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Project Title/Work Order  
WHC-SD-WM-DP-113, Rev. 0, "45-Day Safety Screen Results for Tank  
241-U-204, Push Mode, Cores 81 and 82"

EDT NO.: EDT-612155

ECN NO.: N/A

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		Date: 05/17/95		
Project Title/Work Order WHC-SD-WM-DP-113, Rev. 0, "45-Day Safety Screen Results for Tank 241-U-204, Push Mode, Cores 81 and 82"		EDT NO.: EDT-612155		
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ENGINEERING DATA TRANSMITTAL

Page 1 of 1  
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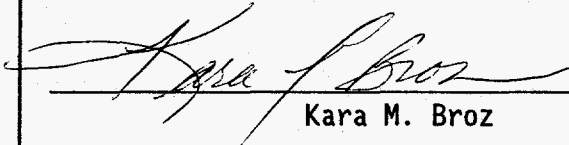
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**Release Date:** 5/18/95

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May 18, 1995

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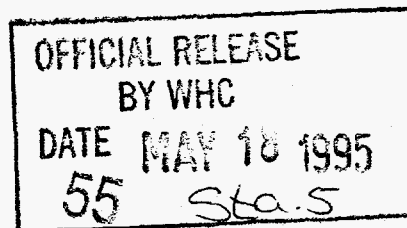
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P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-113, REV. 0

**ANALYTICAL SERVICES**

**Project:**

**45-DAY SAFETY SCREEN RESULTS FOR TANK  
241-U-204, PUSH MODE, CORES 81 AND 82**

**Date Printed:**

**MAY 17, 1995**

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WHC-SD-WM-DP-113, REV. 0

**NARRATIVE**

**45-DAY SAFETY SCREEN RESULTS FOR TANK 241-U-204  
PUSH-MODE CORE SAMPLES 81 AND 82.**

This is the 45-Day report for the fiscal year 1995 tank 241-U-204 (U-204) push-mode characterization effort. Included are a summary of analytical results and copies of the differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA) scans as requested in Reference 1. Other pertinent documentation will be included in the U-204 216-day report.

Summary

Core samples 81 and 82 from tank U-204, obtained by the push-mode core sampling method, were received by the 222-S Laboratories. Each core consisted of only one segment. Both core samples and the field blank were extruded, subsampled, and analyzed in accordance with Reference 1. Drainable liquids and the field blank were analyzed at the segment level for energetics by DSC, percent water by TGA, and total organic carbon (TOC) by furnace oxidation. In addition, the presence or absence of any separable, presumably organic, layer in drainable liquid samples was noted and none was observed. The solids were analyzed directly at the half segment level for energetics by DSC, percent water by TGA, and TOC by persulfate oxidation. Total alpha activity was determined on fusion digestions of the sludge subsamples. No immediate notifications were necessary on samples from cores 81 or 82.

Sample Receipt and Extrusion

U-204 Core 81, Segment 1

Segment 1 of core 81 was removed from riser 2 of tank U-204 on 4/5/95 at 0941 hours. The sample was shipped to the 222-S Laboratory on 4/6/95 and received at the 222-S Laboratory on the same day. Loading and extrusion of the sample in the hot cell took place on 4/7/95. No liner liquid was observed and no problems were noted in extruding the sample.

Collected during extrusion first was 174.56 g of turbid, orange-brown colored drainable liquid followed by approximately eight inches of sludge from the upper half of the sampler. The color of the sludge ranged from a medium brown color for the first two inches to a cream color for the last four inches. The solids had a smooth consistency and the last four inches to extrude appeared to contain less moisture, since this material maintained its shape in the extrusion tray unlike the first four inches. A total of 193.78 g of sludge was collected in one jar.

U-204 Core 82, Segment 1

The first and only segment of core 82 was removed from U-204 on 4/5/95 at 1828 hours. It was sent to, and received at, the 222-S Laboratory the following day. Extrusion took place on 4/7/95. No liner liquid was observed and no problems were noted during the extrusion.

Collected first during the extrusion was 96.28 g of turbid drainable liquid that was yellow in color. This was followed by six to seven inches of solid,

cream colored sample from the upper half of the sampler. The first three to four inches of the solids were wet and crumbly, while the final three inches were smooth and retained their shape. All solids were collected in one jar to yield 126.60 g.

#### U-204 Field Blank

The field blank was created on 4/5/95, shipped to the laboratory on 4/6/95, and received the same day. Extrusion took place on 4/7/95. There was no liner liquid and no problems were noted during the extrusion.

A mass of 267.75 g of drainable liquid was collected in two sample jars as a clear, colorless liquid. The material in jar 6782 was subsampled for analysis.

#### Analytical Results

The safety screening analytical results are presented in Table 1, which includes the LabCore sample number. Column 2 of the table indicates the sample preparation used, if any. As shown, analyses on fused samples are marked with a "F". Results for core 81 are designated as segment 81-1 in Table 1 and appear on the first page of the table. Results for core 82 are designated as segment 82-1.

Drainable liquid samples were not filtered prior to analysis as required in Reference 1. Analyses were inadvertently performed on the unfiltered liquid and were not subsequently performed on filtered samples since the samples showed no exotherm, the TOC content was below or near the detection limit, and the percent water by TGA was three to four times the action limit of 17%.

#### DSC (Energetics Content)

Analyses for DSC were performed under a nitrogen atmosphere using procedure LA-514-113, Rev B-1. No exotherms are observed for the sample and duplicate runs of the drainable liquid, field blank, or sludge samples, therefore no exotherms are calculated on a dry weight basis. The DSC profile of the drainable liquid samples from each core is very similar as is the profile of the sludge samples from each core. Following the endotherm associated with the heating and vaporization of water centered at roughly 102° C, each drainable liquid sample shows a much smaller endotherm centered at approximately 160° C. Each sludge samples also shows a water vaporization endotherm at about 100° C followed by a second endotherm of approximately equal magnitude centered at about 292° C. The DSC scans are provided as an attachment.

#### TGA (Moisture Content)

Weight percent water by TGA was performed under a nitrogen atmosphere using procedure LA-560-112, Rev. A-2. The moisture content in the sludge samples are similar with results ranging from 21.84 to 29.56% water. It appears that the core 82 sludge contains slightly less moisture than the core 81 sludge. At 10.2%, the relative percent difference (RPD) between the sample and

duplicate results from core 82 was slightly above the limit specified in Reference 1. No re-runs were performed. The water content in the two drainable liquid samples was very close. The core 81 liquid averaged 86.67% water while the core 82 liquid averaged 86.68% water. Percent water in the field blank sample was found to be 99.81, close to the expected 100%.

#### Total Alpha

Total alpha analyses were performed on fusion digestions of both sludge subsamples using procedure LA-508-101, Rev D-2. All results are at least a factor of 424 below the notification limit of 41 uCi/g. The sample and duplicate results from core 82 are below the detection limit of 0.0960 uCi/g. The sample result from core 81 was slightly above the detection limit and the duplicate result was below the detection limit. At 85.81%, the standard percent recovery on both sludge samples was outside of the  $\pm 10\%$  limit specified in Reference 1. In addition, the spike recovery on the core 82 sludge sample was scarcely below the 90-110% limit at 89.40%. No re-runs were requested due to the very low activity of the samples.

#### Total Organic Carbon

Analyses for TOC were performed by direct persulfate oxidation on sludge, drainable liquid, and field blank samples per procedure LA-342-100, Rev. A-0. At 815 ug C/g, the sludge in core 81 was richer in TOC than core 82 sludge by a factor of approximately 6.5. The drainable liquids contained even less TOC. The core 82 liquid was less than the 80 ug C/mL detection limit and the core 81 liquid contained 82 ug C/mL. The RPD between sample and duplicate runs of the latter sample was 21.5%, which exceeds the Reference 1 limit of 10%. The 112% spike recovery on core 81 sludge also exceeds the Reference 1 limit of 90-110%. No re-runs were requested since all results were more than an order of magnitude lower than the notification limit of 30,000 ug C/g or 30,000 ug C/mL. The TOC content of the field blank was found to be below the detection limit of 80 ug C/mL.

Reference 1) WHC-SD-WM-TP-311, Rev. 0, "Tank 241-U-204 Tank Characterization Plan", dated March 23, 1995, Westinghouse Hanford Company, Richland, WA 99352.

**WHC-SD-WM-DP-113, REV. 0**

**SAMPLE DATA SUMMARY**

Table 1. Analytical Summary for U-204, Cores 81 and 82.  
U-204

CORE NUMBER: 81 & 82  
SEGMENT #: 81-1

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000717			% Water by TGA using Mettler	%	99.59	n/a	29.12	29.56	29.34	1.50	n/a	n/a	n/a
S95T000717			DSC Exotherm using Mettler	Joules/g	104.7	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000717			TOC by Persulfate/Coulometry	ug/g	91.00	21.10	807.0	8.23e2	8.15e+02	1.96	112.0	80.00	n/a
S95T000721	F		Alpha of Digested Solid	uCi/g	85.81	<4.34e-02	9.67e-02	<6.23e-2	n/a	n/a	92.80	9.60e-02	72.3

Drainable Liquid: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000723			% Water by TGA using Mettler	%	100.4	n/a	86.46	86.89	86.67	0.50	n/a	n/a	n/a
S95T000723			DSC Exotherm using Mettler	Joules/g	98.77	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000723			TOC by Persulfate/Coulometry	ug/mL	94.33	35.50	90.80	7.32e01	8.20e+01	21.5	n/a	40.00	n/a

WHC-SD-WM-DP-113, REV. 0

Table 1. Analytical Summary for U-204, Cores 81 and 82.  
U-204

CORE NUMBER: 81 & 82  
SEGMENT #: 82-1

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000718			% Water by TGA using Mettler	%	99.59	n/a	24.18	21.84	23.01	10.2	n/a	n/a	n/a
S95T000718			DSC Exotherm using Mettler	Joules/g	104.7	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000718			TOC by Persulfate/Coulometry	ug/g	91.00	21.10	120.0	1.28e2	1.24e+02	6.45	n/a	80.00	n/a
S95T000722	F		Alpha of Digested Solid	uCi/g	85.81	<4.34e-02	< 4.36e-2	<4.40e-2	n/a	n/a	89.40	9.60e-02	49.0

Drainable Liquid: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000724			% Water by TGA using Mettler	%	100.4	n/a	87.18	86.18	86.68	1.15	n/a	n/a	n/a
S95T000724			DSC Exotherm using Mettler	Joules/g	98.77	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000724			TOC by Persulfate/Coulometry	ug/mL	92.67	38.20	< 80	<80	n/a	n/a	n/a	80.00	n/a

WHC-SD-WM-DP-113, REV.0

Table 1. Analytical Summary for U-204, Cores 81 and 82.  
U-204

CORE NUMBER: 81 & 82  
SEGMENT #: field blank

SEGMENT PORTION: Drainable Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T000732			% Water by TGA using Mettler	%	99.63	n/a	99.01	100.6	99.81	1.59	n/a	n/a	n/a
S95T000732			DSC Exotherm using Mettler	Joules/g	100.9	n/a	0.00e+00	0	0.000	n/a	n/a	n/a	n/a
S95T000732			TOC by Persulfate/Coulometry	ug/mL	92.67	38.20	< 80	<80	n/a	n/a	n/a	80.00	n/a

WHC-SD-WM-DP-113, REV.0

**WHC-SD-WM-DP-113, REV. 0**

**UNDIGESTED ANALYSES RESULTS - DIRECT**

# LABCORE Data Entry Template for Worklist# 1215

Analyst: ADP Instrument: DSC01 Book # 12N14-A

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

Worklist Comment: Please run U-204 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	<u>28.45</u>	<u>29.8</u>	<u>N/A</u>	Joules/g
95000058	U-204	2 SAMPLE	S95T000717	0	DSC-01	SOLID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000058	U-204	3 DUP	S95T000717	0	DSC-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g
95000058	U-204	4 SAMPLE	S95T000718	0	DSC-01	SOLID	<u>N/A</u>	<u>Ø</u>		Joules/g
		5 STD			DSC-01	SOLID	<u>28.45</u>	<u>29.6</u>	<u>N/A</u>	Joules/g
95000058	U-204	6 DUP	S95T000718	0	DSC-01	SOLID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g

Final page for worklist # 1215

See attached for signatures  
Analyst Signature Date

[Signature] 5/8/95  
Analyst Signature Date

Verified by Blandina Valenzuela 5/9/95

BDV  
5/8/95  
The dup for S95T000718 was analyzed ~~at~~ a day after the previous samples, ~~because~~ the technician did not have time to finish the worklist.

