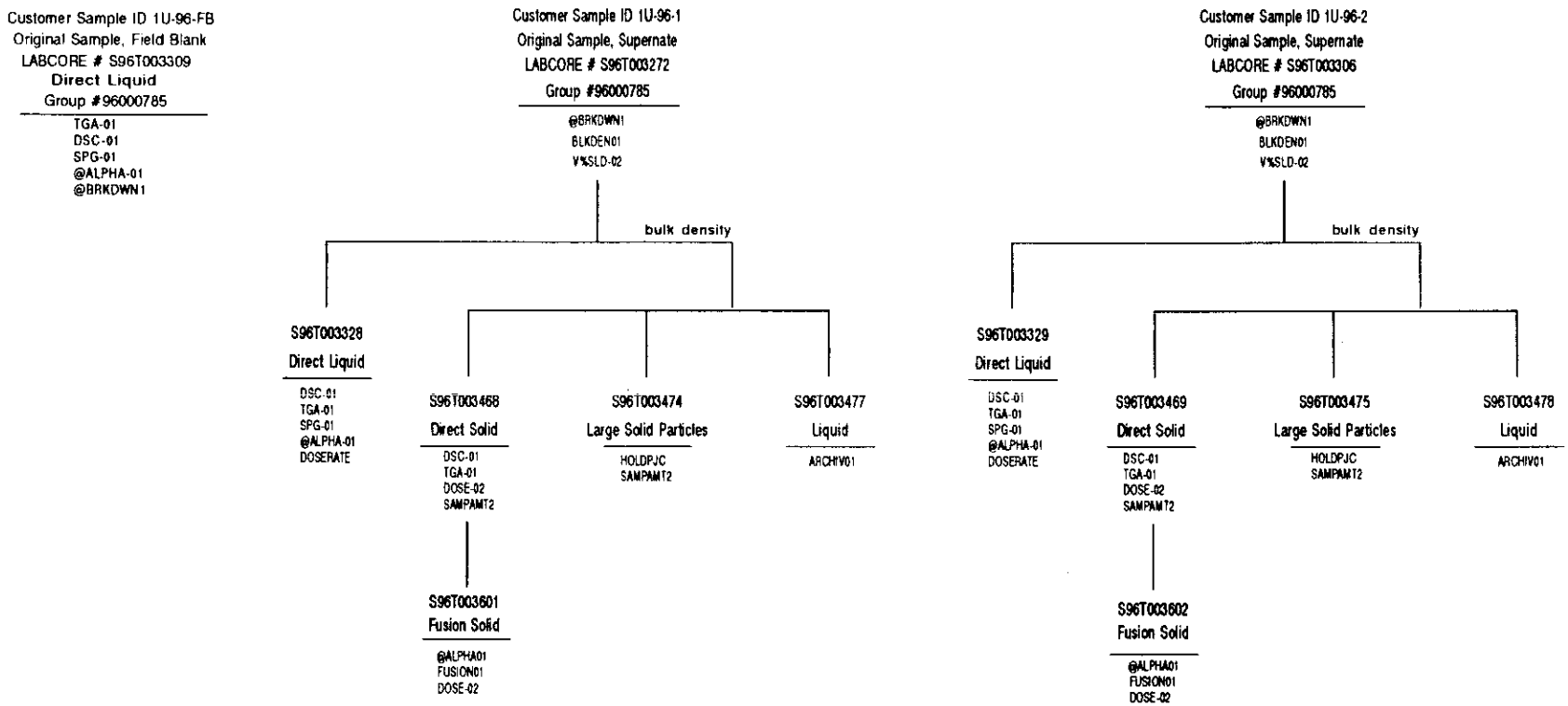
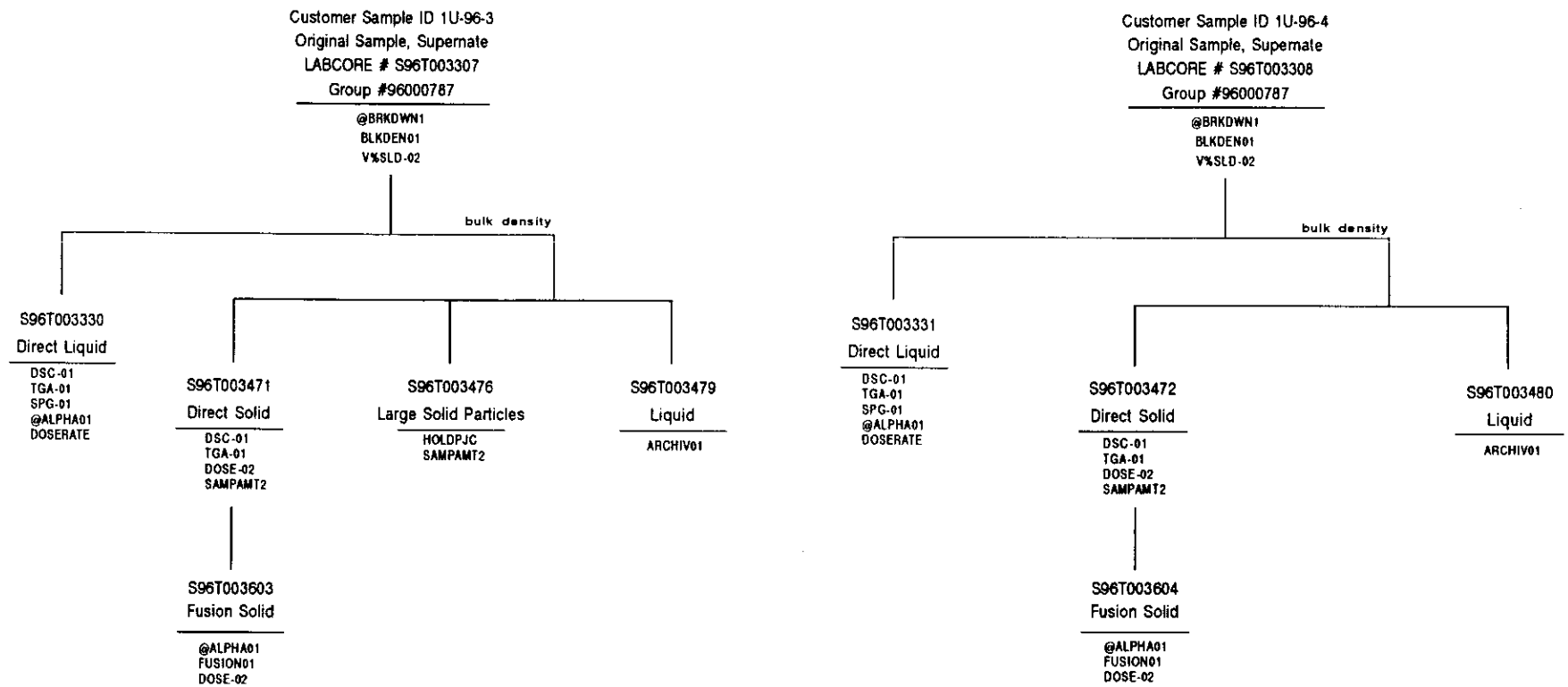
TANK 241-U-101

SAMPLE - SUBSAMPLE RELATIONSHIPS



TANK 241-U-101

SAMPLE - SUBSAMPLE RELATIONSHIPS



SAMPLE DATA SUMMARY

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Table 3: Data Summary Table
U-101 GRAB

RISER: 7
SEGMENT #: 1U-96-1

SEGMENT PORTION: Sludge (from Liquid Grab Sample)

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003468			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	113.5	n/a	19.40	0.00e+00	9.700	200	n/a	n/a	n/a
S96T003468			% Water by TGA using Mettler	%	None	None	99.21	n/a	33.94	29.93	31.93	12.6	n/a	n/a	n/a
S96T003601		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	90.62	<2.55e-02	8.27e-02	n/a	n/a	n/a	n/a	4.00e-02	6.00E+01

Supernate: Supernate

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003272			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.180	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T003272			Volume % Solids	%	None	None	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	n/a	n/a
S96T003328			DSC Exotherm on Perkin Elmer	Joules/g	None	None	98.45	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T003328			% Water by TGA on Perkin Elmer	%	None	None	98.51	n/a	65.25	78.40	71.83	18.3	n/a	n/a	n/a
S96T003328			Alpha in Liquid Samples	uCi/mL	-1.0e+03	41.00	92.19	<3.41e-04	2.14e-03	2.43e-03	2.28e-03	12.7	93.87	4.55e-04	4.05E+01

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Table 3: Data Summary Table
U-101 GRAB

RISER: 7
SEGMENT #: 1U-96-2

SEGMENT PORTION: Sludge (from Liquid Grab Sample)

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003469			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	113.5	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T003469			% Water by TGA using Mettler	%	None	None	99.21	n/a	21.90	19.06	20.48	13.9	n/a	n/a	n/a
S96T003602		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	90.62	<2.55e-02	<6.59e-02	n/a	n/a	n/a	n/a	5.70e-02	2.55E+02

Supernate: Supernate

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003306			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.180	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T003306			Volume % Solids	%	None	None	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	n/a	n/a
S96T003329			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	109.7	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T003329			% Water by TGA on Perkin Elmer	%	None	None	99.29	n/a	77.70	77.77	77.73	0.09	n/a	n/a	n/a
S96T003329			Alpha in Liquid Samples	uCi/mL	-1.0e+03	41.00	92.19	<3.41e-04	1.82e-03	1.50e-03	1.66e-03	19.3	n/a	4.55e-04	3.89E+01

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Table 3: Data Summary Table
U-101 GRAB

RISER: 1
SEGMENT #: 1U-96-3

SEGMENT PORTION: Sludge (from Liquid Grab Sample)

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003471			DSC Exotherm on Perkin Elmer	Joules/g	None	None	99.82	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T003471			% Water by TGA using Mettler	%	None	None	98.72	n/a	36.68	37.61	37.14	2.50	n/a	n/a	n/a
S96T003603		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	90.62	<2.55e-02	1.02e-01	n/a	n/a	n/a	n/a	3.70e-02	4.57E+01

Supernate: Supernate

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003307			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.180	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T003307			Volume % Solids	%	None	None	n/a	n/a	11.00	n/a	n/a	n/a	n/a	n/a	n/a
S96T003330			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	108.3	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T003330			% Water by TGA on Perkin Elmer	%	None	None	99.29	n/a	77.63	76.86	77.25	1.00	n/a	n/a	n/a
S96T003330			Alpha in Liquid Samples	uCi/mL	-1.0e+03	41.00	92.19	<3.41e-04	1.66e-03	1.44e-03	1.55e-03	14.2	n/a	4.55e-04	4.14E+01

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Table 3: Data Summary Table
U-101 GRAB

RISER: 1
SEGMENT #: 1U-96-4

SEGMENT PORTION: Sludge (from Liquid Grab Sample)

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003472			DSC Exotherm on Perkin Elmer	Joules/g	None	None	99.82	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T003472			% Water by TGA using Mettler	%	None	None	98.72	n/a	27.70	31.36	29.53	12.4	n/a	n/a	n/a
S96T003604		F	Alpha of Digested Solid	uCi/g	-1.0e+03	41.00	90.62	<2.55e-02	6.14e-02	5.15e-02	5.65e-02	17.5	97.77	2.90e-02	4.98E+01

Supernate: Supernate

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003308			Bulk Density of Sample	g/mL	None	None	n/a	n/a	1.230	n/a	n/a	n/a	n/a	5.00e-01	n/a
S96T003308			Volume % Solids	%	None	None	n/a	n/a	29.00	n/a	n/a	n/a	n/a	n/a	n/a
S96T003331			DSC Exotherm using Mettler	Joules/g	-1.0e+03	480.0	111.8	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T003331			% Water by TGA using Mettler	%	None	None	101.5	n/a	78.12	77.70	77.91	0.54	n/a	n/a	n/a
S96T003331			Alpha in Liquid Samples	uCi/mL	-1.0e+03	41.00	92.19	<3.41e-04	1.50e-03	1.50e-03	1.50e-03	0.00	n/a	4.55e-04	4.45E+01

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Table 3: Data Summary Table
U-101 GRAB

RISER: 7
SEGMENT #: 1U-96-FB

SEGMENT PORTION: Field Blank

Sample#	R	A#	Analyte	Unit	Action Limits Lower	Action Limits Upper	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S96T003309			DSC Exotherm on Perkin Elmer	Joules/g	None	None	98.45	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S96T003309			% Water by TGA on Perkin Elmer	%	None	None	99.04	n/a	99.10	99.62	99.36	0.52	n/a	n/a	n/a
S96T003309			Alpha in Liquid Samples	uCi/mL	-1.0e+03	41.00	117.2	<5.70e-08	<4.30e-08	<6.61E-8	n/a	n/a	91.64	7.74e-08	5.00E+02

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CHAIN OF CUSTODY FORMS

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CHAIN-OF-CUSTODY RECORD FOR AUGER/GRAB SAMPLING

! Shipment Number 200E-07-TF (2) Sample Number IU-96-1 (3) Supervisor R.J. Prazniik

) Tank U101 (5) Riser 7 (6) Cask/PIG Shipping Container Serial Number WT-SHP-6003A

ıdiation Survey Data For Cask/PIG:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Side Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Bottom Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Smearable Contamination	<20 (Alpha)	<20 DPM (Alpha)
	<1K (Beta-Gamma)	<1000 DPM (Beta-Gamma)
RCT: Rebecca Holland (Signature)	RCT: [illegible] (Signature)	

[8] Shipment Description	
A. Work Package Number	WS-96-00123
B. Cask/PIG Seal Number	1977
C. Date and Time Sample Removed from Tank	5-30-96 / 1240hrs
D. Expected Liquid Content	95%
E. Expected Solid Content	* 5%
F. Dose Rate Through Drill String (Auger)/On Contact (GRAB)	80 mR/hr
G. Expected Sample Length (Auger)/ Volume (GRAB)	125ml

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

BEST AVAILABLE COPY

22

0) Field Comments
* some suspended solids

(32) Laboratory Comments

1) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
U101 Riser 7	222-S	James Sickels For B. Prazniik JAMES SICKELS	1350 5-30-96	

7) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
James Sickels JAMES SICKELS	David J Keane David J Keane	1400 5-30-96	

1) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
David J Keane David J Keane	[illegible] EEPubCS	5-30-96 1500	

5) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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

STRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling Goldenrod - Tank Farm Operations.

BC-8001-326 (01/96)

WHC-SD-WM-DP-190, REV. 0

May. 30. 1996 3:30PM WHC 222S LAB ROOM 2F BACKSIDE No. 1317 P. 2/3

CHAIN-OF-CUSTODY RECORD FOR AUGER/GRAB SAMPLING

) Shipment Number 200E-07-TF (2) Sample Number 1U-96-2 (3) Supervisor R.J. Peaznik

) Tank U101 (5) Riser 7 (6) Cask/PIG Shipping Container Serial Number 6003 EAP 5-30-96

ıdiation Survey Data For Cask/PIG:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5mR/hr	<0.5mR/hr
Side Dose Rate	<0.5mR/hr	<0.5mR/hr
Bottom Dose Rate	<0.5mR/hr	<0.5mR/hr
Smearable Contamination (Alpha)	<20	<20 DPM
(Beta-Gamma)	<1K	<1000 DPM
RCT (Signature)	Ridam Holland	RCT (Signature)

(8) Shipment Description

A. Work Package Number	W5-96-00123
B. Cask/PIG Seal Number	1978
C. Date and Time Sample Removed from Tank	5-30-96/1251 hrs
D. Expected Liquid Content	95%
E. Expected Solid Content	* 5%
F. Dose Rate Through Drill String (Auger)/On Contact (GRAB)	80mR/hr
G. Expected Sample Length (Auger)/ Volume (GRAB)	125ml

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

BEST AVAILABLE COPY

0) Field Comments

* Some suspended solids.

(32) Laboratory Comments

1) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
U101 riser #7	222-S	For B. Peaznik James Sickels	1350 5-30-96	

7) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
James Sickels JAMES Sickels	[signature]	14:25 5-30-96	

1) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
[signature]	EF Dubes	15:00 5-30-96	

5) 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.	Seal No.	Sample No.
☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No	☑ Yes ☐ No

STRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling Goldenrod - Tank Farm Operations.

BC-6001-326 (01/96)

WHC-SD-WM-DP-190, REV. 0

May. 30. 1996 3:31PM WHC 222S LAB ROOM 2F BACKSIDE No. 1317 P. 3/3

CHAIN-OF-CUSTODY RECORD FOR AUGER/GRAB SAMPLING

) Shipment Number 200E-07-TF (2) Sample Number 1U-96-3 (3) Supervisor R.J Prazniik

) Tank U101 (5) Riser 1 (6) Cask/PIG Shipping Container Serial Number 6003D

adiation Survey Data For Cask/PIG:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Side Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Bottom Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Smearable Contamination	<20 (Alpha)	<20 DPM (Alpha)
	<1K (Beta-Gamma)	<1000 DPM (Beta-Gamma)
RCT*	Rebecca Holland (Signature)	RCT Ed C. Miere (Signature)

(8) Shipment Description	
A. Work Package Number	WS-96-00123
B. Cask/PIG Seal Number	~~1979~~ 1606 5-29-96
C. Date and Time Sample Removed from Tank	5-29-96/1205hr
D. Expected Liquid Content	90%
E. Expected Solid Content	≈ 10%
F. Dose Rate Through Drill String (Auger)/On Contact (GRAB)	200mR/h
G. Expected Sample Length (Auger)/ Volume (GRAB)	125ml

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

BEST AVAILABLE COPY

0) Field Comments	(32) Laboratory Comments
* SOME suspended solids	

1) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
U101 Nozzle 1	222 S	For B. Prazniik James Sickels	1255 5-29-96	
7) Relinquished By (Sign and PRINT)		(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
James Sickels		M L Dunnigan	1310 5-29-96	
1) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
M L Dunnigan		E E Dukes	5-29-96 1320	
7) Relinquished By (Sign and PRINT)		(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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

STRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling Goldenrod - Tank Farm Operations. BC-6001-326 (01/96)

WHC-SD-WM-DP-190, REV. 0

May. 30. 1996 10:48AM WHC 222S LAB ROOM 2F BACKSIDE No. 1297 P. 1/2

CHAIN-OF-CUSTODY RECORD FOR AUGER/GRAB SAMPLING

! Shipment Number 200E-07-TF (2) Sample Number 1U DX-96-4 (3) Supervisor R. J Prazniz

) Tank U101 (5) Riser 1 (6) Cask/PIG Shipping Container Serial Number 6003 A

idiation Survey Data For Cask/PIG:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Side Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Bottom Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Smearable Contamination	<20 (Alpha)	<20 DPM (Alpha)
	<1K (Beta-Gamma)	<1000 DPM (Beta-Gamma)
RCT*	Robert Holland (Signature)	RCT* J. C. Miner (Signature)

(8) Shipment Description	
A. Work Package Number	WS-96-00123
B. Cask/PIG Seal Number	~~1980~~ 1607 5-29-96
C. Date and Time Sample Removed from Tank	5-29-96/1214hrs
D. Expected Liquid Content	90%
E. Expected Solid Content	* 10%
F. Dose Rate Through Drill String (Auger)/On Contact (GRAB)	150 mR/hr
G. Expected Sample Length (Auger)/ Volume (GRAB)	125ml

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

BEST AVAILABLE COPY

25

0) Field Comments	(32) Laboratory Comments
* some suspended solids.	

1) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
U101 riser 1	222-S	For B. Prazniz James Sickels	1255 5-29-96	

7) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
James Sickels	M L Dunnington	1330 5-29-96	

1) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
M L Dunnington	E E Dubs	5-29-96 KD	

5) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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

STRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling Goldenrod - Tank Farm Operations. BC-6001-326 (01/96)

WHC-SD-WM-DP-190, REV. 0

CHAIN-OF-CUSTODY RECORD FOR AUGER/GRAB SAMPLING

(1) Shipment Number 200E-07-TF (2) Sample Number 1U-96-FB (3) Supervisor RJ PRAZNIK

(4) Tank U101 (5) Riser 7 (6) Cask/PIG Shipping Container Serial Number 6C003D

Radiation Survey Data For Cask/PIG:	(7) FIELD	(31) LABORATORY
Over Top Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Side Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Bottom Dose Rate	<0.5 mR/hr	<0.5 mR/hr
Smearable Contamination	<20 (Alpha)	<20 DPM (Alpha)
	<1K (Beta-Gamma)	<1000 DPM (Beta-Gamma)
RCT*	Ronna Holland (Signature)	RCT* Ted C. Mura (Signature)

(8) Shipment Description

A. Work Package Number	WS-96-00123
B. Cask/PIG Seal Number	1647
C. Date and Time Sample Removed from Tank	5/30/96 1220hrs
D. Expected Liquid Content	95% 100%
E. Expected Solid Content	*5-30-96 5% 0%
F. Dose Rate Through Drill String (Auger)/On Contact (GRAB)	Ø mRhr
G. Expected Sample Length (Auger)/ Volume (GRAB)	125ml

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

BEST AVAILABLE COPY

26

(30) Field Comments

~~* Some suspended solids~~ entered in error, Field Blank 5-30-96

(32) Laboratory Comments

(11) Point of Origin	(12) Destination	(13) Sender Name (Sign and PRINT)	(14) Date/Time	(15) Sender Comments
U101 R/7	222-S	FOR B. PRAZNIK James Sickels JAMES SICKELS	1350 5-30-96	
(17) Relinquished By (Sign and PRINT)		**(18) Received By (Sign and PRINT)**	**(19) Date/Time**	**(20) Receiver Comments**
James Sickels JAMES SICKELS		David J Keane DAVID J KEANE	1400 5-30-96	
(21) Relinquished By (Sign and PRINT)		**(22) Received By (Sign and PRINT)**	**(23) Date/Time**	**(24) Receiver Comments**
David J Keane DAVID J KEANE		David J Keane 5/30/96	1450 5-30-96	1500
(25) Relinquished By (Sign and PRINT)		**(26) Received By (Sign and PRINT)**	**(27) Date/Time**	**(28) Receiver Comments**

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

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Waste Tank Sampling Goldenrod - Tank Farm Operations.

BC-6001-326 (01/96)

WHC-SD-WM-DP-190 REV. 0

May. 30. 1996 3:30PM WHC 222S LAB ROOM 2F BACKSIDE No. 1317 P. 1/3

INORGANIC ANALYSES

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LABCORE Data Entry Template for Worklist# 9684

Analyst: JLF **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: U-101 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				DSC-01	LIQUID	28.45	31.8*	N/A	Joules/g
96000787	U-101 GRAB	2 SAMPLE	S96T003331	0		DSC-01	LIQUID	N/A	Ø		Joules/g
96000787	U-101 GRAB	3 DUP	S96T003331	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 9684

Jessi Frisby 6-15-96
Analyst Signature **Date**

R Hth 6-21-96
Analyst Signature **Date**

Verified/Validated by
Blanaina Villanueva
6-24-96

BEST AVAILABLE COPY

Data Entry Comments: Both sample and duplicate displayed sharp endotherms after the evaporation of water, which may be due to the melting of a pure compound.

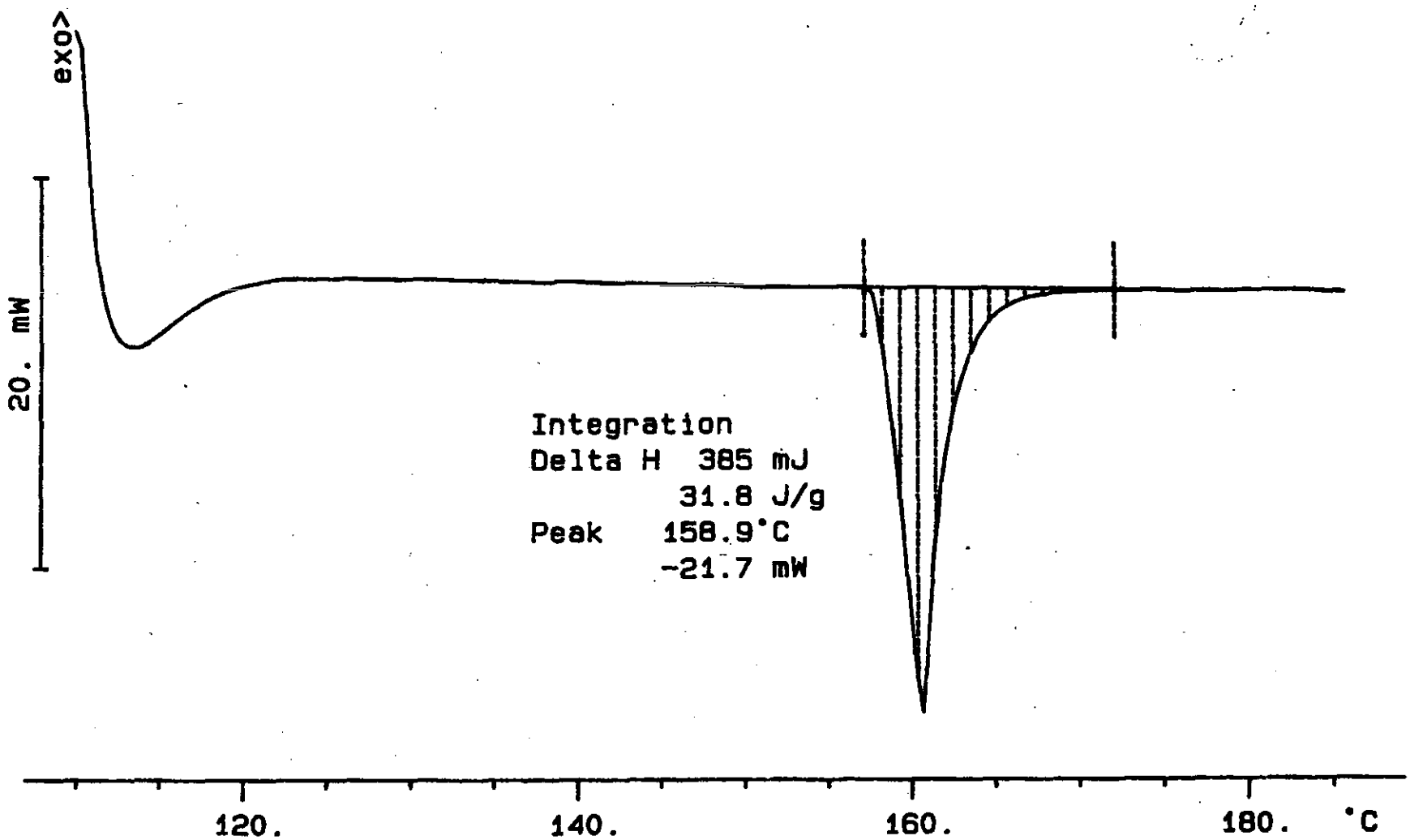
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 29 TO 32.

