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ENGINEERING DATA TRANSMITTAL

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Tank 241-T-204, Core 188 Analytical Results for the Final Report

Jennifer L. Nuzum

Waste Management of Hanford, Inc., Richland, WA 99352
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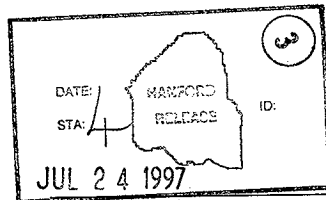
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ANALYTICAL SERVICES

**TANK 241-T-204, CORE 188, ANALYTICAL
RESULTS FOR THE FINAL REPORT**

Project Coordinator: JENNIFER L. NUZUM

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

by

**222-S Laboratory
Waste Management of Hanford, Inc.
P.O. Box 700
Richland, Washington**

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NARRATIVE

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222-S ANALYTICAL SERVICES

**TANK 241-T-204, CORE 188,
ANALYTICAL RESULTS FOR THE FINAL REPORT**

Summary

This document is the final laboratory report for Tank 241-T-204. Push mode core segments were removed from Riser 3 between March 27, 1997, and April 11, 1997. Segments were received and extruded at 222-S Laboratory. Analyses were performed in accordance with *Tank 241-T-204 Push Mode Core Sampling and Analysis Plan* (TSAP) (Winkleman, 1997), *Letter of Instruction for Core Sample Analysis of Tanks 241-T-201, 241-T-202, 241-T-203, and 241-T-204* (LOI) (Bell, 1997), and *Safety Screening Data Quality Objective* (DQO) (Dukelow, et al., 1995).

None of the subsamples submitted for total alpha activity (AT) or differential scanning calorimetry (DSC) analyses exceeded the notification limits stated in DQO. The statistical results of the 95% confidence interval on the mean calculations are provided by the Tank Waste Remediation Systems Technical Basis Group and are not considered in this report.

Appearance and Sample Handling

One core of eleven segments was expected from Tank 241-T-204. One core (Core 188) of ten segments was obtained.

Attachment 1 illustrates subsamples generated in the laboratory for analysis and identifies their sources. This reference also relates tank farm identification numbers to their corresponding 222-S Laboratory sample numbers.

Core 188

Segments were removed from Tank 241-T-204 Riser 3 between March 27, 1997, and April 11, 1997. All segments were received by 222-S Laboratory between April 1, 1997, and April 14, 1997. Table 1 summarizes extrusion information.

Field Blank

A field blank was provided to 222-S Laboratory with Core 188. This sample was treated as a drainable liquid in accordance with TSAP.

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Hydrostatic Head Fluid Blank

There was no indication of the use of hydrostatic head fluid (HHF) in sampling, nor a HHF blank provided to 222-S Laboratory.

Core Composite

One solid core composite was made from Core 188 in accordance with LOI. The core composite worksheets are included in this document.

Table 1. Sample Receipt and Extrusion Information for T-204, Core 188.

Core ID	Sample ID	Date Sampled	Date Received	Date Extruded	Extrusion Temperature	Extrusion Rate (g/min)	Extrusion Length (in)	Extrusion Weight (g)	Extrusion Remarks	Sample Description
	Field Blank	4/1/97	4/15/97	4/21/97	0.0	0.0	272.8	0.0		Drainable liquid was clear and colorless with no organic layer.
97-60	1	3/27/97	4/1/97	4/9/97	18.0	0.0		150.2--Lower Half 161.2--Upper Half		Solids were black and resembled a wet sludge slurry.
97-61	2	4/1/97	4/11/97	4/16/97	4.0	0.0		94.2--Lower Half		Solids were black and resembled a wet sludge.
97-62	3	4/1/97	4/11/97	4/16/97	13.0	0.0		216.6--Lower Half		Solids were black and resembled a wet sludge.
97-63	4	4/1/97	4/11/97	4/16/97	19.0	0.0		166.5--Lower Half 189.4--Upper Half		Solids were black and resembled a dry sludge.
97-64	5	4/1/97	4/15/97	4/18/97	19.0	0.0		178.1--Lower Half 177.3--Upper Half		Solids were black and resembled a dry sludge.
97-65	6	4/1/97	4/15/97	4/18/97	19.0	0.0		166.6--Lower Half 194.8--Upper Half		Solids were black and resembled a dry sludge.
97-66	7	4/1/97	4/15/97	4/18/97	19.0	0.0		183.2--Lower Half 172.7--Upper Half		Solids were black and resembled a dry sludge.
97-67	8	4/1/97	4/15/97	4/18/97	19.0	0.0		193.1--Lower Half 159.3--Upper Half		Solids were black and resembled a dry sludge.
97-68	9	4/1/97	4/15/97	4/21/97	17.0	0.0		153.7--Lower Half 153.9--Upper Half		Solids were black and resembled a dry sludge.
97-69	10	4/1/97	4/15/97	4/21/97	19.0	0.0		151.9--Lower Half 195.3--Upper Half		Solids were black and resembled a dry sludge.

*Approximate Inches Extruded

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Analytical Results Summary

The Data Summary Table (Table 2) included in this report compiles analytical results associated with each subsample submitted in accordance with TSAP, LOI, and DQO.

Liquid subsamples prepared for analysis by an acid adjustment of the direct subsample are indicated by a "D" in the A# column in Table 2. Solid subsamples prepared for analysis by performing a fusion digest are indicated by a "F" in the A# column in Table 2. Solid subsamples prepared for analysis by performing a water digest are indicated by a "W" in the A# column of Table 2.

Inorganic Analyses

Differential Scanning Calorimetry (DSC) Analysis

DSC analysis was performed on all direct subsamples. The exothermic energy based on dry weight of subsample was calculated for all subsamples. The average of the thermogravimetric analysis (TGA) results for each subsample was used in the dry weight correction for that subsample.

DSC analysis results for all subsamples submitted were 0.00 Joules/g. There were no exceptions to the quality control (QC) parameters stated in TSAP for these subsamples.

Thermogravimetric Analysis (TGA)

TGA was performed on all direct subsamples. TGA results were typically determined by summing weight loss steps below 200°C. Weight loss steps above this were not used to determine the result. More information may be obtained by examining the raw data.

Upper Half Segment 4 of Core 188 (S97T000580) was analyzed in triplicate because an instrument fluctuation occurred while analyzing the duplicate. The duplicate value was considered invalid, and the triplicate result is shown as the duplicate in Table 2. More information may be obtained by observing the raw data. Upper Half Segment 10 of Core 188 (S97T000638) had a relative percent difference (RPD) of 30.8 between sample and duplicate. This RPD was reproducible due to inhomogeneity between sample and duplicate. Further analysis was not requested.

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Density

Bulk density was performed on solid lower half segments and the core composite. Results from bulk density tests ranged from 1.15 g/mL to 1.21 g/mL. There were no QC parameters stated in TSAP for bulk density analysis.

Specific Gravity (SpG)

Specific gravity analyses were performed on direct liquid subsamples. There were no exceptions to the QC parameters stated in TSAP for these subsamples.

Ion Chromatography (IC)

IC analysis was performed on direct liquid subsamples and the core composite. For direct liquid subsamples, only the QC for Br was reviewed for this report in accordance with TSAP. There were no exceptions to the QC parameters stated in TSAP for these subsamples.

For the core composite (S97T001199), only the QC for requested analytes (F, Cl, NO₂, NO₃, SO₄, PO₄, and Oxalate) were reviewed for this report in accordance with LOI. Other opportunistic analyte results are included in Table 2. These analytes do not have customer defined QC parameters and are not discussed. The preparation blank showed NO₂ and NO₃ results above the detection level. The levels of these analytes in the preparation blank are inconsequential when compared to results for the sample, and do not impact sample data quality. A matrix spike was not performed on S97T001199.. At this time, the IC instrument is out of service. If further analysis of S97T001199 is requested, the results will be presented in a revision to this document.

Inductively Coupled Plasma Spectrophotometry (ICP)

ICP was performed on direct liquid subsamples and the core composite. For direct liquid subsamples, only the QC for Li was reviewed for this report in accordance with TSAP. There were no exceptions to the QC parameters stated in TSAP for these subsamples.

For the core composite (S97T001199), only the QC for requested analytes (Al, Ba, Bi, Ca, Cr, Fe, La, Mn, Ni, P, K, Si, S, Na, Sr, and U) were reviewed for this report in accordance with LOI. Other opportunistic analyte results are included in Table 2. These analytes do not have customer defined QC parameters and are not discussed.

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Sample S97T001199 spike recoveries reported in Table 2 for Bi, Fe, K, La, Mn, and Na are invalid because the spike concentration (1 ppm) is too low in comparison to the sample concentration (less than 25%). Second spikes with an analyte level of 10 ppm were performed, and the resulting spike recoveries were 104.4%, 101.2%, 94.7%, 102.9%, 101.9%, and 99.5%, respectively. These calculations can be found in the raw data. The preparation blank showed Al, Ca, Na, and Si results above the detection level. The levels of these analytes in the preparation blank are inconsequential when compared to the results for the sample, and do not impact sample data quality.

Total Organic Carbon (TOC)

TOC analysis was performed on the core composite (S97T001199). RPD between sample and duplicate was 21.8. Elevated RPD is due to inhomogeneity between sample and duplicate. Further analysis was not requested.

Total Inorganic Carbon (TIC)

TIC analysis was performed on the core composite (S97T001199). There were no exception to the QC parameters stated in LOI for this sample.

For all TIC analyses, a "Total Inorganic Carbon Analysis Report" worksheet is included as raw data. Due to programming limitations with the TIC instrument software, the sample size listed on this worksheet is incorrect. This value is not used in the final calculations (also included) and has no bearing on the results in Table 2.

Radiochemistry Analyses

Total Alpha (AT) Analysis

AT analyses were requested for direct liquid subsamples and solid lower half segments. Liquid AT results were below the total alpha activity notification limit of 61.5 $\mu\text{Ci/mL}$. All solid AT results were below the total alpha activity notification limit of 41 $\mu\text{Ci/g}$.

RPD between sample and duplicate was 26.0 for Lower Half Segment 5 of Core 188 (S97T000621). Replicates indicated the elevated RPD was due to inhomogeneity between sample and duplicate. Rerun analysis was not requested.

One of the preparation blanks showed AT results above the detection level. The level in the preparation blank is inconsequential when considering the elevated counting error, and does not impact sample data quality.

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Gamma Energy Analysis (GEA)

GEA was performed on the core composite. There were no exceptions to the QC parameters stated in LOI for this subsample.

Strontium 90 (^{90}Sr)

^{90}Sr analysis was performed on the core composite (S97T001198). A tracer was used instead of a spike for QC purposes. RPD between sample and duplicate was 49.6. Count rates for both sample and duplicate were very low, with high counting uncertainties, resulting in an elevated RPD. The preparation blank showed ^{90}Sr results above the detection level. The level in the preparation blank is inconsequential when considering the high counting error, and does not impact sample data quality. Rerun analysis was not requested.

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Procedures

Table 3 lists the analytical procedures used for performing sample analyses. Abbreviations for analyses are defined in the table notes.

Table 3. Analytical Procedures

Analysis	Matrix	Preparation Procedure +	Analysis Procedure
DSC	Solid Liquid	N/A	LA-514-113 Rev. D-0 LA-514-114 Rev. D-0
TGA	Solid Liquid	N/A	LA-514-114 Rev. D-0 LA-560-112 Rev. C-0
Density	Solid	N/A	LO-160-103 Rev. B-0
AT	Solid Liquid	+LA-549-141 Rev. F-0 N/A	LA-508-101 Rev. G-0
Sp.G	Liquid	N/A	LA-510-112 Rev. D-0
IC	Liquid Solid	N/A ++LA-504-101 Rev A-0	LA-533-105 Rev. D-1
ICP	Liquid Solid	N/A +++LA-505-163 Rev A-0	LA-505-151, Rev. E-1 LA-505-161 Rev. C-1
TOC	Solid	N/A	LA-342-100 Rev. E-0
TIC	Solid	N/A	LA-342-100 Rev. E-0

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GEA	Solid	+LA-549-141 Rev. F-0	LA-548-121 Rev. B-0
90Sr	Solid	+LA-549-141 Rev. F-0	LA-220-101 Rev. E-2

Notes:

N/A	not applicable (these are direct samples)
DSC	differential scanning calorimetry
TGA	thermogravimetric analysis
Density	bulk density
AT	total alpha
Sp.G	specific gravity
IC	ion chromatography
ICP	inductively coupled plasma
TOC	total organic carbon
TIC	total inorganic carbon
GEA	gamma energy analysis
90Sr	strontium 90
+	fusion digest
++	water digest
+++	acid digest

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References

- 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.
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- Bell, K.E., 1997, *Letter of Instruction for Core Sample Analysis of Tanks 241-T-201, 241-T-202, 241-T-203, and 241-T-204*, Memo 74620-97-195, Lockheed Martin Hanford Corporation, Richland, WA 99352.
- Meznarich, H. K., 1995, *Quality Assurance Plan for the 222-S Laboratories*, WHC-SD-CP-QAPP-016, Rev. 0, Westinghouse Hanford Company, Richland, WA 99352.

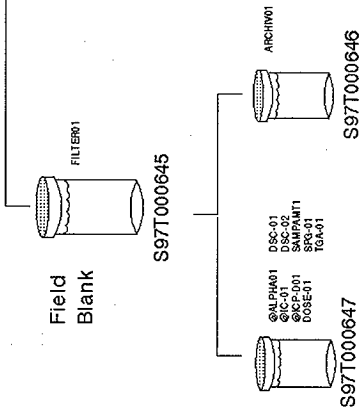
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T-204 SAMPLE BREAKDOWN (ATTACHMENT 1)

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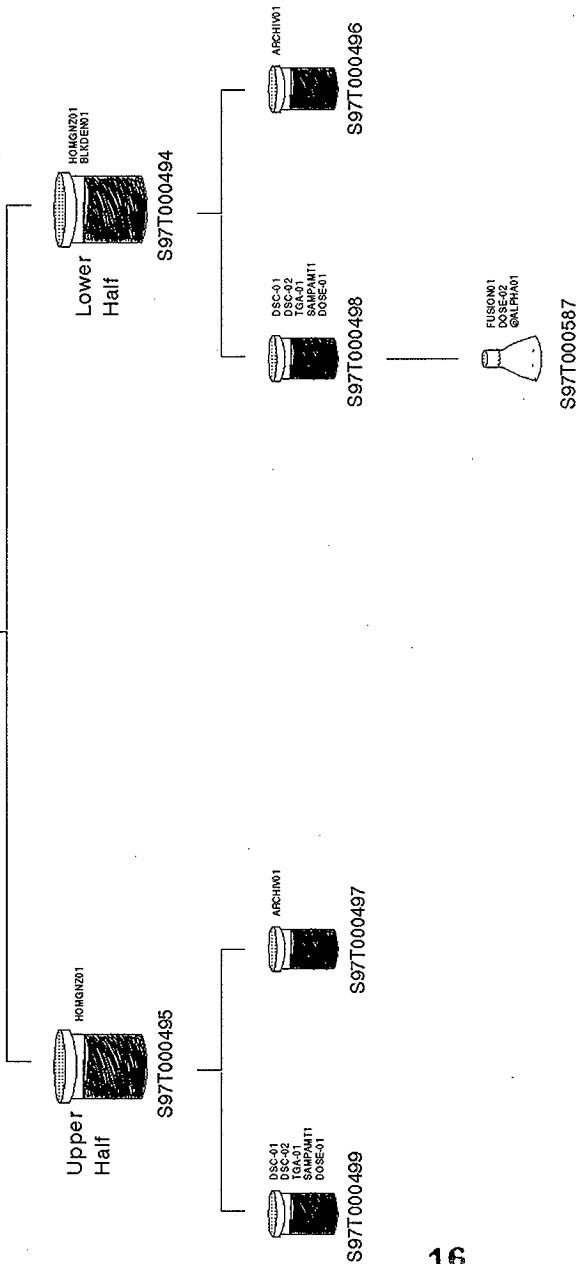
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T-204
Core:188
Seg: Field Blank
S97T000568



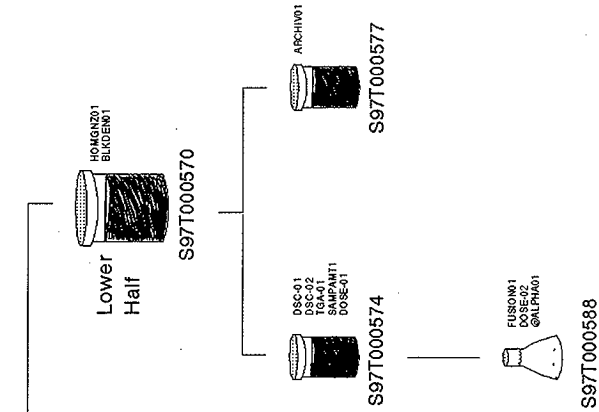
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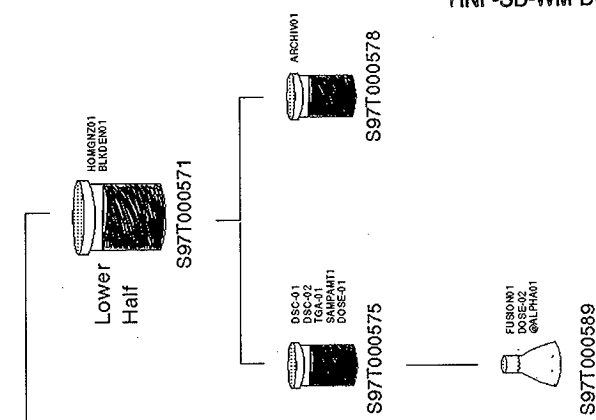
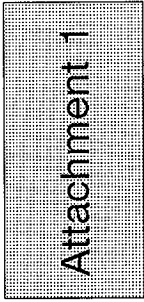


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Seg: 2
S97T000534

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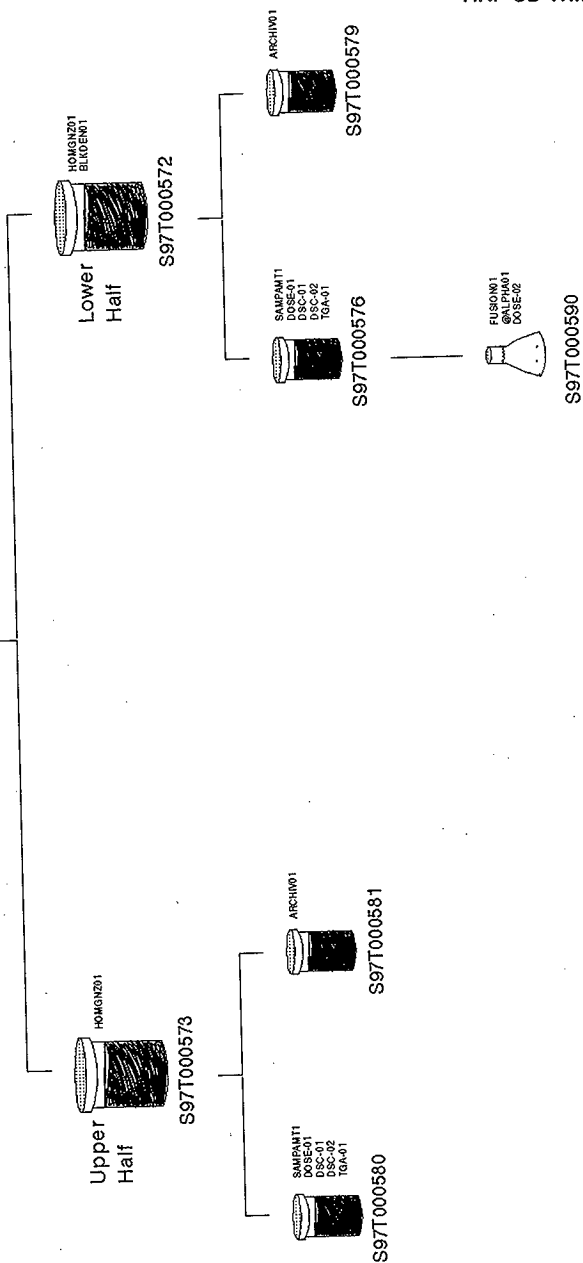


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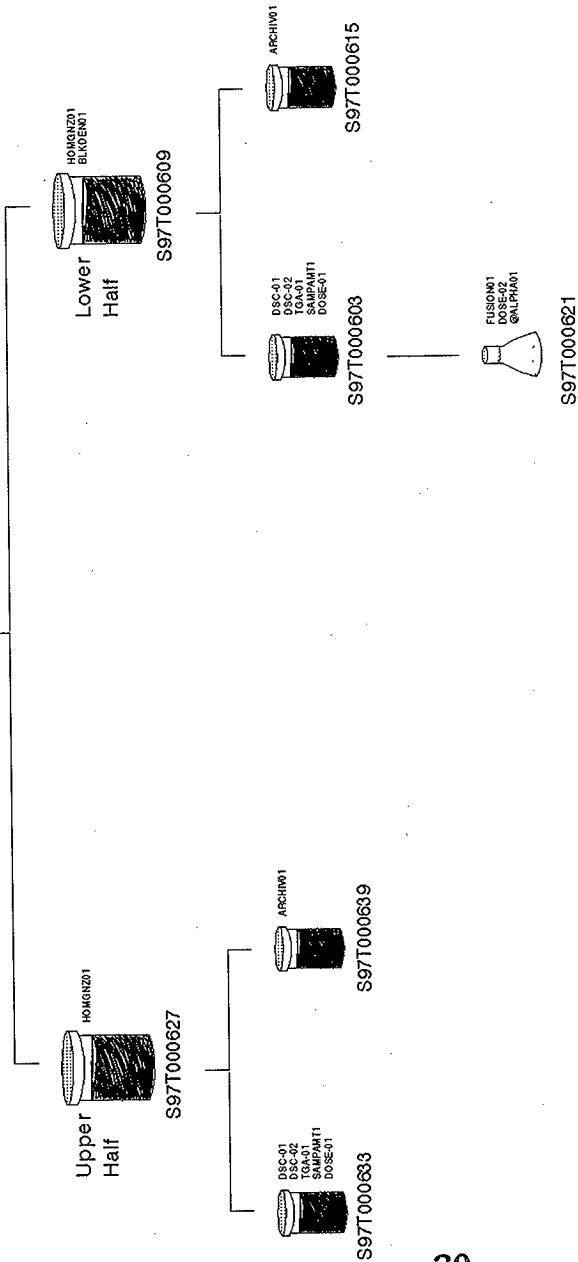
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Core: 188
Seg: 4
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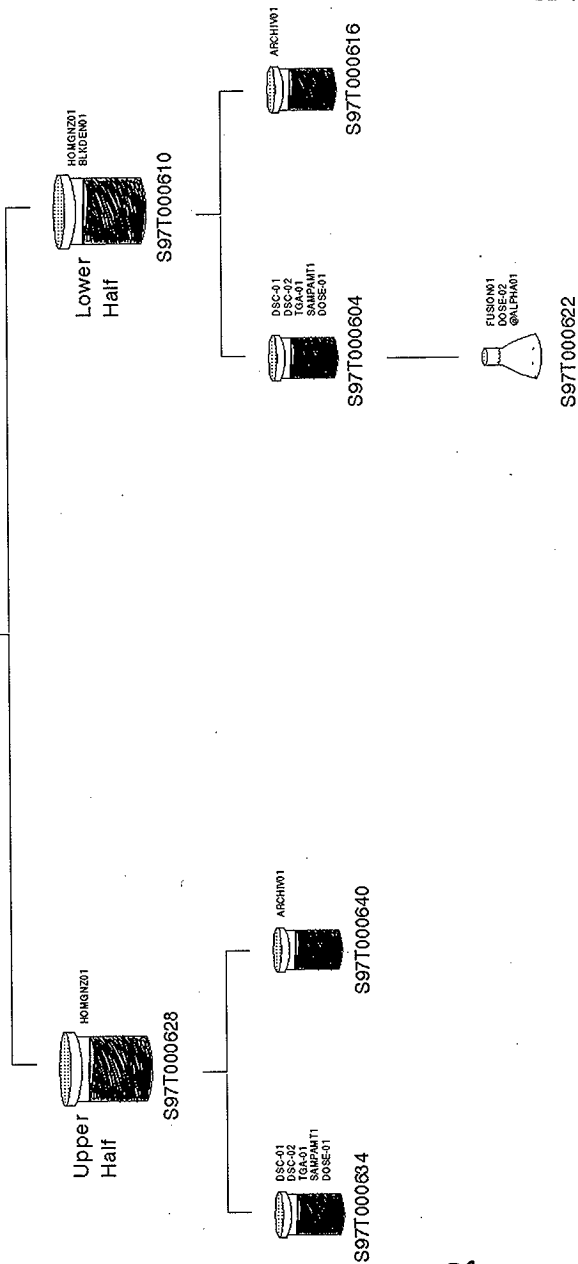
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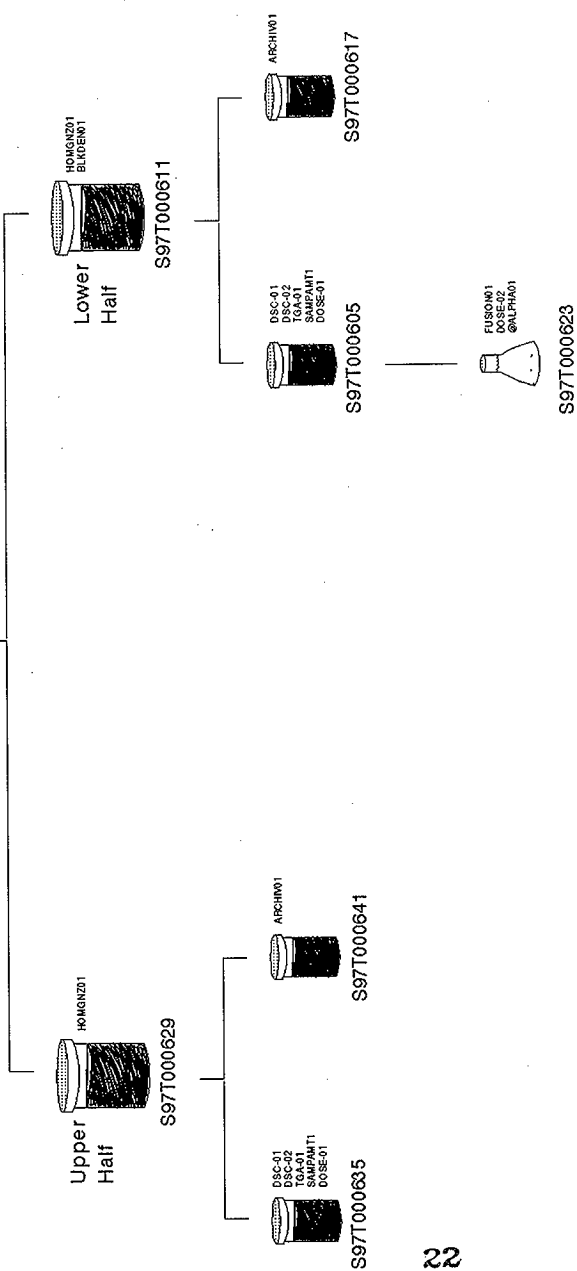
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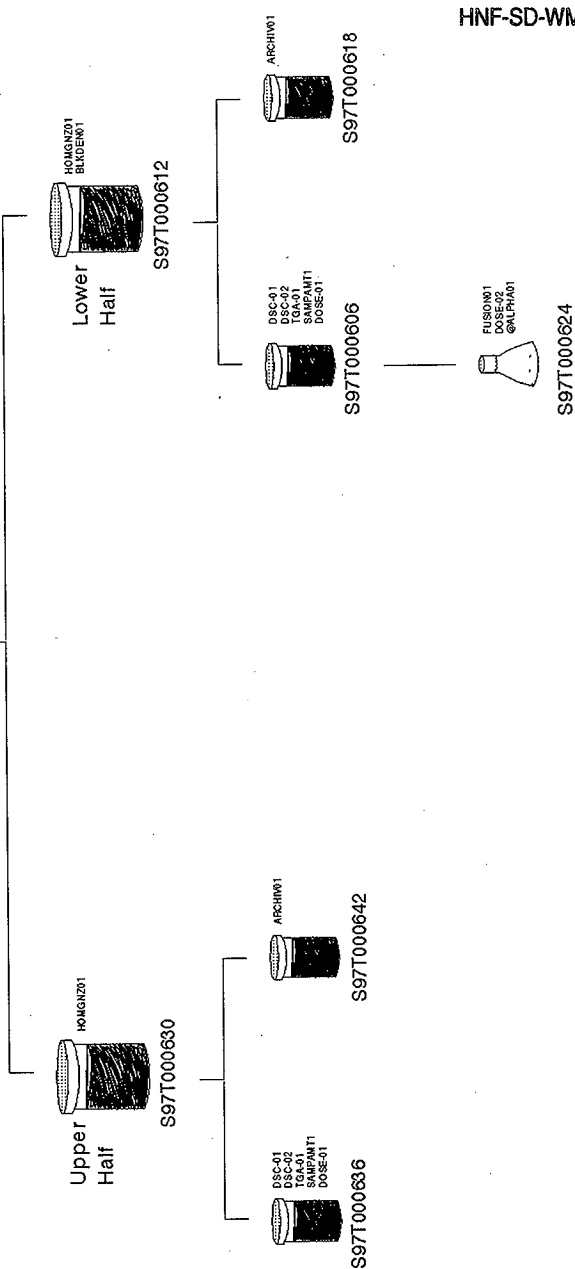
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S97T000563

Attachment 1



T-204
Core:188
Seg: 8
S97T000566

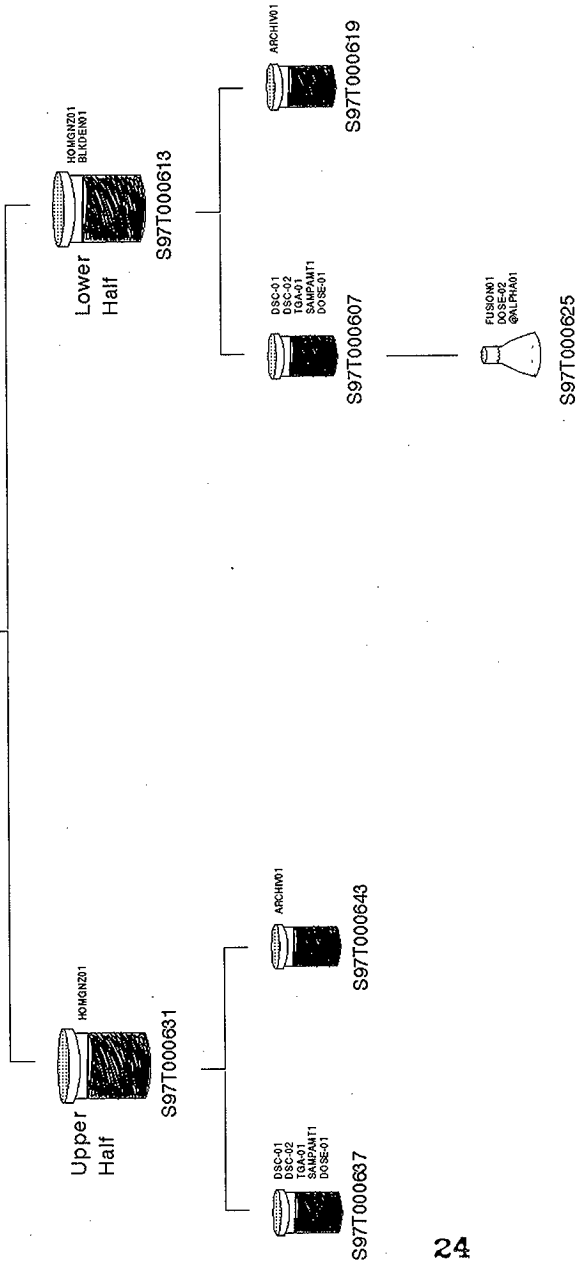
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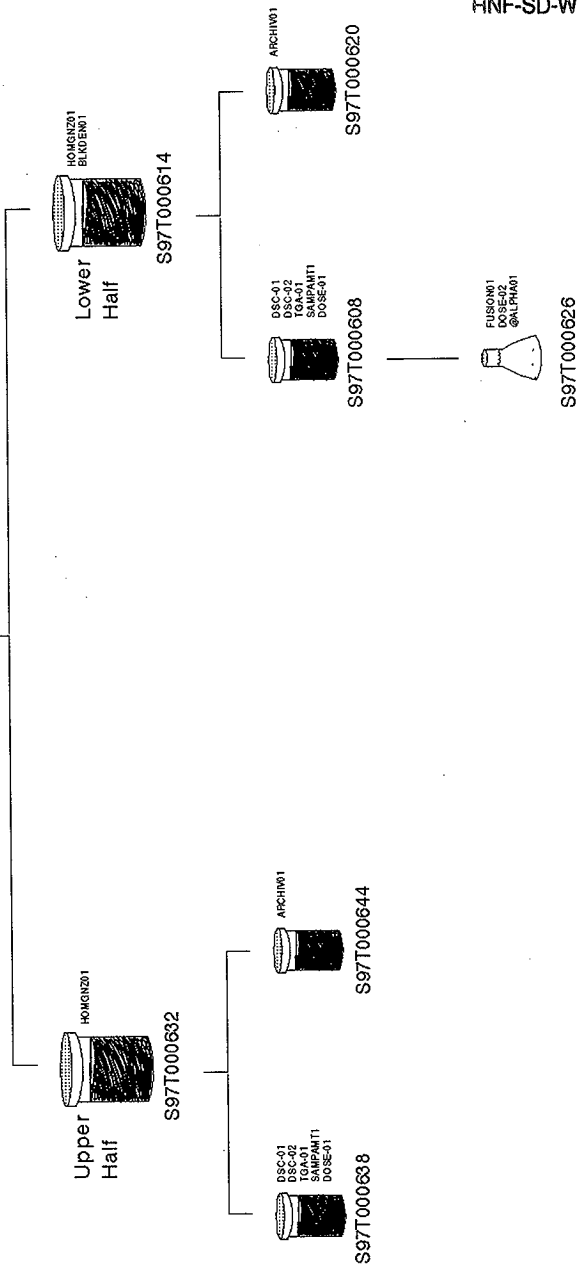
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Seg: 9
S97T000567

Attachment 1



T-204
Core:188
Seg: 10
S97T000569

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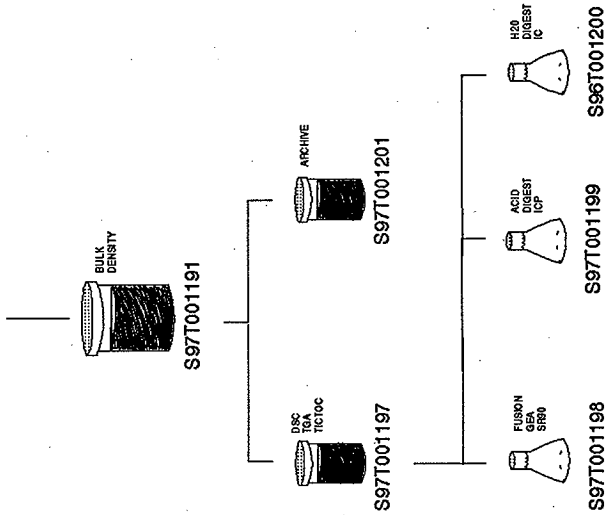


Attachment 1

T-204

Core:188

Composite:Solids



Composited:

Segment: Grams.

1 LH	5.0
1 UH	5.0
2 LH	10.0
3 LH	10.0
4 LH	5.0
4 UH	5.1
5 LH	6.2
5 UH	5.0
6 LH	5.0
6 UH	5.0
7 LH	5.0
7 UH	4.9
8 LH	7.9
8 UH	5.9
9 LH	5.0
9 UH	5.1
10 LH	5.3
10 UH	5.2

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SAMPLE DATA SUMMARY

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Table 2. Data Summary Table
T-204

CORE NUMBER: 188

SEGMENT #: Core Composite

SEGMENT PORTION: Core Composite

Sample#	R #/ Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S97T001191	Bulk Density of Sample	g/ml	n/a	n/a	1.210	n/a	n/a	n/a	n/a	5.00e-01	n/a	n/a
S97T001192	DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a	n/a
S97T001197	DSC Exotherm on Perkin Elmer	Joules/g	96.94	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a	n/a
S97T001197	% Water by TGA on Perkin Elmer	%	98.59	n/a	75.37	74.32	75.09	2.06	n/a	n/a	n/a	n/a
S97T001197	IC by Acid/Coulometry	ug/g	97.34	3.100	1.41e+03	1.38e+03	1.40e+03	2.15	86.30	5.000	n/a	n/a
S97T001197	TOC by Persulfate/Coulometry	ug/g	103.0	1.800	3.46e+02	278.0	312.0	21.8	83.30	40.00	n/a	n/a
S97T001198	Strontium-89/90 High Level	ug/g	103.0	3.00e-03	3.46e+03	5.74e-03	4.60e-03	49.6	n/a	1.00e-03	3.23e+01	n/a
S97T001198	Cobalt-60 by GEA	ug/g	100.0	< 2.50e-06	< 1.71e-03	< 1.48e-3	n/a	n/a	n/a	2.00e-03	n/a	n/a
S97T001198	Cesium-137 by GEA	ug/g	100.0	< 4.20e-06	< 7.75e-03	< 4.03e-3	n/a	n/a	n/a	4.00e-03	n/a	n/a
S97T001198	Europium-154 by GEA	ug/g	n/a	< 8.28e-06	< 4.39e-03	< 3.29e-3	n/a	n/a	n/a	4.00e-03	n/a	n/a
S97T001198	Europium-155 by GEA	ug/g	n/a	< 7.34e-06	< 3.29e-03	< 2.62e-02	2.44e-02	14.8	n/a	n/a	n/a	n/a
S97T001198	Americium-241 by GEA	ug/g	n/a	< 1.92e-05	< 2.860	< 2.81e0	n/a	n/a	n/a	n/a	n/a	n/a
S97T001199	Silver - ICP-Acid Digest	ug/g	120.0	< 1.00e-02	52.90	54.30	53.60	2.61	103.0	14.30	n/a	n/a
S97T001199	Aluminum - ICP-Acid Digest	ug/g	105.0	< 1.00e-01	2.07e+02	209.0	208.0	0.96	107.8	28.60	n/a	n/a
S97T001199	Arsenic - ICP-Acid Digest	ug/g	99.20	< 1.00e-01	67.20	123.0	95.10	58.7	106.4	14.30	n/a	n/a
S97T001199	Boron - ICP-Acid Digest	ug/g	101.2	< 5.00e-03	< 14.30	< 1.40e1	n/a	n/a	103.4	14.30	n/a	n/a
S97T001199	Barium - ICP-Acid Digest	ug/g	107.0	< 5.00e-03	< 1.430	< 1.40e0	5.15e+04	1.55	181.2	28.60	n/a	n/a
S97T001199	Beryllium - ICP-Acid Digest	ug/g	99.60	< 2.08e-01	2.04e+02	208.0	206.0	1.94	98.60	28.60	n/a	n/a
S97T001199	Calcium - ICP-Acid Digest	ug/g	99.20	< 5.00e-03	< 1.430	< 1.40e0	n/a	n/a	101.6	1.430	n/a	n/a
S97T001199	Cadmium - ICP-Acid Digest	ug/g	104.6	< 1.00e-01	61.60	64.30	62.95	4.29	107.4	28.60	n/a	n/a
S97T001199	Cerium - ICP-Acid Digest	ug/g	101.6	< 2.00e-02	6.120	6.920	6.520	12.3	104.0	5.720	n/a	n/a
S97T001199	Cobalt - ICP-Acid Digest	ug/g	98.20	< 1.00e-02	4.51e+03	4.47e+03	4.49e+03	0.89	119.4	2.860	n/a	n/a
S97T001199	Chromium - ICP-Acid Digest	ug/g	95.40	< 1.70e-02	7.250	6.420	6.835	12.1	95.20	2.860	n/a	n/a
S97T001199	Copper - ICP-Acid Digest	ug/g	98.00	< 5.00e-02	3.86e+03	4.21e+03	4.04e+03	8.67	1.34e+03	14.30	n/a	n/a
S97T001199	Iron - ICP-Acid Digest	ug/g	92.40	< 5.00e-01	6.09e+03	6.15e+03	6.12e+03	0.98	138.8	14.30	n/a	n/a
S97T001199	Lanthanum - ICP-Acid Digest	ug/g	102.2	< 5.00e-02	1.13e+04	1.17e+04	1.15e+04	3.48	157.6	14.30	n/a	n/a
S97T001199	Lithium - ICP-Acid Digest	ug/g	99.20	< 1.00e-02	< 2.860	< 2.81e0	n/a	n/a	97.00	2.860	n/a	n/a
S97T001199	Magnesium - ICP-Acid Digest	ug/g	101.0	< 1.00e-01	35.10	34.10	34.60	2.89	103.6	28.60	n/a	n/a
S97T001199	Manganese - ICP-Acid Digest	ug/g	99.40	< 1.00e-02	1.41e+04	1.40e+04	1.40e+04	0.71	155.8	2.860	n/a	n/a
S97T001199	Nickel - ICP-Acid Digest	ug/g	99.60	< 5.00e-02	< 14.30	< 1.40e1	n/a	n/a	101.4	14.30	n/a	n/a
S97T001199	Niobium - ICP-Acid Digest	ug/g	102.8	< 3.60e-01	3.17e+04	3.19e+04	3.18e+04	0.63	208.0	28.60	n/a	n/a
S97T001199	Sodium - ICP-Acid Digest	ug/g	101.6	< 1.00e-01	< 28.60	< 2.81e1	n/a	n/a	101.0	28.60	n/a	n/a
S97T001199	Neodymium - ICP-Acid Digest	ug/g	102.0	< 2.00e-02	2.42e+02	241.0	241.5	0.41	105.4	5.720	n/a	n/a
S97T001199	Nickel - ICP-Acid Digest	ug/g	100.6	< 2.00e-01	2.63e+03	2.66e+03	2.64e+03	1.13	114.2	57.20	n/a	n/a
S97T001199	Phosphorus - ICP-Acid Digest	ug/g	96.00	< 1.00e-01	3.08e+02	312.0	310.0	1.29	100.4	28.60	n/a	n/a
S97T001199	Lead - ICP-Acid Digest	ug/g	96.00	< 1.00e-01	< 28.60	< 2.81e1	n/a	n/a	97.00	28.60	n/a	n/a
S97T001199	Sulfur - ICP-Acid Digest	ug/g	117.6	< 1.300	< 30.50	36.80	33.65	18.7	97.20	17.20	n/a	n/a
S97T001199	Antimony - ICP-Acid Digest	ug/g	96.40	< 6.00e-02	1.52e+03	1.47e+03	1.50e+03	3.34	108.0	14.30	n/a	n/a
S97T001199	Silicon - ICP-Acid Digest	ug/g	160.4	< 2.450	< 28.60	< 2.81e1	n/a	n/a	98.60	28.60	n/a	n/a
S97T001199	Samarium - ICP-Acid Digest	ug/g	102.6	< 1.00e-01	< 28.60	< 2.81e1	n/a	n/a	99.80	2.860	n/a	n/a
S97T001199	Strontium - ICP-Acid Digest	ug/g	101.6	< 1.00e-02	4.95e+02	502.0	498.5	1.40	99.80	2.860	n/a	n/a
S97T001199	Titanium - ICP-Acid Digest	ug/g	89.40	< 1.00e-02	3.470	3.460	3.465	0.29	90.60	2.860	n/a	n/a
S97T001199	Thallium - ICP-Acid Digest	ug/g	97.80	< 2.00e-01	2.90e+02	308.0	299.0	6.02	105.6	57.20	n/a	n/a

Sample#	RA#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T001199	A	Uranium - ICP-Acid Digest	ug/g	96.90	<5.00e-01	<1.43e+02	<1.40e2	n/a	n/a	77.90	143.0	n/a
S97T001199	A	Vanadium - ICP-Acid Digest	ug/g	98.00	<5.00e-02	< 14.30	<1.40e1	n/a	n/a	100.8	14.30	n/a
S97T001199	A	Zinc - ICP-Acid Digest	ug/g	97.40	<3.70e-02	54.20	71.20	62.70	27.1	100.2	2.860	n/a
S97T001199	A	Zirconium - ICP-Acid Digest	ug/g	98.60	<1.00e-02	< 2.860	<2.81e0	n/a	n/a	100.0	2.860	n/a
S97T001200	M	Fluoride-IC-Dionex 4000/4500	ug/g	94.92	<1.20e-02	6.06e+03	5.82e+03	5.94e+03	4.04	n/a	27.21	n/a
S97T001200	M	Chloride-IC-Dionex 4000/4500	ug/g	99.11	<1.70e-02	6.94e+02	653.0	673.5	6.09	n/a	38.54	n/a
S97T001200	M	Nitrite-IC - Dionex 4000/4500	ug/g	101.5	2.32e-01	3.00e+02	267.0	283.6	11.6	n/a	244.9	n/a
S97T001200	M	Bromide by Ion Chromatograph	ug/g	100.7	<1.25e-01	<2.83e+02	<2.82e2	n/a	n/a	n/a	283.5	n/a
S97T001200	M	Nitrate by IC-Dionex 4000/4500	ug/g	101.5	1.39e-01	5.74e+04	5.29e+04	5.52e+04	8.16	n/a	315.1	n/a
S97T001200	M	Phosphate-IC-Dionex 4000/4500	ug/g	94.68	<1.20e-01	2.55e+03	2.36e+03	2.46e+03	7.74	n/a	272.1	n/a
S97T001200	M	Sulfate by IC-Dionex 4000/4500	ug/g	100.0	<1.38e-01	4.14e+02	<5.12e2	n/a	n/a	n/a	312.9	n/a
S97T001200	M	Oxalate-IC-Dionex 4000/4500	ug/g	103.0	<1.05e-01	1.35e+03	1.31e+03	1.33e+03	3.01	n/a	238.1	n/a

HNF-SD-WM-DP-255, REV. 0

Table 2. Data Summary Table
T-204CORE NUMBER: 188
SEGMENT #: Field Blank

SEGMENT PORTION: Field Blank

Sample#	R. #	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000647	D	DSC Exotherm using Mettler	Joules/g	95.96	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000647	D	DSC Exotherm Dry	Calculated	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000647	D	Specific Gravity	Sp.G.	100.5	n/a	1.006	1.203	1.105	17.8	n/a	1.00e-02	n/a
S97T000647	D	% Water by TGA using Mettler	%	99.58	n/a	1.01e-02	< 2.00e-2	100.3	0.35	n/a	2.00e-02	n/a
S97T000647	D	Silver-ICP-Acid Dil.	ug/mL	98.60	< 1.00e-02	2.00e-02	< 2.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S97T000647	D	Aluminum-ICP-Acid Dil.	ug/mL	98.40	< 5.00e-02	< 1.00e-01	< 1.00e-1	n/a	n/a	n/a	1.00e-01	n/a
S97T000647	D	Arsenic-ICP-Acid Dil.	ug/mL	104.4	< 1.00e-01	< 2.00e-01	< 2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Boron-ICP-Acid Dil.	ug/mL	101.8	< 5.00e-02	1.680	1.710	1.695	1.77	n/a	1.00e-01	n/a
S97T000647	D	Barium-ICP-Acid Dil.	ug/mL	100.6	< 5.00e-02	< 1.00e-01	< 1.00e-1	n/a	n/a	n/a	1.00e-01	n/a
S97T000647	D	Beryllium-ICP-Acid Dil.	ug/mL	102.2	< 5.00e-03	< 1.00e-02	< 2.00e-2	n/a	n/a	n/a	1.00e-02	n/a
S97T000647	D	Bismuth-ICP-Acid Dil.	ug/mL	100.8	< 1.00e-01	< 2.00e-01	< 2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Calcium-ICP-Acid Dil.	ug/mL	99.20	< 1.00e-01	18.50	18.40	18.45	0.54	n/a	2.00e-01	n/a
S97T000647	D	Cadmium-ICP-Acid Dil.	ug/mL	100.4	< 5.00e-03	< 1.00e-02	< 1.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S97T000647	D	Cerium-ICP-Acid Dil.	ug/mL	99.00	< 1.00e-01	< 2.00e-01	< 2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Cobalt-ICP-Acid Dil.	ug/mL	104.4	< 2.00e-02	< 4.00e-02	< 4.00e-2	n/a	n/a	n/a	4.00e-02	n/a
S97T000647	D	Chromium-ICP-Acid Dil.	ug/mL	99.80	< 1.00e-02	< 2.00e-02	< 2.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S97T000647	D	Copper-ICP-Acid Dil.	ug/mL	101.8	< 1.00e-02	1.83e-01	1.81e-01	1.82e-01	1.10	n/a	1.00e-01	n/a
S97T000647	D	Iron-ICP-Acid Dil.	ug/mL	93.40	< 5.00e-02	< 1.00e-01	< 1.00e0	n/a	n/a	n/a	1.00e-01	n/a
S97T000647	D	Potassium-ICP-Acid Dil.	ug/mL	98.80	< 5.00e-02	< 1.00e-01	< 1.00e-1	n/a	n/a	n/a	1.00e-01	n/a
S97T000647	D	Lanthanum-ICP-Acid Dil.	ug/mL	100.8	< 5.00e-02	< 2.00e-02	< 2.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S97T000647	D	Lithium-ICP-Acid Dil.	ug/mL	99.00	< 1.00e-02	< 2.00e-01	3.890	3.895	0.26	n/a	2.00e-01	n/a
S97T000647	D	Magnesium-ICP-Acid Dil.	ug/mL	100.8	< 1.00e-01	8.95e-02	8.90e-02	8.92e-02	0.56	n/a	2.00e-02	n/a
S97T000647	D	Manganese-ICP-Acid Dil.	ug/mL	98.60	< 1.00e-02	< 1.00e-01	< 1.00e-1	n/a	n/a	n/a	1.00e-01	n/a
S97T000647	D	Molybdenum-ICP-Acid Dil.	ug/mL	103.6	< 5.00e-02	< 1.00e-01	< 1.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Sodium-ICP-Acid Dil.	ug/mL	103.0	< 1.00e-01	4.310	4.290	4.300	0.47	n/a	2.00e-01	n/a
S97T000647	D	Neodymium-ICP-Acid Dil.	ug/mL	100.4	< 1.00e-01	< 2.00e-01	< 2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Nickel-ICP-Acid Dil.	ug/mL	99.40	< 2.00e-02	< 4.00e-02	< 4.00e-2	n/a	n/a	n/a	4.00e-02	n/a
S97T000647	D	Phosphorus-ICP-Acid Dil.	ug/mL	104.0	< 2.00e-01	< 4.00e-01	< 4.00e-1	n/a	n/a	n/a	4.00e-01	n/a
S97T000647	D	Lead-ICP-Acid Dil.	ug/mL	98.00	< 1.00e-01	< 2.00e-01	< 2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Sulfur-ICP-Acid Dil.	ug/mL	101.0	< 1.00e-01	6.310	6.310	6.310	0.00	n/a	2.00e-01	n/a
S97T000647	D	Antimony-ICP-Acid Dil.	ug/mL	98.00	< 5.00e-02	< 1.00e-01	< 2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Selenium-ICP-Acid Dil.	ug/mL	95.00	< 1.00e-01	< 2.00e-01	< 2.00e-1	5.350	0.00	n/a	2.00e-01	n/a
S97T000647	D	Silicon-ICP-Acid Dil.	ug/mL	99.00	< 1.00e-02	8.86e-02	< 2.00e-1	8.83e-02	0.57	n/a	2.00e-02	n/a
S97T000647	D	Strontium-ICP-Acid Dil.	ug/mL	99.80	< 1.00e-01	< 2.00e-02	< 2.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S97T000647	D	Tantalum-ICP-Acid Dil.	ug/mL	100.2	< 1.00e-02	< 4.00e-02	< 4.00e-2	n/a	n/a	n/a	4.00e-02	n/a
S97T000647	D	Thallium-ICP-Acid Dil.	ug/mL	96.40	< 2.00e-01	< 4.00e-01	< 4.00e-1	n/a	n/a	n/a	4.00e-01	n/a
S97T000647	D	Uranium-ICP-Acid Dil.	ug/mL	98.80	< 5.00e-01	< 1.00e0	< 1.00e-1	n/a	n/a	n/a	1.00e0	n/a
S97T000647	D	Vanadium-ICP-Acid Dil.	ug/mL	103.6	< 5.00e-02	< 1.00e-01	< 1.00e-1	n/a	n/a	n/a	1.00e-01	n/a
S97T000647	D	Zinc-ICP-Acid Dil.	ug/mL	98.80	< 1.00e-02	1.04e-01	1.01e-01	1.03e-01	2.93	n/a	2.00e-02	n/a
S97T000647	D	Zirconium-ICP-Acid Dil.	ug/mL	101.6	< 1.00e-02	< 2.00e-02	< 2.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S97T000647	D	Fluoride-IC-Pionex 4000/4500	ug/mL	90.51	< 1.20e-02	< 1.92e-01	< 1.92e-01	1.92e-01	n/a	n/a	1.92e-01	n/a
S97T000647	D	Chloride-IC-Pionex 4000/4500	ug/mL	102.5	< 1.70e-02	7.933	8.360	8.146	5.28	n/a	2.72e-01	n/a
S97T000647	D	Nitrite-IC - Bionex 4000/4500	ug/mL	100.6	< 1.08e-01	2.114	< 1.73e0	n/a	n/a	n/a	1.728	n/a

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000647		Bromide by Ion Chromatograph	ug/mL	97.62	<1.25e-01	< 2.000	<2.00e0	N/a	N/a	N/a	2.000	N/a
S97T000647		Nitrate by IC-Dionex 4000/4500	ug/mL	98.99	1.39e-01	4.702	5.480	5.091	15.3	N/a	2.224	N/a
S97T000647		Phosphate-IC-Dionex 4000/4500	ug/mL	98.90	<1.20e-01	2.077	<1.92e0	N/a	N/a	N/a	1.920	N/a
S97T000647		Sulfate by IC-Dionex 4000/4500	ug/mL	99.05	<1.38e-01	17.80	18.20	18.00	2.22	N/a	2.208	N/a
S97T000647		Oxalate-IC-Dionex 4000/450	ug/mL	103.2	<1.05e-01	1.732	<1.68e0	N/a	N/a	N/a	1.680	N/a
S97T000647		Alpha in Liquid Samples	uCi/mL	90.00	<5.06e-07	1.15e-06	9.51e-07	1.05e-06	18.9	N/a	3.97e-07	4.83E+01

Table 2. Data Summary Table
T-204

CORE NUMBER: 183

SEGMENT #: 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%
S97T000499		DSC Exotherm using Mettler	Joules/g	90.33	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000499		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000499		% Water by TGA using Mettler	%	99.50	n/a	88.58	80.95	84.77	9.00	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000494		Bulk Density of Sample	g/mL	n/a	n/a	1.150	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000498		DSC Exotherm using Mettler	Joules/g	90.33	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000498		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000498		% Water by TGA using Mettler	%	99.50	n/a	79.53	78.89	79.21	0.81	n/a	n/a	n/a
S97T000587	F	Alpha of Digested Solid	uCi/g	86.00	<2.47e-03	1.76e-01	1.51e-01	1.63e-01	15.3	n/a	3.00e-03	8.02E+00

23-Jul-1997 12:01:21
A-0002-1

Table 2. Data Summary Table
T-204

CORE NUMBER: 188
SEGMENT #: 2

SEGMENT PORTION: L Lower Half of Segment

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000570		Bulk Density of Sample	g/mL	n/a	n/a	1.170	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000574		PSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000574		PSC Exotherm on Perkin Elmer	Joules/g	93.36	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000574		% Water by TGA on Perkin Elmer	%	98.50	n/a	75.56	79.43	77.50	4.99	n/a	n/a	n/a
S97T000588	F	Alpha of Digested Solid	uCi/g	86.00	<2.47e-03	1.38e-01	1.49e-01	1.44e-01	7.67	75.29	3.00e-03	9.17E+00

Table 2. Data Summary Table
T-204

CORE NUMBER: 188
SEGMENT #: 3

SEGMENT PORTION: L Lower Half of Segment

Sample#	R/A#	AnalYTE	Bulk Density of Sample	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000571				g/mL	n/a	n/a	1.160	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000575		PSC	Exotherm Dry Calculated	Jouless/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000575		PSC	Exotherm on Perkin Elmer	Jouless/g	93.36	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000575		% Water	by TGA on Perkin Elmer	%	98.50	n/a	79.82	79.52	79.67	0.38	n/a	n/a	n/a
S97T000569	F	Alpha of Digested Solid		uCi/g	86.00	<2.47e-03	1.39e-01	1.16e-01	1.27e-01	17.3	n/a	3.00e-03	9.18E+00

HNF-SD-WM-DP-255, REV. 0

Table 2. Beta Summary Table
T-204

CORE NUMBER: 188
SEGMENT #: 4

SEGMENT PORTION: U Upper Half of Segment

Sample#	R.A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000580		DSC Exotherm Dry, Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000580		DSC Exotherm on Perkin Elmer	Joules/g	94.90	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000580		% Water by TGA on Perkin Elmer	%	98.72	n/a	72.48	71.39	71.94	1.52	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R.A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000572		Bulk Density of Sample	g/mL	n/a	n/a	1.200	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000576		DSC Exotherm Dry, Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000576		DSC Exotherm on Perkin Elmer	Joules/g	94.90	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000576		% Water by TGA on Perkin Elmer	%	98.72	n/a	74.94	74.82	74.88	0.16	n/a	n/a	n/a
S97T000590		IF Alpha of Digested Solid	uCi/g	80.50	3.00e-03	1.38e-01	1.36e-01	1.37e-01	1.46	77.57	2.00e-03	8.68E+00

Table 2. Data Summary Table
T-204

CORE NUMBER: 183
SEGMENT #: 5

SEGMENT PORTION: U Upper Half of Segment

Sample#	R/A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000633		PSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000633		PSC Exotherm on Perkin Elmer	Joules/g	96.45	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000633		% Water by TGA on Perkin Elmer	%	98.92	n/a	76.90	76.18	76.54	0.94	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R/A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000603		PSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000603		PSC Exotherm on Perkin Elmer	Joules/g	97.08	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000603		% Water by TGA on Perkin Elmer	%	98.72	n/a	75.93	74.92	75.43	1.34	n/a	n/a	n/a
S97T000609		Bulk Density of Sample	g/mL	n/a	n/a	1.210	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000621	F	Alpha of Digested Solid	uCi/g	80.50	3.00e-03	1.27e-01	1.65e-01	1.46e-01	26.0	n/a	2.00e-03	9.10E+00

Table 2. Data Summary Table
T-204

CORE NUMBER: 183
SEGMENT #: 6

SEGMENT PORTION: U Upper Half of Segment

Sample#	Rt A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000634		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000634		DSC Exotherm on Perkin Elmer	Joules/g	96.45	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000634		% Water by IGA on Perkin Elmer	%	98.92	n/a	75.64	77.96	76.80	3.02	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	Rt A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000604		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000604		DSC Exotherm on Perkin Elmer	Joules/g	97.08	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000604		% Water by IGA on Perkin Elmer	%	98.17	n/a	76.81	75.92	76.37	1.17	n/a	n/a	n/a
S97T000610		Bulk Density of Sample	g/mL	n/a	n/a	1.170	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000622	F	Alpha of Digested Solid	uCi/g	80.50	3.00e-03	1.29e-01	1.38e-01	1.34e-01	6.74	n/a	3.00e-03	9.06e+00

Table 2. Data Summary Table
T-204CORE NUMBER: 188
SEGMENT #: 7

SEGMENT PORTION: U Upper Half of Segment

Sample#	R/A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000435		PSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000435		PSC Exotherm on Perkin Elmer	Joules/g	92.90	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000435		% Water by TGA on Perkin Elmer	%	98.89	n/a	72.74	72.06	72.40	0.94	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R/A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000405		PSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000405		PSC Exotherm on Perkin Elmer	Joules/g	94.94	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000405		% Water by TGA on Perkin Elmer	%	98.82	n/a	76.21	74.04	75.12	2.89	n/a	n/a	n/a
S97T000411		Bulk Density of Sample	g/mL	n/a	n/a	1.180	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000423	F	Alpha of Digested Solid	uCi/g	88.50	<1.92e-03	<3.16e-03	1.46e-01	n/a	n/a	n/a	5.00e-03	5.00E+02

Table 2. Data Summary Table
T-204

CORE NUMBER: 188
SEGMENT #: 8

SEGMENT PORTION: U Upper Half of Segment

Sample#	R #	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000636		PSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000636		PSC Exotherm on Perkin Elmer	Joules/g	92.90	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000636		% Water by TGA on Perkin Elmer	%	98.89	n/a	72.05	72.78	72.41	1.01	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R #	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000606		PSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000606		PSC Exotherm on Perkin Elmer	Joules/g	94.94	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000606		% Water by TGA on Perkin Elmer	%	98.82	n/a	73.21	69.64	71.42	5.00	n/a	n/a	n/a
S97T000612		Bulk Density of Sample	g/mL	n/a	n/a	1.200	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000624	F	Alpha of Digested Solid	uCi/g	88.50	<1.92e-03	1.84e-01	1.58e-01	1.71e-01	15.2	n/a	5.00e-03	8.39E+00

Table 2. Data Summary Table
T-204CORE NUMBER: 188
SEGMENT #: 9

SEGMENT PORTION: U Upper Half of Segment

Sample #	Rt A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000637		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000637		DSC Exotherm on Perkin Elmer	Joules/g	94.50	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000637		% Water by TGA on Perkin Elmer	%	98.17	n/a	71.04	75.10	73.07	5.56	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample #	Rt A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000607		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000607		DSC Exotherm on Perkin Elmer	Joules/g	94.52	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000607		% Water by TGA on Perkin Elmer	%	98.05	n/a	74.42	75.99	75.20	2.09	n/a	n/a	n/a
S97T000613		Bulk Density of Sample	g/mL	n/a	n/a	1.190	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000625	F	Alpha of Digested Solid	uCi/g	88.50	<1.92e-03	2.08e-01	1.89e-01	1.99e-01	9.57	n/a	5.00e-03	7.52E+00

Table 2. Data Summary Table
T-204CORE NUMBER: 188
SEGMENT #: 10

SEGMENT PORTION: U Upper Half of Segment

Sample#	R/A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000638		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000638		DSC Exotherm on Perkin Elmer	Joules/g	94.90	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000638		% Water by TGA on Perkin Elmer	%	98.17	n/a	53.74	73.28	63.51	30.8	n/a	n/a	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R/A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000608		DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000608		DSC Exotherm on Perkin Elmer	Joules/g	94.52	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S97T000608		% Water by TGA on Perkin Elmer	%	98.05	n/a	73.89	74.98	74.44	1.46	n/a	n/a	n/a
S97T000614		Bulk Density of Sample	g/mL	n/a	n/a	1.210	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000626	F	Alpha of Digested Solid	uCi/g	88.50	<1.92e-03	1.57e-01	1.41e-01	1.49e-01	10.7	n/a	4.00e-03	8.42E+00

HNF-SD-WM-DP-255, REV. 0

CHAIN OF CUSTODY FORMS

HNF-SD-WM-DP-255, REV. 0

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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 1204 (2) Sample Number Field Blank (3) Supervisor David Guss (4) Tunk T-204 (5) Riser 3 (6) Segment Field Blank (7) Core 18" (8) Cask Serial Number 1013-C

Radiation Survey Data:

Over Top Dose Rate

<0.5 mR/hr

Side Dose Rate

<0.5 mR/hr

Bottom Dose Rate

<0.5 mR/hr

Measurable Contamination

<20 dpm/cm²<10 dpm/cm²<10 dpm/cm²<10 dpm/cm²RCT*
(HPT)[Signature]RCT*
(HPT)[Signature][Signature][Signature][Signature][Signature][Signature][Signature][Signature]

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

HNF-SD-WM-DP-255, REV. 0

A5

(12) Field Comments

Deionized H₂O used for
Field Blank

(34) Laboratory Comments

(13) Point of Origin

222-5 Loh222-5 Loh222-5 Loh222-5 Loh222-5 Loh222-5 Loh222-5 Loh222-5 Loh222-5 Loh222-5 Loh222-5 Loh222-5 Loh

(19) Relinquished By (Sign and PRINT)

Steven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B Carter

(23) Relinquished By (Sign and PRINT)

Steven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B Carter

(27) Relinquished By (Sign and PRINT)

Steven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B CarterSteven B Carter

(16) Seal Intact Upon Release?

☒ Yes ☐ No

(31) Seal Intact Upon Receipt?

☒ Yes ☐ No

(32) Seal Data Consistent with this Record?

☒ Yes ☐ No

(33) Seal Data Consistent with this Record?

☒ Yes ☐ No

Sample No.

☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number 800W-08-TF
 Tank T-204

(2) Sample Number 3
 (5) Riser 3

(3) Supervisor Demetrius
 (7) Core 188

(8) Cask Serial Number 1013-C

Radation Survey Data:

Over Top Dose Rate < 0.005 mSv
 Side Dose Rate < 0.005 mSv
 Bottom Dose Rate < 0.005 mSv
 Unmeasurable Contamination < 0.334 Bq
1511 (Alpha) 1-97
< 16.7 Bq

(9) FIELD
< 0.005 mSv
< 0.005 mSv
< 0.005 mSv
< 0.334 Bq
< 16.7 Bq
 (Alpha)
 (Beta-Gamma)
 (Signature) [Signature]

(10) Shipment Description
 A. Work Package Number W5-96-00304
 B. Cask Seal Number 12209
 C. Sampler Serial Number 96-171
 D. Date and Time Sampler Unsealed 3/27/97, 0545 AM
 E. Expected Liquid Content 20%
 F. Expected Solid Content 80%
 G. Dose Rate Through Drill String 2.5 mR/hr
 H. Expected Sample Length 12 3/4"

RCT* (HPT) [Signature]
 RCT* (HPT) (Signature) [Signature]

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

INF-SD-WM-DP-255, REV. 0

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Field Comments

Laboratory Comments

Point of Origin	(14) Destination	(15) Sampler Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
T-204	222-5 later	James Sickle	4-1-97	
Relinquished By (Sign and PRINT)	James Sickle	James Sickle	4-1-97	
Relinquished By (Sign and PRINT)	James Sickle	James Sickle	4-1-97	
Relinquished By (Sign and PRINT)	James Sickle	James Sickle	4-1-97	
Relinquished By (Sign and PRINT)	James Sickle	James Sickle	4-1-97	

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

(32) Seal Data Consistent with this Record? ☒ Yes ☐ No

Cask Seal No. ☒ Yes ☐ No

Sample No. ☒ Yes ☐ No

RECESSION: White - Office of Sample Management

Yellow - Recipient of Sample

Pink - Core Sampling

Goldendred - Tank Firm Observation

RC-6000-309 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

60000-200-08-7F
 204

(3) Supervisor R. L. Smith

(2) Sample Number 97-61

(5) Riser 3

(1) Ship Name 60000-200-08-7F

(6) Segment 2

(4) Tank 204

(7) Core 188

(8) Cask Serial Number C-2016

Radiation Survey Data		(9) FIELD		(33) LABORATORY		(10) Shipment Description	
Over Top Dose Rate	<0.5 mR/hr			A. Work Package Number	WS-96-00306		
Side Dose Rate	<0.5 mR/hr			B. Cask Seal Number	1152		
Bottom Dose Rate	<0.5 mR/hr			C. Sampler Serial Number	96-175		
Smearable Contamination	<20 dpm			D. Date and Time Sampler Unsealed	4-11-97 0302		
	(Alpha)			E. Expected Liquid Content	44575 Ludge		
	<1000 dpm			F. Expected Solid Content	0mc		
ACT: <u>Shirley E. Brown</u>	(Base Gamma)			G. Dose Rate Through Drill String	19"		
(HPT)	(Signature)			H. Expected Sample Length			

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

(12) Field Comments		(34) Laboratory Comments	
universal samples Bottom of sampler clean		5977000534	

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Senter Comments
7-204	2225 Lab	James S. Kels	4-12-97	
(18) Requisitioned By (Sign and PRINT)	(19) Requisitioned By (Sign and PRINT)	(20) Requisitioned By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
James S. Kels	James S. Kels	James S. Kels	4-12-97	
(23) Requisitioned By (Sign and PRINT)	(24) Requisitioned By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments	
James S. Kels	James S. Kels	4-12-97		
(27) Requisitioned By (Sign and PRINT)	(28) Requisitioned By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	
James S. Kels	James S. Kels	4-12-97		

(31) Seal Intact Upon Receipt?	(32) Seal Date Consistent with this Record?	(33) Cask Seal No.	(34) Sample No.
☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S6-95 Goldenrod - Tank Farm Operations, S4-43

BC-6000-309 (02/94)

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

SHIP 200W-08-7P
204

(1) Ship Number 97-62 (3) Supervisor R. French (7) Core 188 (8) Cask Serial Number 76
(4) Tank 3 (5) Riser 3 (6) Sigmant 3

Radiation Survey Data:		(9) FIELD		(10) SHIPMENT DESCRIPTION	
Over Top Dose Rate	<u><0.5 mR/hr</u>	(13) LABORATORY		A. Work Package Number	<u>WS-96-00306</u>
Side Dose Rate	<u><0.5 mR/hr</u>			B. Cask Seal Number	<u>1153</u>
Bottom Dose Rate	<u><0.5 mR/hr</u>			C. Sampler Serial Number	<u>96-126</u>
Measurable Contamination	<u><20 mR/hr/cm</u>			D. Date and Time Sampler Unsealed	<u>4-11-97 / 0425</u>
				E. Expected Liquid Content	<u>6487</u>
				F. Expected Solid Content	<u>364095</u>
				G. Dose Rate Through Drift Shield	<u>CMR</u>
				H. Expected Sample Length	<u>19"</u>

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

48

(12) Field Comments	(13) Laboratory Comments
Universal sampler @ sampling has small amount of waste on bottom.	597T000535

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
204	232's LAB	James Sicket	4-11-97	
(19) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)			
James Sicket	James Sicket			
(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)			
James Sicket	James Sicket			
(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)			
James Sicket	James Sicket			

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

DISTRIBUTION: White - Office of Sample Management Yellow - Recipient of Sample Pink - Core Sampling, S-95 Goldent - Tank Farm Operations, S-43

Sample No. 97-62 ☒ Yes ☐ No

PC-6000-309 (02/94)

COPY 2001-08-17

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Sample Number 97-63 (3) Supervisor R. Frank Faust
 (4) Tank T-204 (5) Riser 3 (6) Segment 4 (7) Core 188 (8) Cask Serial Number 69

Radiation Survey Data:
 (9) FIELD
 Over Top Dose Rate <0.5 mR/hr
 Side Dose Rate <0.5 mR/hr
 Bottom Dose Rate <0.5 mR/hr
 Smearable Contamination <20 dpm (Alpha)
<1000 dpm (Beta-Gamma)
 RCT James Dickie (Signature) (HPT) RCT* James Dickie (Signature) (HPT)

(33) LABORATORY
 (10) Shipment Description
 A. Work Package Number WS-96-00306
 B. Cask Seal Number 1154
 C. Sampler Serial Number 96-172
 D. Date and Time Sampler Unloaded 4-11-97/0523
 E. Expected Liquid Content VLET
 F. Expected Solid Content Sludge
 G. Door Rate-Through Drill String 0.18
 H. Expected Sample Length 19"

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

HNF-SD-WM-DP-255, REV. 0

(12) Field Comments

① Universal sampler
 ② small amount of water on bottom of samples.

(34) Laboratory Comments

SP7T000536

(13) Point of Origin <u>2223 LAB</u>	(14) Destination <u>2223 LAB</u>	(15) Sampler Name (Sign and PRINT) <u>James Dickie</u>	(16) Page/Case <u>4-11-97</u>	(17) Sender Comments
(18) Relinquished By (Sign and PRINT) <u>James Dickie</u>	(19) Received By (Sign and PRINT) <u>James Dickie</u>	(20) Date/Time <u>4-11-97</u>	(21) Date/Time <u>4-11-97</u>	(22) Receiver Comments
(23) Relinquished By (Sign and PRINT) <u>James Dickie</u>	(24) Received By (Sign and PRINT) <u>James Dickie</u>	(25) Date/Time <u>4-11-97</u>	(26) Date/Time <u>4-11-97</u>	(27) Receiver Comments
(28) Relinquished By (Sign and PRINT)	(29) Received By (Sign and PRINT)	(30) Date/Time	(31) Date/Time	(32) Receiver Comments

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

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

Shipment No. ☒ Yes ☐ No

Cask Seal No. ☒ Yes ☐ No

Sample No. ☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Print Number 2000-08-TE (2) Sample Number 97-64 (3) Supervisor Mike Jones (4) Date 4-11-97 (5) Cask Serial Number 22-G
 Ink T-204 (6) Riser 3 (7) Segment 5 (8) Core 188

(9) FIELD		(33) LABORATORY	
Print Date	<u>4-15-97</u>	Top Dose Rate	<u>2.005 mSv/hr</u>
Dose Rate	<u>4.15 hr</u>	Dose Rate	<u>2.005 mSv/hr</u>
Sample Dose Rate	<u>2.005 mSv/hr</u>	Sample Dose Rate	<u>2.005 mSv/hr</u>
Variable Contamination	<u>4-11-97</u>	Variable Contamination	<u>2.005 mSv/hr</u>
(Alpha)	<u>2.005 mSv/hr</u>	(Alpha)	<u>2.005 mSv/hr</u>
(Beta-Gamma)	<u>2.005 mSv/hr</u>	(Beta-Gamma)	<u>2.005 mSv/hr</u>
(Signature)	<u>[Signature]</u>	(Signature)	<u>[Signature]</u>
RCT* (HPT)	<u>[Signature]</u>	RCT* (HPT)	<u>[Signature]</u>

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

HNF-SD-WM-DP-255, REV. 0

COPY

(34) Laboratory Comments

(14) Destination		(15) Sender Name (Sign and PRINT)	
Print of Origin	<u>22-G</u>	Print of Origin	<u>STEVEN BLANTZ</u>
Influenced By (Sign and PRINT)	<u>[Signature]</u>	Influenced By (Sign and PRINT)	<u>[Signature]</u>
Influenced By (Sign and PRINT)	<u>[Signature]</u>	Influenced By (Sign and PRINT)	<u>[Signature]</u>
Influenced By (Sign and PRINT)	<u>[Signature]</u>	Influenced By (Sign and PRINT)	<u>[Signature]</u>
Influenced By (Sign and PRINT)	<u>[Signature]</u>	Influenced By (Sign and PRINT)	<u>[Signature]</u>

(31) Seal Intact Upon Receipt?		(32) Seal Data Consistent with this Receipt?	
Yes	☒	Yes	☒
No	☐	No	☐

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number	(2) Sample Number	(3) Supervisor	(4) Tank	(5) Riser	(6) Segment	(7) Core	(8) Cask Serial Number
2000-08-7F	3	M. C. Jones	T-204		6	188	27-6

Radiation Survey Data:		(10) Shipment Description
Over Top Dose Rate	0.54 R/h	A. Work Package Number
Side Dose Rate	0.54 R/h	B. Cask Seal Number
Bottom Dose Rate	0.54 R/h	C. Sampler Serial Number
Spentable Contamination	< 20 pCi/cm²	D. Date and Time Sampler Uncented
	(Alpha)	E. Expanded Liquid Content
	4K from location	F. Expected Solid Content
	(Signature)	G. Dose Rate Through Drill String
		H. Expanded Sample Length

(13) LABORATORY	(14) SHIPMENT
2000-08-7F	27-6
0.54 R/h	188
0.54 R/h	27-6
0.54 R/h	188
< 20 pCi/cm²	27-6
(Alpha)	188
4K from location	27-6
(Signature)	188
	27-6

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

51

HNF-SD-WM-DP-255, REV. 0

8129 Held Comments

134) Laboratory Comments

GOPY

(113) Point of Origin T-3014	(114) Destination 222-S	(115) Sender Name (Sign and PRINT) Steve B. Cantar	(116) Date/Time 04-15-97	(117) Sender Comments
(119) Relinquished By (Sign and PRINT) Steve B. Cantar	(120) Received By (Sign and PRINT) Steve B. Cantar	(121) Date/Time 04-15-97	(122) Receiver Comments	
(123) Relinquished By (Sign and PRINT) Steve B. Cantar	(124) Received By (Sign and PRINT) Steve B. Cantar	(125) Date/Time 04-15-97	(126) Receiver Comments	
(127) Relinquished By (Sign and PRINT) Steve B. Cantar	(128) Received By (Sign and PRINT) Steve B. Cantar	(129) Date/Time 04-15-97	(130) Receiver Comments	
(31) Seal Intact Upon Release? ☒ Yes ☐ No		(32) Seal Data Consistent with this Record? Seal No. ☒ Yes ☐ No		Sample No. ☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number 2000-08-TF (2) Sample Number 97-066 (3) Supervisor MC Jones (4) Cask Serial Number SN-58
 Date 7-20-94 (5) Riser 3 (6) Segment 7 (7) Core 188

(8) FIELD		(32) LABORATORY	
Location Survey Date:	<u>7-20-94</u>	(10) Shipment Description	<u>WS-96-00306</u>
Top Dose Rate	<u>1.5 mR/hr</u>	A. Work Package Number	<u>12454</u>
Dose Rate	<u>1.5 mR/hr</u>	B. Cask Seal Number	<u>96-092</u>
Bottom Dose Rate	<u>1.5 mR/hr</u>	C. Sampler Serial Number	<u>4-11-97/1400</u>
Measurable Contamination	<u>1.5 mR/hr</u>	D. Date and Time Sampler Unloaded	<u>80.90</u>
	<u>1.5 mR/hr</u>	E. Expected Liquid Content	<u>20.90</u>
	<u>1.5 mR/hr</u>	F. Expected Solid Content	<u>0.00530 L. 5 mR/hr</u>
	<u>1.5 mR/hr</u>	G. "Dose" Rate Through Dull Stung	<u>19"</u>
	<u>1.5 mR/hr</u>	H. Expected Sample Length	

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

HNF-SD-WM-DP-255, REV. 0

Field Comments

(34) Laboratory Comments

COPY

(14) Destination		(15) Sender (Name, Sign and Print)		(16) Date/Time		(17) Sender Comments	
Point of Origin	<u>222-5</u>	Signature	<u>Steven B. Cantan</u>	Date/Time	<u>07-15-94</u>		
Received By (Sign and Print)	<u>Steven B. Cantan</u>	Received By (Sign and Print)	<u>Steven B. Cantan</u>	Date/Time	<u>07-15-94</u>		
Relinquished By (Sign and Print)	<u>Steven B. Cantan</u>	Relinquished By (Sign and Print)	<u>Steven B. Cantan</u>	Date/Time	<u>07-15-94</u>		
Relinquished By (Sign and Print)	<u>Steven B. Cantan</u>	Relinquished By (Sign and Print)	<u>Steven B. Cantan</u>	Date/Time	<u>07-15-94</u>		

(31) Seal Intact Upon Release?

(32) Seal Data Consistent with this Record?

☒ Yes ☐ No

☒ Yes ☐ No

☒ Yes ☐ No

Cask Seal No.

(32) Seal Data Consistent with this Record?

☒ Yes ☐ No

Sample No.

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY

(1) Shipment Number 300W-08-TP (2) Sample Number # 97-67 (3) Supervisor Daniel Carrig Daniel Carrig

(4) Tank 7-204 (5) Release 3 (6) Segment 48 (7) Core 1881 (8) Cask Serial Number 576

Radiation Survey Data:

(9) FIELD (10) SHIPMENT DESCRIPTION

Over Top Dose Rate < 0.5 mR/hr A. Work Package Number W3-76-00306

Side Dose Rate < 0.5 mR/hr B. Cask Seal Number 12219

Bottom Dose Rate < 0.5 mR/hr C. Sampler Serial Number 76-252

Smearable Contamination < 20 dpm/100cm² D. Date and Time Sampler Unsealed 4/11/97, 1702 hr

(Alpha) AD E. Expected Liquid Content 60%

(Beta-Gamma) AD F. Expected Solid Content 40%

RCT* (HPT) 12/1/97 G. Dose Rate Through Drift Sting 0.005 Sv

(Signature) [Signature] H. Expected Sample Length 19"

(Signature) [Signature]

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

53

(34) Laboratory Comments

(12) Field Comments Sampler has a small find at bottom of sample

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
7-204	222-5 Lakes	Steven B. Carter	04-15-97	
(18) Relinquished By (Sign and PRINT)	(19) Received By (Sign and PRINT)	(20) Relinquished By (Sign and PRINT)	(21) Date/Time <td>(22) Receiver Comments</td>	(22) Receiver Comments
Steven B. Carter	James L. Knight	James L. Knight	04-15-97	
(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Relinquished By (Sign and PRINT)	(26) Date/Time <td>(27) Receiver Comments</td>	(27) Receiver Comments
James L. Knight	James L. Knight	James L. Knight	04-15-97	
(28) Relinquished By (Sign and PRINT)	(29) Received By (Sign and PRINT)	(30) Relinquished By (Sign and PRINT)	(31) Date/Time <td>(32) Receiver Comments</td>	(32) Receiver Comments

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

(19) Seal Date Consistent with this Record? ☒ Yes ☐ No

(20) Cask Seal No. 1881 (21) Sample No. 97-67

DISTRIBUTION: White - Office of Sample Management

Yellow - Recipient of Sample

Pink - Core Sampling, S6-05

Goldenrod - Tank Farm Operations, S4-03

BC-6000-303 102/94

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COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number 200W-08-TF (2) Sample Number #97-69 (3) Supervisor Daniel Garza, Daniel Day
 Tank T-204 (5) Risor 3 (6) Segment #10 (7) Core 188 (8) Cask Serial Number C-1036

Field Survey Data:

(9) FIELD (10) Shipment Description

Top Dose Rate 2.5 mR/hr A. Work Package Number WS-19-00306
 Dose Rate 2.5 mR/hr B. Cask Seal Number 12220
 Bottom Dose Rate 2.5 mR/hr C. Sampler Serial Number 96-247
 Sample Contamination 2.20 dpm/100cm² D. Date and Time Sampler Unsealed 4/11/97, 2000 hrs
 (Signature) [Signature] E. Expected Liquid Content 10%
 (Date/Signature) [Signature] F. Expected Solid Content 90%
 RCT* (HPT) [Signature] G. Dose Rate Through Drill String 0.005 Sv
 (Signature) [Signature] H. Expected Sample Length 14 1/2"

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

(34) Laboratory Comments

Only pushed 14 1/2" and HBD went off

Field Comments

(11) Destination 222-S 1405 (15) Sender Name (Sign and PRINT) Steven B Carter (17) Sender Comments
 (12) Received By (Sign and PRINT) [Signature] (18) Date/Time 4/11/97 (19) Receiver Comments
 (23) Released By (Sign and PRINT) [Signature] (24) Date/Time 4/11/97 (25) Receiver Comments
 (26) Released By (Sign and PRINT) [Signature] (27) Date/Time 4/11/97 (28) Receiver Comments
 (29) Released By (Sign and PRINT) [Signature] (30) Date/Time 4/11/97 (31) Receiver Comments

(31) Seal Intact Upon Receipt? ☒ Yes ☐ No (32) Seal Data Consistent with this Record? ☒ Yes ☐ No

Shipment No. [Signature] Cask Seal No. [Signature] Sample No. [Signature]

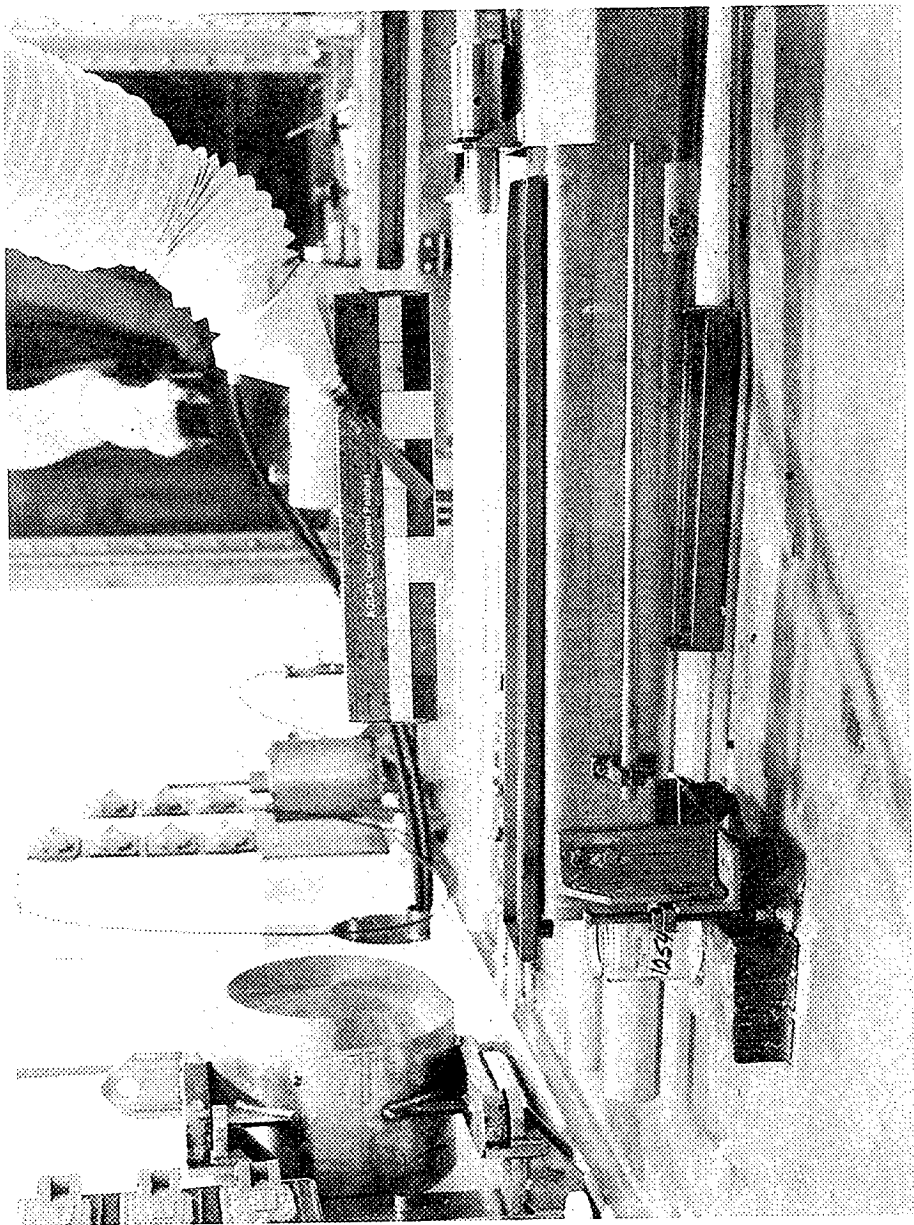
Yellow - Office of Sample Management Pink - Core Sampling, S6-B5 Goldfirmed - Tank Farm Operations, S4-43

HNF-SD-WM-DP-255, REV. 0

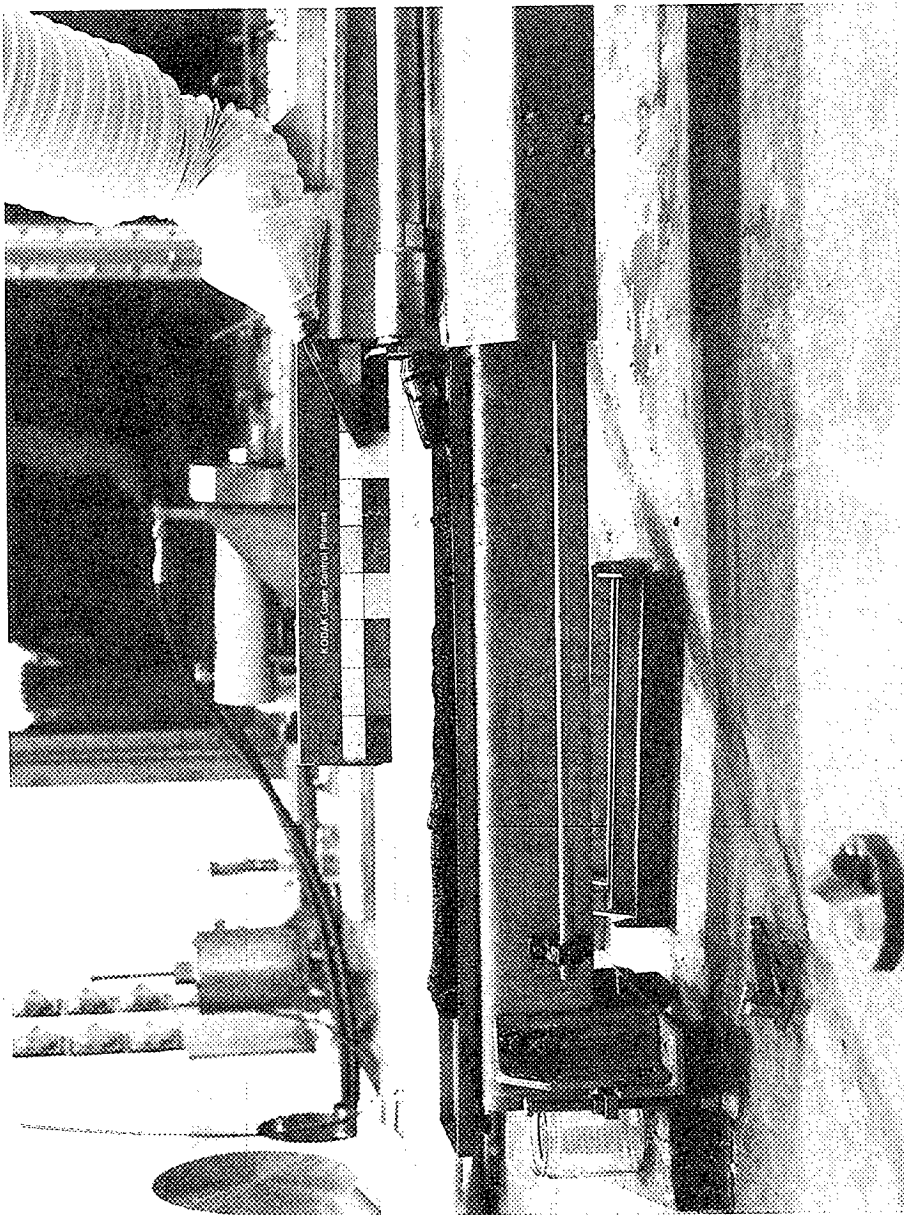
PHOTOGRAPHS

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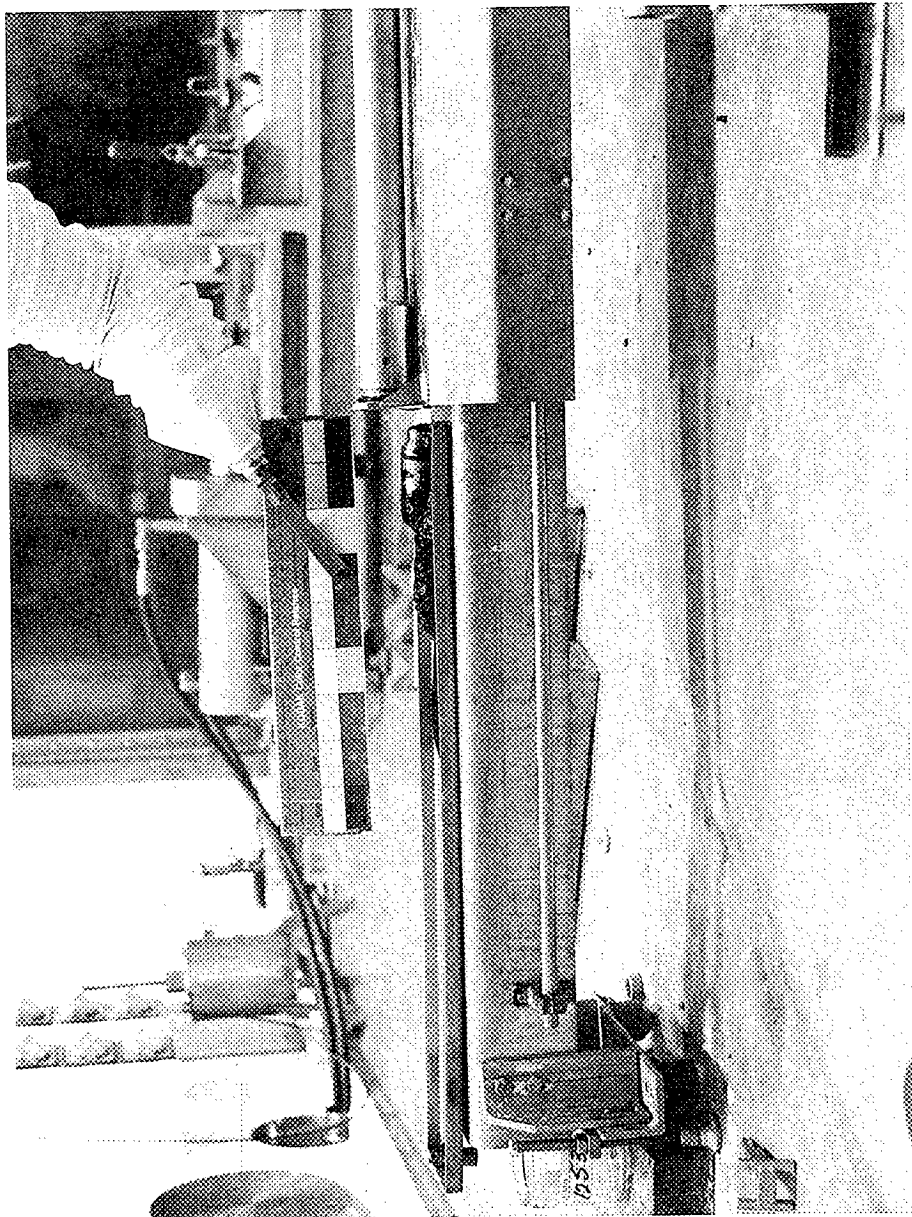
7-204 C188 Field Blank



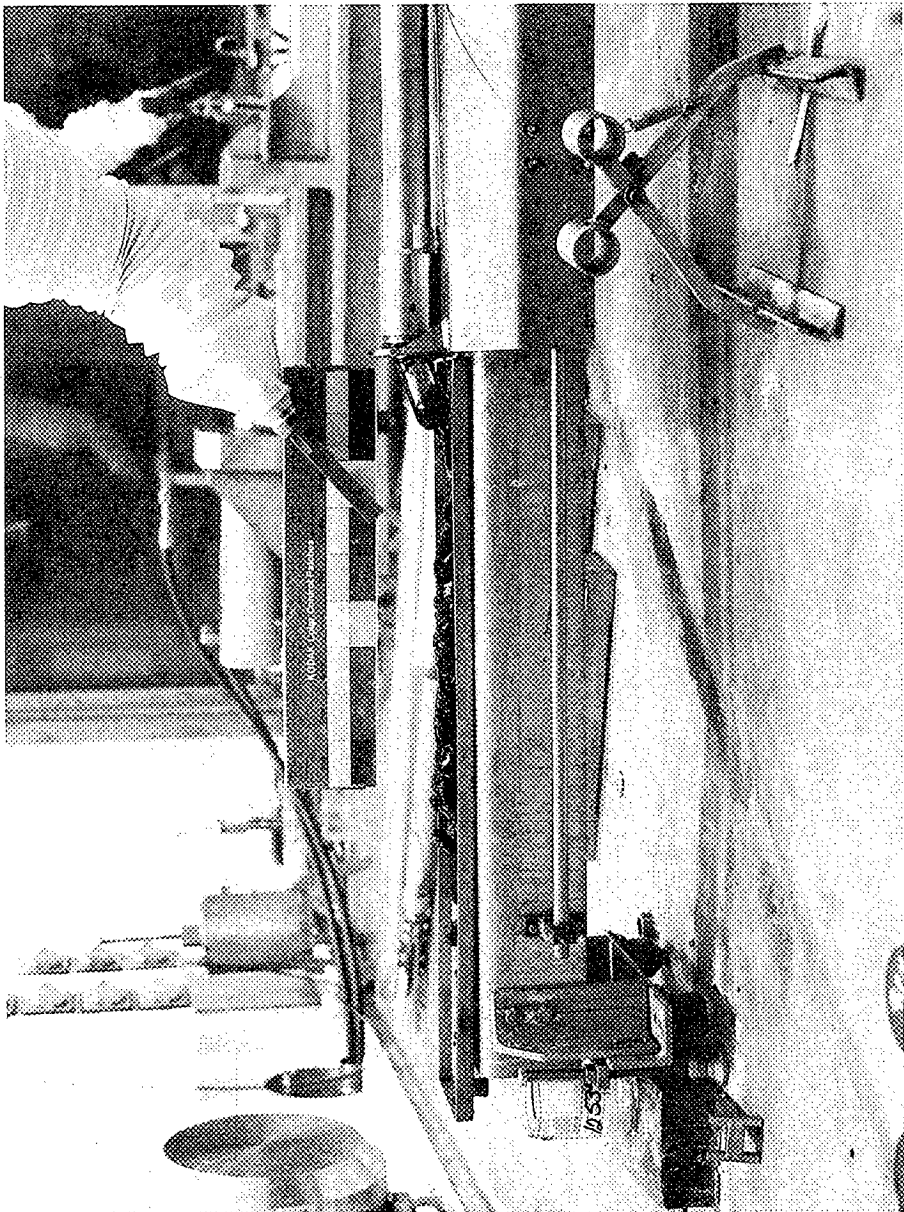
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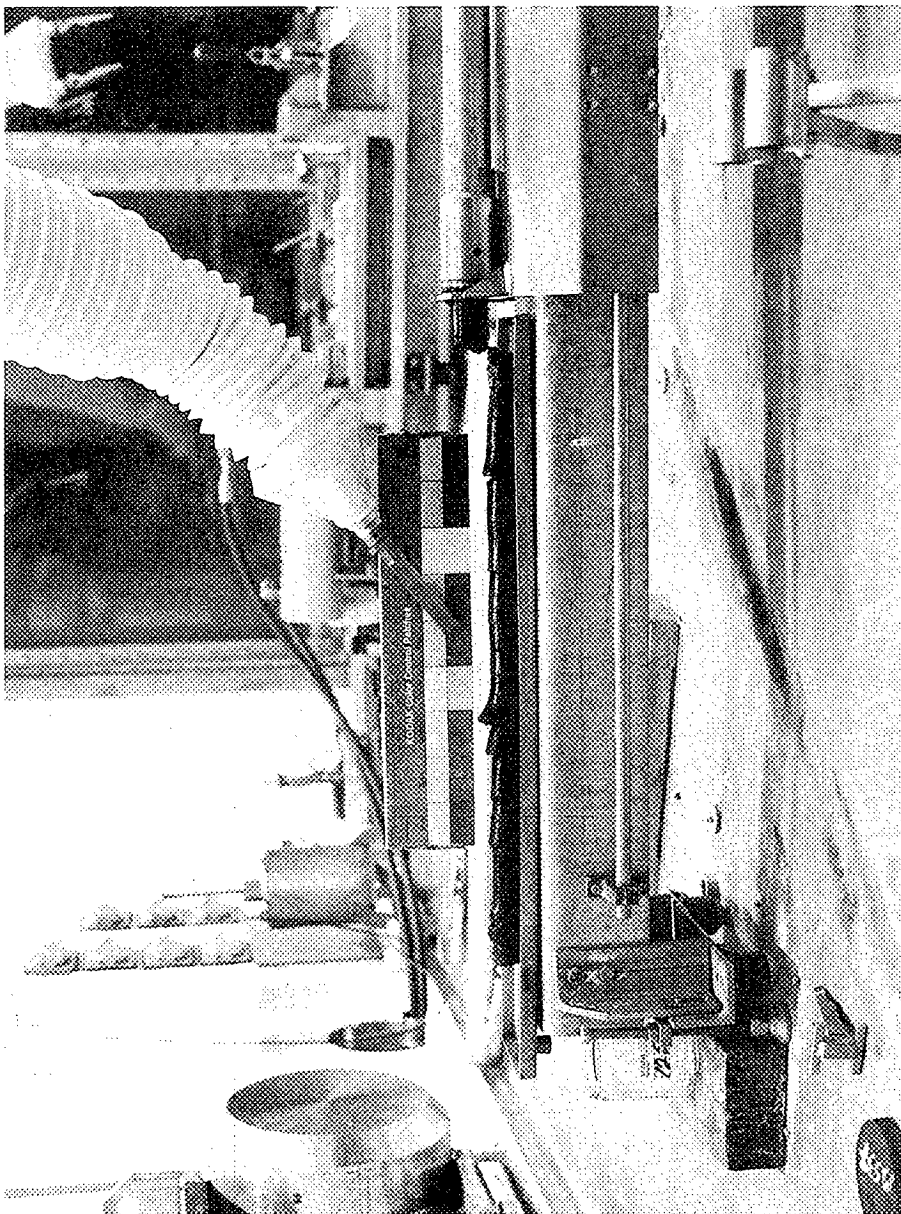
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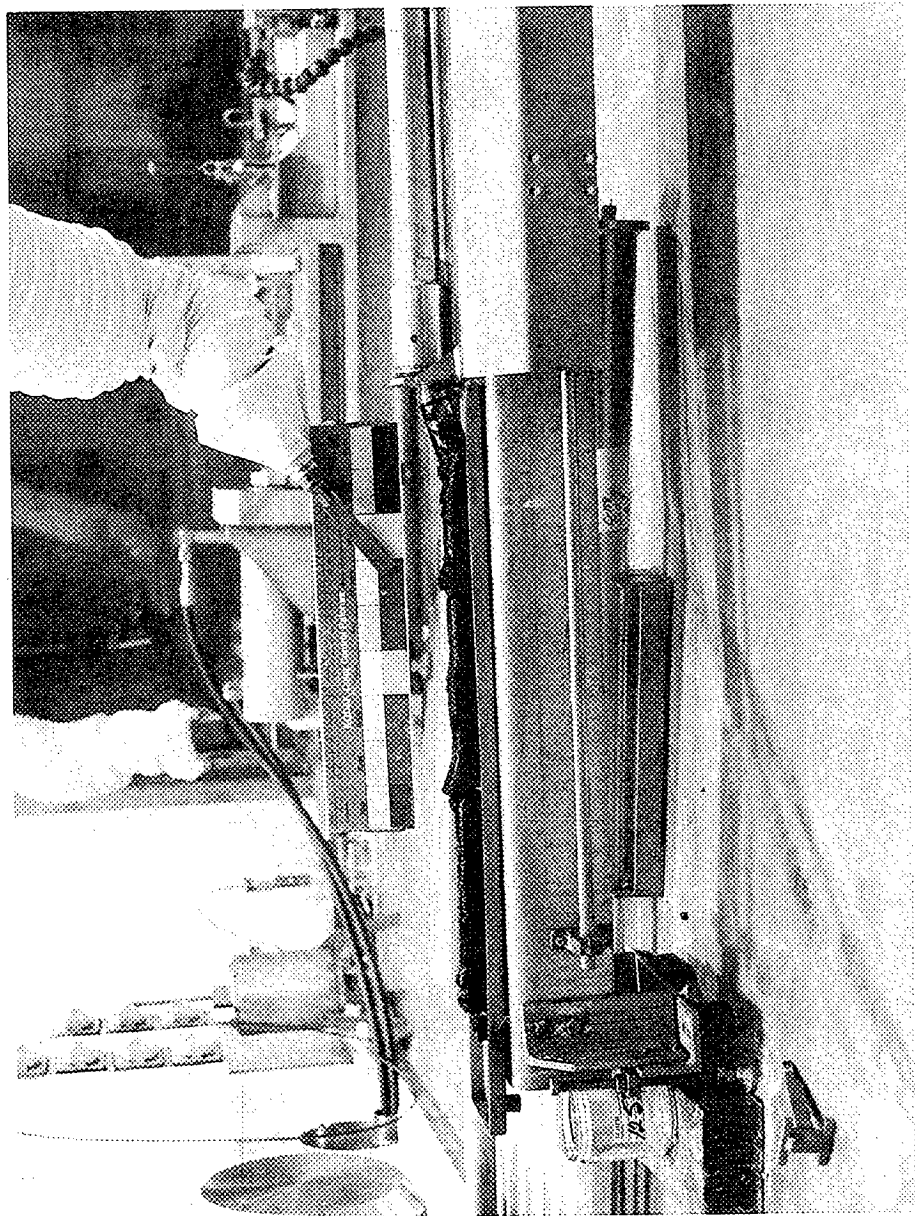
T-204 C188 Seg 3



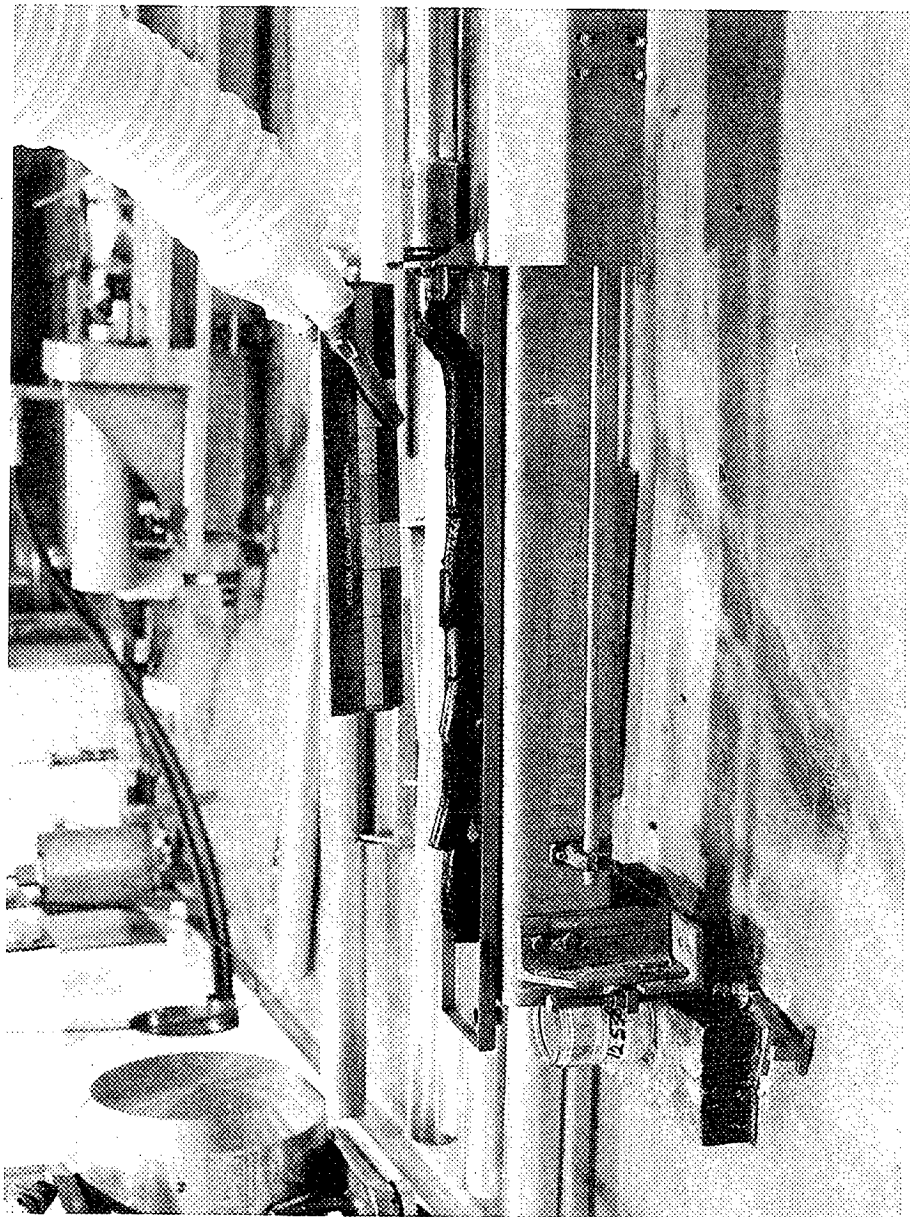
T-204 C188 Seg 4



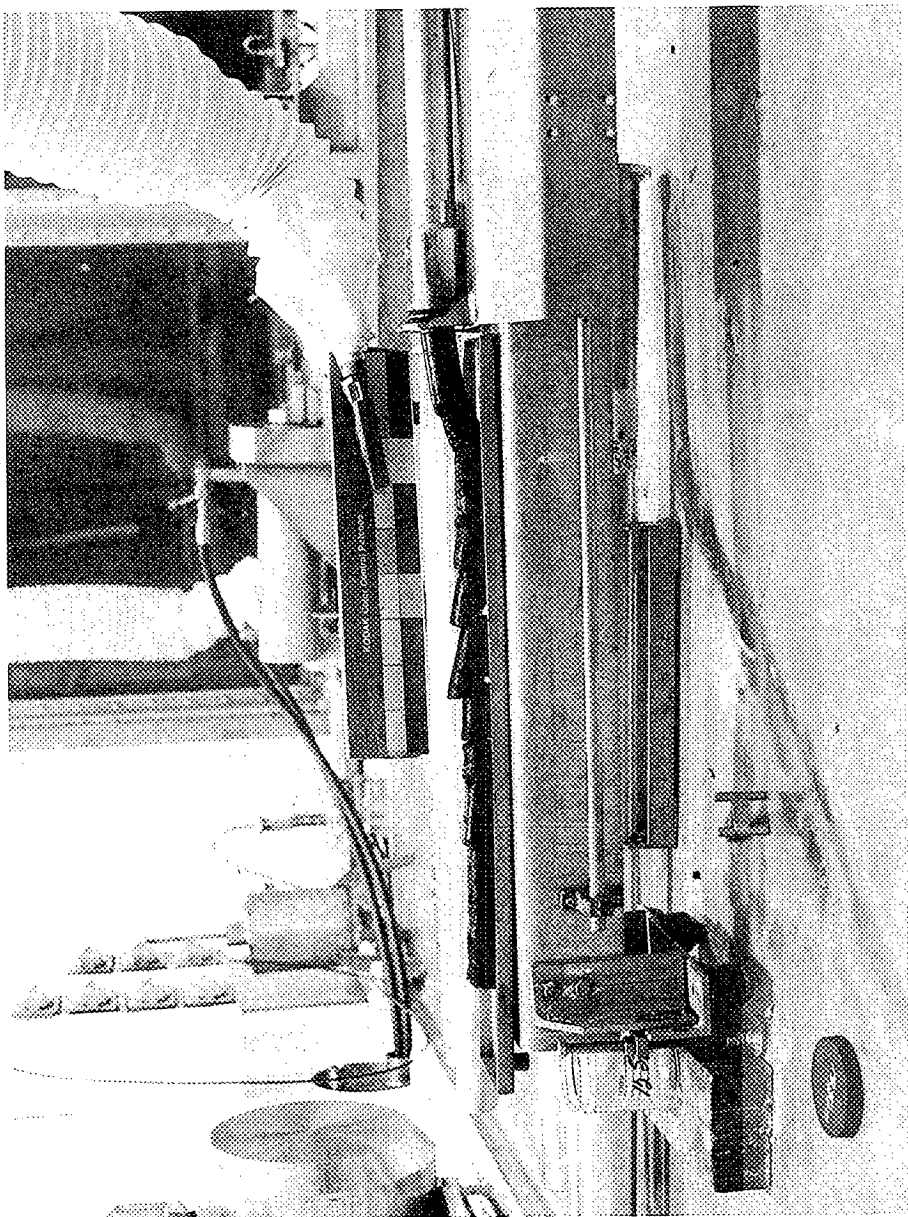
F204 C168 Seg 5



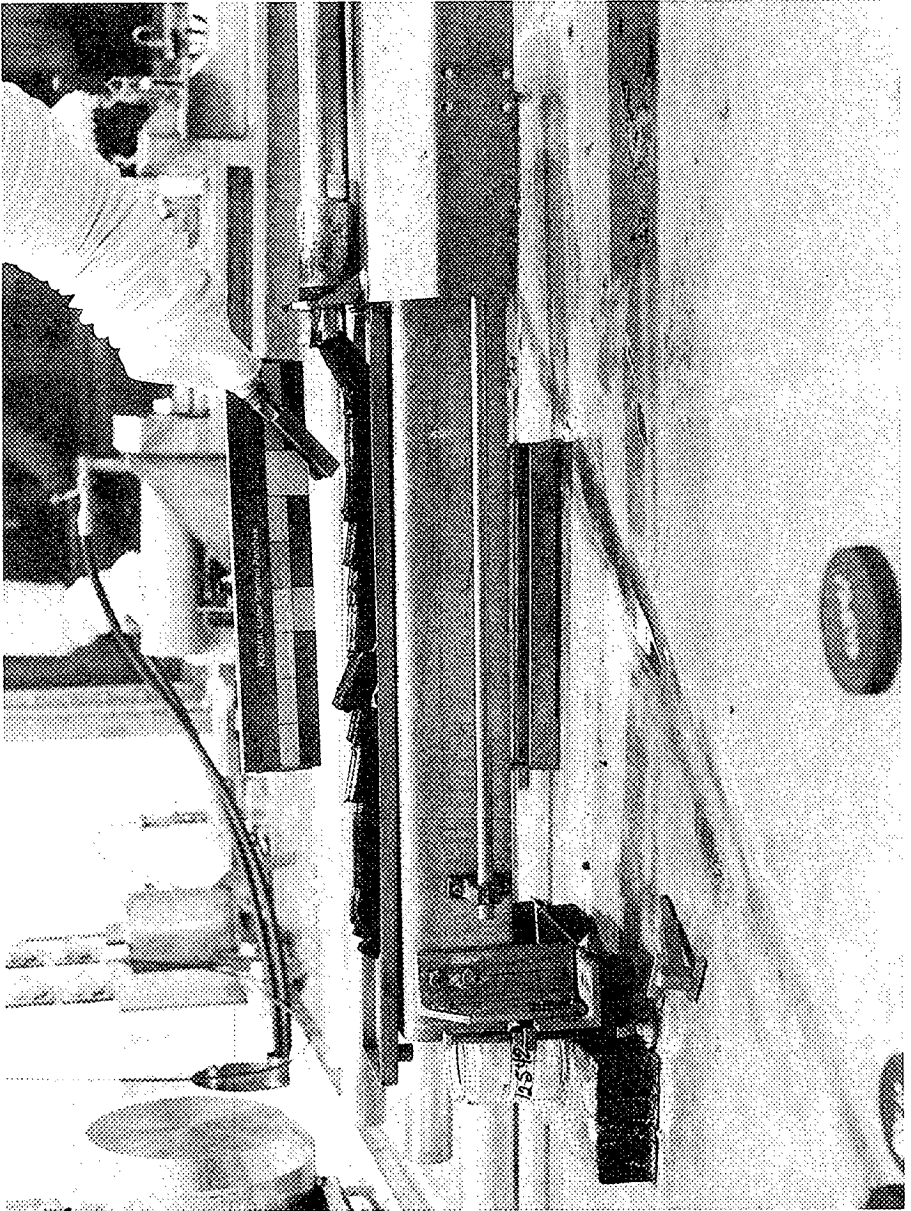
T-204 C188 Seg 6



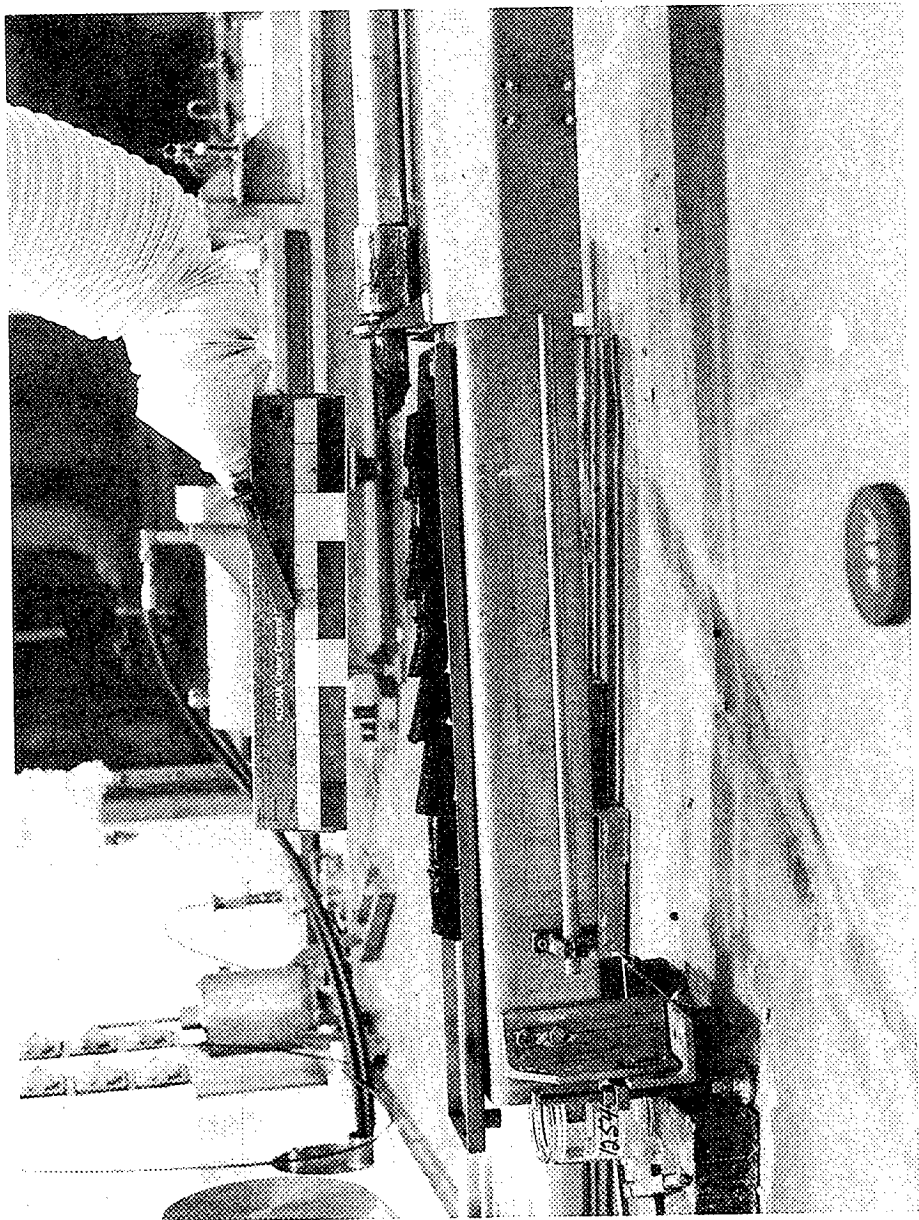
T-204 C188 Sec 7



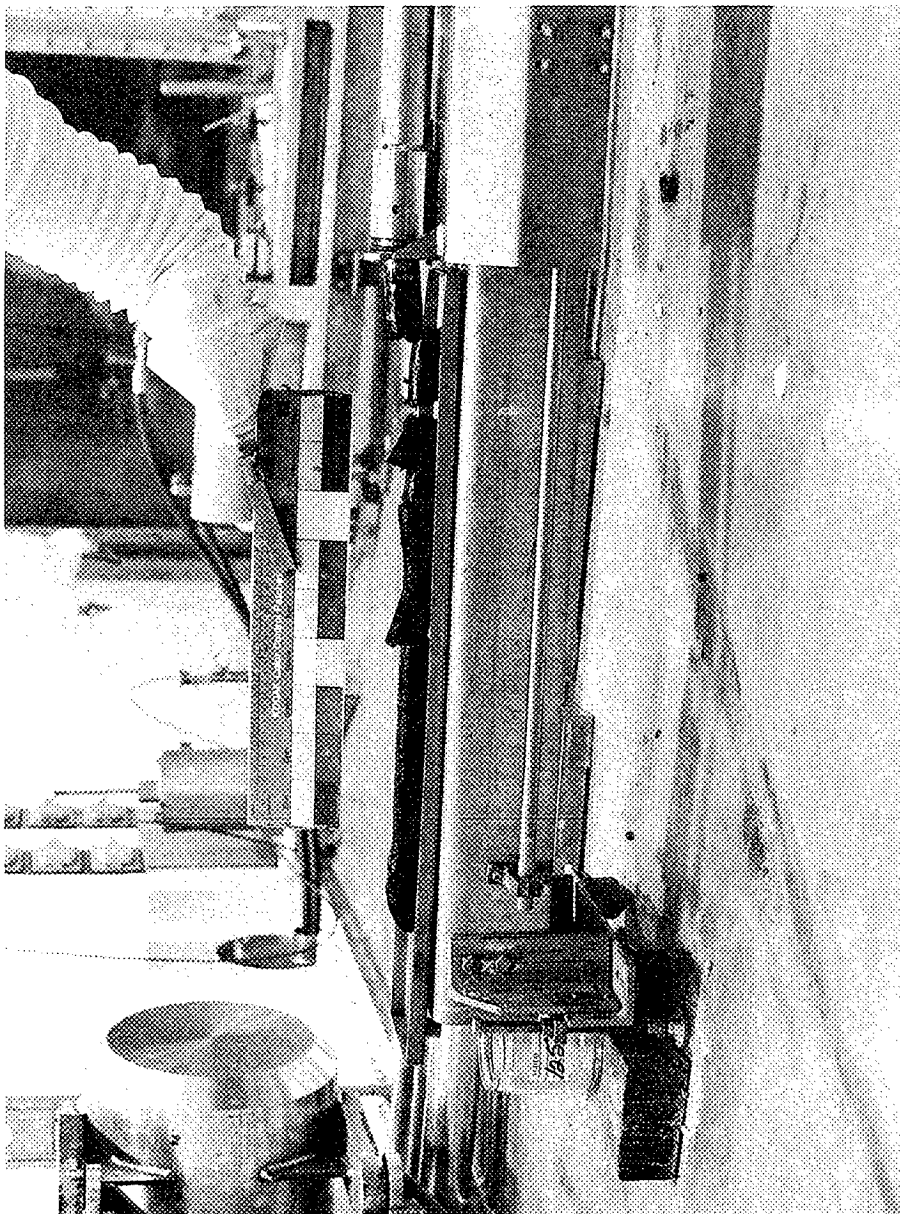
7-204 C188 Seg 8



T-204 C188' Seg 9



T-204 C188 Seg 10



HNF-SD-WM-DP-255, REV. 0

COMPOSITE WORKSHEETS

HNF-SD-WM-DP-255, REV. 0

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Composite Worksheet

06/13/97
05/29/97

09:49
09:39

0509 373 0547
0509 373 0545

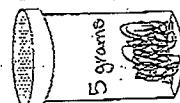
2225 HAZMAT UNIT --- LAB DATA MGMT
LAB DATA MGMT

0025
0003

Date: 5/27/97

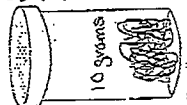
Bank: T 204

Sample PARENT
ID: S91T000494
Auger/
Core: 188
Segment: 1 LH
Jar#: 12189



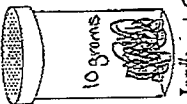
Jar/Vial Size: 250 mL
Initial Weight: 286.7 g
Final Weight: 281.0 g
Net Weight: 5.7 g

Sample PARENT
ID: S91T000495
Auger/
Core: 188
Segment: 1 LH
Jar#: 12189



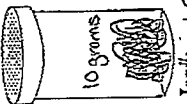
Jar/Vial Size: 60 mL
Initial Weight: 144.8 g
Final Weight: 133.5 g
Net Weight: 11.3 g

Sample ARCHIVE
ID: S91T000577
Auger/
Core: 188
Segment: 2 LH
Jar#: 12118 (Bin 105)



Jar/Vial Size: 250 mL
Initial Weight: 370.5 g
Final Weight: 298.3 g
Net Weight: 72.2 g

Sample PARENT
ID: S91T000571
Auger/
Core: 188
Segment: 3 LH
Jar#: 12535



Jar/Vial Size: 250 mL
Initial Weight: 370.5 g
Final Weight: 298.3 g
Net Weight: 72.2 g

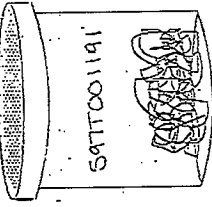
HNF-SD-WM-DP-255, REV. 0

Start Time: _____
End Time: _____

Tests:
COM POS 01
HOM GEN 01
BLK DEN 01

XIN-73

Jar#: 11835
Jar/Vial Size: 125 mL
Final Weight: 226.1 g
Initial Weight: 20.5 g
Net Weight: 105.6 g



Homogenization
Time (Min.): 5

(after final
subsample added)

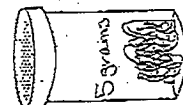
Special Instructions: Composite Using weights listed above.