Data Entry Comments: S95T000717 produced two endotherms one at 99.1°C with a delta H of 783.8 J/g and the second at 291.7°C with a delta H of 613.3 J/g. S95T000718 produced two endotherms one at 104.5°C with a delta H of 681.7 J/g and second at 296.9°C with a delta H of 743.4 J/g.

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

## LABCORE Data Entry Template for Worklist# 1215

Analyst: ADP Instrument: DSC01 Book # 12N14-A

Method: LA-514-113 Rev/Mod B1

Worklist Comment: Please run U-204 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
95000058	U-204	2 SAMPLE	S95T000717	0	DSC-01	SOLID	N/A			Joules/g
95000058	U-204	3 DUP	S95T000717	0	DSC-01	SOLID			N/A	Joules/g
95000058	U-204	4 SAMPLE	S95T000718	0	DSC-01	SOLID	N/A			Joules/g
95000058	U-204	5 DUP	S95T000718	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 1215

Anthony Purneter 5-6-95  
Analyst Signature Date

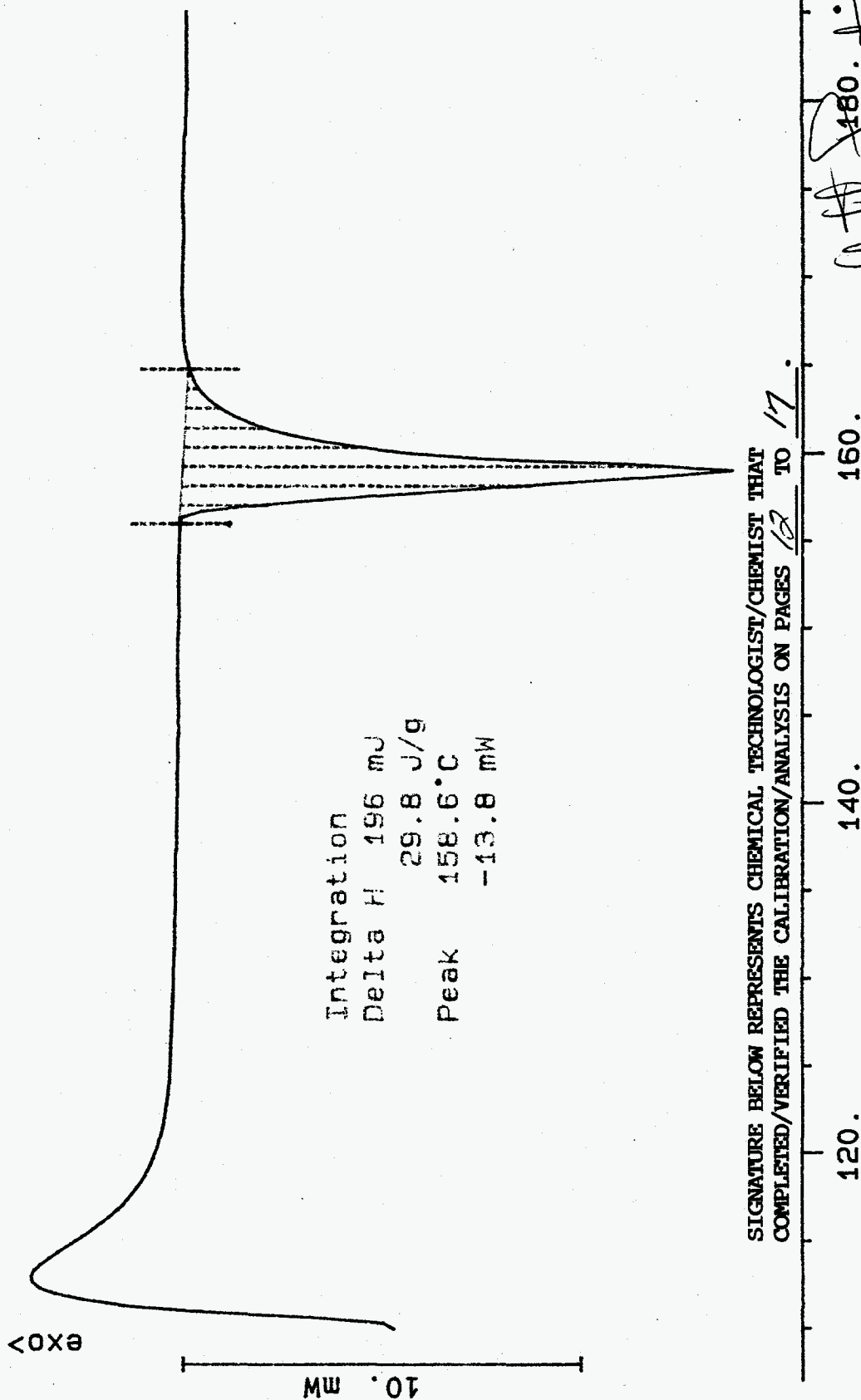
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Analyst Signature Date

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.

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DSC STD 12N14-A  
6.590 mg  
Rate: 10.0 °C/min  
File: 00085.001  
Ident: 0.0  
DSC METTLER  
222-S Laboratory  
06-May-95

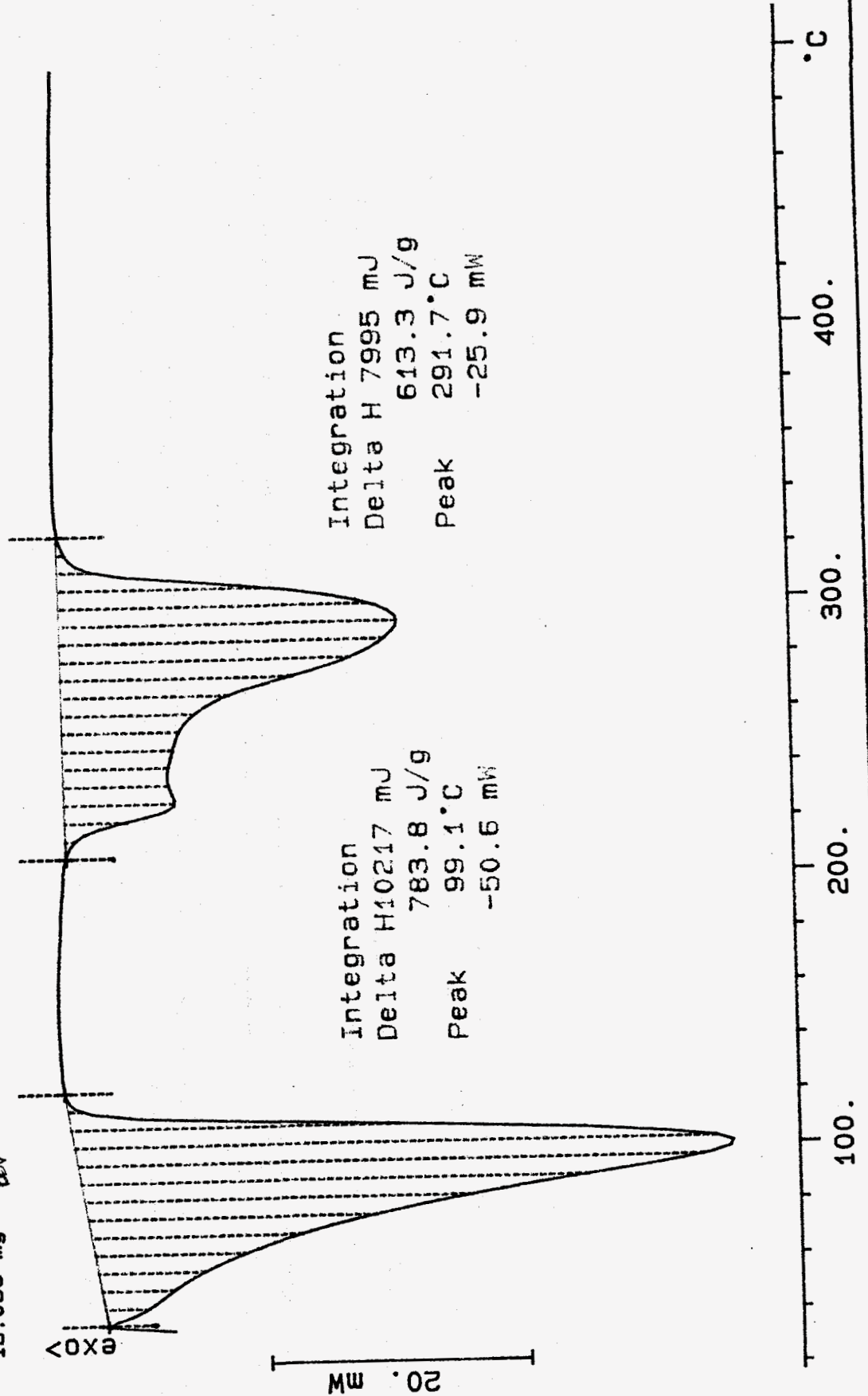


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S45T000717  
 695000717 N2  
 13.036 mg 5/8/95  
 80V

File: 00086.001 DSC METTLER 06-May-95  
 Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min



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S95T000717 DUP N2

14.416 mg

File: 00087.001 DSC METTLER 06-May-95

Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

exo

20. mW

Integration  
Delta H 9595 mJ  
665.6 J/g  
Peak 99.1°C  
-49.8 mW

Integration  
Delta H 9300 mJ  
645.1 J/g  
Peak 291.3°C  
-29.8 mW

°C

100.

200.

300.

400.

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S95T000718 N2

15.319 mg

Rate: 10.0 °C/min

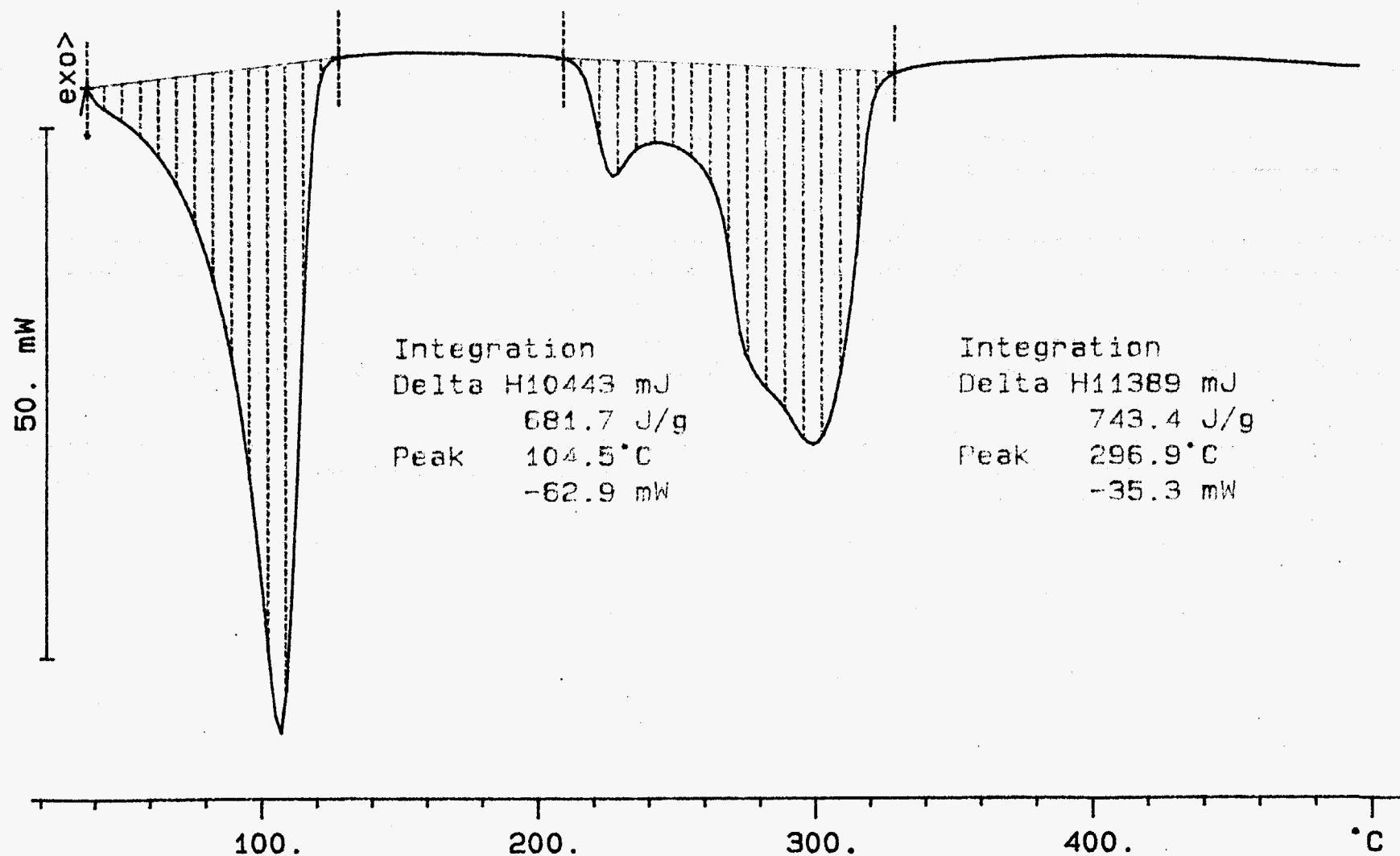
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DSC METTLER