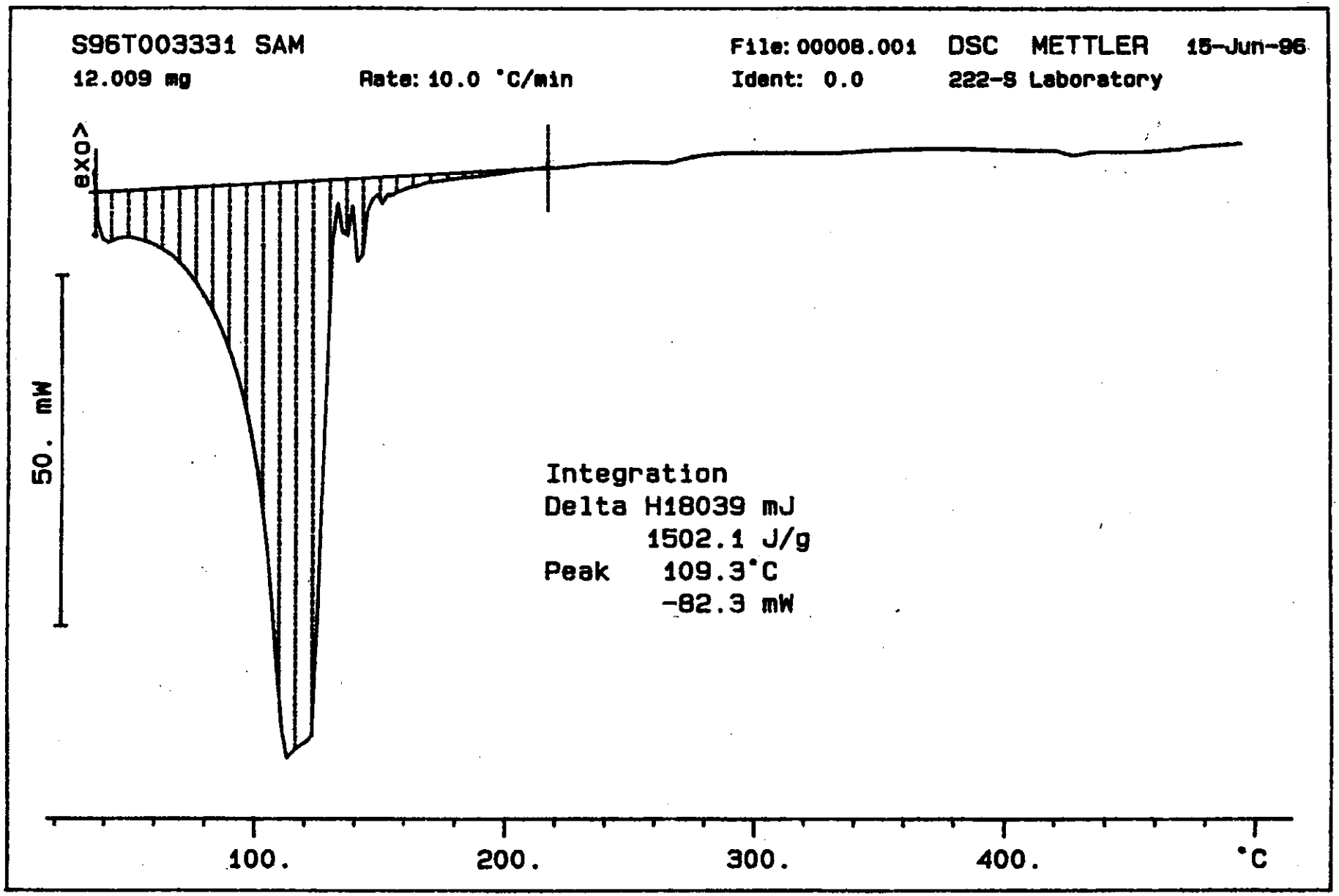
DSC STD 12N14B 7-12-96

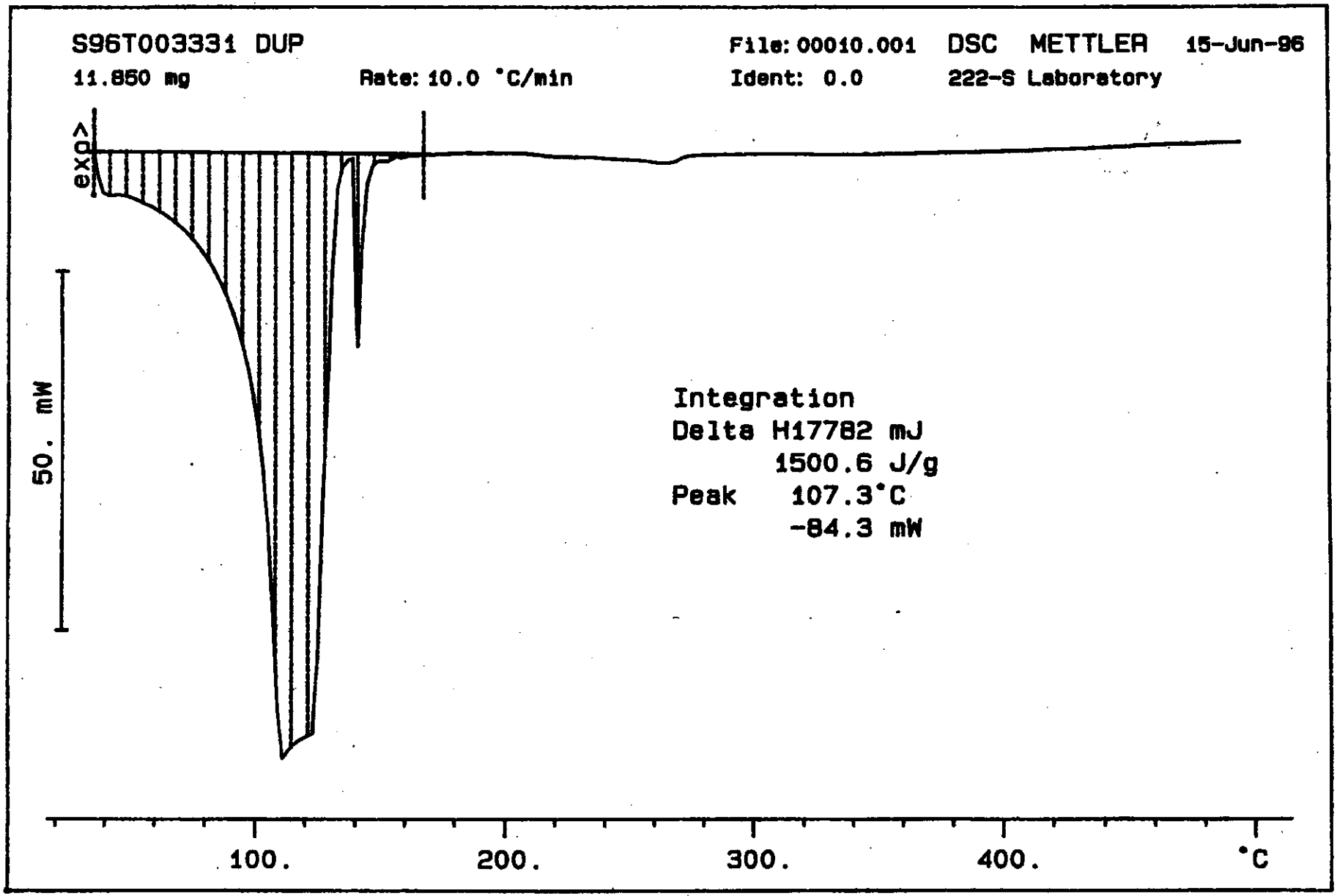
File: 00001.001 DSC METTLER 14-Jun-96

12.080 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory



Jessie J Jones


S96T003331 SAM
12.009 mg
Rate: 10.0 °C/min
File: 00008.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Jun-96
exo>
50. mW
Integration
Delta H18039 mJ
1502.1 J/g
Peak 109.3°C
-82.3 mW
100.
200.
300.
400.
°C


S96T003331 DUP
11.850 mg
Rate: 10.0 °C/min
File: 00010.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Jun-96
exo>
50. mW
Integration
Delta H17782 mJ
1500.6 J/g
Peak 107.3°C
-84.3 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9685

Analyst: PJM **Instrument:** DSC0 1 **Book #** 12N14B

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

Worklist Comment: U-101 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID	28.45	31.2*	N/A	Joules/g
96000785	U-101 GRAB	2	SAMPLE	S96T003329	0		DSC-01	LIQUID	N/A	Ø		Joules/g
96000785	U-101 GRAB	3	DUP	S96T003329	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g
		4	STD				DSC-01	LIQUID	28.45	30.8	N/A	Joules/g
96000787	U-101 GRAB	5	SAMPLE	S96T003330	0		DSC-01	LIQUID	N/A	Ø		Joules/g
96000787	U-101 GRAB	6	DUP	S96T003330	0		DSC-01	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 9685

See attached for signatures
Analyst Signature **Date** 6-28-96 BOV

[signature] 6/29/96
Analyst Signature **Date**

Verified/Validated by
Blanchina Valenzuela 7-1-96

S96T003329 produced several sharp peaks ~~with~~ which indicates a melt or evaporation of a pure compound. 6-28-96 BOV

Data Entry Comments: S96T003330 produced sharp peaks which indicates a melt or evaporation of a pure compound

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# 9685

Analyst: RSM **Instrument:** DSC0 **Book #** 12N14B

Method: LA-514-113 Rev/Mod

Worklist Comment: U-101 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID			N/A	Joules/g
96000785	U-101 GRAB	2	SAMPLE	S96T003329	0		DSC-01	LIQUID	N/A			Joules/g
96000785	U-101 GRAB	3	DUP	S96T003329	0		DSC-01	LIQUID			N/A	Joules/g
96000787	U-101 GRAB	4	SAMPLE	S96T003330	0		DSC-01	LIQUID	N/A			Joules/g
96000787	U-101 GRAB	5	DUP	S96T003330	0		DSC-01	LIQUID			N/A	Joules/g

Final page for worklist # 9685

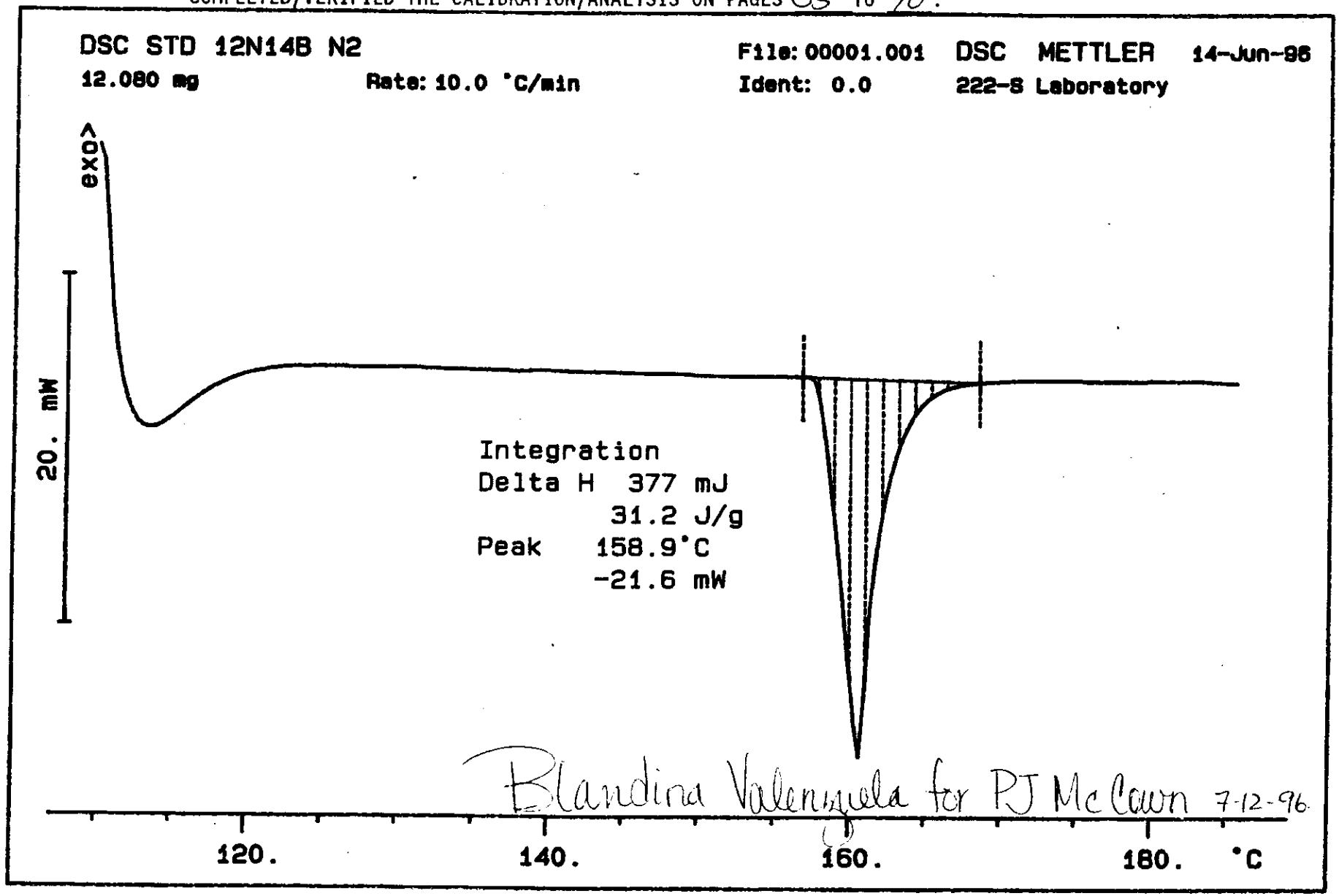
RJMcCown 6/25/96
Analyst Signature Date

Analyst Signature Date

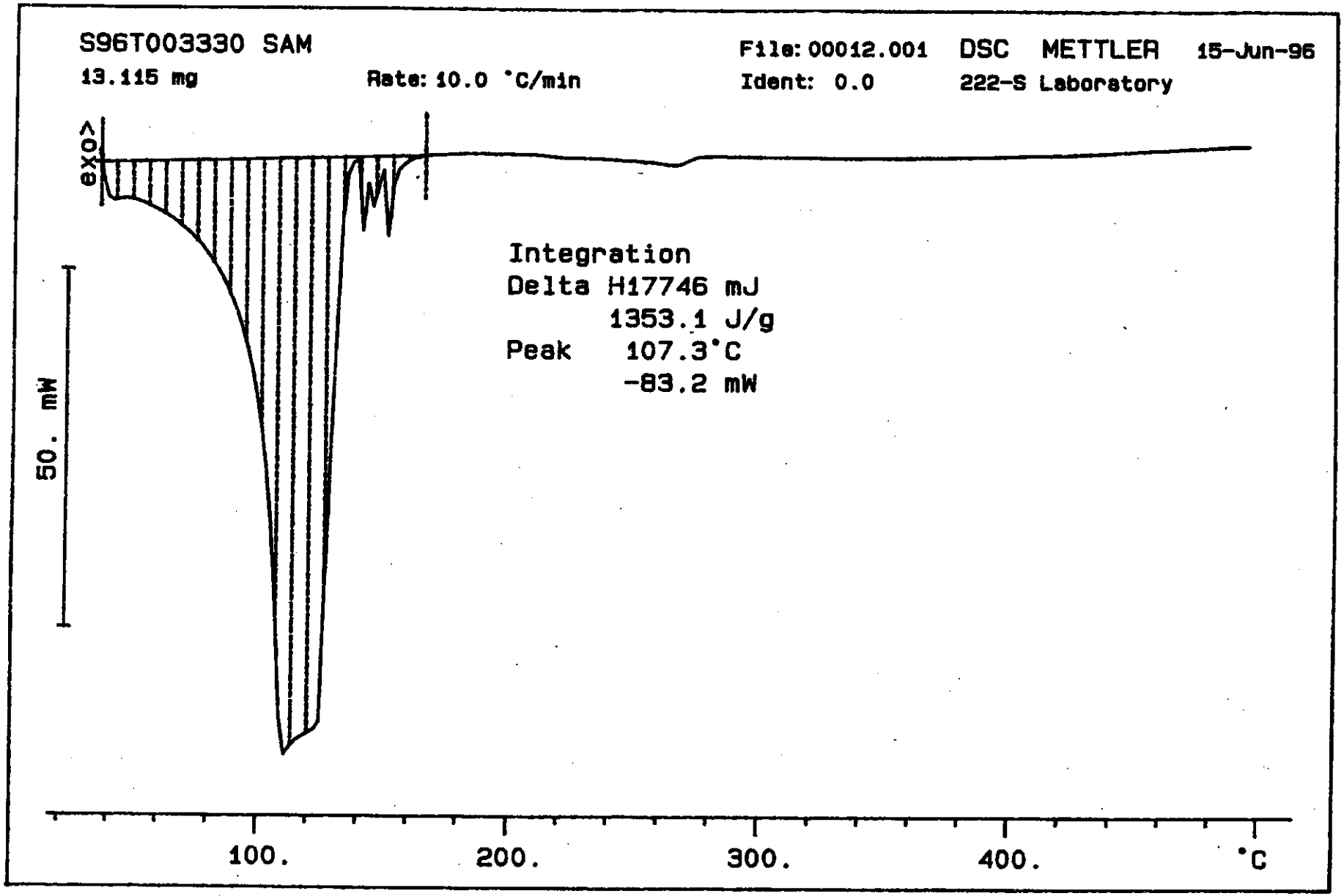
Data Entry Comments:

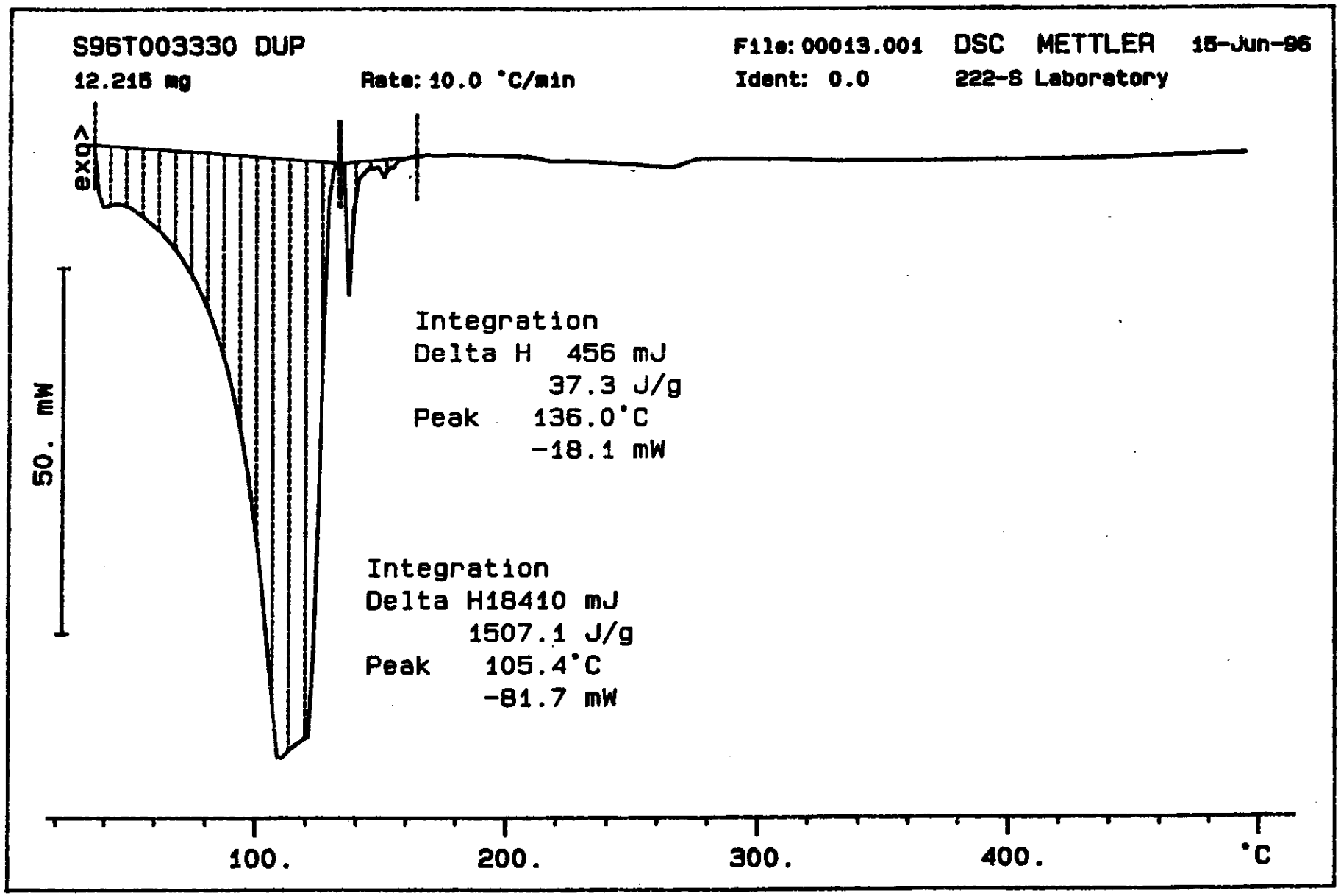
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

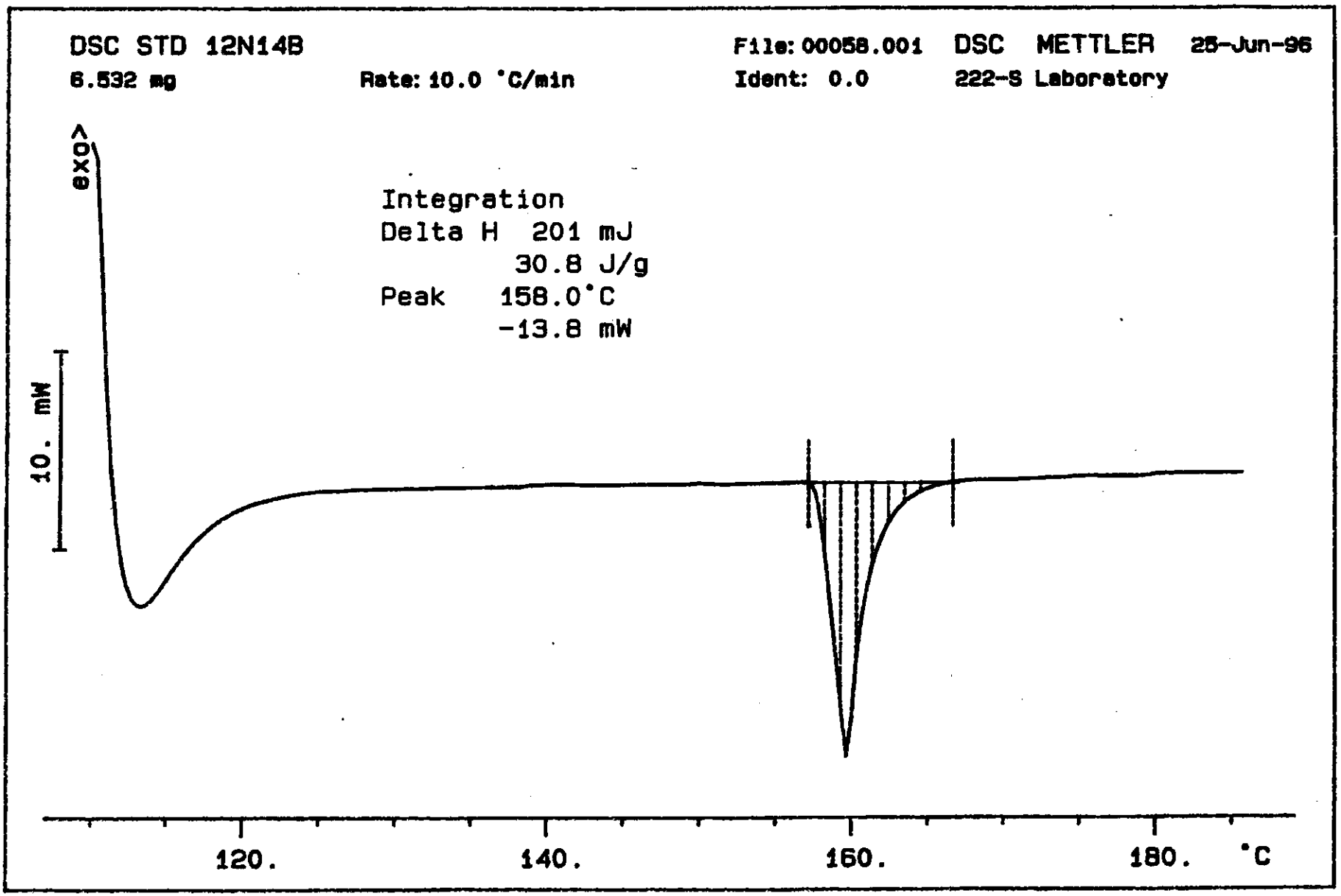
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 35 TO 40.

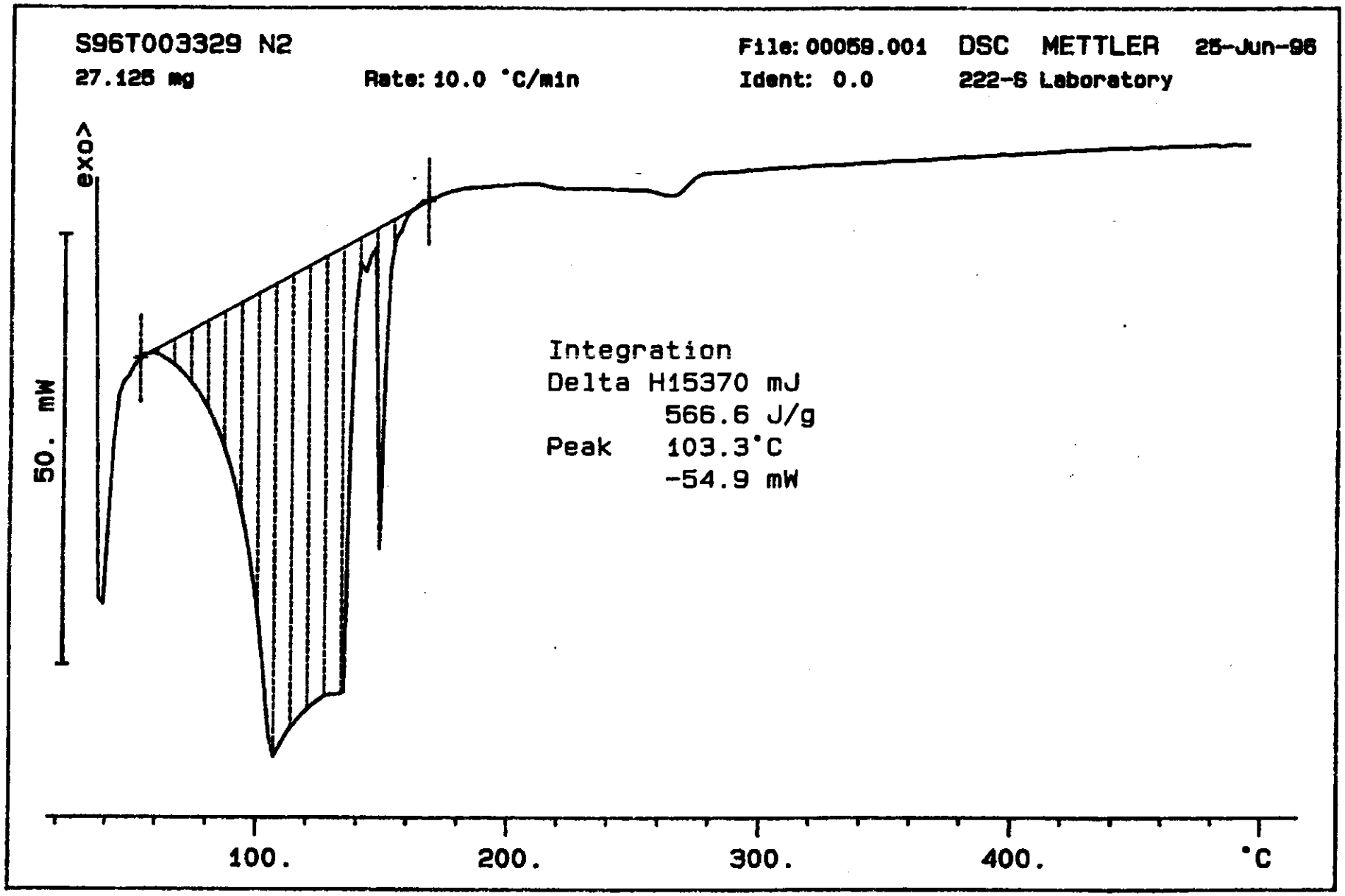


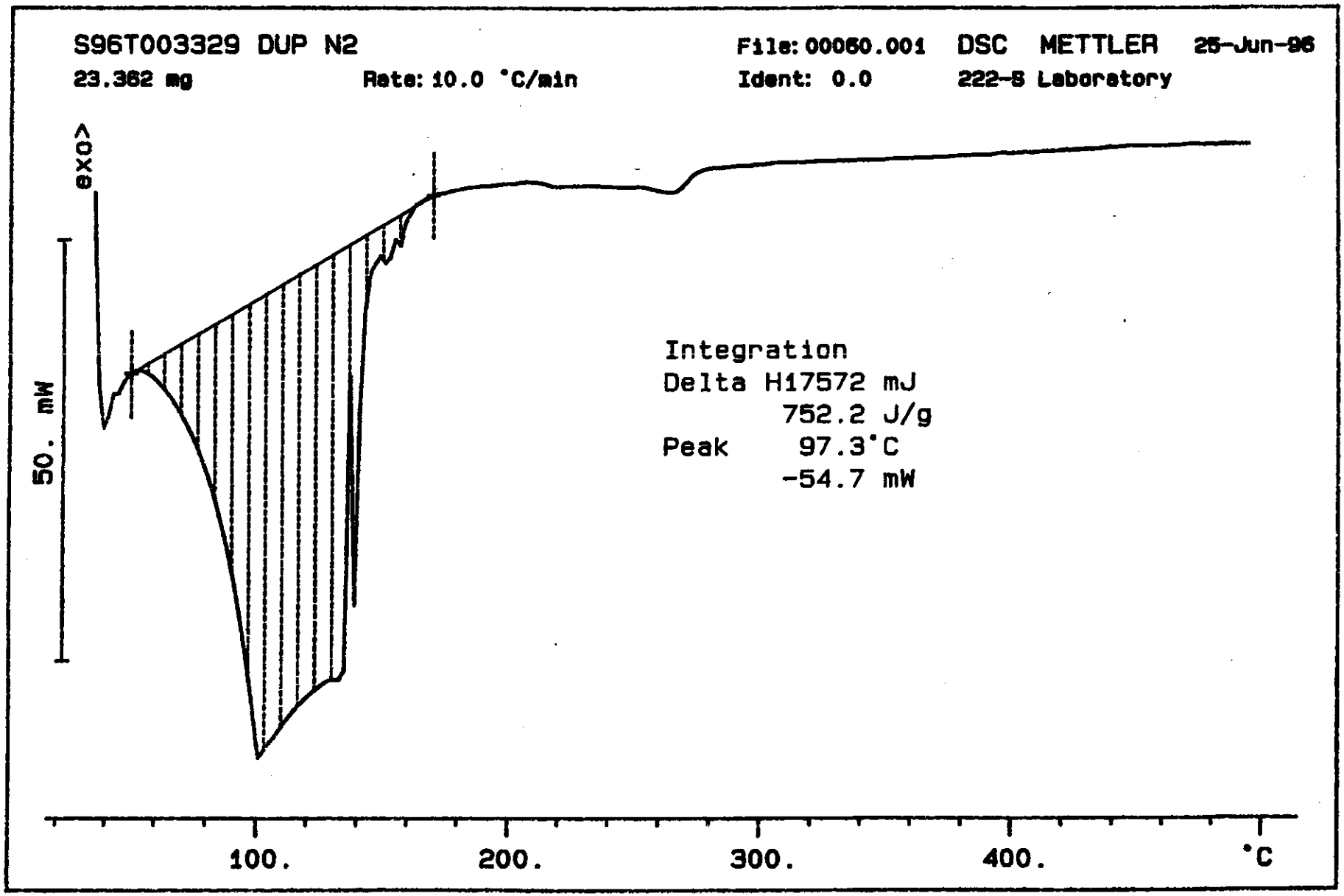
Blandina Valenzuela for PJ McCown 7-12-96