Composite Worksheet

te: 5/27/97

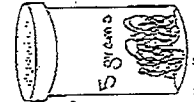
nk: 1204

Sample PARENT
ID: S91T000512
Auger/
Core: 188
Segment: 4 LH



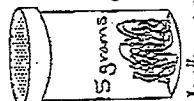
Jar#: 12537
Jar/Vial Size: 250 mL
Initial Weight: 250.0 g
Final Weight: 250.2 g
Net Weight: 1.4 g

Sample PARENT
ID: S91T000513
Auger/
Core: 188
Segment: 4 LH



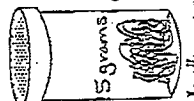
Jar#: 12536
Jar/Vial Size: 250 mL
Initial Weight: 248.9 g
Final Weight: 273.0 g
Net Weight: 7.9 g

Sample PARENT
ID: S91T000609
Auger/
Core: 188
Segment: 5 LH



Jar#: 12533
Jar/Vial Size: 250 mL
Initial Weight: 241.1 g
Final Weight: 254.9 g
Net Weight: 6.2 g

Sample PARENT
ID: S91T000627
Auger/
Core: 188
Segment: 5 LH



P.C. Nuzum
Phone# 373-3199

06/13/97 09:38 2509 373 0547
05/29/97 09:38 2509 373 0543

HNF-SD-WM-DP-255, REV. 0

LAB DATA MGMT

See Parent
Jar# 11435
on Page #1

Special Instructions:

Composite Worksheet

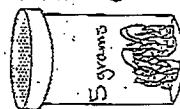
Date: 5/27/97

Bank: T204

P.C. Nuzum

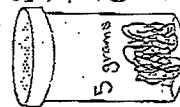
Phone# 373-3199

Sample Parent
ID: S97T000610
Auger/
Core: 188
Segment: 6 LH



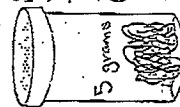
Jar/Vial Size: 250 mL
Initial Weight: 200.5 g
Final Weight: 202.6 g
Net Weight: 7.9 g

Sample Parent
ID: S97T000628
Auger/
Core: 188
Segment: 6 LH



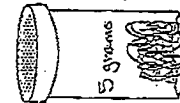
Jar/Vial Size: 250 mL
Initial Weight: 296.0 g
Final Weight: 297.5 g
Net Weight: 4.5 g

Sample Parent
ID: S97T000611
Auger/
Core: 188
Segment: 7 LH



Jar/Vial Size: 250 mL
Initial Weight: 274.5 g
Final Weight: 286.1 g
Net Weight: 6.4 g

Sample Parent
ID: S97T000629
Auger/
Core: 188
Segment: 7 LH



Jar/Vial Size: 250 mL
Initial Weight: 294.6 g
Final Weight: 288.6 g
Net Weight: 6.0 g

HNF-SD-WM-DP-255, REV. 0

See Parent
Jar# 11935
on Page #1

Special Instructions:

Composite Worksheet

06/13/97 09:47 2509 373 5047

222S HAZMAT UNIT →→→ LAB DATA MGMT

0222

05/29/97 09:41 2509 373 0545

LAB DATA MGMT

005

HNF-SD-WM-DP-255, REV. 0

P.C. Nuzum
Phone# 373-3199

te: 5/27/97

lk: 1204

Sample PARENT

ID: SA1T0000612

Auger/

Core: 188

Segment: 9 LH

12542

Jar/Vial Size: 250 mL

Initial Weight: 277.1 g

Final Weight: 267.4 g

Net Weight: 9.7 g

Sample PARENT

ID: SA1T0000630

Auger/

Core: 188

Segment: 8 LH

Jar/Vial Size: 250 mL

Initial Weight: 273.3 g

Final Weight: 264.1 g

Net Weight: 8.6 g

Sample PARENT

ID: SA1T000063

Auger/

Core: 188

Segment: 9 LH

Jar/Vial Size: 250 mL

Initial Weight: 273.6 g

Final Weight: 265.1 g

Net Weight: 8.5 g

Sample PARENT

ID: SA1T0000631

Auger/

Core: 188

Segment: 9 LH

Jar/Vial Size: 250 mL

Initial Weight: 286.1 g

Final Weight: 296.9 g

Net Weight: 9.2 g

See Parent

Jar# 11635

on Page #1

74

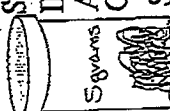
Special Instructions:

Composite Worksheet

Date: 5/27/97

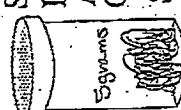
Tank: T204

Sample PARENT
ID: 5977000614
Auger/ 188
Core: 1014
Segment: 1014



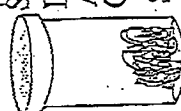
Jar/Vial Size: 250 mL
Initial Weight: 261.0 g
Final Weight: 250.9 g
Net Weight: 10.1 g

Sample PARENT
ID: 5977000632
Auger/ 188
Core: 1004
Segment: 1004



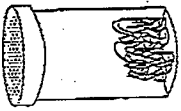
Jar/Vial Size: 250 mL
Initial Weight: 314.0 g
Final Weight: 304.5 g
Net Weight: 9.5 g

Sample
ID: 1130
Auger/ 188
Core: 1004
Segment: 1004



Jar/Vial Size: 250 mL
Initial Weight: 314.0 g
Final Weight: 304.5 g
Net Weight: 9.5 g

Sample
ID: 1130
Auger/ 188
Core: 1004
Segment: 1004



Jar/Vial Size: 250 mL
Initial Weight: 314.0 g
Final Weight: 304.5 g
Net Weight: 9.5 g

See Parent
Jar# 11435
on Page #1

Special Instructions:

HNF-SD-WM-DP-255, REV. 0

Final Composite Calculation SheetDate: 6-11-97 Technician: A CampbellTotal number of jars used to build the composite: 18Composite Jar number: 11835 Jar size: 125

- 1) Sample from segment jar 12197 to composite jar = 5.0 grams
- 2) Sample from segment jar 12189 to composite jar = 5.0 grams
- 3) Sample from segment jar 12118 to composite jar = 10.0 grams
- 4) Sample from segment jar 12535 to composite jar = 10.0 grams
- 5) Sample from segment jar 12532 to composite jar = 5.0 grams
- 6) Sample from segment jar 12537 to composite jar = 5.1 grams
- 7) Sample from segment jar 12536 to composite jar = 6.2 grams
- 8) Sample from segment jar 12533 to composite jar = 5.0 grams
- 9) Sample from segment jar 12538 to composite jar = 5.0 grams
- 10) Sample from segment jar 12539 to composite jar = 5.0 grams
- 11) Sample from segment jar 12540 to composite jar = 5.0 grams
- 12) Sample from segment jar 12544 to composite jar = 4.9 grms
- 13) Sample from segment jar 12542 to composite jar = 7.9 grms
- 14) Sample from segment jar 12543 to composite jar = 5.9 grms
- 15) " " " " 12541 " " " = 5.0 grms
- 16) " " " " " " " = 5.1 grams
- 17) " " " " " " " = 5.3 grams
- 18) " " " " " " " = 5.2 grams

abc
6-11-97 Total grams collected in composite jar # 11835 = 105.6 grams

HNF-SD-WM-DP-255, REV. 0

SAMPLE HANDLING

HNF-SD-WM-DP-255, REV. 0

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LABCORE Data Entry Template for Worklist# 17438

Analyst: JLE Instrument: BA000 Book # _____

Method: LO-160-103 Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 C188 SEG# 1 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20.05</u>	<u>N/A</u>		
		2 INSTCHK02			EXTRUD01	SOLID	<u>50.18</u>	<u>N/A</u>		
97000261	T-204	3 SAMPLE	S97T000451	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>Q</u>		ml
97000261	T-204	4 SAMPLE	S97T000451	0	DLIQWT01	SOLID	<u>N/A</u>	<u>Q</u>		g
97000261	T-204	5 SAMPLE	S97T000451	0	EST.G/ML	SOLID	<u>N/A</u>	<u>Q</u>		g/ml
97000261	T-204	6 SAMPLE	S97T000451	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	7 SAMPLE	S97T000451	0	LLIQWT01	SOLID	<u>N/A</u>	<u>45</u>		g
97000261	T-204	8 SAMPLE	S97T000451	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>WHLN-1392</u>		
97000261	T-204	9 SAMPLE	S97T000451	0	SLDVOL01	SOLID	<u>N/A</u>	<u>N/A</u>		ml
97000261	T-204	10 SAMPLE	S97T000451	0	SLDWT-01	SOLID	<u>N/A</u>	<u>3115</u>		g
97000261	T-204	11 SAMPLE	S97T000451	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	12 SAMPLE	S97T000451	0	ORGVOL01	SOLID	<u>N/A</u>	<u>Q</u>		ml

Final page for worklist # 17438

Jessie S. Sinskey 4/19/97
Analyst Signature Date
N. Lapins 4-10-97

Jessie S. Sinskey 4/19/97
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# 17566

Analyst: EL Instrument BA000 Book # N/A

Method: LO-160-103 Rev/Mod B0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: 204 C188 SEG # 2 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.00</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.14</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000534	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		ml
97000261	T-204	4 SAMPLE	S97T000534	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000534	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
97000261	T-204	6 SAMPLE	S97T000534	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	7 SAMPLE	S97T000534	0	LLIQWT01	SOLID	<u>N/A</u>	<u><10</u>		g
97000261	T-204	8 SAMPLE	S97T000534	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>11392</u>		
97000261	T-204	9 SAMPLE	S97T000534	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		ml
97000261	T-204	10 SAMPLE	S97T000534	0	SLDWT-01	SOLID	<u>N/A</u>	<u>94.2</u>		g
97000261	T-204	11 SAMPLE	S97T000534	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	12 SAMPLE	S97T000534	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		ml

Final page for worklist # 17566

EL 4-18-97
 Analyst Signature Date
 Validated by: W Lapins 4-18-97

EL 4-18-97
 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# 17567

Analyst: EC Instrument BA000 Book # NA

Method: LO-160-103 Rev/Mod D0

Worklist Comment: #204 C188 SEG # 3 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.00</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.14</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000535	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
97000261	T-204	4 SAMPLE	S97T000535	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000535	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
97000261	T-204	6 SAMPLE	S97T000535	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	7 SAMPLE	S97T000535	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	8 SAMPLE	S97T000535	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>11-1392</u>		
97000261	T-204	9 SAMPLE	S97T000535	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		mL
97000261	T-204	10 SAMPLE	S97T000535	0	SLDWT-01	SOLID	<u>N/A</u>	<u>216.6</u>		g
97000261	T-204	11 SAMPLE	S97T000535	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	12 SAMPLE	S97T000535	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 17567

SLD 4-18-97
Analyst Signature Date
Validated by: H Lapins 4-18-97

SLD 4-18-97
Analyst Signature Date

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17568

Analyst: CE Instrument# BA000 Book # NA

Method: LO-160-103 Rev/Mod 00

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: #204 C188 SEG # 4 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.00</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.14</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000536	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		ml
97000261	T-204	4 SAMPLE	S97T000536	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000536	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/ml
97000261	T-204	6 SAMPLE	S97T000536	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	7 SAMPLE	S97T000536	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	8 SAMPLE	S97T000536	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>N-1392</u>		
97000261	T-204	9 SAMPLE	S97T000536	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		ml
97000261	T-204	10 SAMPLE	S97T000536	0	SLDWT-01	SOLID	<u>N/A</u>	<u>355.9</u>		g
97000261	T-204	11 SAMPLE	S97T000536	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	12 SAMPLE	S97T000536	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		ml

Final page for worklist # 17568

Analyst Signature

Date

Validated by: N Lapins 4-18-97

Analyst Signature

Date

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17569

Analyst: ABC Instrument BA000 Book # NA

Method: LO-160-103 Rev/Mod 30

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 C188 SEG # 5 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.00</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500/5</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000565	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		ml
97000261	T-204	4 SAMPLE	S97T000565	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000565	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/ml
97000261	T-204	6 SAMPLE	S97T000565	0	EXTRUD01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000261	T-204	7 SAMPLE	S97T000565	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	8 SAMPLE	S97T000565	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>N-1392</u>		
97000261	T-204	9 SAMPLE	S97T000565	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		ml
97000261	T-204	10 SAMPLE	S97T000565	0	SLDWT-01	SOLID	<u>N/A</u>	<u>355.4</u>		g
97000261	T-204	11 SAMPLE	S97T000565	0	APPEAR01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000261	T-204	12 SAMPLE	S97T000565	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		ml

Final page for worklist # 17569

ABC Campbell 4/21/97
Analyst Signature Date

ABC Campbell 4/21/97
Analyst Signature Date

Validated By M Lopez 4-21-97

Data Entry Comments:

worklistrpt Version 2.1 05/15/95
04/15/97 14:31

Page:

LABCORE Data Entry Template for Worklist# 17570

Analyst: AB Instrument EA000Book # NAMethod: LO-160-103 Rev/Mod BD

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 C188 SEG # 6 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.00</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500.00</u>	<u>500.15</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000564	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
97000261	T-204	4 SAMPLE	S97T000564	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000564	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
97000261	T-204	6 SAMPLE	S97T000564	0	EXTRUD01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000261	T-204	7 SAMPLE	S97T000564	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	8 SAMPLE	S97T000564	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>N-B92</u>		
97000261	T-204	9 SAMPLE	S97T000564	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		mL
97000261	T-204	10 SAMPLE	S97T000564	0	SLDWT-01	SOLID	<u>N/A</u>	<u>361.4</u>		g
97000261	T-204	11 SAMPLE	S97T000564	0	APPEAR01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000261	T-204	12 SAMPLE	S97T000564	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 17570

Analyst Signature Alan B Campbell Date 4/21/97Analyst Signature Alan B Campbell Date 4/21/97Validated by H Lapins 4-21-97

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# 17571

Analyst: ABC Instrument EA000 Book # NA

Method: LO-160-103 Rev/Mod BO HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 C188 SEG # 7 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.00</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.15</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000563	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		ml
97000261	T-204	4 SAMPLE	S97T000563	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000563	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
97000261	T-204	6 SAMPLE	S97T000563	0	EXTRUD01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000261	T-204	7 SAMPLE	S97T000563	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	8 SAMPLE	S97T000563	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>N-1392</u>		
97000261	T-204	9 SAMPLE	S97T000563	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		ml
97000261	T-204	10 SAMPLE	S97T000563	0	SLDWT-01	SOLID	<u>N/A</u>	<u>355.9</u>		g
97000261	T-204	11 SAMPLE	S97T000563	0	APPEAR01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000261	T-204	12 SAMPLE	S97T000563	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		ml

Final page for worklist # 17571

Alan B Campbell 4/21/97
Analyst Signature Date
Validated by H Lapins 4-21-97

Alan B Campbell 4/21/97
Analyst Signature Date

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17602

Analyst: ABC Instrument: BA000 Book # NA

Method: LO-160-103 Rev/Mod BO HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 C188 SEG # 8 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.00</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.15</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000566	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
97000261	T-204	4 SAMPLE	S97T000566	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000566	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
97000261	T-204	6 SAMPLE	S97T000566	0	EXTRUD01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000261	T-204	7 SAMPLE	S97T000566	0	LLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	8 SAMPLE	S97T000566	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>N-1392</u>		
97000261	T-204	9 SAMPLE	S97T000566	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		mL
97000261	T-204	10 SAMPLE	S97T000566	0	SLDWT-01	SOLID	<u>N/A</u>	<u>352.6</u>		g
97000261	T-204	11 SAMPLE	S97T000566	0	APPEAR01	SOLID	<u>N/A</u>	<u>Complete</u>		
97000261	T-204	12 SAMPLE	S97T000566	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 17602

Alan B. Campbell 4/21/97
Analyst Signature Date
Validated by JJ Lapins 4-21-97

Alan B. Campbell 4/21/97
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# 17603

Analyst: CE Instrument: BA000 Book # NA
Method: LO-160-103 Rev/Mod BO HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T-204 C188 FIELD BLANK RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.09</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.21</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000568	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>250</u>		mL
97000261	T-204	4 SAMPLE	S97T000568	0	DLIQWT01	SOLID	<u>N/A</u>	<u>272.8</u>		g
97000261	T-204	5 SAMPLE	S97T000568	0	EST.G/ML	SOLID	<u>N/A</u>	<u>1.09</u>		g/mL
97000261	T-204	6 SAMPLE	S97T000568	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	7 SAMPLE	S97T000568	0	LLIQWT01	SOLID	<u>N/A</u>			g
97000261	T-204	8 SAMPLE	S97T000568	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>N-1392</u>		
97000261	T-204	9 SAMPLE	S97T000568	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		mL
97000261	T-204	10 SAMPLE	S97T000568	0	SLDWT-01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	11 SAMPLE	S97T000568	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	12 SAMPLE	S97T000568	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 17603

CE 4-22-97
Analyst Signature Date
Validated by N Lapins 4-22-97

CE 4-22-97
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# 17604

Analyst: CC Instrument: BA000 Book # NA

Method: LO-160-103 Rev/Mod B0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 C188 SEG # 9 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.09</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.21</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000567	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
97000261	T-204	4 SAMPLE	S97T000567	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000567	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
97000261	T-204	6 SAMPLE	S97T000567	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	7 SAMPLE	S97T000567	0	LLIQWT01	SOLID	<u>N/A</u>	<u><5</u>		g
97000261	T-204	8 SAMPLE	S97T000567	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>1-1392</u>		
97000261	T-204	9 SAMPLE	S97T000567	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		mL
97000261	T-204	10 SAMPLE	S97T000567	0	SLDWT-01	SOLID	<u>N/A</u>	<u>327.6</u>		g
97000261	T-204	11 SAMPLE	S97T000567	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	12 SAMPLE	S97T000567	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 17604

CC 4-22-97
Analyst Signature Date

CC 4-22-97
Analyst Signature Date

Validated by N. Lapins 4-22-97

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# 17605

Analyst: EC Instrument: BA000 Book # NA
Method: LO-160-103 Rev/Mod B0 HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T-204 C188 SEG # 10 RISER 3 EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 INSTCHK01			EXTRUD01	SOLID	<u>20</u>	<u>20.09</u>	<u>N/A</u>	
		2 INSTCHK02			EXTRUD01	SOLID	<u>500</u>	<u>500.21</u>	<u>N/A</u>	
97000261	T-204	3 SAMPLE	S97T000569	0	DLIQVOL1	SOLID	<u>N/A</u>	<u>0</u>		mL
97000261	T-204	4 SAMPLE	S97T000569	0	DLIQWT01	SOLID	<u>N/A</u>	<u>0</u>		g
97000261	T-204	5 SAMPLE	S97T000569	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/mL
97000261	T-204	6 SAMPLE	S97T000569	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	7 SAMPLE	S97T000569	0	LLIQWT01	SOLID	<u>N/A</u>	<u>45</u>		g
97000261	T-204	8 SAMPLE	S97T000569	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>NB92</u>		
97000261	T-204	9 SAMPLE	S97T000569	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>		mL
97000261	T-204	10 SAMPLE	S97T000569	0	SLDWT-01	SOLID	<u>N/A</u>	<u>347.2</u>		g
97000261	T-204	11 SAMPLE	S97T000569	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>		
97000261	T-204	12 SAMPLE	S97T000569	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		mL

Final page for worklist # 17605

CSC 4-22-97
Analyst Signature Date

CSC 4-22-97
Analyst Signature Date

Validated by N. Lapins 4-22-97

Data Entry Comments:

HNF-SD-WM-DP-255, REV. 0

SAMPLE PREPARATIONS

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Analyst: KNT

Instrument: FUS01

Book # _____

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

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 FUSION DIGEST C188S1LH, 2LH, 3LH lad

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
1 BLNK-PREP										
97000261	T-204				FUSION01	SOLID	1	.250	N/A	g/L
		2 SAMPLE	S97T000587	0 F						
		.5065	→ .250L		FUSION01	SOLID	N/A	2.0260		g/L
97000261	T-204	3 SAMPLE	S97T000587	0 F	DOSE-02	SOLID	N/A	1.5		mrad/hour
97000261	T-204	4 DUP	S97T000587	0 F	FUSION01	SOLID	2.0260	2.0688	N/A	g/L
97000261	T-204	.5172	→ .250L							
97000261	T-204	5 DUP	S97T000587	0 F	DOSE-02	SOLID	<.5	<.5	N/A	mrad/hour
97000261	T-204	6 SAMPLE	S97T000588	0 F	FUSION01	SOLID	N/A	1.9084		g/L
97000261	T-204	.4771	→ .250L							
97000261	T-204	7 SAMPLE	S97T000588	0 F	DOSE-02	SOLID	N/A	1.5		mrad/hour
97000261	T-204	8 DUP	S97T000588	0 F	FUSION01	SOLID	1.9084	1.9712	N/A	g/L
97000261	T-204	.4928	→ .250L							
97000261	T-204	9 DUP	S97T000588	0 F	DOSE-02	SOLID	<.5	<.5	N/A	mrad/hour
97000261	T-204	10 SAMPLE	S97T000589	0 F	FUSION01	SOLID	N/A	1.9248		g/L
97000261	T-204	.4812	→ .250L							
97000261	T-204	11 SAMPLE	S97T000589	0 F	DOSE-02	SOLID	N/A	1.5		mrad/hour
97000261	T-204	12 DUP	S97T000589	0 F	FUSION01	SOLID	1.9248	1.8448	N/A	g/L
97000261	T-204	.4612	→ .250L							
97000261	T-204	13 DUP	S97T000589	0 F	DOSE-02	SOLID	<.5	<.5	N/A	mrad/hour

Final page for worklist # 17711

Kim Thomas
 Analyst Signature

4-30-97
 Date

Kim Thomas
 Analyst Signature

4-30-97
 Date

S97T000498 → S97T000587
 S97T000574 → S97T000588
 S97T000575 → S97T000589

Data Entry Comments:

FAXED 4-30-97

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

REVIEWER SIGNATURE

DATE

LABCORE Data Entry Template for Worklist# 17712

Analyst: *KEN*

Instrument: FUS01

Book #

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

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 FUSION DIGEST C188S4LH, 5LH, 6LH, lad

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP				FUSION01	SOLID	<i>1</i>	<i>.250</i>	N/A g/L
97000261	T-204	2 SAMPLE	S97T000590	0 F		FUSION01	SOLID	<i>N/A</i>	<i>2.2032</i>	g/L
97000261	T-204	3 SAMPLE	S97T000590	0 F		DOSE-02	SOLID	<i>N/A</i>	<i>2.5</i>	mrad/hour
97000261	T-204	4 DUP	S97T000590	0 F		FUSION01	SOLID	<i>2.2032</i>	<i>2.1864</i>	N/A g/L
97000261	T-204	5 DUP	S97T000590	0 F		DOSE-02	SOLID	<i>2.5</i>	<i>2.5</i>	N/A mrad/hour
97000261	T-204	6 SAMPLE	S97T000621	0 F		FUSION01	SOLID	<i>N/A</i>	<i>2.1340</i>	g/L
97000261	T-204	7 SAMPLE	S97T000621	0 F		DOSE-02	SOLID	<i>N/A</i>	<i>2.5</i>	mrad/hour
97000261	T-204	8 DUP	S97T000621	0 F		FUSION01	SOLID	<i>2.1340</i>	<i>2.1128</i>	N/A g/L
97000261	T-204	9 DUP	S97T000621	0 F		DOSE-02	SOLID	<i>2.5</i>	<i>2.5</i>	N/A mrad/hour
97000261	T-204	10 SAMPLE	S97T000622	0 F		FUSION01	SOLID	<i>N/A</i>	<i>2.0472</i>	g/L
97000261	T-204	11 SAMPLE	S97T000622	0 F		DOSE-02	SOLID	<i>N/A</i>	<i>2.5</i>	mrad/hour
97000261	T-204	12 DUP	S97T000622	0 F		FUSION01	SOLID	<i>2.0472</i>	<i>2.3196</i>	N/A g/L
97000261	T-204	13 DUP	S97T000622	0 F		DOSE-02	SOLID	<i>2.5</i>	<i>2.5</i>	N/A mrad/hour

Final page for worklist # 17712

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

S97T000576 → S97T000590
S97T000603 → S97T000621
S97T000604 → S97T000622

Faxed 4-30-97

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.

REVIEWER SIGNATURE

DATE

May. 2. 1997

3:50AM

WHC 222S LAB ROOM 2F BACKSIDE

No. 2643 P. 1/1

HNF-SD-WM-DP-245, REV. 0

mkt 7-14-97

Page: 1

Worklist Version 2.1 05/15/95
05/01/97 17:46

LABCORE Data Entry Template for Worklist# 17713

Analyst: LYNN

Instrument: FUS01

Book # 117A

Method: LA-549-141 Rev/Mod

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 FUSION DIGEST C188S7LH, 8LH, 9LH, 10LH lad

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	<u>1</u>	<u>250</u>	N/A	g/L
97000261	T-204	2 SAMPLE	S97T000623 O F		FUSION01	SOLID	N/A	<u>1.9188</u>		g/L
		<u>.1797</u> → <u>.250 l</u>								
97000261	T-204	3 SAMPLE	S97T000623 O F		DOSE-02	SOLID	N/A	<u>10.5</u>		mrad/hour
97000261	T-204	4 DUP	S97T000623 O F		FUSION01	SOLID	<u>1.9188</u>	<u>1.9192</u>	N/A	g/L
		<u>.4798</u> → <u>.250 l</u>								
97000261	T-204	5 DUP	S97T000623 O F		DOSE-02	SOLID	<u><0.5</u>	<u>10.5</u>	N/A	mrad/hour
97000261	T-204	6 SAMPLE	S97T000624 O F		FUSION01	SOLID	N/A	<u>1.8076</u>		g/L
		<u>.4519</u> → <u>.250 l</u>								
97000261	T-204	7 SAMPLE	S97T000624 O F		DOSE-02	SOLID	N/A	<u>10.5</u>		mrad/hour
97000261	T-204	8 DUP	S97T000624 O F		FUSION01	SOLID	<u>1.8076</u>	<u>1.8541</u>	N/A	g/L
		<u>.4636</u> → <u>.250 l</u>								
97000261	T-204	9 DUP	S97T000624 O F		DOSE-02	SOLID	<u><0.5</u>	<u>10.5</u>	N/A	mrad/hour
97000261	T-204	10 SAMPLE	S97T000625 O F		FUSION01	SOLID	N/A	<u>1.9120</u>		g/L
		<u>.4905</u> → <u>.250 l</u>								
97000261	T-204	11 SAMPLE	S97T000625 O F		DOSE-02	SOLID	N/A	<u>10.5</u>		mrad/hour
97000261	T-204	12 DUP	S97T000625 O F		FUSION01	SOLID	<u>1.9120</u>	<u>1.9276</u>	N/A	g/L
		<u>.4819</u> → <u>.250 l</u>								
97000261	T-204	13 DUP	S97T000625 O F		DOSE-02	SOLID	<u><0.5</u>	<u>10.5</u>	N/A	mrad/hour
97000261	T-204	14 SAMPLE	S97T000626 O F		FUSION01	SOLID	N/A	<u>1.9784</u>		g/L
		<u>.4946</u> → <u>.250 l</u>								
97000261	T-204	15 SAMPLE	S97T000626 O F		DOSE-02	SOLID	N/A	<u>10.5</u>		mrad/hour
97000261	T-204	16 DUP	S97T000626 O F		FUSION01	SOLID	<u>1.9784</u>	<u>1.9340</u>	N/A	g/L
		<u>.4835</u> → <u>.250 l</u>								
97000261	T-204	17 DUP	S97T000626 O F		DOSE-02	SOLID	<u><0.5</u>	<u>10.5</u>	N/A	mrad/hour

Data Entry Comments:

Found 58-97

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.

worklist Version 2.1 05/15/95
05/01/97 17:46

HNF-SD-WM-DP-245, REV. 0

05-2-97

Page: 2

LABCORE Data Entry Template for Worklist# 17713

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
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Final page for worklist # 17713

Analyst Signature

Date

5-2-97

Analyst Signature

Date

5-2-97

HNF-SD-WM-DP-255, REV. 0

m. GCH
5/3/97

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# 18345

Analyst: R/K Instrument: FUS01 Book # _____

Method: LA-549-141 Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 FUSION DIGEST CORE COMPOSITE C188 lad

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			FUSION01	SOLID	<u>1</u>	<u>.250L</u>	<u>N/A</u>	<u>g/L</u>
97000261	T-204	2 SAMPLE	S97T001198 0 F		DOSE-02	SOLID	<u>N/A</u>	<u>2.194</u>		<u>mrad/hour</u>
		<u>.5485</u> → <u>.250L</u>								
97000261	T-204	3 SAMPLE	S97T001198 0 F		FUSION01	SOLID	<u>N/A</u>	<u>2.5</u>		<u>g/L</u>
97000261	T-204	4 DUP	S97T001198 0 F		DOSE-02	SOLID	<u>2.194</u>	<u>2.174</u>	<u>N/A</u>	<u>mrad/hour</u>
		<u>.5436</u> → <u>.250L</u>								
97000261	T-204	5 DUP	S97T001198 0 F		FUSION01	SOLID	<u>2.5</u>	<u>2.5</u>	<u>N/A</u>	<u>g/L</u>

Final page for worklist # 18345

Not Kim 6/20/97
Analyst Signature Date

Analyst Signature Date

S97T001197 → S97T001198

Validated
6/25/97
R K Fuller

Data Entry Comments: Submitted by R K Fuller 6/20

LABCORE Data Entry Template for Worklist# 18346

Analyst: RLM Instrument: H2001 Book # _____

Method: LA-504-101 Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 H2O DIGEST CORE COMPOSITE C188 lad

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2001G01	SOLID	<u>1</u>	<u>.100</u>	<u>N/A</u>	g/L
97000261	T-204	2 SAMPLE	S97T001200 0 W		H2001G01	SOLID	<u>N/A</u>	<u>4.851</u>		g/L
97000261	T-204	3 SAMPLE	S97T001200 0 W		DOSE-02	SOLID	<u>N/A</u>	<u>4.5</u>		mrad/hour
97000261	T-204	4 DUP	S97T001200 0 W		H2001G01	SOLID	<u>4.851</u>	<u>4.871</u>	<u>N/A</u>	g/L
97000261	T-204	5 DUP	S97T001200 0 W		DOSE-02	SOLID	<u>4.5</u>	<u>4.5</u>	<u>N/A</u>	mrad/hour

Final page for worklist # 18346

RL McCann 6/20/97
Analyst Signature Date

AK McShane 6/30/97
Analyst Signature Date

S97T001197 → S97T1200

Validated by
R & Fuller
6/20/97

Data Entry Comments: Submitted by R. King

HNF-SD-WM-DP-255,
REV. 0

Page: 1

worklist rpt Version 2.1 05/13/95
07/08/97 11:00

LABCORE Data Entry Template for Worklist# 19176

Analyst: DCD Instrument: ACD01 Book # WNC-1A > 2.5 ml each
WNC-2 to 50 ml final
 Method: LA-S05-163 Rev/Mod A-0 volume. DF-20

Worklist Comment: ACIDIG01 (T-204 CORE 188 SEG CORE COMP).TDM

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				ACIDIG01	SOLID	<u>1</u>	<u>.050</u>	<u>N/A</u>	<u>g/L</u>
		2	STD-PREP				ACIDIG01	SOLID	<u>20</u>	<u>20</u>	<u>N/A</u>	<u>DF</u>
97000261	T-204	3	SAMPLE	S97T001199	0	A	ACIDIG01	SOLID	<u>N/A</u>	<u>6.982</u>		<u>g/L</u>
				<u>0.3491g</u>								
97000261	T-204	4	SAMPLE	S97T001199	0	A	DOSE-02	SOLID	<u>N/A</u>	<u>2.5</u>		<u>mrad/hour</u>
97000261	T-204	5	DUP	S97T001199	0	A	ACIDIG01	SOLID	<u>6.982</u>	<u>7.124</u>	<u>N/A</u>	<u>g/L</u>
				<u>0.3562g</u>								
97000261	T-204	6	DUP	S97T001199	0	A	DOSE-02	SOLID	<u>2.5</u>	<u>2.5</u>	<u>N/A</u>	<u>mrad/hour</u>
97000261	T-204	7	SPK	S97T001199	0	A	ACIDIG01	SOLID	<u>N/A</u>	<u>7.198</u>	<u>N/A</u>	<u>g/L</u>
				<u>0.3599g</u>								
97000261	T-204	8	SPK	S97T001199	0	A	DOSE-02	SOLID	<u>N/A</u>	<u>2.5</u>	<u>N/A</u>	<u>mrad/hour</u>

Final page for worklist # 19176

D. J. D. D. 7-9-97
 Analyst Signature Date

C. J. D. 7-14-97
 Analyst Signature Date

Data Entry Comments:

Hand by Trishia Hynes

HPT CHARLENE Cooper 2997 1430

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.

calculated
 204
 7/14/97

HNF-SD-WM-DP-255, REV. 0

BULK DENSITY WORKSHEETS

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HNF-SD-WM-DP-255, REV. 0

Bulk Density Worksheet

Date: 4/21/97

Requestor: JNW:km

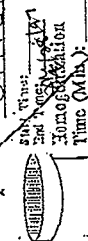
Tank: I-204

Core: 198

Seg: 1 LH

Auger: —

Sample ID: SG II 00444



Jar #:

Jar/Vial Size: mL

Initial Weight: g

Final Weight: g

Net Weight: g

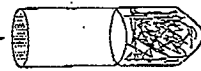
Jar #:

Jar/Vial Size: mL

Initial Weight: g

Final Weight: g

Net Weight: g



Core #: 12197

Final Vol.: 11.5 mL

Initial Weight: 7.47 g

Final Weight: 20.64 g

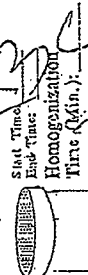
Net Weight: 13.17 g

Sample ID:

Appearance/Narrative:

Bulk Den = 115 g/mL

Tank: _____
 Core: _____
 Seg: _____
 Auger: _____
 Sample ID: _____



Jar #:

Jar/Vial Size: mL

Initial Weight: g

Final Weight: g

Net Weight: g

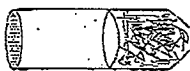
Jar #:

Jar/Vial Size: mL

Initial Weight: g

Final Weight: g

Net Weight: g



Core #:

Final Vol.: mL

Initial Weight: g

Final Weight: g

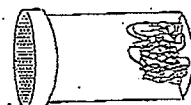
Net Weight: g

Sample ID:

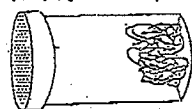
Appearance/Narrative:

HNF-SD-WM-DP-255, REV. 0

Bulk Density Worksheet

Date: 4/22/97Requestor: WuzomTank: T204Core: 148Seg: 274Auger: ---Sample ID: 54TT000570Start Time: ---
End Time: ---
Homogenization Time (Min.): ---Jar/Vial Size: 12534 mLInitial Weight: --- gFinal Weight: --- gNet Weight: --- g

102

Cone#: 34Final Vol: 11.6 mLInitial Weight: 744 gFinal Weight: 21.01 gNet Weight: 13.57 gSample ID: ---Appearance/Narrative: OK DUOL = 13.57 / 11.6 = 1.17 g/mLTank: ---Core: ---Seg: ---Auger: ---Sample ID: 54TT000570Start Time: ---End Time: ---Homogenization Time (Min.): ---Jar/Vial Size: --- mLInitial Weight: --- gFinal Weight: --- gNet Weight: --- gCone#: ---Final Vol: --- mLInitial Weight: --- gFinal Weight: --- gNet Weight: --- gSample ID: ---Appearance/Narrative: ---

HNF-SD-WM-DP-255, REV. 0

Bulk Density Worksheet

Date: 4/22/97

Requestor: NUZUM

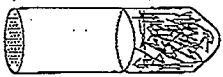
Tank: T-204
Core: 184
Seg: 31A
Auger: 1

Sample ID: 1253 597000571

Start Time: 12:44
End Time: 12:46
Homogenization Time (Min.): 2



Jar#: 12535
Jar/Vial Size: 100 mL
Initial Weight: 7.44 g
Final Weight: 7.44 g
Net Weight: 0 g

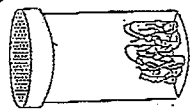


Cone#: 35
Final Vol: 10.0 mL
Initial Weight: 7.43 g
Final Weight: 19.05 g
Net Weight: 11.62 g
Sample ID:

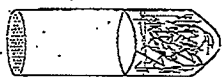
Appearance/Narrative: HR DEN CO = 10.02 / 10.0 = 1.162 g/mL

Tank:
Core:
Seg:
Auger:
Sample ID:

Start Time:
End Time:
Homogenization Time (Min.):



Jar#:
Jar/Vial Size: mL
Initial Weight: g
Final Weight: g
Net Weight: g



Cone#:
Final Vol: mL
Initial Weight: g
Final Weight: g
Net Weight: g
Sample ID:

Appearance/Narrative:

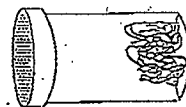
Bulk Density Worksheet

Date: 4-21-97Requestor: AKZURATank: 7-204Core: 186Seg: 41H

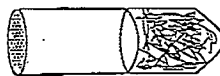
Auger: _____

Sample ID: 597700572

Start Time: _____
 End Time: _____
 Homogenization Time (Min.): 10

Jar/Vial Size: 12.5 mL

Initial Weight: _____ g

Final Weight: 0.87 gNet Weight: 4.8797 gCone#: 32Final Vol: 11.0 mLInitial Weight: 7.45 gFinal Weight: 20.69 gNet Weight: 13.24 g

Sample ID: _____

Appearance/Narrative: Bulk Density = 1324/11.0 mL = 120 g/mL

Tank: _____

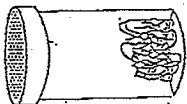
Core: _____

Seg: _____

Auger: _____

Sample ID: _____

Start Time: _____
 End Time: _____
 Homogenization Time (Min.): _____



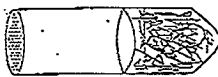
Jar#: _____

Jar/Vial Size: 12.5 mL

Initial Weight: _____ g

Final Weight: 4.2399 g

Net Weight: _____ g



Cone#: _____

Final Vol: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Sample ID: _____

Appearance/Narrative: _____

Bulk Density Worksheet

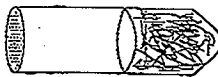
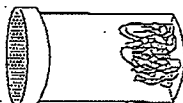
Requestor: NOVA

Date: 4-24-97

Tank: 1-204
Core: 188
Seg: 5 LH
Auger: —
Sample ID: 97750609

Start Time: Label
End Time: 2:00
Homogenization Time (Min.): —

Jar#: 12536
Jar/Vial Size: — mL
Initial Weight: — g
Final Weight: 0.6327 g
Net Weight: 4.8327 g



Cone#: 36
Final Vol: 9.5 mL
Initial Weight: 7.46 g
Final Weight: 16.42 g
Net Weight: 11.46 g

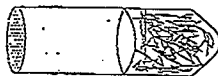
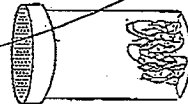
Sample ID: —

Appearance/Narrative: BLK DEN 591 = 11.46/9.5 = 1.21 g/mL

Tank: —
Core: —
Seg: —
Auger: —
Sample ID: —

Start Time: —
End Time: —
Homogenization Time (Min.): —

Jar#: —
Jar/Vial Size: — mL
Initial Weight: — g
Final Weight: — g
Net Weight: — g



Cone#: —
Final Vol: — mL
Initial Weight: — g
Final Weight: — g
Net Weight: — g

Sample ID: —

Appearance/Narrative: —

Bulk Density Worksheet

Requestor: U07-08

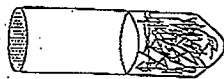
Date: 4/24/97

Tank: F204
Core: 166
Seg: CoalH
Auger: AN
Sample ID: 397T000G10

Start Time: 15:10
End Time: 15:14
Homogenization Time (Min.): 4



Jar#: W4
Jar/Vial Size: 125 mL
Initial Weight: 7.50 g
Final Weight: 24.50 g
Net Weight: 17 g

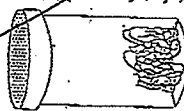


Cone#: 36
Final Vol: 14.5 mL
Initial Weight: 7.50 g
Final Weight: 24.50 g
Net Weight: 17 g
Sample ID:

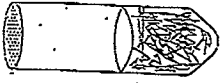
Appearance/Narrative: 61.0 EN 5.01 = 17.00 / 14.5 = 1.17 g/mL

Tank:
Core:
Seg:
Auger:
Sample ID:

Start Time:
End Time:
Homogenization Time (Min.):



Jar#: W4
Jar/Vial Size: 125 mL
Initial Weight: g
Final Weight: g
Net Weight: g



Cone#:
Final Vol: mL
Initial Weight: g
Final Weight: g
Net Weight: g
Sample ID:

Appearance/Narrative:

HNF-SD-WM-DP-255, REV. 0

Bulk Density Worksheet

Date: 4/28/97

Requestor: Nuzum

Tank: 118-1-204

Core: 180

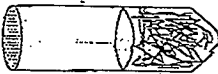
Seg: 7

Auger: —

Sample ID: S9T000611

Start Time: 12:30 PM
End Time: 1:00 PM
Homogenization Time (Min.):

Jar#: 12540
Jar/Vial Size: mL
Initial Weight: g
Final Weight: g
Net Weight: g



Cone#: 12540
Final Vol: 11.0 mL
Initial Weight: 7.3 g
Final Weight: 2.0 g
Net Weight: 16.5 g

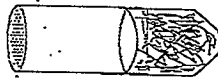
Sample ID: —

Appearance/Narrative: 11.0/10 = 6.18 g/mL

Tank: —
Core: —
Seg: —
Auger: —
Sample ID: —

Start Time: —
End Time: —
Homogenization Time (Min.): —

Jar#: —
Jar/Vial Size: mL
Initial Weight: g
Final Weight: 4.28 g
Net Weight: g



Cone#: —
Final Vol: mL
Initial Weight: g
Final Weight: g
Net Weight: g

Sample ID: —

Appearance/Narrative: —

Bulk Density Worksheet

Date: 4/28/97

equestor: Nazom

Tank: 7-204

Core: 188

Seg: 82H

Auger: _____

Sample ID: S971009612

Start Time: _____

End Time: _____

Homogenization Time (Min.): _____

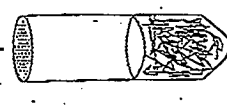
Jar#: 12542

Jar/Vial Size: 250 mL

Initial Weight: 401.6 g

Final Weight: _____ g

Net Weight: _____ g



Cone#: 12542

Final Vol: 10.15 mL

Initial Weight: 7.47 g

Final Weight: 21.3 g

Net Weight: 13.8 g

Sample ID: S971000612

Appearance/Narrative: _____

Bulk Density: 13.89 / 1.20 g/mL

Tank: _____
 Core: _____
 Seg: _____
 Auger: _____
 Sample ID: _____

Start Time: _____

End Time: _____

Homogenization Time (Min.): _____

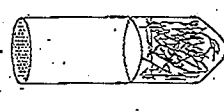
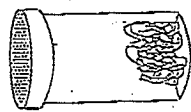
Jar#: _____

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g



Cone#: _____

Final Vol: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Sample ID: _____

Appearance/Narrative: _____

Bulk Density Worksheet

Requestor: 662244

Date: 4-28-97

Tank: 1-204

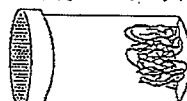
Core: 188

Seg: 9

Auger: 4H

Sample ID: S917000013

Start Time: _____
End Time: _____
Homogenization Time (Min.): 10/10



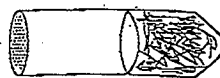
Jar#: 12541

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: 10.08 g

Net Weight: 10.08 g



Cone#: 12541

Final Vol: 8.5 mL

Initial Weight: 7.54 g

Final Weight: 17.62 g

Net Weight: 10.08 g

Sample ID: _____

Appearance/Narrative: Black DEW 15 10.08/8.5 = 1.18 g/mL

Start Time: _____
End Time: _____
Homogenization Time (Min.): _____



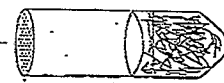
Jar#: _____

Jar/Vial Size: _____ mL

Initial Weight: 7.0 g

Final Weight: 7.0 g

Net Weight: 7.0 g



Cone#: _____

Final Vol: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ g

Sample ID: _____

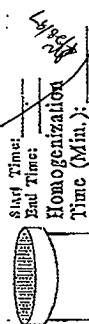
Appearance/Narrative: _____

Bulk Density Worksheet

Requestor: NOZOWA

Date: 4/29/97

Tank: E204
Core: 188
Seg: 10LH
Auger:
Sample ID: SP-11000614



Jar/Vial Size: 250 mL
Initial Weight: g
Final Weight: g
Net Weight: g

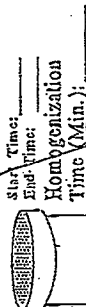
Cone#: 51
Final Vol: 13.25 mL
Initial Weight: 7.60 g
Final Weight: 23 g
Net Weight: 16.09 g

Sample ID:

Appearance/Narrative:

Cell Bulk Den = 10.7 / 3.25 = 1.21 = g/mL

Tank:
Core:
Seg:
Auger:
Sample ID:



Jar/Vial Size: mL
Initial Weight: g
Final Weight: g
Net Weight: g

Cone#: 39
Final Vol: mL
Initial Weight: 197 g
Final Weight: g
Net Weight: g

Sample ID:

Appearance/Narrative:

Bulk Density Worksheet

HNF-SD-WM-DP-255, REV. 0

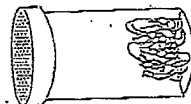
Requestor: N/AZLW

Date: 6/12/97

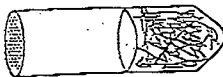
Tank: T-204
Core: Comp 5/6
Seg: ---
Auger: ---

Sample ID: 5977001191

Start Time: ---
End Time: ---
Homogenization Time (Min.): ---



Jar#: 9497
Jar/Vial Size: --- mL
Initial Weight: --- g
Final Weight: --- g
Net Weight: --- g



Cone#: 11835
Final Vol: 11.0 mL
Initial Weight: 7.45 g
Final Weight: 20.73 g
Net Weight: 13.28 g

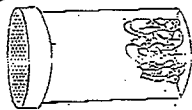
Sample ID: ---

Appearance/Narrative: 28
Bulk Den = 1.21 gm/ml

500 A of 2104

Tank: ---
Core: ---
Seg: ---
Auger: ---
Sample ID: ---

Start Time: ---
End Time: ---
Homogenization Time (Min.): ---



Jar#: 1183
Jar/Vial Size: --- mL
Initial Weight: --- g
Final Weight: --- g
Net Weight: --- g



Cone#: 1183
Final Vol: --- mL
Initial Weight: --- g
Final Weight: --- g
Net Weight: --- g

Sample ID: ---

Appearance/Narrative: ---

HNF-SD-WM-DP-255, REV. 0

INORGANIC ANALYSES

HNH-SD-WM-DP-255, REV. 0

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LABCORE Data Entry Template for Worklist# 17819

Analyst: SMF Instrument: DSC0 1 Book # 12014-B

Method: LA-514-113 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under Nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	LIQUID	<u>28.45</u>	<u>27.3</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000647 0		DSC-01	LIQUID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000647 0		DSC-01	LIQUID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17819

Susie M. Dulson 5-3-97
Analyst Signature Date

[Signature] 5-6-97
Analyst Signature Date

Validated 5/8/97 [Signature]

Data Entry Comments:

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 115 TO 117.

DSC IND 12N14-B N2

15.119 mg

Rate: 10.0 °C/min

File: 00117.001 DSC METTLER

44-NOV-91

Ident: 0.0 222-S Laboratory

5-3-97

SMF

exo>

10. mW

Integration
Delta H 413 mJ
27.3 J/g
Peak 147.9°C
-26.4 mW

HNF-SD-WM-DP-255, REV. 0

120. 140. 160. 180. °C

5-3-97

Amulbon

HNF-SD-WM-DP-245, REV. 0

mtg
7/14/97

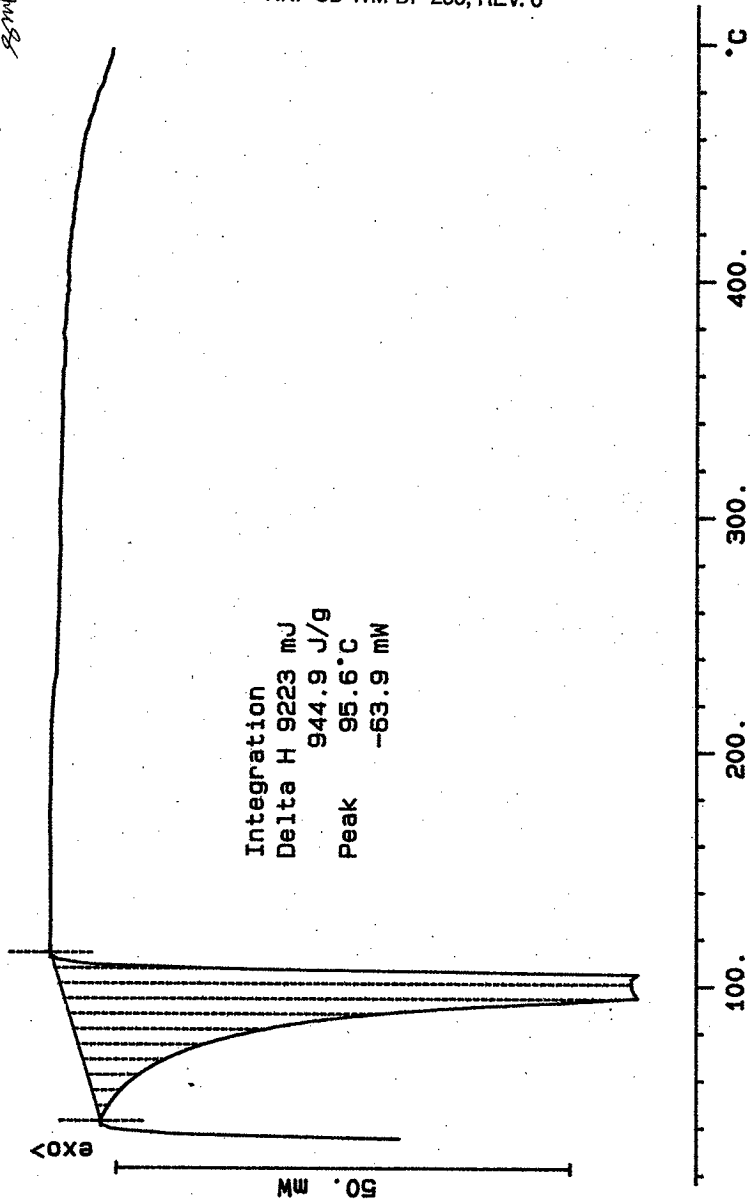
HNF-SD-WM-DP-255, REV. 0

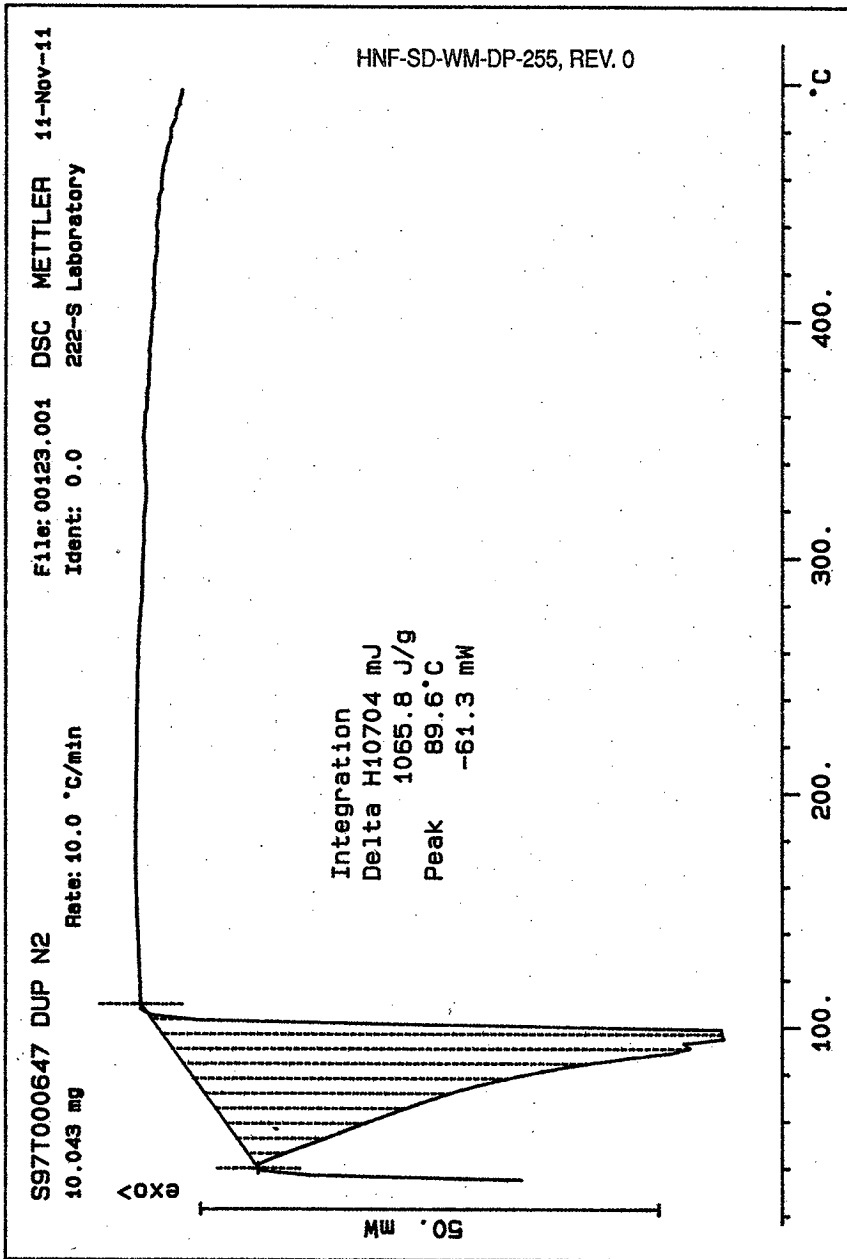
S97T000647 N2
9.760 mg

File: 00121.001 DSC METTLER
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

44-Nov-11
9-3-97
BMP





LABCORE Data Entry Template for Worklist# 17828

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

Method: LA-514-113 Rev/Mod D-D

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	<u>28.45</u>	<u>25.7</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000498 0		DSC-01	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000498 0		DSC-01	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000499 0		DSC-01	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000499 0		DSC-01	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17828

[Signature] 05-03-97
Analyst Signature Date

Validated 5/8/97 [Signature]

[Signature] 5-6-97
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 119 TO 133.

DSC IND 12N14-B N2

15.119 mg

Rate: 10.0 °C/min

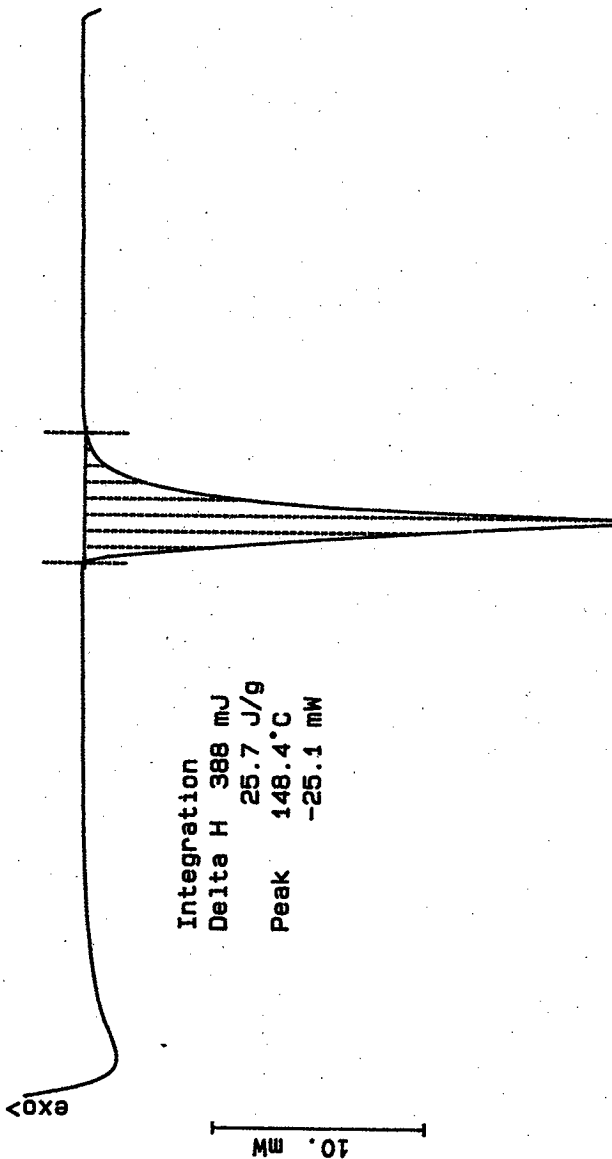
File: 00129.001 DSC METTLER

Ident: 0.0 222-S Laboratory

05-03-97

11-Nov-97

ADP 5-3-97



HNF-SD-WM-DP-255, REV. 0

120. 140. 160. 180. °C

Anthony Parnis 050397

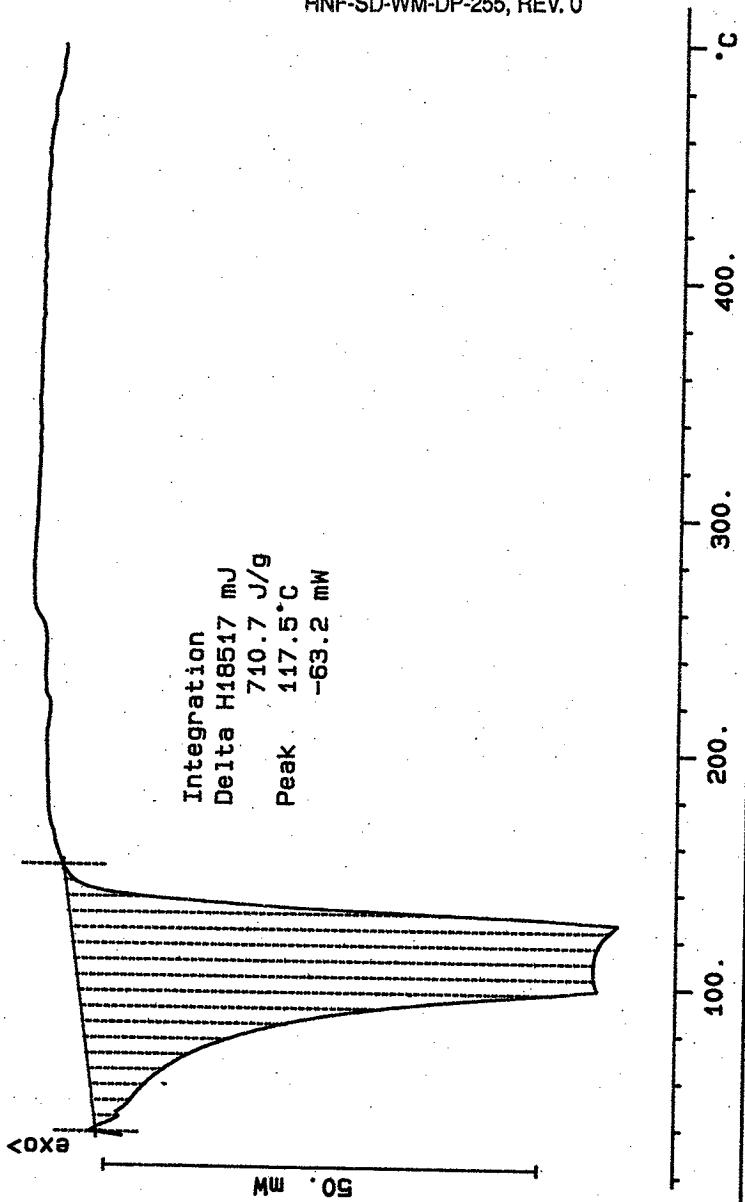
HNF-SD-WM-DP-255, REV. 0

S97T000498 SAM N2
26.053 mg

File: 00130.001 DSC METTLER
Ident: 0.0 222-S Laboratory

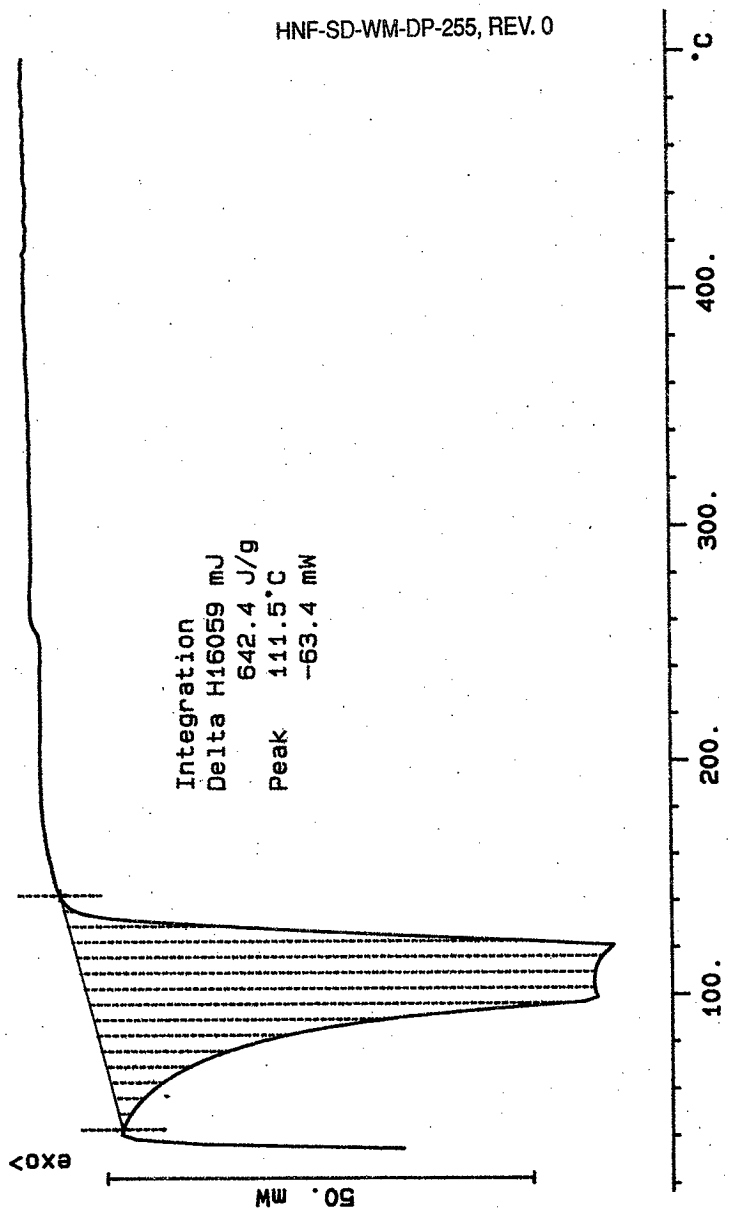
11-Nov-11

Rate: 10.0 °C/min



S97T000498 DUP N2
25.000 mg
Rate: 10.0 °C/min
File: 00132.001
Ident: 0.0
DSC METTLER
222-S Laboratory
11-Nov-11

HNF-SD-WM-DP-255, REV. 0

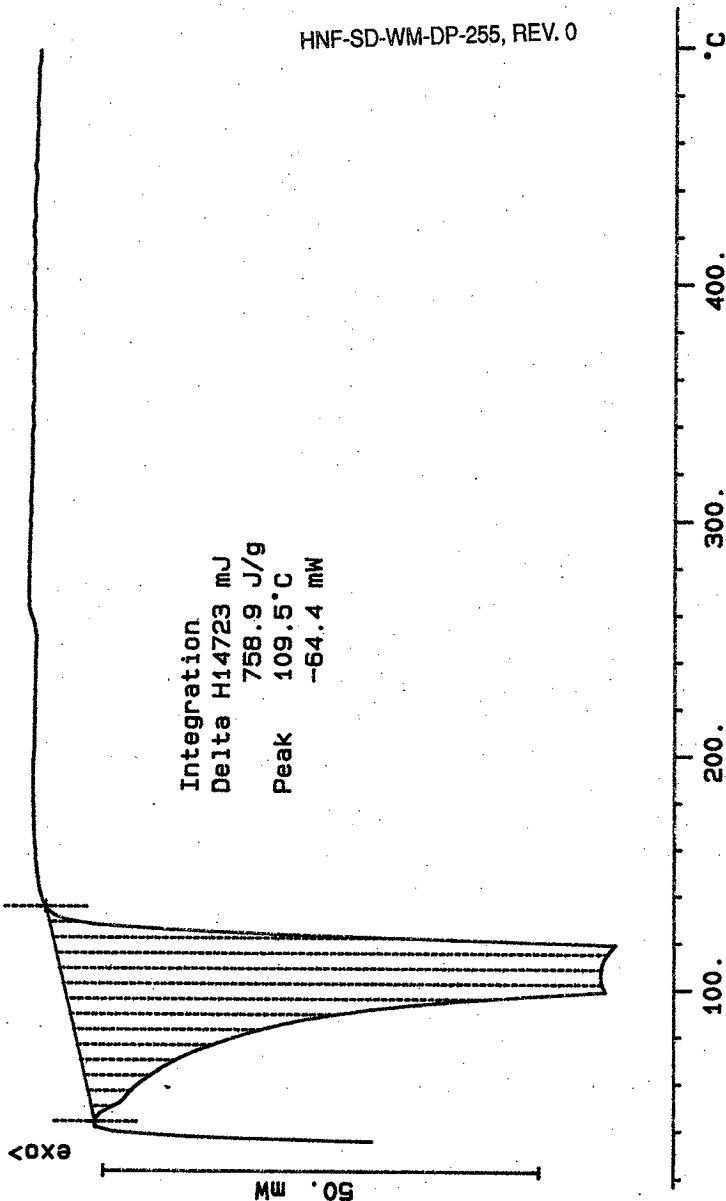


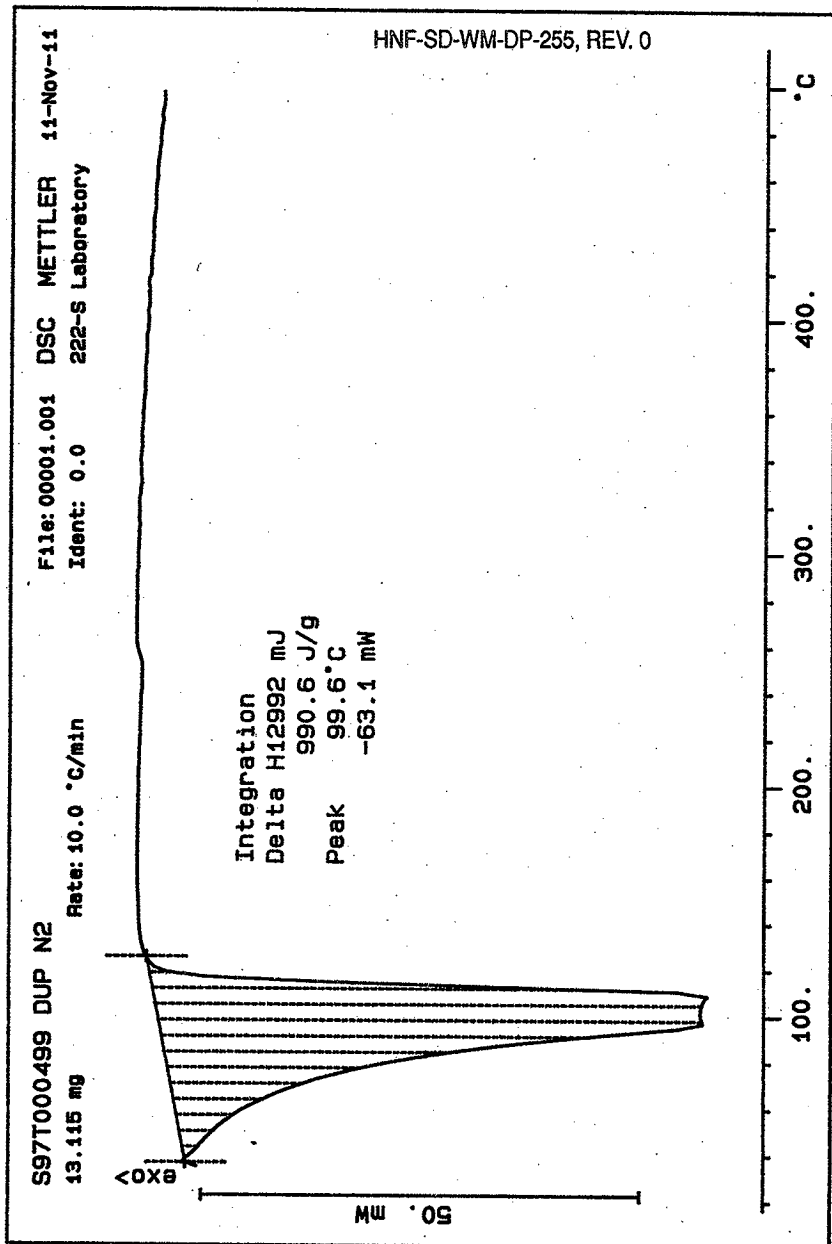
Integration
Delta H16059 mJ
642.4 J/g
Peak 111.5°C
-63.4 mW

File: 00134.001 DSC METTLER 11-Nov-11
 Ident: 0.0 222-S Laboratory

S97T000499 SAM N2
 19.399 mg Rate: 10.0 °C/min

HNF-SD-WM-DP-255, REV. 0





LABCORE Data Entry Template for Worklist# 17829

Analyst: ADP Instrument: DSC0 3 Book # 12 N14B

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

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>26.56*</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000574	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000574	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000575	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000575	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17829

See Attached for Additional Signatures
Analyst Signature Date

Lusie M. Tullson 5-14-97
Validated 5/15/97 Q. Macholor

Janis Mack 5-15-97
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# 17829

Analyst: ADP Instrument: DSC0 Book # 12N14-B

Method: LA-514-113 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T000574	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T000574	0	DSC-01	SOLID			N/A	Joules/g
97000261	T-204	4 SAMPLE	S97T000575	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	5 DUP	S97T000575	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 17829

ADP 5-14-97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:
Samples Run on DSC-03. 992 5/14/97

Curve 1: DSC

File info: INMD010513 Tue May 13 20:40:17 1997

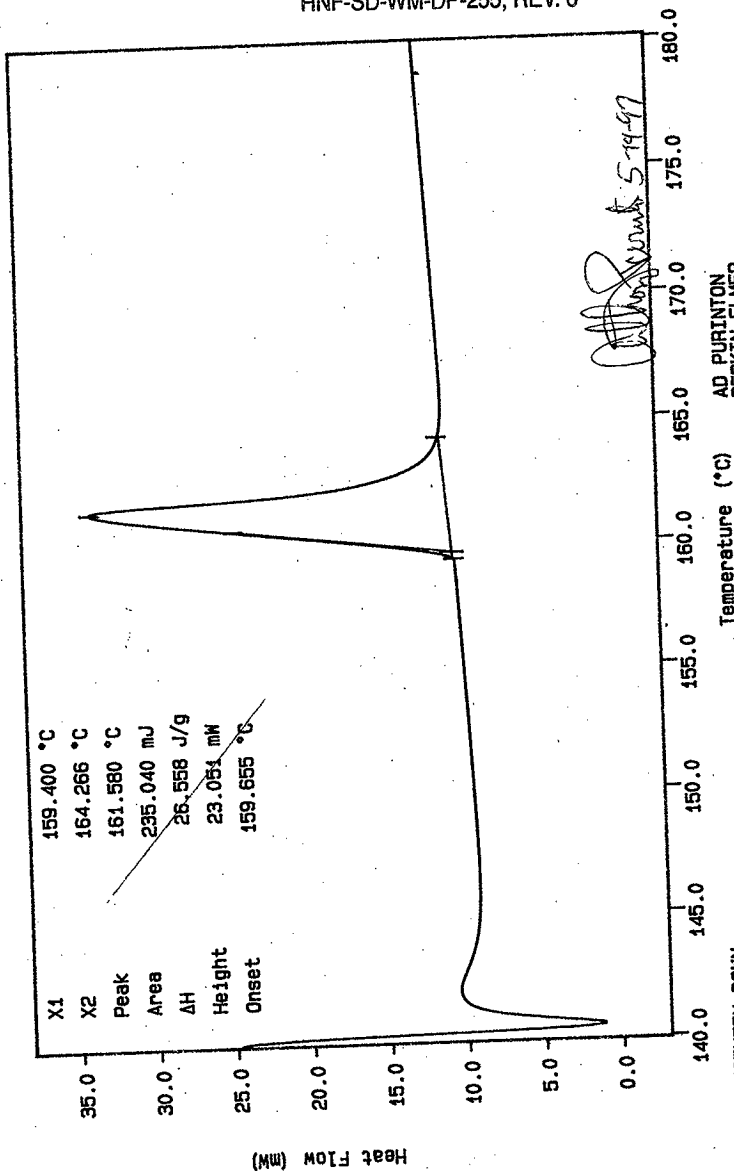
Sample Weight: 8.850 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 136 TO 138