06-May-95

Ident: 0.0

222-S Laboratory



WHC-SD-WM-DP-113, REV.0

BEST AVAILABLE COPY

DSC STD 12N14-A

6.590 mg

Rate: 10.0 °C/min

File: 00100.001

DSC METTLER

07-May-95

Ident: 0.0

222-S Laboratory

exo>

5. mW

Integration

Delta H 195 mJ

29.6 J/g

Peak 158.7°C

-12.2 mW

Blandina Valenzuela 5/8/95

120.

140.

160.

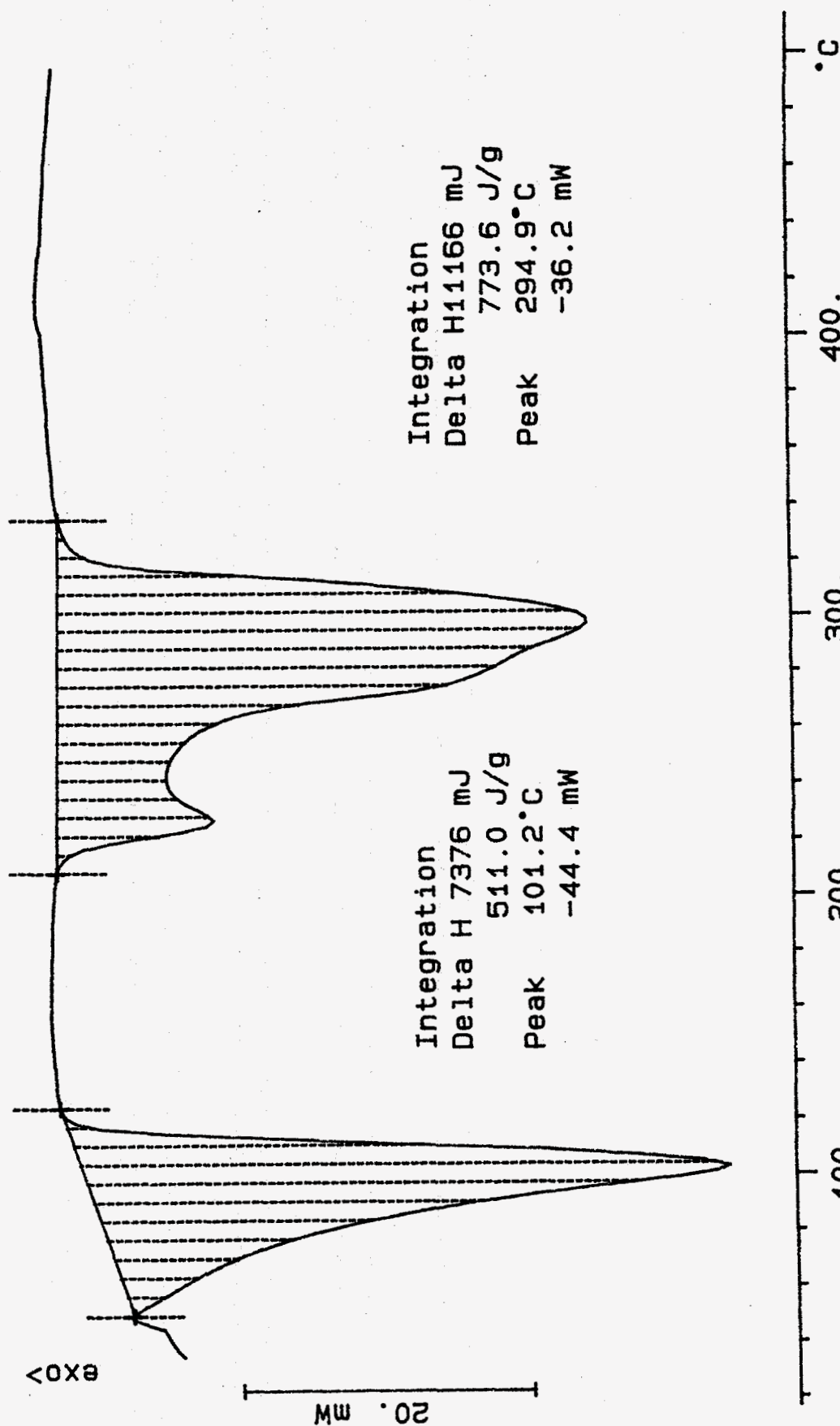
180. °C

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S95T000718 DUP  
14.434 mg

File: 00102.001 DSC METTLER 07-May-95  
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min



## LABCORE Data Entry Template for Worklist# 1229

Analyst: SNF Instrument: DSC01 Book # 12N14-A

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

Worklist Comment: Please run U-204 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	LIQUID	<u>28.45</u>	<u>28.1</u>	<u>N/A</u>	Joules/g
95000058	U-204	2 SAMPLE	S95T000723	0	DSC-01	LIQUID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000058	U-204	3 DUP	S95T000723	0	DSC-01	LIQUID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g
95000058	U-204	4 SAMPLE	S95T000724	0	DSC-01	LIQUID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000058	U-204	5 DUP	S95T000724	0	DSC-01	LIQUID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g

### Final page for worklist # 1229

Susie M. Fulton 5-8-95  
Analyst Signature Date

[Signature] 5-9-95  
Analyst Signature Date

Verified by Blandina Valenzuela 5/9/95

#### Data Entry Comments:

Both samples are a bright yellow liquid

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

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DSC STD 12N14-A  
6.632 mg

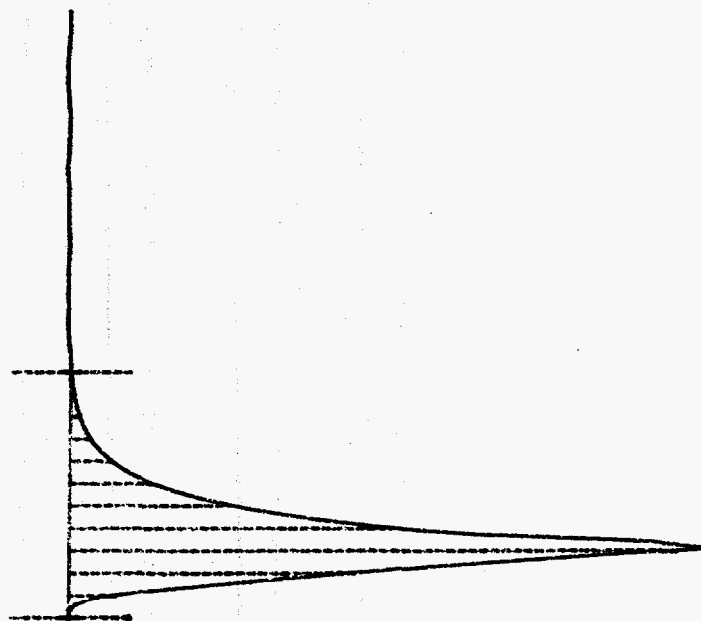
File: 00005.001 DSC METTLER 08-May-95  
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

exo

5 mW

Integration  
Delta H 187 mJ  
28.1 J/g  
Peak 159.4°C  
-12.0 mW



SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT  
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 19 TO 23.

120.

140.

160.

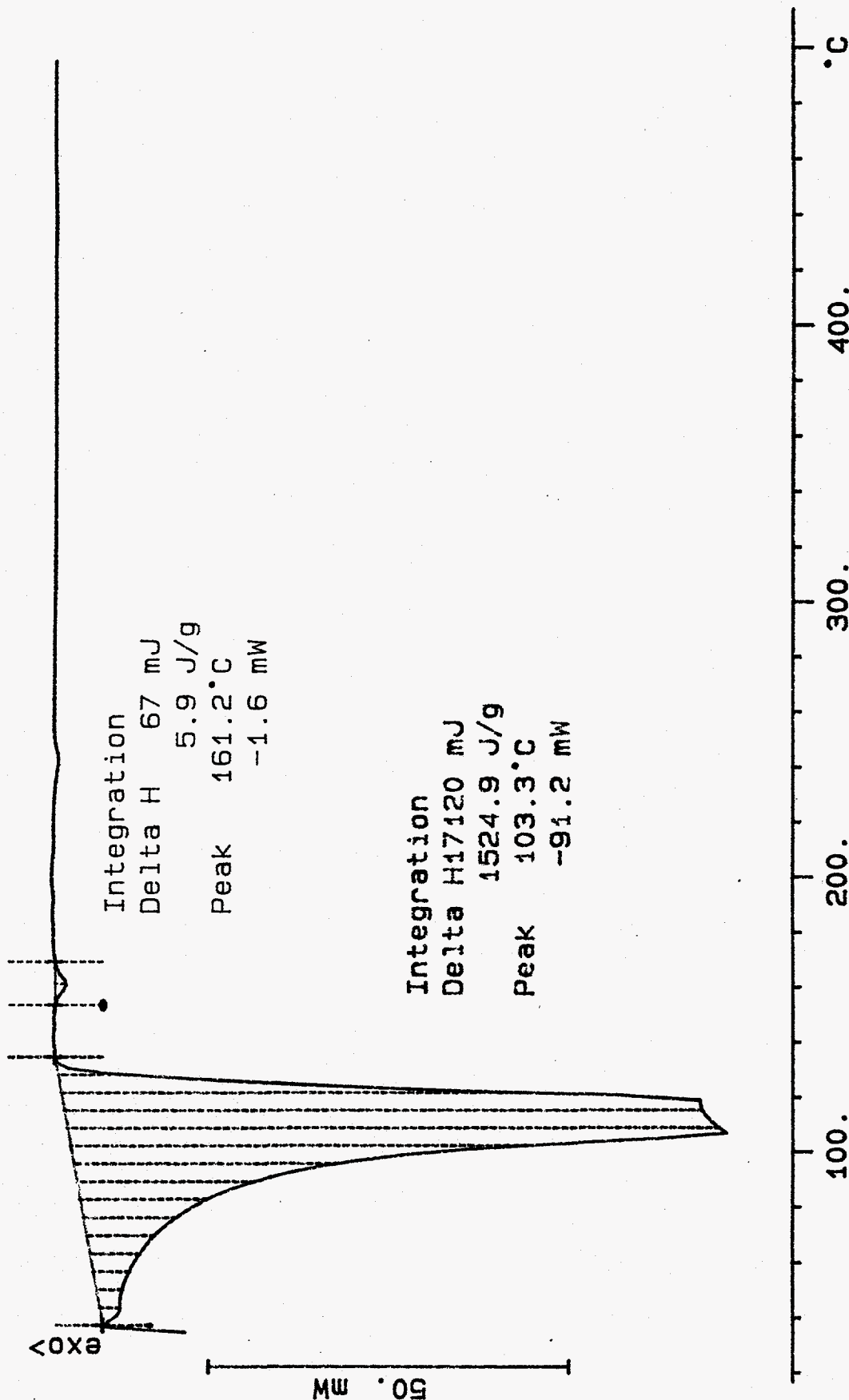
180.