S96T003330 SAM
13.115 mg
Rate: 10.0 °C/min
File: 00012.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Jun-96
exo>
50. mW
Integration
Delta H17746 mJ
1353.1 J/g
Peak 107.3°C
-83.2 mW
100.
200.
300.
400.
°C


S96T003330 DUP
12.215 mg
Rate: 10.0 °C/min
File: 00013.001
Ident: 0.0
DSC METTLER
222-S Laboratory
15-Jun-96
exo>
50. mW
Integration
Delta H 456 mJ
37.3 J/g
Peak 136.0°C
-18.1 mW
Integration
Delta H18410 mJ
1507.1 J/g
Peak 105.4°C
-81.7 mW
100.
200.
300.
400.
°C


DSC STD 12N14B
6.532 mg
Rate: 10.0 °C/min
File: 00058.001
Ident: 0.0
DSC METTLER
222-S Laboratory
25-Jun-96
exo>
Integration
Delta H 201 mJ
30.8 J/g
Peak 158.0°C
-13.8 mW
10. mW
120.
140.
160.
180.
°C


S96T003329 N2
27.125 mg
Rate: 10.0 °C/min
File: 00059.001
Ident: 0.0
DSC METTLER
222-S Laboratory
25-Jun-96
exo>
50. mW
Integration
Delta H15370 mJ
566.6 J/g
Peak 103.3°C
-54.9 mW
100.
200.
300.
400.
°C


S96T003329 DUP N2
23.382 mg
Rate: 10.0 °C/min
File: 00060.001
Ident: 0.0
DSC METTLER
222-S Laboratory
25-Jun-96
exo>
50. mW
Integration
Delta H17572 mJ
752.2 J/g
Peak 97.3°C
-54.7 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 9686

Analyst: DCD **Instrument:** DSC0 3 **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-101 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	LIQUID	28.45	28.01	N/A	Joules/g
96000785	U-101 GRAB	2	SAMPLE	S96T003309	0		DSC-03	LIQUID	N/A	Ø		Joules/g
96000785	U-101 GRAB	3	DUP	S96T003309	0		DSC-03	LIQUID	Ø	Ø	N/A	Joules/g
96000785	U-101 GRAB	4	SAMPLE	S96T003328	0		DSC-03	LIQUID	N/A	Ø		Joules/g
96000785	U-101 GRAB	5	DUP	S96T003328	0		DSC-03	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 9686

See attached for signatures

Analyst Signature **Date** 6-14-96

Validated by H Anastas BDV 6-19-96

[signature] 6-17-96

Analyst Signature **Date**

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 9686

Analyst: DCD **Instrument:** DSC0 **Book #** 12N14B

Method: LA-514-113 Rev/Mod

Worklist Comment: U-101 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	LIQUID			N/A	Joules/g
96000785	U-101 GRAB	2	SAMPLE	S96T003309	0		DSC-01	LIQUID	N/A			Joules/g
96000785	U-101 GRAB	3	DUP	S96T003309	0		DSC-01	LIQUID			N/A	Joules/g
96000785	U-101 GRAB	4	SAMPLE	S96T003328	0		DSC-01	LIQUID	N/A			Joules/g
96000785	U-101 GRAB	5	DUP	S96T003328	0		DSC-01	LIQUID			N/A	Joules/g

Final page for worklist # 9686

David A Dunham 6-13-96
Analyst Signature **Date**

Analyst Signature **Date**

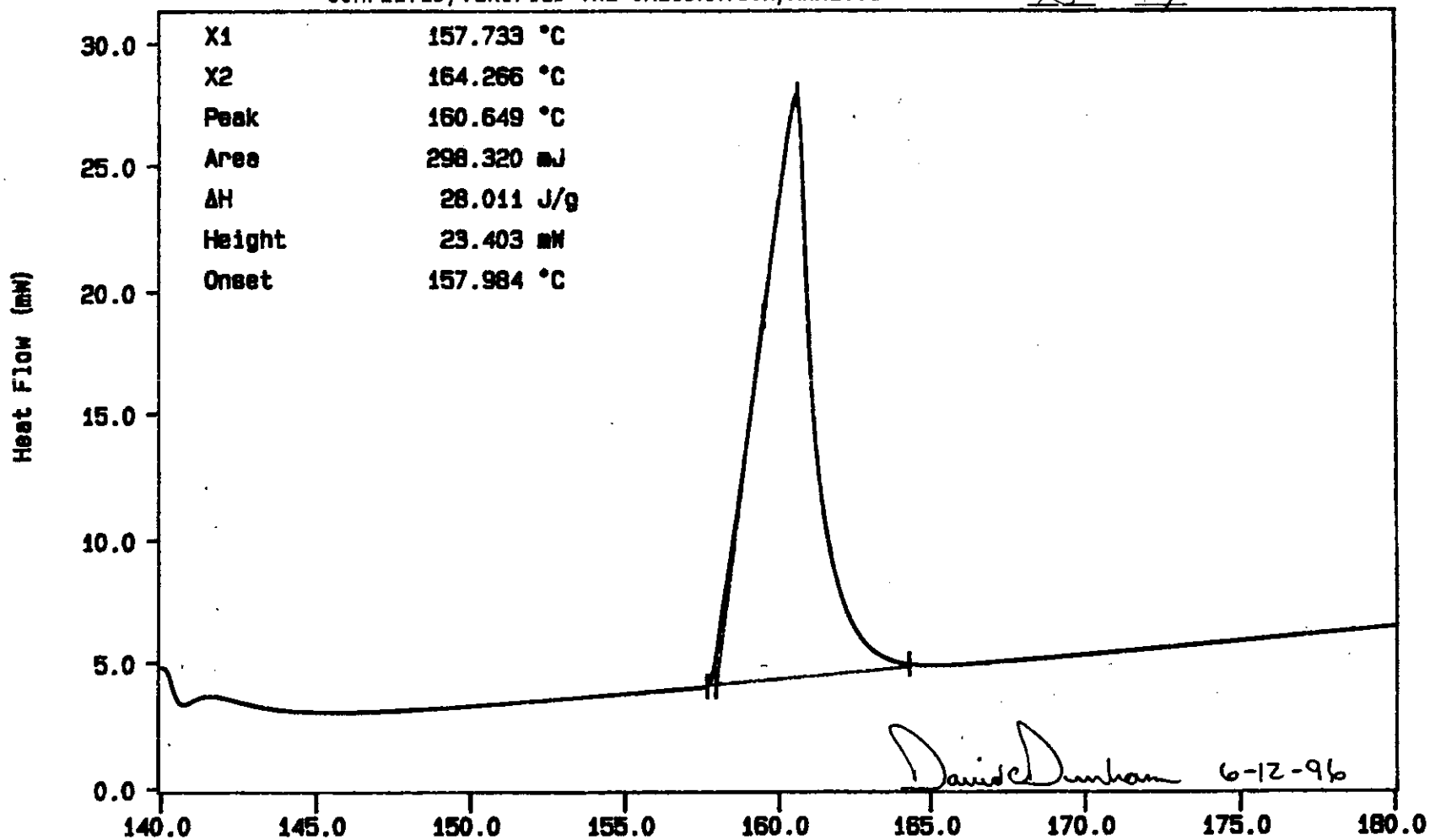
DSC-03 instrument was used.
6-14-96
Blandina Valenzuela

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.

Curve 1: DSC
File info: IND061201 Wed Jun 12 05:49:27 1996
Sample Weight: 10.650 mg
12N14-B INDIUM AT 10C\MIN

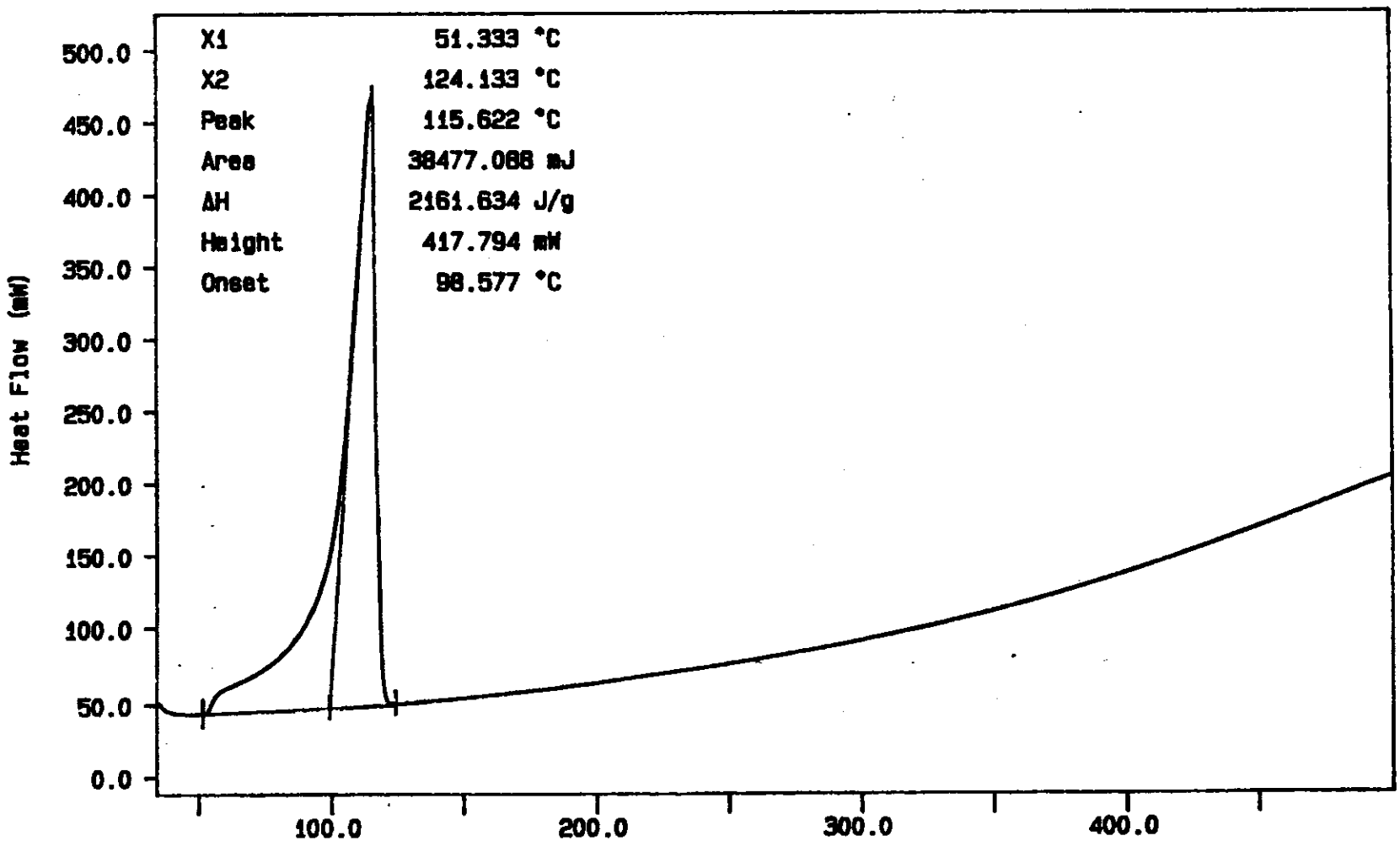
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 43 TO 47.



N2, EXOTHERM DOWN
TEMP1: 140.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 180.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 12 05:53:32 1996

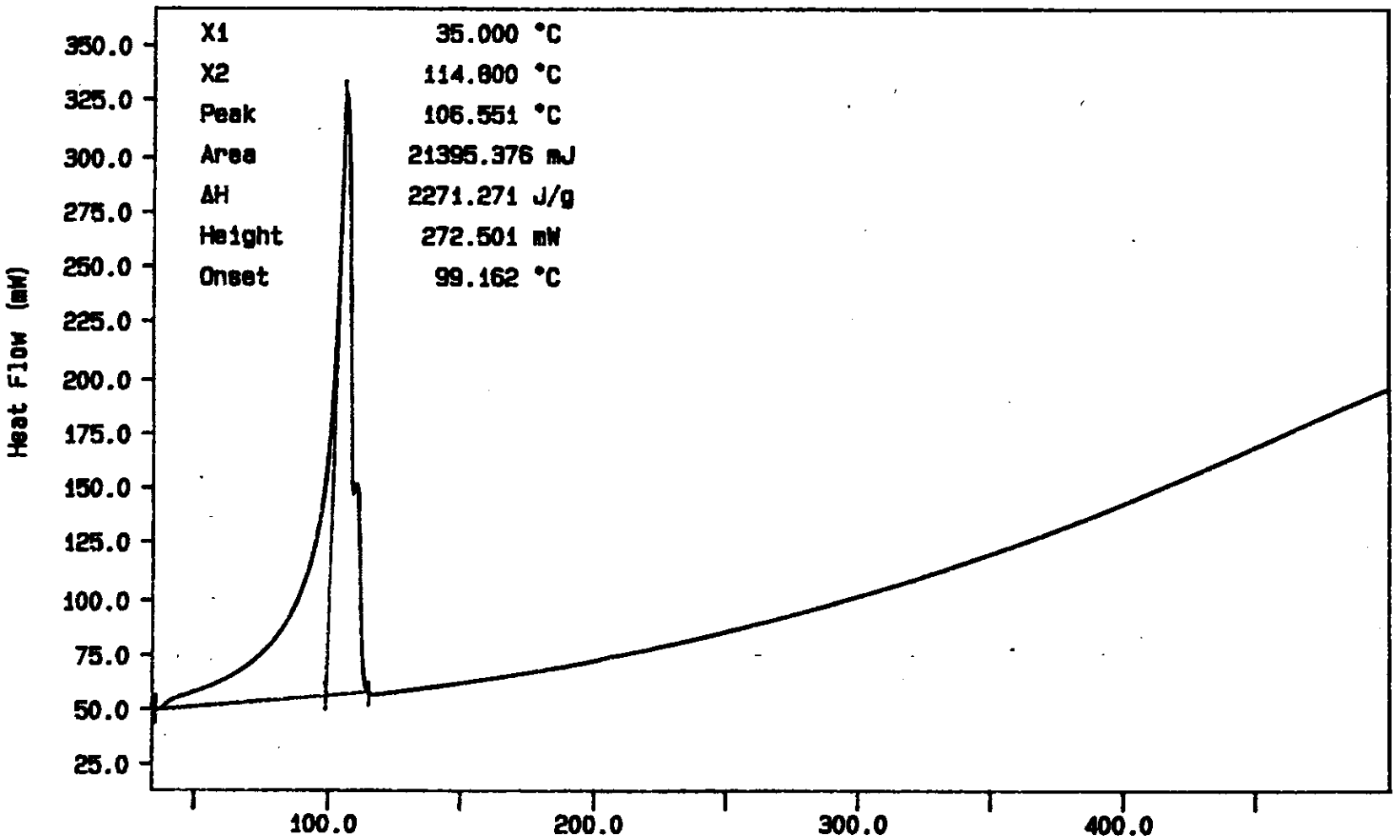
Curve 1: DSC
File info: SAM061201 Wed Jun 12 11:02:04 1996
Sample Weight: 17.800 mg
596T003309 SAM



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 12 13:25:37 1996

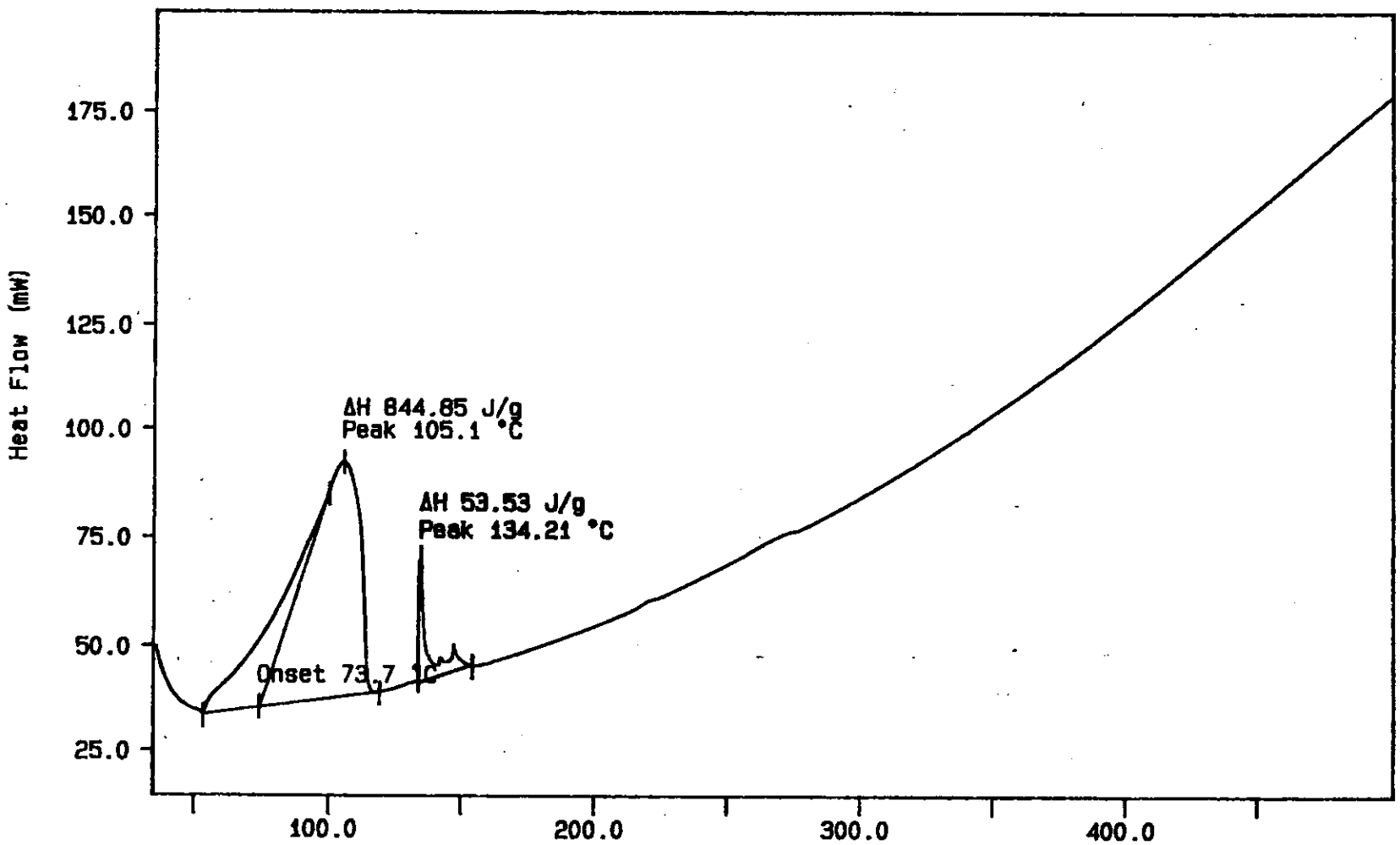
Curve 1: DSC
File info: SAM061202 Wed Jun 12 14:21:25 1996
Sample Weight: 9.420 mg
S96T003309-~~SAM~~ DUP
DCD
6-12-96



exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 12 15:15:24 1996

Curve 1: DSC
File info: SAM061302 Thu Jun 13 16:37:28 1996
Sample Weight: 11.640 mg
S96T003328 DUP

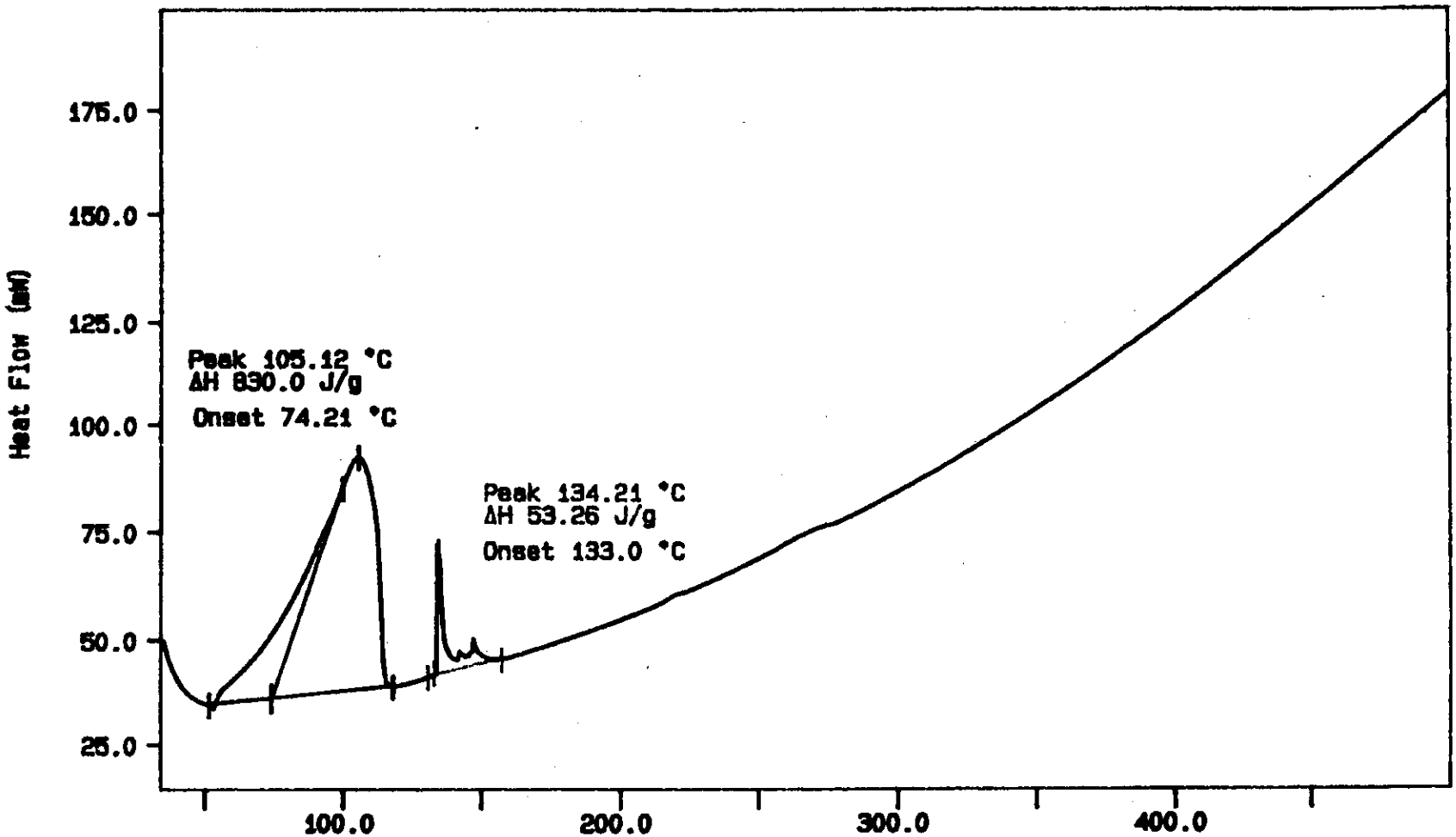


exotherm down, N2 purge gas
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 13 17:10:40 1996

WHC-SD-WM-DP-190, REV. 0

Curve 1: DSC
File info: SAM061302 Thu Jun 13 16:37:28 1996
Sample Weight: 11.640 mg
S96T003328 DUP



exothers down, N2 purge gas
TEMP: 25.0 C TIME: 0.0 min RATE: 10.0 C/min
TEMP: 600.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jul 11 14:15:52 1996

LABCORE Data Entry Template for Worklist# 10683

Analyst: ADO **Instrument:** DSC01 **Book #** 12N14B

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

Worklist Comment: U-101 DSC-01 RUN UNDER NITROGEN SLP

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	28.45	32.3	N/A	Joules/g
96000785	U-101 GRAB	2 SAMPLE	S96T003468	0	DSC-01	SOLID	N/A	19.4		Joules/g
96000785	U-101 GRAB	3 DUP	S96T003468	0	DSC-01	SOLID	19.4	Ø	N/A	Joules/g
96000785	U-101 GRAB	4 SAMPLE	S96T003469	0	DSC-01	SOLID	N/A	Ø		Joules/g
96000785	U-101 GRAB	5 DUP	S96T003469	0	DSC-01	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 10683

Anthony Punuto 7-10-96
Analyst Signature **Date**

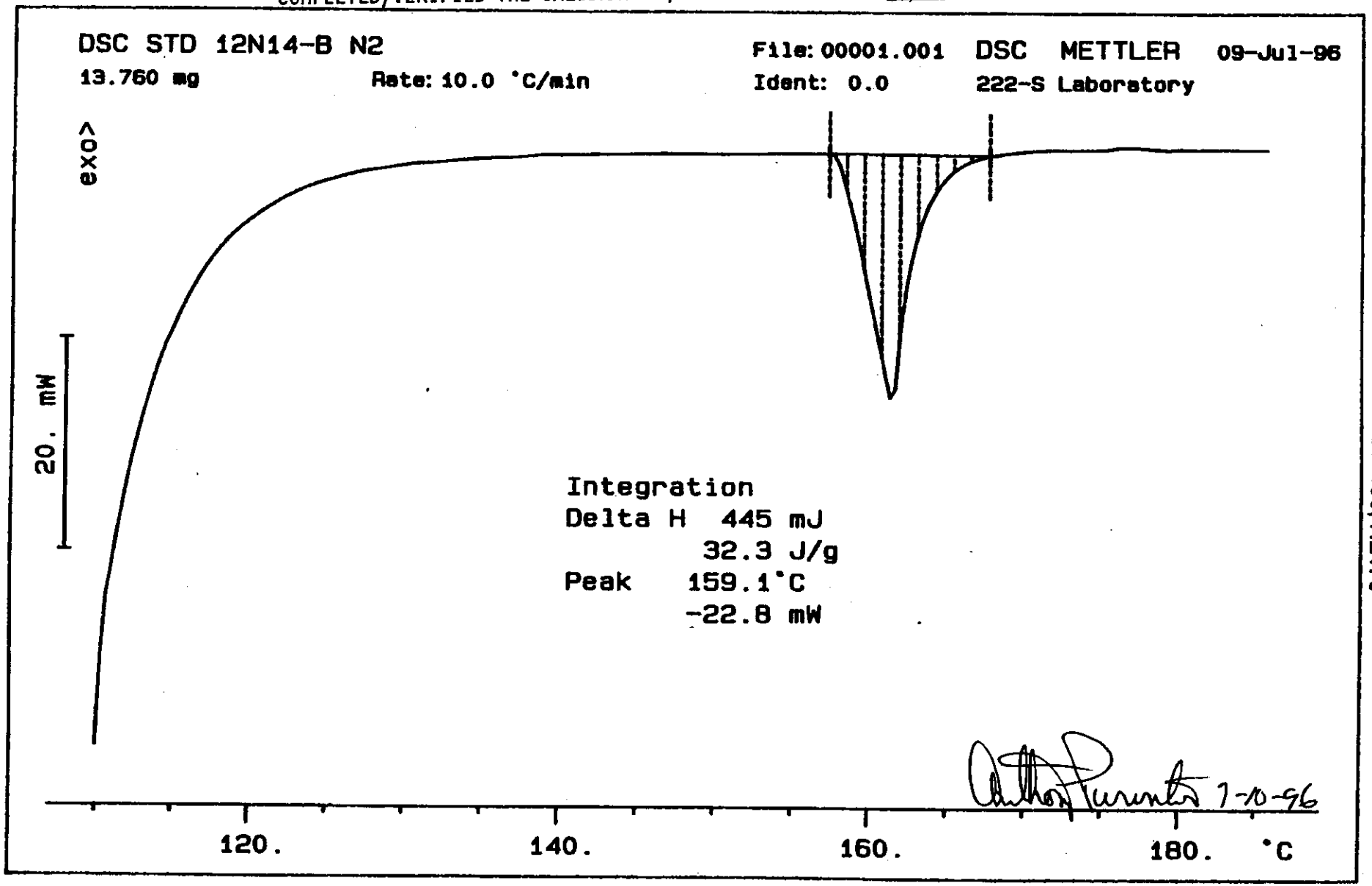
Analyst Signature **Date**

Verified/Validated by
Blandina
Valenzuela
7-12-96

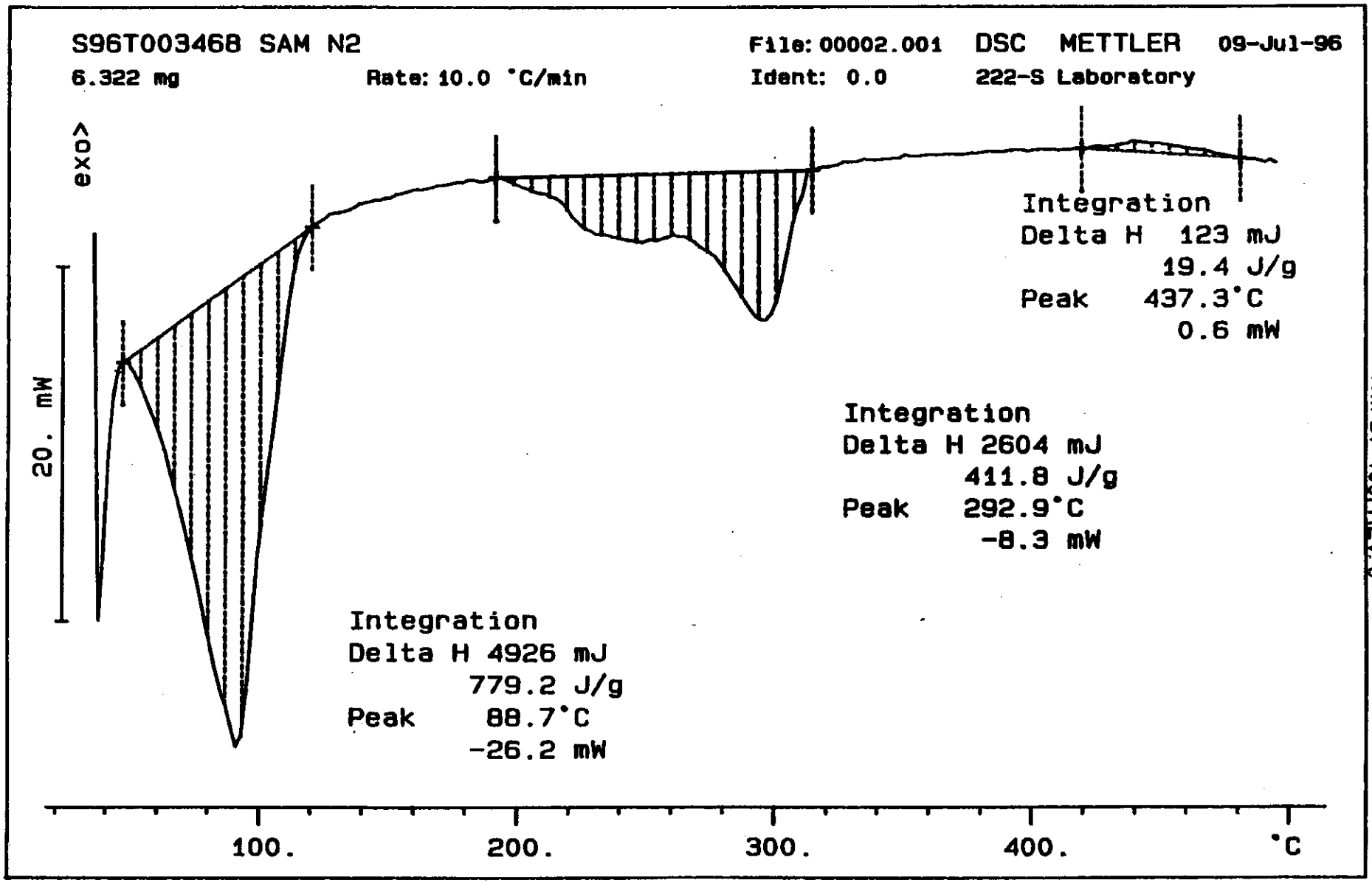
Data Entry Comments: A triplicate was not run because result was not close to the notification limit.