~~HNF-SD-WM-DP-245, REV. 0~~ ^{note} 7-14-97

HNF-SD-WM-DP-255, REV. 0



N2, EXOTHERM DOWN

TEMP: 140.0 °C
TIME: 0.0 min RATE: 10.0 °C/min

Curve 1: DSC

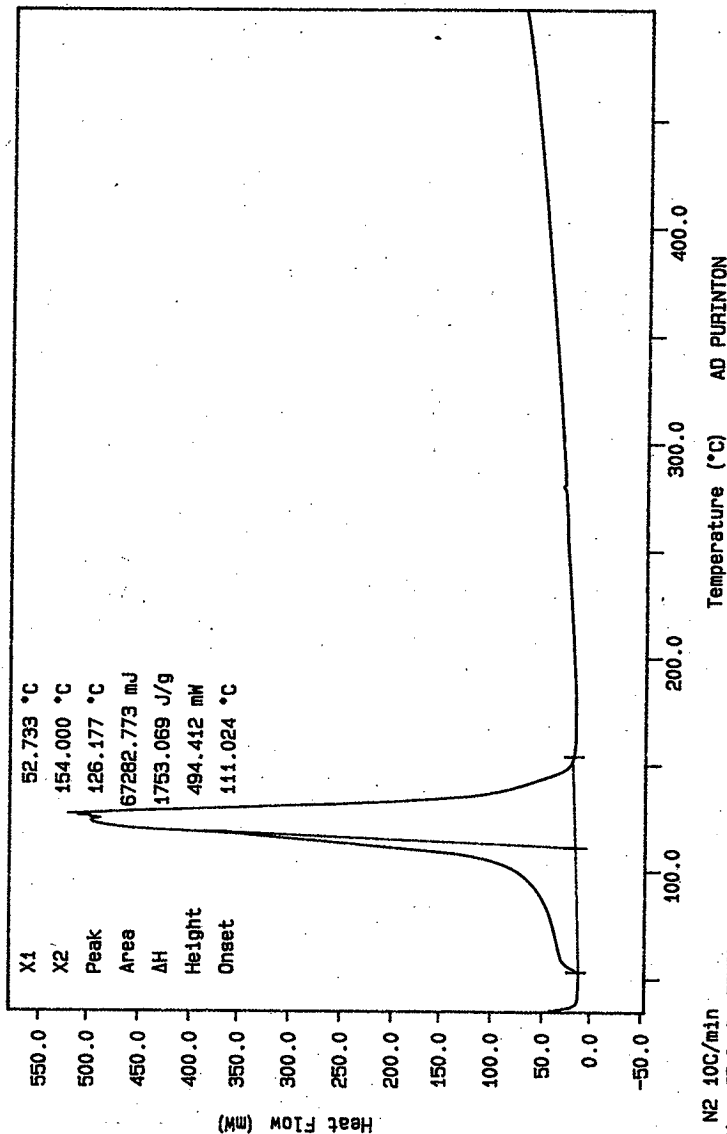
File info: SAM050614 Wed May 14 03: 49: 57 1997

Sample Weight: 38.380 mg

S97T000574 SAM

HNF-SD-WM-DP-245, REV. 0 ^{mtc} 7-10-97

HNF-SD-WM-DP-255, REV. 0



N2 10C/min
TEMP: 50.0 °C
TIME: 0.0 min RATE: 10.0 C/min

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 14 03: 53: 11 1997

Curve 1: DSC

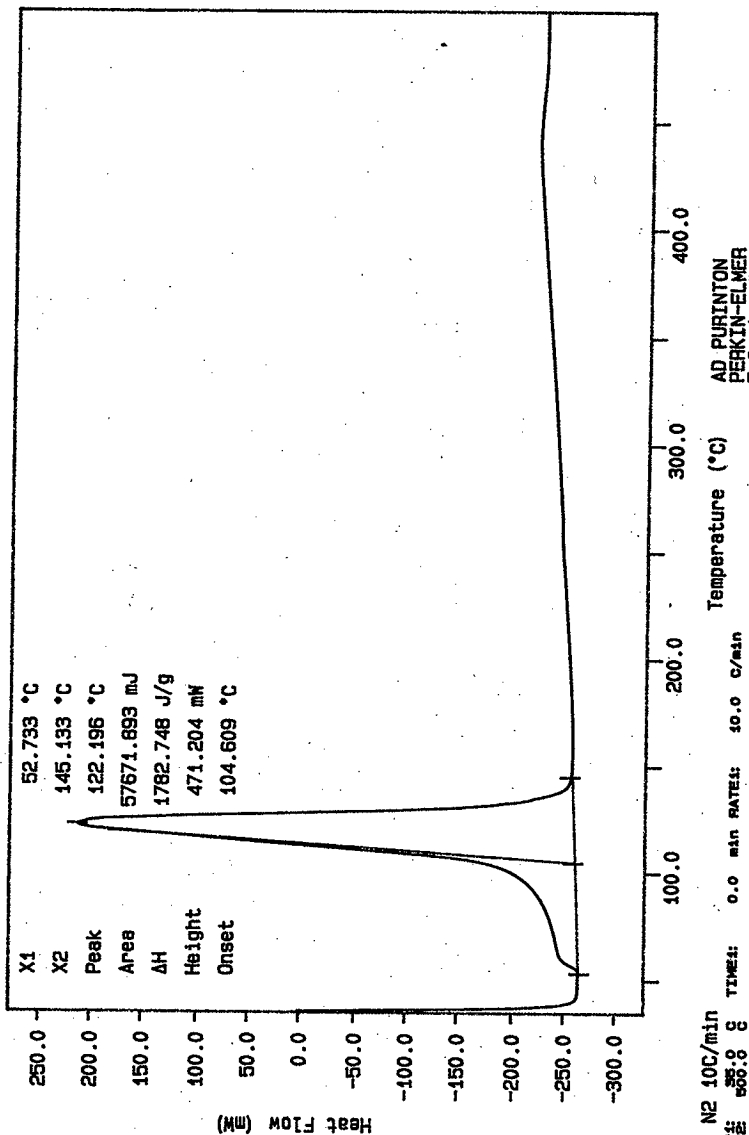
File Info: SAN070514 Wed May 14 04:46 1997

Sample Weight: 32.350 mg

S97T000574 DUP

HNF-SD-WM-DP-245, REV. 0 ^{note} 7/14/97

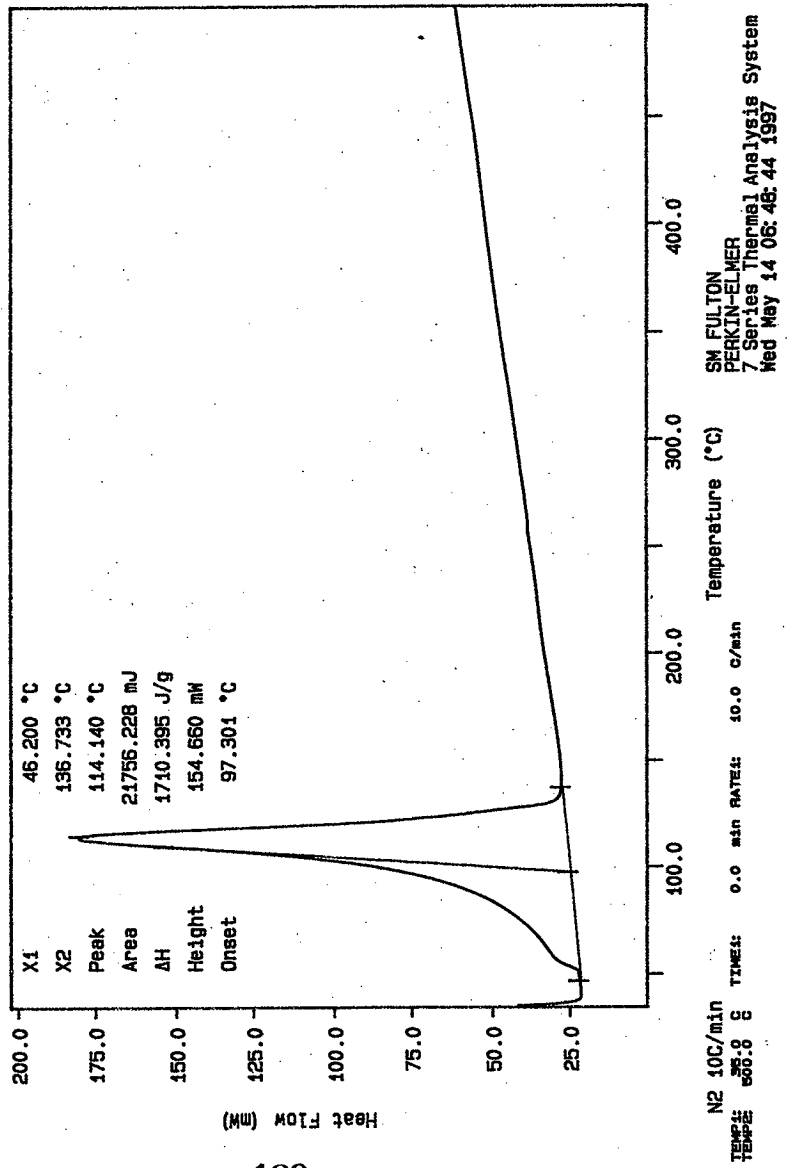
HNF-SD-WM-DP-255, REV. 0



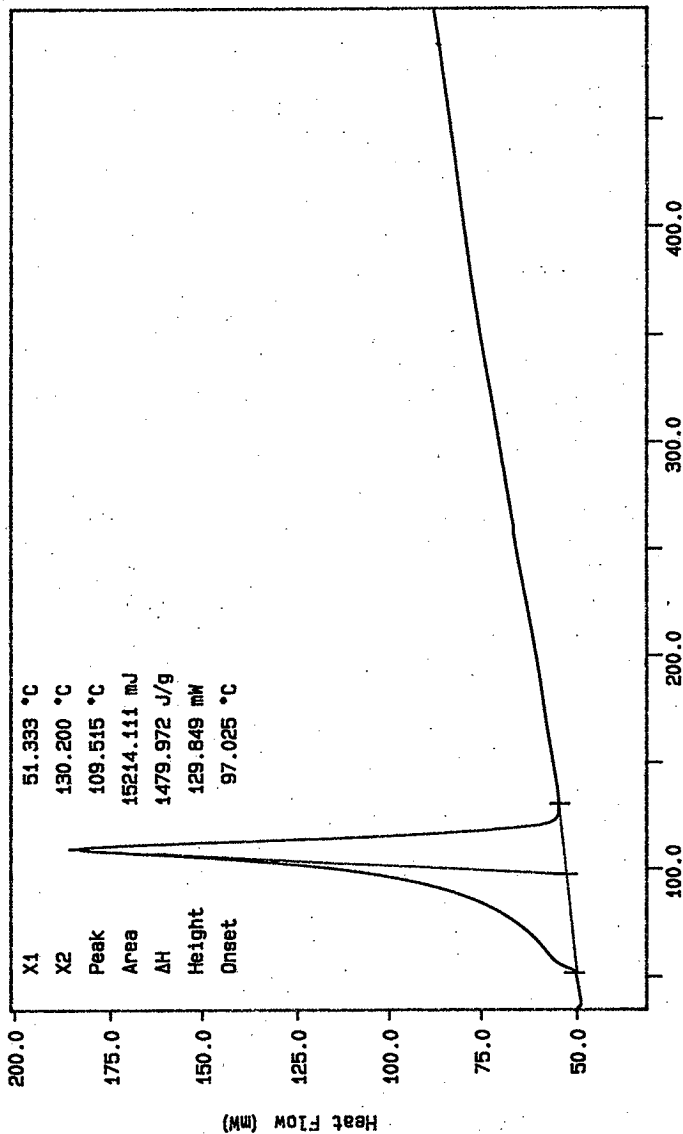
N2 10C/min
TEMP: 35.0 °C
TIME: 550.0 S

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 14 05:40:07 1997

Curve 1: DSC
File info: SAM051401 Wed May 14 06:35:25 1997
Sample Weight: 12.720 mg
S97T000575



Curve 1: DSC
 File Info: SAM051402 Wed May 14 07:39:36 1997
 Sample Weight: 10.280 mg
 S97T000575 DUP



SM FULTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed May 14 08:16:13 1997

N2 10C/min
 TEMP: 35.0 °C
 TIME: 0.0 min RATE: 10.0 °C/min

LABCORE Data Entry Template for Worklist# 17830

Analyst: SMF Instrument: DSC0 3 Book # 12N14B

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

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>27.00x</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000576	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000576	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000580	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000580	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17830

See Attached for Signature
Analyst Signature Date

Susan Bee 5/16/97
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# 17830

Analyst: SMF Instrument: DSC0 3 Book # 12014-B
Method: LA-514-113 Rev/Mod D-O HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T000576	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T000576	0	DSC-01	SOLID			N/A	Joules/g
97000261	T-204	4 SAMPLE	S97T000580	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	5 DUP	S97T000580	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 17830

Lusie M. Pullen 5-15-97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Samples run on DSC-03. SMF 5/16/97

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.

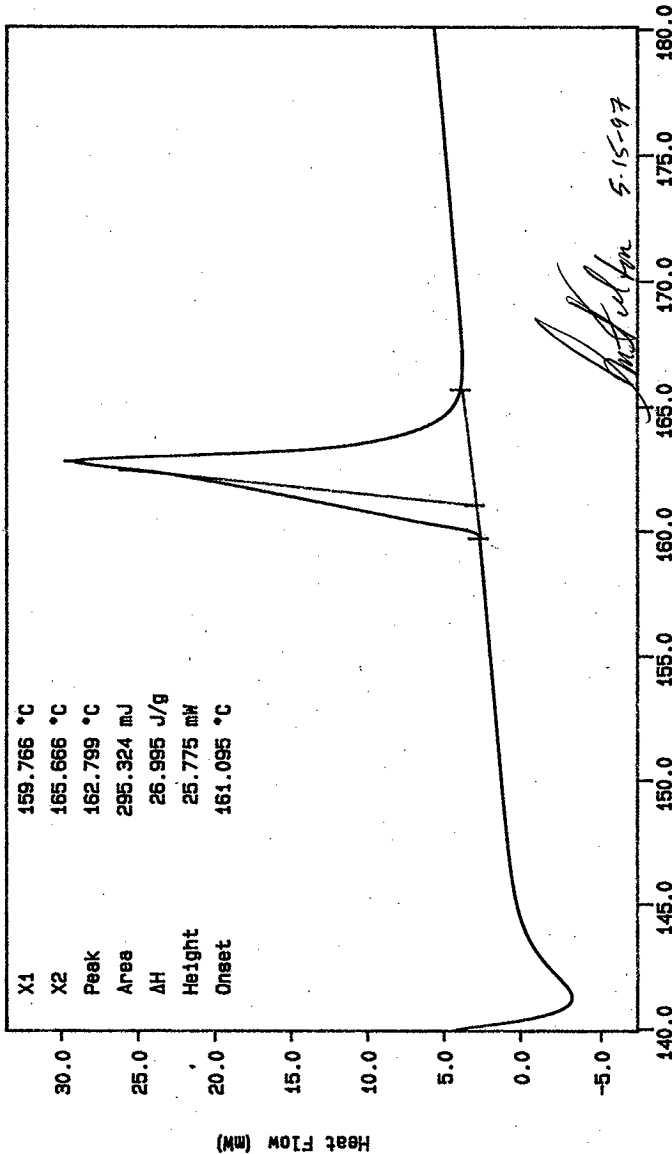
Curve 1: DSC

File Info: IND051501 Thu May 15 02:36:27 1997

Sample Weight: 10.940 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 133 TO 137.



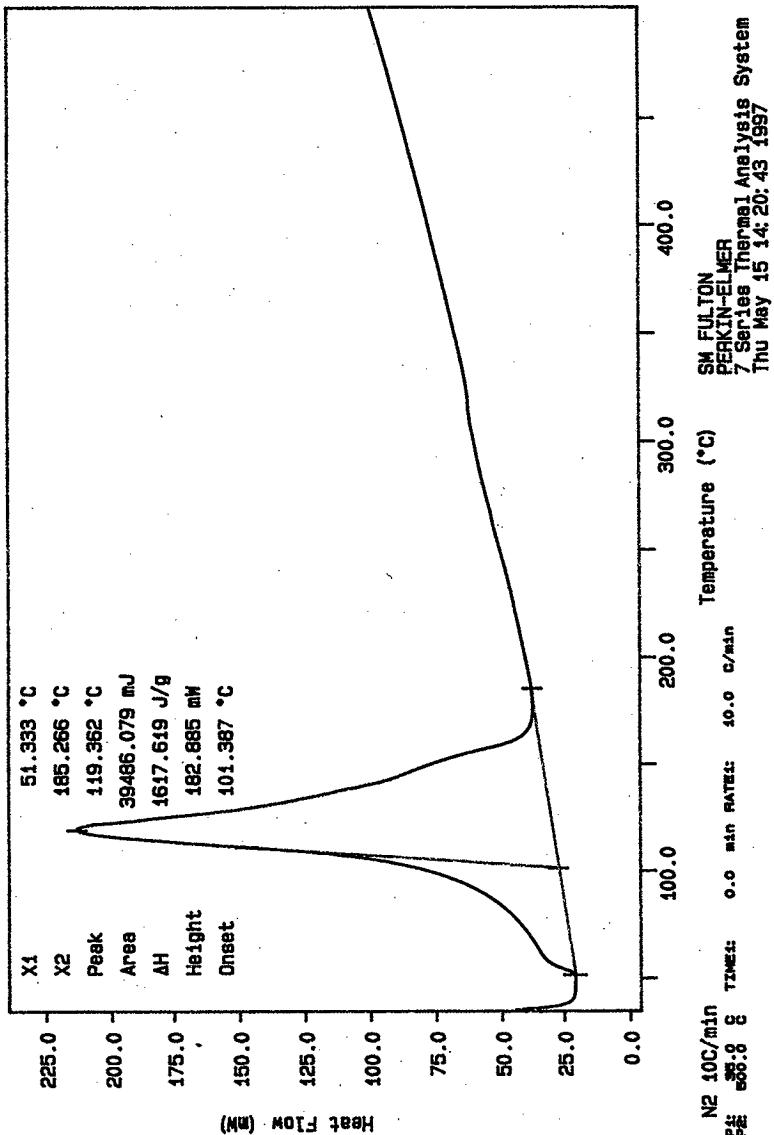
HNF-SD-WM-DP-255, REV. 0

HNF-SD-WM-DP-245, REV. 0 *mtc*
7-14-97

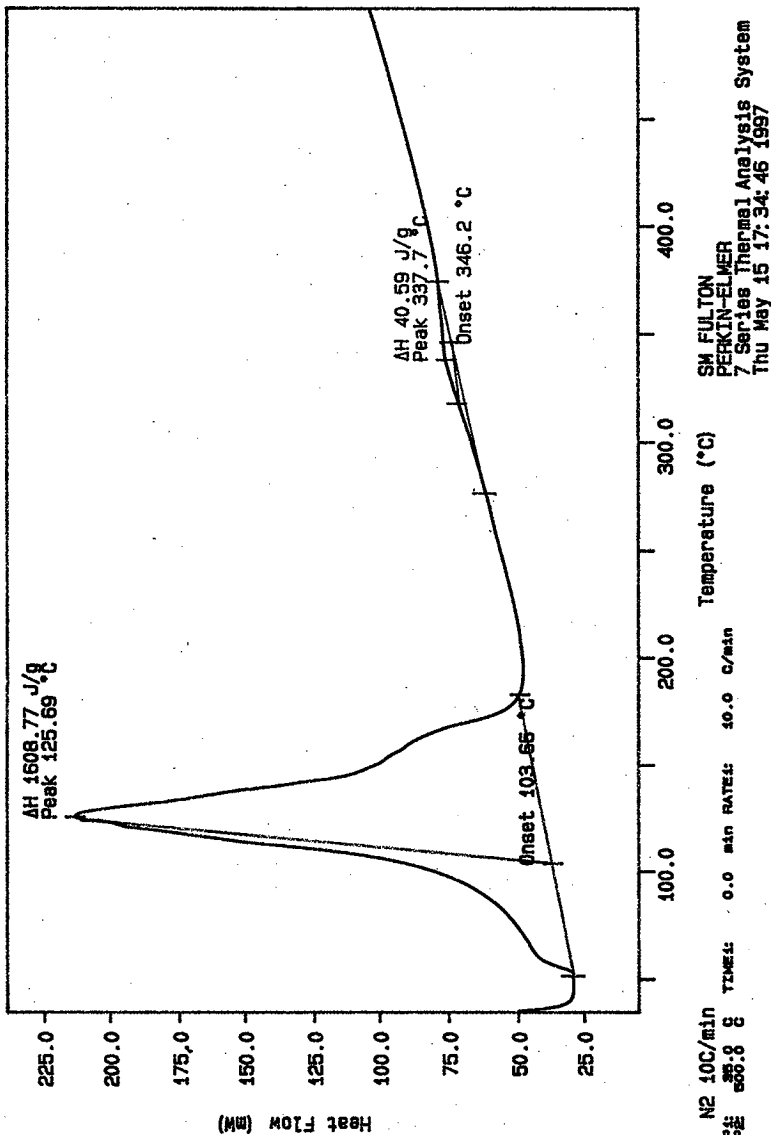
Curve 1: DSC
 File info: SAM051505 Thu May 15 13:52:15 1997
 Sample Weight: 24.410 mg
 997T000576

~~HNF-SD-WM-DP-245, REV. 0~~ *MS 7-11-97*

HNF-SD-WM-DP-255, REV. 0



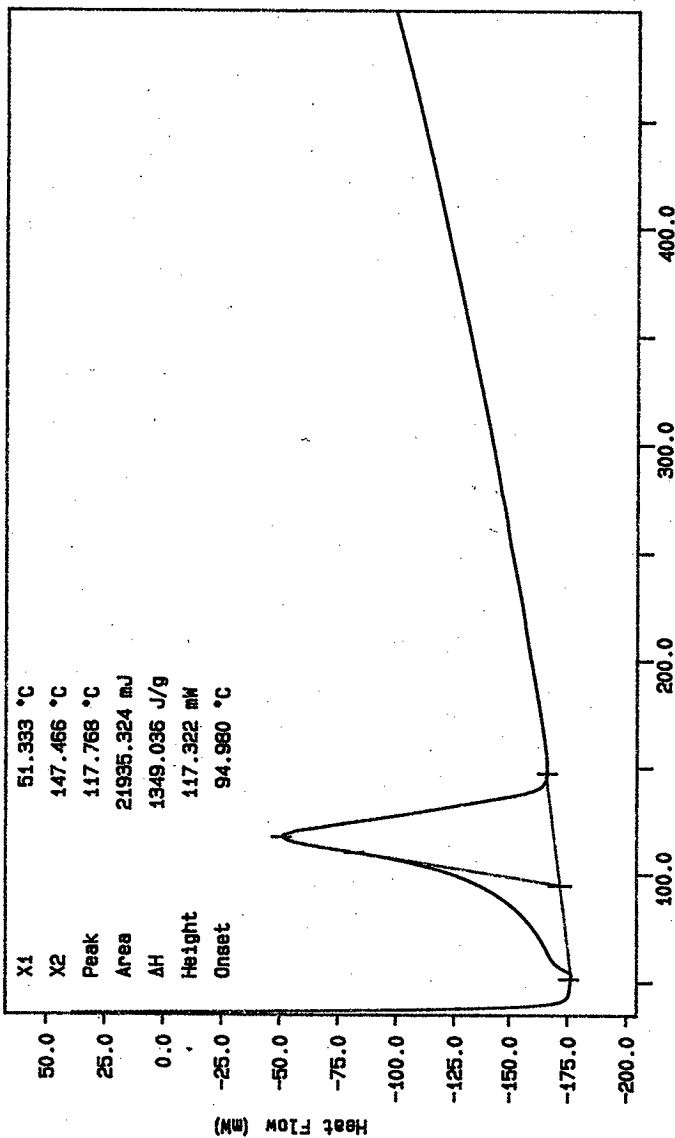
Curve 4: DSC
File Info: SAM051506 Thu May 15 15:13:51 1997
Sample Weight: 27.350 mg
S97T000576 DUP



Curve 1: DSC
 File info: SAM051507 Thu May 15 18:38:49 1997
 Sample Weight: 16.260 mg
 S97T000580 SAM

HNF-SD-WM-DP-245, REV. 0 *note*
 7-14-97

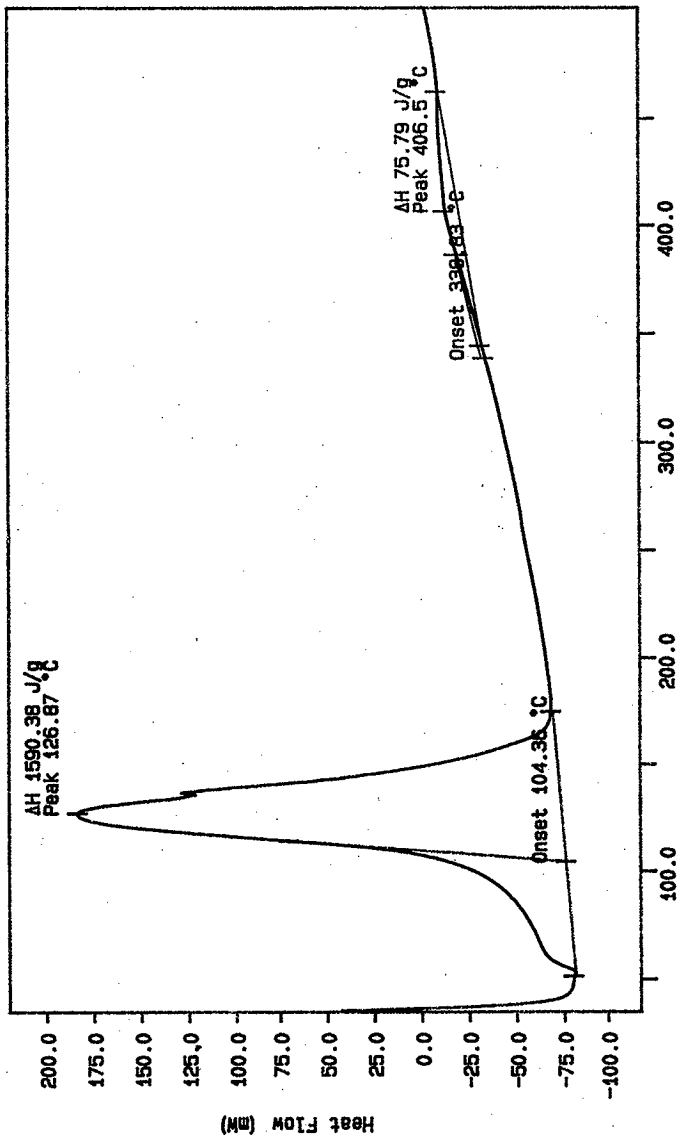
HNF-SD-WM-DP-255, REV. 0



N2 10C/min
 TEMP: 35.0 °C
 TIME: 000.0 s
 AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 15 18:39:43 1997

Curve 1: DSC
 File info: SAM051508 Thu May 15 19:35:23 1997
 Sample Weight: 35.610 mg
 S97T000580 DUP

HNF-SD-WM-DP-245, REV. 0 *mtc*
 7-14-97
 HNF-SD-WM-DP-255, REV. 0



N2 10C/min
 TIME: 26.8 s
 RATE: 0.0 min RATE: 10.0 C/min
 AD PURINGTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 15 20:16:38 1997

LABCORE Data Entry Template for Worklist# 17831

Analyst: ADP Instrument: DSC0 3 Book # 12N14B

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

Worklist Comment: T204, DSC-01 Run under nitrogen. ^{skm} HNF-SD-WM-DP-255, REV. 0

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>27.62</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000603	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000603	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000604	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000604	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17831

See Attached for Signature
Analyst Signature Date

Simon Ra 5/16/97
Analyst Signature Date

Validated 5/1/97 Anchor

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# 17831

Analyst: ADP Instrument: DSC0 3 Book # 12 N14B
Method: LA-514-113 Rev/Mod D.O HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T000603	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T000603	0	DSC-01	SOLID			N/A	Joules/g
97000261	T-204	4 SAMPLE	S97T000604	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	5 DUP	S97T000604	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 17831

Anthony Pucento 5-15-97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Samples run on DSC-03. ^{Q3} 5/16/97

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.

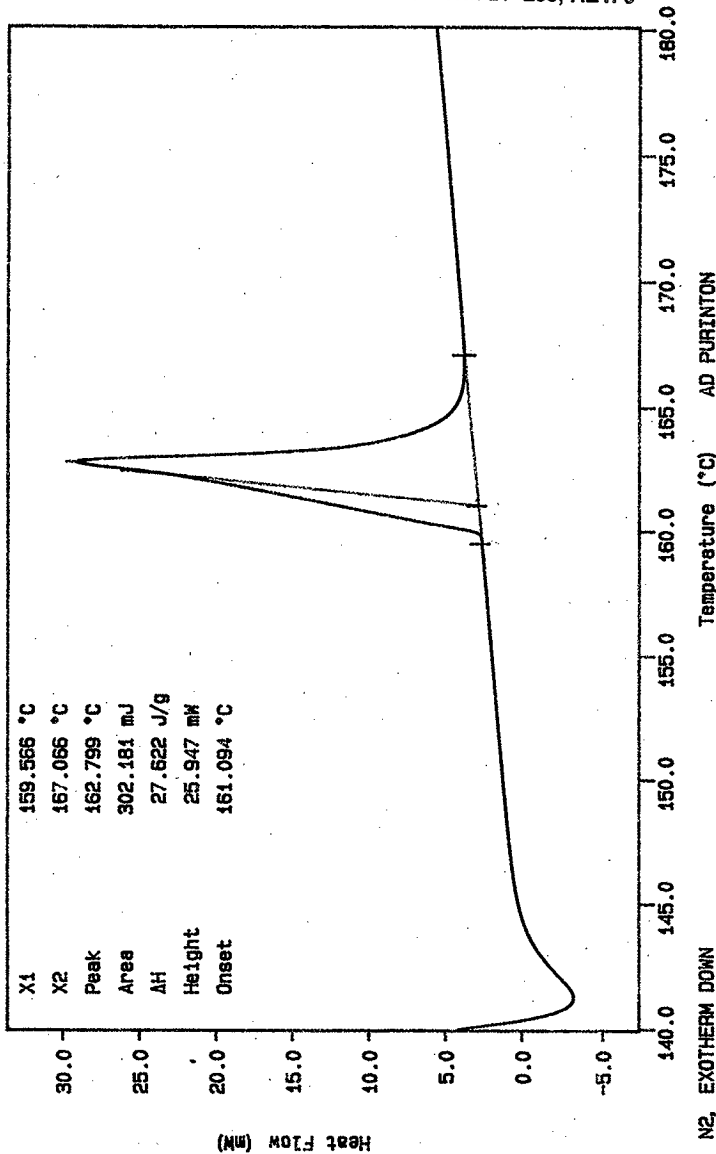
Curve 1: DSC

File Info: IND051501 Thu May 15 02:36:27 1997

Sample Weight: 10.940 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 140 TO 144



N2, EXOTHERM DOWN
TEMP: 148.8 °C
TIME: 148.8 s

0.0 min RATE: 10.0 °C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER

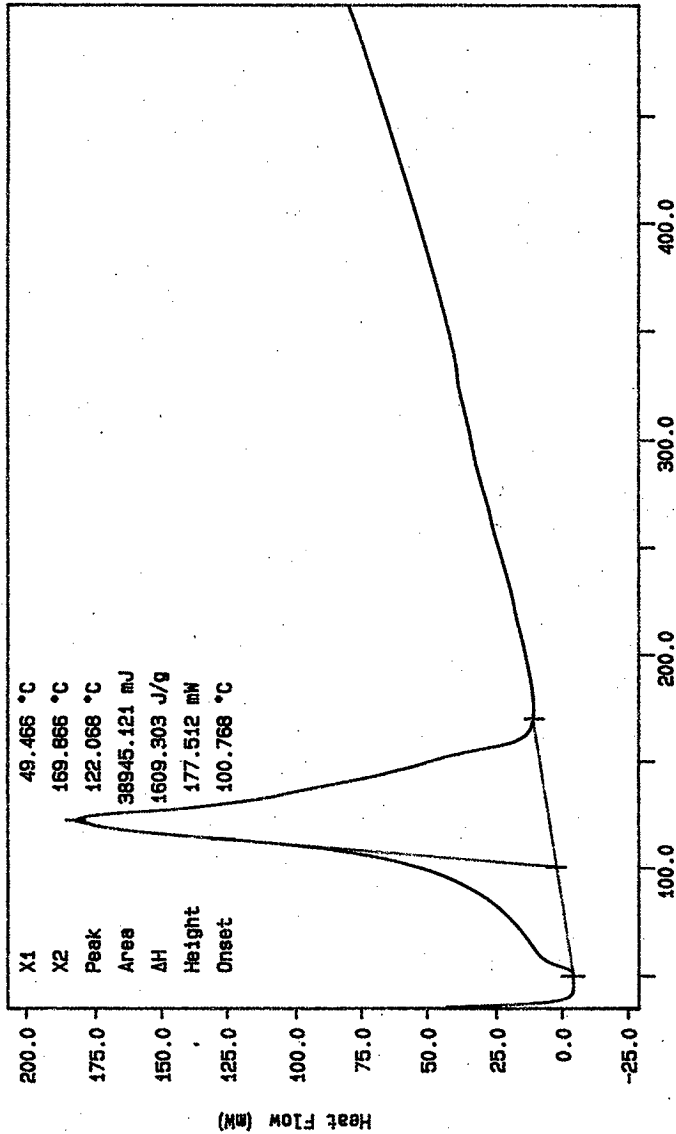
7 Series Thermal Analysis System
Fri May 16 08:35:14 1997

MacLellan 5/16/97

HNF-SD-WM-DP-245, REV. 0 *1/14-97*

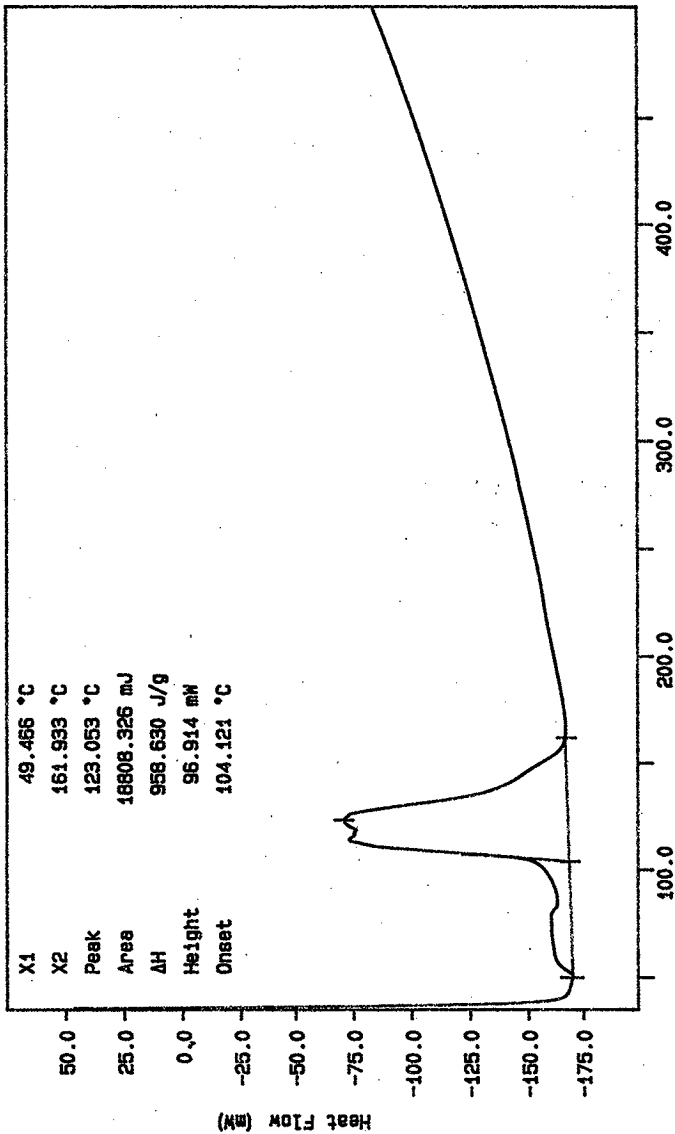
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC
File Info: SAM051509 Thu May 15 23:26:09 1997
Sample Weight: 24.200 mg
S977000603 SAM



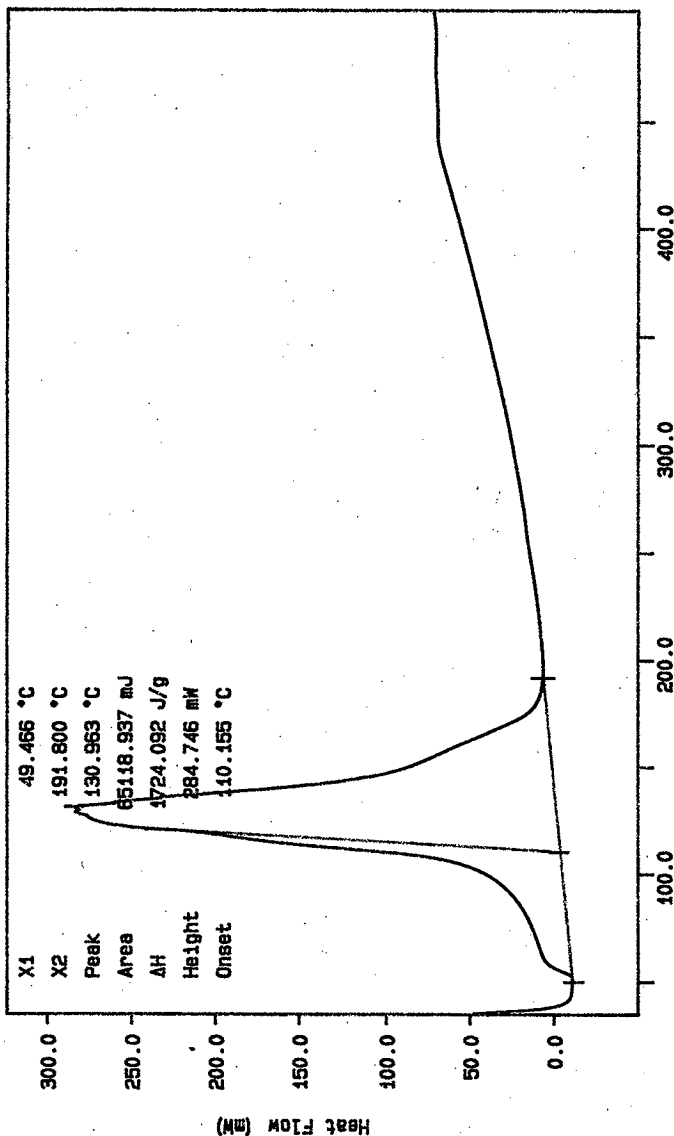
N2 10C/min
TIME: 00.8 g
AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 23:56:37 1997

Curve 1: DSC
 File Info: SAN051510 Fri May 16 00:48:01 1997
 Sample Weight: 19.620 mg
 S97T000603 DUP



N2 10C/min
 TEM: 35.8 °C
 TIME: 0.0 min RATE: 10.0 C/min
 AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Fri May 16 00:50:38 1997

Curve 1: DSC
 File Info: SAM051511 Fri May 16 01:45:37 1997
 Sample Weight: 37.770 mg
 S97T000604 SAM



N2 10C/min
 TEMPERATURE 50.0 °C
 TIME: 0.0 min RATE: 10.0 C/min
 AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Fri May 16 01:59:34 1997

Curve 1: DSC

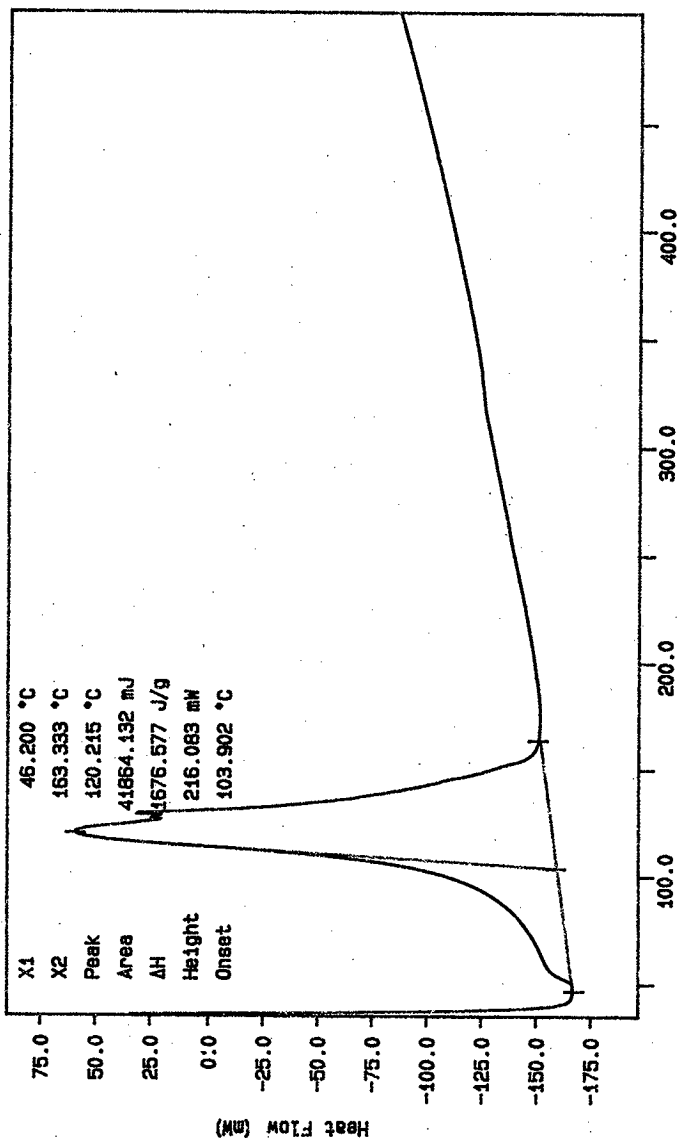
File Info: SAN051513 Fri May 16 02:54:17 1997

Sample Weight: 24.970 mg

S97T000604 DUP

HNF-SD-WM-DP-245, REV. 0 ^{note} 7-14-97

HNF-SD-WM-DP-255, REV. 0



N2 10C/min
TIME: 35.8 s
TEMP: 500.0 °C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 16 03:12:22 1997

LABCORE Data Entry Template for Worklist# 17832

Analyst: ADP Instrument: DSC0 3 Book # 12X148

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

Worklist Comment: T204, DSC-01 Run under nitrogen. skim

HNF-SD-WM-DP-255, REV. 0

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>27.01</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000605	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000605	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000606	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000606	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17832

See Attached for Signature
Analyst Signature Date

[Signature] 5-21-97
Analyst Signature Date

Validated 5/22/97 [Signature]

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# 17832

Analyst: ADP Instrument: DSC0 3 Book # 12N14B

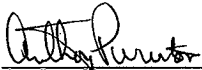
Method: LA-514-113 Rev/Mod D.O

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T000605	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T000605	0	DSC-01	SOLID			N/A	Joules/g
97000261	T-204	4 SAMPLE	S97T000606	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	5 DUP	S97T000606	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 17832


Analyst Signature 5-16-97
 Date 5/17/97

Analyst Signature _____ Date _____

Data Entry Comments:

Samples run on DSC-03. BB 5/16/97

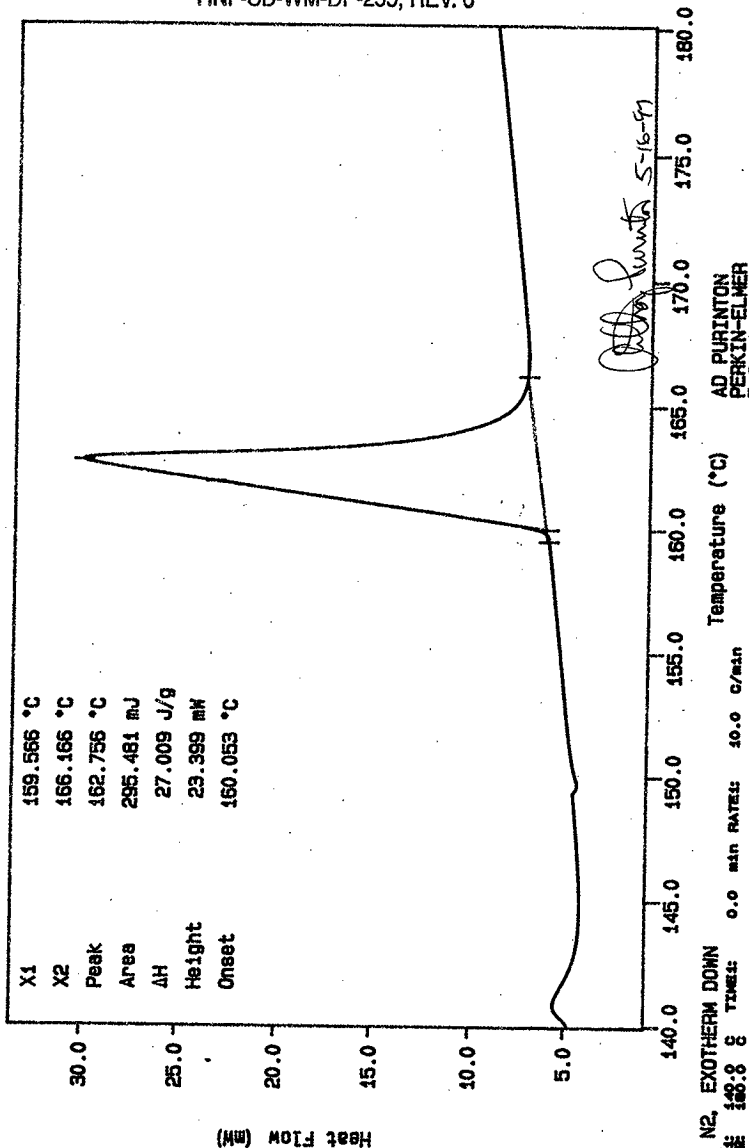
Curve 1: DSC

File info: IND051601 Fri May 16 03:24:36 1997

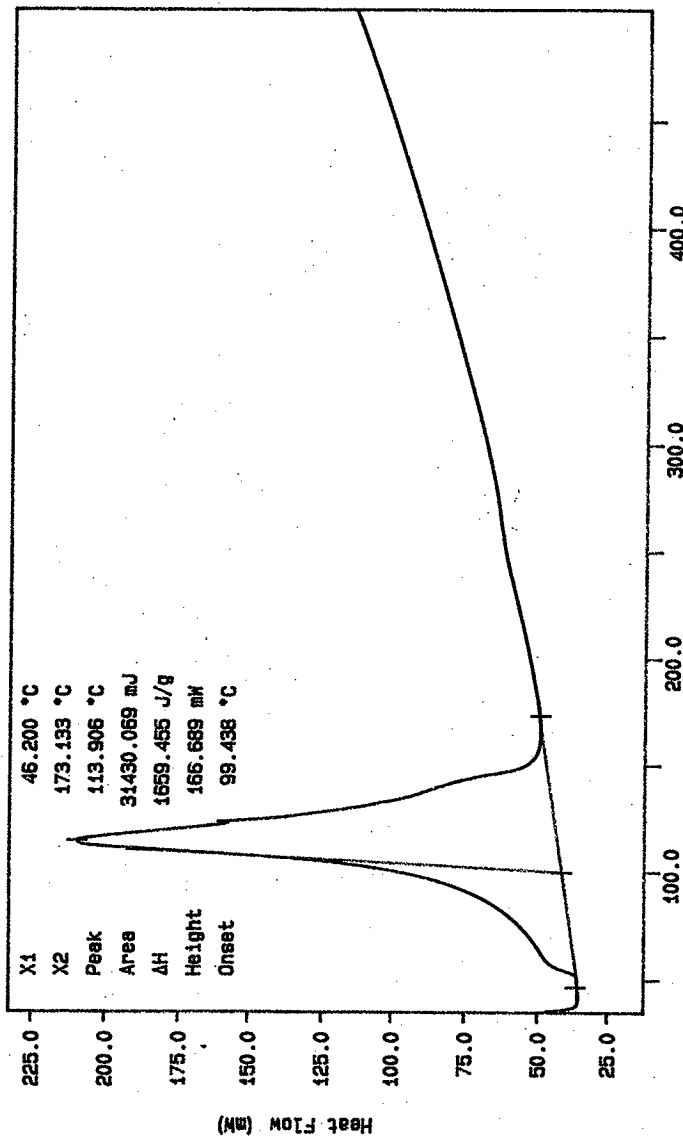
Sample Weight: 10.940 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 147 TO 151.



Curve 1: DSC
 File Info: SAM051601 Fri May 16 04:23:55 1997
 Sample Weight: 18.940 mg
 S97T000605 SAM

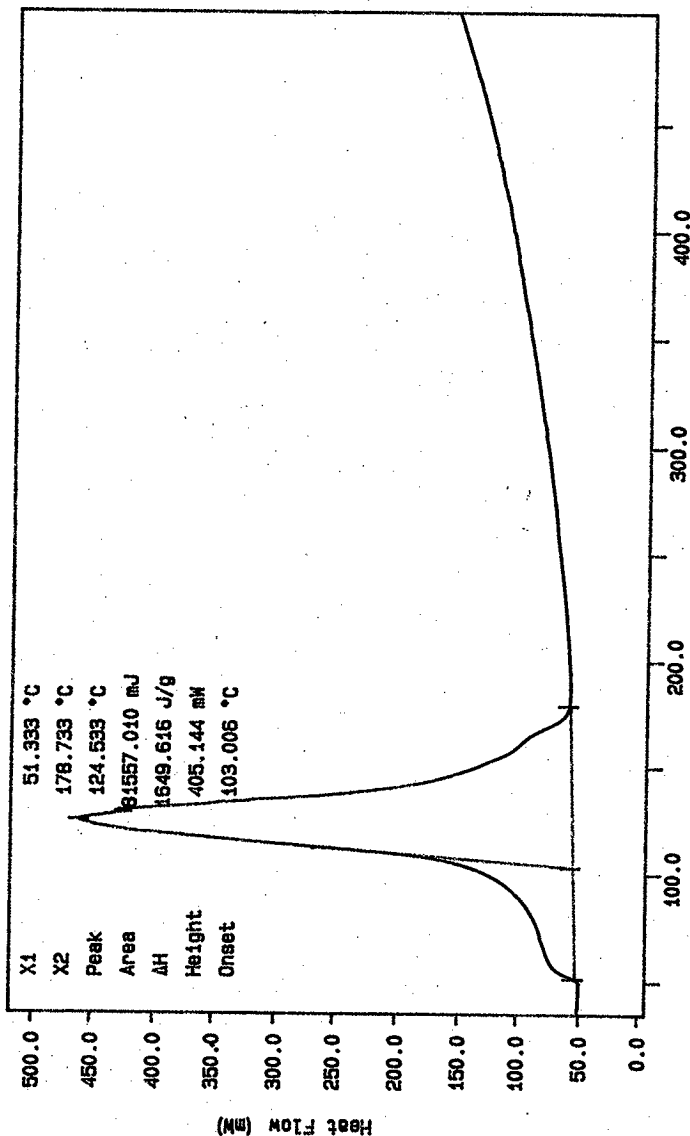


N2 100/min
 Temp: 50.0 °C
 TIME: 000.0 g
 AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Fri May 16 08:17:12 1997

Curve 1: DSC
 File Info: S4051602 Fri May 16 19:36:05 1997
 Sample Weight: 49.440 mg
 S97T000605DUP

HNF-SD-WM-DP-245, REV. 0 *MTC*
 7-14-97

HNF-SD-WM-DP-255, REV. 0



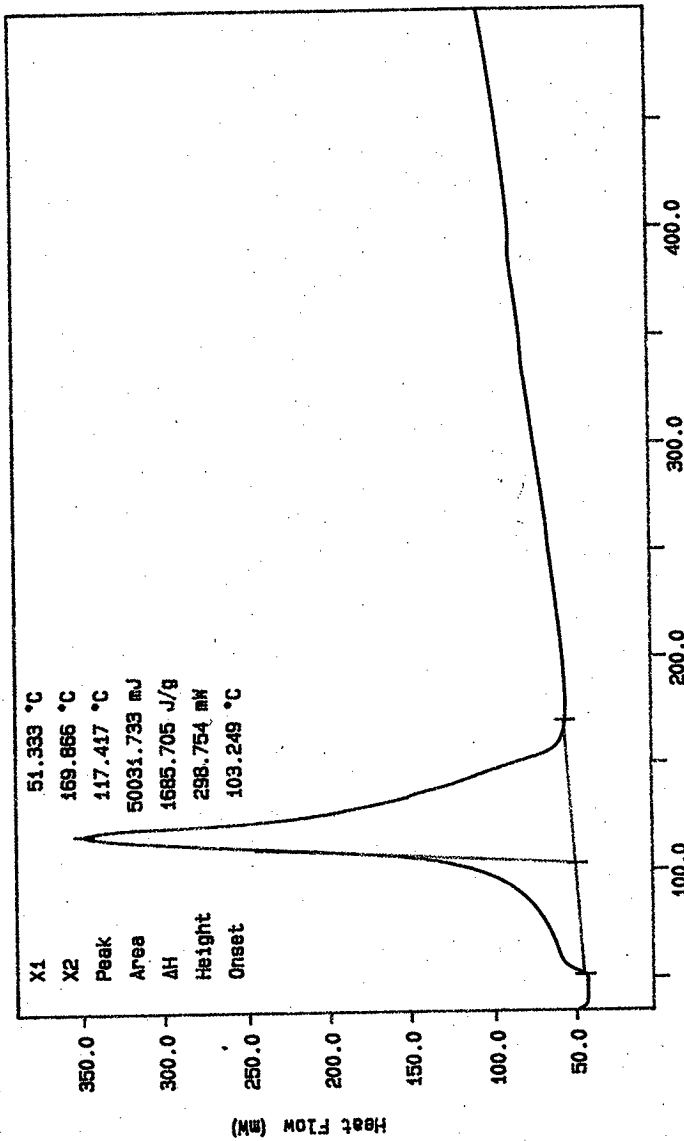
N2 10C/min
 TEMPERATURE 500.0 g
 TIME: 0.0 min RATE: 10.0 C/min
 RD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Fri May 16 21:25:35 1997

File info: SAM051603 Fri May 16 22:16:35 1997

File # 110. 348031003 11.1
Sample Weight: 29.680 mg

909000125

X1	51.333 °C
X2	169.866 °C
Peak	117.417 °C
Area	50031.733 mJ
ΔH	1685.705 J/g
Height	298.754 mW
Onset	103.249 °C



N2 10C/min

00:00

TIME:

0.0 MIN RATE: 50.0 C/min

Temperature (°C)

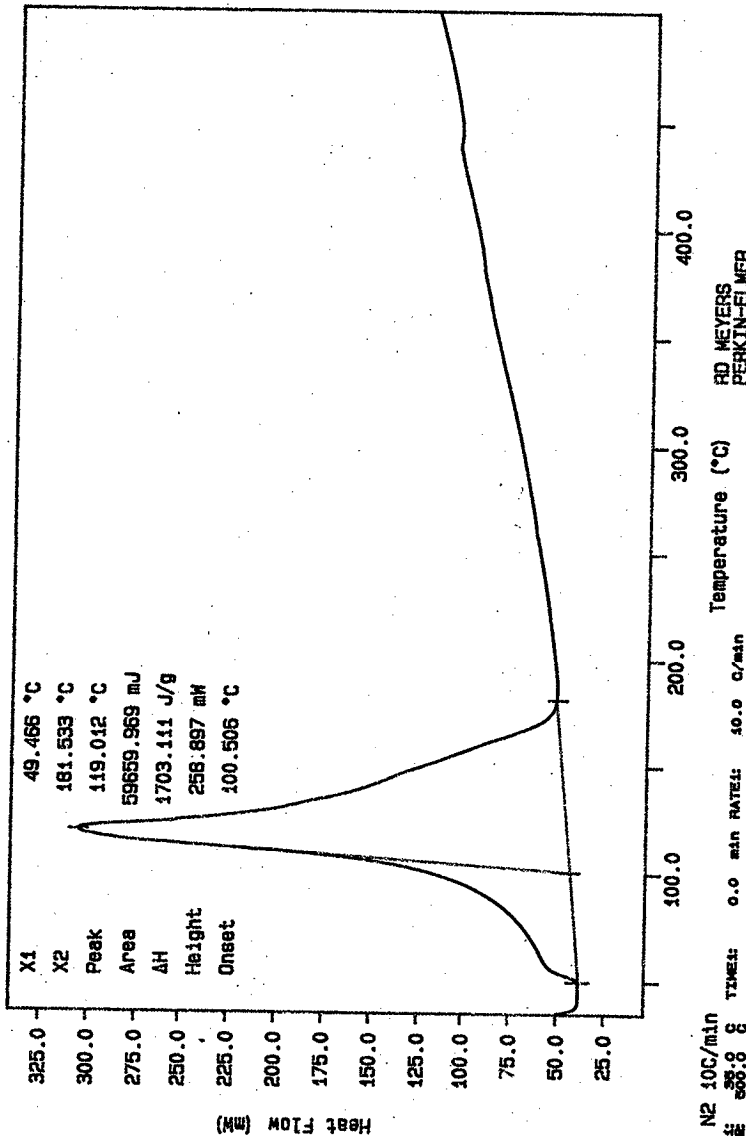
**ROD MEYERS
PEAKIN-ELMER**

PEAKIN-ELMER
7 Series Thermal Analysis System
Sat May 17 00:40:37 1997

~~HNF-SD-WM-DP-245, REV. 0~~ *mtz*
7-14-97

HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC
File info: SAM051701 Sat May 17 01:41:32 1997
Sample Weight: 35.030 mg
SS7T000606DUP



RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat May 17 03:47:26 1997

LABCORE Data Entry Template for Worklist# 17833

Analyst: RDM Instrument: DSC0 3 Book # 12N14B

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

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>26.89</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000607	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000607	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000608	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000608	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17833

See Attached for Signature
Analyst Signature Date

5-21-97
Analyst Signature Date

Validated 5/22/97 B. Mehebor

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# 17833

Analyst: Com Instrument: DSC0 3 Book # 12M4B

Method: LA-514-113 Rev/Mod D-D

Worklist Comment: T204, DSC-01 Run under nitrogen. skm HNF-SD-WM-DP-255, REV. 0

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T000607 0		DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T000607 0		DSC-01	SOLID			N/A	Joules/g
97000261	T-204	4 SAMPLE	S97T000608 0		DSC-01	SOLID	N/A			Joules/g
97000261	T-204	5 DUP	S97T000608 0		DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 17833

Com 5/14/97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:
Samples run on DSC-03 5/20/97

Curve 1: DSC

File info: TER051702 Sat May 17 20:57:32 1997

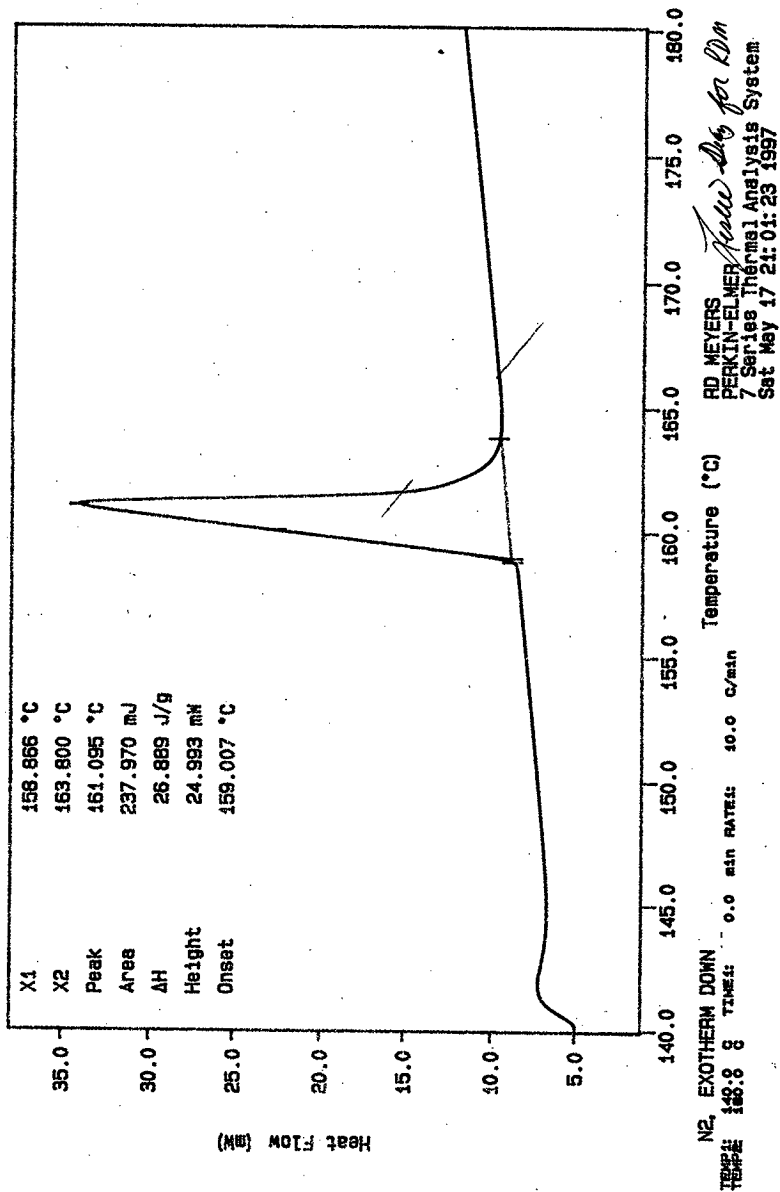
Sample Weight: 8.850 mg

12N14-8

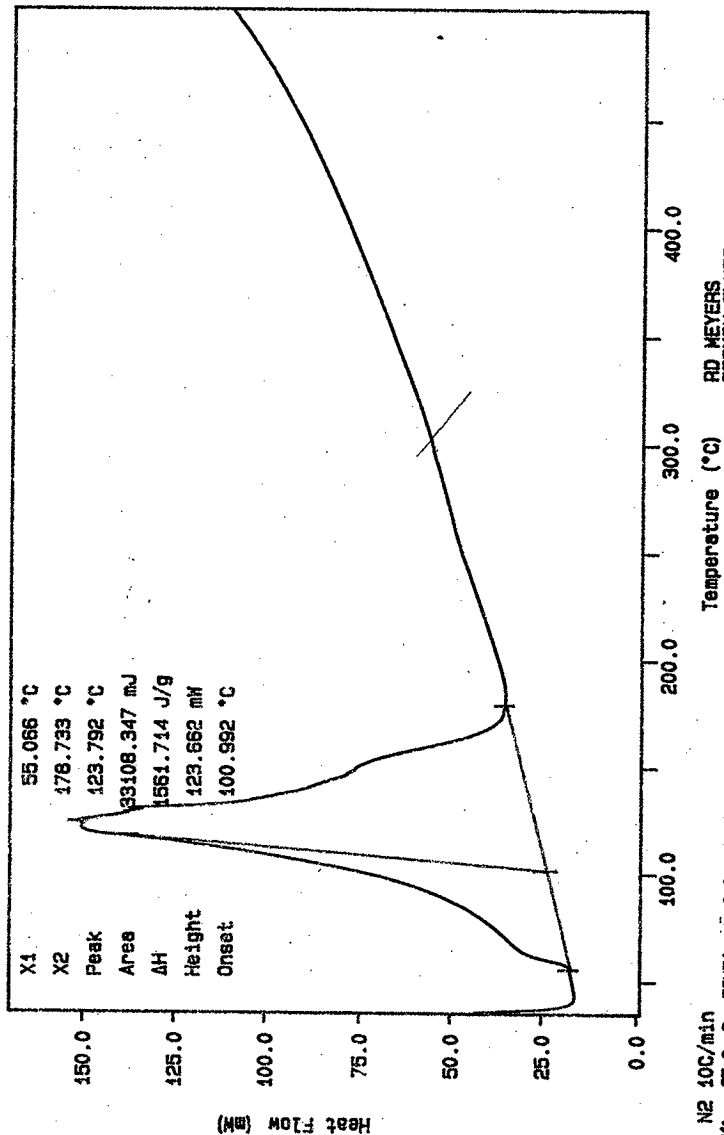
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 154 TO 158.