5-8-95

*Lusie M. Fulton*

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S95T000724 N2  
11.227 mg  
Rate: 10.0 °C/min  
File: 00006.001 DSC METTLER 08-May-95  
Ident: 0.0 222-S Laboratory



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S95T000724 (DUP) N2

11.944 mg

File: 00008.001 DSC METTLER 08-May-95

Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

exo

Integration  
Delta H 80 mJ  
6.7 J/g  
Peak 159.2 °C  
-1.4 mW

Integration  
Delta H18177 mJ  
1521.9 J/g  
Peak 101.3 °C  
-88.4 mW

50. mW

100. 200. 300. 400. °C

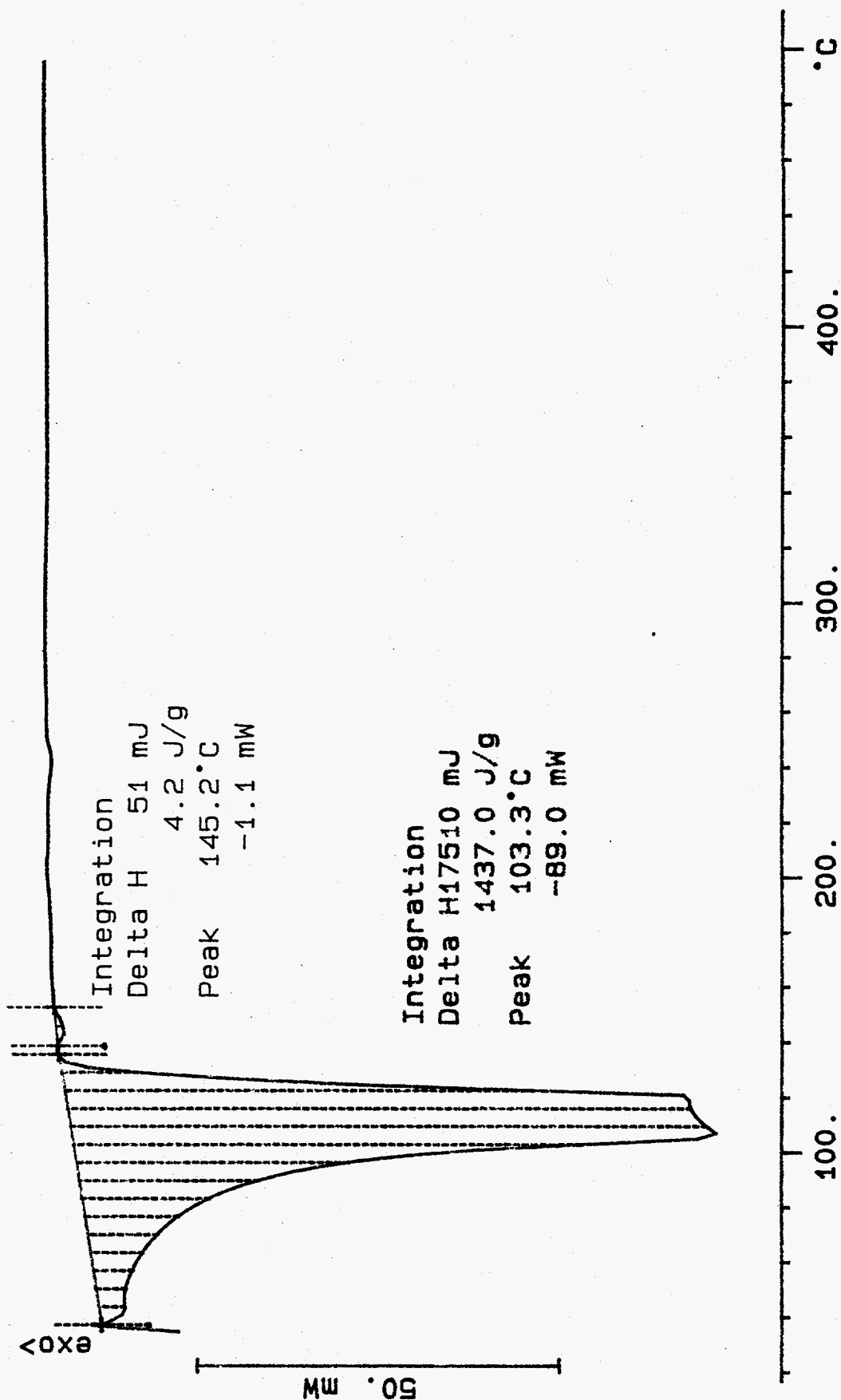
BEST AVAILABLE COPY

S95T000723 N2

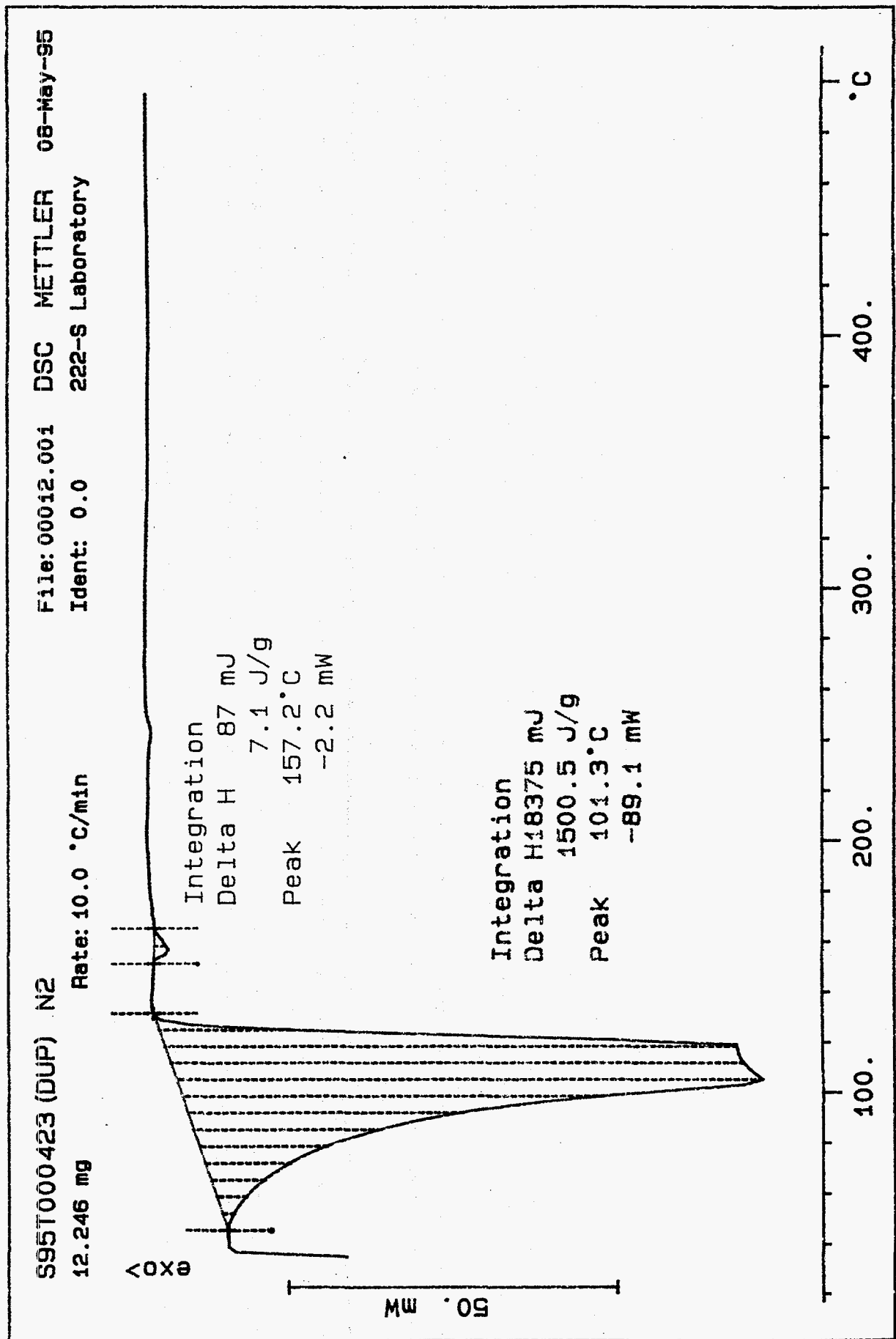
12.185 mg

File: 00010.001 DSC METTLER 08-May-95  
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min



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# LABCORE Data Entry Template for Worklist# 1230

Analyst: KDM Instrument: DSC01 Book # 12N\4A

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

Worklist Comment: Please run U-204 DSC under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	LIQUID	<u>28.45</u>	<u>28.7</u>	<u>N/A</u>	Joules/g
95000058	U-204	2 SAMPLE	S95T000732	0	DSC-01	LIQUID	<u>N/A</u>	<u>Ø</u>		Joules/g
95000058	U-204	3 DUP	S95T000732	0	DSC-01	LIQUID	<u>Ø</u>	<u>Ø</u>	<u>N/A</u>	Joules/g

## Final page for worklist # 1230

KDM <sup>5/4/95 BDV</sup>  
Analyst Signature Date

[Signature] 5-4-95  
Analyst Signature Date

Verified by Blandina Valenzuela 5/4/95

Data Entry Comments: S95T000732 produced one endotherm at 99.3°C with a  
delta H of 1639.6 J/g. The small <sup>BDV peak</sup> bump at approximately 460°C was  
caused by a slight bump of the instrument.

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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DSC STD 12N14-A  
6.590 mg 5/17/95  
BDV

Rate: 10.0 °C/min

File: 00058.001 DSC METTLER 03-May-95  
Ident: 0.0 222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT  
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 25 TO 27.

10. mW

exo

Integration  
Delta H 189 mJ  
28.7 J/g  
Peak 158.9 °C  
-12.1 mW

120.

140.