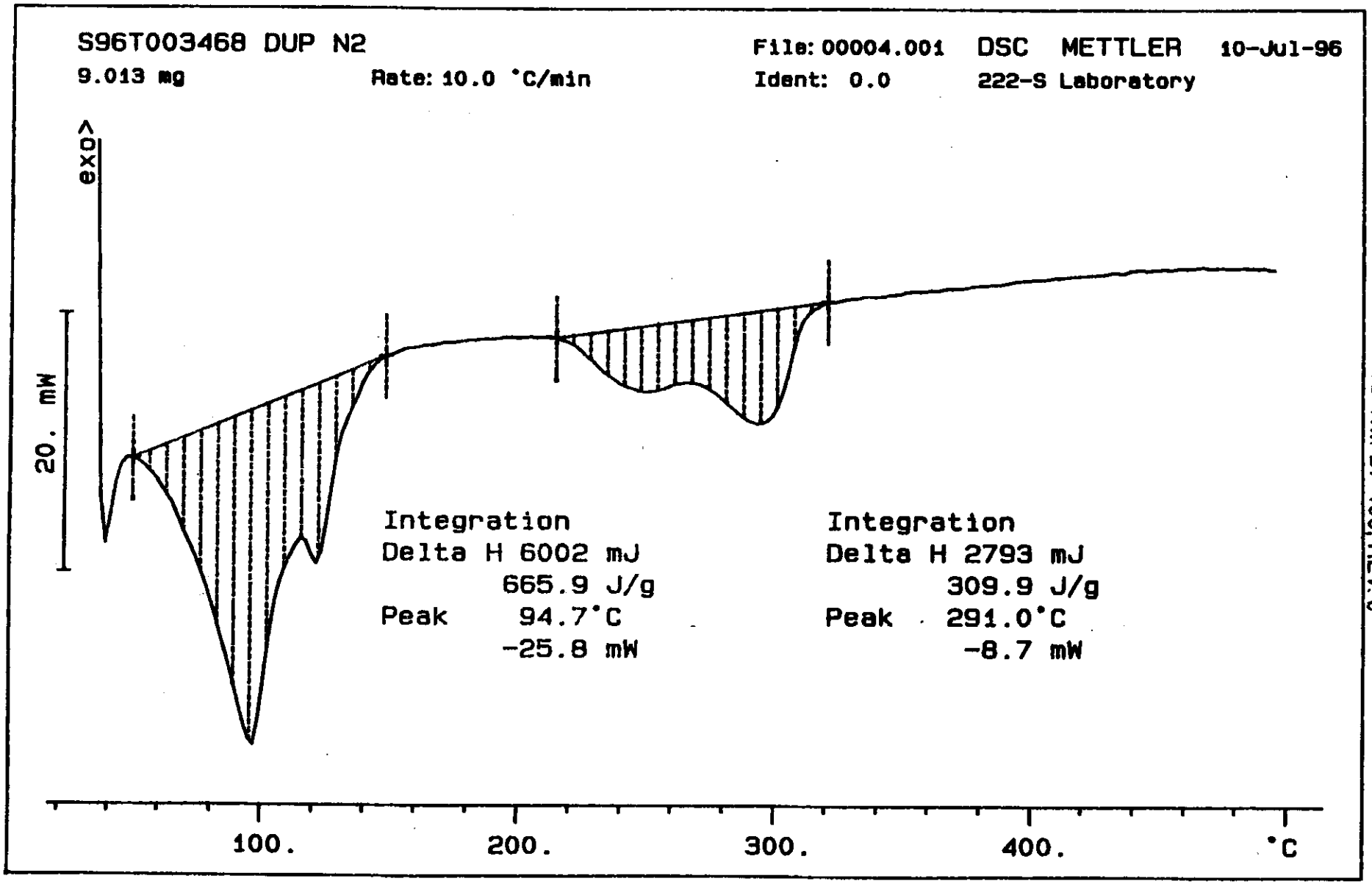
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

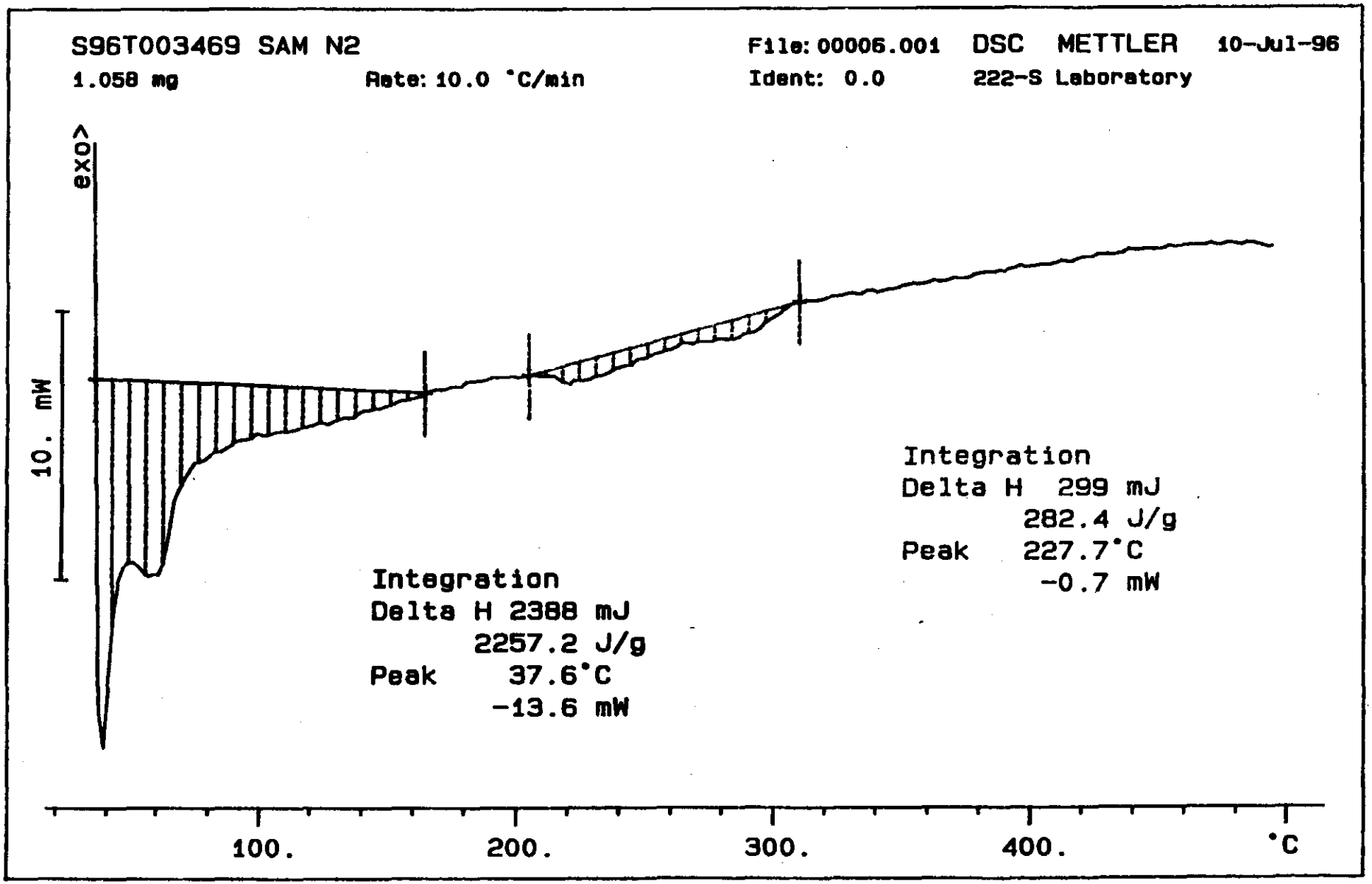
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 49 TO 53.

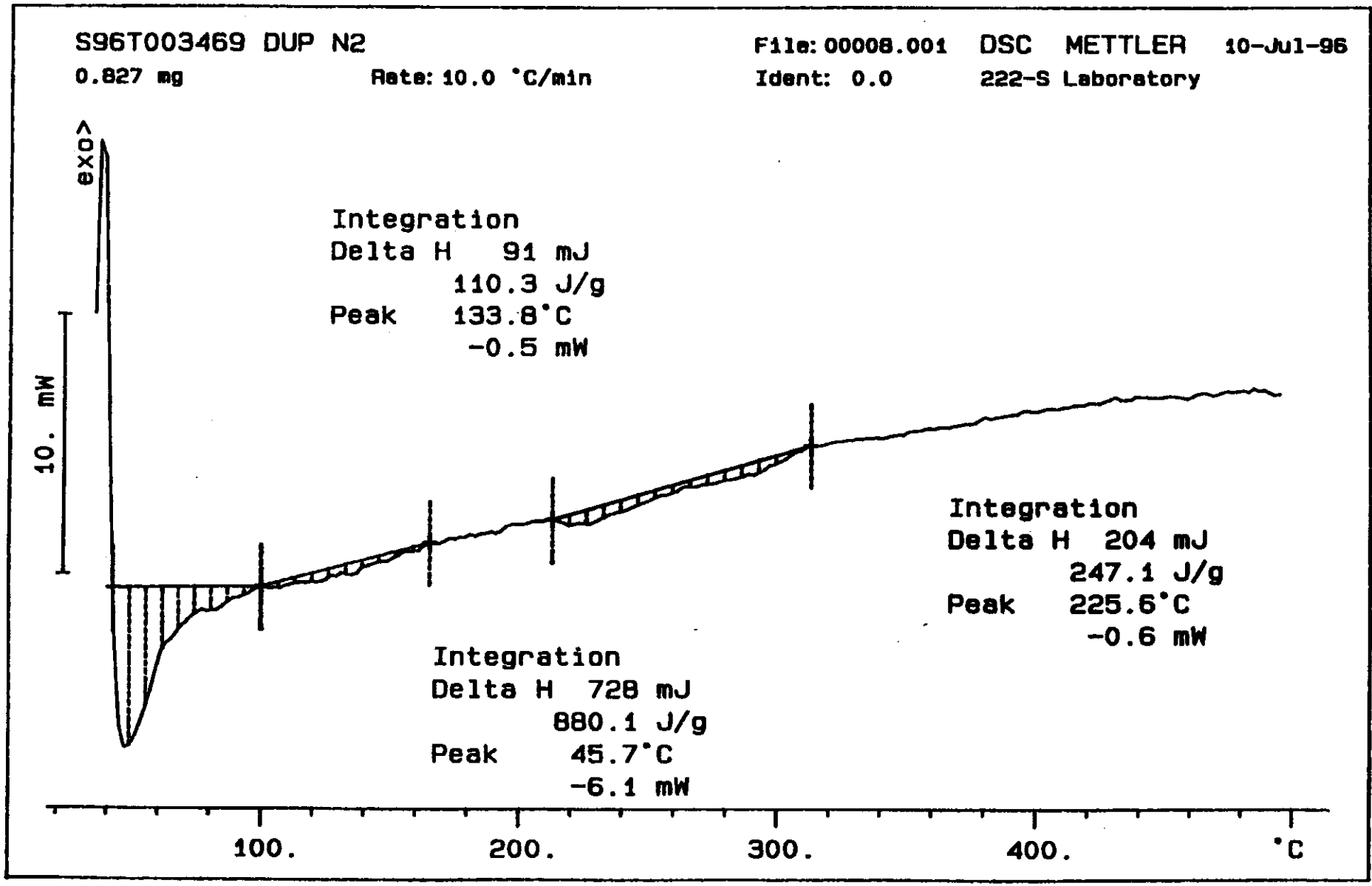


Author Purnell 7-10-96


S96T003468 SAM N2
6.322 mg
Rate: 10.0 °C/min
File: 00002.001
Ident: 0.0
DSC METTLER 09-Jul-96
222-S Laboratory
exo>
20. mW
Integration
Delta H 123 mJ
19.4 J/g
Peak 437.3°C
0.6 mW
Integration
Delta H 2604 mJ
411.8 J/g
Peak 292.9°C
-8.3 mW
Integration
Delta H 4926 mJ
779.2 J/g
Peak 88.7°C
-26.2 mW
100.
200.
300.
400.
°C


S96T003468 DUP N2
9.013 mg
Rate: 10.0 °C/min
File: 00004.001
Ident: 0.0
DSC METTLER
222-S Laboratory
10-Jul-96
exo>
20. mW
Integration
Delta H 6002 mJ
665.9 J/g
Peak 94.7°C
-25.8 mW
Integration
Delta H 2793 mJ
309.9 J/g
Peak 291.0°C
-8.7 mW
100.
200.
300.
400.
°C


S96T003469 SAM N2
1.058 mg
Rate: 10.0 °C/min
File: 00006.001
Ident: 0.0
DSC METTLER
222-S Laboratory
10-Jul-96
exo>
10. mW
Integration
Delta H 2388 mJ
2257.2 J/g
Peak 37.6°C
-13.6 mW
Integration
Delta H 299 mJ
282.4 J/g
Peak 227.7°C
-0.7 mW
100.
200.
300.
400.
°C


S96T003469 DUP N2
0.827 mg
Rate: 10.0 °C/min
File: 00008.001
Ident: 0.0
DSC METTLER
222-S Laboratory
10-Jul-96
exo>
10. mW
Integration
Delta H 91 mJ
110.3 J/g
Peak 133.8°C
-0.5 mW
Integration
Delta H 728 mJ
880.1 J/g
Peak 45.7°C
-6.1 mW
Integration
Delta H 204 mJ
247.1 J/g
Peak 225.6°C
-0.6 mW
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 10684

Analyst: ADP **Instrument:** ~~DSC01~~ DSC03 (NLA 7-10-96) **Book #** 12N14B

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-101 DSC-01 RUN UNDER NITROGEN SLP

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	28.45	28.40	N/A	Joules/g
96000787	U-101 GRAB	2	SAMPLE	S96T003471	0		DSC-03	SOLID	N/A	Ø		Joules/g
96000787	U-101 GRAB	3	DUP	S96T003471	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g
96000787	U-101 GRAB	4	SAMPLE	S96T003472	0		DSC-03	SOLID	N/A	Ø		Joules/g
96000787	U-101 GRAB	5	DUP	S96T003472	0		DSC-03	SOLID	Ø	Ø	N/A	Joules/g

Final page for worklist # 10684

See Attached for Signatures

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

Verified/Validated by Blandina Valenzuela 7-12-96

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 10684

Analyst: ADO **Instrument:** DSC01 **Book #** 12N14B

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

Worklist Comment: U-101 DSC-01 RUN UNDER NITROGEN SLP

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-01	SOLID			N/A	Joules/g
96000787	U-101 GRAB	2	SAMPLE	S96T003471	0		DSC-01	SOLID	N/A			Joules/g
96000787	U-101 GRAB	3	DUP	S96T003471	0		DSC-01	SOLID			N/A	Joules/g
96000787	U-101 GRAB	4	SAMPLE	S96T003472	0		DSC-01	SOLID	N/A			Joules/g
96000787	U-101 GRAB	5	DUP	S96T003472	0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 10684

Anthony Pruneda 7-10-96

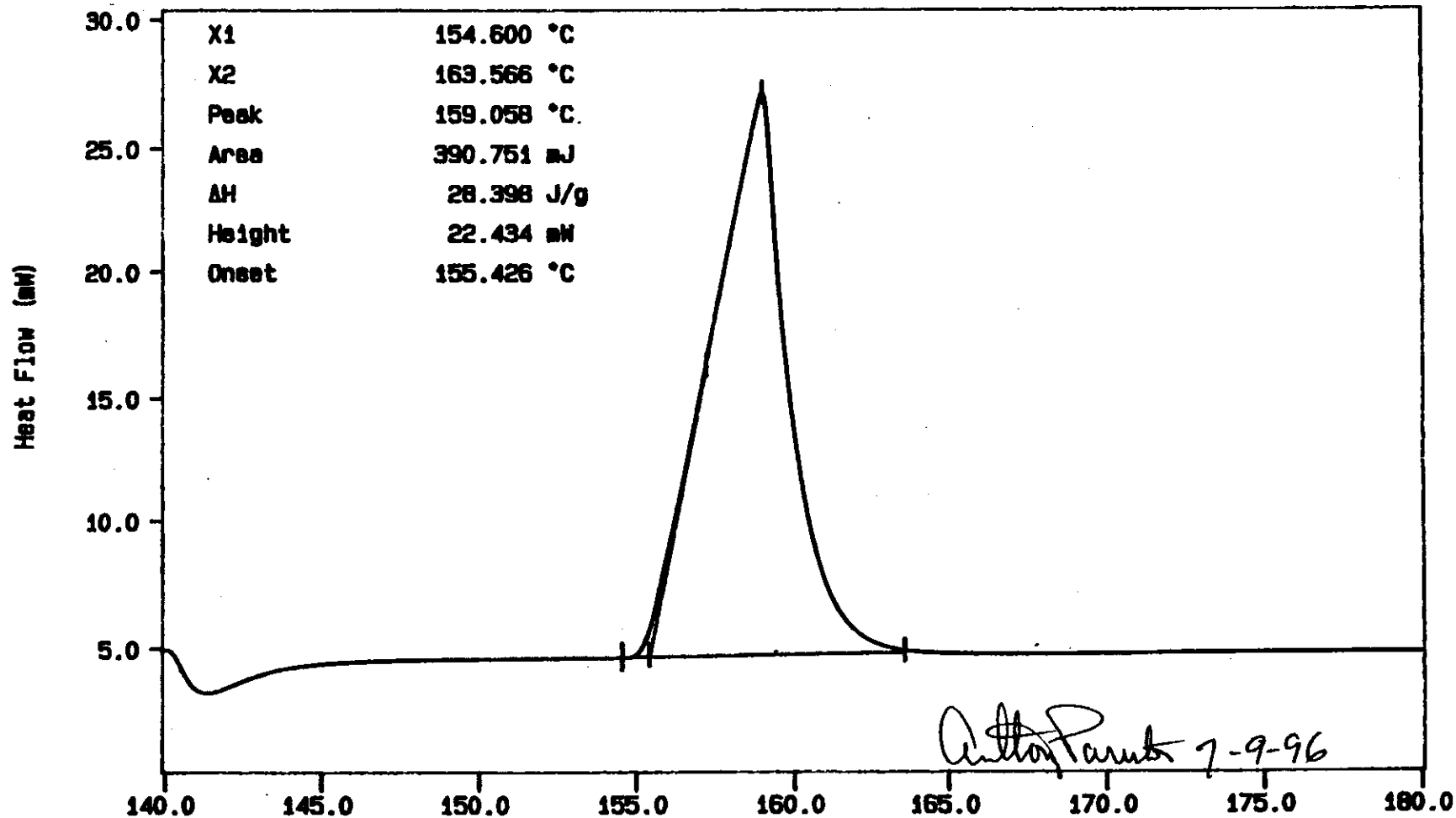
Analyst Signature **Date** **Analyst Signature** **Date**

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.

Curve 1: DSC
File info: IND070905 Tue Jul 9 20:27:03 1996
Sample Weight: 13.760 mg
12N14-B INDIUM AT 10C/MIN

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 56 TO 60.

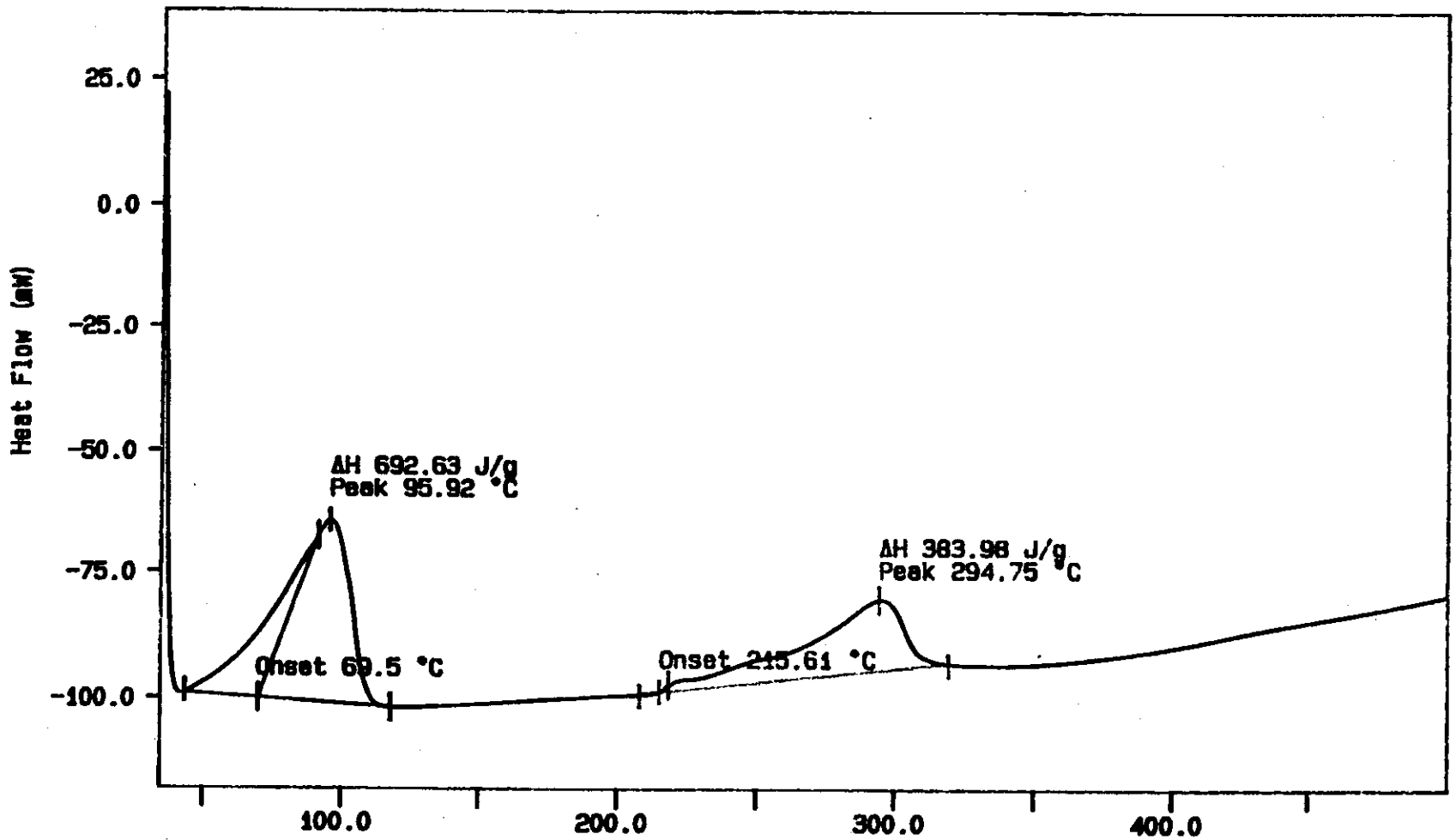


Anthony Purinton 7-9-96

N2, EXOTHERM DOWN
TEMP1: 140.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 180.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jul 9 21:02:24 1996

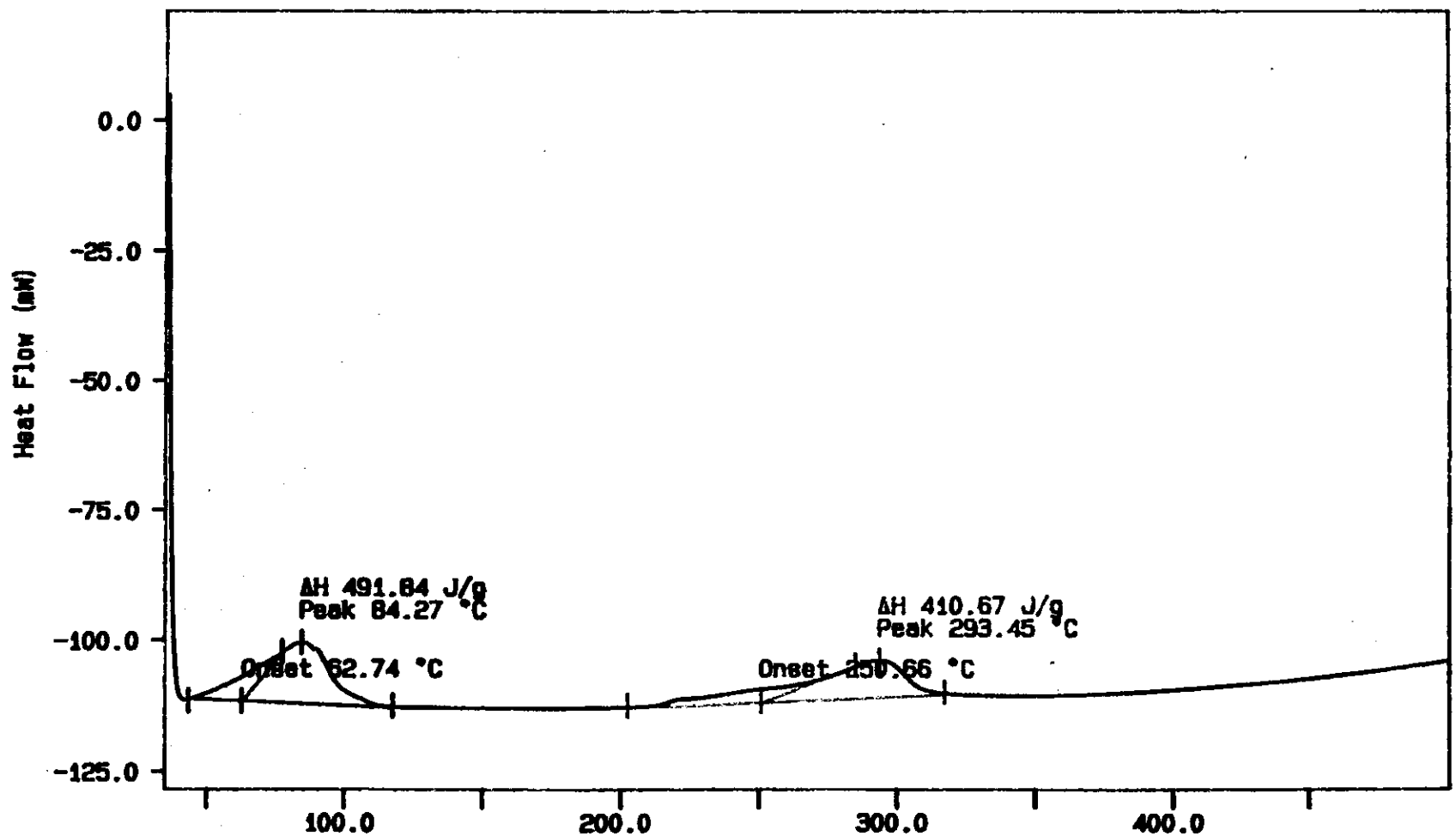
Curve 1: DSC
File info: SAM070901 Tue Jul 9 23:37:50 1996
Sample Weight: 9.670 mg
S96T003471 SAM