HNF-SD-WM-DP-245, REV. 0 *note 7-14-97*

HNF-SD-WM-DP-255, REV. 0

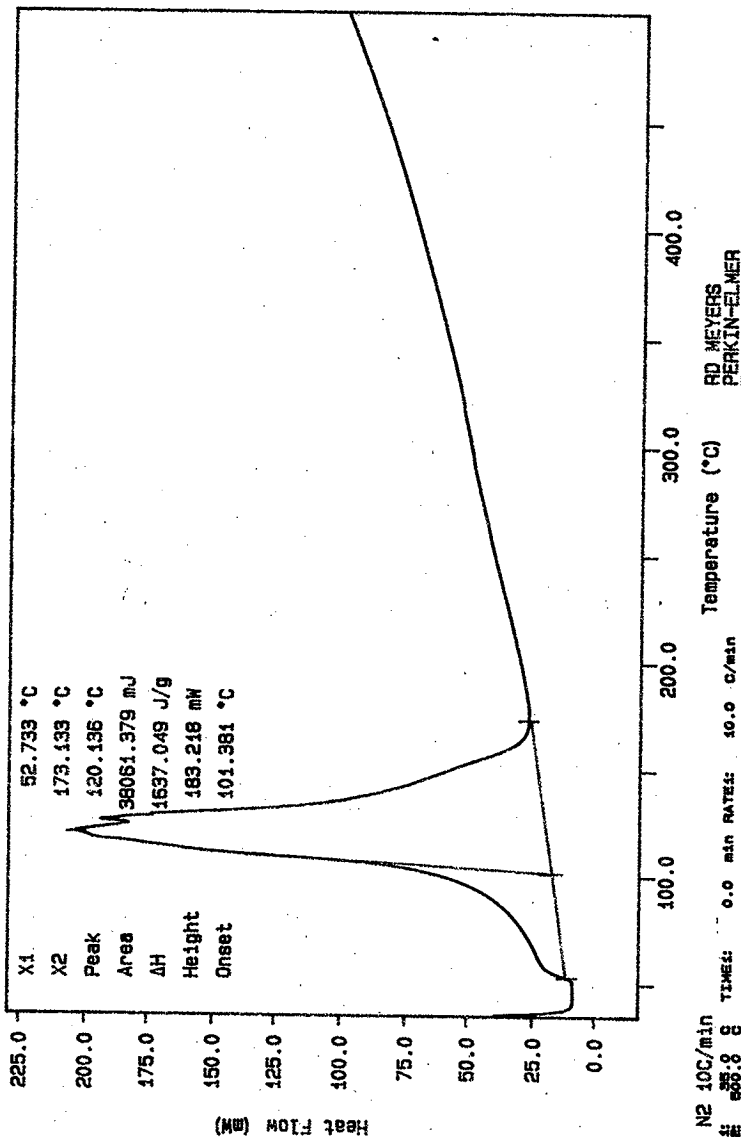


Curve 1: DSC
 File Info: SAM051704 Sat May 17 21:51:34 1997
 Sample Weight: 21.200 mg
 S977000607



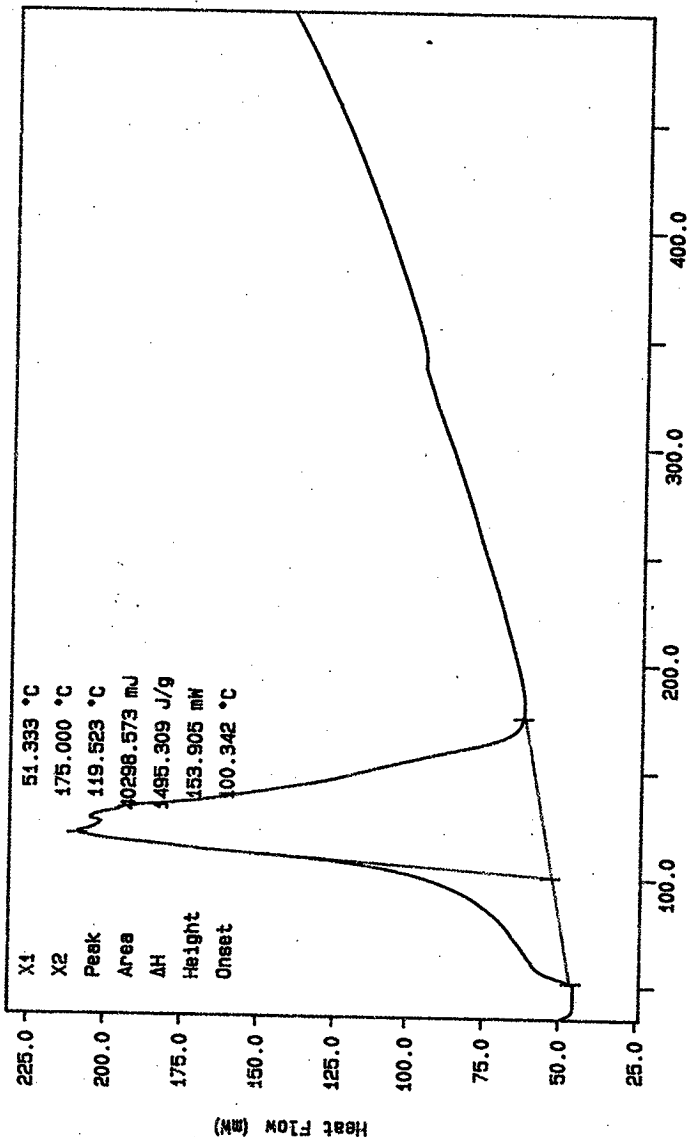
N2 100 c/min
 Temp: 255.8 °C
 Time: 0.0 min RATE: 10.0 °C/min
 PD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Sat May 17 22:00:40 1997

Curve 1: DSC
File info: SAM051705 Sat May 17 22:51:09 1997
Sample Weight: 23.250 mg
S97T000607DUP



RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sun May 18 00:33:08 1997

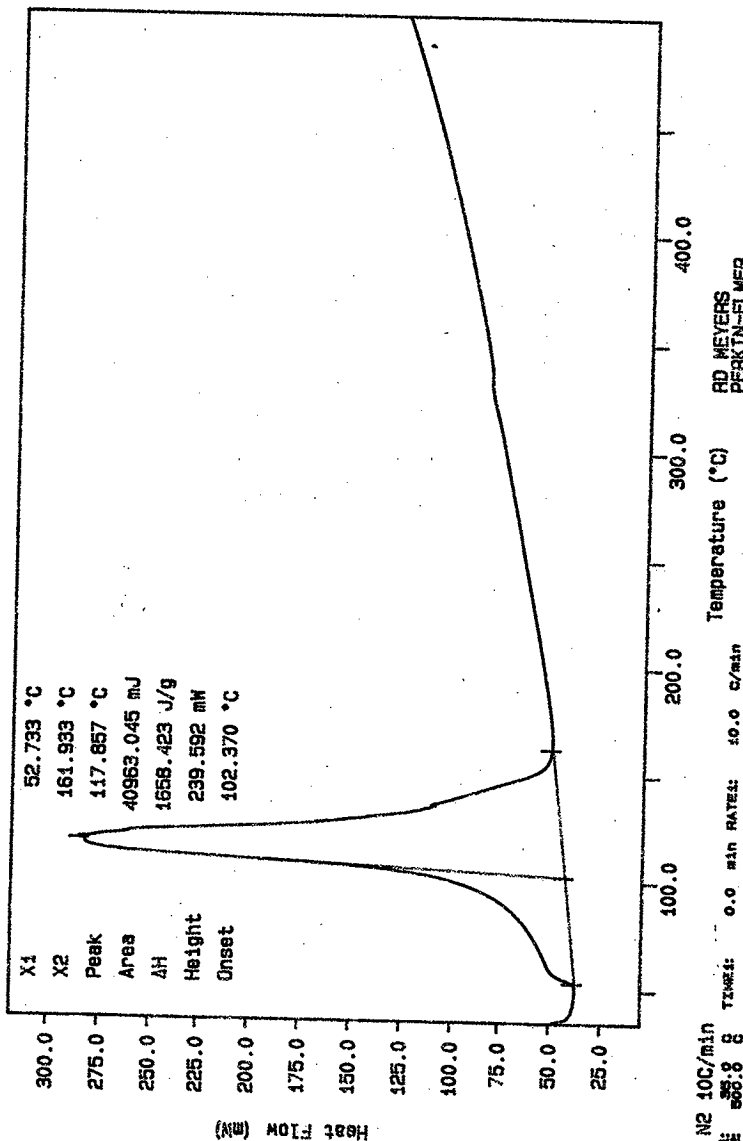
Curve 1: DSC
File Info: SAK051801 Sun May 18 01:28:43 1997
Sample Weight: 26.950 mg
S977000608



RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sun May 18 01:33:35 1997

N2 10C/min
TIME: 00.8 g
TIME: 0.0 min RATE: 10.0 C/min

Curve 1: DSC
File Info: SAM051602 Sun May 16 02:23:51 1997
Sample Weight: 24.700 mg
S97T000608DUP



RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sun May 16 04:06:00 1997

LABCORE Data Entry Template for Worklist# 17834

Analyst: JDS Instrument: DSC0 3 Book # 12N14B

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

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>27.44</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000633	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000633	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000634	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000634	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17834

See Attached for Signature
Analyst Signature Date
Validated 5/30/97 [Signature]

Susan Bee 5/22/97
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# 17834

Analyst: Jds Instrument: DSC0 3 Book # 12N14B

Method: LA-514-113 Rev/Mod D-0

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T000633	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T000633	0	DSC-01	SOLID			N/A	Joules/g
97000261	T-204	4 SAMPLE	S97T000634	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	5 DUP	S97T000634	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 17834

JA Sp 5/19/97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Samples run on DSC-03. 5/20/97

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

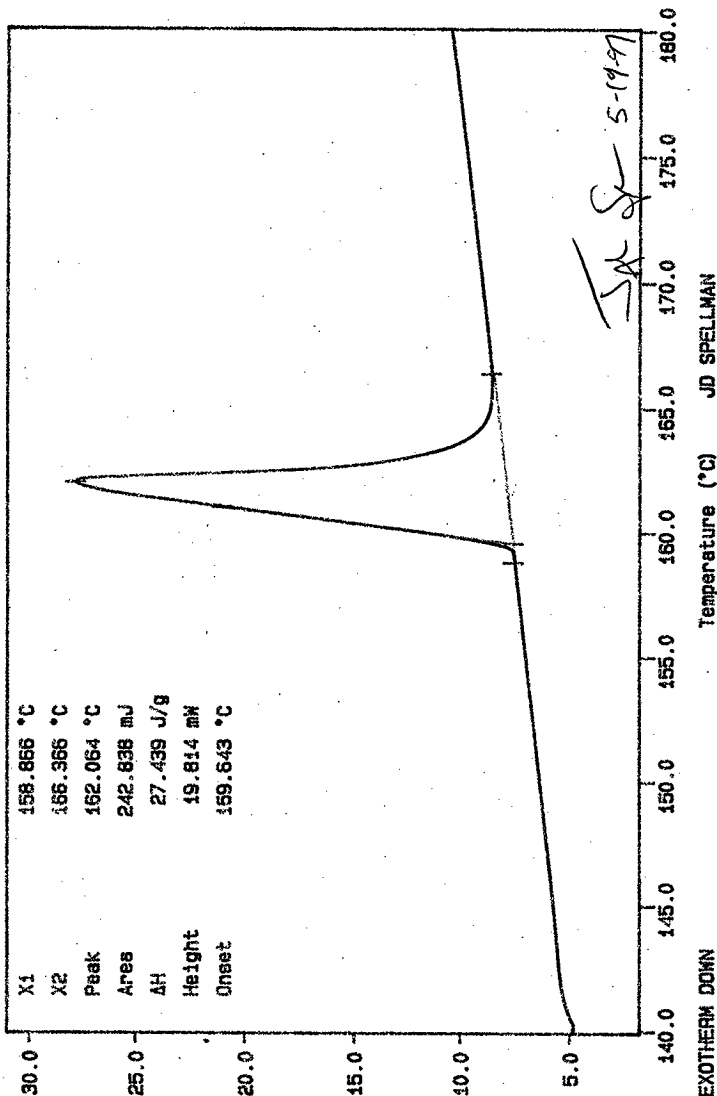
File Info: IND051603 Sun May 18 18:24:45 1997

Sample Weight: 8.850 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 161 TO 162

Heat Flow (mW)



N2, EXOTHERM DOWN

TEMP: 160.0 °C TIME: 0.0 min RATE: 40.0 °/min

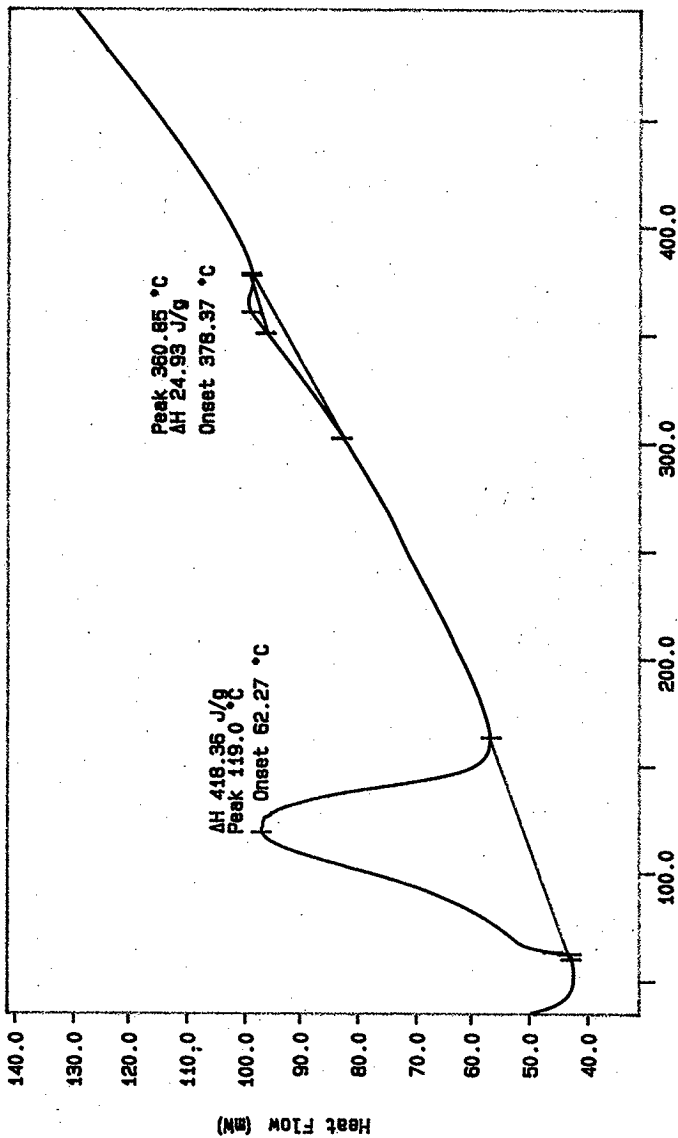
JD SPELMAN
PERKIN-ELMER
7 Series Thermal Analysis System

Sun May 18 18:25:57 1997

HNF-SD-WM-DP-255, REV. 0

HNF-SD-WM-DP-245, REV. 0 ^{MCE} 7-14-97

Curve 1: DSC
File Info: SAM051803 Sun May 18 19:35:45 1997
Sample Weight: 32.790 mg
S97T000633



N2 10C/min
TIME: 35.0 s
TIME: 555.0 s

0.0 min RATE: 10.0 C/min

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 08:12:24 1997

Curve 1: DSC

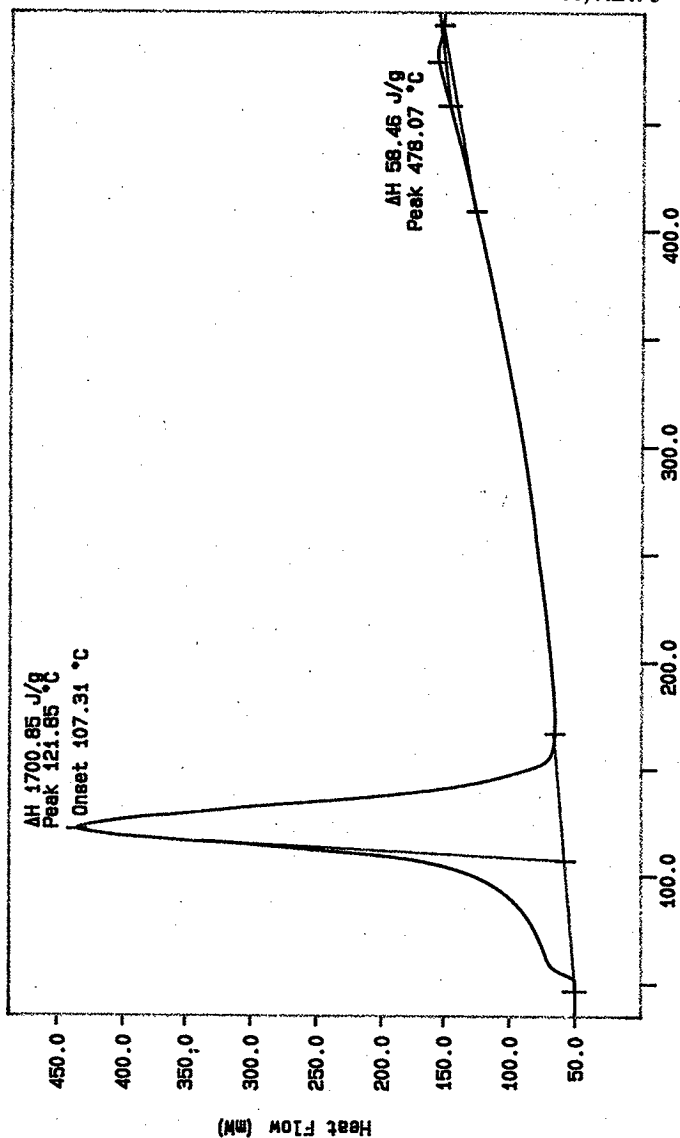
File Info: SAM051804 Sun May 18 22:17:01 1997

Sample Weight: 38.950 mg

S97T000633DUP

HNF-SD-WM-DP-245, REV. 0 ^{note} 7-14-97

HNF-SD-WM-DP-255, REV. 0



N2 10C/min
TIME: 38.9 g
TIME: 555.8 g

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 08:17:55 1997

Curve 1: DSC

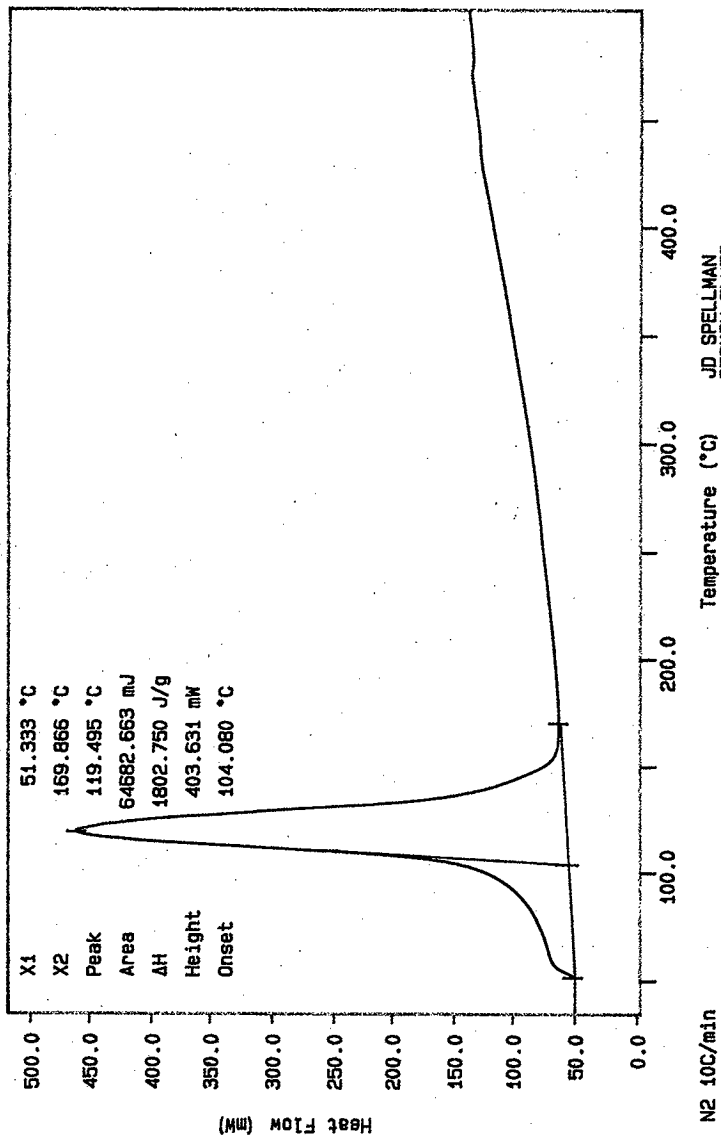
File Info: SAM051805 Mon May 19 01:23:38 1997

Sample Weight: 35.880 mg

S97T000634

HNF-SD-WM-DP-245, REV. 0 ^{ME2} 7-14-97

HNF-SD-WM-DP-255, REV. 0



N2 10C/min
TEMP: 50.0 °C
TIME: 0.0 min

RATE: 10.0 °C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 19 02:21:28 1997

Curve 1: DSC

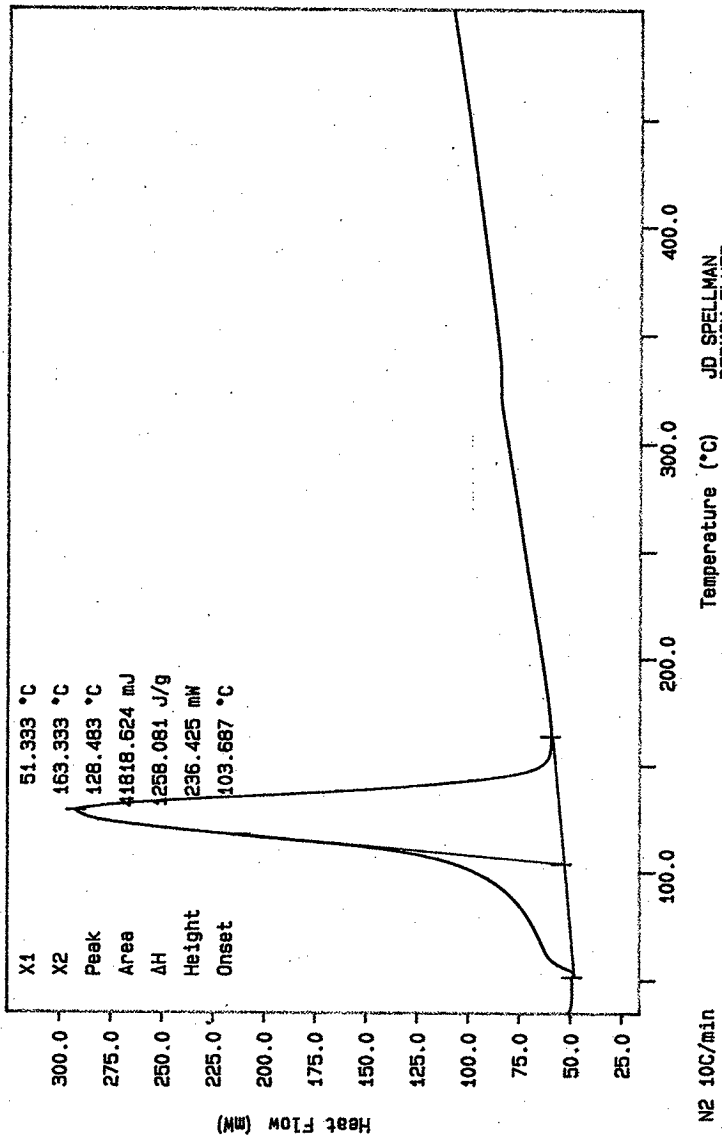
File info: SAM051806 Mon May 19 03:13:11 1997

Sample Weight: 33.240 mg

S97T000634DUP

~~HNF-SD-WM-DP-245, REV. 0~~ ^{mtz} 7-14-97

HNF-SD-WM-DP-255, REV. 0



JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 19 03:40:45 1997

N2 10C/min
TEMP: 35.0 °C
TIME: 0.0 min RATE: 10.0 C/min

LABCORE Data Entry Template for Worklist# 17835

Analyst: PJM Instrument: DSC0 3 Book # 12 N 14 B

Method: LA-514-114 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>26.43</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000635	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000635	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000636	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000636	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17835

See Attached For Signature
Analyst Signature Date
Validated 6/2/97

 5/22/97
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# 17835

Analyst: RLM Instrument: DSC0 3 Book # 12N14B

Method: LA-514-113 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T000635	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T000635	0	DSC-01	SOLID			N/A	Joules/g
97000261	T-204	4 SAMPLE	S97T000636	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	5 DUP	S97T000636	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 17835

RLM 5/21/97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Ran samples on DSC-03. @ 5/21/97

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.

File info: IND052003 Tue May 20 22:56:39 1997

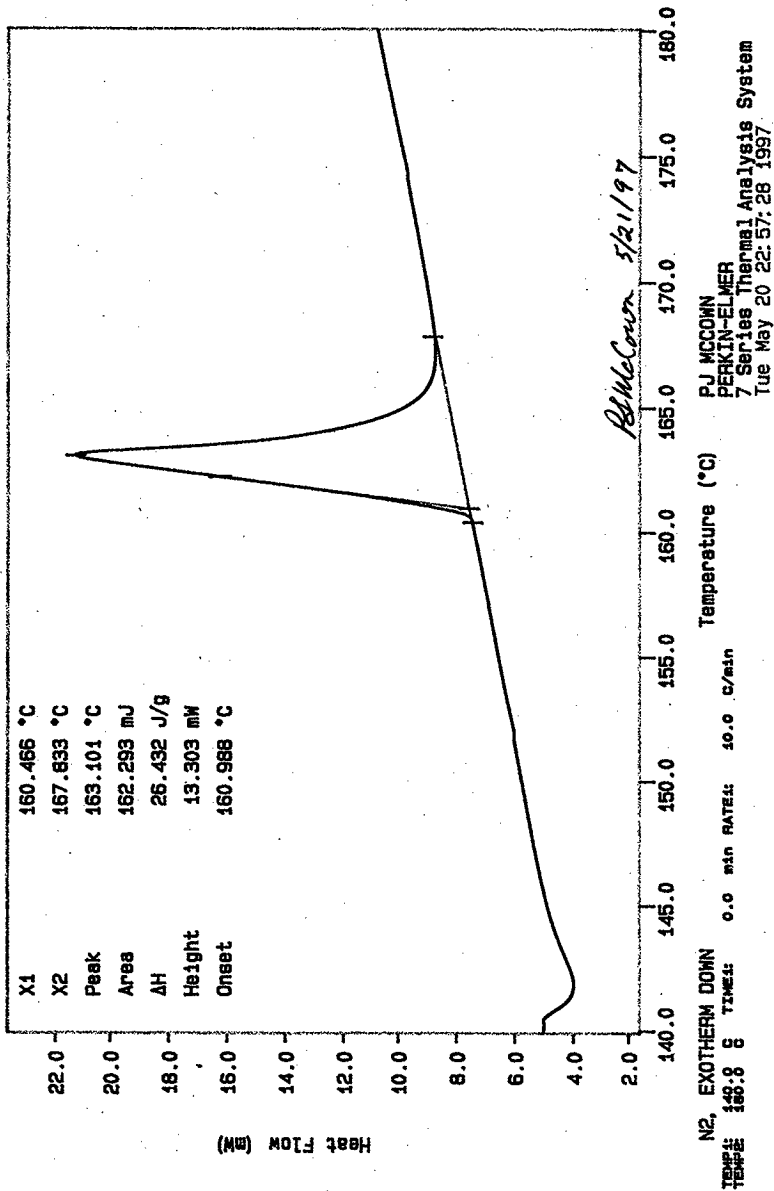
Sample Weight: 6.140 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 168 TO 172

~~HNF-SD-WM-DP-245, REV. 0~~ ^{int} ₇₋₁₄₋₉₇

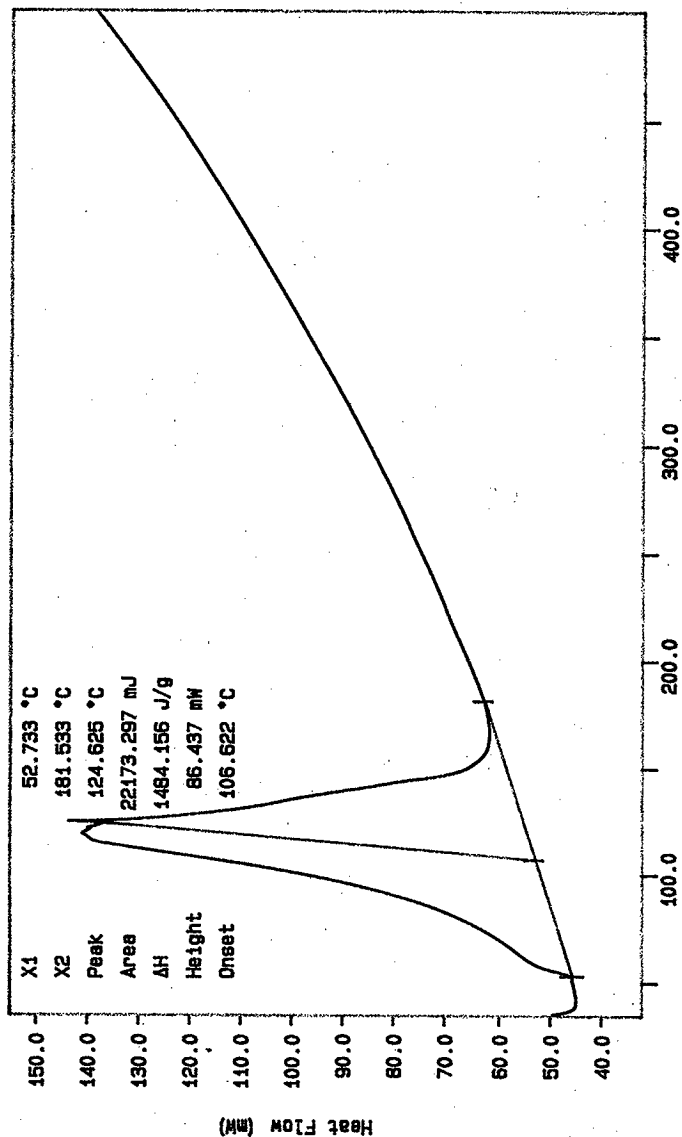
HNF-SD-WM-DP-255, REV. 0



Curve 1: DSC
 File Info: SAK052101 Wed May 21 00:56:23 1997
 Sample Weight: 14.940 mg
 S97T000635

HNF-SD-WM-DP-245, REV. 0 *11-14-97*

HNF-SD-WM-DP-255, REV. 0



N2 100/min
 Temp: 35.0 °C
 Time: 555.8 s
 PJ MCCOWN
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed May 21 01:21:36 1997

Curve 1: DSC

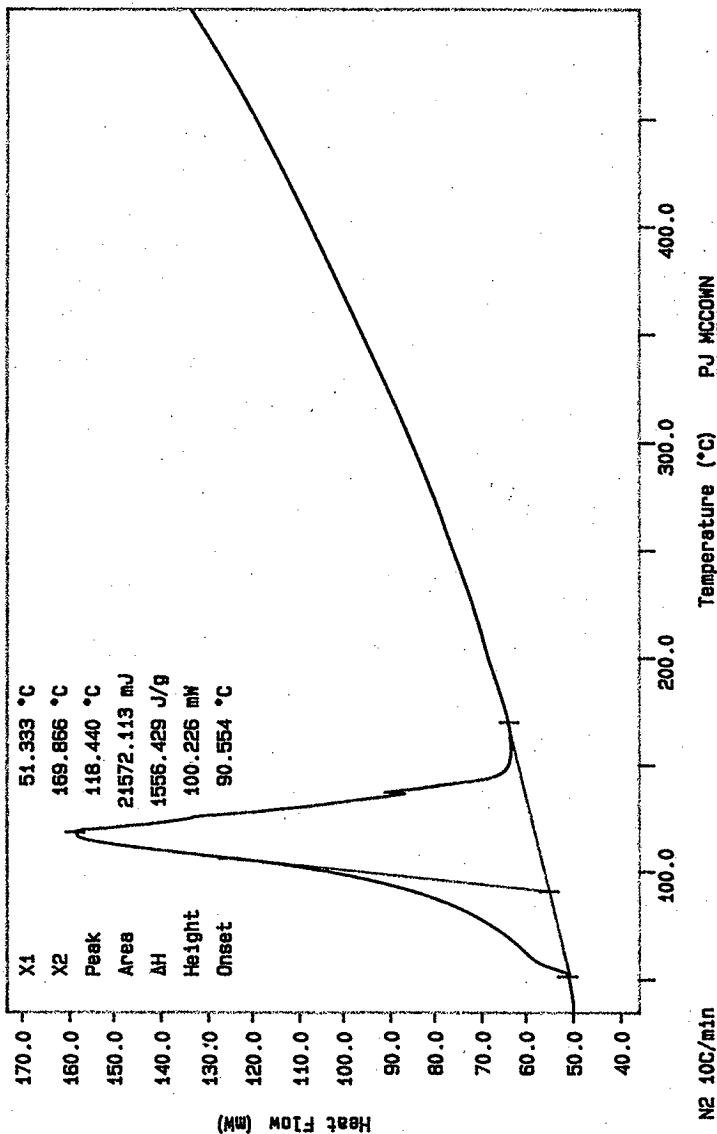
File Info: SAM052102 Wed May 21 02:16:13 1997

Sample Weight: 13.860 mg

S977000635 DUP

~~HNF-SD-WM-DP-245, REV. 0~~ ^{WTE}
~~7-14-97~~

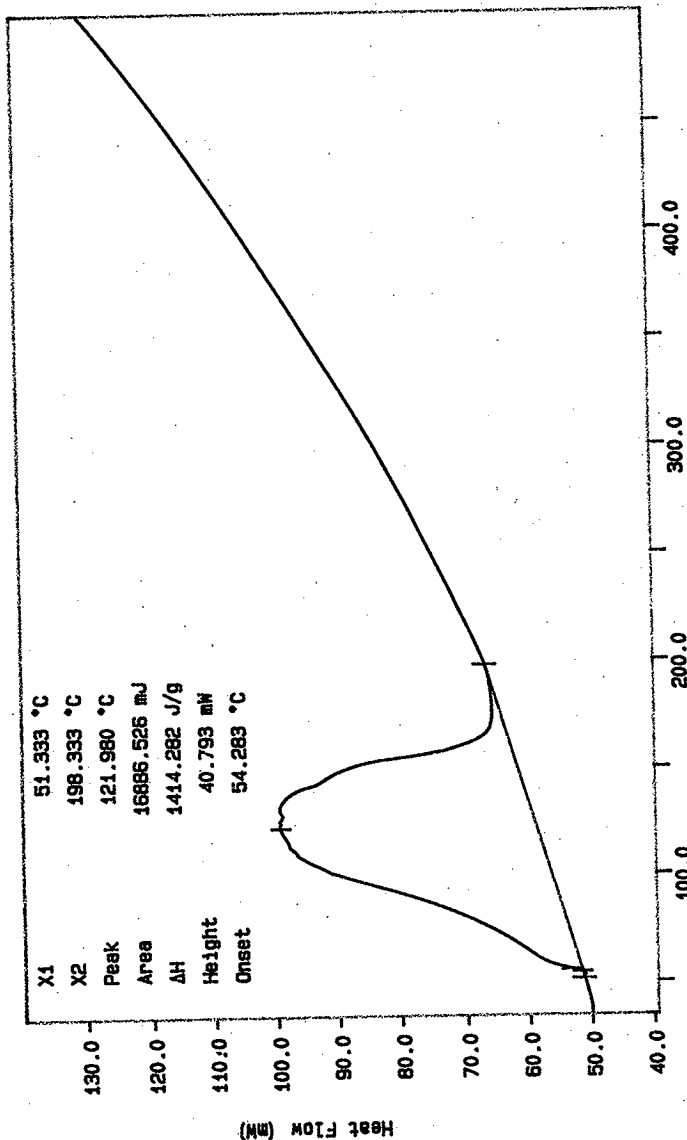
HNF-SD-WM-DP-255, REV. 0



PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 02:23:43 1997

N2 10C/min
TIME: 38.8 S
RATE: 0.0 min RATE: 10.0 C/min

Curve 1: DSC
 File Info: SAN052103 Wed May 21 03:26:03 1997
 Sample Weight: 11.940 mg
 8977000636



PJ MCCOWN
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed May 21 03:37 1997

N2 10C/min
 TEMP: 250.0 °C
 TIME: 0.0 min RATE: 10.0 C/min

Curve 1: DSC

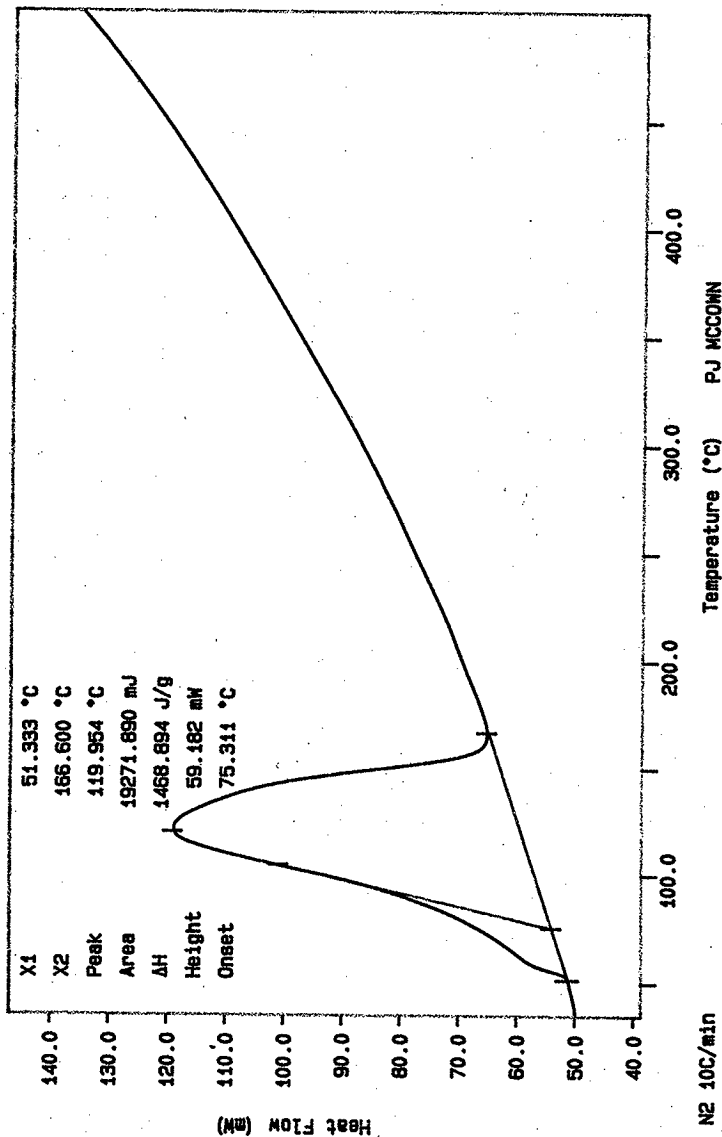
File Info: SAK052104 Wed May 21 04:39:15 1997

Sample Weight: 13.120 mg

S97T000636 DUP

HNF-SD-WM-DP-245, REV. 0 ^{note} 7-11-97

HNF-SD-WM-DP-255, REV. 0



N2 10C/min
TEMP: 50.0 °C
TIME: 555.8 s

PJ MCCOMB
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 06:13:39 1997

LABCORE Data Entry Template for Worklist# 17836

Analyst: ADP Instrument: DSC0 3 Book # 12N14B

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

Worklist Comment: T204, DSC-01 Run under nitrogen. skm HNF-SD-WM-DP-255, REV. 0

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>28.45</u>	<u>26.27.00</u>	<u>N/A</u>	Joules/g
97000261	T-204	2 SAMPLE	S97T000637 0		DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3 DUP	S97T000637 0		DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
97000261	T-204	4 SAMPLE	S97T000638 0		DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	5 DUP	S97T000638 0		DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 17836

See Attached for Signature
Analyst Signature Date

5-29-97
Analyst Signature Date

Validated 5/30/97 J. Macheloz

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# 17836

Analyst: ADP Instrument: DSC0 3 Book # 12N14B

Method: LA-514-113 Rev/Mod D-0

Worklist Comment: T204, DSC-01 Run under nitrogen. skm

HNF-SD-WM-DP-255, REV. 0

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID	<u>2000 5/10/97</u>		N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T000637	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T000637	0	DSC-01	SOLID			N/A	Joules/g
97000261	T-204	4 SAMPLE	S97T000638	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	5 DUP	S97T000638	0	DSC-01	SOLID			N/A	Joules/g

Final page for worklist # 17836

ADP 5-15-97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Samples run on DSC-03. ~~SS~~ 5/16/97

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: IND051501 Thu May 15 02:36:27 1997

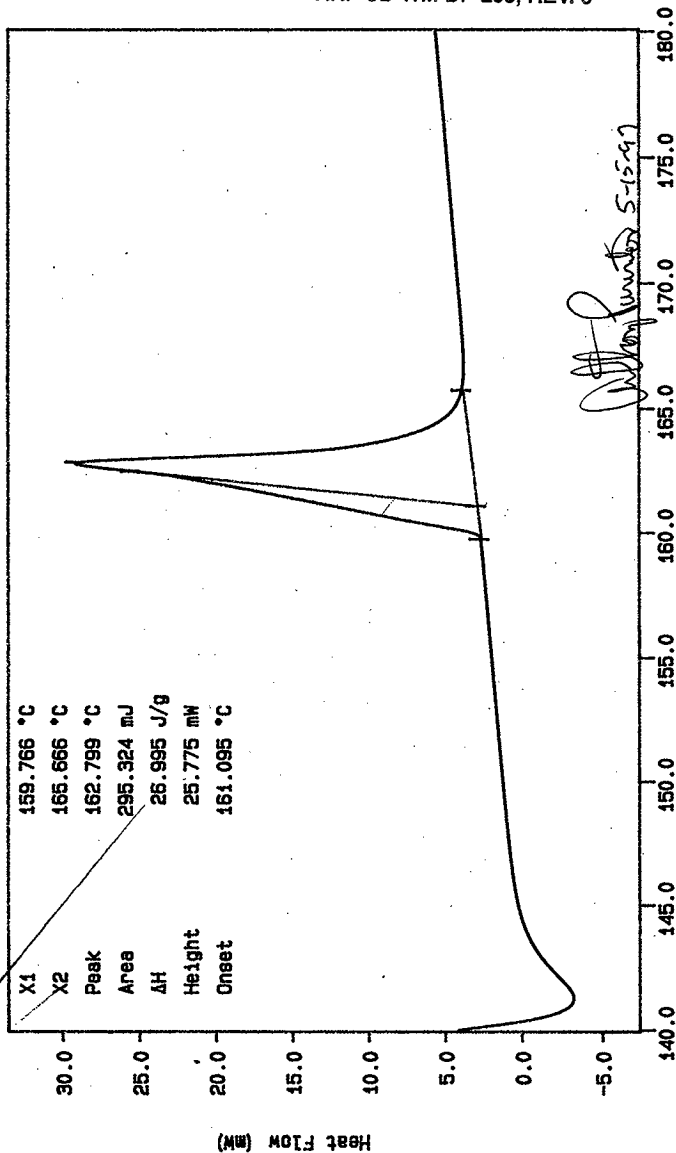
Sample Weight: 10.940 mg

12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 175 TO 179.

HNF-SD-WM-DP-245, REV. 0 ^{note} 7-14-97

HNF-SD-WM-DP-255, REV. 0



N2, EXOTHERM DOWN

TEMP: 149.8 °C TIMES: 0.0 min RATE: 10.0 °C/min

AD PURINTON

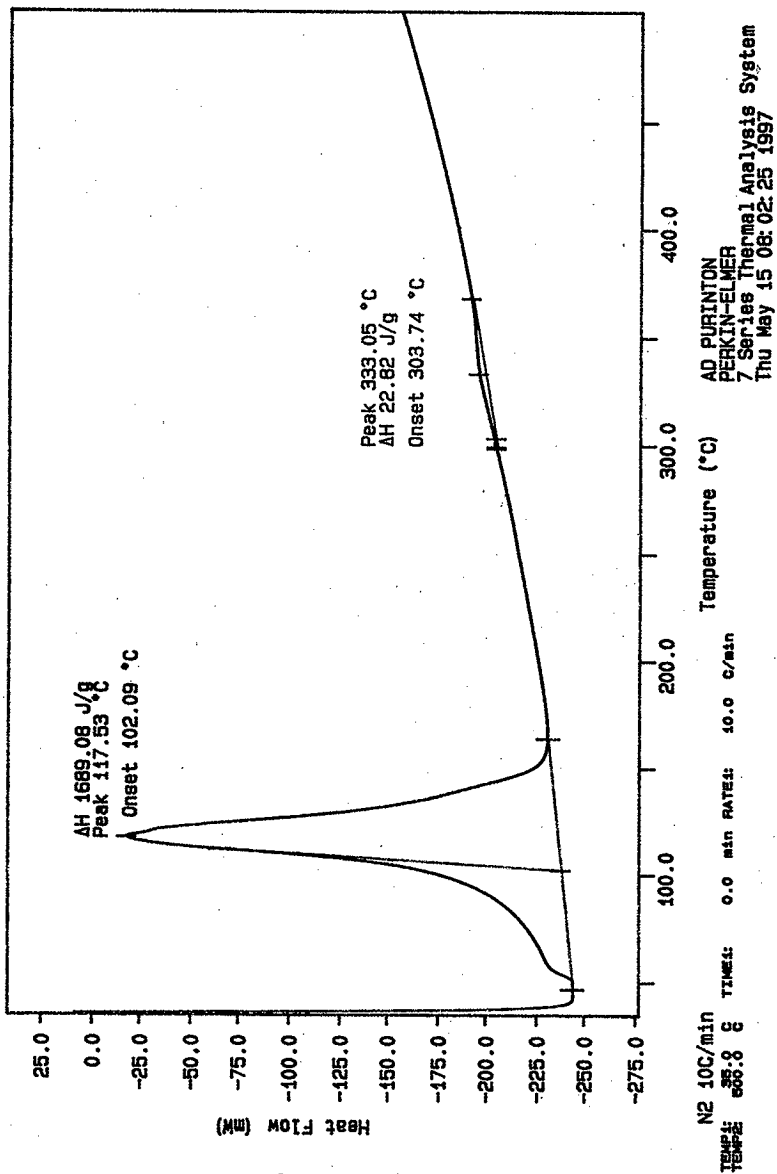
PERKIN-ELMER

7 Series Thermal Analysis System

Thu May 15 02:39:03 1997

~~HNF-SD-WM-DP-245, REV. 0~~ ^{mdc} 7-14-97

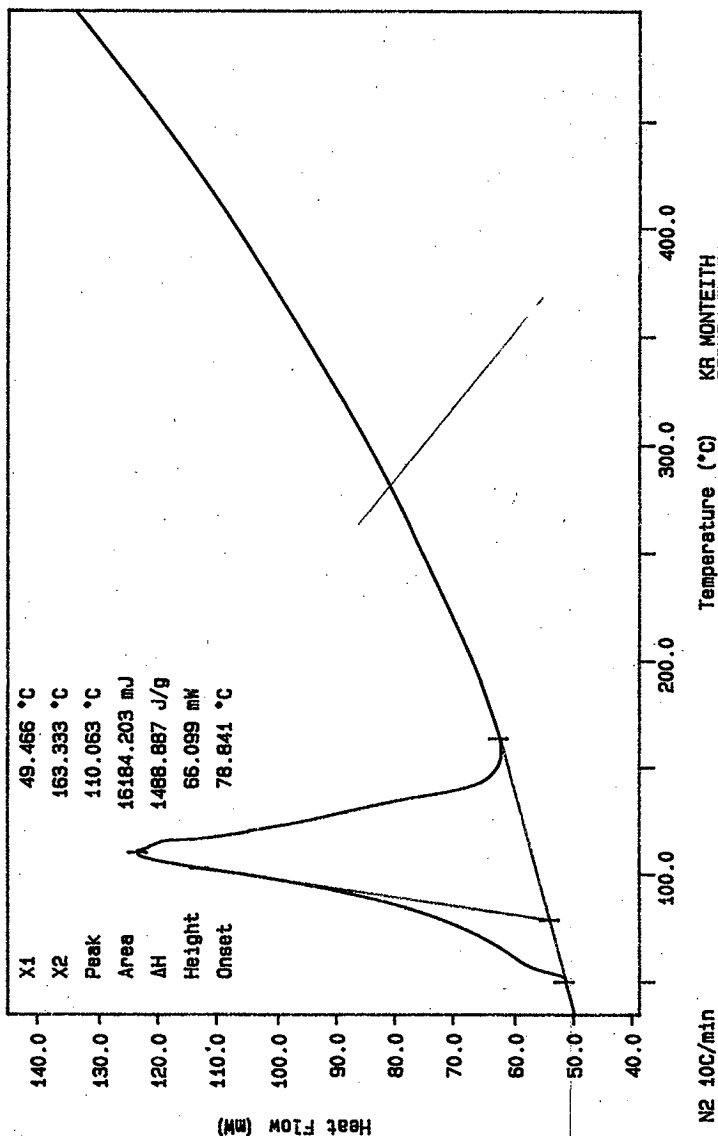
Curve 1: DSC
File info: SAM051501 Thu May 15 03:50:12 1997
Sample Weight: 23.620 mg
S97T000637 SAM



Curve 1: DSC
 File Info: SAM051502 Thu May 15 09:24:28 1997
 Sample Weight: 10.870 mg
 S97T000637 DUP

HNF-SD-WM-DP-245, REV. 0 ⁰⁰⁰⁰ 7-11-97

HNF-SD-WM-DP-255, REV. 0



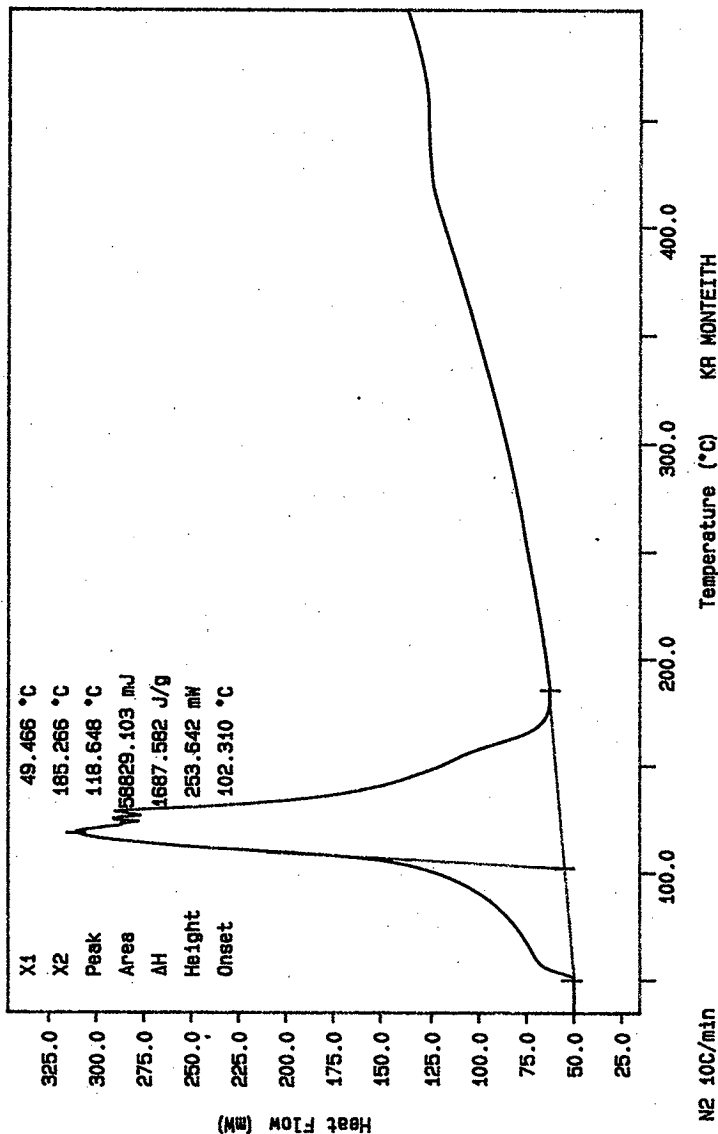
KR MONTEITH
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 15 09:47:14 1997

N2 10C/min
 TEMP: 50.0 °C
 TIME: 00.0 s
 RATE: 0.0 min RATE: 10.0 C/min

Curve 1: DSC
 File Info: SAM051503 Thu May 15 11:18:26 1997
 Sample Weight: 34.860 mg
 S97T000638 SAM

~~HNF-SD-WM-DP-245, REV. 0~~ ^{ME} ₇₋₁₁₋₉₇

HNF-SD-WM-DP-255, REV. 0



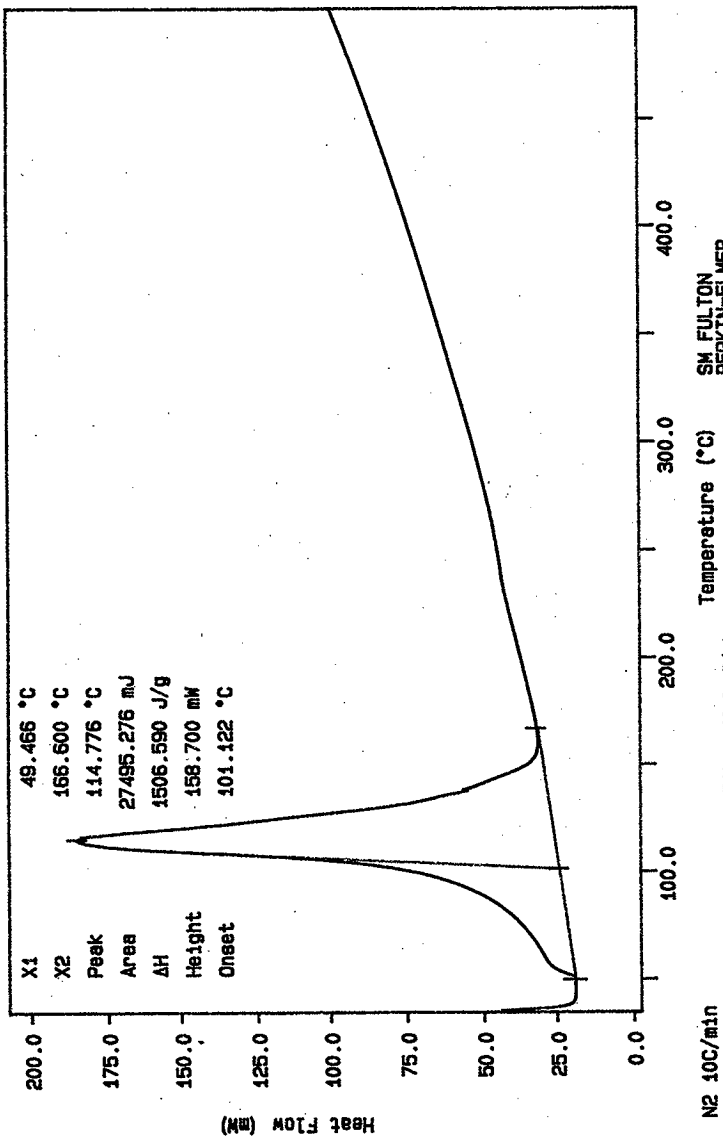
KA MONTEITH
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 15 11:46:20 1997

N2 10C/min
 TIME: 0.0 min RATE: 10.0 C/min
 TEMPE 35.0 °C
 TEMPE 600.0 °C

Curve 1: DSC
 File info: SAM051504 Thu May 15 12:32:54 1997
 Sample Weight: 18.250 mg
 S97T000638 DUP

HNF-SD-WM-DP-245, REV. 0 ^{DATE} 7-14-97

HNF-SD-WM-DP-255, REV. 0



SM FULTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 15 12:53:09 1997

N2 10C/min
 TIME: 55.8 s
 RATE: 10.0 °C/min

LABCORE Data Entry Template for Worklist# 18349

Analyst: ppb Instrument: DSC0 2 Book # NA

Method: LA-514-113 Rev/Mod 01/5/29/97

Worklist Comment: DSC-02 T-204 solid. -ppb

HNF-SD-WM-DP-255, REV. 0

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000261	T-204	1	SAMPLE	S97T000498	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	2	DUP	S97T000498	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	3	SAMPLE	S97T000499	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	4	DUP	S97T000499	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	5	SAMPLE	S97T000574	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	6	DUP	S97T000574	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	7	SAMPLE	S97T000575	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	8	DUP	S97T000575	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	9	SAMPLE	S97T000576	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	10	DUP	S97T000576	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	11	SAMPLE	S97T000580	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	12	DUP	S97T000580	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	13	SAMPLE	S97T000603	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	14	DUP	S97T000603	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	15	SAMPLE	S97T000604	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	16	DUP	S97T000604	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	17	SAMPLE	S97T000605	0		DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	18	DUP	S97T000605	0		DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry

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# 18349

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

Final page for worklist # 18349

B. Machol 5/29/97
Analyst Signature Date

Analyst Signature Date

HNF-SD-WM-DP-255, REV. 0

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# 18350

Analyst: ppb Instrument: DSC0 3 Book # NA

Method: LA-514-113 Rev/Mod 02 5/29/97 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: DSC-02 T-204 solid. -ppb

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000261	T-204	1 SAMPLE	S97T000606	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	2 DUP	S97T000606	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	3 SAMPLE	S97T000607	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	4 DUP	S97T000607	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	5 SAMPLE	S97T000608	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	6 DUP	S97T000608	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	7 SAMPLE	S97T000633	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	8 DUP	S97T000633	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	9 SAMPLE	S97T000634	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	10 DUP	S97T000634	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	11 SAMPLE	S97T000635	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	12 DUP	S97T000635	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	13 SAMPLE	S97T000636	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	14 DUP	S97T000636	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	15 SAMPLE	S97T000637	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	16 DUP	S97T000637	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry
97000261	T-204	17 SAMPLE	S97T000638	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	18 DUP	S97T000638	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry

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# 18350

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

Final page for worklist # 18350

R. MacLeod 5/29/97
Analyst Signature Date

Analyst Signature Date

HNF-SD-WM-DP-255, REV. 0

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# 18351

Analyst: ppb Instrument: DSC0 2 Book # NK

Method: ~~LA-514-113 Rev/Mod~~ 5/28/97

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: DSC-02 T-204 liquid. -ppb

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000261	T-204	1 SAMPLE	S97T000647	0	DSC-02	LIQUID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	2 DUP	S97T000647	0	DSC-02	LIQUID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry

Final page for worklist # 18351

B. Bachelor 5/28/97
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.

LABCORE Data Entry Template for Worklist# 18689

Analyst: ADP Instrument: DSC0 3 Book # 12N14B

Method: LA-514-114 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	SOLID	<u>28.45</u>	<u>27.58</u>	<u>N/A</u>	Joules/g
97000261	T-204	2	SAMPLE	S97T001197	0		DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
97000261	T-204	3	DUP	S97T001197	0		DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 18689

See Attached for Signature
Analyst Signature Date

R. Jones 6-26-97
Analyst Signature Date

Validated 6/26/97 Brachlor

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# 18689

Analyst: ADP Instrument: DSC0 3 Book # 12N14-B

Method: LA-514-113 Rev/Mod D-0

HNFS-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 DSC, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-01	SOLID			N/A	Joules/g
97000261	T-204	2 SAMPLE	S97T001197	0	DSC-01	SOLID	N/A			Joules/g
97000261	T-204	3 DUP	S97T001197	0	DSC-01	SOLID	*		N/A	Joules/g

Final page for worklist # 18689

Anthony Parente 6-19-97
Analyst Signature Date

Analyst Signature Date

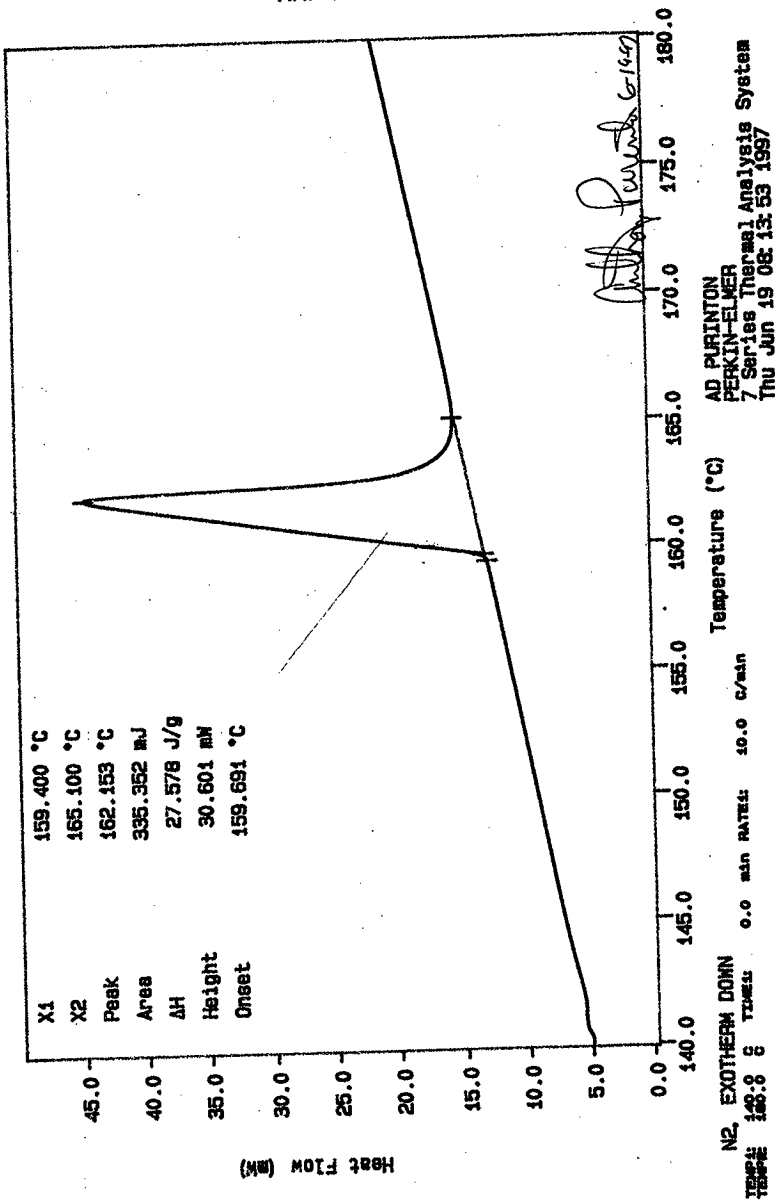
Data Entry Comments:

Ran samples on DSC-03. 6/26/97

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: IND061901 Thu Jun 19 08:08:50 1997
 Sample Weight: 12.160 mg
 12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 187 TO 189.



HNF-SD-WM-DP-245, REV. 0 *only 7-14-97*
 HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC

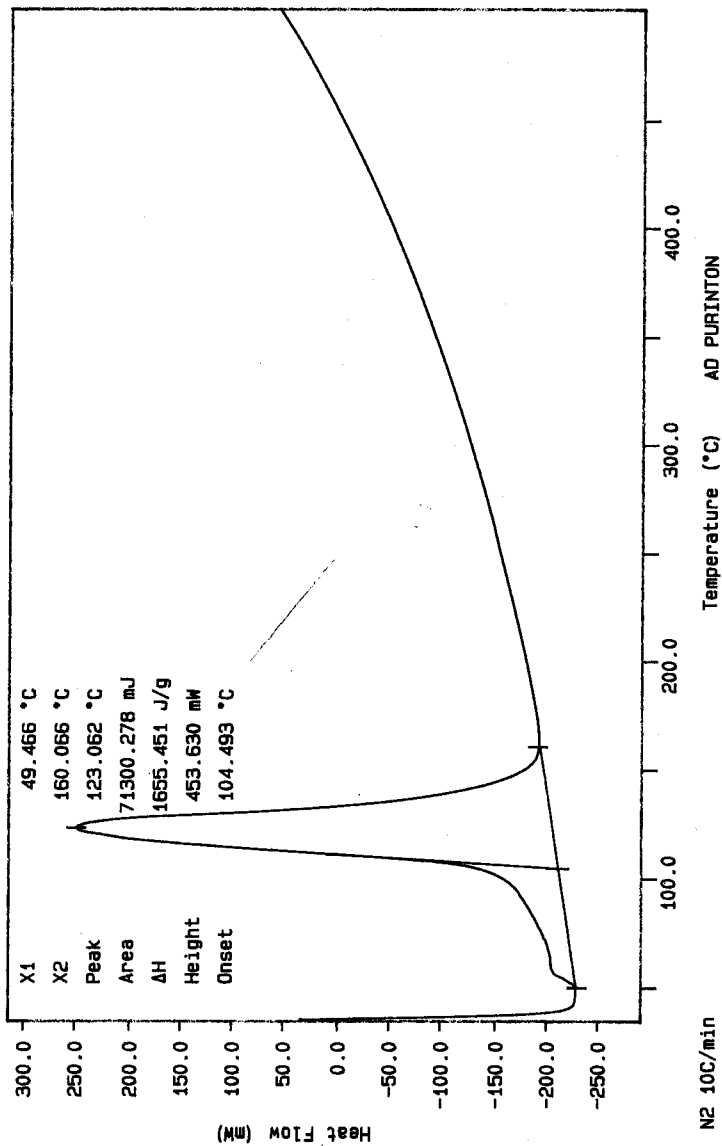
File info: SAM061901 Thu Jun 19 10:27:18 1997

Sample Weight: 43.070 mg

S97T001197 SAM

HNF-SD-WM-DP-245, REV. 0 ^{DATE} 7-14-97

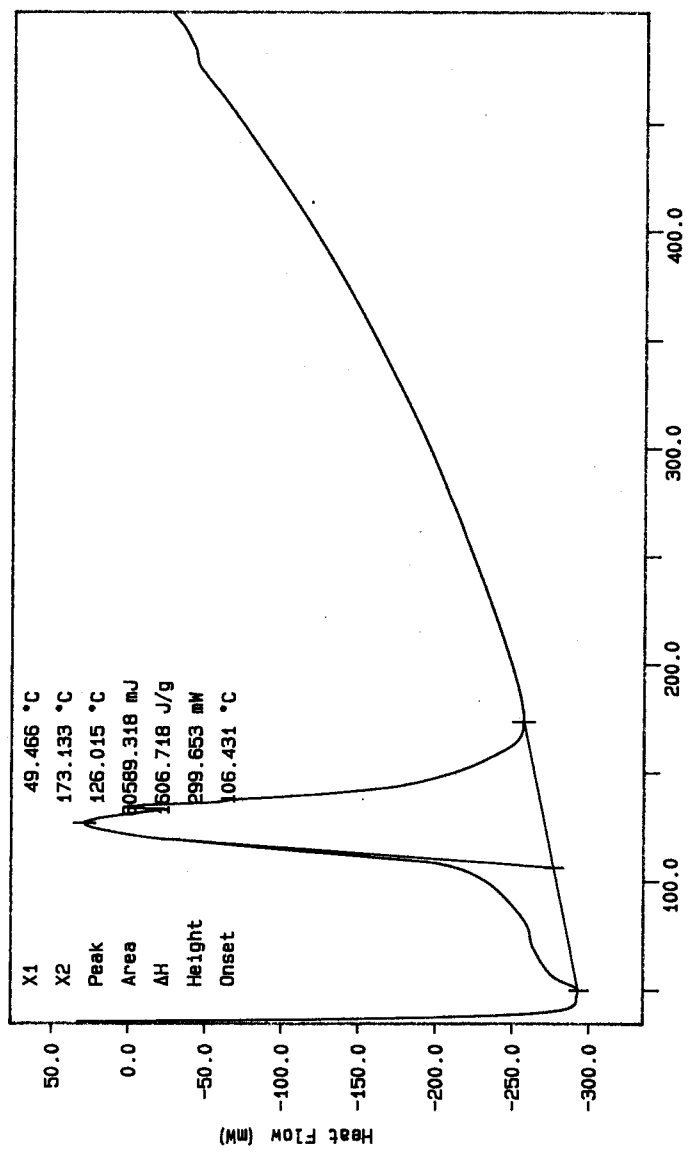
HNF-SD-WM-DP-255, REV. 0



AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 19 11:08:11 1997

N2 10C/min
TEMP: 25.0 °C
TIME: 000.0 s
0.0 min RATE: 10.0 C/min

Curve 1: DSC
File info: SAM061902 Thu Jun 19 12:05:11 1997
Sample Weight: 37.710 mg
S97T001197 DUP



N2 10C/min
TEMP: 36.0 °C
TIME: 0.0 min RATE: 10.0 °C/min
AD PURINTON
PEAKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 19 12:14:09 1997

LABCORE Data Entry Template for Worklist# 19020

Analyst: ppb Instrument: DSC0 2 Book # NA

Method: LA 514-113 Rev/Mod 03 7/1/97

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: DSC-02 T-204 Comp solid. -ppb

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
97000261	T-204	1 SAMPLE	S97T001197	0	DSC-02	SOLID	<u>N/A</u>	<u>0</u>		Joules/g Dry
97000261	T-204	2 DUP	S97T001197	0	DSC-02	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g Dry

Final page for worklist # 19020

ppb 7/1/97
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.