180. °C

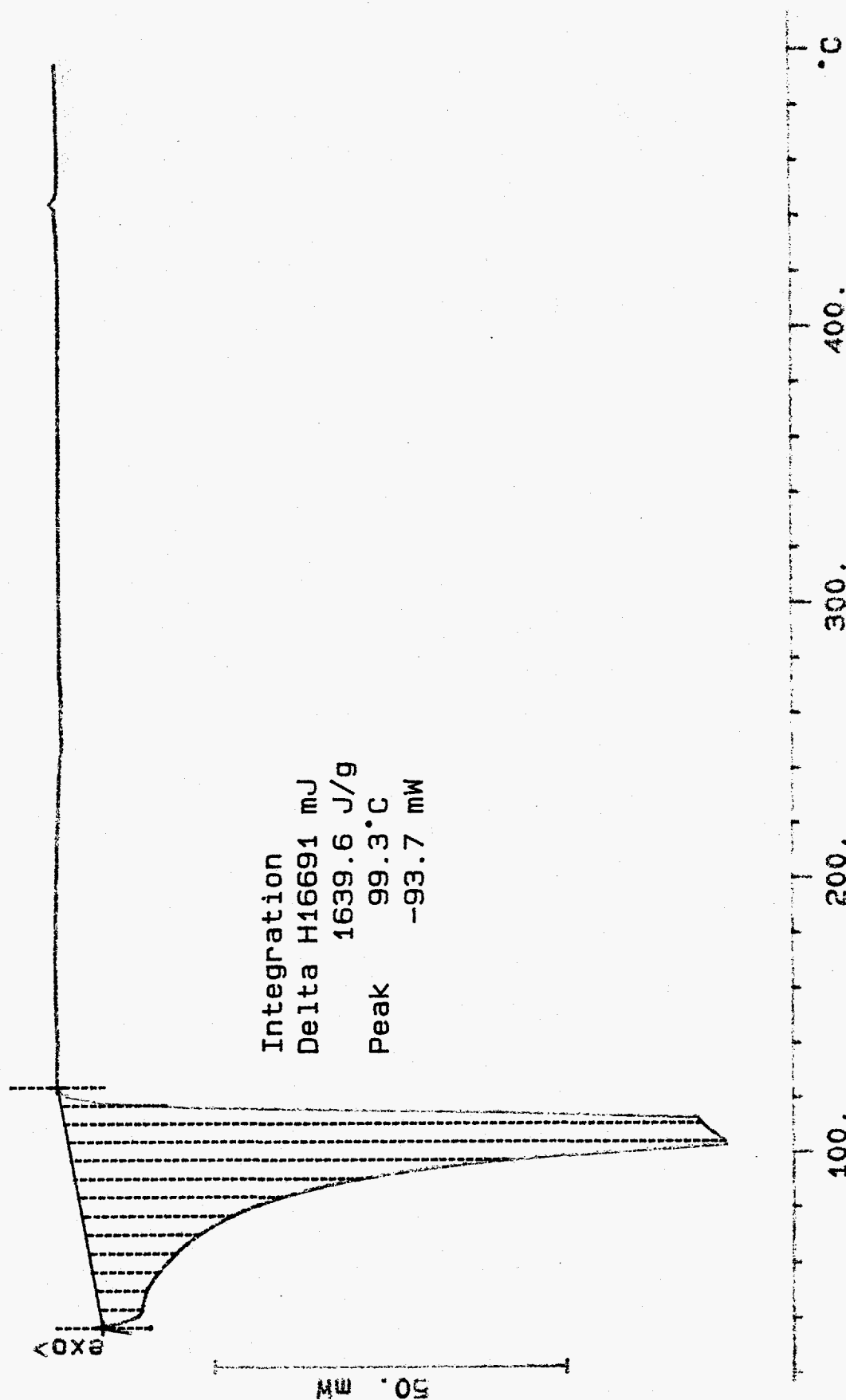
*Barbara Valenzuela* 5/17/95  
for RD Meijer

BEST AVAILABLE COPY

S95T000732 N2  
10.180 mg

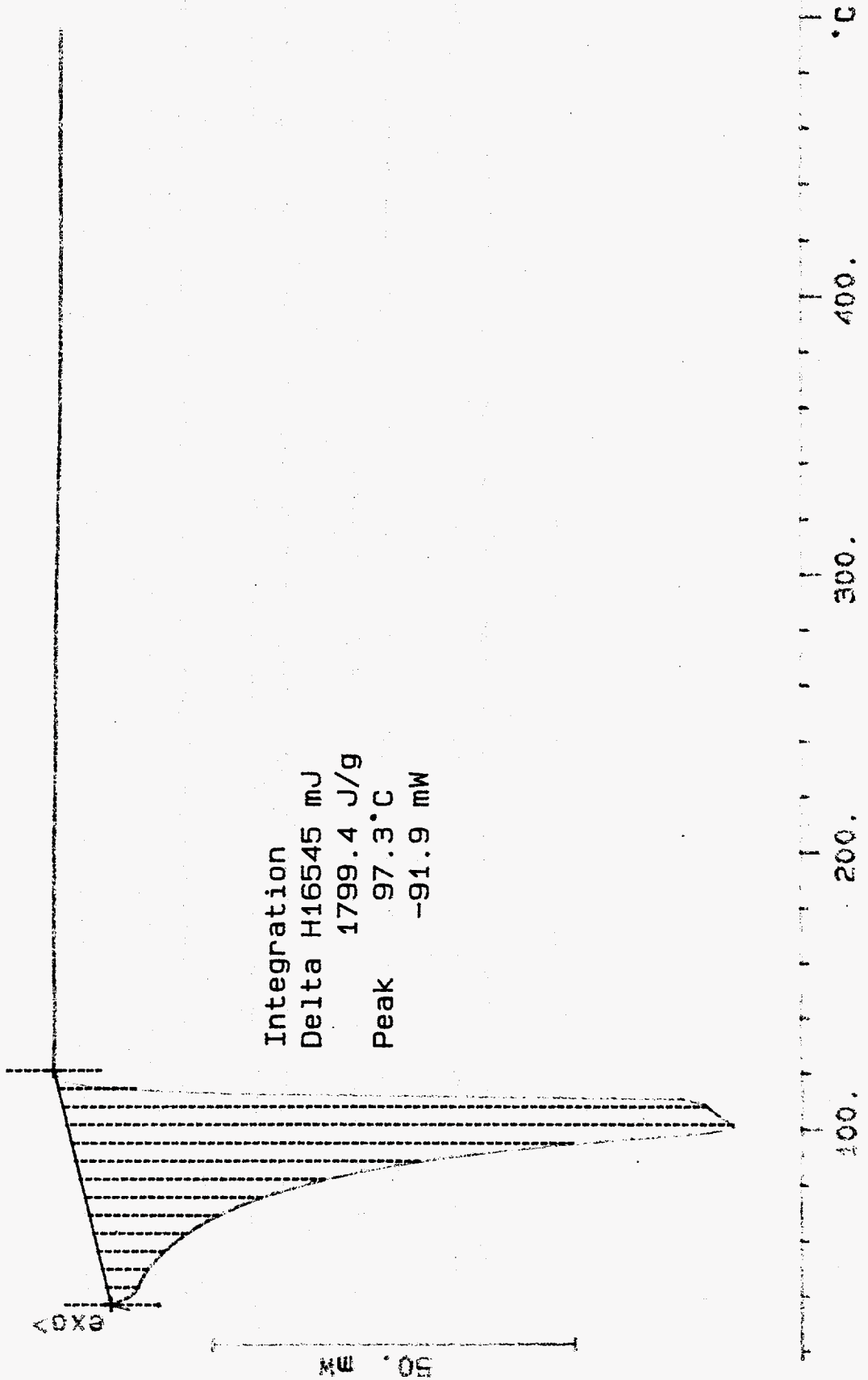
Rate: 10.0 °C/min

File: 00059.001 DSC METTLER 03-May-95  
Ident: 0.0 222-S Laboratory



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S95T000732 (DUP) N2 File: 00060.001 DSC METTLER 03-May-95  
 9.195 mg Rate: 10.0 °C/min Ident: 0.0 222-S Laboratory



# LABCORE Data Entry Template for Worklist# 1236

Analyst: AOP Instrument: TGA01 Book # 42N8-A

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

Worklist Comment: Please run U-204 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.19</u>	<u>58.95</u>	<u>N/A</u>	%
95000058	U-204	2 SAMPLE	S95T000717	0	TGA-01	SOLID	<u>N/A</u>	<u>29.12</u>		%
95000058	U-204	3 DUP	S95T000717	0	TGA-01	SOLID	<u>29.12</u>	<u>29.56</u>	<u>N/A</u>	%
95000058	U-204	4 SAMPLE	S95T000718	0	TGA-01	SOLID	<u>N/A</u>	<u>24.18</u>		%
95000058	U-204	5 DUP	S95T000718	0	TGA-01	SOLID	<u>24.18</u>	<u>21.84</u>	<u>N/A</u>	%

Final page for worklist # 1236

Anthony Purno 5-9-95  
Analyst Signature Date

Re Jones 5-9-95  
Analyst Signature Date

Verified by Blandina Valenzuela 5/9/95

Data Entry Comments: S95T000717 produced a second weight loss step of 17.81% at 289.0°C  
S95T000718 produced a second weight loss step of 20.40% at 297.0°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.

TGA STD 42N8-A

15.612 mg

Rate: 10.0 °C/min

File: 00025.001

TG

METTLER

09-May-95

Ident: 0.0

222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT  
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 29 TO 33.