N2 10C/min
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 400.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Jul 9 23:53:46 1996

Curve 1: DSC
File info: SAM070902 Wed Jul 10 00:53:37 1996
Sample Weight: 4.460 mg
S96T003471 DUP

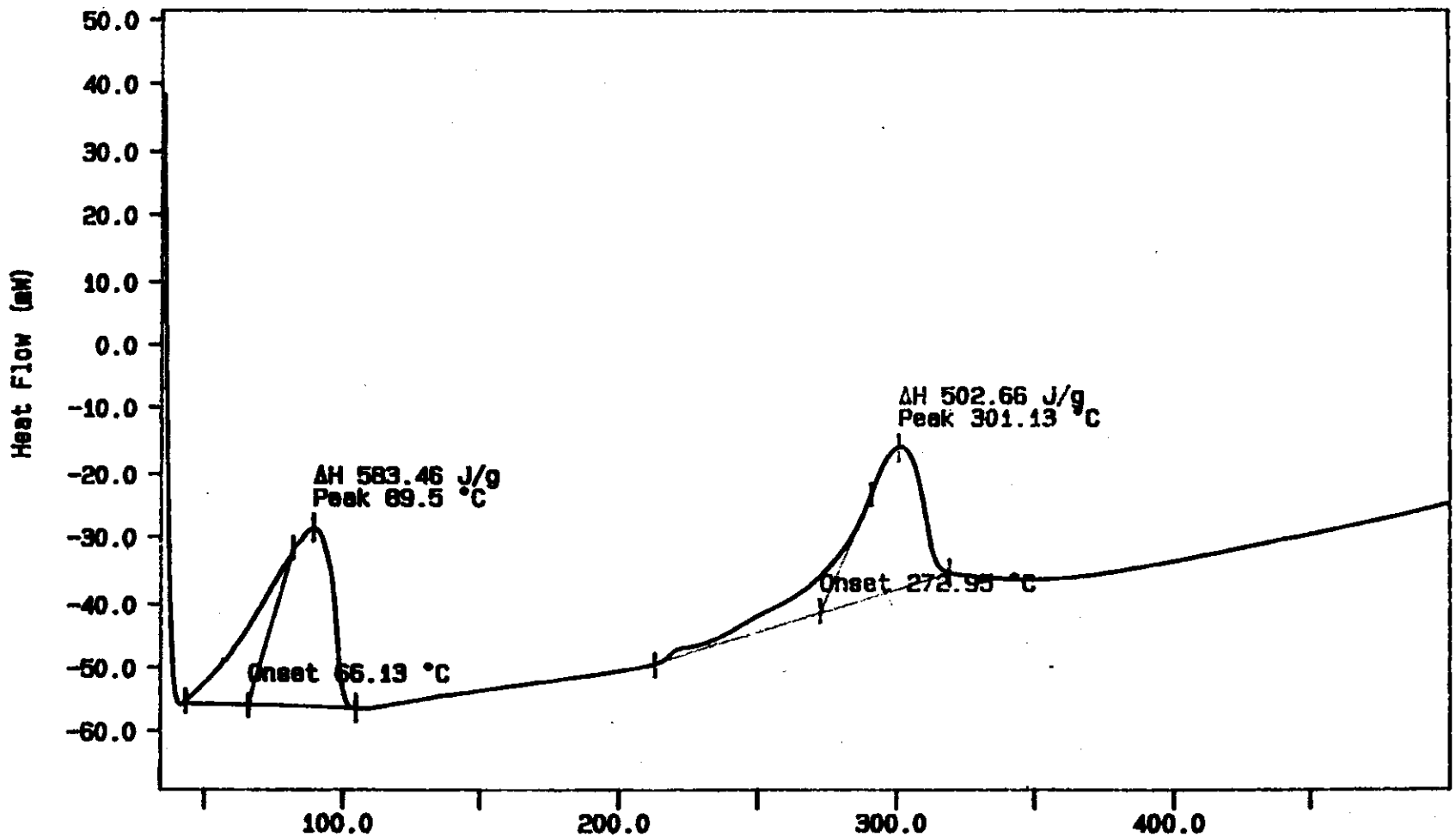


N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jul 10 01:08:38 1996

58

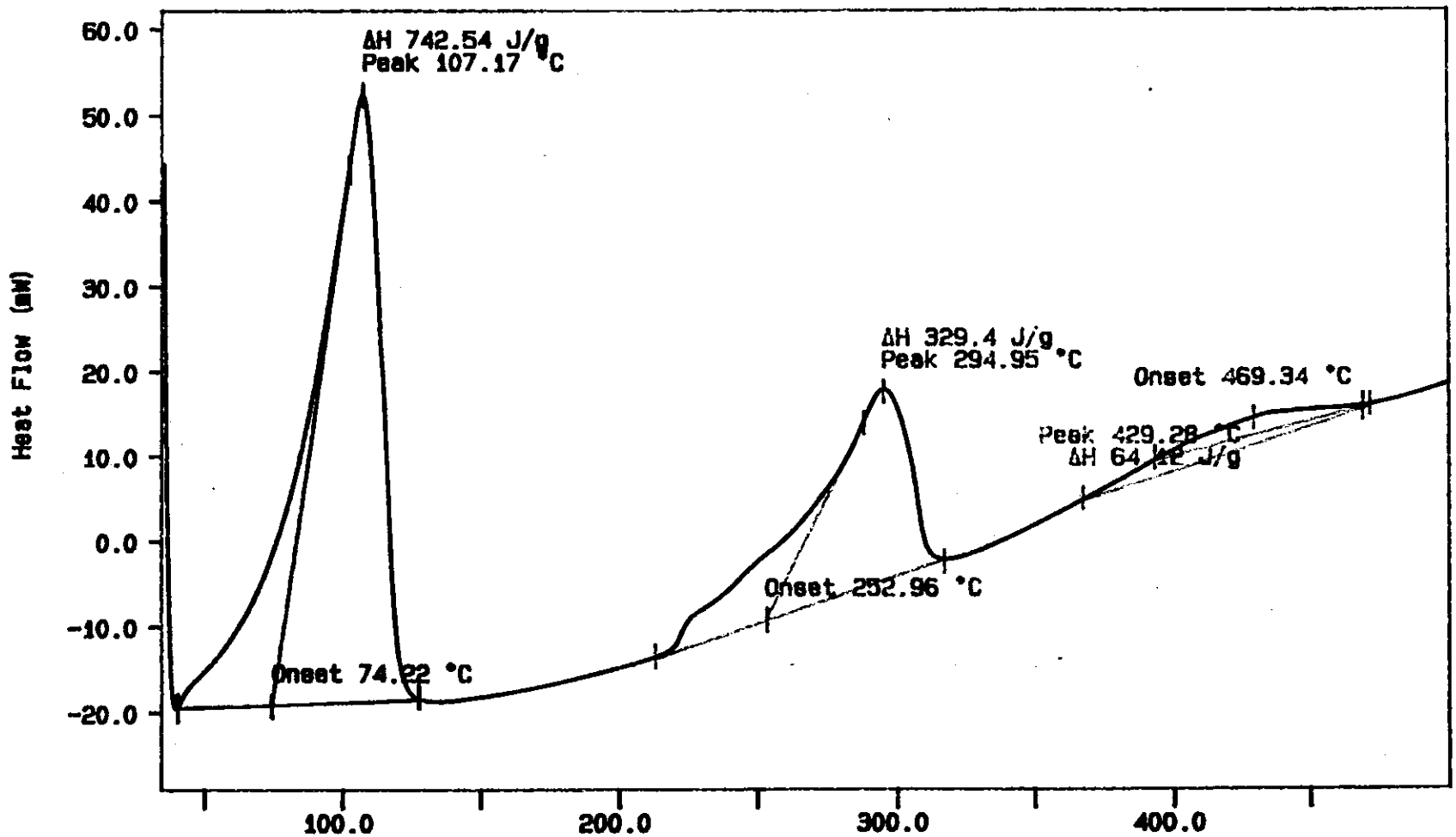
Curve 1: DSC
File info: SAM070903 Wed Jul 10 02:07:24 1996
Sample Weight: 8.390 mg
S96T003472 SAM



N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jul 10 02:17:55 1996

Curve 1: DSC
File info: SAM070904 Wed Jul 10 03:11:46 1996
Sample Weight: 17.540 mg
S96T003472 DUP



N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jul 10 03:17:01 1996

60

LABCORE Data Entry Template for Worklist# 9687

Analyst: JLF **Instrument:** TGA0 1 **Book #** 8208-A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-101 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID	59.2	60.08*	N/A	%
96000787	U-101 GRAB	2	SAMPLE	S96T003331	0		TGA-01	LIQUID	N/A	78.12		%
96000787	U-101 GRAB	3	DUP	S96T003331	0		TGA-01	LIQUID	78.12	77.7	N/A	%

Final page for worklist # 9687

Analyst Signature: [signature] Date: 10-15-96

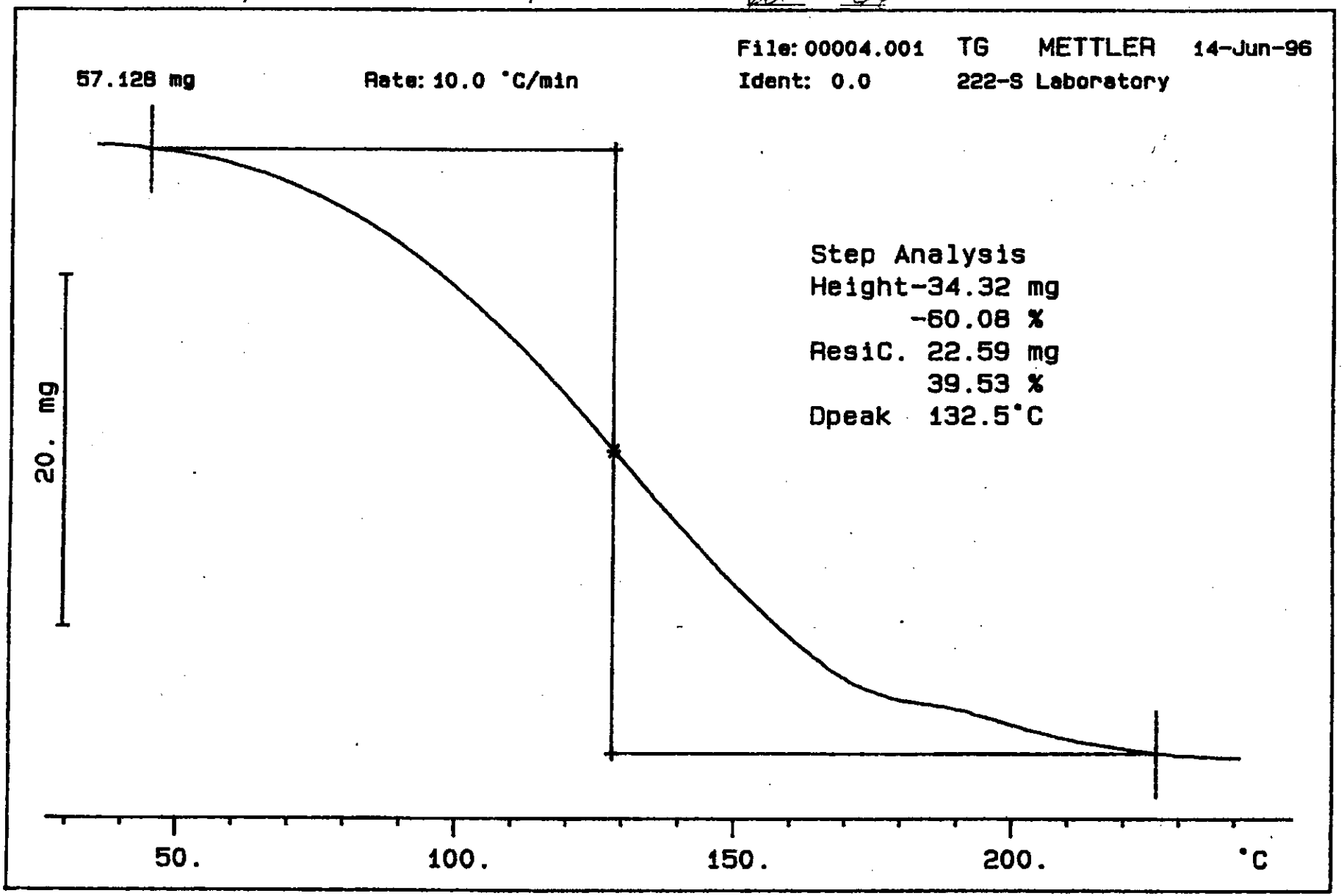
Analyst Signature: [signature] Date: 6-21-96

Verified/Validated by
Blandina Valenzuela 6-21-96

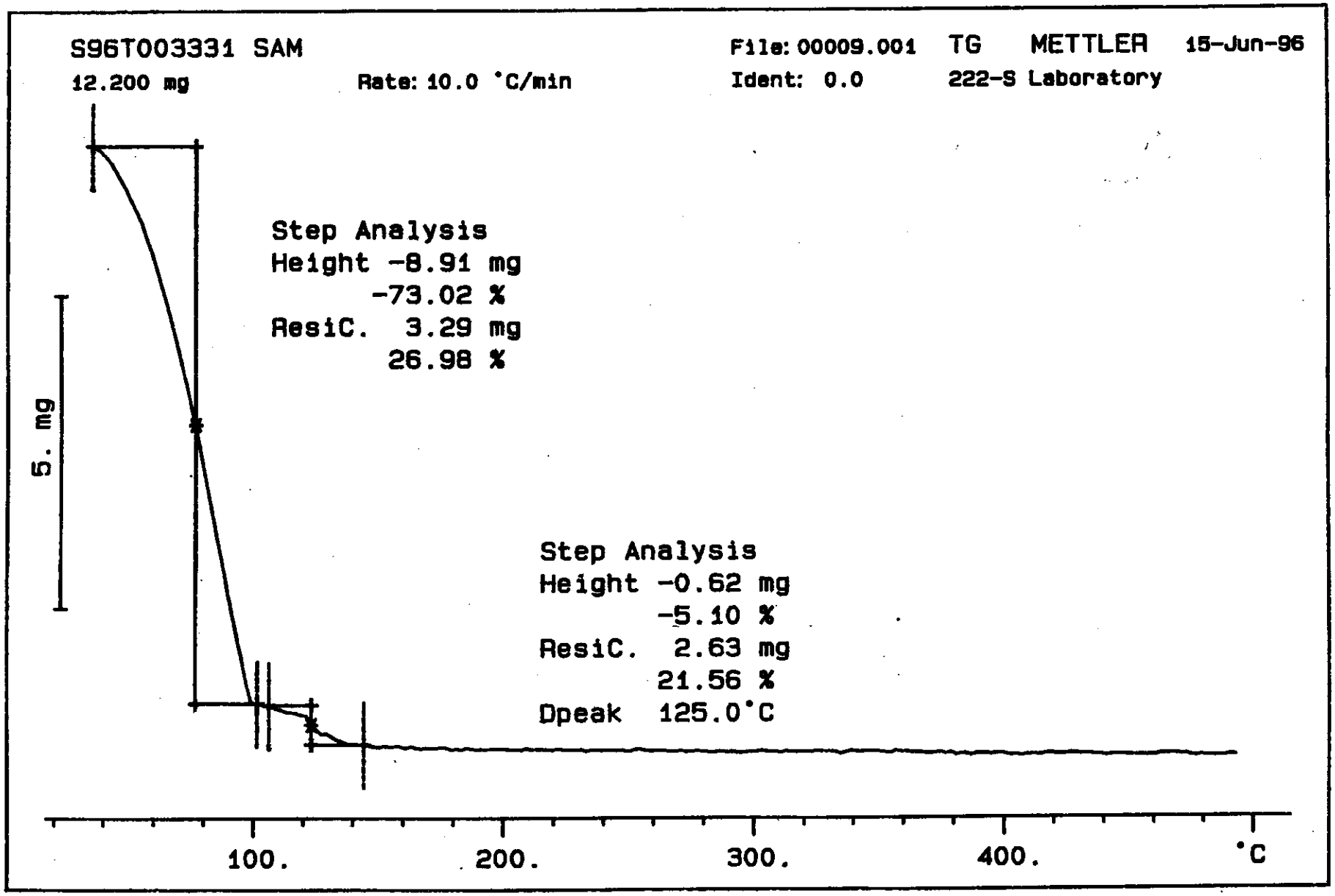
Data Entry Comments: Results are the sum of two weight loss steps.

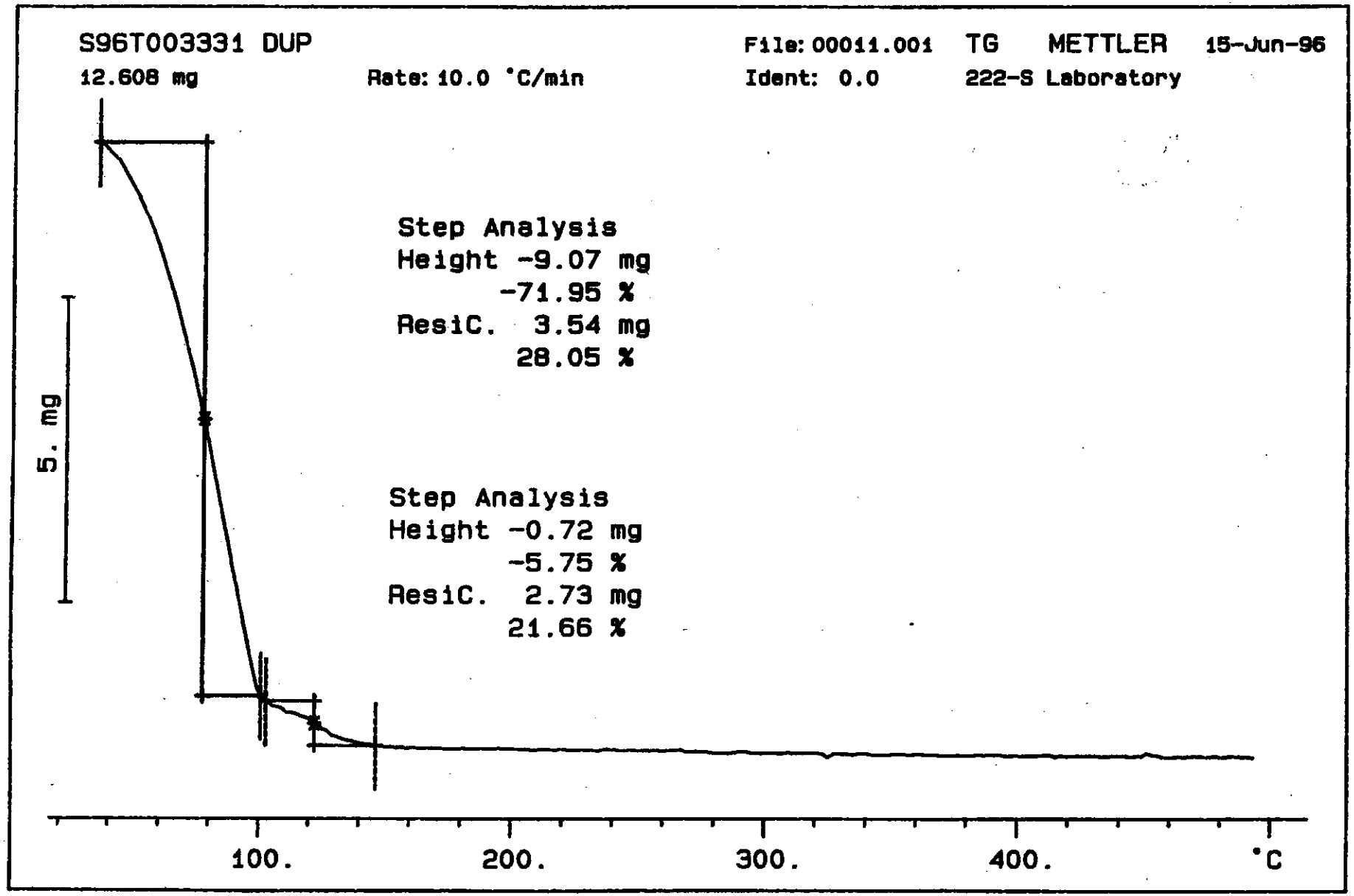
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 62 TO 64



6-15-96 0300


S96T003331 SAM
12.200 mg
Rate: 10.0 °C/min
File: 00009.001
TG METTLER 15-Jun-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -8.91 mg
-73.02 %
ResiC. 3.29 mg
26.98 %
5. mg
Step Analysis
Height -0.62 mg
-5.10 %
ResiC. 2.63 mg
21.56 %
Dpeak 125.0°C
100.
200.
300.
400.
°C


S96T003331 DUP
12.608 mg
Rate: 10.0 °C/min
File: 00011.001
Ident: 0.0
TG
METTLER
15-Jun-96
222-S Laboratory
Step Analysis
Height -9.07 mg
-71.95 %
ResiC. 3.54 mg
28.05 %
Step Analysis
Height -0.72 mg
-5.75 %
ResiC. 2.73 mg
21.66 %
5. mg
100.
200.
300.
400.
°C

worklistrpt Version 2.1 05/15/95
06/20/96 12:17

LABCORE Data Entry Template for Worklist# 9688

Analyst: JLF **Instrument:** TGA0 3 **Book #** 82N8A

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-101 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-03	LIQUID	59.2	58.78	N/A 6-20-96 BDV	%
96000785	U-101 GRAB	2 SAMPLE	S96T003329	0		TGA-03	LIQUID	N/A	77.770		%
96000785	U-101 GRAB	3 DUP	S96T003329	0		TGA-03	LIQUID	77.770 6-20-96	77.77	N/A	%
96000787	U-101 GRAB	4 SAMPLE	S96T003330	0		TGA-03	LIQUID	N/A	77.63		%
96000787	U-101 GRAB	5 DUP	S96T003330	0		TGA-03	LIQUID	77.63	76.86	N/A	%

Final page for worklist # 9688

See attached for signatures

Analyst Signature **Date** 6-20-96 BDV

Verified/Validated by Blandina Valenzuela 6-24-96

RLDeh 6-21-96

Analyst Signature **Date**

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 9688

Analyst: JLF **Instrument:** TGA0 _____ **Book #** 8008-A

Method: LA-560-112 Rev/Mod _____

Worklist Comment: U-101 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID			N/A	%
96000785	U-101 GRAB	2	SAMPLE	S96T003329	0		TGA-01	LIQUID	N/A			%
96000785	U-101 GRAB	3	DUP	S96T003329	0		TGA-01	LIQUID			N/A	%
96000787	U-101 GRAB	4	SAMPLE	S96T003330	0		TGA-01	LIQUID	N/A			%
96000787	U-101 GRAB	5	DUP	S96T003330	0		TGA-01	LIQUID			N/A	%

Final page for worklist # 9688

Jessie L Jinsby 6-15-96
Analyst Signature Date

Analyst Signature Date

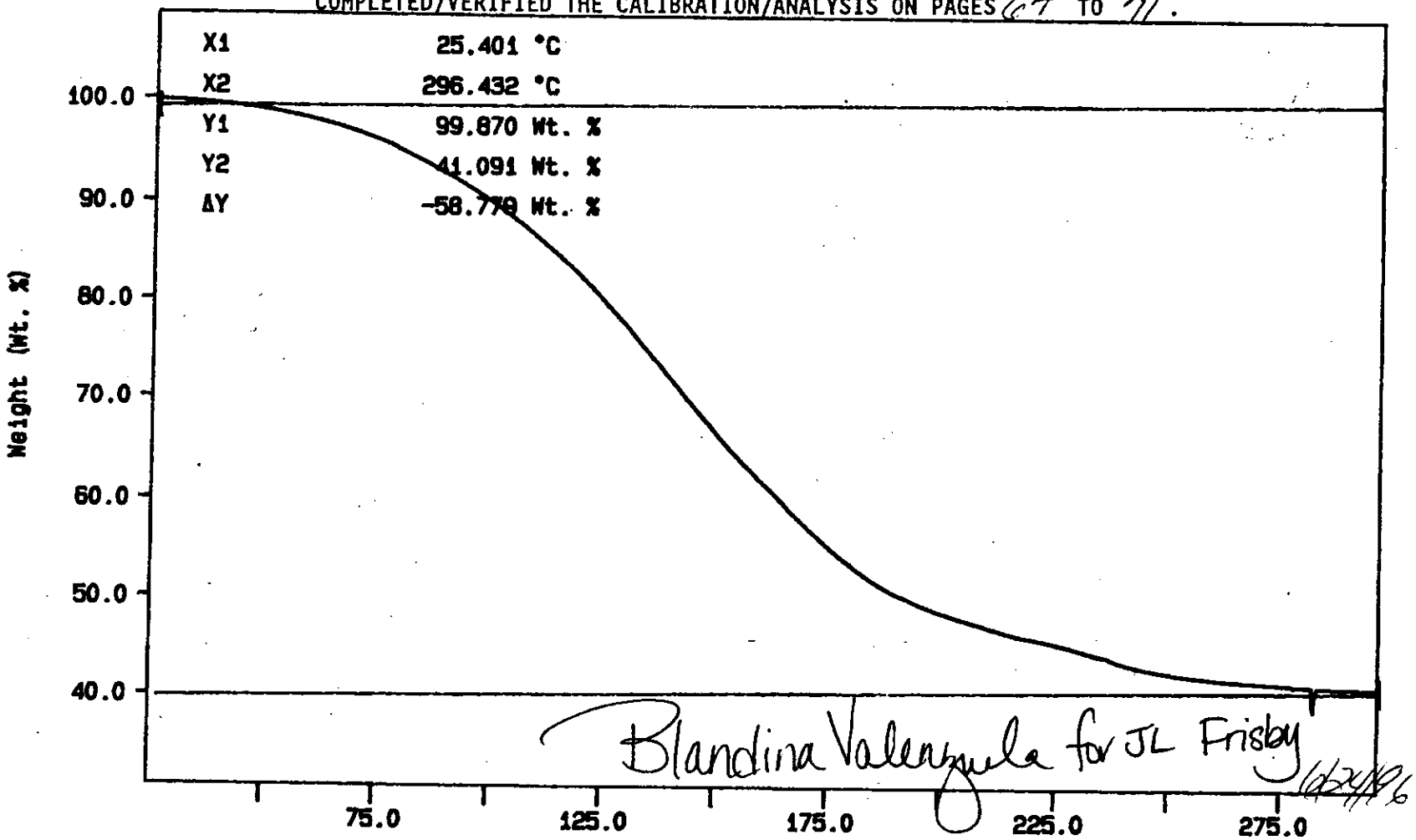
TGA-03 instrument
was used
6-20-96
Blandina
Valenzuela

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.