LABCORE Data Entry Template for Worklist# 17838

Analyst: ADP Instrument: TGA0 1 Book # 97N8-A

Method: LA-560-112 Rev/Mod C-0

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID	<u>59.4</u>	<u>59.10</u>	<u>N/A</u>	%
97000261	T-204	2	SAMPLE	S97T000498	0		TGA-01	SOLID	<u>N/A</u>	<u>79.53</u>		%
97000261	T-204	3	DUP	S97T000498	0		TGA-01	SOLID	<u>79.53</u>	<u>78.89</u>	<u>N/A</u>	%
97000261	T-204	4	SAMPLE	S97T000499	0		TGA-01	SOLID	<u>N/A</u>	<u>88.50</u>		%
97000261	T-204	5	DUP	S97T000499	0		TGA-01	SOLID	<u>88.50</u>	<u>80.95</u>	<u>N/A</u>	%

Final page for worklist # 17838

Anthony Ruvito 05-03-97
Analyst Signature Date

John M. Munn 5-6-97
Analyst Signature Date

Validated 5/8/97 JB

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 192 TO 196.

TGA TER 97N8-A N2
20.550 mg

Rate: 10.0 °C/min

File: 00119.001 T6 METTLER 02-May-97
Ident: 0.0 222-S Laboratory

Step Analysis
Height-12.15 mg
-59.10 %
Resid. 8.40 mg
40.90 %
Dpeak 112.5 °C

5. mg

HNF-SD-WM-DP-255, REV. 0

HNF-SD-WM-DP-245, REV. 0 ^{mtg} 7-14-97

50. 100. 150. 200. °C

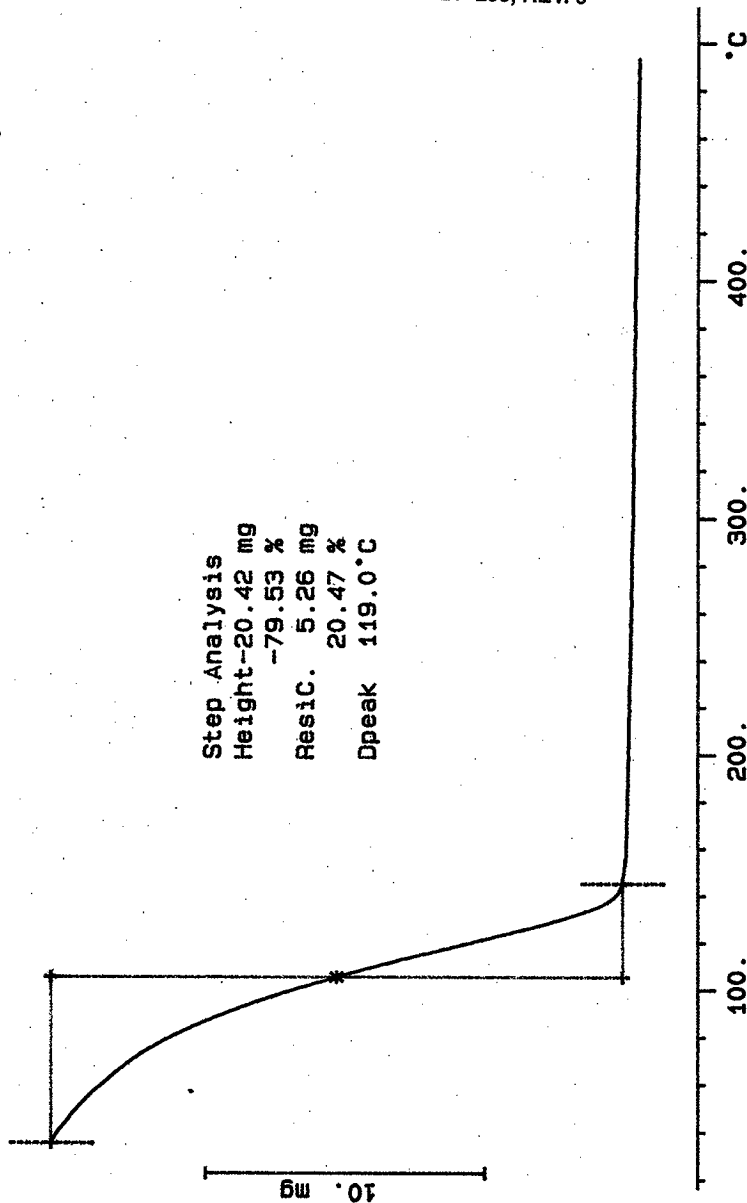
Anthony R. ... 05-03-97

HNF-SD-WM-DP-255, REV. 0

File: 00131.001 TG METTLER 03-May-97
Ident: 0.0 222-S Laboratory

S97T000498 SAM N2
25.673 mg Rate: 10.0 °C/min

Step Analysis
Height-20.42 mg
-79.53 %
Resic. 5.26 mg
20.47 %
Dpeak 119.0 °C



S97T000498 DUP N2

34.274 mg

Rate: 10.0 °C/min

File: 00133.001

Ident: 0.0

TG

METTLER

03-May-97

222-S Laboratory

Step Analysis

Height-27.04 mg

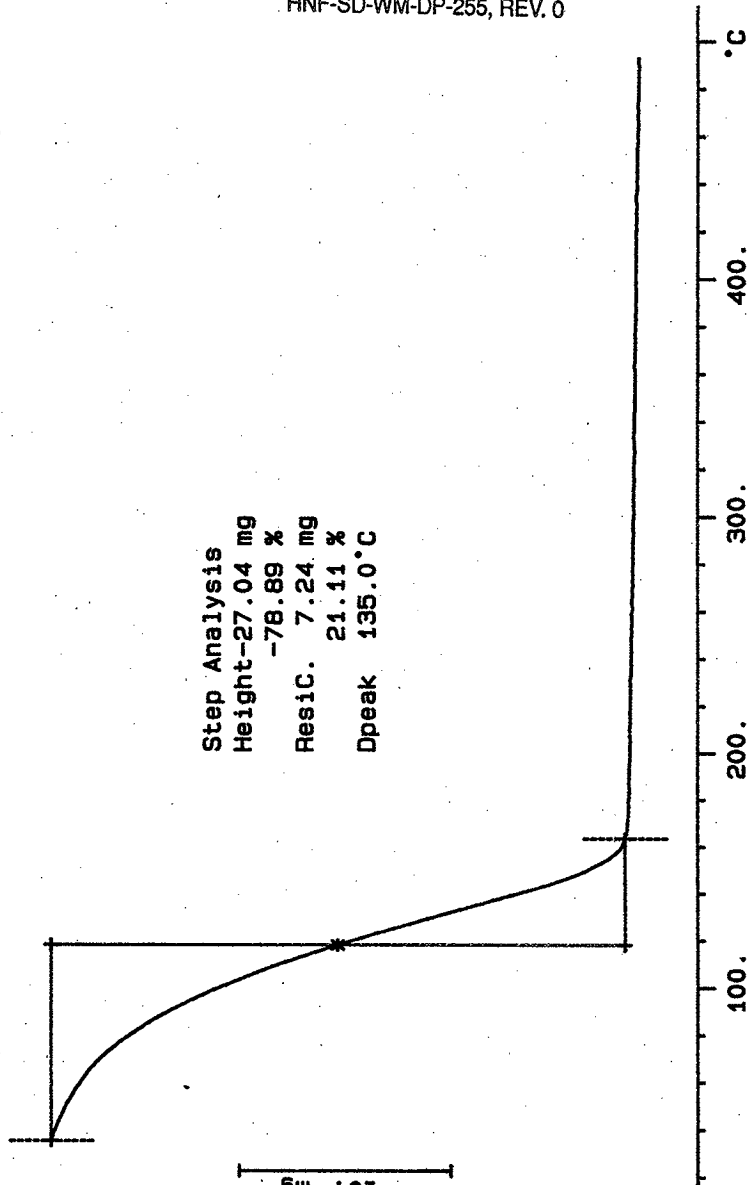
-78.89 %

ResiC. 7.24 mg

21.11 %

Dpeak 135.0 °C

10. mg

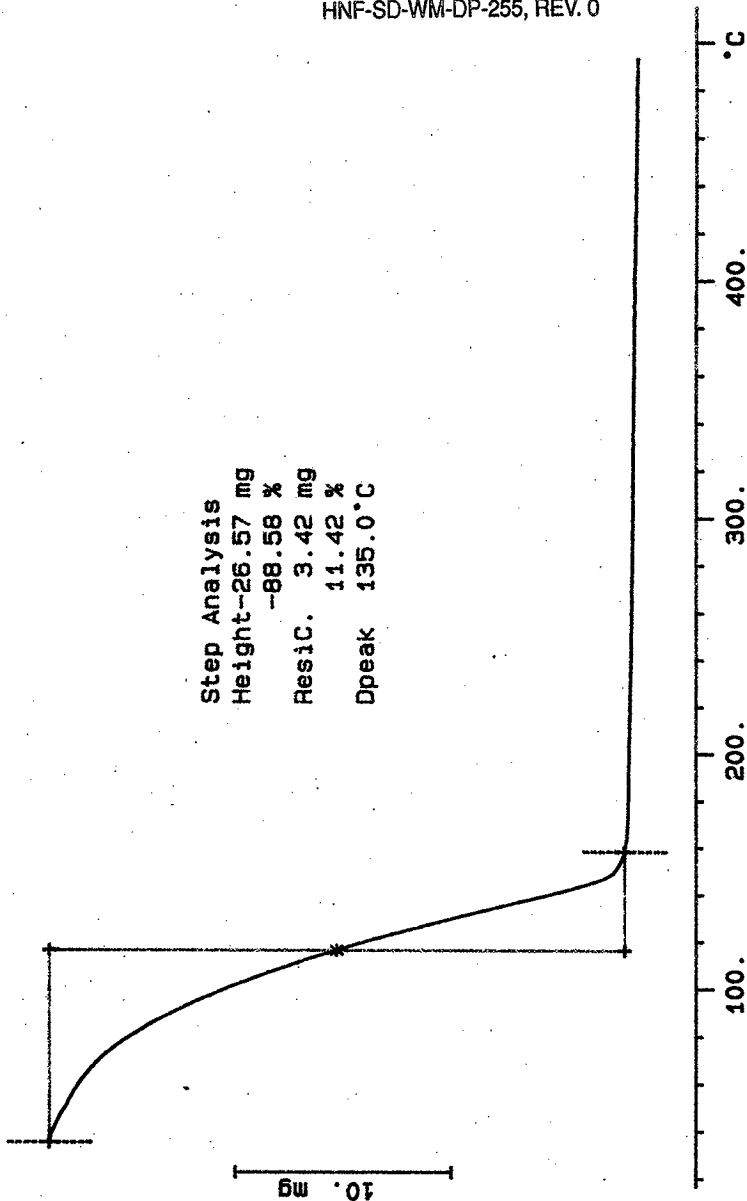


HNF-SD-WM-DP-255, REV. 0

HNF-SD-WM-DP-255, REV. 0

S97T000499 SAM N2
 29.997 mg
 Rate: 10.0 °C/min
 File: 00135.001 TG METTLER 03-May-97
 Ident: 0.0 222-S Laboratory

Step Analysis
 Height-26.57 mg
 -88.58 %
 Resid. 3.42 mg
 11.42 %
 Dpeak 135.0 °C



HNF-SD-WM-DP-255, REV. 0

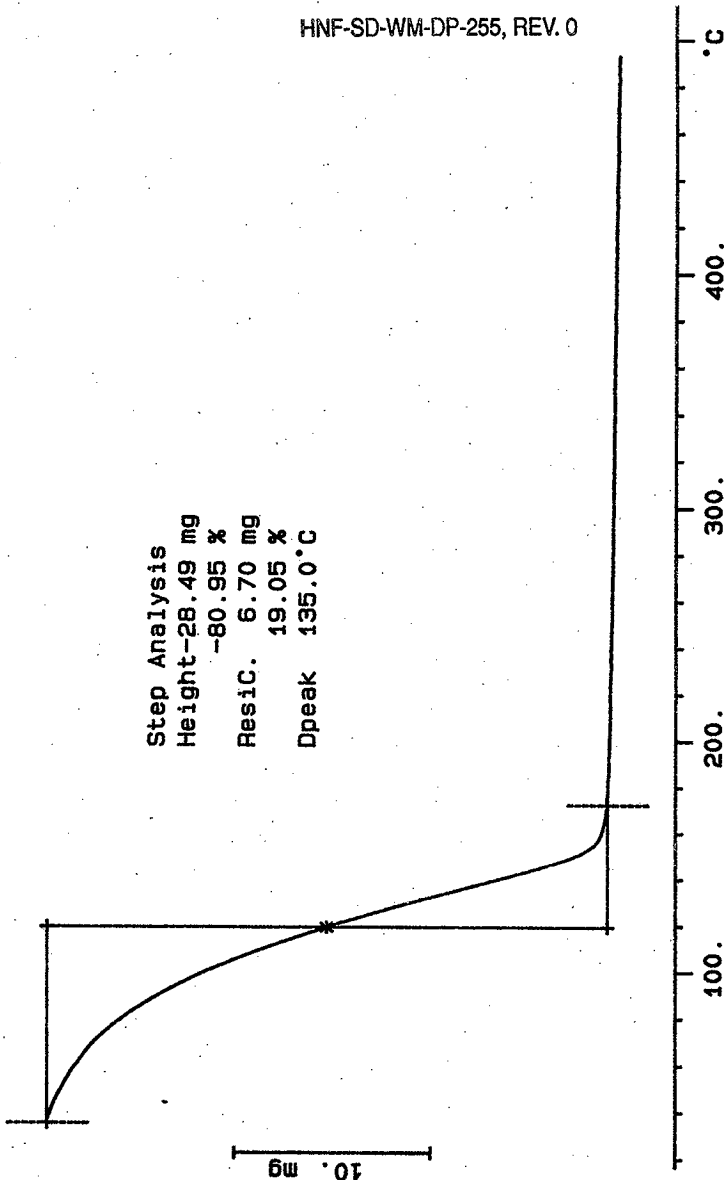
S97T000499 DUP N2
35.193 mg

File: 00002.001
Ident: 0.0

Rate: 10.0 °C/min

03-May-97
TG
222-S Laboratory

Step Analysis
Height-28.49 mg
-80.95 %
Resid. 6.70 mg
19.05 %
Dpeak 135.0 °C



LABCORE Data Entry Template for Worklist# 17839

Analyst: ADP Instrument: TGA0 3 Book # 97 NBAMethod: LA-514-114 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.4</u>	<u>58.51</u>	<u>N/A</u>	%
97000261	T-204	2 SAMPLE	S97T000574	0	TGA-03	SOLID	<u>N/A</u>	<u>75.56</u>		%
97000261	T-204	3 DUP	S97T000574	0	TGA-03	SOLID	<u>75.56</u>	<u>79.43</u>	<u>N/A</u>	%
97000261	T-204	4 SAMPLE	S97T000575	0	TGA-03	SOLID	<u>N/A</u>	<u>79.82</u>		%
97000261	T-204	5 DUP	S97T000575	0	TGA-03	SOLID	<u>79.82</u>	<u>79.52</u>	<u>N/A</u>	%

Final page for worklist # 17839

See Attached for Additional Signatures

Analyst Signature Date

Analyst Signature

Date

Jim Macle 5-15-97
 Analyst Signature Date

Jim Fulton 5-14-97
 Validated 5/15/97 *Drachler*

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# 17839

Analyst: ADP Instrument: TGA0 3 Book # 97N8-A

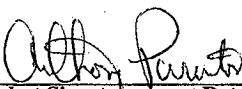
Method: LA-560-112 Rev/Mod D-0

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID			N/A	%
97000261	T-204	2 SAMPLE	S97T000574	0	TGA-01	SOLID	N/A			%
97000261	T-204	3 DUP	S97T000574	0	TGA-01	SOLID			N/A	%
97000261	T-204	4 SAMPLE	S97T000575	0	TGA-01	SOLID	N/A			%
97000261	T-204	5 DUP	S97T000575	0	TGA-01	SOLID			N/A	%

Final page for worklist # 17839

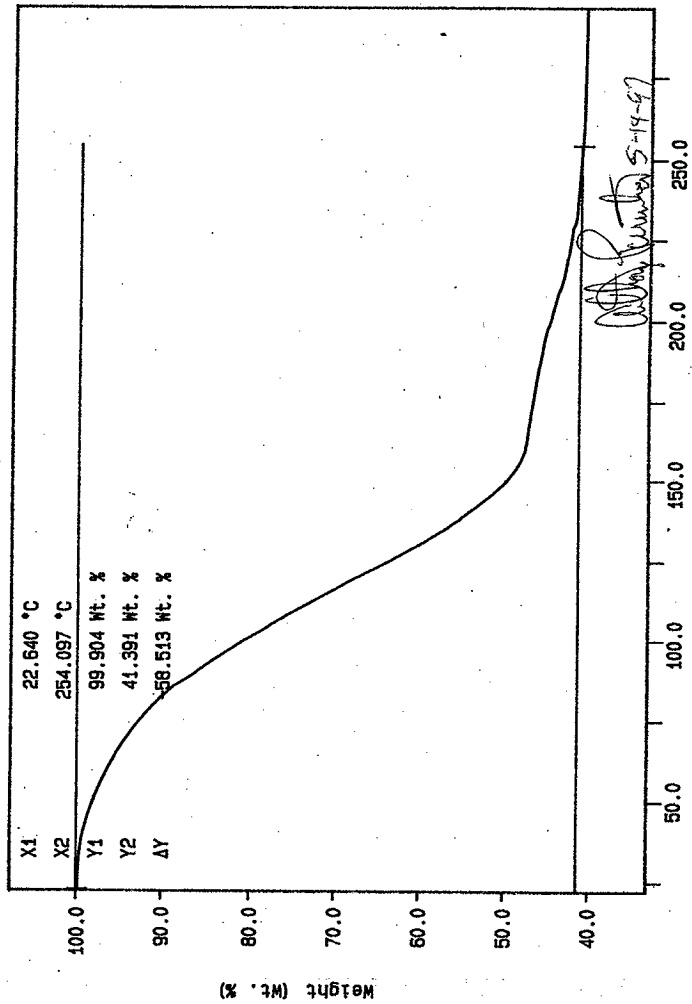

Analyst Signature Date 5-14-97

Analyst Signature Date

Data Entry Comments:
Ran samples on TGA-03. S. Maclellan 5/14/97

Curve 1: TGA
File Info: TER010513 Tue May 13 22:09:38 1997
Sample Weight: 13.546 mg
TGA STD 97N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 199 TO 203.



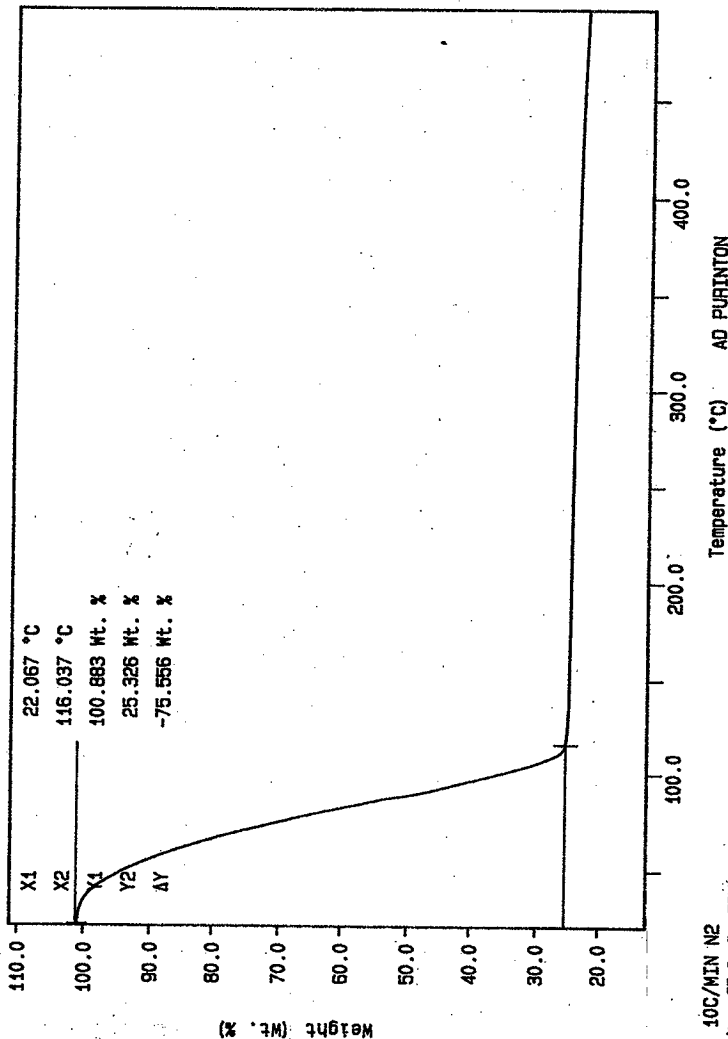
N2 10C/MIN
TEMP: 35.0 °C
TIME: 500.0 s
RATE: 0.0 min RATE: 10.0 C/min
Temperature (°C)
A PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue May 13 22:32:08 1997

Curve 1: TGA

File Info: SAK050514 Wed May 14 03:46:29 1997

Sample Weight: 9.154 mg

SS97000574 SAM



100/MIN N2

TEMP: 35.0 °C
TIME: 500.0 s

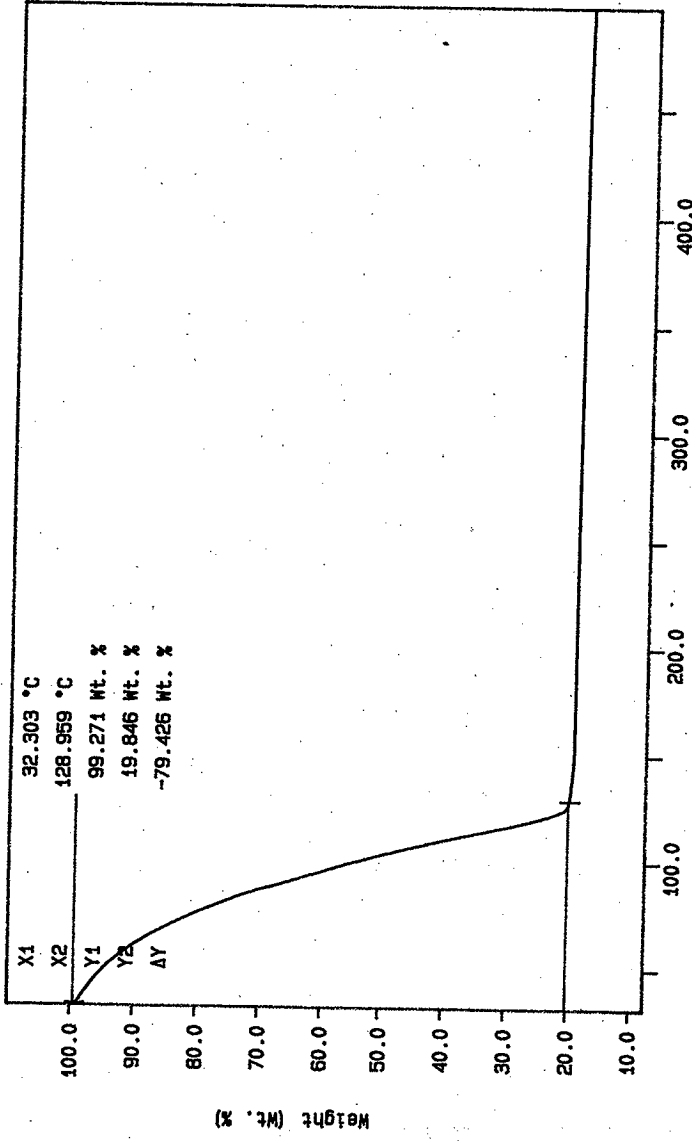
TIME: 0.0 min RATE: 10.0 °C/min

AD. PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 14 03:47:07 1997

~~HNF-SD-WM-DP-245, REV. 0~~ ¹¹⁶ ₇₋₁₁₋₉₇

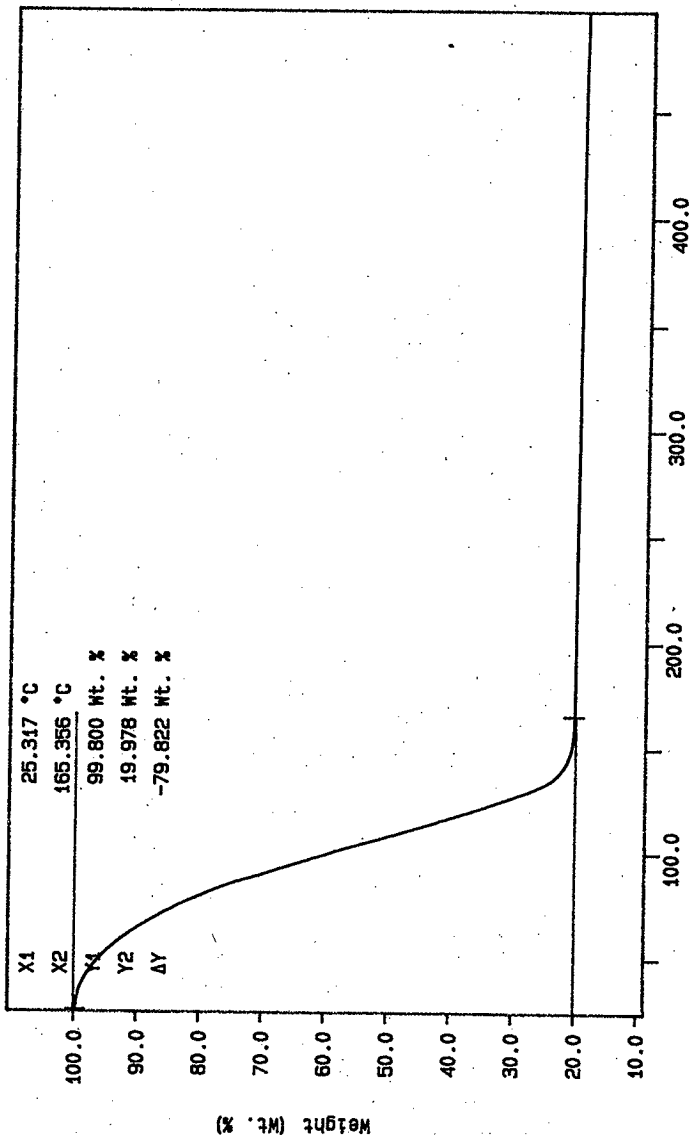
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA
 File info: SAM020514 Wed May 14 04:51:54 1997
 Sample Weight: 11.481 mg
 S97T000574 DUP



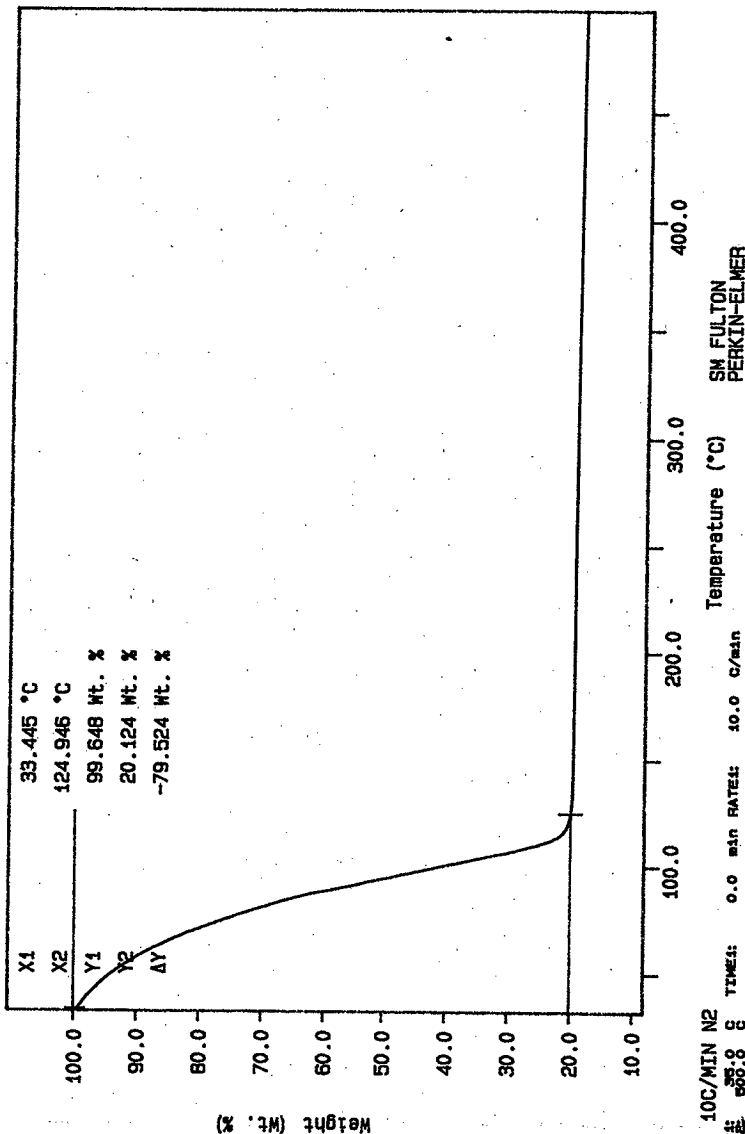
10C/MIN N2
 TEMP: 50.0 °C
 TIME: 0.0 min RATE: 10.0 °C/min
 AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed May 14 05:31:20 1997

Curve 1: TGA
 File Info: SAN051401 Wed May 14 06:38:53 1997
 Sample Weight: 15.065 mg
 S97T000575



100/MIN N2
 TEMP: 50.0 °C
 TIME: 00.00
 0.0 min RATE: 10.0 °C/min
 SM FULTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed May 14 06:54:02 1997

Curve 1: TGA
 File info: SAM051402 Wed May 14 07: 45: 28 1997
 Sample Weight: 8.665 mg
 S97T000575 DUP



SM FULTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed May 14 08: 11: 09 1997

LABCORE Data Entry Template for Worklist# 17842

Analyst: ADP Instrument: TGA0 3 Book # 97N84

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

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.4</u>	<u>58.70</u>	<u>N/A</u>	%
97000261	T-204	2 SAMPLE	S97T000605	0	TGA-03	SOLID	<u>N/A</u>	<u>76.21</u>		%
97000261	T-204	3 DUP	S97T000605	0	TGA-03	SOLID	<u>76.21</u>	<u>74.04</u>	<u>N/A</u>	%
97000261	T-204	4 SAMPLE	S97T000606	0	TGA-03	SOLID	<u>N/A</u>	<u>73.21</u>		%
97000261	T-204	5 DUP	S97T000606	0	TGA-03	SOLID	<u>73.21</u>	<u>69.64</u>	<u>N/A</u>	%

Final page for worklist # 17842

See Attached for Signature
Analyst Signature Date

5-21-97
Analyst Signature Date

Validated 5/22/97 JSchebler

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# 17842

Analyst: ADD Instrument: TGA0 3 Book # 97N8A

Method: LA-560-112 Rev/Mod D-0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm HNF-SD-WM-DP-255, REV. 0

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID			N/A	%
97000261	T-204	2 SAMPLE	S97T000605	0	TGA-01	SOLID	N/A			%
97000261	T-204	3 DUP	S97T000605	0	TGA-01	SOLID			N/A	%
97000261	T-204	4 SAMPLE	S97T000606	0	TGA-01	SOLID	N/A			%
97000261	T-204	5 DUP	S97T000606	0	TGA-01	SOLID			N/A	%

Final page for worklist # 17842

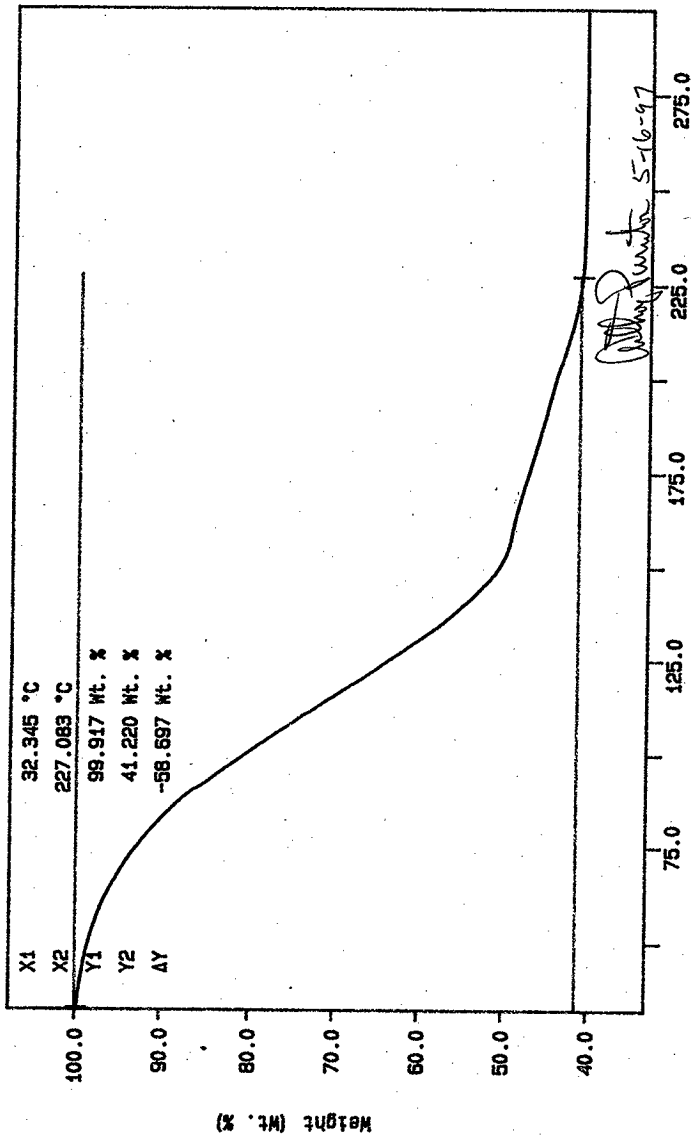
Anthony P. Parnis 5-16-97
Analyst Signature Date
ROB-gym 5/17/97

Analyst Signature Date

Data Entry Comments:
Samples run on TGA-03. 5/16/97

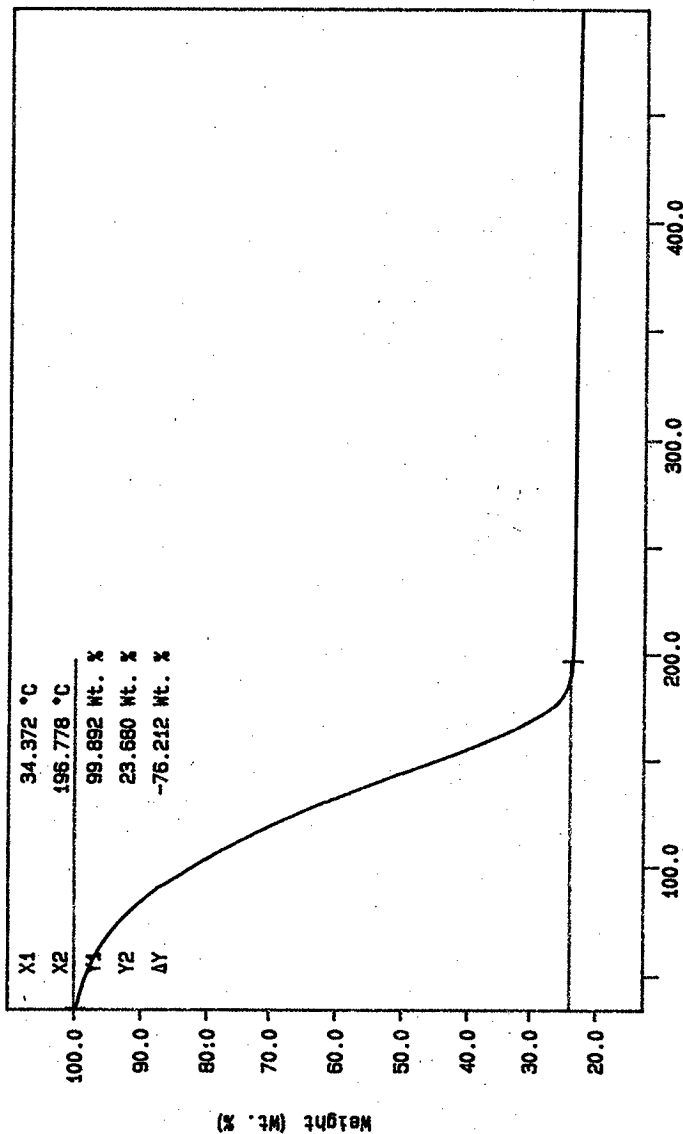
Curve 1: TGA
 File info: TER051601 Fri May 16 03: 43: 38 1997
 Sample Weight: 14.009 mg
 TGA STD 97NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES *206* TO *210*.



N2 10C/MIN
 TEMP: 350.8 °C
 TIME: 0.0 min RATE: 10.0 C/min
 AD P (URINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Fri May 16 03: 44: 13 1997

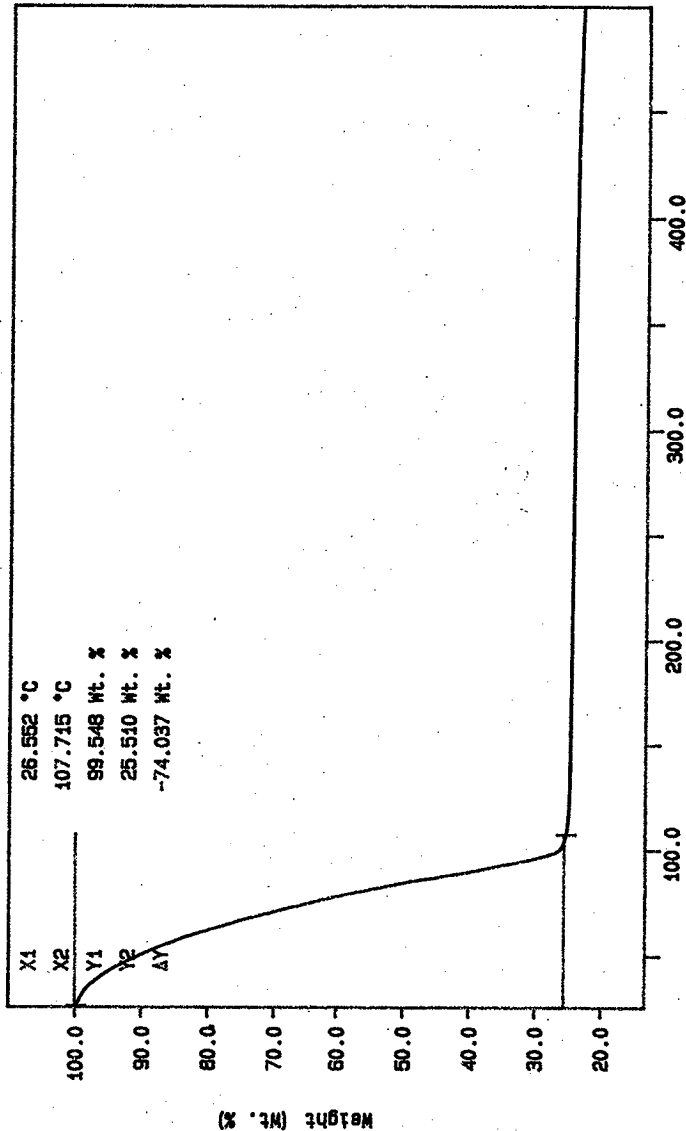
Curve 1: TGA
 File info: SAM051601 Fri May 16 04:44:58 1997
 Sample Weight: 37.374 mg
 S97T000605 SAM



AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Fri May 16 05:30:27 1997

10C/MIN N2
 TEMP: 300.8 °C
 TIME: 0.0 min RATE: 10.0 °C/min

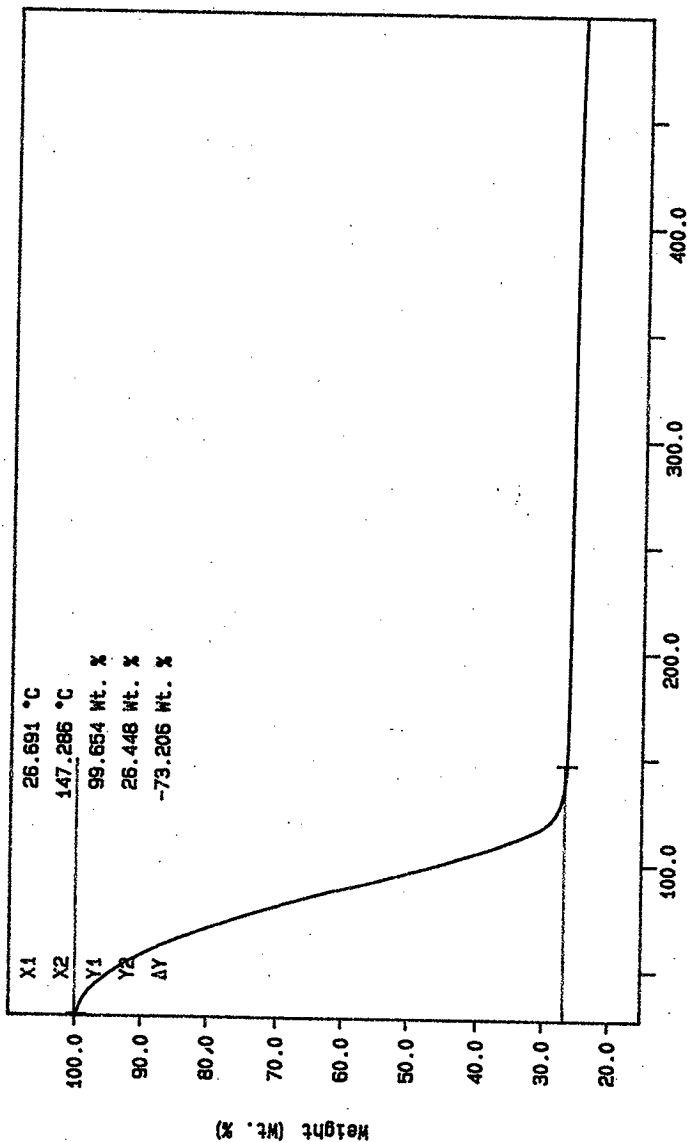
Curve 1: TGA
 File Info: SAM051602 Fri May 16 19:40:25 1997
 Sample Weight: 5.819 mg
 S97T000605DUP



10C/MIN N2
 TEMP: 25.0 °C
 TIME: 666.8 S
 0.0 min RATE: 10.0 °C/min
 RD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Fri May 16 21:20:20 1997

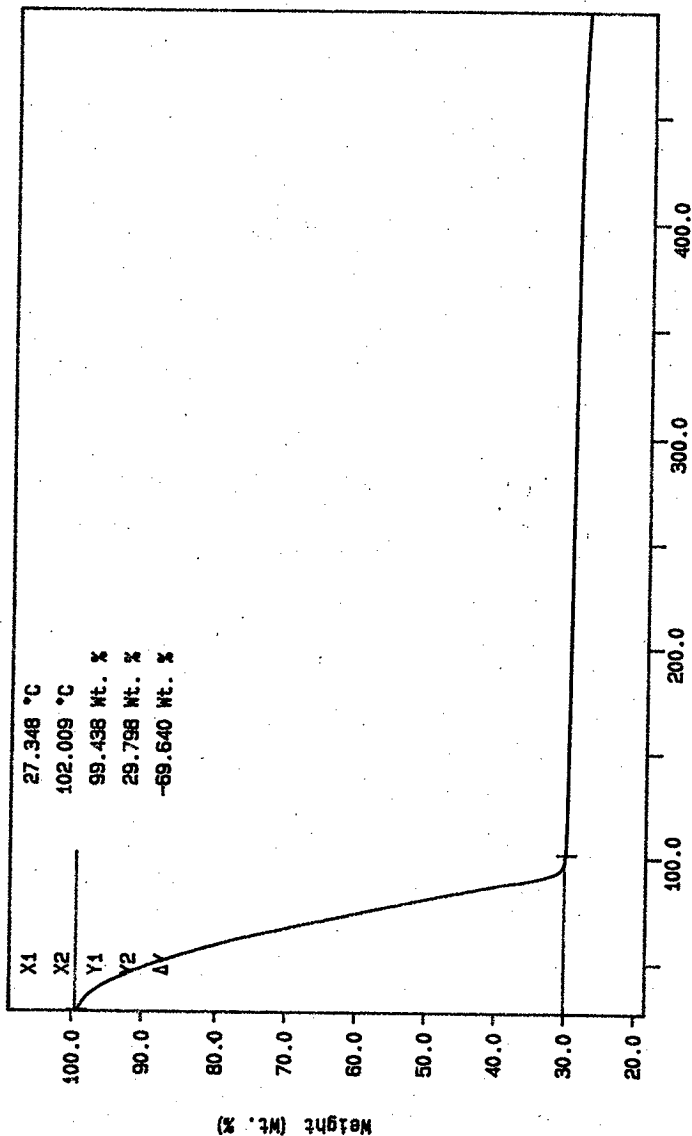
Curve 1: TGA
 File Info: 051603 Fri May 16 22:21:18 1997
 Sample Weight: 6.773 mg
 S97T000606

HNF-SD-WM-DP-245, REV. 0 *note 7-14-97*
 HNF-SD-WM-DP-255, REV. 0



10C/MIN N2
 TEMP: 350.0 °C
 TIME: 0.0 min RATE: 10.0 C/min
 RD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Sat May 17 00:48:52 1997

Curve 1: TGA
 File Info: SAM051701 Sat May 17 01:47:02 1997
 Sample Weight: 4.661 mg
 S97T000606DUP



10C/MIN N2
 TEMPERATURE 25.0 °C
 TIME 00:00:00
 0.0 min RATE: 10.0 C/min
 RD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Sat May 17 04:08:13 1997

LABCORE Data Entry Template for Worklist# 17843

Analyst: RDM Instrument: TGA0 3 Book # 97N89

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

Worklist Comment: T204, TGA-01 Run under nitrogen. skm HNF-SD-WM-DP-255, REV. 0

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.4</u>	<u>58.24</u>	<u>N/A</u>	%
97000261	T-204	2 SAMPLE	S97T000607 0		TGA-03	SOLID	<u>N/A</u>	<u>74.42</u>		%
97000261	T-204	3 DUP	S97T000607 0		TGA-03	SOLID	<u>74.48</u>	<u>75.99</u>	<u>N/A</u>	%
97000261	T-204	4 SAMPLE	S97T000608 0		TGA-03	SOLID	<u>N/A</u>	<u>73.89</u>		%
97000261	T-204	5 DUP	S97T000608 0		TGA-03	SOLID	<u>73.89</u>	<u>74.98</u>	<u>N/A</u>	%

Final page for worklist # 17843

See Attached for Signature
Analyst Signature Date

5-21-97
Analyst Signature Date

Validated 5/22/97 Rachelor

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# 17843

Analyst: Van Instrument: TGA0 3 Book # TINGA

Method: LA-560-112 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
97000261	T-204	2	SAMPLE	S97T000607	0		TGA-01	SOLID	N/A			%
97000261	T-204	3	DUP	S97T000607	0		TGA-01	SOLID			N/A	%
97000261	T-204	4	SAMPLE	S97T000608	0		TGA-01	SOLID	N/A			%
97000261	T-204	5	DUP	S97T000608	0		TGA-01	SOLID			N/A	%

Final page for worklist # 17843

Van 5/18/97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:
Ran samples on TGA-03. 5/20/97

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.

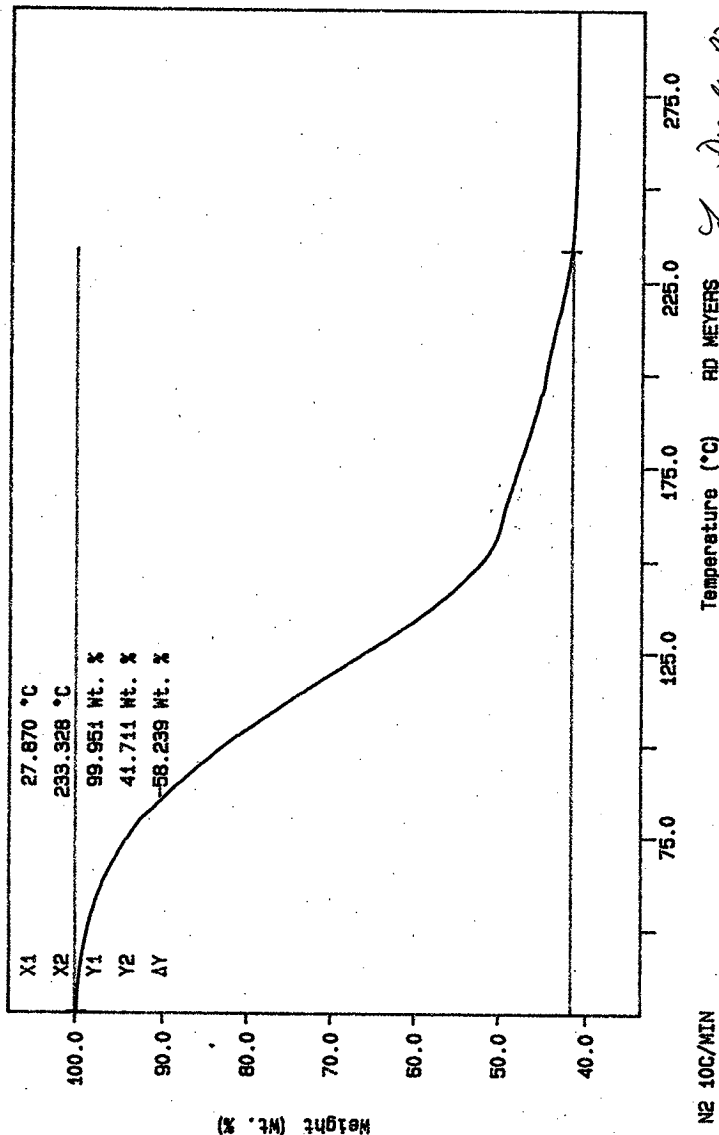
Curve 1: TGA

File Info: TER051701 Sat May 17 18:10:12 1997

Sample Weight: 14.239 mg

TGA STD 97N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 212 TO 217.



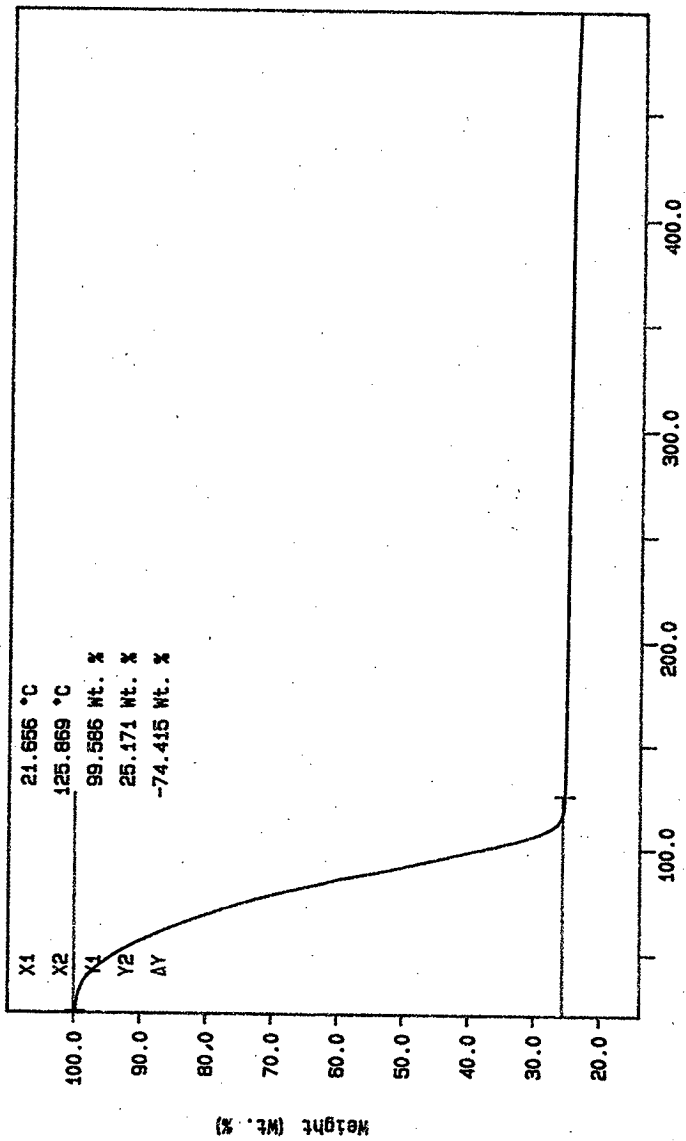
N2 10C/MIN
TEMP 25.0 °C
TIME 300.0 s

0.0 MIN RATE: 10.0 C/MIN

Temperature (°C)

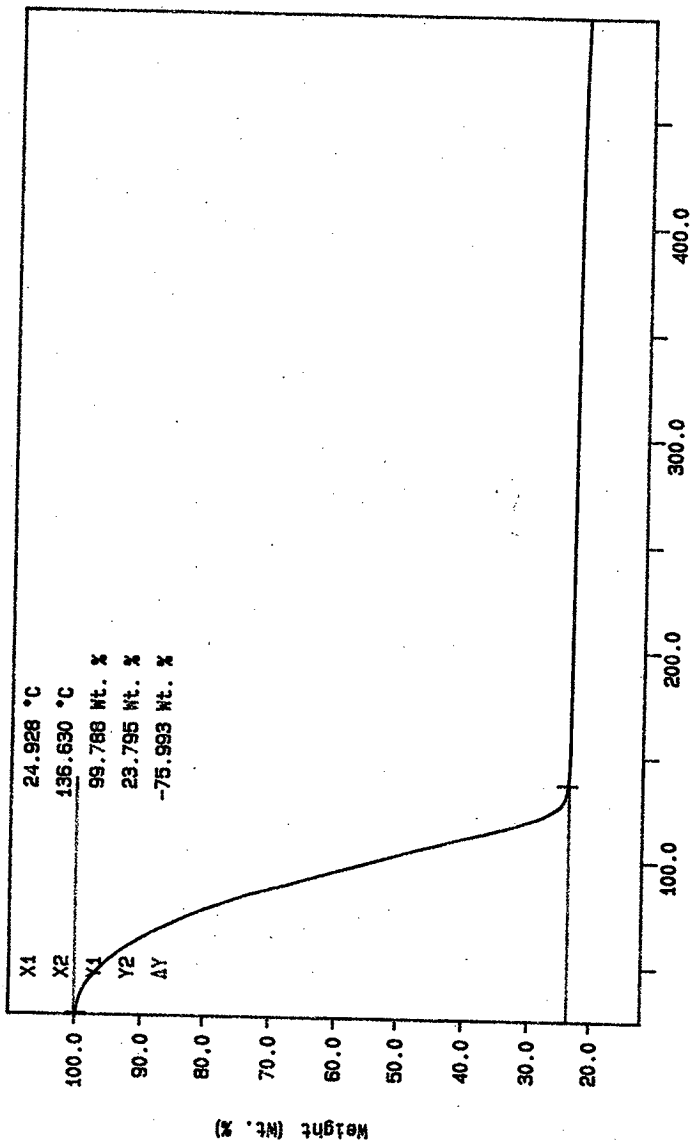
RD MEYERS
PERKIN-ELMER TGA
7 Series Thermal Analysis System
Sat May 17 20:51:42 1997

Curve 1: TGA
File info: SAM051704 Sat May 17 21:44:54 1997
Sample Weight: 7.724 mg
S97T000607



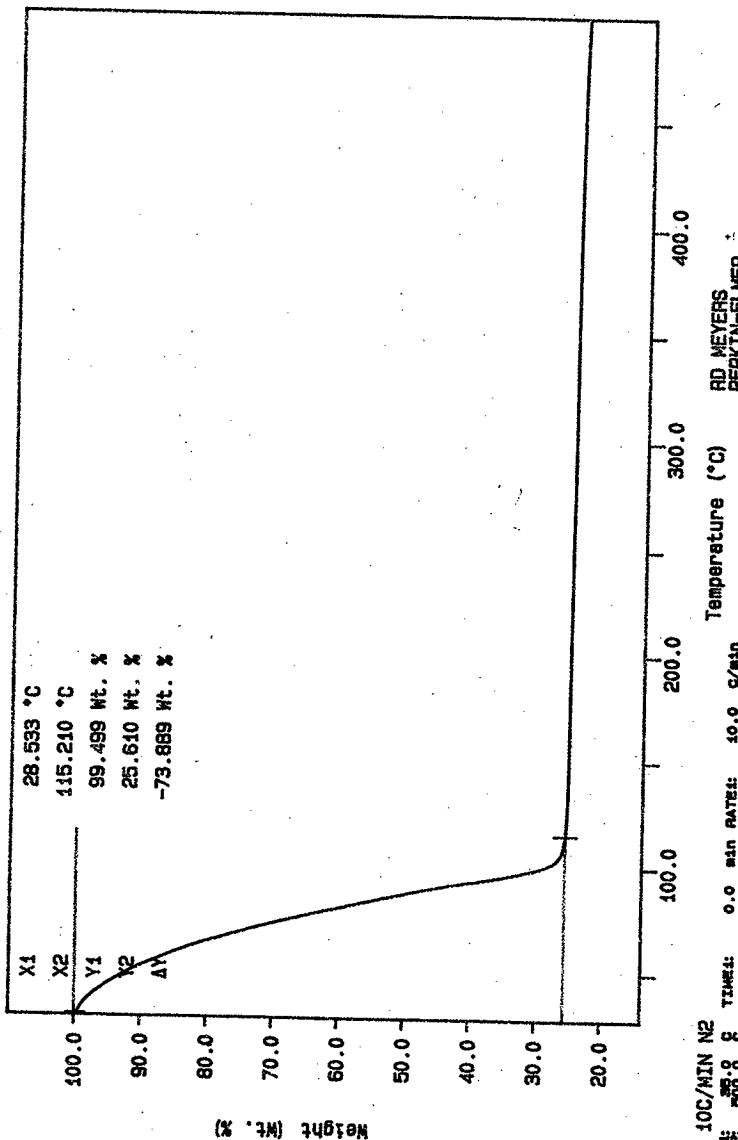
10C/MIN N2
TEMP: 550.0 °C
TIME: 00:08
0.0 min RATE: 10.0 °C/min
RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat May 17 21:50:36 1997

Curve 1: TGA
 File info: SAM051705 Sat May 17 22:55:44 1997
 Sample Weight: 11.698 mg
 S97T000607DUP



10C/MIN N2
 TEMP: 25.0 °C
 TIME: 250.0 s
 0.0 min RATE: 10.0 C/min
 RD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Sun May 18 00:41:01 1997

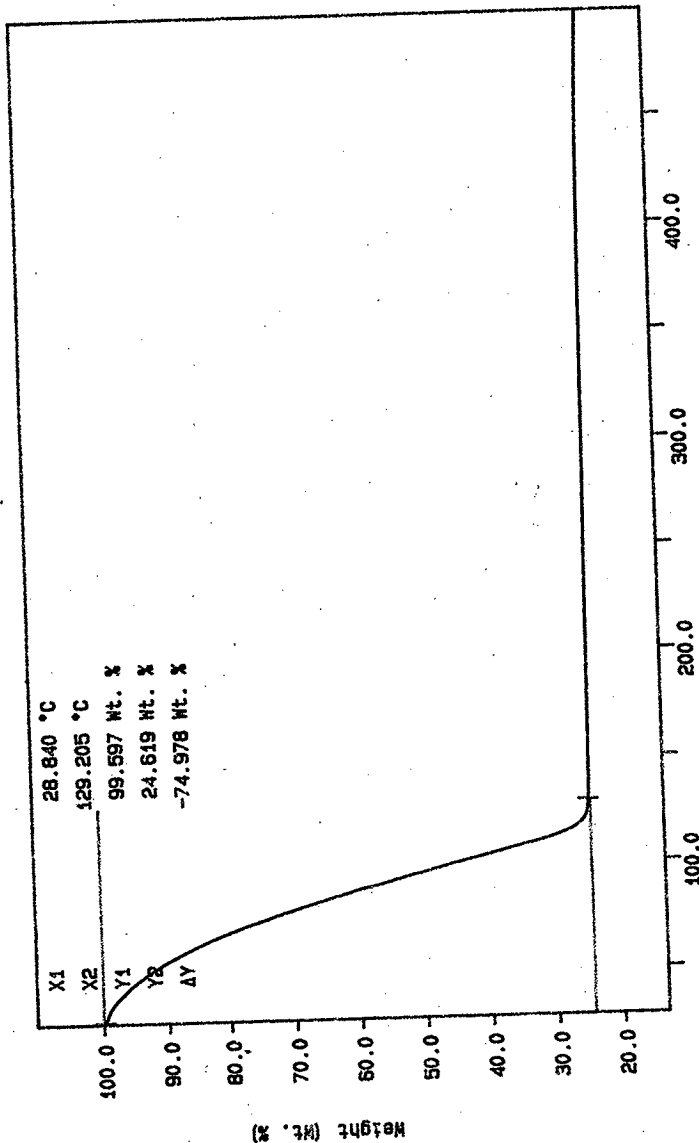
Curve 1: TGA
 File Info: SAK051801 Sun May 18 01:31:29 1997
 Sample Weight: 6.750 mg
 S97T000608



RD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Sun May 18 01:39:06 1997

10C/MIN N2
 TEMP 35.0 °C
 TIME: 0.0 min RATE: 10.0 °C/min

Curve 1: TGA
 File Info: SAK051802 Sun May 18 02:38:29 1997
 Sample Weight: 9.511 mg
 S97T000608DUP



RD MEYERS
 PEKIN-ELMER
 7 Series Thermal Analysis System
 Sun May 18 04:00:12 1997

10C/MIN N2
 TEMPERATURE: 28.8 °C
 TIME: 600.8 s
 0.0 MIN RATE: 10.0 C/MIN

LABCORE Data Entry Template for Worklist# 17844

Analyst: JDS Instrument: TGA0 3 Book # 97N8AMethod: LA-514-114 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.4</u>	<u>58.76</u>	<u>N/A</u>	%
97000261	T-204	2 SAMPLE	S97T000633	0	TGA-03	SOLID	<u>N/A</u>	<u>76.90</u>		%
97000261	T-204	3 DUP	S97T000633	0	TGA-03	SOLID	<u>76.90</u>	<u>76.18</u>	<u>N/A</u>	%
97000261	T-204	4 SAMPLE	S97T000634	0	TGA-03	SOLID	<u>N/A</u>	<u>75.69</u>		%
97000261	T-204	5 DUP	S97T000634	0	TGA-03	SOLID	<u>75.64</u>	<u>77.96</u>	<u>N/A</u>	%

Final page for worklist # 17844

See Attached for Signatures
Analyst Signature Date5-21-97
Analyst Signature DateValidated 5/22/97
J. McChesler

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# 17844

Analyst: Jds Instrument: TGA0 3 Book # 97NFA
Method: LA-560-112 Rev/Mod D-0 HNFS-D-WM-DP-255, REV. 0
Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	SOLID			N/A	%
97000261	T-204	2	SAMPLE	S97T000633	0		TGA-01	SOLID	N/A			%
97000261	T-204	3	DUP	S97T000633	0		TGA-01	SOLID			N/A	%
97000261	T-204	4	SAMPLE	S97T000634	0		TGA-01	SOLID	N/A			%
97000261	T-204	5	DUP	S97T000634	0		TGA-01	SOLID			N/A	%

Final page for worklist # 17844

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

Ran samples on TGA-03. 8/20/97

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.

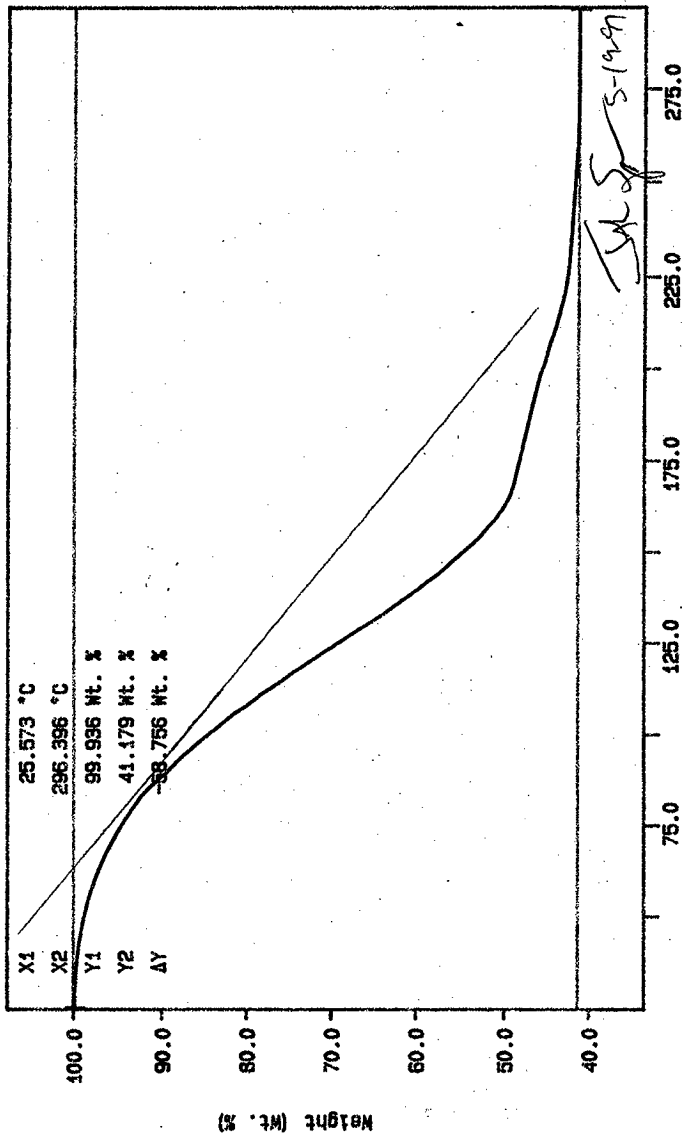
Curve 1: TGA

File info: TER051801 Sun May 18 17:59:02 1997

Sample Weight: 17.368 mg

TGA STD 97NBA

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES ~~220~~ TO ~~224~~.