Step Analysis

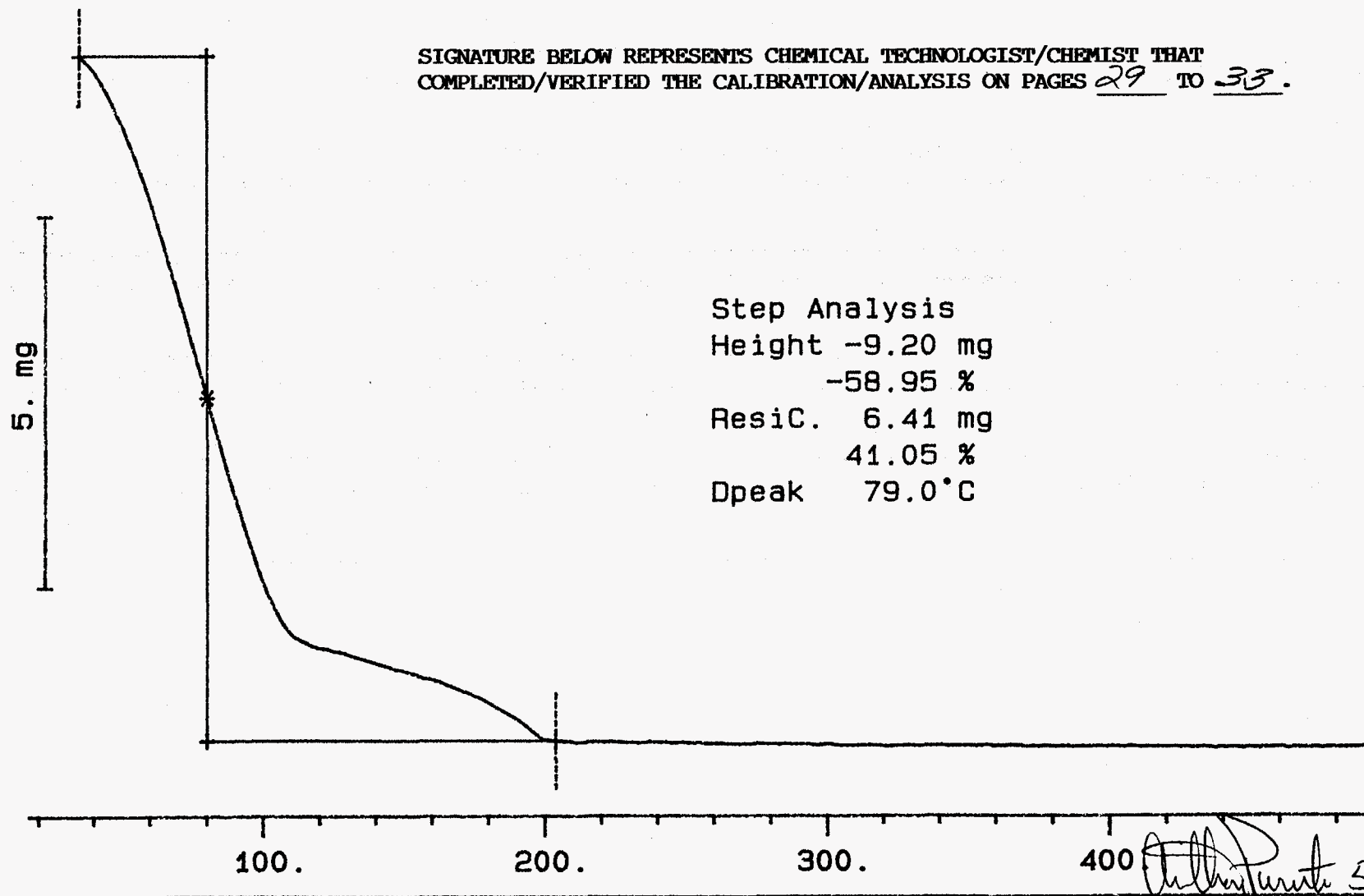
Height -9.20 mg

-58.95 %

ResiC. 6.41 mg

41.05 %

Dpeak 79.0 °C



S95T000717 SAM N2

14.862 mg

Rate: 10.0 °C/min

File: 00026.001

TG

METTLER

09-May-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -4.33 mg

-29.12 %

ResiC. 10.53 mg

70.88 %

Dpeak 61.0 °C

Step Analysis

Height -2.65 mg

-17.81 %

ResiC. 7.76 mg

52.25 %

Dpeak 289.0 °C

30

5. mg

100. 200. 300. 400. °C

S95T000717 DUP N2

18.802 mg

Rate: 10.0 °C/min

File: 00027.001

TG

METTLER

09-May-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -5.56 mg

-29.56 %

ResiC. 13.24 mg

70.44 %

Dpeak 69.0 °C

Step Analysis

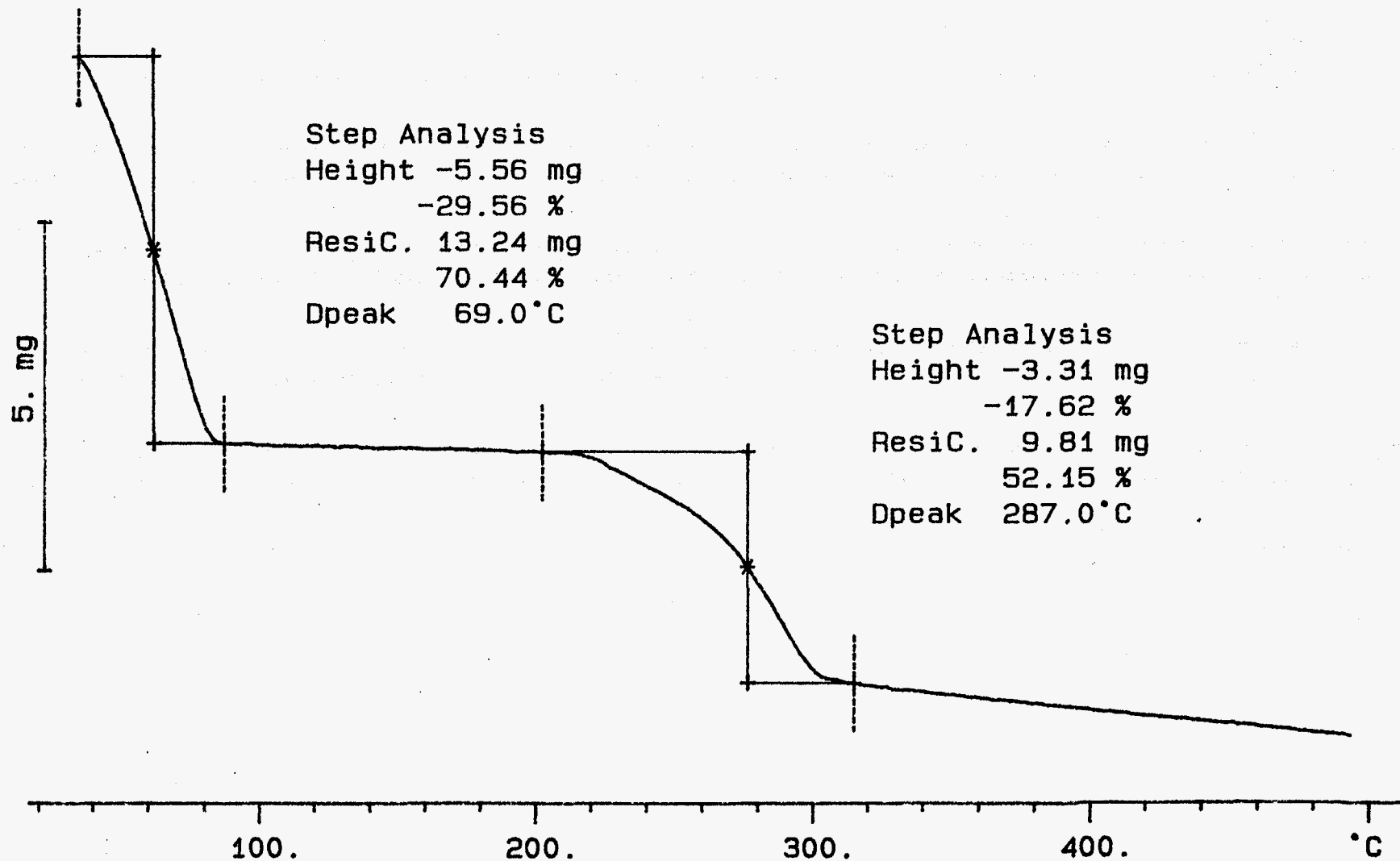
Height -3.31 mg

-17.62 %

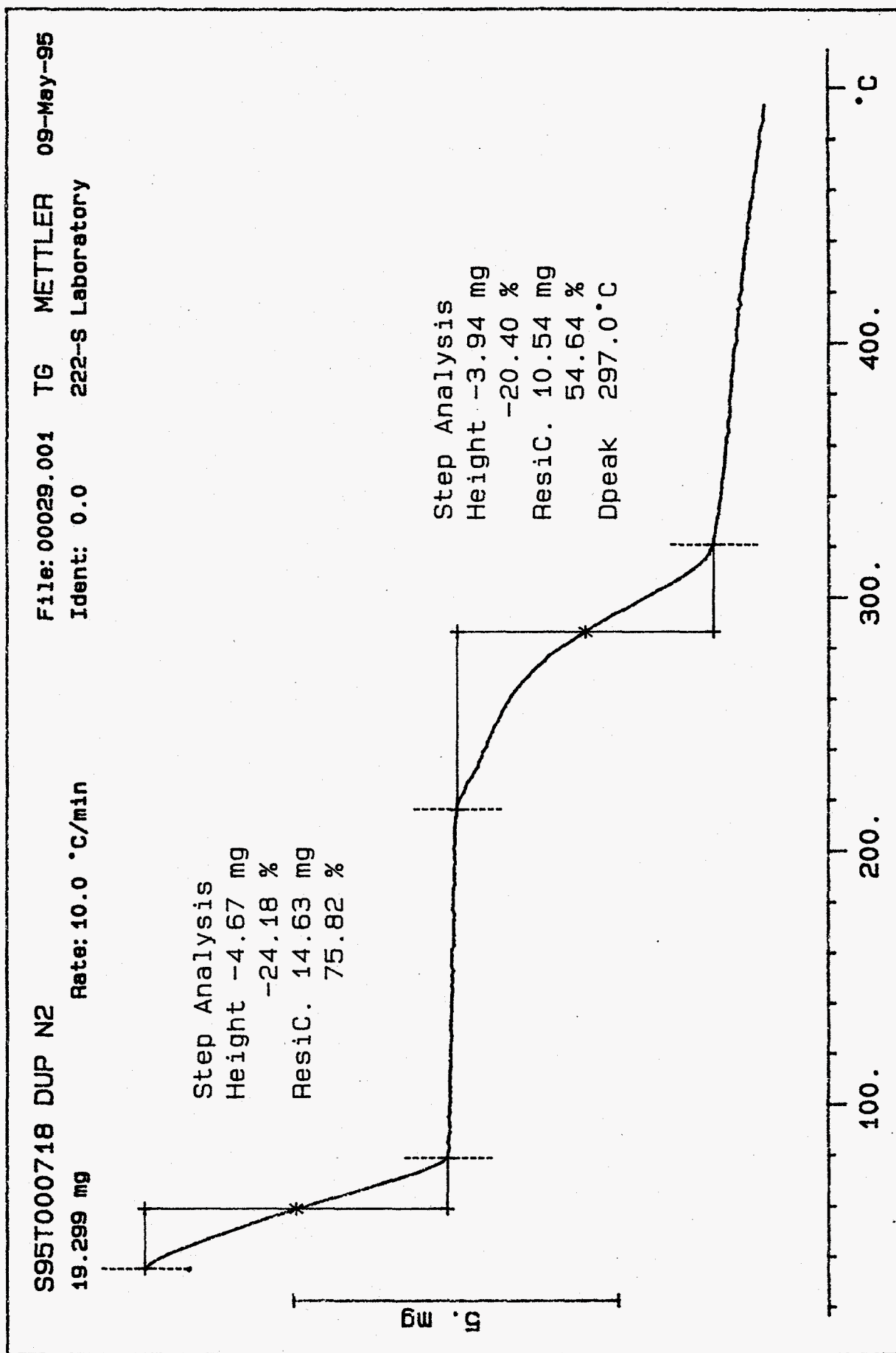
ResiC. 9.81 mg

52.15 %

Dpeak 287.0 °C



131



S95T000718 SAM N2

15.571 mg

Rate: 10.0 °C/min

File: 00028.001

TG

METTLER

09-May-95

Ident: 0.0

222-S Laboratory

Step Analysis

Height -3.40 mg

-21.84 %

ResiC. 12.17 mg

78.16 %

Dpeak 55.0 °C

Step Analysis

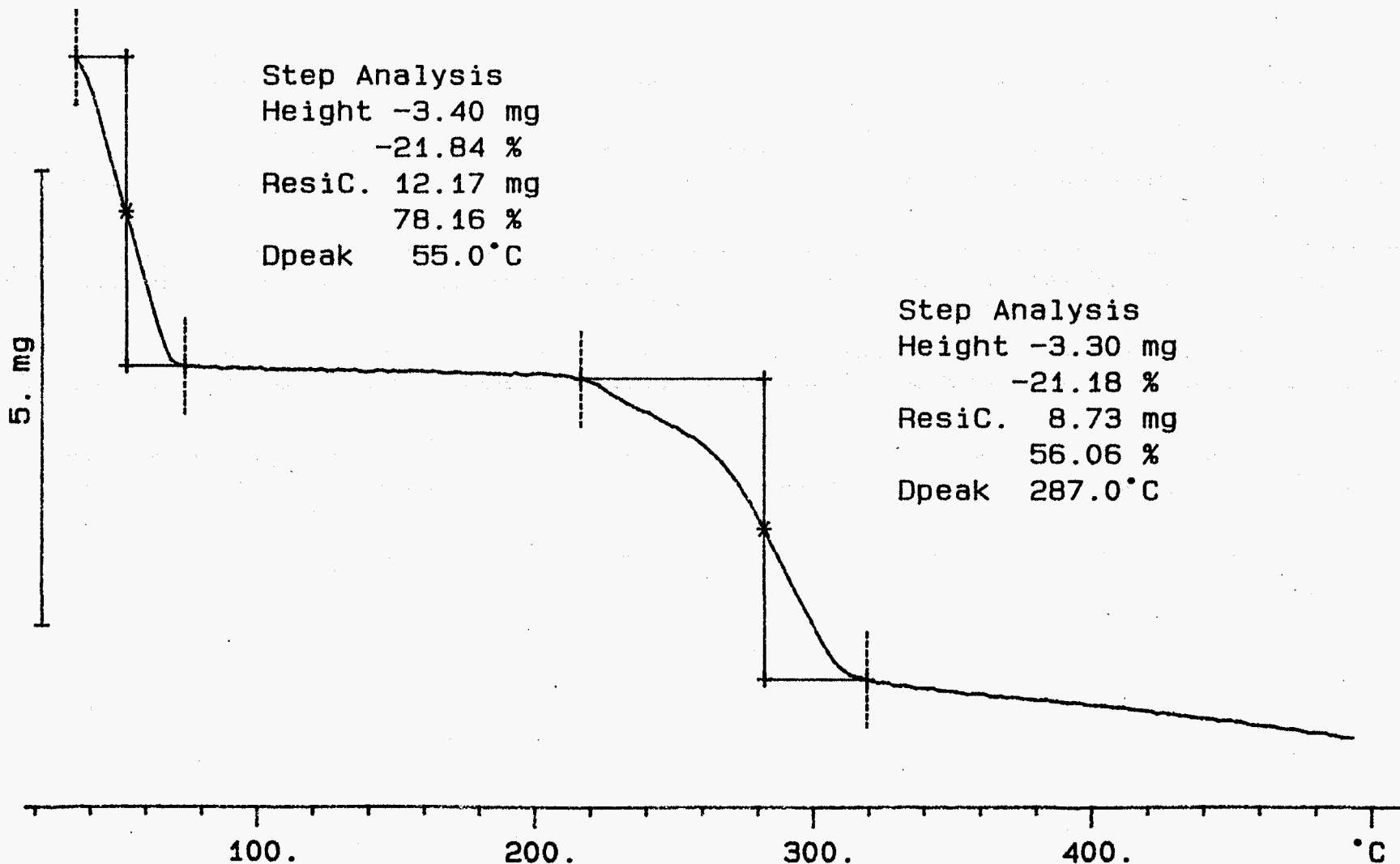
Height -3.30 mg

-21.18 %

ResiC. 8.73 mg

56.06 %

Dpeak 287.0 °C



# LABCORE Data Entry Template for Worklist# 1248

Analyst: SMT Instrument: TGA01 Book # 42N8-17

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

Worklist Comment: Please run U-204 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	LIQUID	<u>59.19</u>	<u>59.42</u>	N/A	%
95000058	U-204	2 SAMPLE	S95T000723	0	TGA-01	LIQUID	N/A	<u>86.46</u>		%
95000058	U-204	3 DUP	S95T000723	0	TGA-01	LIQUID	<u>86.46</u>	<u>86.89</u>	N/A	%
95000058	U-204	4 SAMPLE	S95T000724	0	TGA-01	LIQUID	N/A	<u>87.18</u>		%
95000058	U-204	5 DUP	S95T000724	0	TGA-01	LIQUID	<u>87.18</u>	<u>86.18</u>	N/A	%