Curve 1: TGA
File info: TST0614.01 Fri Jun 14 10:42:30 1996
Sample Weight: 27.518 mg
TGA STD 82N8-A

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

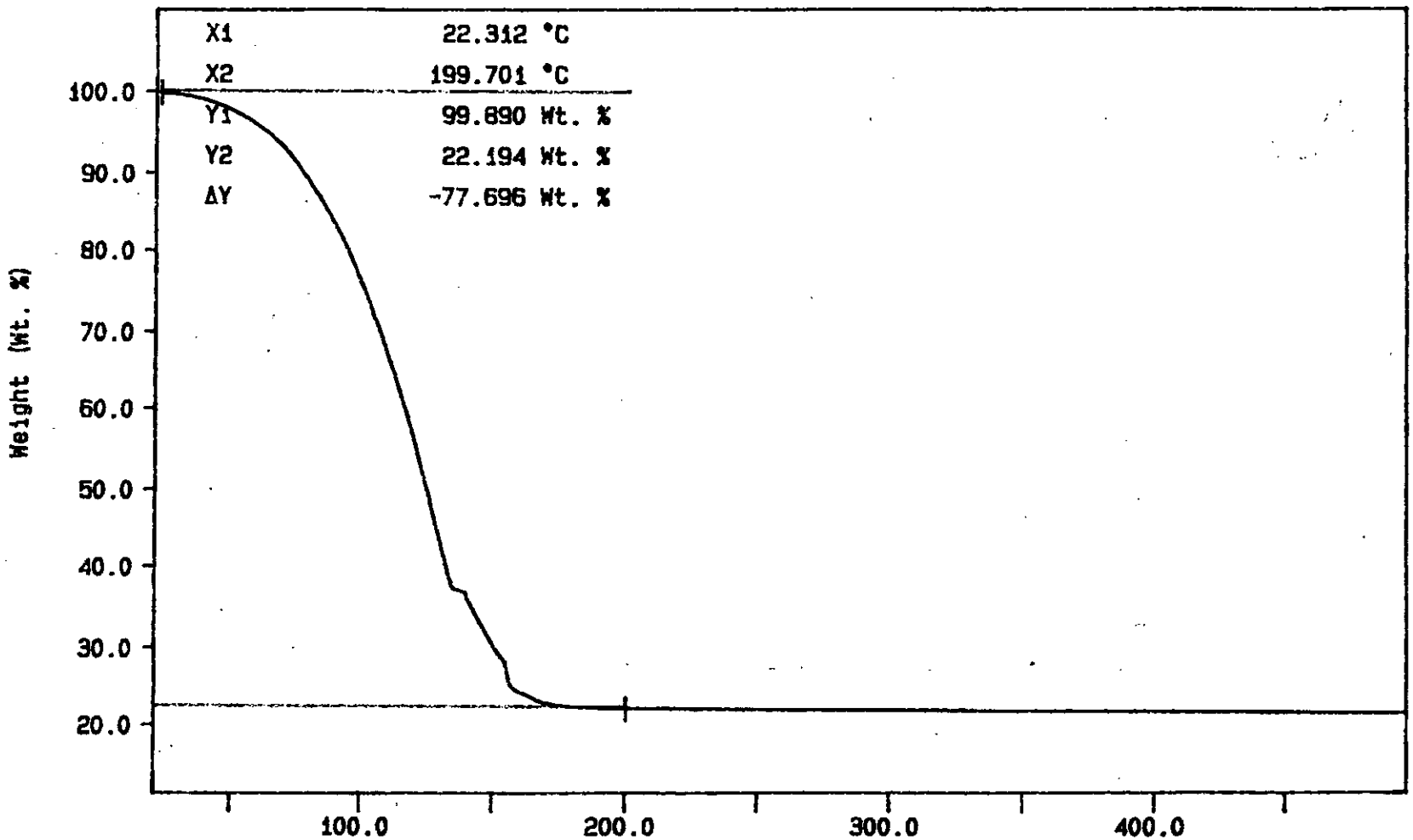


Blandina Valenzuela for JL Frisby 6/24/96

N2 10C/MIN
TEMP1: 30.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 20 11:01:15 1996

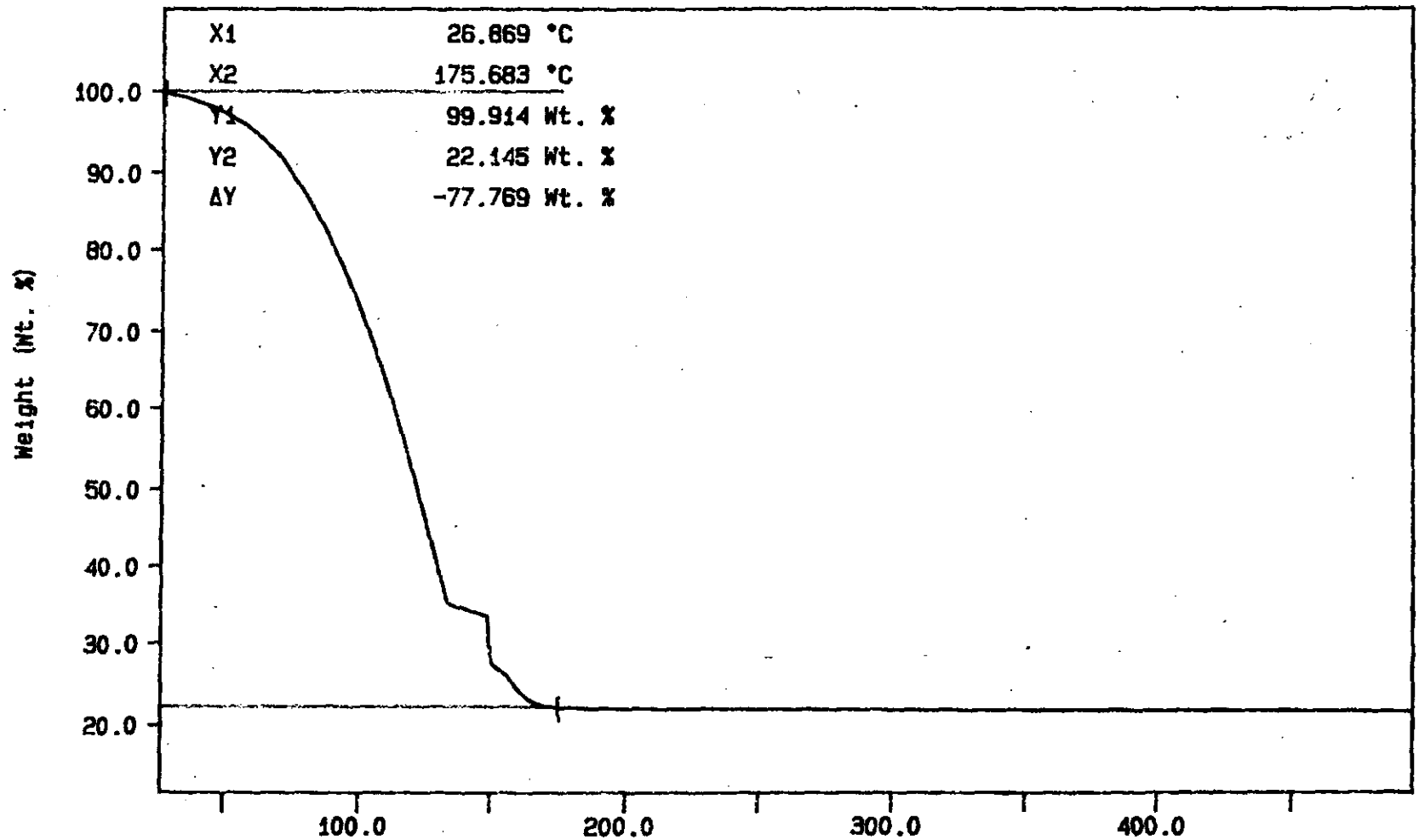
Curve 1: TGA
File info: SAM061501 Sat Jun 15 00:31:12 1996
Sample Weight: 11.622 mg
~~S96I001722 DUP~~ 6-15-96
S96I003329 SAM



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

JL FRISBY
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jun 15 00:33:35 1996

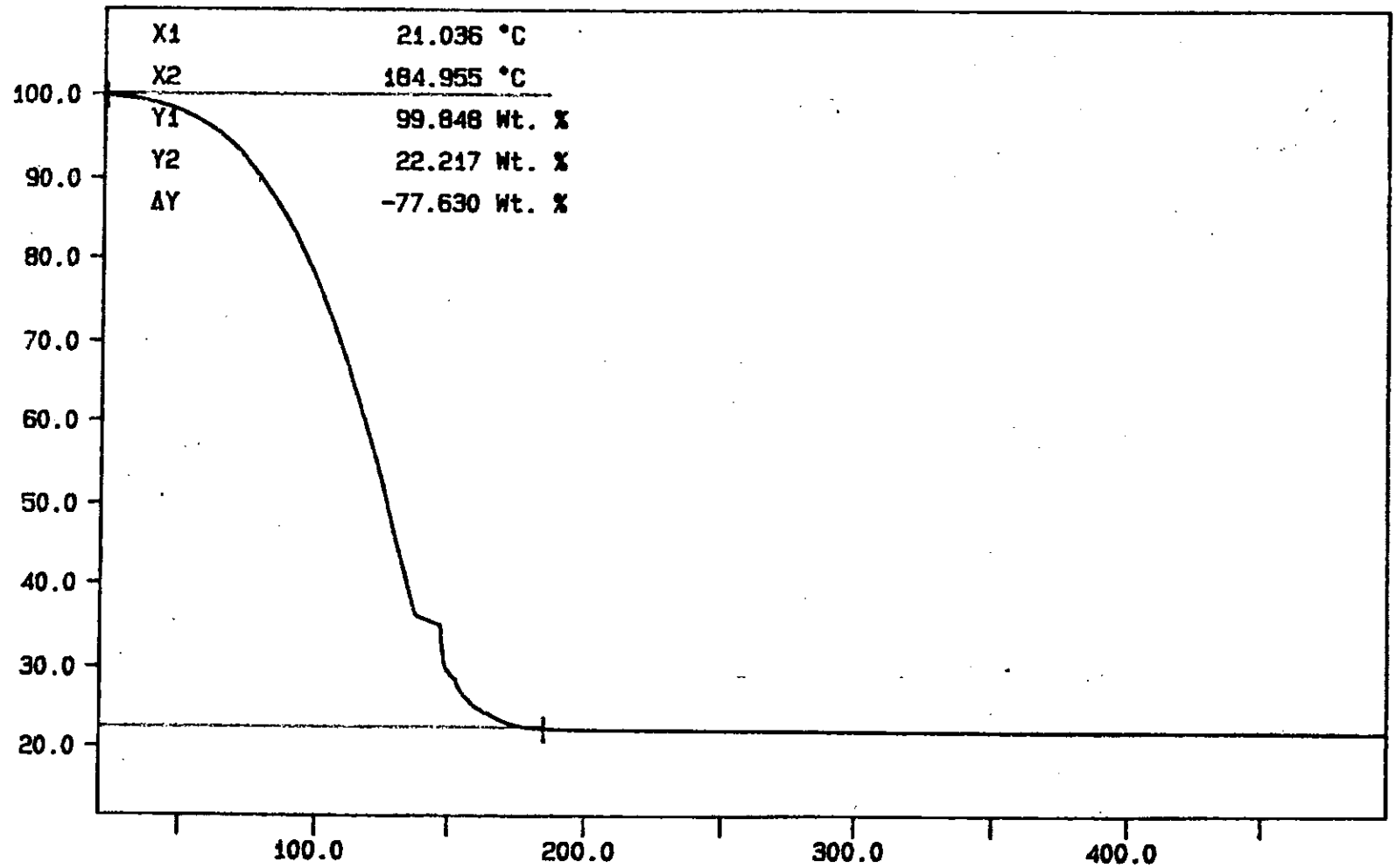
Curve 1: TGA
File info: SAM061502 Sat Jun 15 01:41:56 1996
Sample Weight: 11.613 mg
S96T003329 DUP



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

JL FRISBY
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jun 15 02:07:16 1996

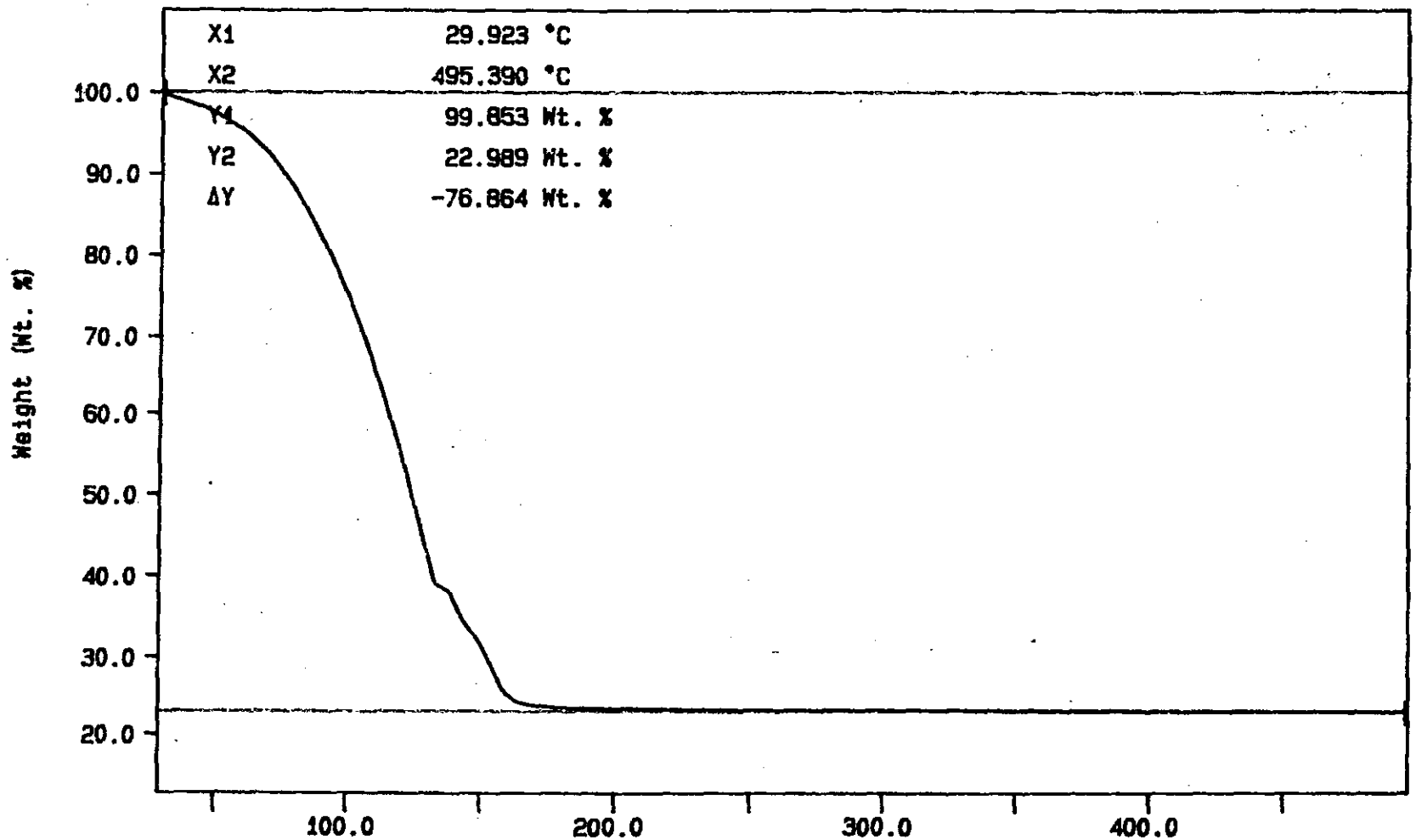
Curve 1: TGA
File info: SAM061503 Sat Jun 15 03:17:12 1996
Sample Weight: 12.029 mg
S96T003330 SAM



10C/MIN N2
TEMP1: 30.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

JL FRISBY
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jun 15 03:19:07 1996

Curve 1: TGA
File info: SAM061504 Sat Jun 15 04:25:55 1996
Sample Weight: 11.639 mg
S96T003330 DUP



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

JL FRISBY
PERKIN-ELMER
7 Series Thermal Analysis System
Sat Jun 15 17:39:21 1996

LABCORE Data Entry Template for Worklist# 9689

Analyst: DCD **Instrument:** TGA0 3 **Book #** 82N8A

Method: LA-514-114 Rev/Mod C-1

Worklist Comment: U-101 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	LIQUID	59.2	58.63*	N/A	%
96000785	U-101 GRAB	2	SAMPLE	S96T003309	0		TGA-03	LIQUID	N/A	99.10		%
96000785	U-101 GRAB	3	DUP	S96T003309	0		TGA-03	LIQUID	99.10	99.62	N/A	%
		4	STD				TGA-03	LIQUID	59.2	58.32	N/A	%
96000785	U-101 GRAB	5	SAMPLE	S96T003328	0		TGA-03	LIQUID	N/A	65.25		%
96000785	U-101 GRAB	6	DUP	S96T003328	0		TGA-03	LIQUID	65.25	~~78.2~~ 78.4	N/A	%

Lea 7-11-96

Final page for worklist # 9689

See attached for signatures
Analyst Signature **Date** 6-14-96

6 17 96
Analyst Signature **Date**

Validated by HAnastn 6-19-96

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 9689

Analyst: DCD **Instrument:** TGA0 **Book #** 82N8A

Method: LA-560-112 Rev/Mod

Worklist Comment: U-101 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID			N/A	%
96000785	U-101 GRAB	2	SAMPLE	S96T003309	0		TGA-01	LIQUID	N/A			%
96000785	U-101 GRAB	3	DUP	S96T003309	0		TGA-01	LIQUID			N/A	%
96000785	U-101 GRAB	4	SAMPLE	S96T003328	0		TGA-01	LIQUID	N/A			%
96000785	U-101 GRAB	5	DUP	S96T003328	0		TGA-01	LIQUID			N/A	%

Final page for worklist # 9689

David Dunham 6-13-96
Analyst Signature **Date**

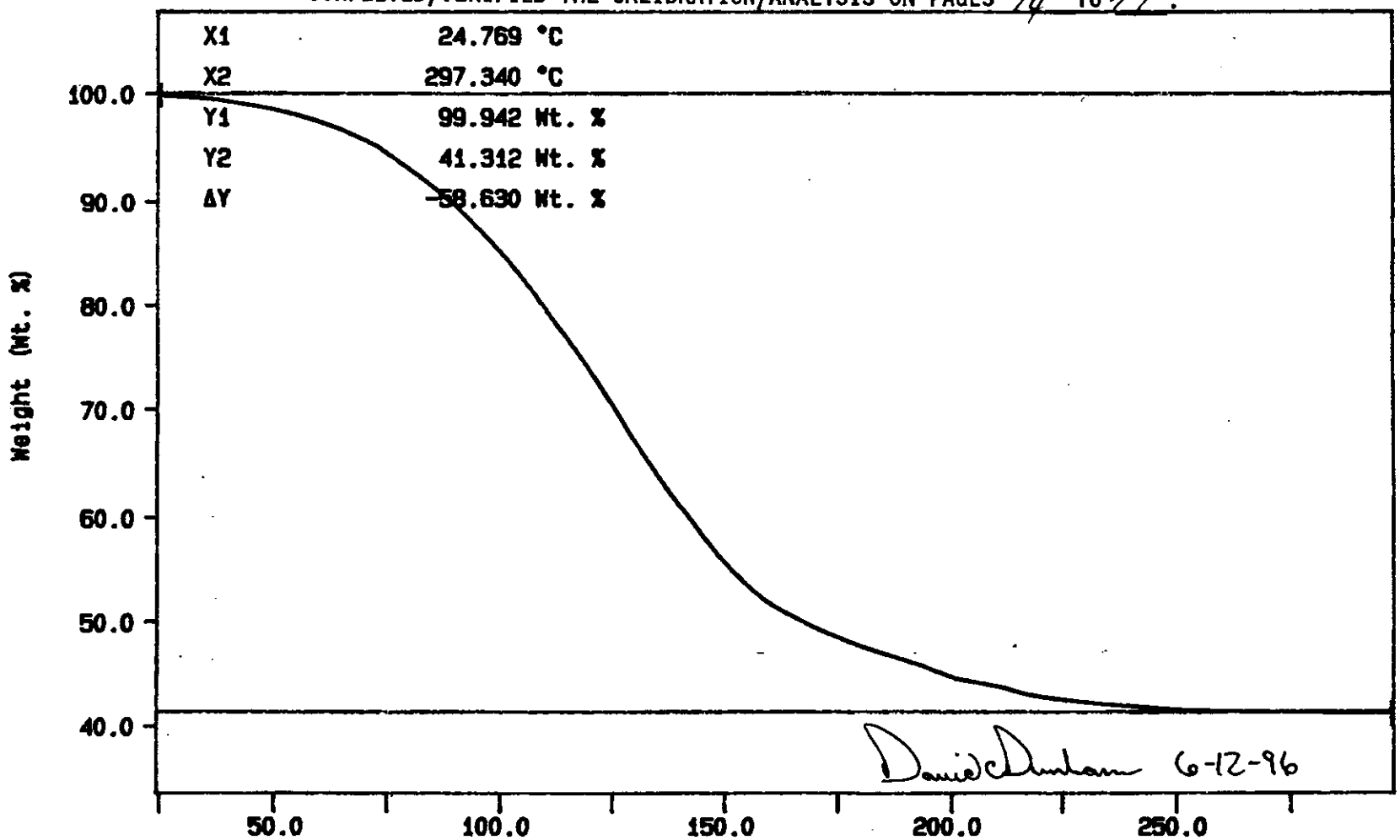
Analyst Signature **Date**

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.

Curve 1: TGA
File info: TER061201 Wed Jun 12 06:09:13 1996
Sample Weight: 19.225 mg
TGA STD B2NB-A

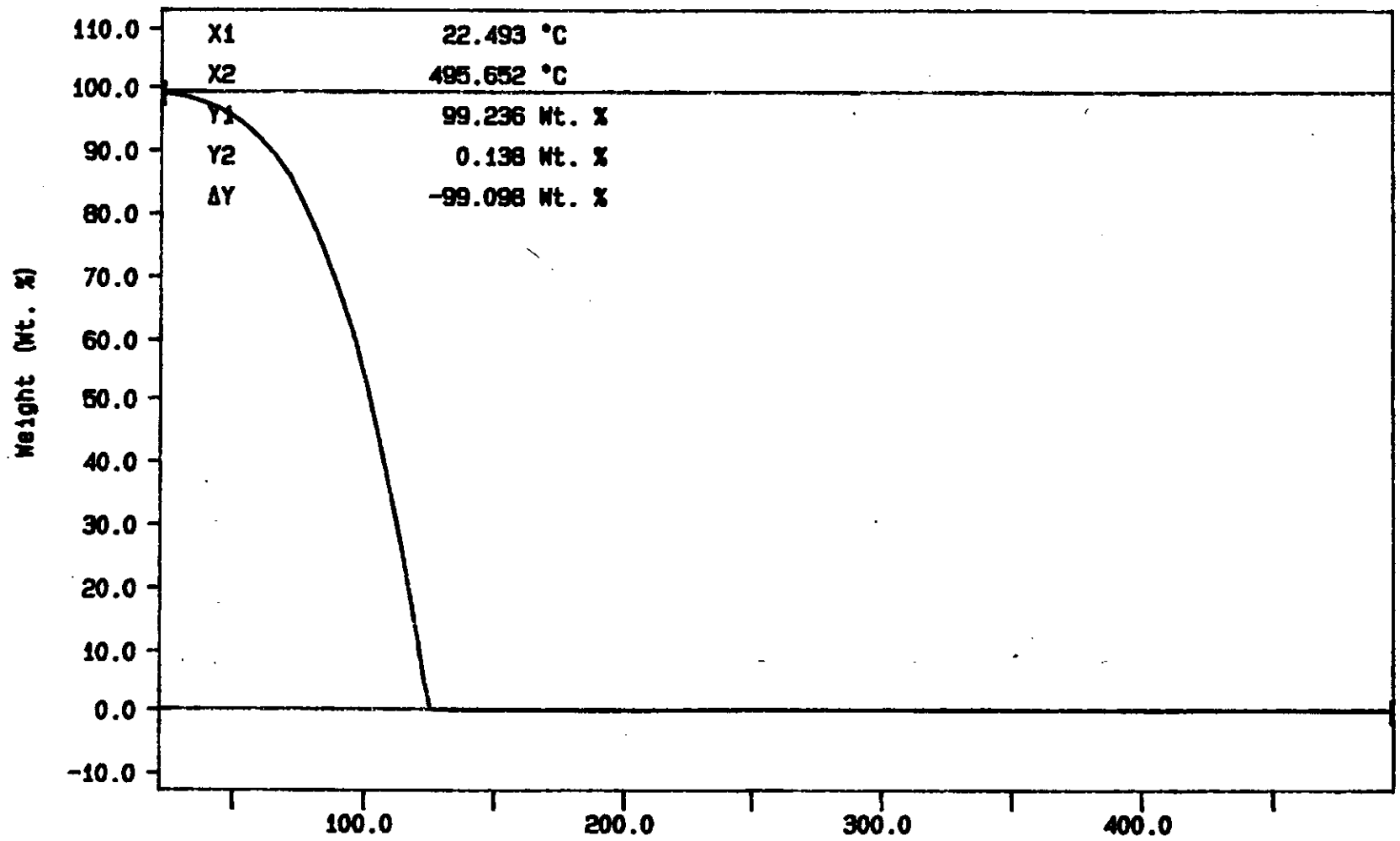
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 74 TO 79.