N2 10C/MIN

TIME: 55.0 S

TIME: 0.0 min RATE: 10.0 C/min

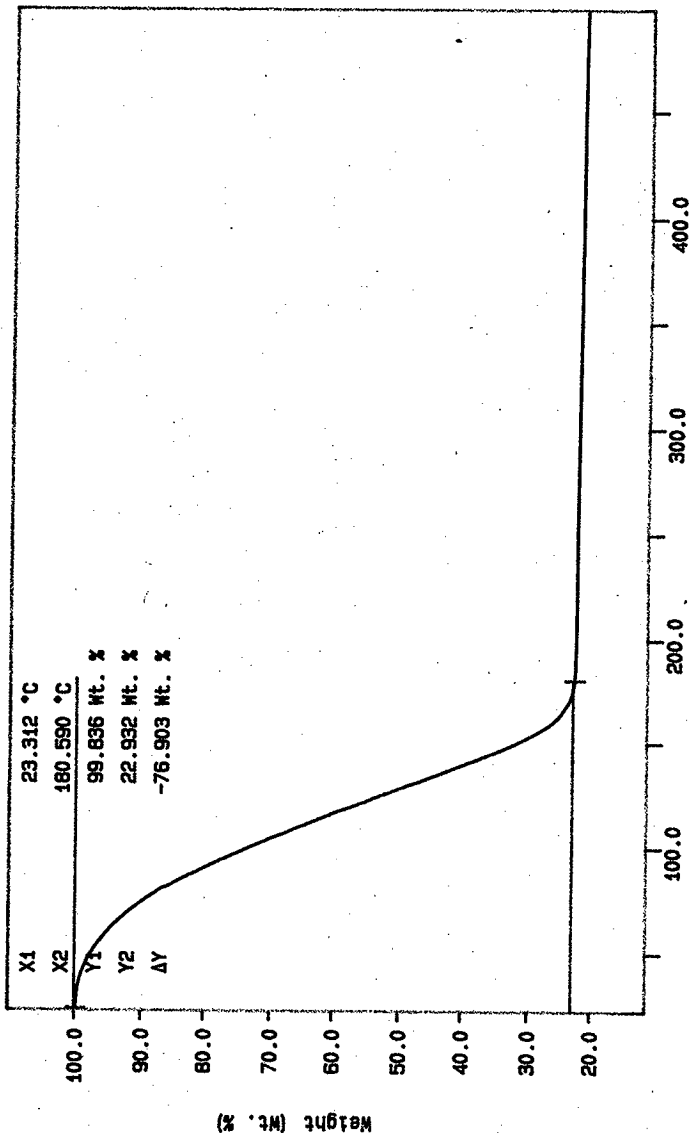
JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System

Sun May 18 18:12:28 1997

HNF-SD-WM-DP-245, REV. 0 ~~DATE~~ 7-14-97

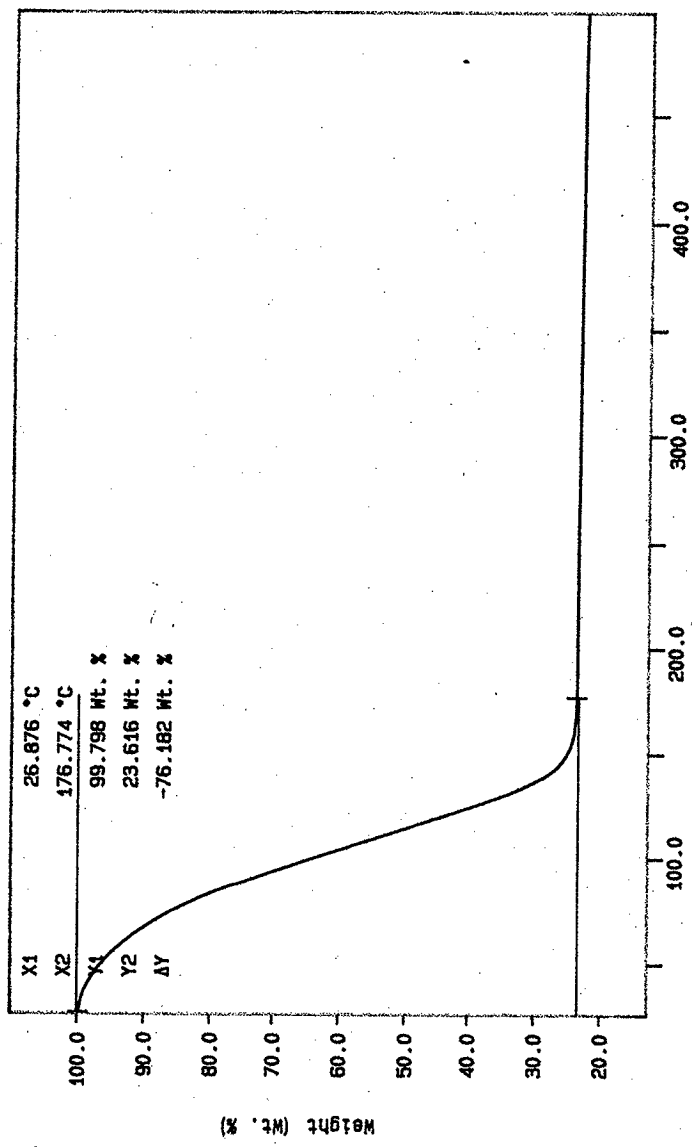
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA
File Info: SAM051803 Sun May 18 19:30:29 1997
Sample Weight: 24.624 mg
S97T000633



10C/MIN N2
TEMP: 50.0 °C
TIME: 500.0 s
10C/MIN RATE: 10.0 °C/min
JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Tue May 20 14:36:38 1997

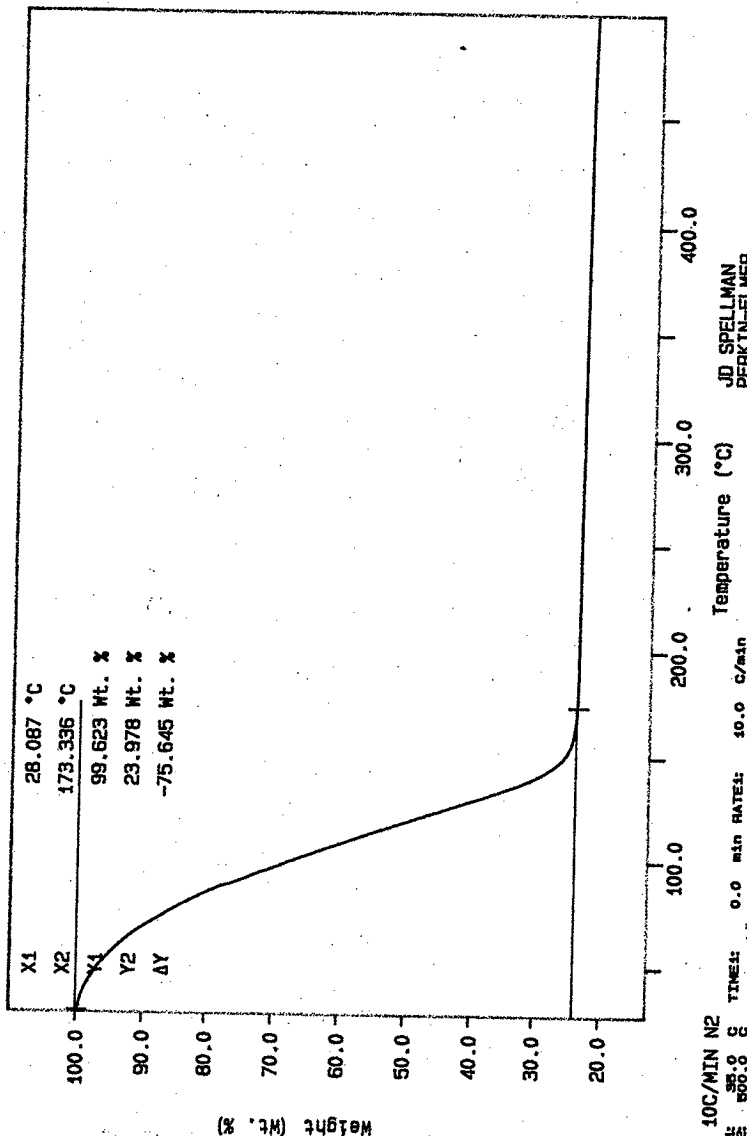
Curve 1: TGA
File Info: SAM051804 Sun May 18 22:21:33 1997
Sample Weight: 16.742 mg
S97T000633DUP



10C/MIN N2
TEMP: 550.0 C
TIME: 550.0 C

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 19 00:42:53 1997

Curve 1: TGA
 File info: SAM051805 Mon May 19 01:35:14 1997
 Sample Weight: 45.615 mg
 S97T000634

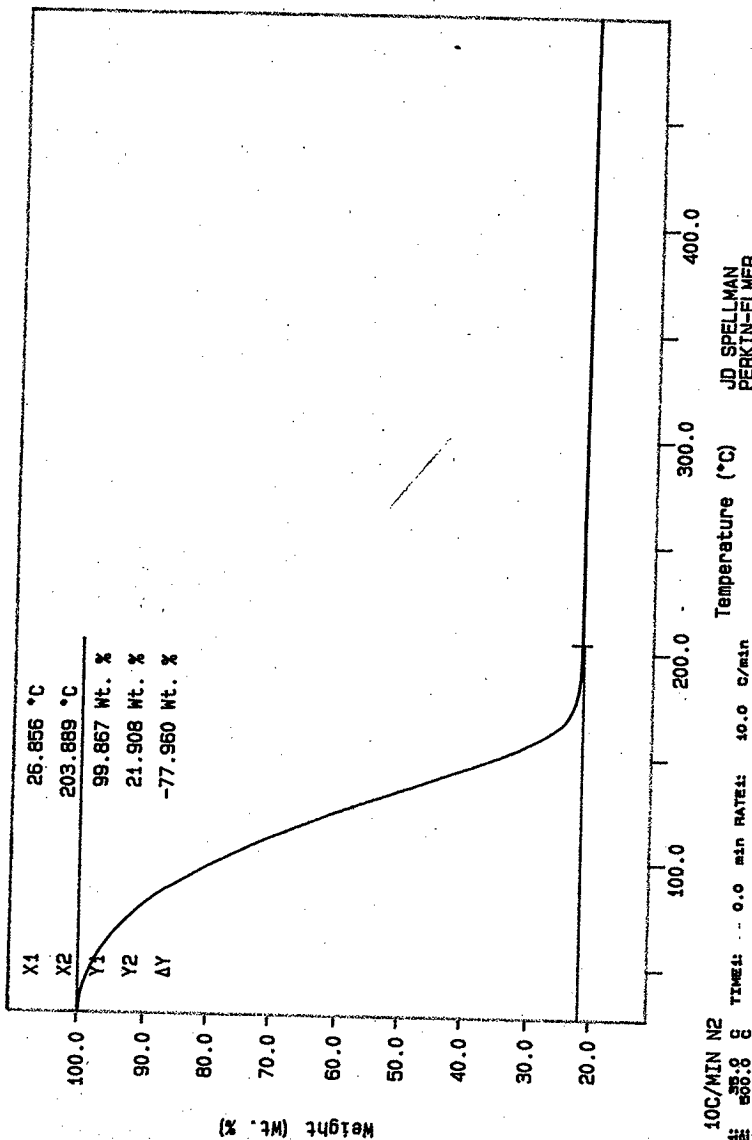


JD SPELLMAN
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Mon May 19 02:14:29 1997

Curve 1: TGA
 File Info: SAM051806 Mon May 19 03:07:32 1997
 Sample Weight: 22.823 mg
 S97T000634DUP

HNF-SD-WM-DP-245, REV. 0 ^{Wt 74497}

HNF-SD-WM-DP-255, REV. 0



10C/MIN N2
 TEMP: 35.9 °C
 TIME: 0.0 min RATE: 10.0 °C/min
 JD SPELLMAN
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Mon May 19 03:46:23 1997

LABCORE Data Entry Template for Worklist# 17845

Analyst: PJM Instrument: TGA0 3 Book # 97N8A

Method: LA-514-114 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.4</u>	<u>58.74</u>	<u>N/A</u>	%
97000261	T-204	2 SAMPLE	S97T000635	0	TGA-03	SOLID	<u>N/A</u>	<u>72.74</u>		%
97000261	T-204	3 DUP	S97T000635	0	TGA-03	SOLID	<u>72.74</u>	<u>72.06</u>	<u>N/A</u>	%
97000261	T-204	4 SAMPLE	S97T000636	0	TGA-03	SOLID	<u>N/A</u>	<u>72.05</u>		%
97000261	T-204	5 DUP	S97T000636	0	TGA-03	SOLID	<u>72.05</u>	<u>72.78</u>	<u>N/A</u>	%

Final page for worklist # 17845

See Attached for Signature
Analyst Signature PJM Date 5/22/97

Susan Rie 5/22/97
Analyst Signature Date

Validated 6/2/97 S. Schelker

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17845

Analyst: RLM Instrument: TGA0 3 Book # 97N8A

Method: LA-560-112 Rev/Mod D-0

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	_____	_____	N/A	%
97000261	T-204	2 SAMPLE	S97T000635	0	TGA-01	SOLID	N/A	_____	_____	%
97000261	T-204	3 DUP	S97T000635	0	TGA-01	SOLID	_____	_____	N/A	%
97000261	T-204	4 SAMPLE	S97T000636	0	TGA-01	SOLID	N/A	_____	_____	%
97000261	T-204	5 DUP	S97T000636	0	TGA-01	SOLID	_____	_____	N/A	%

Final page for worklist # 17845

Red McCown 5/21/97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Ran samples on TGA-03. BBS 5/21/97

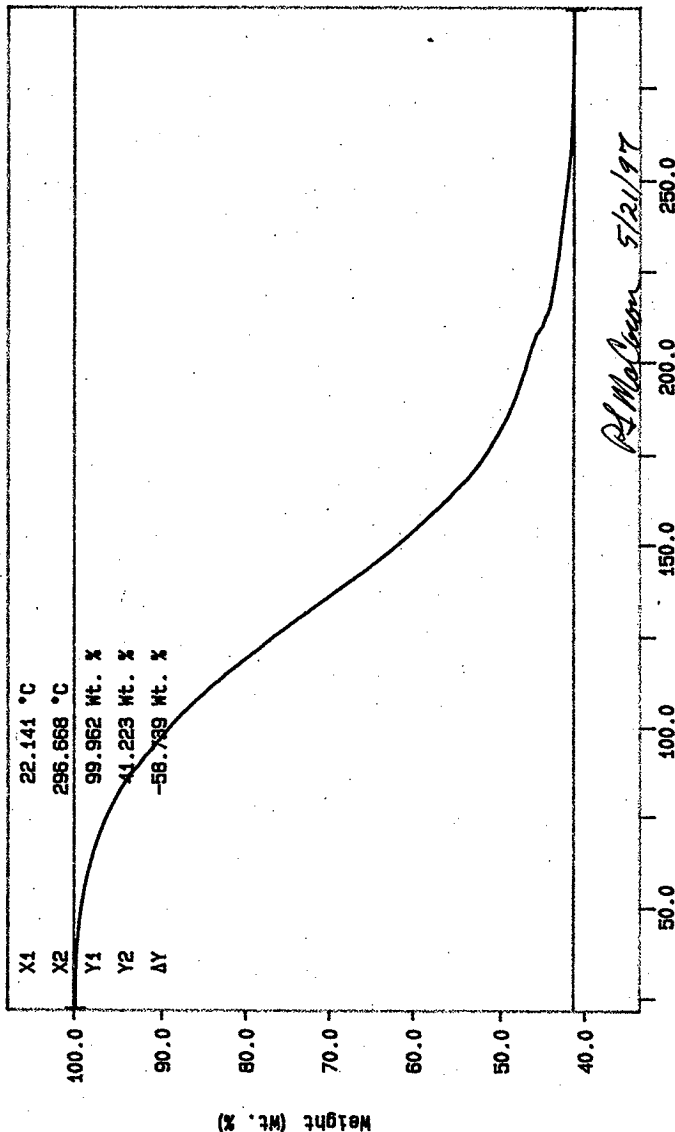
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Curve 1: TGA
 File info: TER052003 Tue May 20 23:17:02 1997
 Sample Weight: 27.987 mg
 97N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 222 TO 227.

HNF-SD-WM-DP-245, REV. 0 *note*
 7-14-97

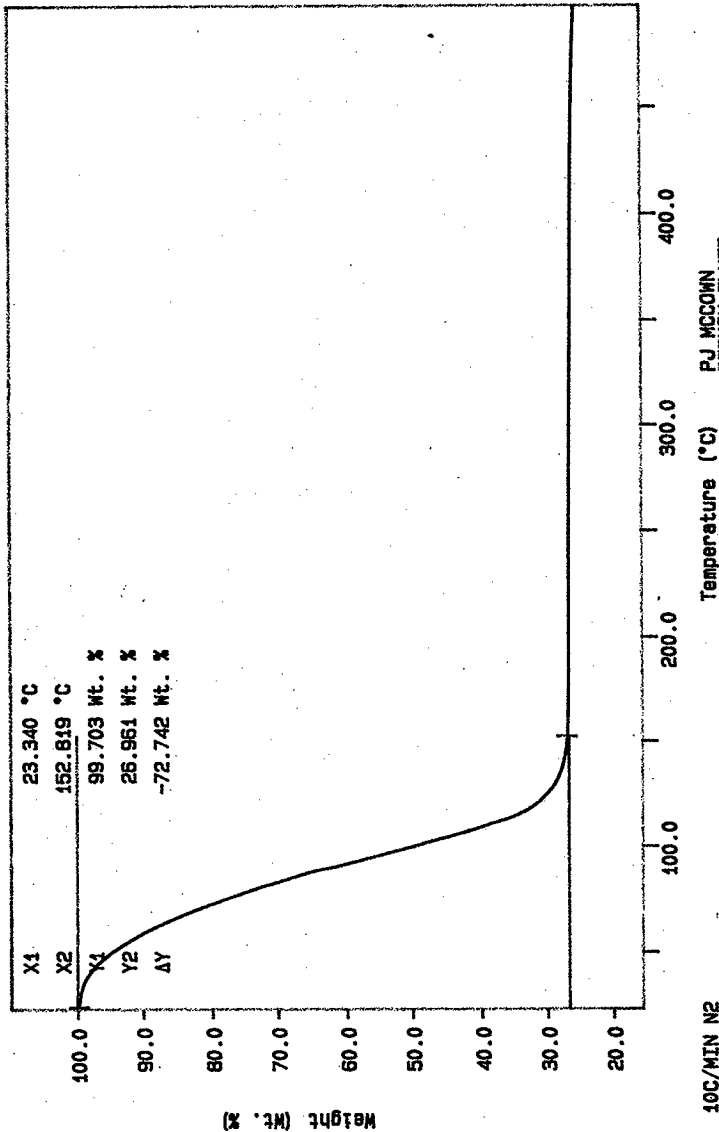
HNF-SD-WM-DP-255, REV. 0



PL MacLean 5/21/97

10C/MIN N2
 50.0 g
 300.0 g
 0.0 min RATE: 10.0 C/min
 TIME: 0.0
 5/21/97
 RJ MCCOY
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Tue May 20 23:56:01 1997

Curve 1: TGA
File Info: SAM052101 Wed May 21 00:56:53 1997
Sample Weight: 8.761 mg
997T000635



PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 01:13:45 1997

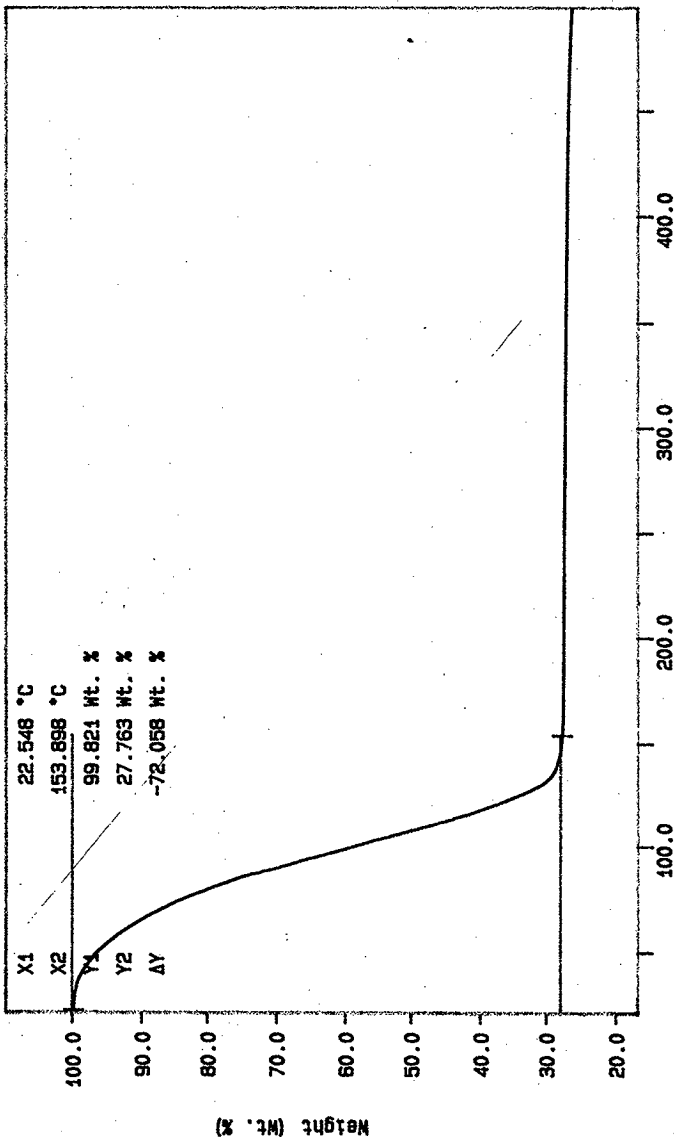
100/MIN N2
TEMP: 35.8 °C
TIME: 0.0 min RATE: 10.0 °C/min

Curve 1: TGA

File info: SAM052102 Wed May 21 02:18:12 1997

Sample Weight: 12.983 mg

S97T000635 DUP



10C/MIN N2

TEMP: 35.8 °C

TIME: 500.8 s

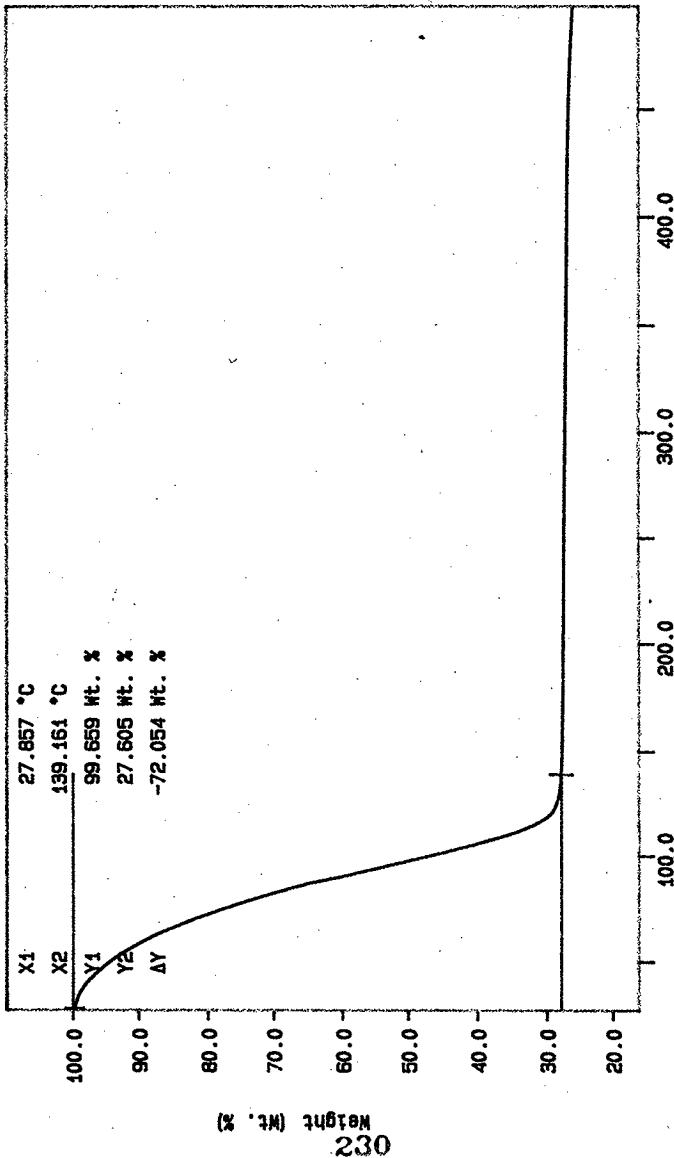
0.0 min RATE: 10.0 C/min

Temperature (°C)

PJ MCCOHN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 02:18:24 1997

HNF-SD-WM-DP-245, REV. 0 *mtz*
7-14-97
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA
File info: SAM052103 Wed May 21 03:25:56 1997
Sample Weight: 8.264 mg
S97T000636

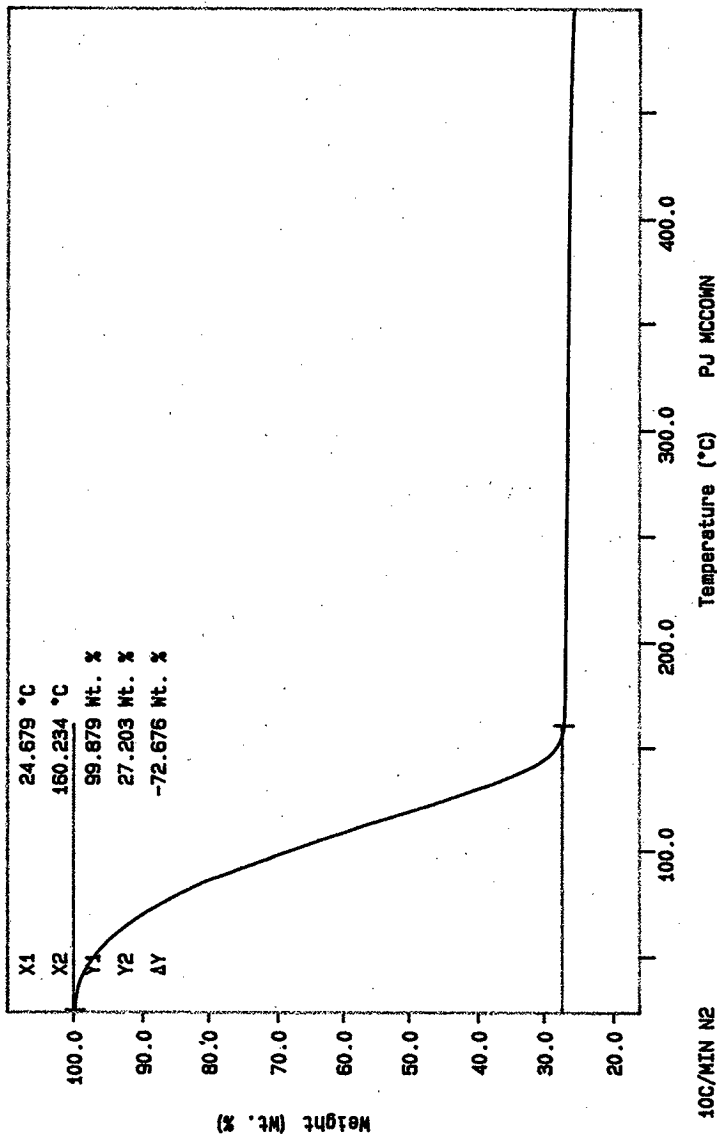


100/MIN N2
TEMP: 35.8 °C
TIME: 55.8 s
0.0 min RATE: 10.0 g/min
PJ MCCOHN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 03:33:04 1997

Curve 1: TGA
 File info: SAM052104 Wed May 21 04:38:54 1997
 Sample Weight: 14.953 mg
 S97T000636 DUP

HNF-SD-WM-DP-245, REV. 0 *7-14-97*

HNF-SD-WM-DP-255, REV. 0



PJ MCCOWN
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed May 21 06:24:15 1997

10C/MIN N2
 TEMP: 25.0 °C
 TIME: 500.0 s
 0.0 min RATE: 10.0 C/min

LABCORE Data Entry Template for Worklist# 17846

Analyst: ADP Instrument: TGA0 3 Book # 97N88

Method: LA-514-114 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.4</u>	<u>58.10</u>	<u>N/A</u>	%
97000261	T-204	2 SAMPLE	S97T000637	0	TGA-03	SOLID	<u>N/A</u>	<u>75.63</u>		%
97000261	T-204	3 DUP	S97T000637	0	TGA-03	SOLID	<u>75.63</u>	<u>75.63</u>	<u>N/A</u>	%
97000261	T-204	4 SAMPLE	S97T000638	0	TGA-03	SOLID	<u>N/A</u>	<u>75.24</u>		%
97000261	T-204	5 DUP	S97T000638	0	TGA-03	SOLID	<u>75.24</u>	<u>74.74</u>	<u>N/A</u>	%

Final page for worklist # 17846

See Attached for Signature
Analyst Signature Date

Steven R. 5/16/97
Analyst Signature Date

Rejected 5/21/97 [Signature]

Data Entry Comments:

Low STD recovery. Rerun samples. [Signature]

LABCORE Data Entry Template for Worklist# 17846

Analyst: ADP

Instrument: TGA0 3

Book # 97N8A

Method: LA-560-112 Rev/Mod D-0

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	_____	_____	N/A	%
97000261	T-204	2 SAMPLE	S97T000637	0	TGA-01	SOLID	N/A	_____	_____	%
97000261	T-204	3 DUP	S97T000637	0	TGA-01	SOLID	_____	_____	N/A	%
97000261	T-204	4 SAMPLE	S97T000638	0	TGA-01	SOLID	N/A	_____	_____	%
97000261	T-204	5 DUP	S97T000638	0	TGA-01	SOLID	_____	_____	N/A	%

Final page for worklist # 17846

Anthony Punter 5-15-97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Samples run on TGA-03. 5/16/97

Curve 1: TGA

File Info: TER051501 Thu May 15 02:57:04 1997

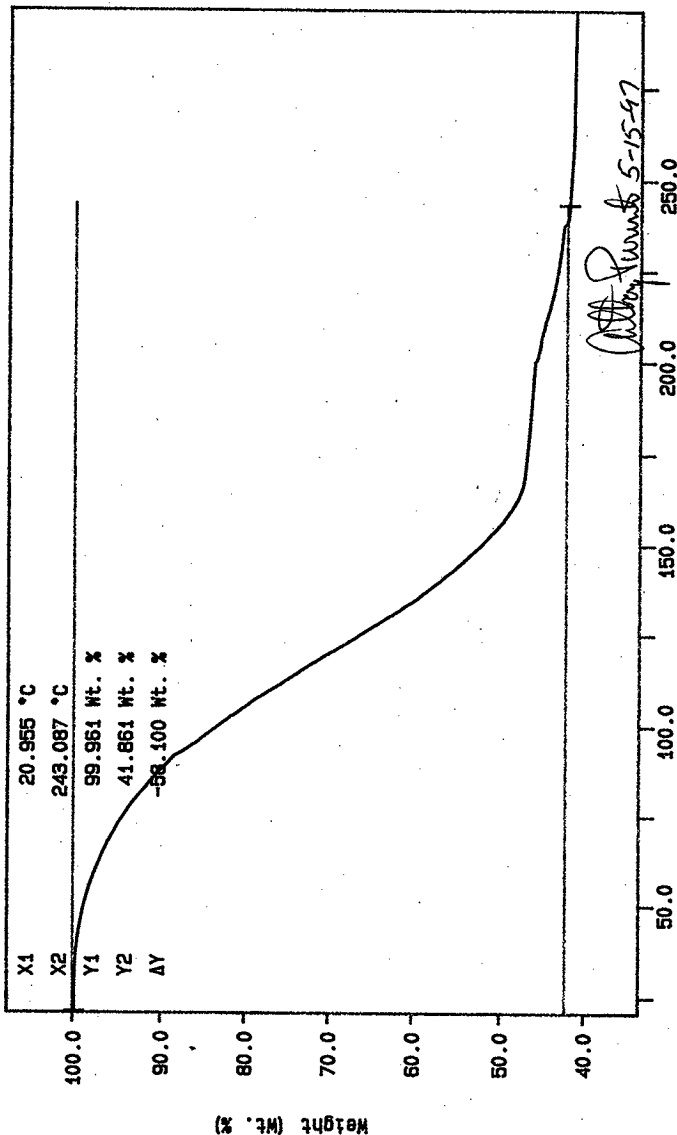
Sample Weight: 14.820 mg

TGA STD 97N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 234 TO 238.

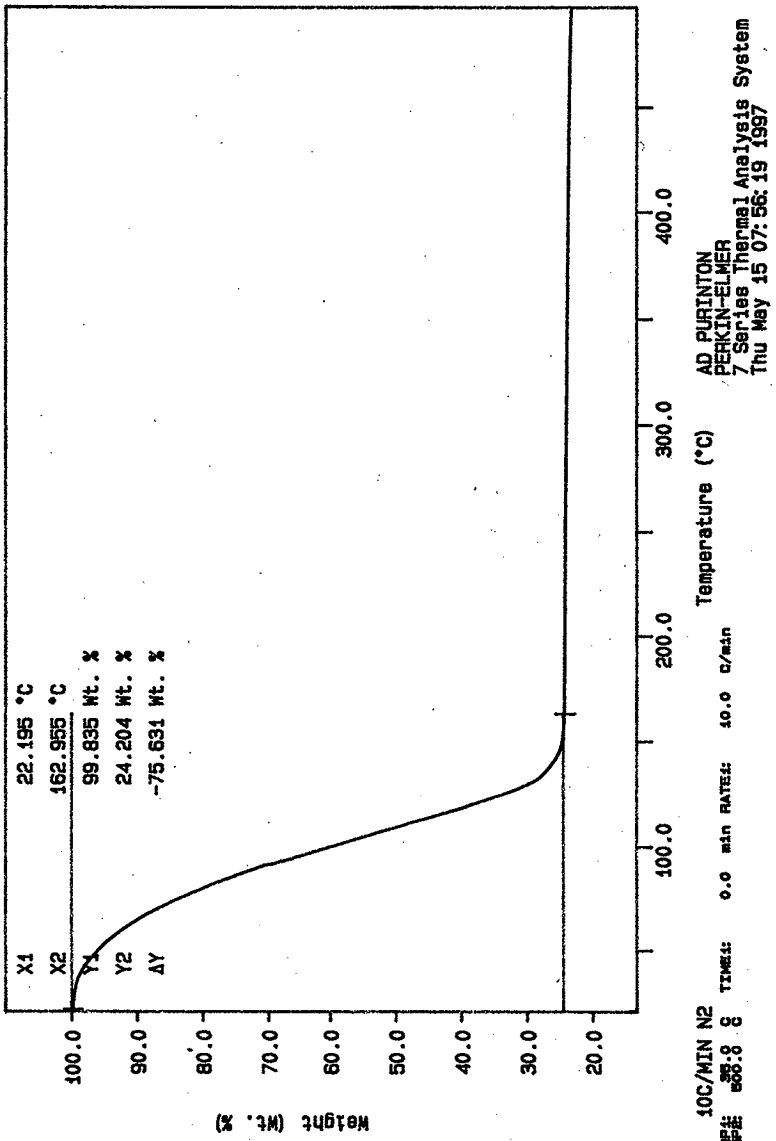
HNF-SD-WM-DP-245, REV. 0 *maxe 7-14-97*

HNF-SD-WM-DP-255, REV. 0

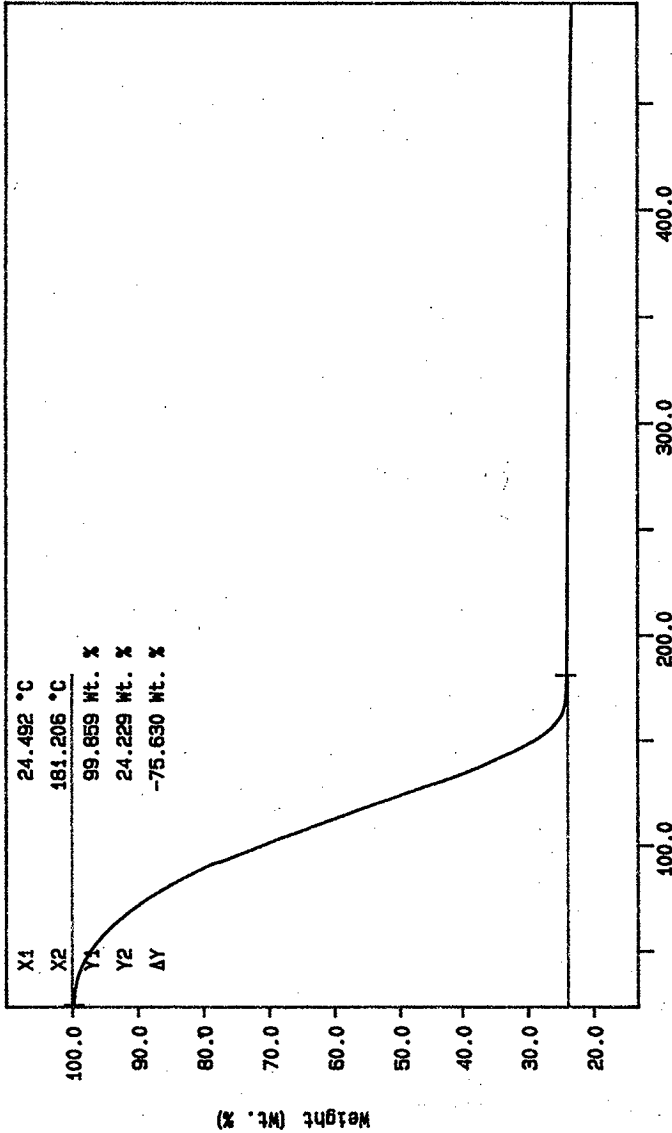


N2 10C/MIN
TIME 300.0 S
TIME 0.0 min RATE: 10.0 C/min
AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 03:05:30 1997

Curve 1: TGA
File info: SAM051501 Thu May 15 04:10:16 1997
Sample Weight: 12.397 mg
S97T000637 SAM

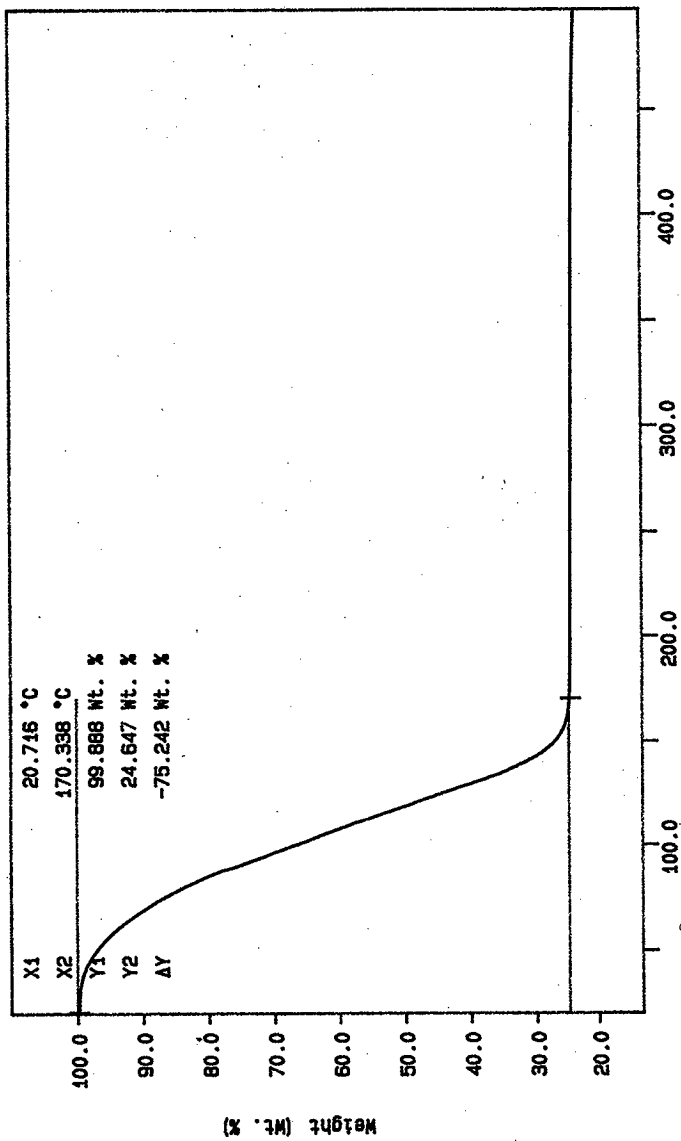


Curve 1: TGA
 File Info: SAM051502 Thu May 15 09:24:49 1997
 Sample Weight: 21.443 mg
 S97T000637 DUP



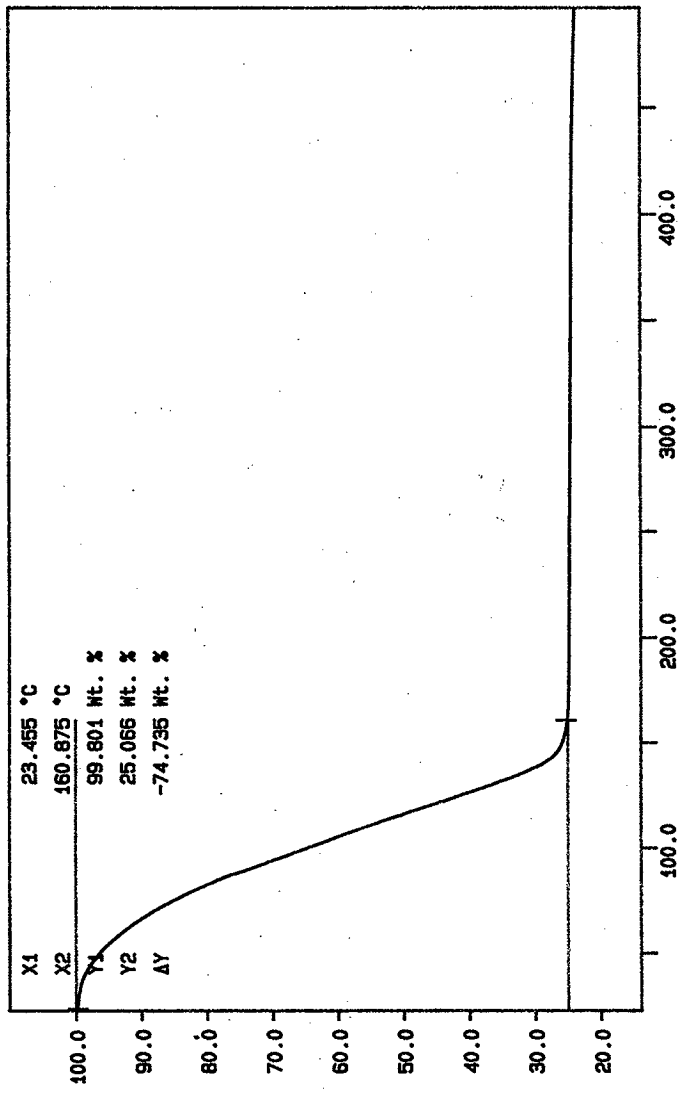
100/MIN N2
 TEMPERATURE 35.0 °C
 TIME 00:00
 0.0 min RATE 10.0 C/min
 KR MONTEITH
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 15 09:42:06 1997

Curve 1: TGA
File Info: SAN051503 Thu May 15 11:18:44 1997
Sample Weight: 16.905 mg
S97T000638 SAM



10C/MIN N2
TEMP: 35.0 C
TIME: 500.0 S
RATE: 0.0 min RATE: 10.0 C/min
KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 11:39:48 1997

Curve 1: TGA
File Info: SAM051504 Thu May 15 12:43:13 1997
Sample Weight: 14.848 mg
S97T000638 DUP



10C/MIN N2
TEMP: 25.0 C
TIME: 00:00
10C/MIN RATE: 10.0 C/min
SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 12:59:16 1997

LABCORE Data Entry Template for Worklist# 17847

Analyst: SMF Instrument: TGA0 1 Book # 97N8-A

Method: LA-560-112 Rev/Mod C-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, TGA-01 Run under nitrogen. skm

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID	<u>59.4</u>	<u>59.15</u>	<u>N/A</u>	%
97000261	T-204	2	SAMPLE	S97T000647	0		TGA-01	LIQUID	<u>N/A</u>	<u>100.69</u>		%
97000261	T-204	3	DUP	S97T000647	0		TGA-01	LIQUID	<u>100.69</u>	<u>100.34</u>	<u>N/A</u>	%

Final page for worklist # 17847

Laurie M. Tullon 5-3-97
Analyst Signature Date

Thy. V. V. V. 5-6-97
Analyst Signature Date

Validated 5/8/97 Brachel

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.

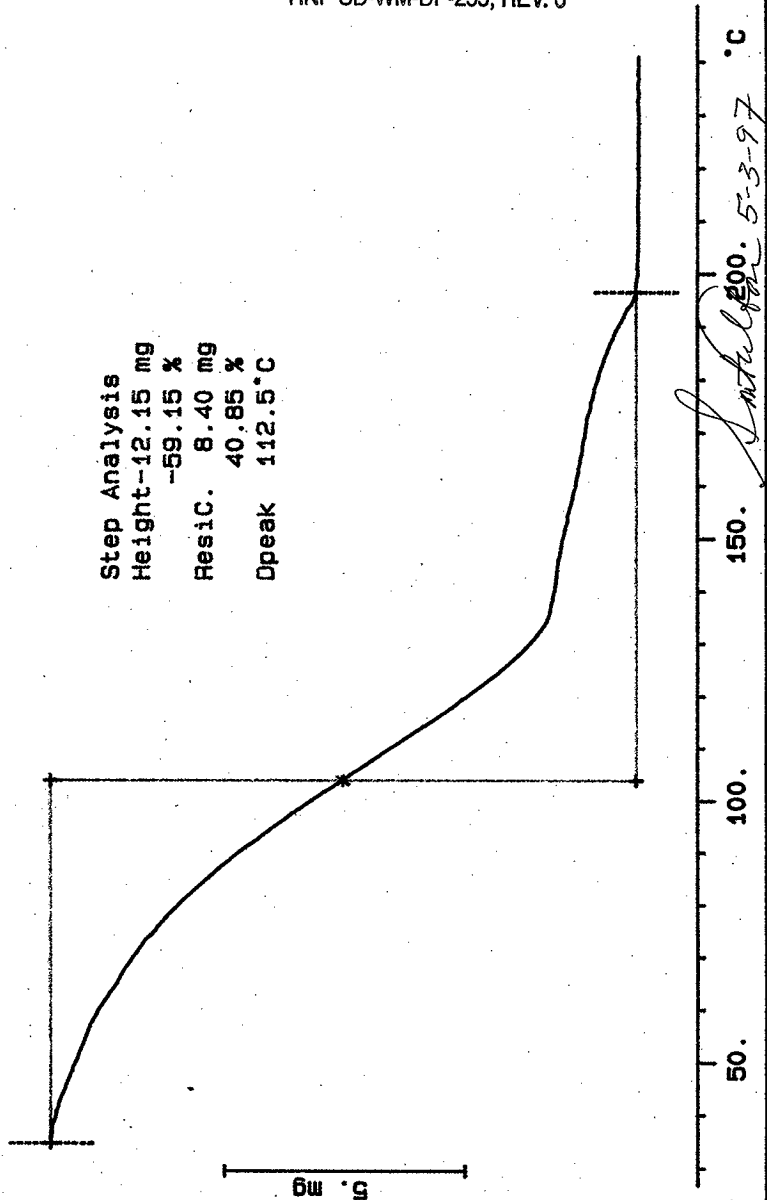
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 240 TO 242.

TGA TER 97N8-A N2
20.550 mg

File: 00119.001 TG METTLER 02-May-97
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

Step Analysis
Height-12.15 mg
-59.15 %
Resid. 8.40 mg
40.85 %
Dpeak 112.5 °C



Initial 200.5-3-97

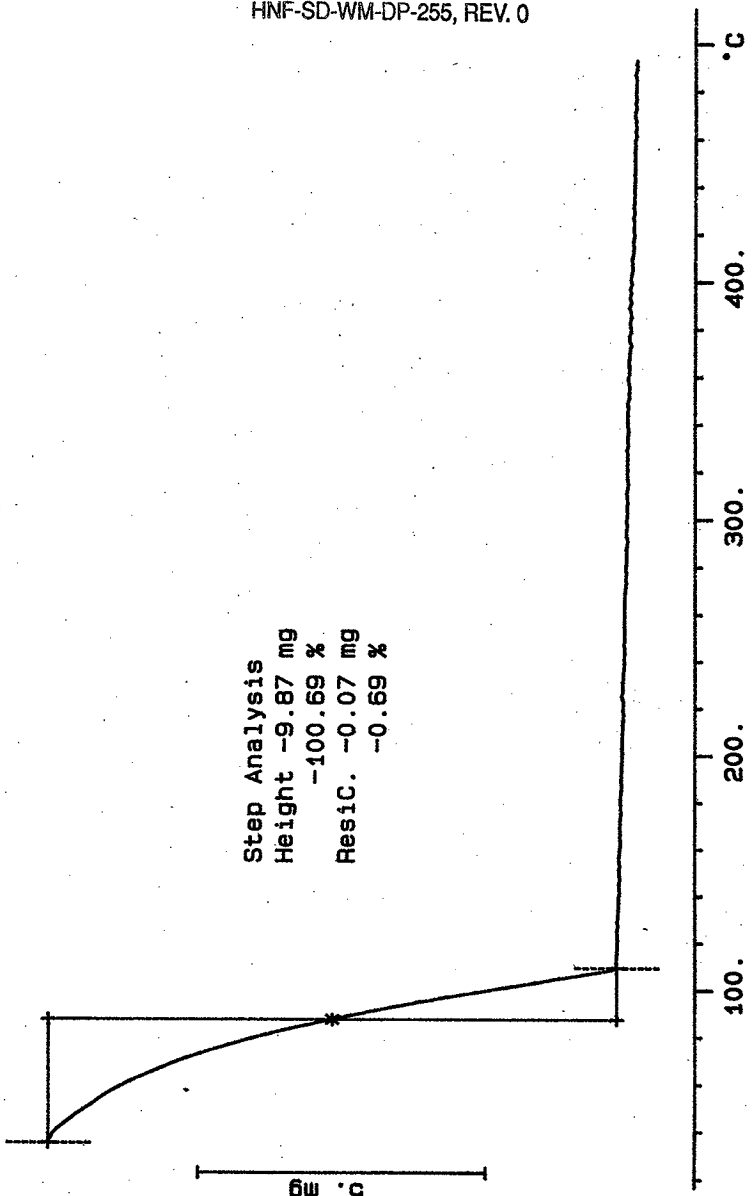
HNF-SD-WM-DP-255, REV. 0

File: 00122.001 TG METTLER 02-May-97
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

S97T000647 N2
9.801 mg

Step Analysis
Height -9.87 mg
-100.69 %
ResidC. -0.07 mg
-0.69 %



S97T000647 DUP N2

10.048 mg

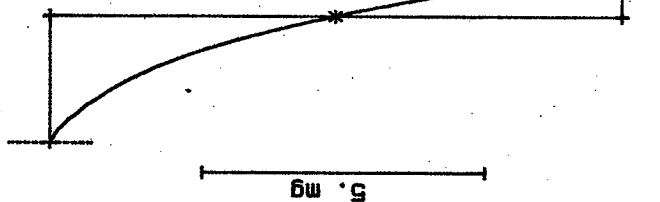
Rate: 10.0 °C/min

File: 00124.001 TG METTLER 02-May-97

Ident: 0.0 222-S Laboratory

HNF-SD-WM-DP-255, REV. 0

Step Analysis
Height-10.08 mg
-100.34 %
Resid. -0.03 mg
-0.34 %



LABCORE Data Entry Template for Worklist# 18239

Analyst: Blm Instrument: TGA0 3 Book # 97N8A
Method: LA-514-114 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0
Worklist Comment: Rerun due to high RPD, low STD. Rund under N2. -PPB

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.4</u>	<u>58.6</u>	<u>N/A</u>	%
97000261	T-204	2 SAMPLE	S97T000576	0	TGA-03	SOLID	<u>N/A</u>	<u>74.94</u>		%
97000261	T-204	3 DUP	S97T000576	0	TGA-03	SOLID	<u>74.94</u>	<u>74.82</u>	<u>N/A</u>	%
97000261	T-204	4 SAMPLE	S97T000580	0	TGA-03	SOLID	<u>N/A</u>	<u>72.48</u>		%
97000261	T-204	5 DUP	S97T000580	0	TGA-03	SOLID	<u>72.48</u>	<u>71.39</u>	<u>N/A</u>	%
97000261	T-204	6 SAMPLE	S97T000603	0	TGA-03	SOLID	<u>N/A</u>	<u>75.93</u>		%
97000261	T-204	7 DUP	S97T000603	0	TGA-03	SOLID	<u>75.93</u>	<u>74.92</u>	<u>N/A</u>	%

Final page for worklist # 18239

Blm 5/21/97
Analyst Signature Date
Validated 6/2/97 Blm

Blm 5/22/97
Analyst Signature Date

Data Entry Comments:

597T000580 ran in triplicate. Blm Samples ran on FG DBS.
High RPD 597T000580 due to instrument fluctuation. TRIPLICATE run shows acceptable
RPD. 5/22/97 Used TRIP value instead of DUP value. 5/22/97

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.

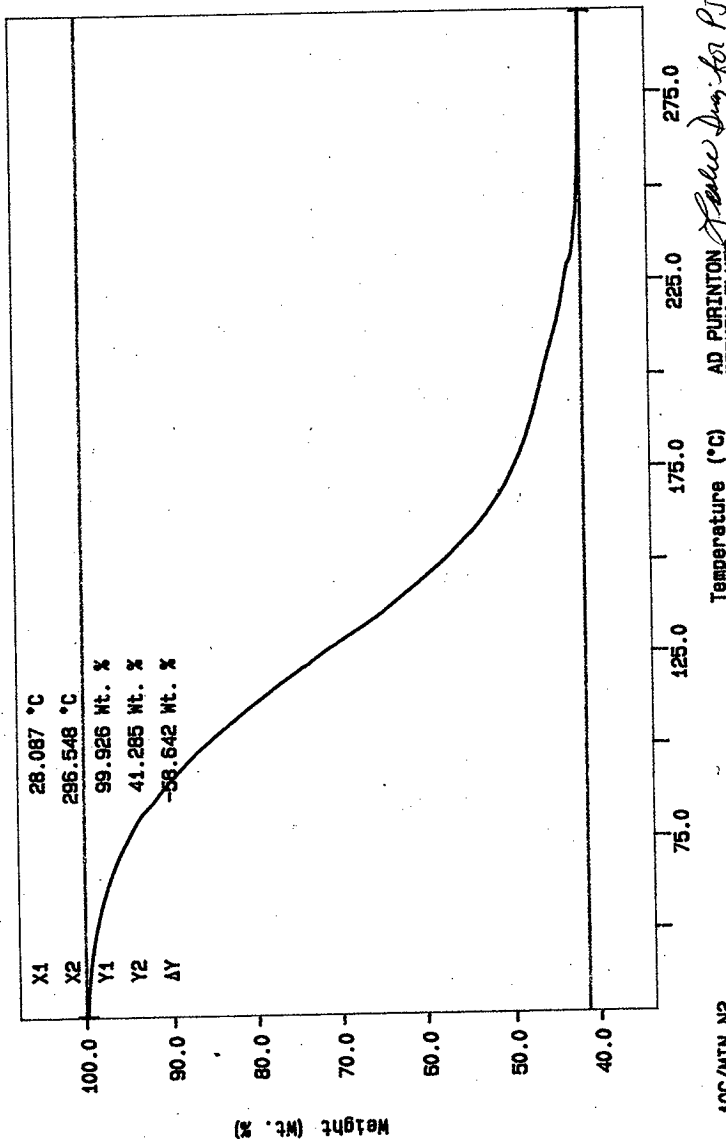
Curve 1: TGA

File info: TER052101 Wed May 21 07:08:54 1997

Sample Weight: 22.268 mg

97NB-A

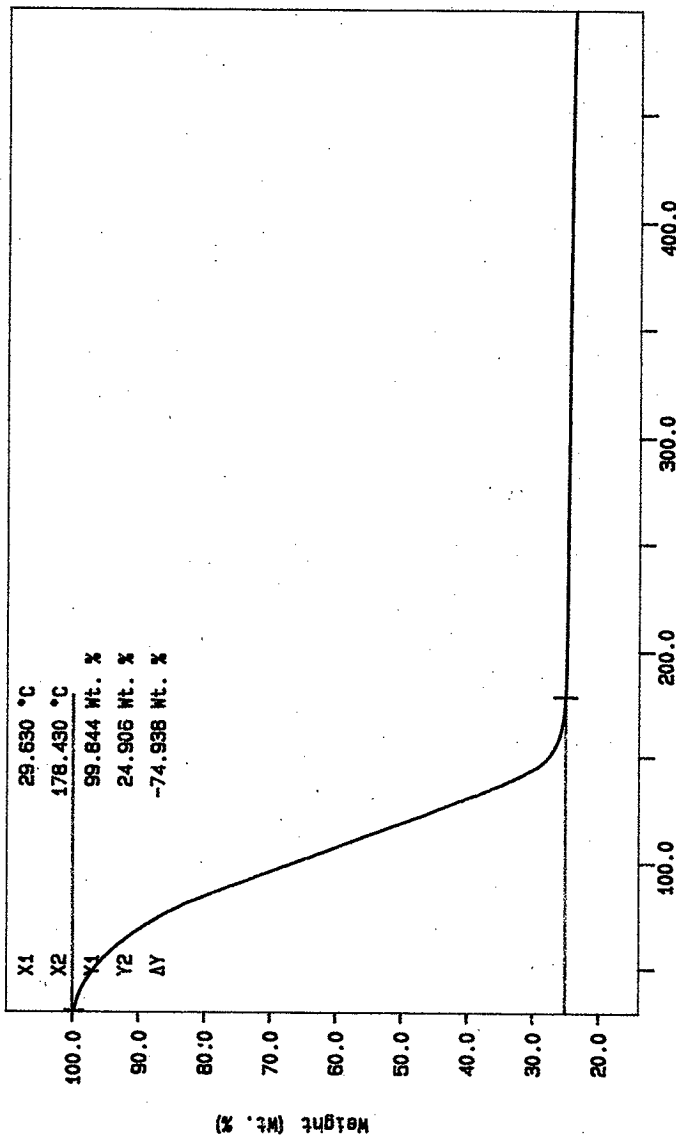
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 244 TO 251.