Final page for worklist # 1248

Lusie M. Gutton 5-8-95  
Analyst Signature Date

[Signature] 5-9-95  
Analyst Signature Date

Verified by Blandina Valenzuela 5/9/95

Data Entry Comments:

Both samples are a bright yellow liquid

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

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TGA STD 42N8-A

13.703 mg

Rate: 10.0 °C/min

File: 00002.001 TG METTLER 08-May-95

Ident: 0.0 222-S Laboratory

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT  
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 35 TO 39.

Step Analysis

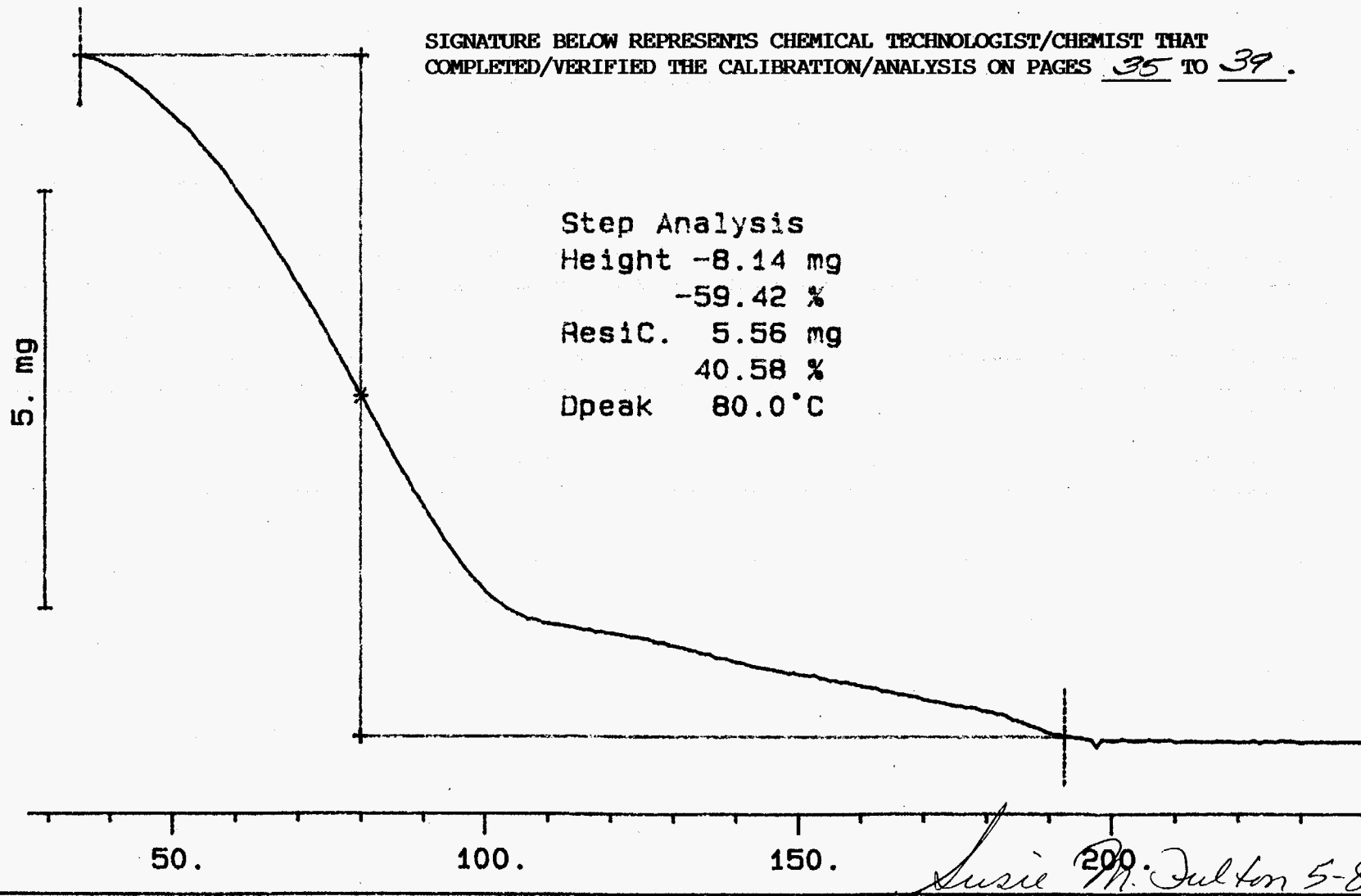
Height -8.14 mg

-59.42 %

ResidC. 5.56 mg

40.58 %

Dpeak 80.0 °C



35

WHC-SD-WM-DP-113, REV.0

*Lusie M. Fulton 5-8-95*

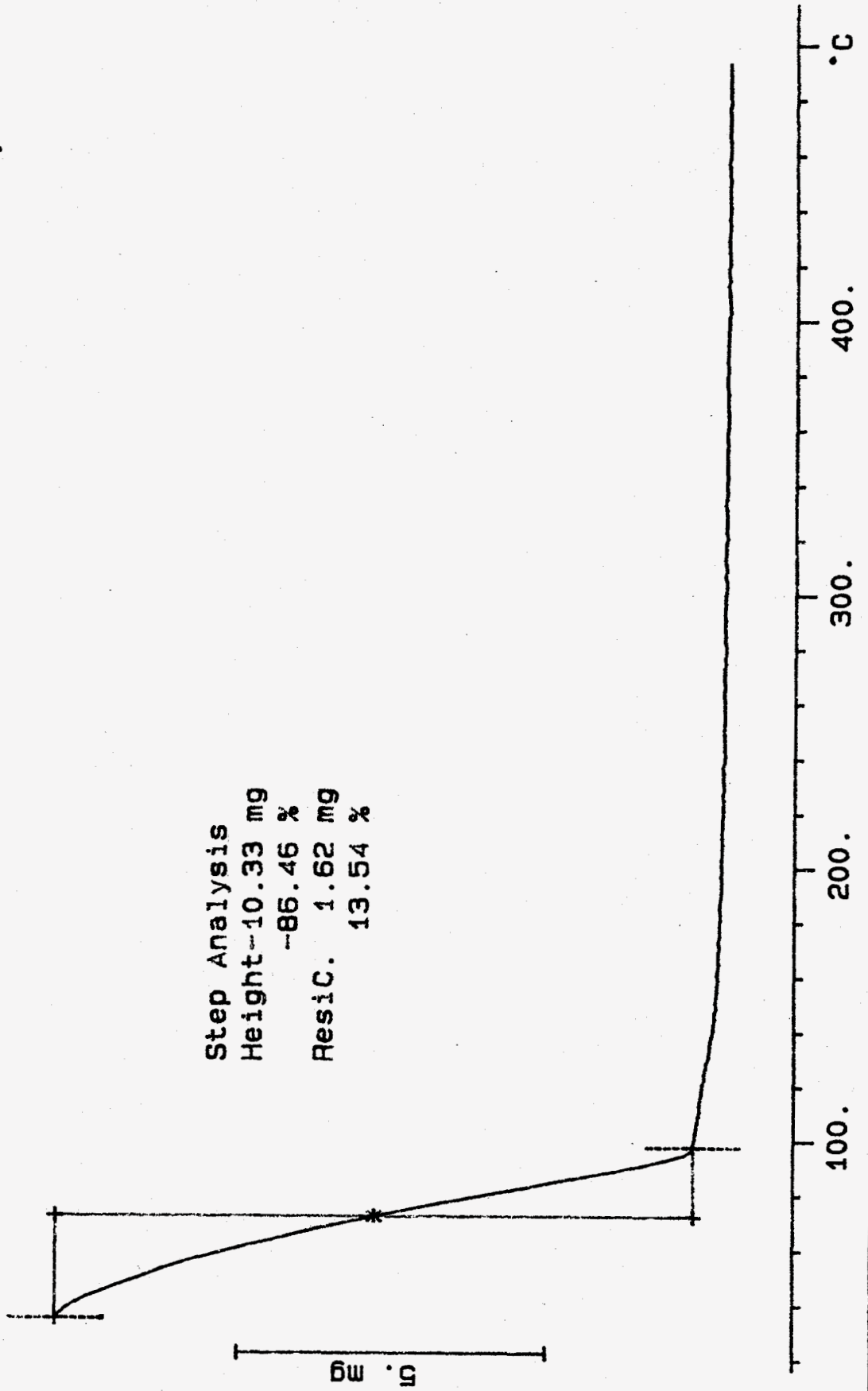
BEST AVAILABLE COPY

File: 00007.001 TG METTLER 08-May-95  
 Ident: 0.0 222-S Laboratory

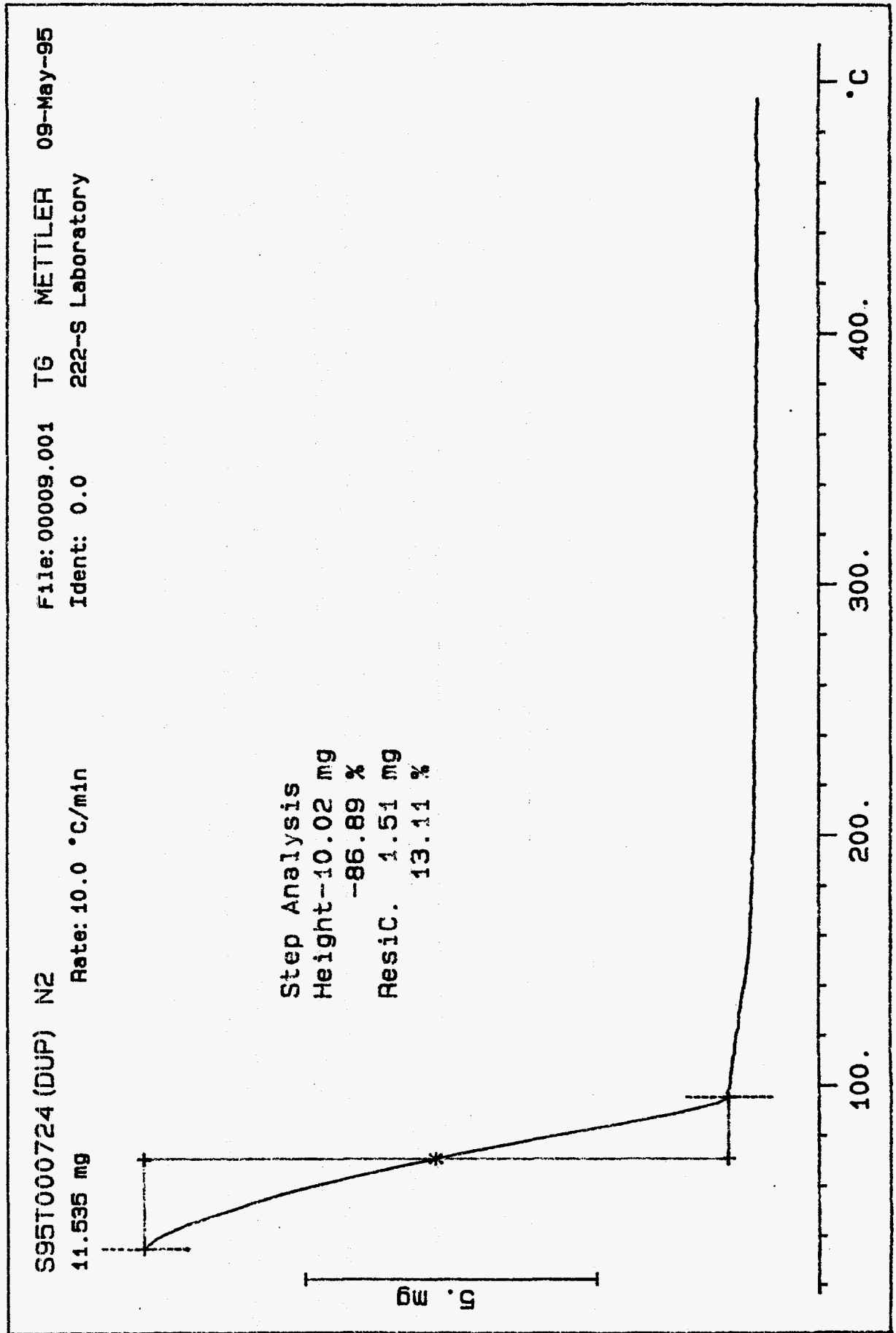
Rate: 10.0 °C/min

S95T000724 N2  
 11.948 mg

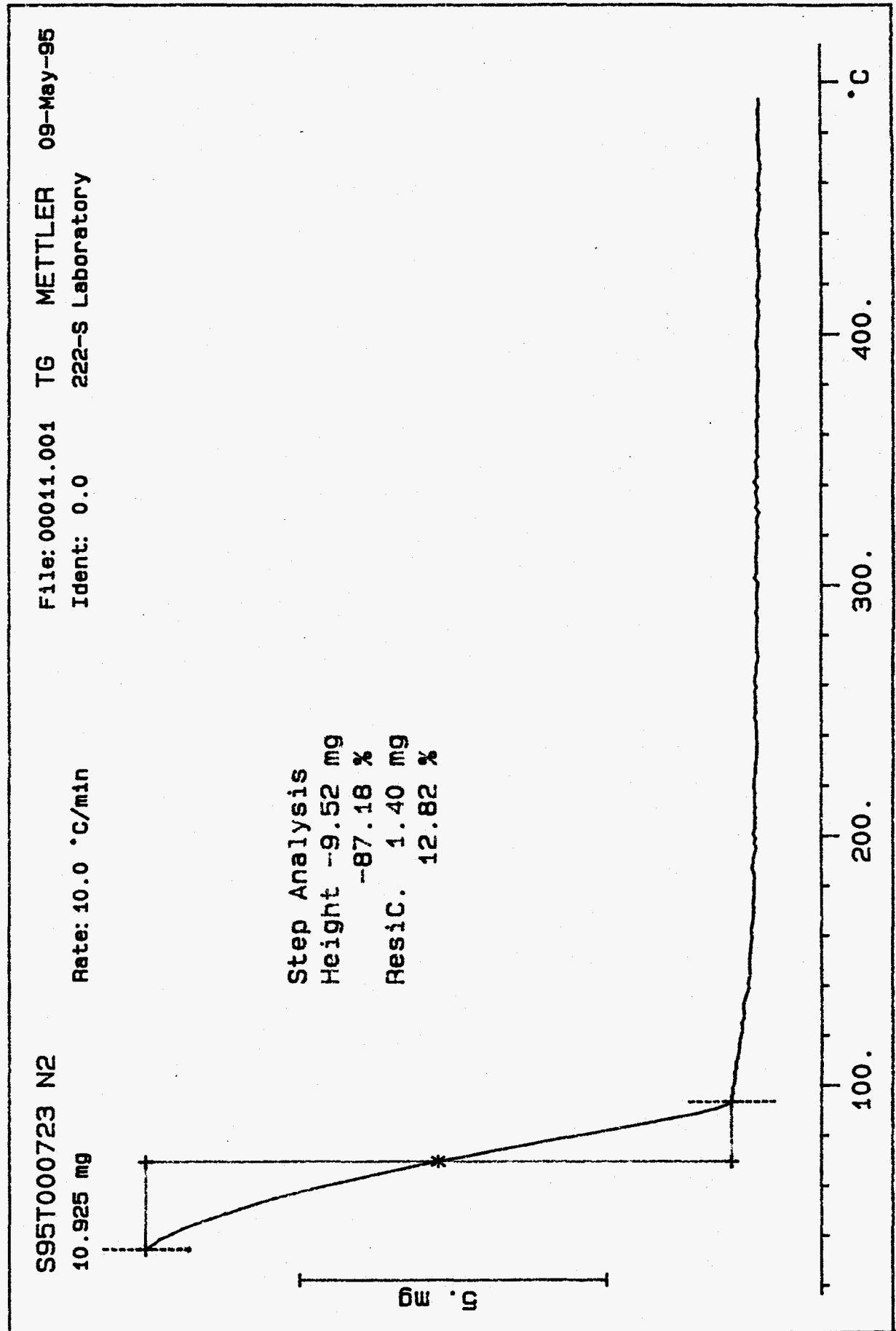
Step Analysis  
 Height-10.33 mg  
 -86.46 %  
 ResidC. 1.62 mg  
 13.54 %



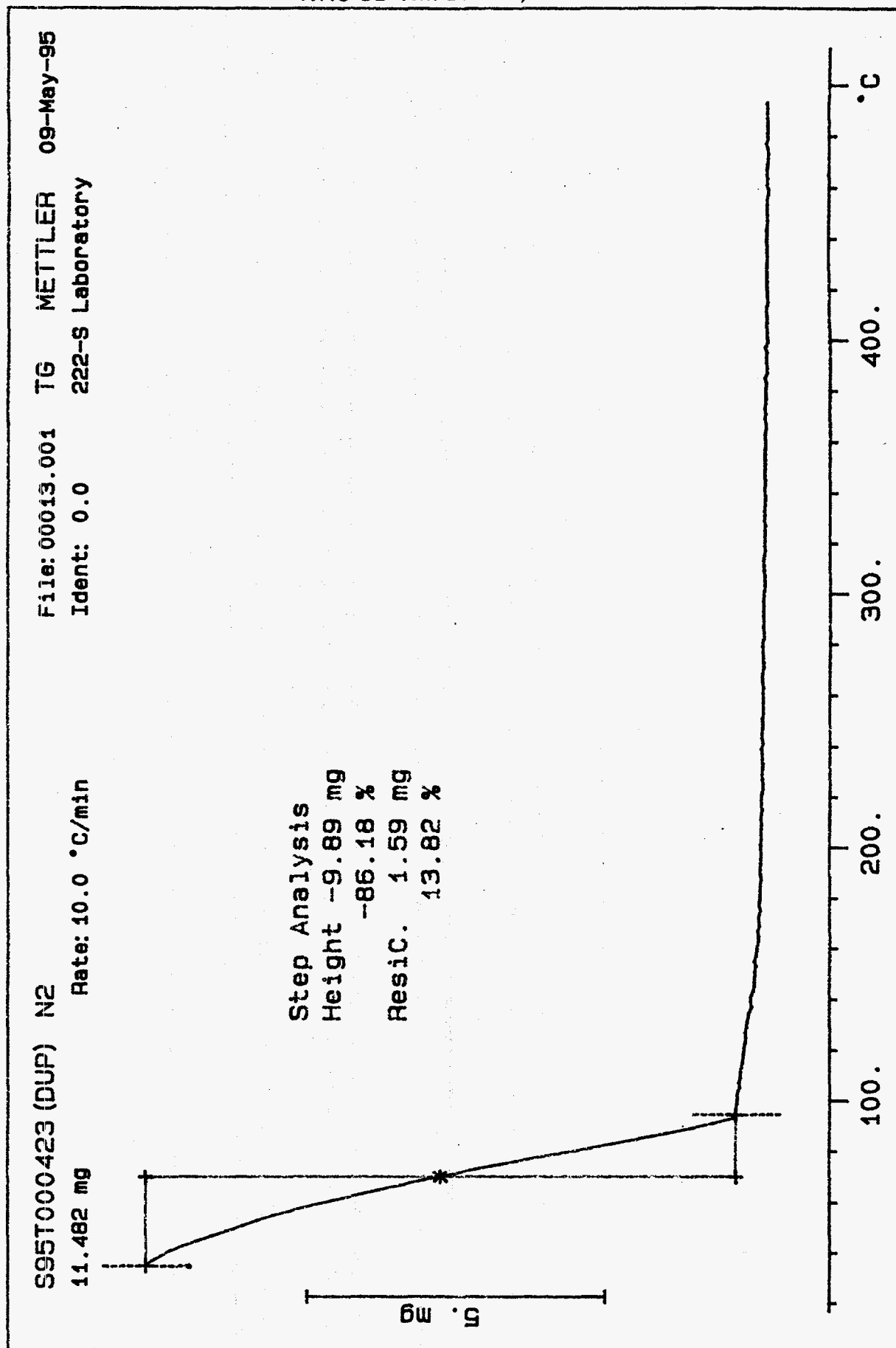
BEST AVAILABLE COPY



BEST AVAILABLE COPY



BEST AVAILABLE COPY



## LABCORE Data Entry Template for Worklist# 1249

Analyst: ADP Instrument: TGA01 Book # 42N8-A

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