N2 10C/MIN
TEMP1: 30.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 12 06:13:27 1996

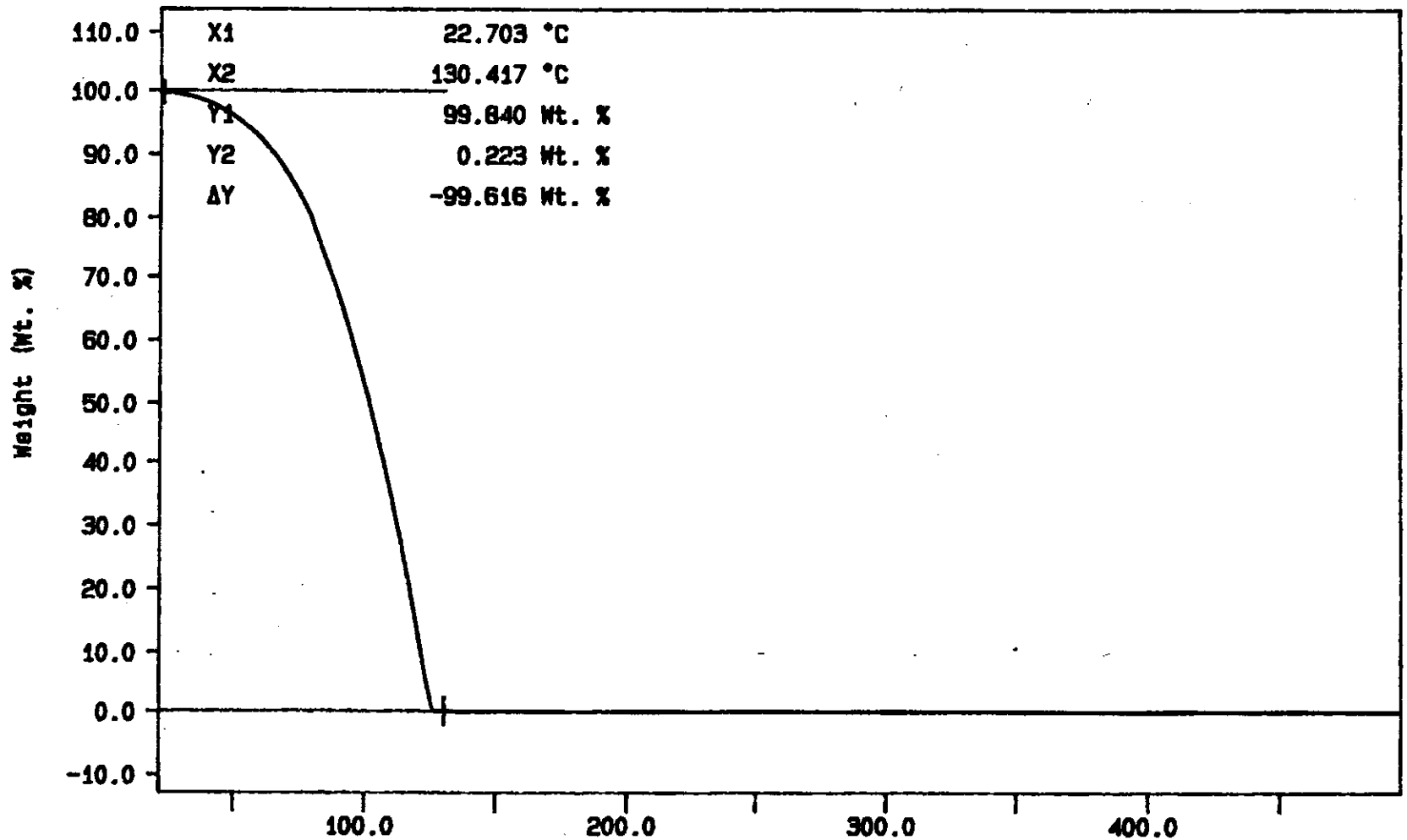
Curve 1: TGA
File info: SAM061203 Wed Jun 12 11:00:18 1996
Sample Weight: 9.423 mg
S96T003309 SAM



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 12 13:11:59 1996

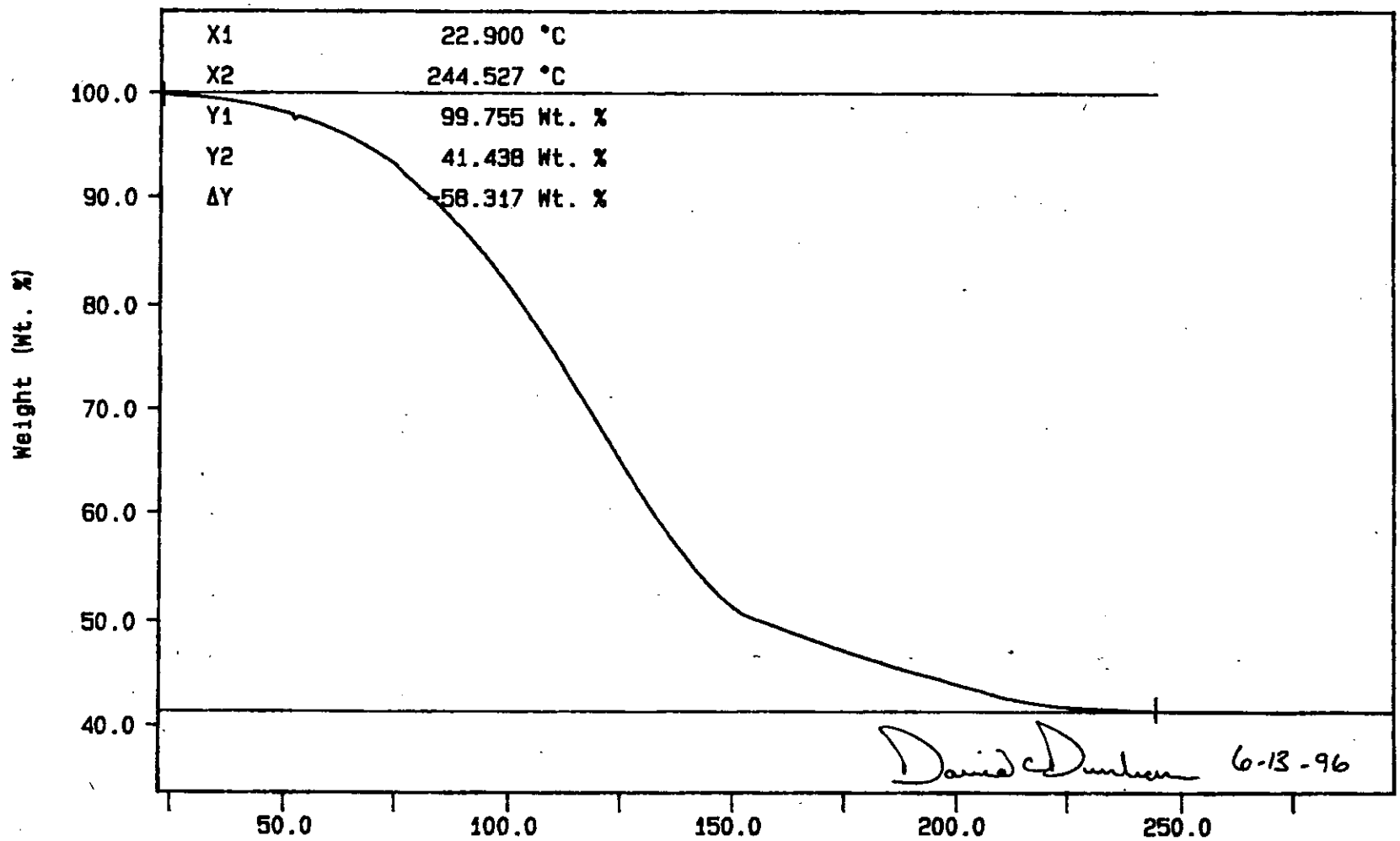
Curve 1: TGA
File info: SAM061205 Wed Jun 12 14:21:12 1996
Sample Weight: 9.340 mg
S96T003309 DUP



10C/MIN N2
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 800.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 12 15:09:18 1996

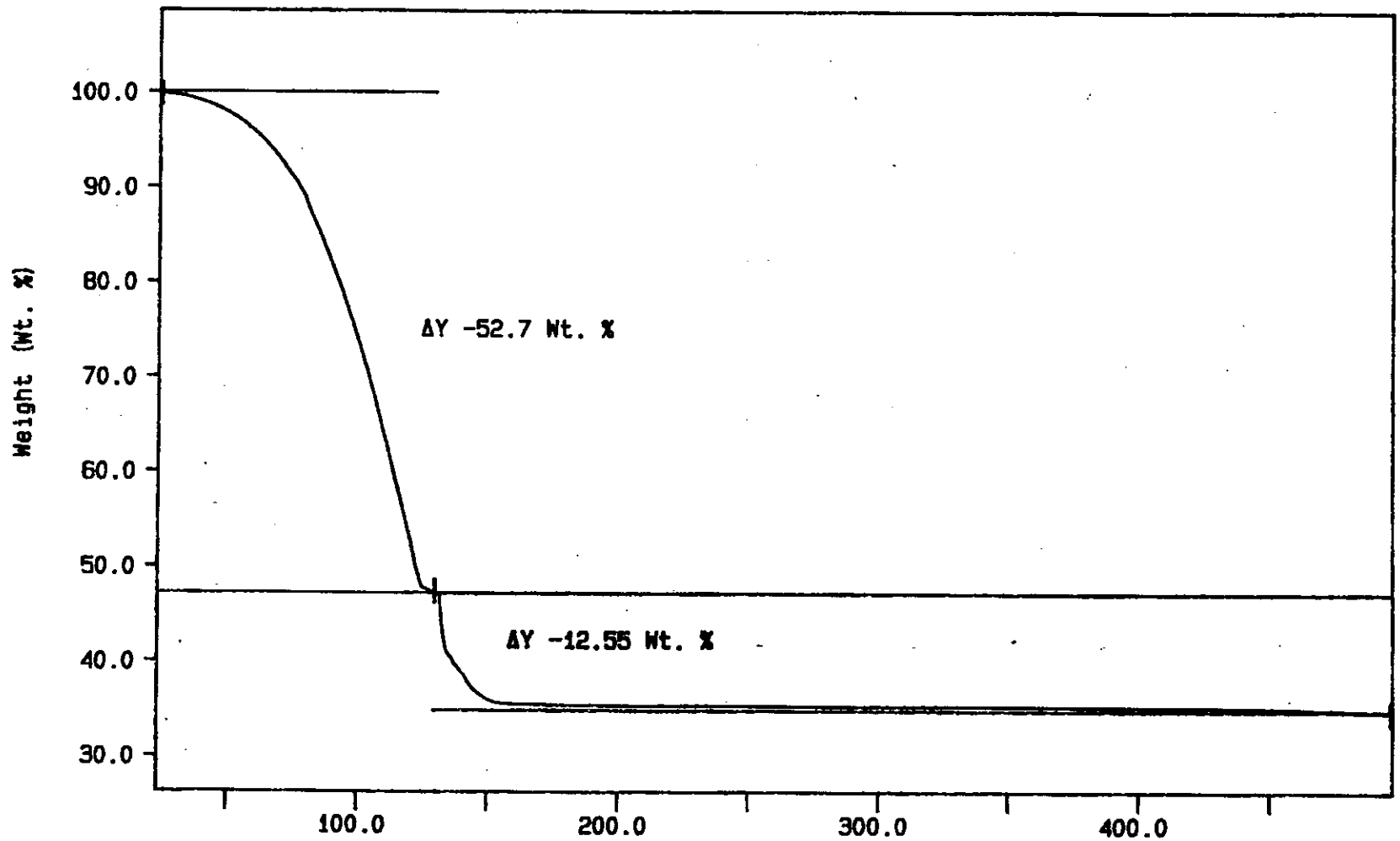
Curve 1: TGA
File info: TER061302 Thu Jun 13 06:35:53 1996
Sample Weight: 15.694 mg
TGA STD 82N8-A



N2 10C/MIN
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 900.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 13 15:25:56 1996

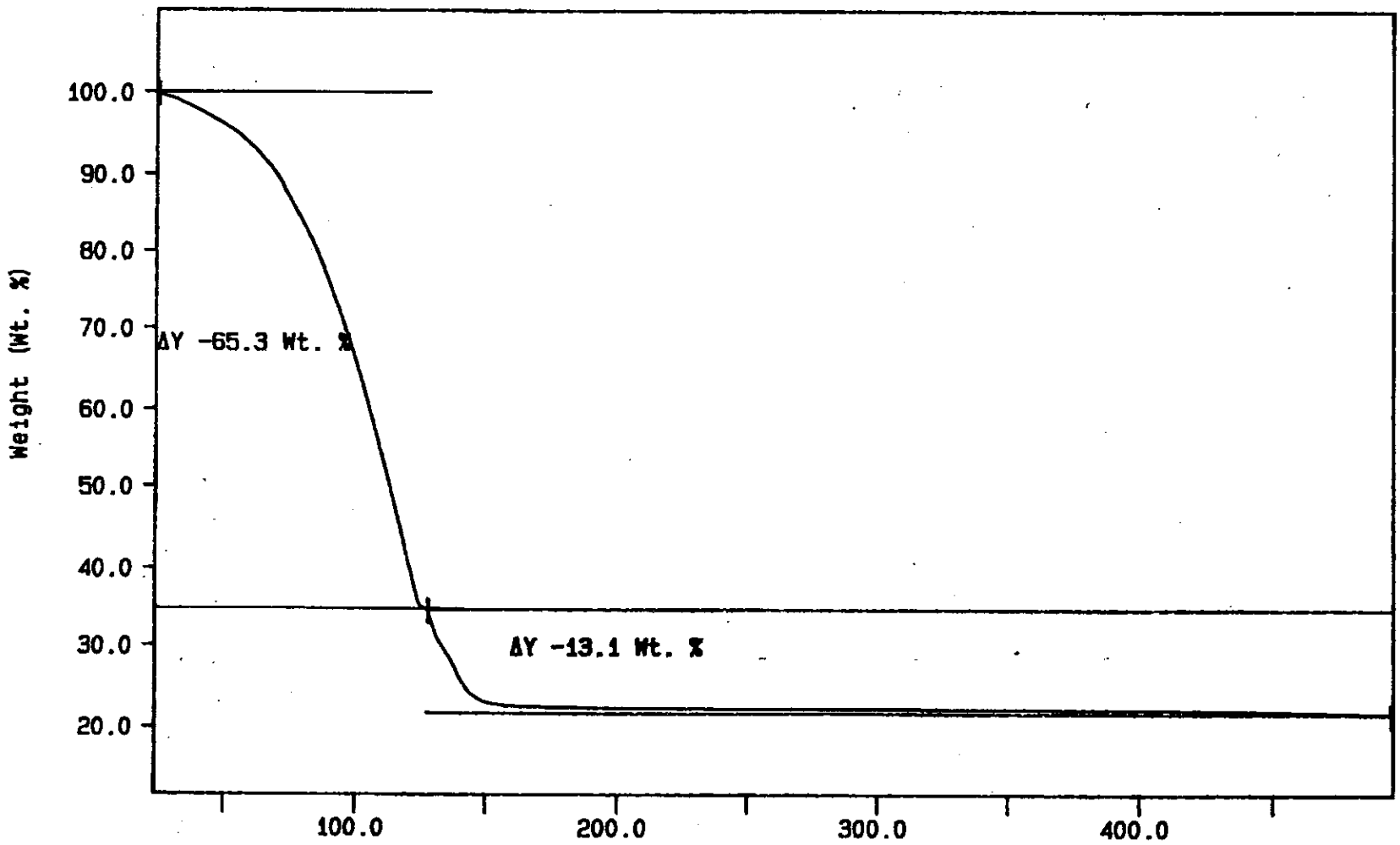
Curve 1: TGA
File info: SAM061303 Thu Jun 13 14:30:39 1996
Sample Weight: 14.015 mg
S96T003328 SAM



10C/MIN N2
TEMP1: 90.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 13 15:46:01 1996

Curve 1: TGA
File info: SAM061304 Thu Jun 13 15:53:08 1996
Sample Weight: 12.356 mg
S96T003328 DUP



10C/MIN N2
TEMP1: 30.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

DC DUNHAM
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 13 15:59:09 1996

worklistrpt Version 2.1 05/15/95
07/09/96 20:49

LABCORE Data Entry Template for Worklist# 10685

Analyst: ADP **Instrument:** TGA01 **Book #** 82N8-A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-101 TGA-01 RUN UNDER NITROGEN SLP

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	59.2	58.73	N/A	%
96000785	U-101 GRAB	2	SAMPLE	S96T003468	0		TGA-01	SOLID	N/A	33.94		%
96000785	U-101 GRAB	3	DUP	S96T003468	0		TGA-01	SOLID	33.94	29.93	N/A	%
96000785	U-101 GRAB	4	SAMPLE	S96T003469	0		TGA-01	SOLID	N/A	21.90		%
96000785	U-101 GRAB	5	DUP	S96T003469	0		TGA-01	SOLID	21.90	19.06	N/A	%

Final page for worklist # 10685

Anthony Pirruntu 7-10-96
Analyst Signature **Date**

Analyst Signature **Date**

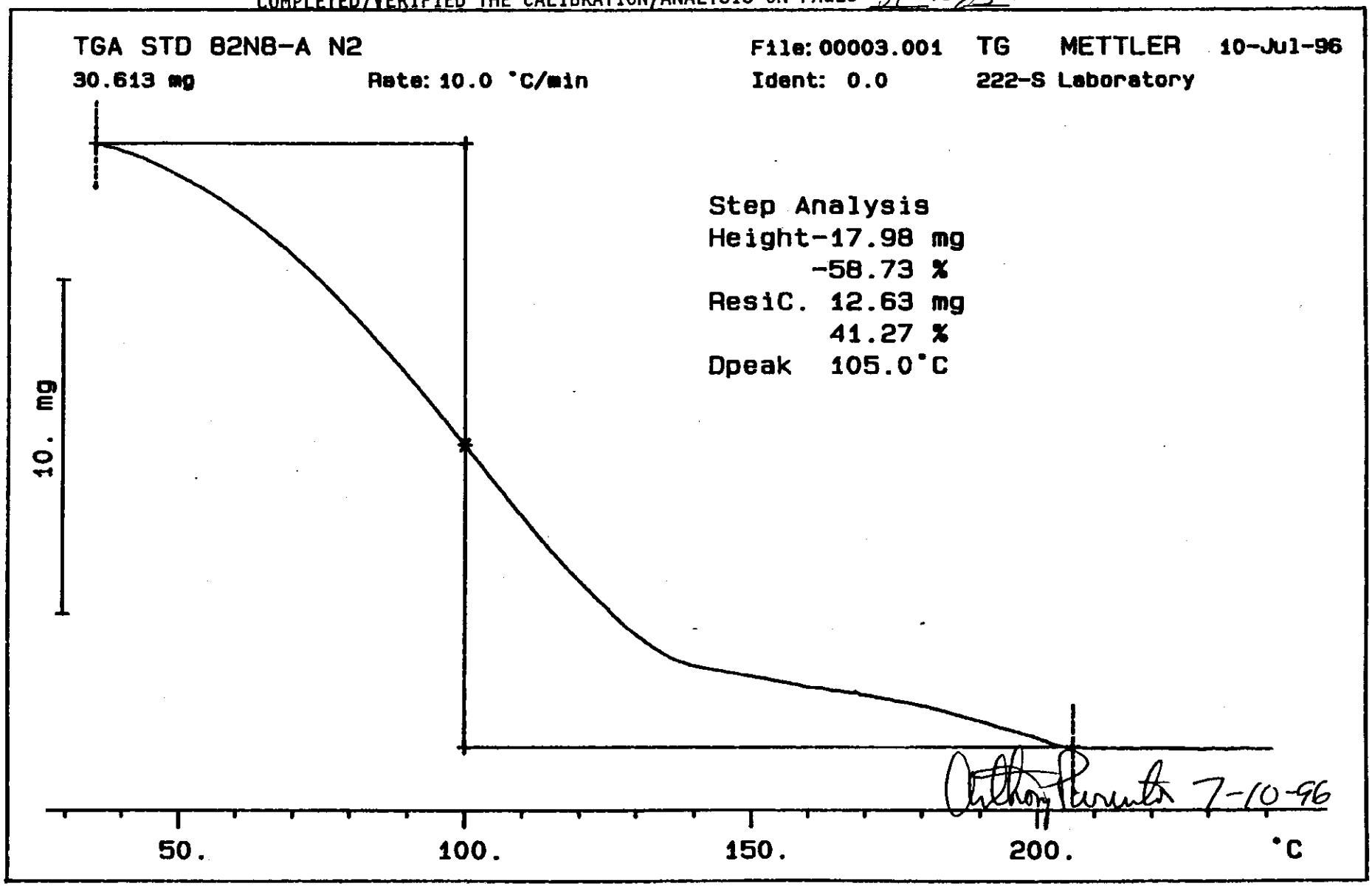
Verified/Validated by
Blandina Valenzuela 7-12-96

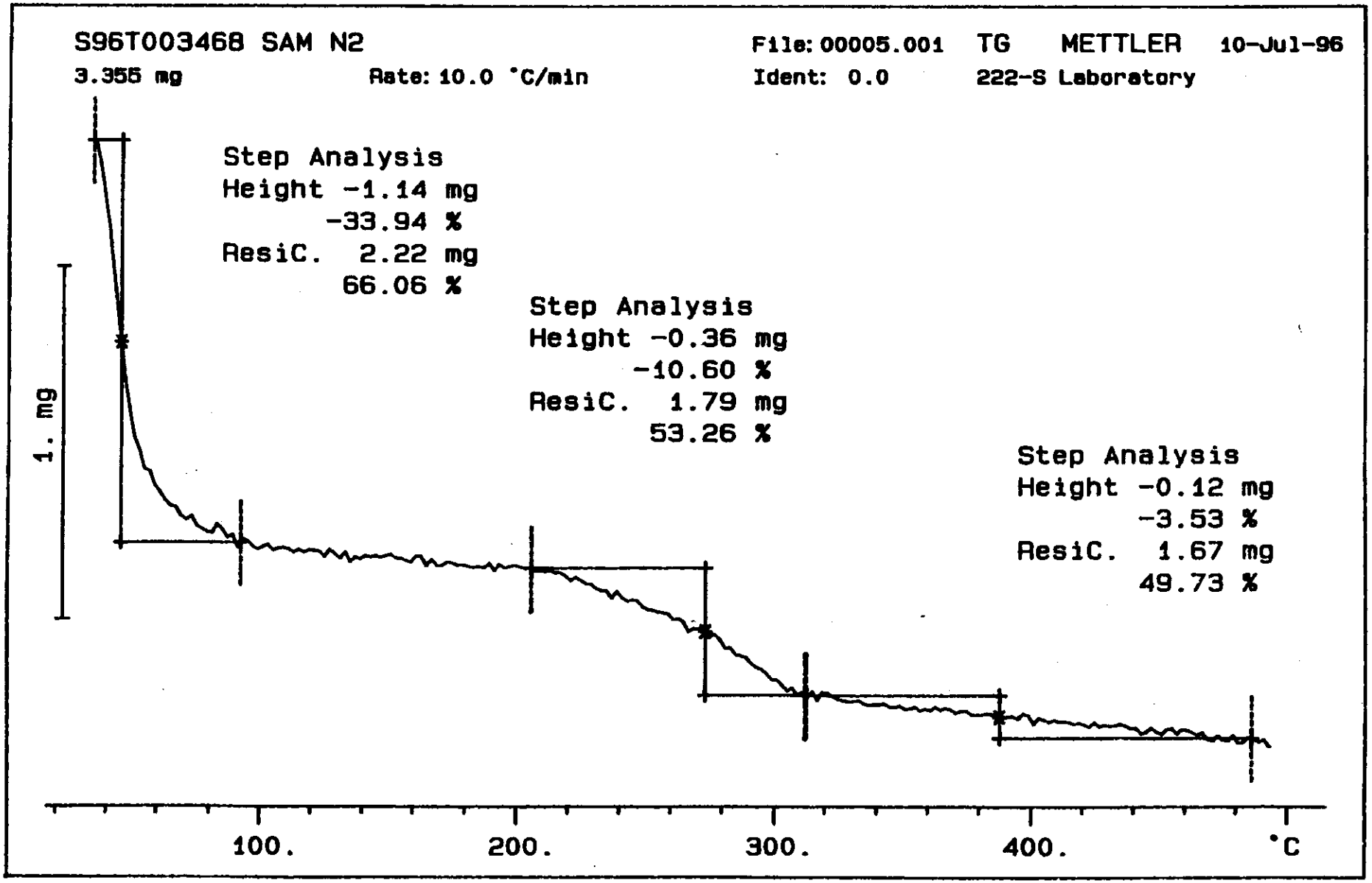
S96T003468 didn't have much sample to work with so the sample pings ~~of the~~ 7-11-96 are very small. The scale for the thermograms is very small so the peaks seen on the thermograms are from the vibrations in the lab.

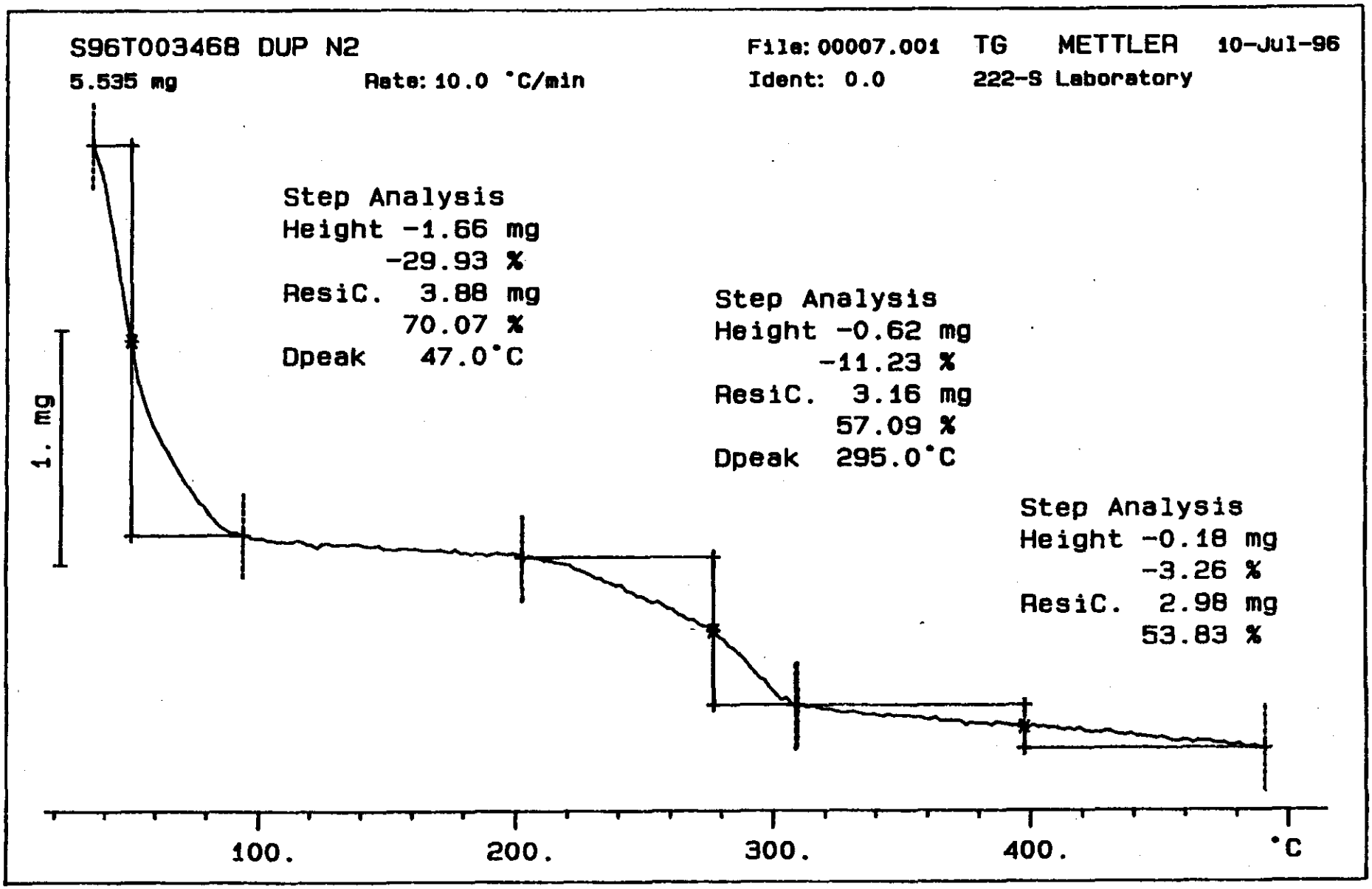
Data Entry Comments: S96T003469 didn't have much sample to work with so the sample pings are very small. The scale for the run is very small so the peaks seen 7-11-96 on the thermograms are from the vibrations in the lab.

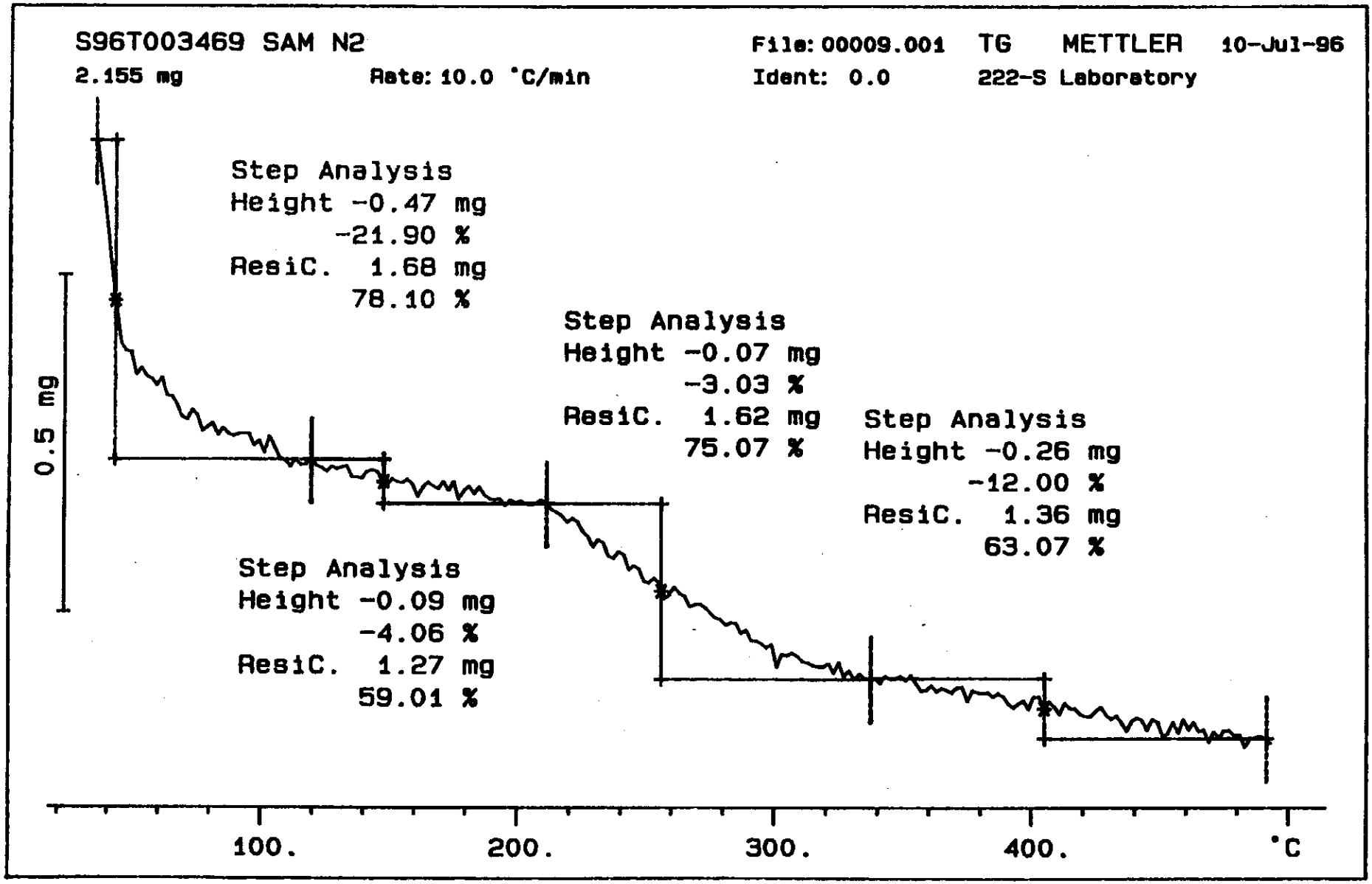
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

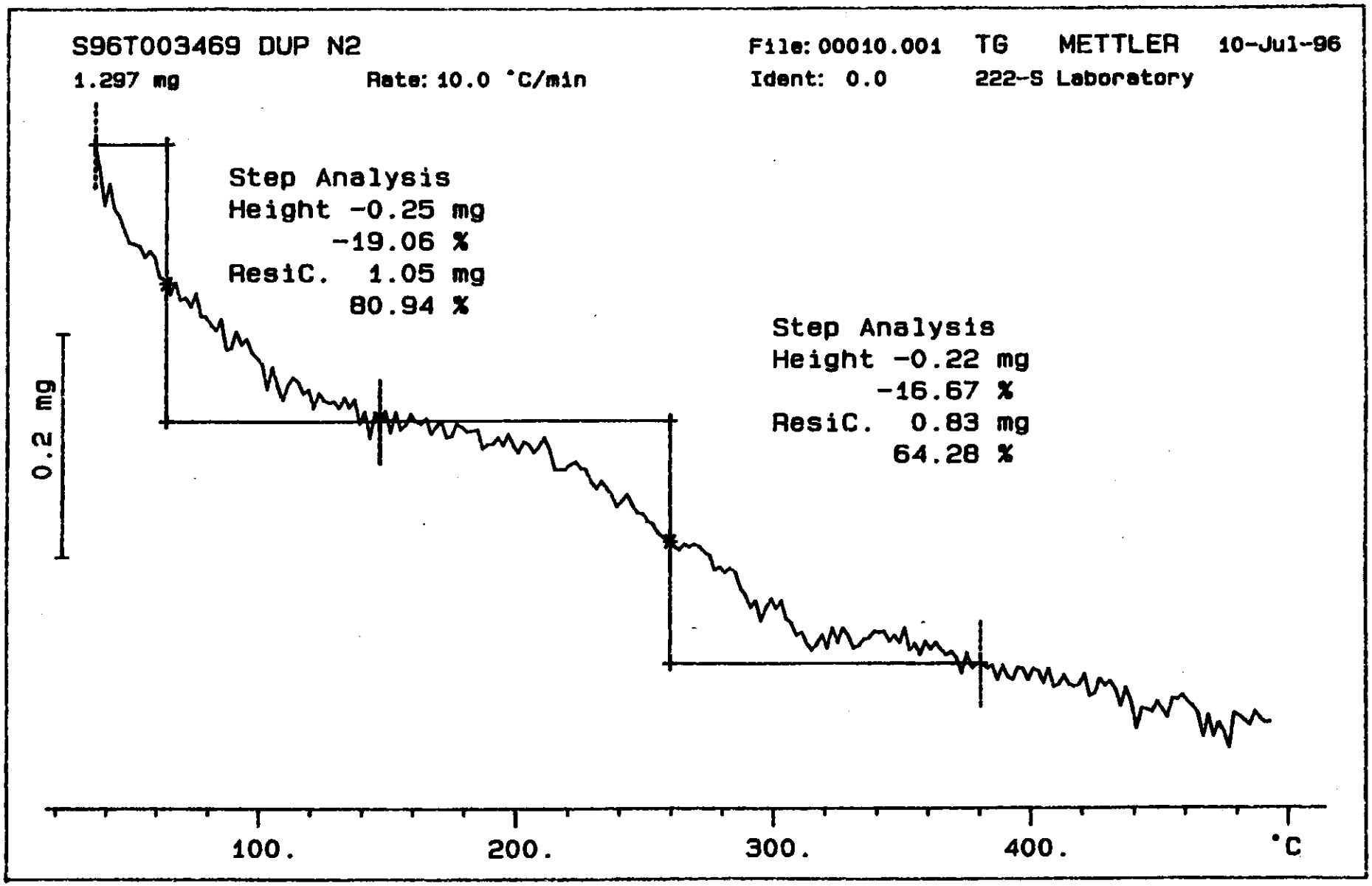
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 81 TO 85.




S96T003468 SAM N2
3.355 mg
Rate: 10.0 °C/min
File: 00005.001
TG METTLER 10-Jul-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -1.14 mg
-33.94 %
ResiC. 2.22 mg
66.06 %
Step Analysis
Height -0.36 mg
-10.60 %
ResiC. 1.79 mg
53.26 %
Step Analysis
Height -0.12 mg
-3.53 %
ResiC. 1.67 mg
49.73 %
1. mg
100.
200.
300.
400.
°C


S96T003468 DUP N2
5.535 mg
Rate: 10.0 °C/min
File: 00007.001
TG METTLER 10-Jul-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -1.66 mg
-29.93 %
ResiC. 3.88 mg
70.07 %
Dpeak 47.0°C
Step Analysis
Height -0.62 mg
-11.23 %
ResiC. 3.16 mg
57.09 %
Dpeak 295.0°C
Step Analysis
Height -0.18 mg
-3.26 %
ResiC. 2.98 mg
53.83 %
1. mg
100.
200.
300.
400.
°C


S96T003469 SAM N2
2.155 mg
Rate: 10.0 °C/min
File: 00009.001
TG METTLER 10-Jul-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -0.47 mg
-21.90 %
ResiC. 1.68 mg
78.10 %
Step Analysis
Height -0.07 mg
-3.03 %
ResiC. 1.62 mg
75.07 %
Step Analysis
Height -0.26 mg
-12.00 %
ResiC. 1.36 mg
63.07 %
Step Analysis
Height -0.09 mg
-4.06 %
ResiC. 1.27 mg
59.01 %
0.5 mg
100.
200.
300.
400.
°C


S96T003469 DUP N2
1.297 mg
Rate: 10.0 °C/min
File: 00010.001
TG
METTLER
10-Jul-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -0.25 mg
-19.06 %
ResiC. 1.05 mg
80.94 %
Step Analysis
Height -0.22 mg
-16.67 %
ResiC. 0.83 mg
64.28 %
0.2 mg
100.
200.
300.
400.
°C

LABCORE Data Entry Template for Worklist# 10686

Analyst: ADP **Instrument:** TGA01 **Book #** ~~72N14 BARD~~ 82N9A

Method: LA-560-112 Rev/Mod B-1

Worklist Comment: U-101 TGA-01 RUN UNDER NITROGEN SLP

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-01	SOLID	59.2	58.44	N/A	%
96000787	U-101 GRAB	2 SAMPLE	S96T003471	0		TGA-01	SOLID	N/A	36.68		%
96000787	U-101 GRAB	3 DUP	S96T003471	0		TGA-01	SOLID	36.68	37.61	N/A	%
96000787	U-101 GRAB	4 SAMPLE	S96T003472	0		TGA-01	SOLID	N/A	27.70		%
96000787	U-101 GRAB	5 DUP	S96T003472	0		TGA-01	SOLID	27.70	31.36	N/A	%

Final page for worklist # 10686

Anthony Pierantoni 7-10-96
Analyst Signature **Date**

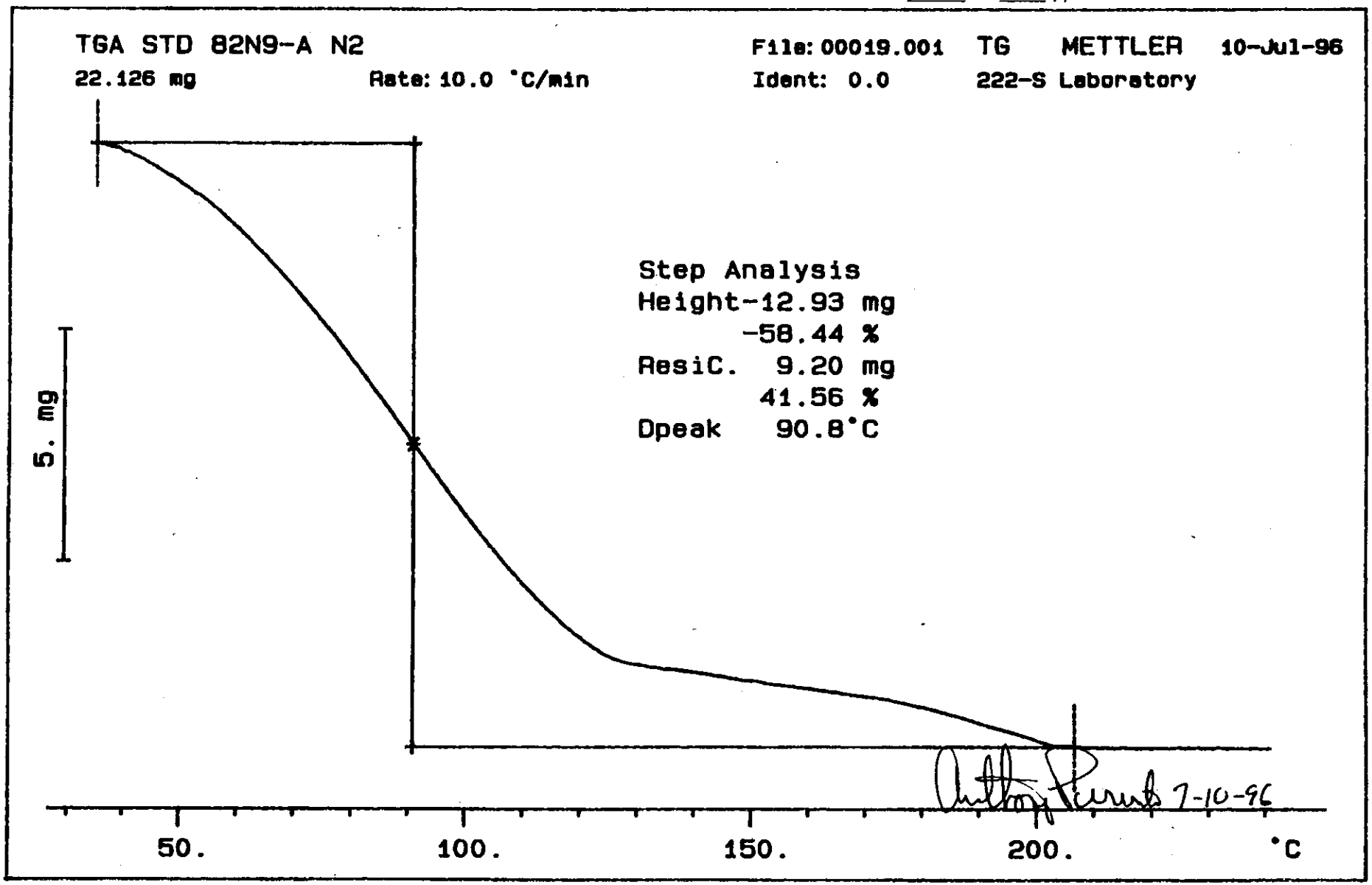
Analyst Signature **Date**

Verified/Validated by
Blandina Valenzuela
7-12-96

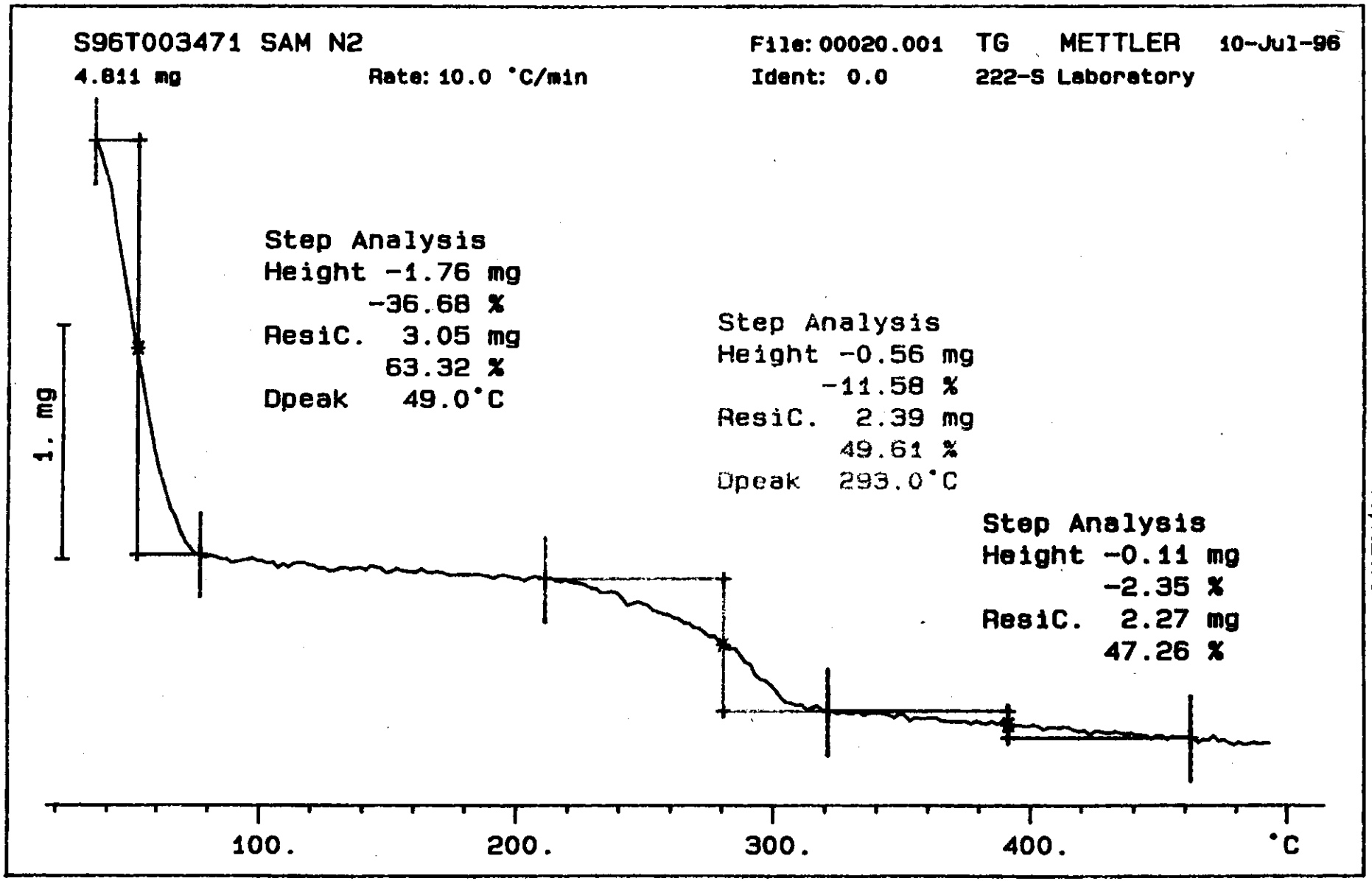
Data Entry Comments:

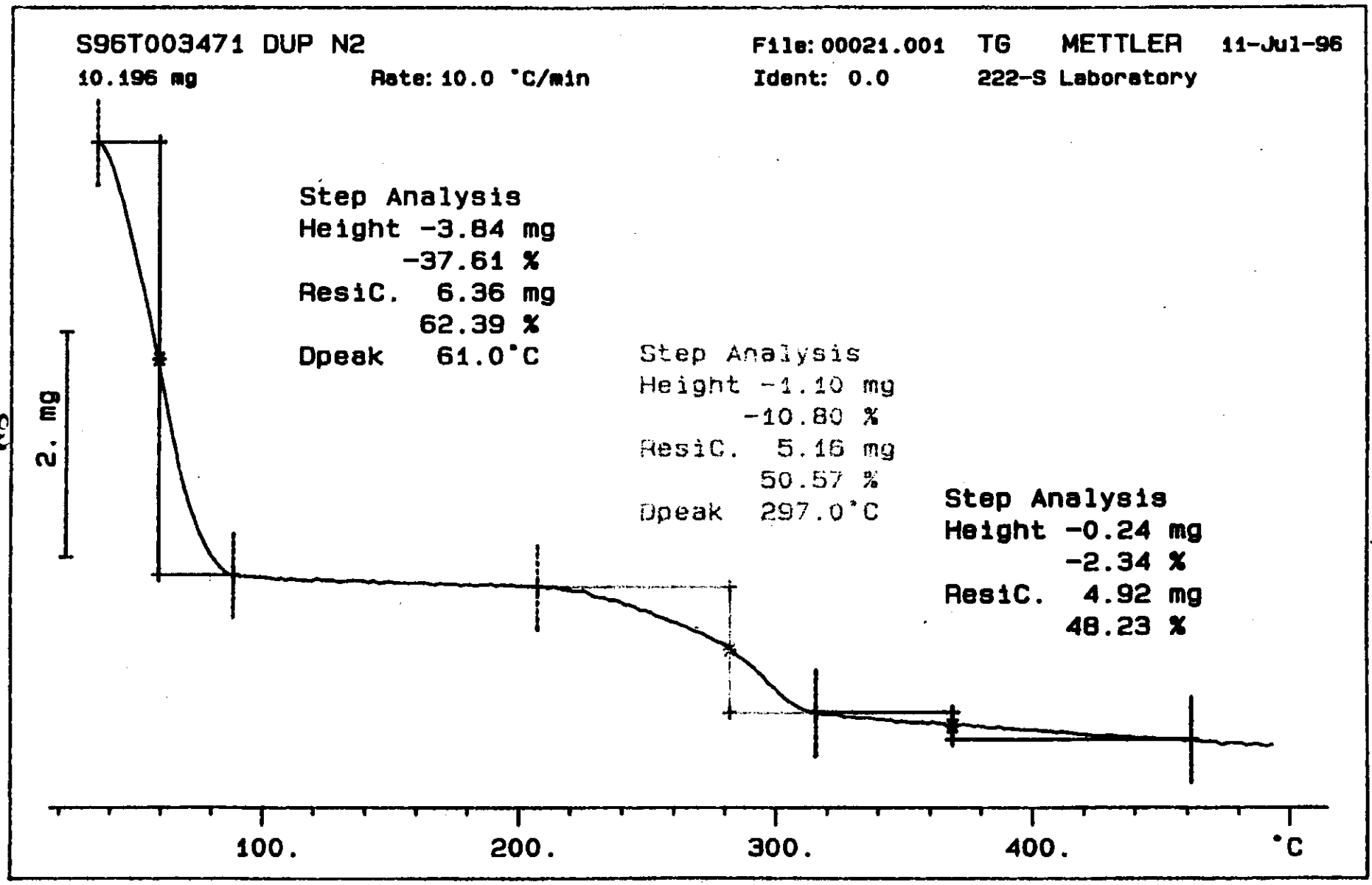
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

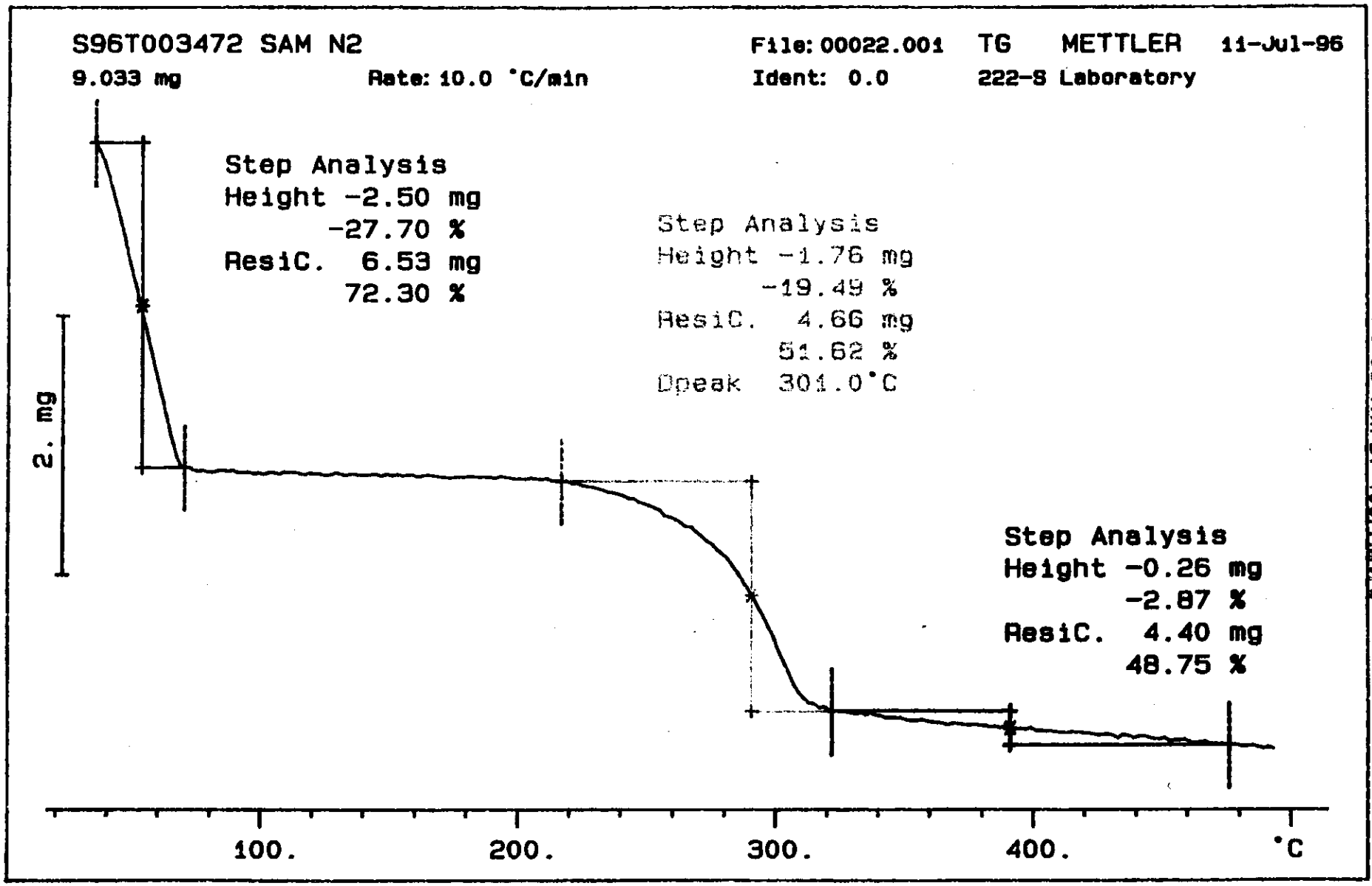
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 87 TO 91 7/12/96

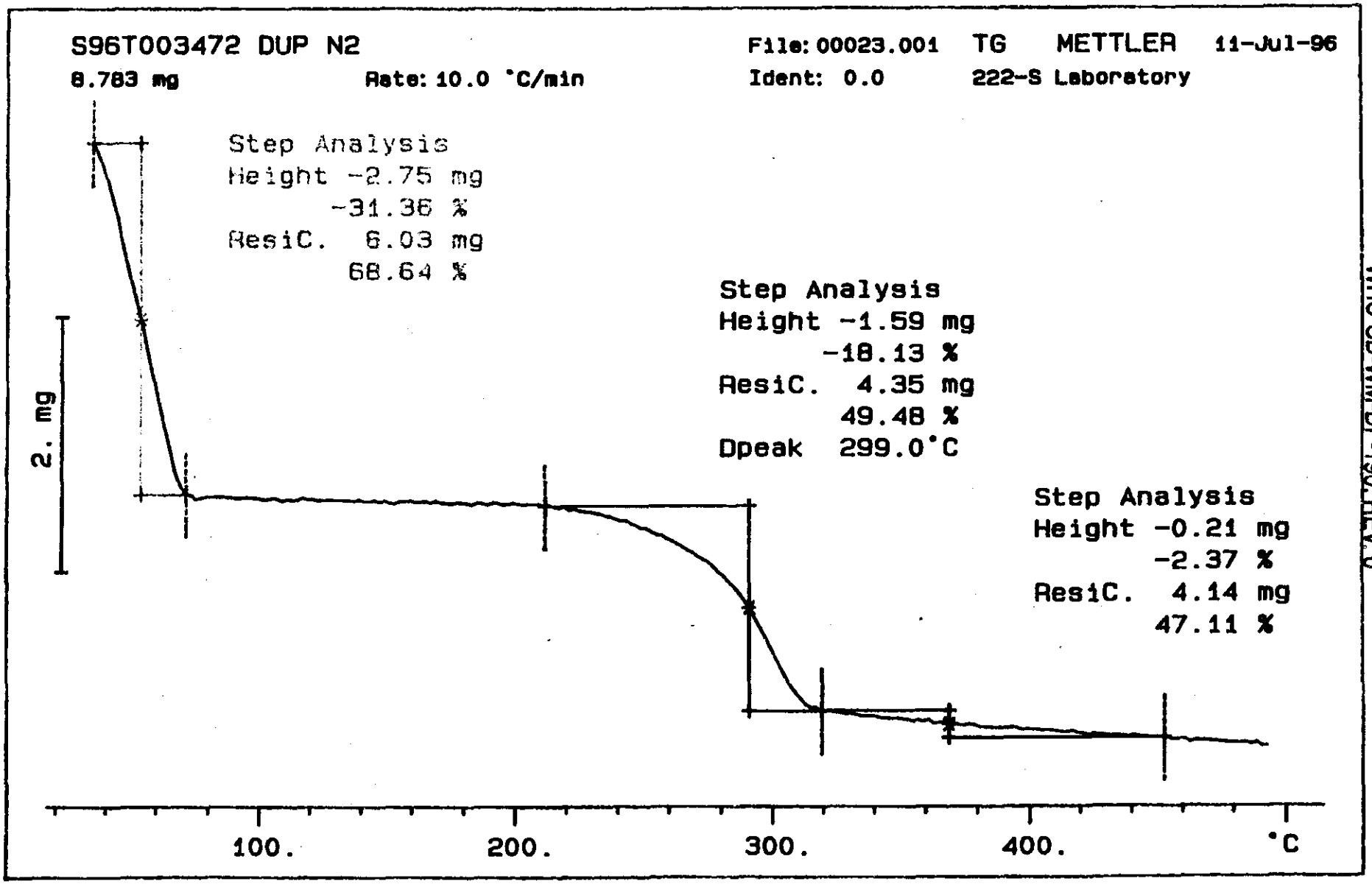


7-10-96


S96T003471 SAM N2
4.811 mg
Rate: 10.0 °C/min
File: 00020.001
TG METTLER
10-Jul-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -1.76 mg
-36.68 %
ResiC. 3.05 mg
63.32 %
Dpeak 49.0°C
Step Analysis
Height -0.56 mg
-11.58 %
ResiC. 2.39 mg
49.61 %
Dpeak 293.0°C
Step Analysis
Height -0.11 mg
-2.35 %
ResiC. 2.27 mg
47.26 %
1. mg
100.
200.
300.
400.
°C


S96T003471 DUP N2
10.196 mg
Rate: 10.0 °C/min
File: 00021.001
TG METTLER
11-Jul-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -3.84 mg
-37.61 %
ResiC. 6.36 mg
62.39 %
Dpeak 61.0°C
Step Analysis
Height -1.10 mg
-10.80 %
ResiC. 5.16 mg
50.57 %
Dpeak 297.0°C
Step Analysis
Height -0.24 mg
-2.34 %
ResiC. 4.92 mg
48.23 %
2. mg
100.
200.
300.
400.
°C


S96T003472 SAM N2
9.033 mg
Rate: 10.0 °C/min
File: 00022.001
TG METTLER 11-Jul-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -2.50 mg
-27.70 %
ResiC. 6.53 mg
72.30 %
Step Analysis
Height -1.76 mg
-19.49 %
ResiC. 4.66 mg
51.62 %
Dpeak 301.0°C
Step Analysis
Height -0.26 mg
-2.87 %
ResiC. 4.40 mg
48.75 %
2. mg
100.
200.
300.
400.
°C


S96T003472 DUP N2
8.783 mg
Rate: 10.0 °C/min
File: 00023.001
TG METTLER 11-Jul-96
Ident: 0.0
222-S Laboratory
Step Analysis
Height -2.75 mg
-31.36 %
ResiC. 6.03 mg
68.64 %
Step Analysis
Height -1.59 mg
-18.13 %
ResiC. 4.35 mg
49.48 %
Dpeak 299.0°C
Step Analysis
Height -0.21 mg
-2.37 %
ResiC. 4.14 mg
47.11 %
2. mg
100.
200.
300.
400.
°C

DISTRIBUTION SHEET

To Distribution	From Proram Support	Page 1 of 1
		Date: 07/12/96
Project Title/Work Order **WHC-SD-WM-DP-190, REV. 0** "45-Day Safety Screening Results for Tank 241-U-101, Grab Samples 1U-96-1 through 1U-96-4"		EDT NO.: 614799
		ECN NO.: N/A

Name	MSIN	Text With all Attach	EDT/ECN ONLY
Pacific Northwest Laboratory			
J. R. Gormsen	K7-28		X
S. J. Harris	K7-22	X	
K. L. Silvers	P7-27		X
U.S. Department of Energy, RL			
C. A. Babel	S7-54	X	
Westinghouse Hanford Company			
J. N. Appel	G3-21		X
T. M. Brown	R2-12	X	
D. C. Hetzer	S6-31		X
J. E. Hyatt	S3-31	X	
T. J. Kelley	S7-21	X	
N. W. Kirch	R2-11	X	
M. J. Kupfer	H5-49		X
J. E. Meacham	S7-15	X	
G. L. Miller	T6-06	X	
K. L. Powell	T6-04		X
J. B. Schaffer (SD COV SHT., DST. SHT, ROR)	R2-12		X*
L. W. Shelton	H5-49		X
M. J. Sutey	T4-07	X	X*
T. T. Tran (LATA)	B1-44	X	
J. A. Voogd	H5-03		X
L. R. Webb (SD COV SHT., DST. SHT, ROR)	T6-06		X *
A. E. Young	R2-12	X	
Central Files	A3-88	2	
EDMC	H6-08	X	
LTIC	T6-03		X
U. S. Department of Energy			
Jim Poppiti 12800 Middlebrook Rd. Trevion II, EM-36 Germantown, MD 20874			X

*** Needs only releasing paperwork, not a copy of the released document.**