Worklist Comment: Please run U-204 TGA under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	LIQUID	<u>59.19</u> <u>58.74</u> <sup>ppv</sup>	<u>58.97</u>	N/A	%
95000058	U-204	2 SAMPLE	S95T000732	0	TGA-01	LIQUID	N/A	<u>99.01</u>		%
95000058	U-204	3 DUP	S95T000732	0	TGA-01	LIQUID	<u>99.01</u>	<u>100.56</u>	N/A	%

Final page for worklist # 1249

[Signature] 5-9-95  
Analyst Signature Date

[Signature] 5-9-95  
Analyst Signature Date

Verified by Blandina Valenzuela 5/9/95

Data Entry Comments:

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

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TGA STD 42N8-A

15.612 mg

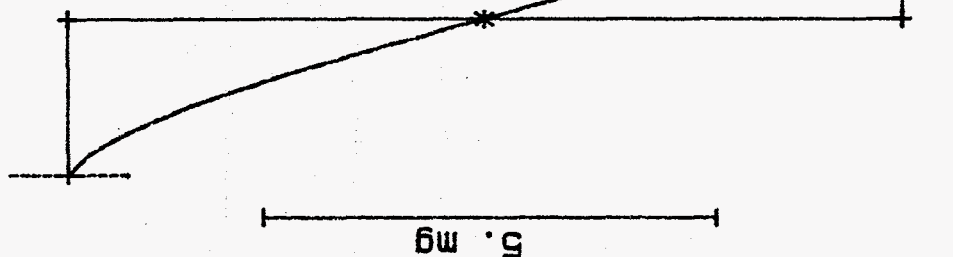
File: 00025.001 TG METTLER 09-May-95

Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT  
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 41 TO 43.

Step Analysis  
Height -9.21 mg  
-58.97 %  
Resid. 6.41 mg  
41.03 %  
Dpeak 79.0 °C



100. 200. 300. 400. *Anthony J. P. 5-9-95*

WHC-SD-MM-DP-113, REV. 0

09-May-95

## 222-S Laboratory



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S95T000732 (DUP) N2  
 9.971 mg  
 Rate: 10.0 °C/min  
 File: 00031.001 TG METTLER 09-May-95  
 Ident: 0.0 222-S Laboratory

Step Analysis  
 Height-10.03 mg  
 -100.56 %  
 Resid. -0.09 mg  
 -0.92 %  
 Dpeak 85.0 °C