HNFS-D-WM-DP-255, REV. 0
HNFS-D-WM-DP-245, REV. 0 ^{mkc} 7-14-97

AD PURINTON *Perkin Elmer* for PJM
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 16:12 1997

Curve 1: TGA
 File Info: SAN052113 Wed May 21 20:03:28 1997
 Sample Weight: 17.934 mg
 S97T000576



10C/MIN N2
 TEMPS 35.8 &
 TIME: 500.8 s
 0.0 MIN RATE: 10.0 C/min
 PJ MCCOMB
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed May 21 20:21:39 1997

Curve 1: T6A

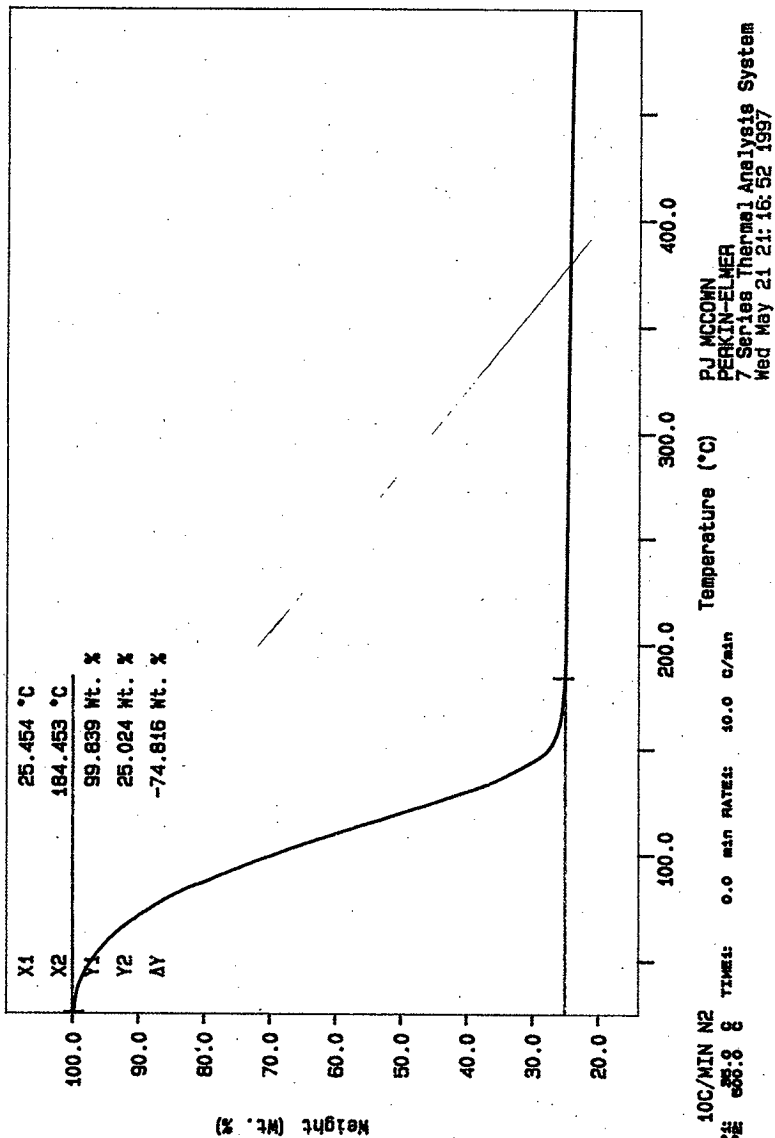
File Info: SAM052114 Wed May 21 21:16:33 1997

Sample Weight: 17.903 mg

S97T000576 DUP

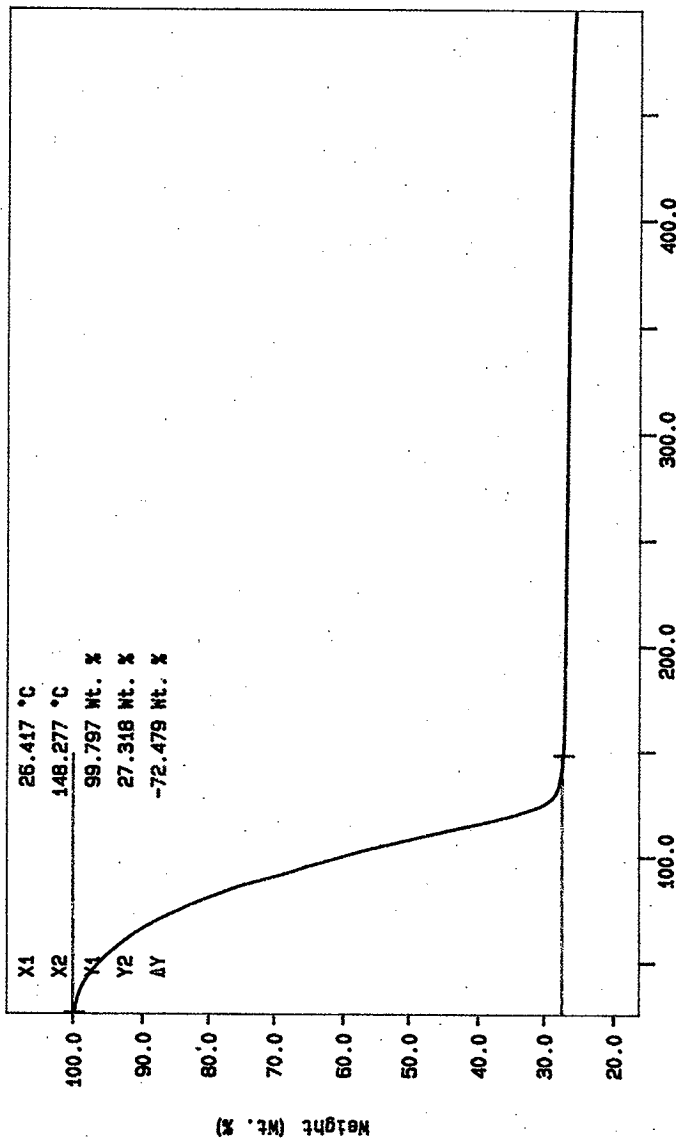
HNF-SD-WM-DP-245, REV. 0 *7-14-97*

HNF-SD-WM-DP-255, REV. 0



P.J. MCCOY
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 21:16:52 1997

Curve 1: TGA
File Info: SAM052115 Wed May 21 22:28:46 1997
Sample Weight: 13.218 mg
S97T000580

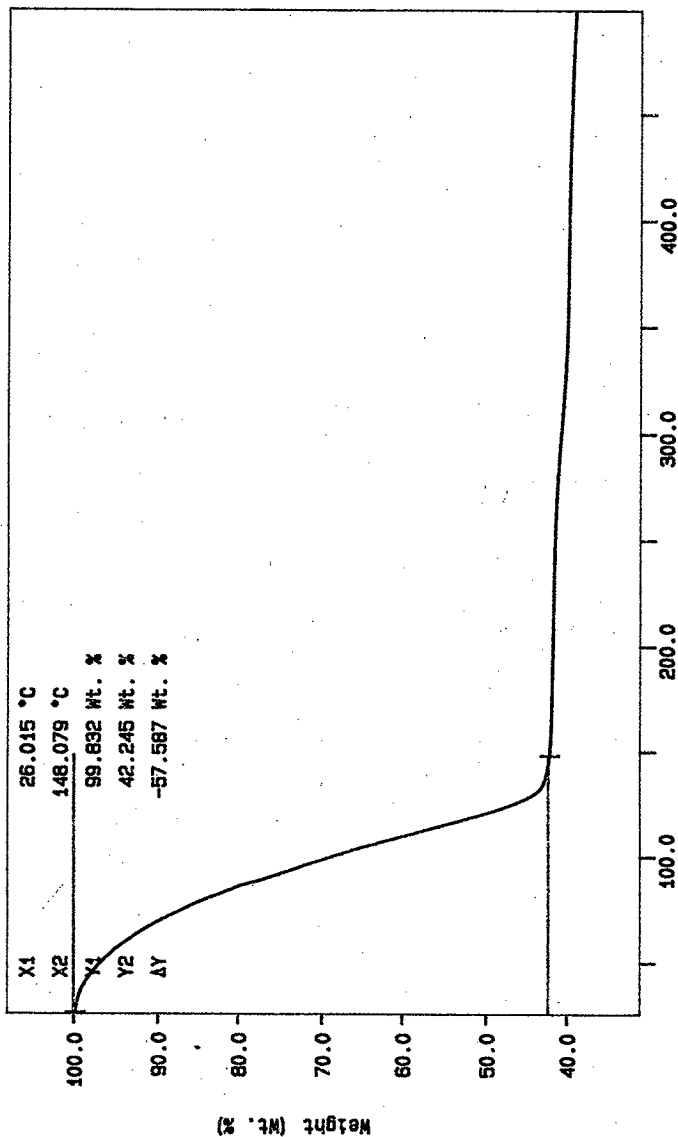


100/MIN N2
TEMP: 50.0 °C
TIME: 0.0 min RATE: 10.0 °C/min
PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 22:30:54 1997

Curve 1: TGA
 File Info: SAM052201 Wed May 21 23:54:15 1997
 Sample Weight: 18.480 mg
 S97T000580 DUP

HNF-SD-WM-DP-245, REV. 0 *mke 7-14-97*

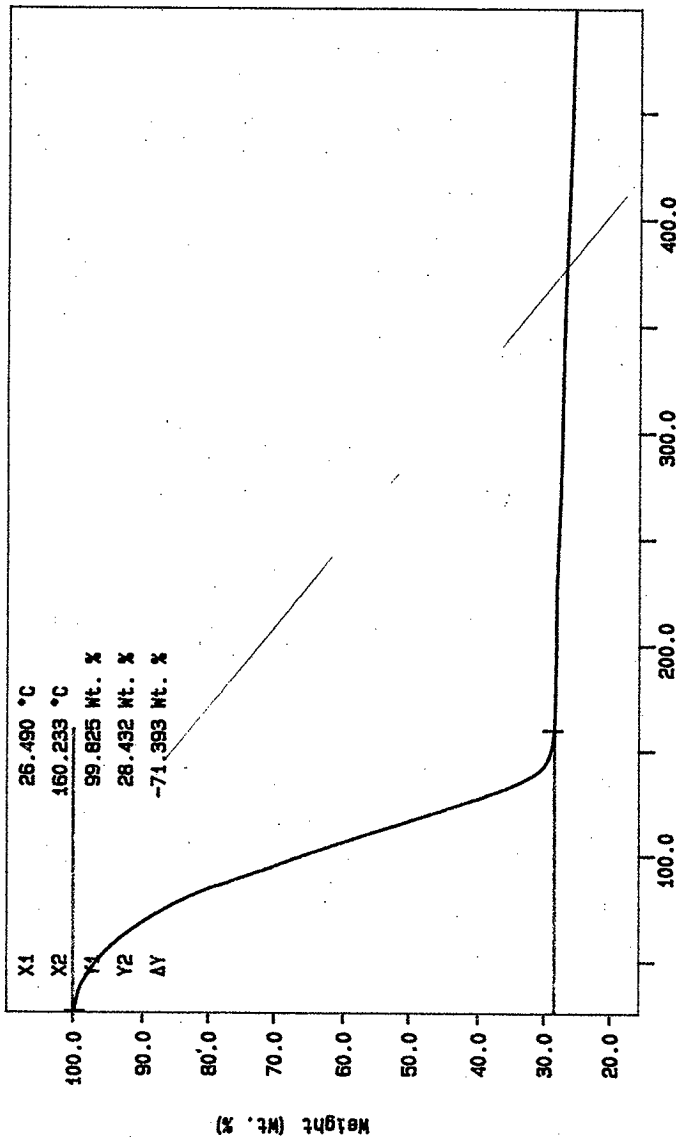
HNF-SD-WM-DP-255, REV. 0



PJ MCCOHN
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 22 00:13:25 1997

10C/MIN N2
 TGA
 0.0 min RATE: 10.0 C/min
 TIME: 00:08

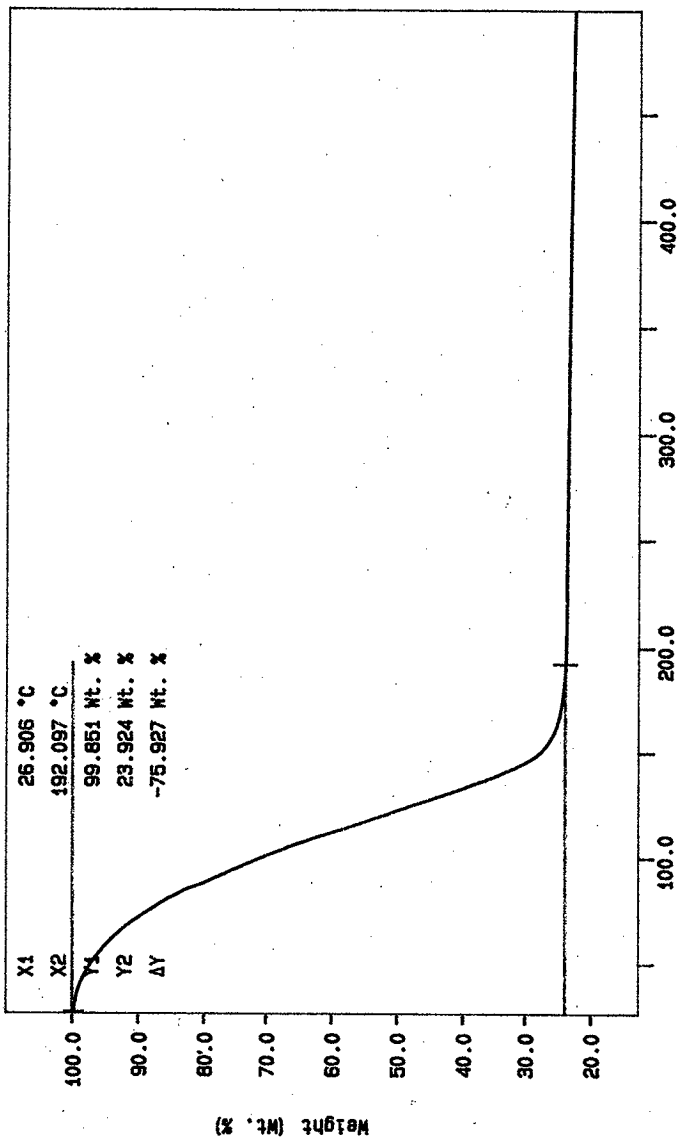
Curve 1: TGA
File Info: SAM05202 Thu May 22 01:06:52 1997
Sample Weight: 14.400 mg
S97T000580 TRIP



10C/MIN N2
TEMP: 30.0 °C
TIME: 0.0 min RATE: 10.0 °C/min
P.J. MCCOY
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 01:15:21 1997

Curve 1: TGA
 File info: SAM052203 Thu May 22 02:16:48 1997
 Sample Weight: 16.693 mg
 S977000603

HNF-SD-WM-DP-245, REV. 0 *note 7-14-97*
 HNF-SD-WM-DP-255, REV. 0

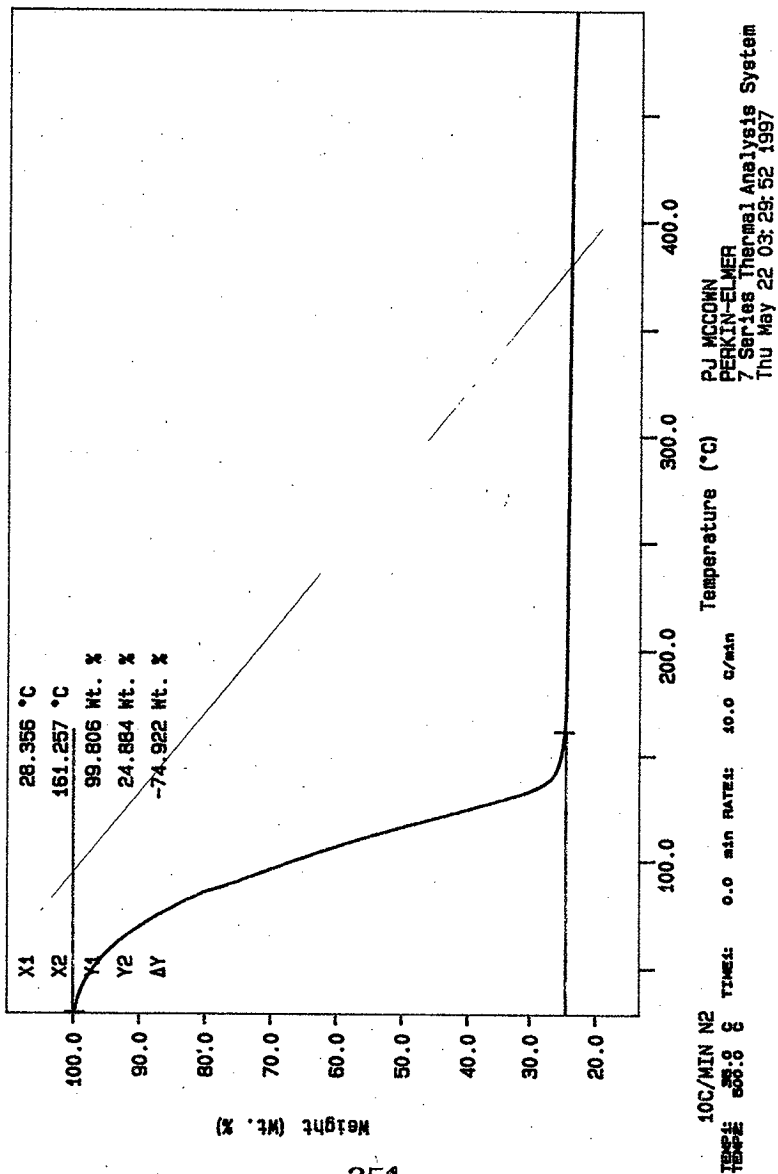


10C/MIN N2
 THERM: 26.9 8
 TIME: 0.0 min RATE: 10.0 C/min
 PJ MCCOWN
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 22 02:55 1997

Curve 1: TGA
 File info: SAM052204 Thu May 22 03:27:02 1997
 Sample Weight: 17.267 mg
 S97T000603 DUP

HNF-SD-WM-DP-245, REV. 0 *msc 7-4-97*

HNF-SD-WM-DP-255, REV. 0



LABCORE Data Entry Template for Worklist# 18240

Analyst: ADP Instrument: TGA0 3 Book # 97N8A
Method: LA-514-114 Rev/Mod D-O HNF-SD-WM-DP-255, REV. 0

Worklist Comment: Rerun due to high RPD, low STD. Run under N2. -PPB

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	SOLID	<u>59.4</u>	<u>58.31</u>	<u>N/A</u>	%
97000261	T-204	2	SAMPLE	S97T000604	0		TGA-03	SOLID	<u>N/A</u>	<u>76.81</u>		%
97000261	T-204	3	DUP	S97T000604	0		TGA-03	SOLID	<u>76.81</u>	<u>75.92</u>	<u>N/A</u>	%
97000261	T-204	4	SAMPLE	S97T000637	0		TGA-03	SOLID	<u>N/A</u>	<u>71.04</u>		%
97000261	T-204	5	DUP	S97T000637	0		TGA-03	SOLID	<u>71.04</u>	<u>75.00</u>	<u>N/A</u>	%
97000261	T-204	6	SAMPLE	S97T000638	0		TGA-03	SOLID	<u>N/A</u>	<u>53.74</u>		%
97000261	T-204	7	DUP	S97T000638	0		TGA-03	SOLID	<u>53.74</u>	<u>73.28</u>	<u>N/A</u>	%

Final page for worklist # 18240

Cheryl Purnell 5-22-97
Analyst Signature Date
Validated 6/2/97 Bachelon

Jay J. Hummel 5-27-97
Analyst Signature Date

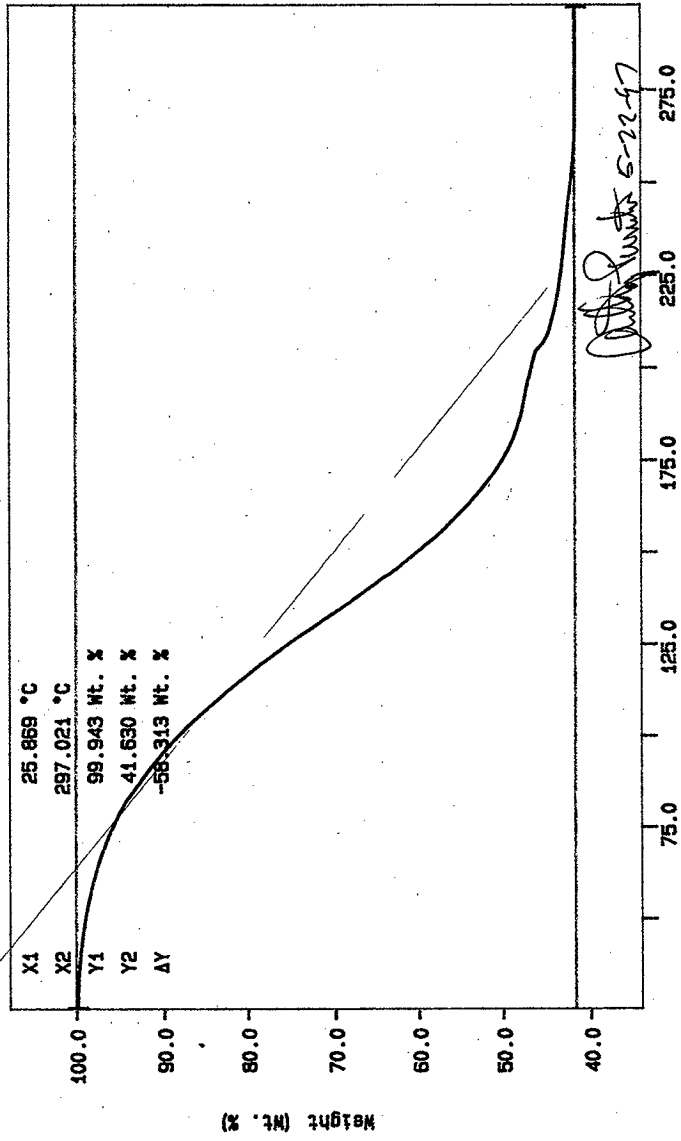
Data Entry Comments:

Reproducible high RPD for S97T000638. No further reruns. 5/27/97

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.

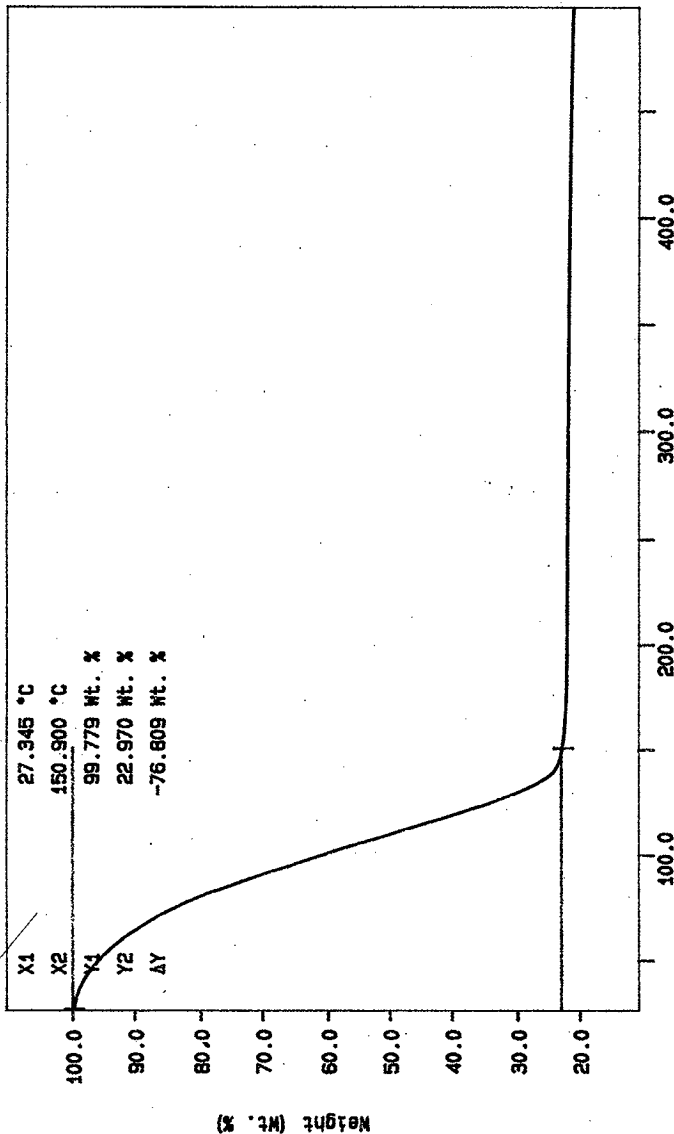
Curve 1: TGA
File Info: TER052201 Thu May 22 06:27:16 1997
Sample Weight: 24.197 mg
97N8-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 253 TO 259.



10C/MIN N2
TEMP: 55.8 °C
TIME: 255.8 S
0.0 min RATE: 10.0 °C/min
Temperature (°C)
AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 06:30:29 1997

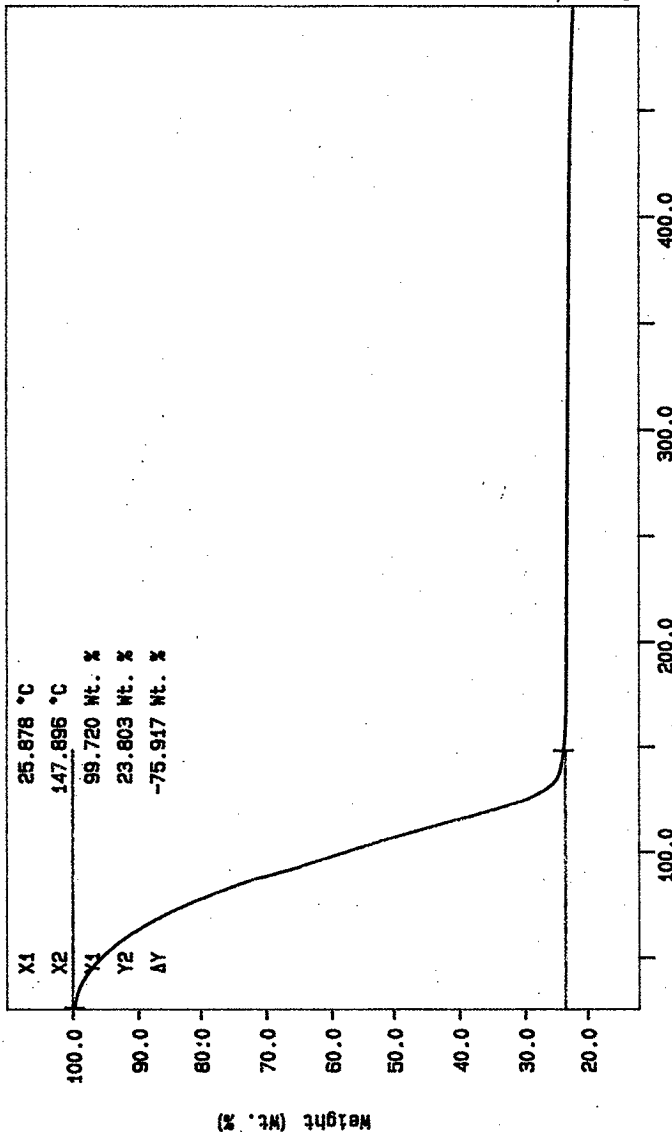
Curve 1: TGA
File info: SAN052205 Thu May 22 07:35:36 1997
Sample Weight: 14.756 mg
S97T000604 SAM



AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 09:03:36 1997

100/MIN N2
TEMP: 35.8 °C
TIME: 555.8 s
RATES: 10.0 °C/min

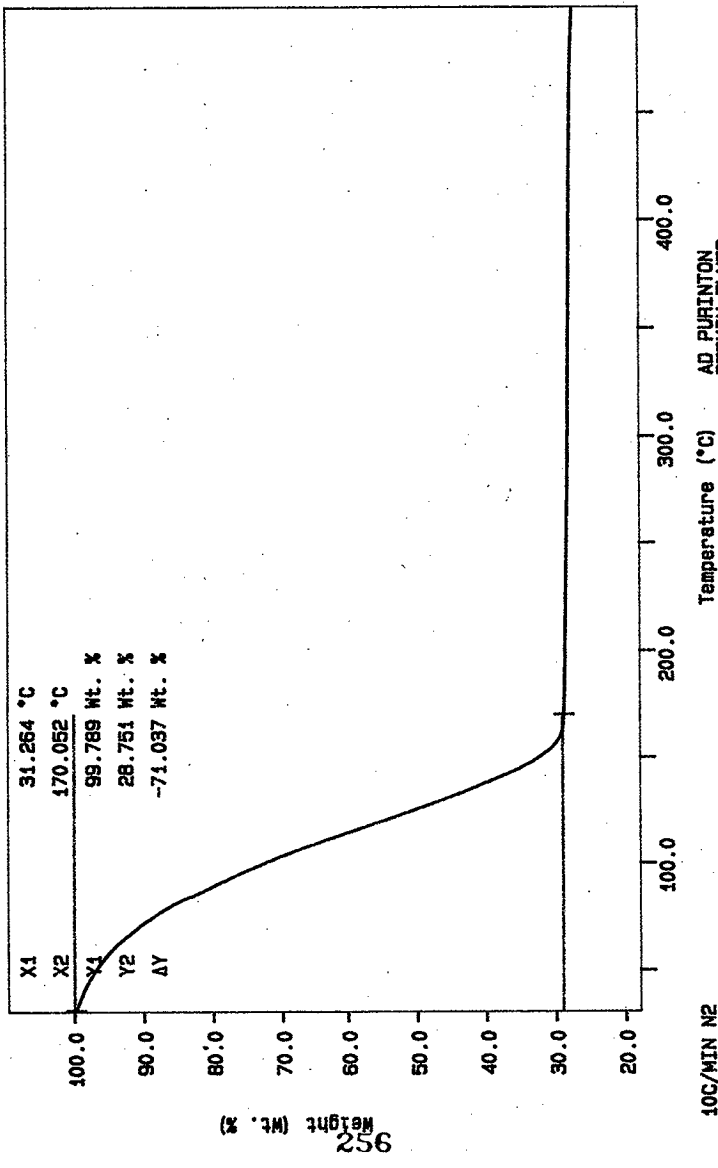
Curve 1: TGA
File Info: SAM052207 Thu May 22 09:57:27 1997
Sample Weight: 14.472 mg
S97T000604 DUP



AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 09:58:29 1997

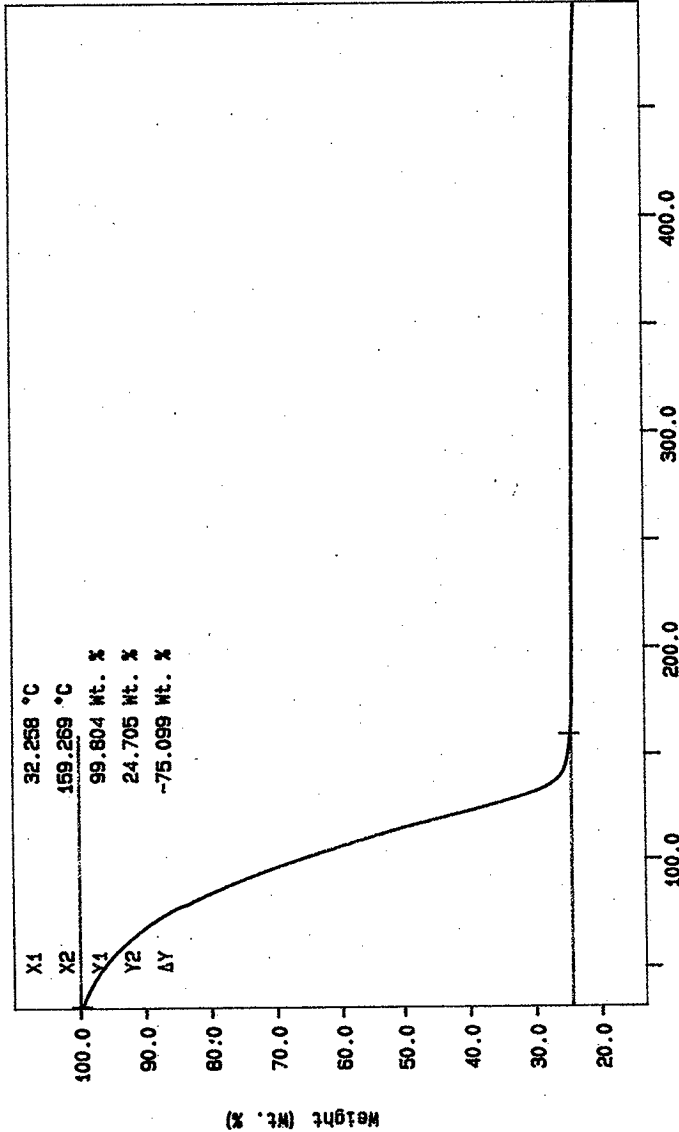
100/MIN N2
TIME 00:00
TIME 00:00
10.0 min RATE: 10.0 °C/min

Curve 1: TGA
File Info: SAM052208 Thu May 22 11:05:28 1997
Sample Weight: 20.778 mg
S97T000637 SAM



AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 11:07:36 1997

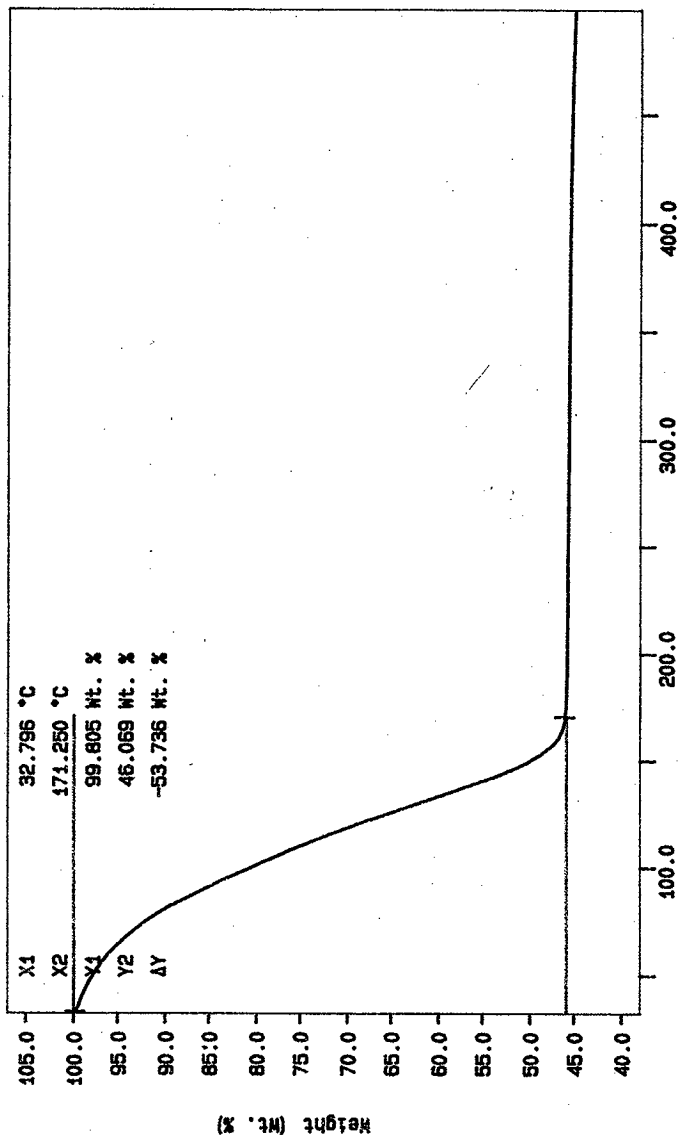
Curve 1: TGA
File Info: SAM052209 Thu May 22 12:11:09 1997
Sample Weight: 14.932 mg
S97T000637 DUP



AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 12:24:47 1997

10C/MIN N2
TEMP: 350.8 °C
TIME: 5.0 min RATE: 10.0 g/min

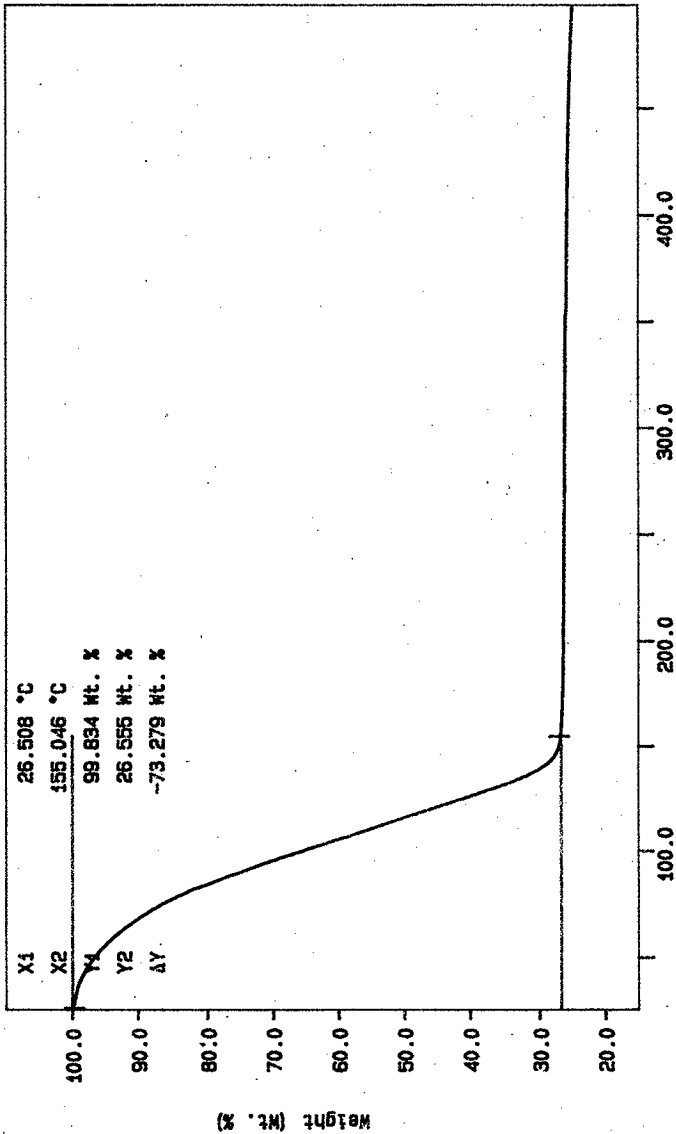
Curve 1: TGA
 File Info: SAM052210 Thu May 22 13:18:20 1997
 Sample Weight: 34.752 mg
 S97T000638 SAM



AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 22 13:44:51 1997

10C/MIN N2
 TEMPE 35.0 C
 TIME: 0.0 min RATE: 10.0 C/min

Curve 1: TGA
File Info: SAN052211 Thu May 22 14:37:28 1997
Sample Weight: 22.898 mg
S97T000638 DUP



10C/MIN N2
TEMP: 350.0 °C
TIME: 00:08
TGA: 0.0 min RATE: 10.0 °C/min
AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 14:39:41 1997

LABCORE Completed Worklist Report for Worklist# 18685

Analyst: jds Instrument: TGA03 Book# _____

Method: _____ Rev/Mod _____

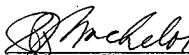
Worklist Comment: T-204 TGA, RUN UNDER N2. RCJ

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		TGA-03	SOLID	5.90±0.01	58.17	98.593	% Recovery
2	SAMPLE	S97T001197	0		TGA-03	SOLID	N/A	75.87		%
3	DUP	S97T001137	0		TGA-03	SOLID	75.87	74.32	2.064	RPD

Final page for worklist# 18685

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

 7/22/97
Reviewer Signature _____ Date _____

worklistrpt Version 2.1 05/15/95
07/18/97 13:45

Page: 1

LABCORE Data Entry Template for Worklist# 18685Analyst: ds Instrument: TGA0 3 Book # 103NBAMethod: LA-560-112 Rev/Mod D-0

Worklist Comment: T-204 TGA, RUN UNDER N2. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-01	SOLID	<u>59.0</u>	<u>58.17</u>	<u>N/A</u>	%
97000261	T-204	2 SAMPLE	S97T001197	0	TGA-01	SOLID	<u>N/A</u>	<u>75.87</u>		%
97000261	T-204	3 DUP	S97T001197	0	TGA-01	SOLID	<u>75.87</u>	<u>74.32</u>	<u>N/A</u>	%

Final page for worklist # 18685

ds 7/18/97
 Analyst Signature Date
 Validated 7/22/97 ds

ds 7-18-97
 Analyst Signature Date

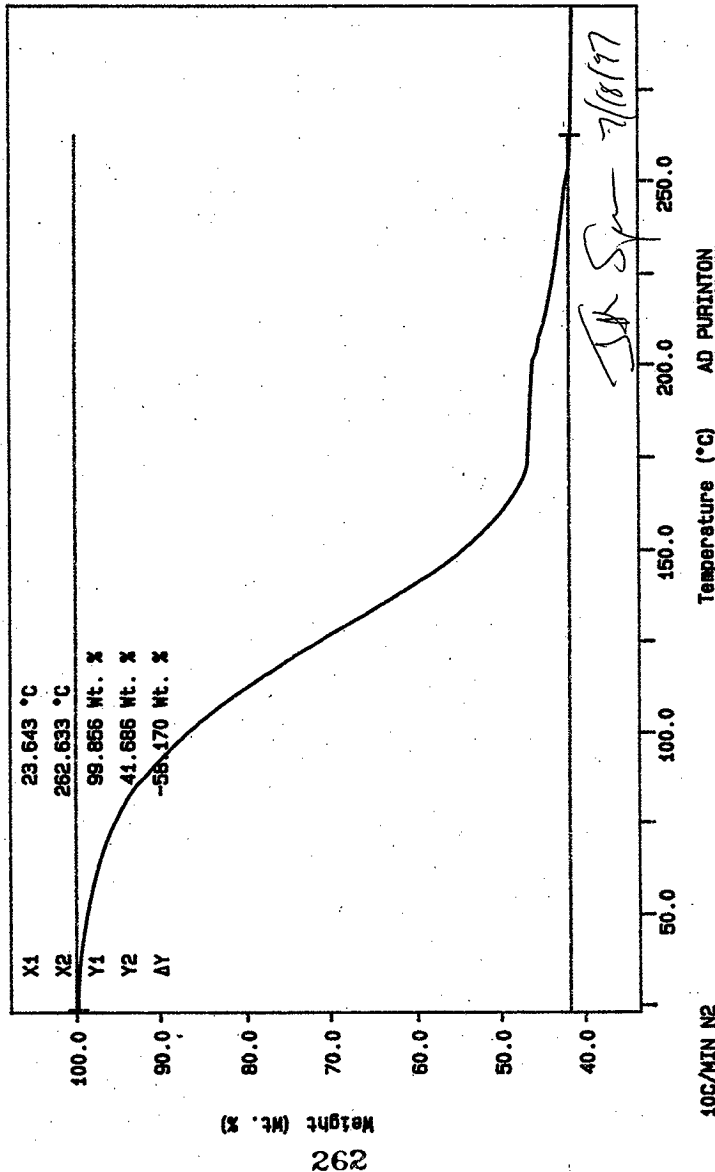
Data Entry Comments:

Samples run on TGA-03. 7/22/97

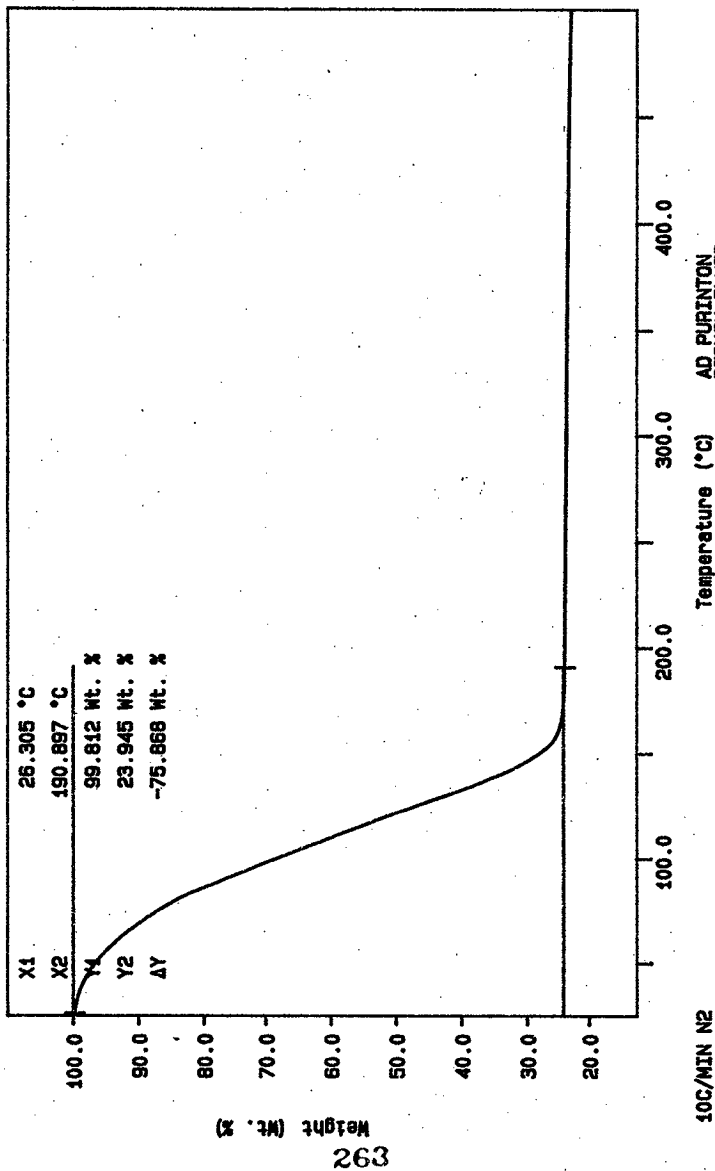
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number,
 R = Replicate Number, A = Aliquot Code.

Curve 1: T6A
 File Info: TER061901 Thu Jun 19 08:27:57 1997
 Sample Weight: 14.280 mg
 103NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES ~~202~~ *202 TO 204*

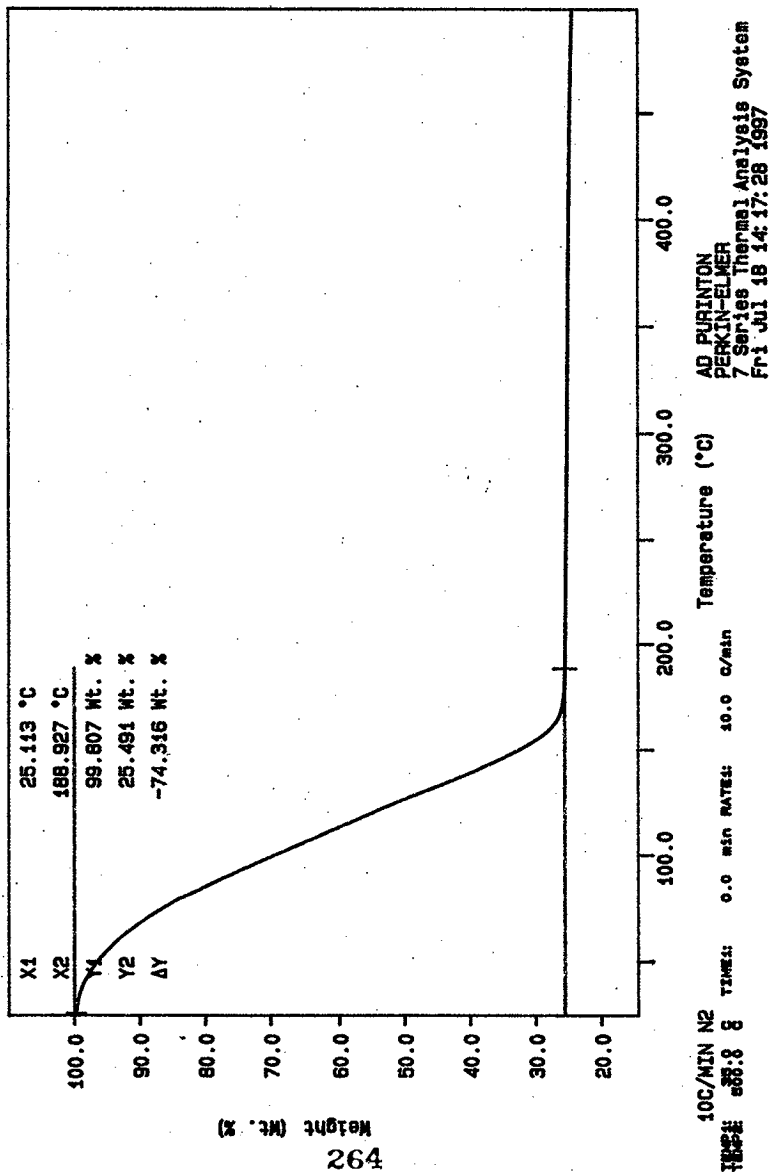


Curve 1: TGA
 File Info: SAM061901 Thu Jun 19 10:25:28 1997
 Sample Weight: 25.501 mg
 S97T001197 SAM



10C/MIN N2
 THERM 25.501 g TIME: 0.0 min RATE: 10.0 C/min
 AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Fri Jul 18 14:15:14 1997

Curve 1: TGA
File Info: SAM061902 Thu Jun 19 12:01:56 1997
Sample Weight: 23.601 mg
S97T001197 DUP



LABCORE Data Entry Template for Worklist# 17820

Analyst: RY Instrument: BA001 _____ Book # 133N16-A

Method: LA-510-112 Rev/Mod D-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, SPG-01 Use a cal. pipette. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			SPG-01	LIQUID	<u>1.39755</u>	<u>1.404</u>	N/A	Sp.G.
97000261	T-204	2 SAMPLE	S97T000647 0		SPG-01	LIQUID	N/A	<u>1.0063</u>	<u>0.010</u>	Sp.G. RWS 5/5/97
97000261	T-204	3 DUP	S97T000647 0		SPG-01	LIQUID	<u>1.0063</u>	<u>1.2026</u>	N/A	Sp.G. RWS 5/5/97 203

Final page for worklist # 17820

Rae Ann Green 4-30-97
Analyst Signature Date

[Signature] 4-30-97
Analyst Signature Date
Approved RW Schmedt 5/5/97

Data Entry Comments:

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

HNF-SD-WM-DP-255, REV. 0

SPECIFIC GRAVITY : LA-510-112 (C-3)

D-0 Rev 5/5/97

Type		STANDARD	STANDARD
STANDARD	Gross Weight (W2)	1.4036	1.4354
Work List	Tare Weight (W1)	1.2972	1.3309
17820	Weight of Solution (W2-W1)	0.10638	0.10457
Test Code	Volume of Solution μ L	75.1400	75.1400
SPG-01	Specific Gravity	1.4158	1.3917
Matrix	Specific Gravity (Average)	1.4037	
LIQUID			
Sample #			
STD			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RAG	Specific Gravity = [(W2-W1) * 1000 μ L/mL] / [Vol. of Solution μ L * 1.000 g/mL]		
Date			
04/30/97	∇ RESULT ∇		
Time	Specific Gravity Average =	1.404	
02:00 PM			

Data Entry by: <i>Dary Hammond</i>	Date: 04/30/97
Approved by: <i>Rw Schroeder</i>	Date: ^{RWS} 5/5/97

Form 510112L1 Rev. 1.1 Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

HNF-SD-WM-DP-255, REV. 0

SPECIFIC GRAVITY : LA-510-112 (C-3) ^{D-0} ^{RWS} ^{5/5/97}

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.4007	1.3753
Work List	Tare Weight (W1)	1.3251	1.2850
17820	Weight of Solution (W2-W1)	0.07561	0.09036
Test Code	Volume of Solution μ L	75.1400	75.1400
SPG-01	Specific Gravity	1.0063	1.2026
Matrix	Specific Gravity (Average)	1.1044	
LIQUID			
Sample #			
S97T000647			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RAG	Specific Gravity = $[(W2-W1) * 1000 \mu\text{L/mL}] / [\text{Vol. of Solution } \mu\text{L} * 1.000 \text{ g/mL}]$		
Date			
04/30/97	$\sqrt{\text{RESULT}}$		
Time	Specific Gravity Average =	1.104	
02:00 PM			

Data Entry by: <i>Dany Hammond</i>	Date: 04/30/97
Approved by: <i>RWS</i>	Date: 5/5/97

HNF-SD-WM-DP-245, REV. 0 mte
7-14-97

LABCORE Completed Worklist Report for Worklist# 17900

Analyst: smf

Instrument: IC01

Book# 50 N20D

Method: LA-533-105 Rev/Mod D-1

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204 @IC-01 rerun. Try 11 or 21 df.jmf

Seq	Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB	0		@IC-QC F	QC	1	<1.20e-2		ug/mL
1	CCB	0		@IC-QC CL	QC	1	<1.70e-2		ug/mL
1	CCB	0		@IC-QC NO2	QC	1	<1.08e-1		ug/mL
1	CCB	0		@IC-QC BR	QC	1	<1.25e-1		ug/mL
1	CCB	0		@IC-QC NO3	QC	1	1.39e-01	0.139	ug/mL
1	CCB	0		@IC-QC P04	QC	1	<1.20e-1		ug/mL
1	CCB	0		@IC-QC S04	QC	1	<1.38e-1		ug/mL
1	CCB	0		@IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2	CCV	0		@IC-QC F	QC	5.90e01	5.34e+01	90.508 % Recovery	
2	CCV	0		@IC-QC CL	QC	7.90e01	8.10e+01	102.532 % Recovery	
2	CCV	0		@IC-QC NO2	QC	5.43e02	5.46e+02	100.552 % Recovery	
2	CCV	0		@IC-QC BR	QC	5.89e02	5.75e+02	97.623 % Recovery	
2	CCV	0		@IC-QC NO3	QC	5.94e02	5.88e+02	98.990 % Recovery	
2	CCV	0		@IC-QC P04	QC	5.45e02	5.39e+02	98.899 % Recovery	
2	CCV	0		@IC-QC S04	QC	6.31e02	6.25e+02	99.049 % Recovery	
2	CCV	0		@IC-QC OXALATE2	QC	5.32e02	5.49e+02	103.195 % Recovery	
3	SAMPLE	S97T000647	0	@IC-01 F-02	LIQUID	N/A	<1.920e-01	0.192	ug/mL
3	SAMPLE	S97T000647	0	@IC-01 CL-02	LIQUID	N/A	7.933e+00	0.272	ug/mL
3	SAMPLE	S97T000647	0	@IC-01 NO2-02	LIQUID	N/A	2.114e+00	1.728	ug/mL
3	SAMPLE	S97T000647	0	@IC-01 BR-02	LIQUID	N/A	<2.000e+00	2.000	ug/mL
3	SAMPLE	S97T000647	0	@IC-01 NO3-02	LIQUID	N/A	4.702e+00	2.224	ug/mL
3	SAMPLE	S97T000647	0	@IC-01 P04-02	LIQUID	N/A	2.077e+00	1.920	ug/mL
3	SAMPLE	S97T000647	0	@IC-01 S04-02	LIQUID	N/A	1.780e+01	2.208	ug/mL
3	SAMPLE	S97T000647	0	@IC-01 OXALATE2	LIQUID	N/A	1.732e+00	1.680	ug/mL
4	DUP	S97T000647	0	@IC-01 F-02	LIQUID	<1.92e-1	<1.92e-1		RFD
4	DUP	S97T000647	0	@IC-01 CL-02	LIQUID	7.93e+00	8.36e+00	5.279	RFD
4	DUP	S97T000647	0	@IC-01 NO2-02	LIQUID	2.11e+00	<1.73e0		RFD
4	DUP	S97T000647	0	@IC-01 BR-02	LIQUID	<2.00e0	<2.00e0		RFD
4	DUP	S97T000647	0	@IC-01 NO3-02	LIQUID	4.70e+00	5.48e+00	15.324	RFD
4	DUP	S97T000647	0	@IC-01 P04-02	LIQUID	2.08e+00	<1.92e0		RFD
4	DUP	S97T000647	0	@IC-01 S04-02	LIQUID	1.78e+01	1.82e+01	2.222	RFD
4	DUP	S97T000647	0	@IC-01 OXALATE2	LIQUID	1.73e+00	<1.68e0		RFD

Final page for worklist# 17900

Analyst Signature Date

Analyst Signature Date

 5/13/97

LABCORE Data Entry Template for Worklist# 17900

Analyst: SMF Instrument: IC0 1

Book# 50N20-D

Method: LA-533-105 Rev/Mod D-1

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204 @IC-01 rerun. Try 11 or 21 df.jmf

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 SAMPLE	S97T000647 0		@IC-01	LIQUID	97000261	T-204
	Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02					
4 DUP	S97T000647 0		@IC-01	LIQUID		

Final page for worklist # 17900

Analyst Signature

Date

Analyst Signature

Date

uploaded 5-12-97

JK Wainell

17900MAY.CSV

Data Entry Comments:

DF 16 = .200 ml sam → 3.0 ml Eluent.

Insufficient sample (all that was left

was 400 ml)

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

SMF

Sample Name: CCB ELUENT BLANK		Date: 05/07/1997 22:18:16
Data File : C:\DX\DATA\97050771.D20		
Method : C:\DX\METHOD\KIT.MET	HNF-SD-WM-DP-255, REV. 0	
ACI Address: 1 System: 1 Inject#: 20	Detector: CDM-1	
Analyst : <i>Jean Jey</i>	Column: AG4A/AS4A anion column	

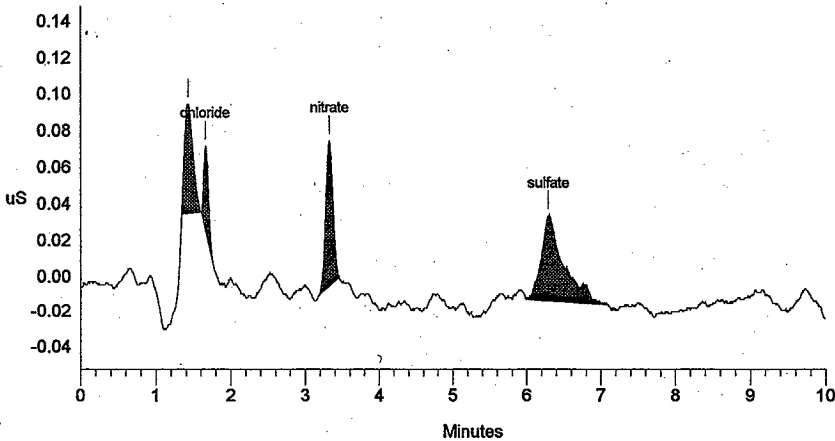
 Calibration Volume Dilution Points Rate Start Stop Area Reject

 External 1 1 3000 5Hz 0.00 10.00 30

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.43		0.000	60	465	1	
2	1.66	chloride	0.011	46	205	1	4.18
3	3.33	nitrate	0.139	80	535	1	2.36
4	6.29	sulfate	0.018	47	1002	1	4.42
Totals			0.168	232	2206		

File: 97050771.D20 Sample: CCB ELUENT BLANK



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES *270 TO 273*.

Data Reprocessed On 05/07/1997 22:38:40

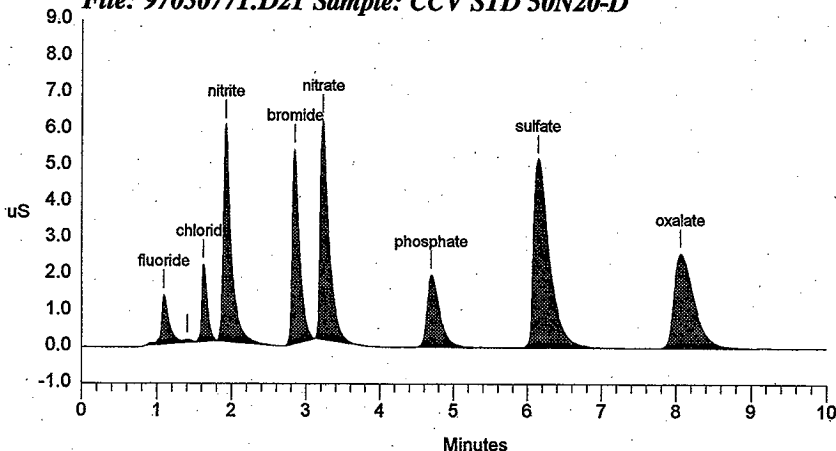
Sample Name: CCV STD 50N20-D Date: 05/07/1997 22:35:49
Data File : C:\DX\DATA\97050771.D21 HNF-SD-WM-DP-255, REV. 0
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 21 Detector: CDM-1
Analyst : *S. Sullivan* Column: AG4A/AS4A anion column

	Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3000	5Hz	0.00	10.00		30	

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.09	fluoride	53.389	1351	9577	3	-2.38
2	1.41		0.000	59	367	4	
3	1.62	chloride	81.027	2117	10582	1	1.67
4	1.91	nitrite	546.288	5961	43185	1	-0.69
5	2.84	bromide	574.719	5361	35908	1	-0.35
6	3.22	nitrate	587.807	6079	48939	1	-0.92
7	4.69	phosphate	539.446	1986	23916	1	1.73
8	6.13	sulfate	624.619	5193	76673	1	1.77
9	8.05	oxalate	548.721	2606	48533	1	2.72
Totals			3556.016	30713	297681		

File: 97050771.D21 Sample: CCV STD 50N20-D



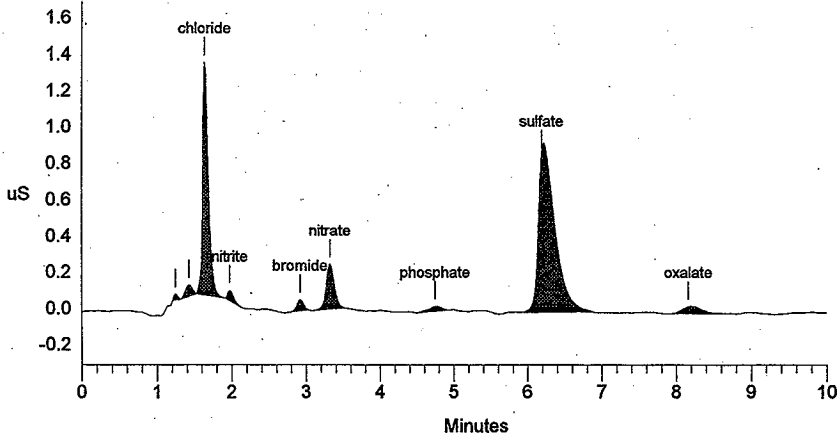
Sample Name: S97T000647 Date: 05/07/1997 22:46:47
 Data File : C:\DX\DATA\97050771.D22
 Method : C:\DX\METHOD\KIT.MET HNF-SD-WM-DP-255, REV. 0
 ACI Address: 1 System: 1 Inject#: 22 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	16	3000	5Hz	0.00	10.00		30

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.25		0.000	31	106	1	
2	1.43		0.000	61	393	1	
3	1.63	chloride	7.933	1279	6522	1	2.51
4	1.97	nitrite	2.114	56	290	1	2.42
5	2.92	bromide	1.906	61	372	1	2.46
6	3.32	nitrate	4.702	246	1839	1	2.15
7	4.75	phosphate	2.077	25	296	1	2.89
8	6.19	sulfate	17.802	865	14251	1	2.65
9	8.16	oxalate	1.732	39	725	1	4.08
Totals			38.265	2664	24794		

File: 97050771.D22 Sample: S97T000647



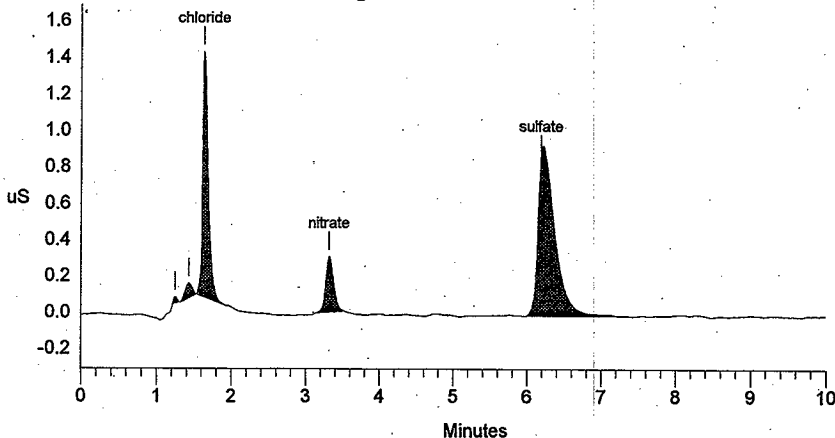
Sample Name: S97T000647 DUP Date: 05/07/1997 23:01:13
 Data File : C:\DX\DATA\97050771.D23
 Method : C:\DX\METHOD\KIT.MET HNF-SD-WM-DP-255, REV.0
 ACI Address: 1 System: 1 Inject#: 23 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	16	3000	5Hz	0.00	10.00		30

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.25		0.000	32	99	1	
2	1.43		0.000	81	526	1	
3	1.63	chloride	8.355	1346	6869	1	2.51
4	3.31	nitrate	5.478	305	2247	1	1.95
5	6.19	sulfate	18.183	857	14540	1	2.65
Totals			32.016	2620	24281		

File: 97050771.D23 Sample: S97T000647 DUP



LABCORE Completed Worklist Report for Worklist# 19440

Analyst: kgh

Instrument: IC01

Book# 721204

Method: 14-533-105 Rev/Mod D-1

Worklist Comment: T204, @IC-01 skm

Seq	Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB	0		@IC-QC F	QC	1	<1.20e-2		ug/mL
1	CCB	0		@IC-QC CL	QC	1	<1.70e-2		ug/mL
1	CCB	0		@IC-QC NO2	QC	1	<1.08e-1		ug/mL
1	CCB	0		@IC-QC BR	QC	1	<1.25e-1		ug/mL
1	CCB	0		@IC-QC NO3	QC	1	1.68e-01	0.168	ug/mL
1	CCB	0		@IC-QC P04	QC	1	<1.20e-1		ug/mL
1	CCB	0		@IC-QC S04	QC	1	2.92e-01	0.292	ug/mL
1	CCB	0		@IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2	CCV	0		@IC-QC F	QC	5.90e01	5.60e+01	94.915 % Recovery	
2	CCV	0		@IC-QC CL	QC	7.90e01	7.83e+01	99.114 % Recovery	
2	CCV	0		@IC-QC NO2	QC	5.43e02	5.51e+02	101.473 % Recovery	
2	CCV	0		@IC-QC BR	QC	5.89e02	5.93e+02	100.679 % Recovery	
2	CCV	0		@IC-QC NO3	QC	5.94e02	6.03e+02	101.515 % Recovery	
2	CCV	0		@IC-QC P04	QC	5.45e02	5.16e+02	94.679 % Recovery	
2	CCV	0		@IC-QC S04	QC	6.32e02	6.32e+02	100.000 % Recovery	
2	CCV	0		@IC-QC OXALATE2	QC	5.34e02	5.50e+02	102.996 % Recovery	
3	BLNK-PREP	0		@IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3	BLNK-PREP	0		@IC-01 CL-02	SOLID	1	<1.70e-2		ug/g
3	BLNK-PREP	0		@IC-01 NO2-02	SOLID	1	2.32e-01	0.232	ug/g
3	BLNK-PREP	0		@IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3	BLNK-PREP	0		@IC-01 NO3-02	SOLID	1	1.39e-01	0.139	ug/g
3	BLNK-PREP	0		@IC-01 P04-02	SOLID	1	<1.20e-1		ug/g
3	BLNK-PREP	0		@IC-01 S04-02	SOLID	1	<1.38e-1		ug/g
3	BLNK-PREP	0		@IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4	SAMPLE	S97T001200	0 W	@IC-01 F-02	SOLID	N/A	6.055e+03	27.210	ug/g
4	SAMPLE	S97T001200	0 W	@IC-01 CL-02	SOLID	N/A	6.939e+02	38.540	ug/g
4	SAMPLE	S97T001200	0 W	@IC-01 NO2-02	SOLID	N/A	3.001e+02	244.900	ug/g
4	SAMPLE	S97T001200	0 W	@IC-01 BR-02	SOLID	N/A	2.834e+02	283.500	ug/g
4	SAMPLE	S97T001200	0 W	@IC-01 NO3-02	SOLID	N/A	5.740e+04	315.100	ug/g
4	SAMPLE	S97T001200	0 W	@IC-01 P04-02	SOLID	N/A	2.551e+02	272.100	ug/g
4	SAMPLE	S97T001200	0 W	@IC-01 S04-02	SOLID	N/A	4.135e+02	312.900	ug/g
4	SAMPLE	S97T001200	0 W	@IC-01 OXALATE2	SOLID	N/A	1.350e+03	238.100	ug/g
5	DUP	S97T001200	0 W	@IC-01 F-02	SOLID	6.06e+03	5.82e+03	4.040 RPD	
5	DUP	S97T001200	0 W	@IC-01 CL-02	SOLID	6.94e+02	6.53e+02	6.088 RPD	
5	DUP	S97T001200	0 W	@IC-01 NO2-02	SOLID	3.00e+02	2.67e+02	11.640 RPD	
5	DUP	S97T001200	0 W	@IC-01 BR-02	SOLID	<2.83e2	<2.82e2	RPD	
5	DUP	S97T001200	0 W	@IC-01 NO3-02	SOLID	5.74e+04	5.29e+04	8.160 RPD	
5	DUP	S97T001200	0 W	@IC-01 P04-02	SOLID	2.55e+03	2.36e+03	7.739 RPD	
5	DUP	S97T001200	0 W	@IC-01 S04-02	SOLID	4.14e+02	<3.12e2	RPD	
5	DUP	S97T001200	0 W	@IC-01 OXALATE2	SOLID	1.35e+03	1.31e+03	3.008 RPD	

Units shown for QC (BLK/BKG) may not reflect the actual units.

273.1

LABCORE Completed Worklist Report for Worklist# 19440

Seq	Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
-----	------	---------	-----	------	--------	--------	-------	-------------	------

Final page for worklist# 19440

Analyst Signature	Date
-------------------	------

Analyst Signature	Date
-------------------	------

<u>James M. Fuy</u>	<u>7/23/97</u>
Reviewer Signature	Date

07/23/97 08:24
A-0004-1

Page: 1

LABCORE Data Entry Template for Worklist# 19440

Analyst: K6H Instrument: IC0 1 Book# 72N20AMethod: LA-533-105 Rev/Mod D-1

Worklist Comment: T204, @IC-01 skm

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	CCV				@IC-QC	QC		
3	BLNK-PREP				@IC-01	SOLID		
4	SAMPLE	S97T001200 0 W			@IC-01	SOLID	97000261	T-204
		Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5	DUP	S97T001200 0 W			@IC-01	SOLID		

Final page for worklist # 19440

Analyst Signature

Date

Analyst Signature

Date

*JmLye for K6H 7/23/97**re-uploaded 7-23-97**John Howell**19440JUL.CSV**Validated 7/23/97 JmLye*

Data Entry Comments:

Data from 18822 was reuploaded to 19440. No real resun was done. JmLye - PC had wanted spike run, but resun was impossible due to air quality problems in 4D. Worklist 18822 is attached. 273.3 JmLye

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Completed Worklist Report for Worklist# 18822

Analyst: kgh Instrument: IC01 Book# 72N204
Method: LA-533-108 Rev/Mod D-1 HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T-204 IC. RCJ

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0		④IC-QC F	QC	1	<1.20e-2		ug/mL
1 CCB	0		④IC-QC CL	QC	1	<1.70e-2		ug/mL
1 CCB	0		④IC-QC NO2	QC	1	<1.08e-1		ug/mL
1 CCB	0		④IC-QC BR	QC	1	<1.25e-1		ug/mL
1 CCB	0		④IC-QC NO3	QC	1	1.68e-01	0.168	ug/mL
1 CCB	0		④IC-QC P04	QC	1	<1.20e-1		ug/mL
1 CCB	0		④IC-QC S04	QC	1	2.92e-01	0.292	ug/mL
1 CCB	0		④IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 CCV	0		④IC-QC F	QC	5.99e01	5.60e+01	94.815 % Recovery	
2 CCV	0		④IC-QC CL	QC	7.90e01	7.83e+01	99.114 % Recovery	
2 CCV	0		④IC-QC NO2	QC	5.43e02	5.51e+02	101.473 % Recovery	
2 CCV	0		④IC-QC BR	QC	5.89e02	5.93e+02	100.679 % Recovery	
2 CCV	0		④IC-QC NO3	QC	5.94e02	6.03e+02	101.515 % Recovery	
2 CCV	0		④IC-QC P04	QC	5.45e02	5.16e+02	94.679 % Recovery	
2 CCV	0		④IC-QC S04	QC	6.32e02	6.32e+02	100.000 % Recovery	
2 CCV	0		④IC-QC OXALATE2	QC	5.34e02	5.50e+02	102.996 % Recovery	
3 BLNK-PREP	0		④IC-01 F-02	SOLID	1	<1.20e-2		ug/g
3 BLNK-PREP	0		④IC-01 CL-02	SOLID	1	<1.70e-2		ug/g
3 BLNK-PREP	0		④IC-01 NO2-02	SOLID	1	2.32e-01	0.232	ug/g
3 BLNK-PREP	0		④IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
3 BLNK-PREP	0		④IC-01 NO3-02	SOLID	1	1.39e-01	0.139	ug/g
3 BLNK-PREP	0		④IC-01 P04-02	SOLID	1	<1.20e-1		ug/g
3 BLNK-PREP	0		④IC-01 S04-02	SOLID	1	<1.38e-1		ug/g
3 BLNK-PREP	0		④IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
4 SAMPLE	S97T001200	0 W	④IC-01 F-02	SOLID	N/A	6.055e+03	27.210	ug/g
4 SAMPLE	S97T001200	0 W	④IC-01 CL-02	SOLID	N/A	6.939e+02	38.540	ug/g
4 SAMPLE	S97T001200	0 W	④IC-01 NO2-02	SOLID	N/A	3.001e+02	244.990	ug/g
4 SAMPLE	S97T001200	0 W	④IC-01 BR-02	SOLID	N/A	2.834e+02	283.500	ug/g
4 SAMPLE	S97T001200	0 W	④IC-01 NO3-02	SOLID	N/A	5.740e+04	315.100	ug/g
4 SAMPLE	S97T001200	0 W	④IC-01 P04-02	SOLID	N/A	2.551e+03	272.100	ug/g
4 SAMPLE	S97T001200	0 W	④IC-01 S04-02	SOLID	N/A	4.135e+02	312.900	ug/g
4 SAMPLE	S97T001200	0 W	④IC-01 OXALATE2	SOLID	N/A	1.350e+03	238.100	ug/g
5 DUP	S97T001200	0 W	④IC-01 F-02	SOLID	6.06e+03	5.82e+03	4.040 RPD	
5 DUP	S97T001200	0 W	④IC-01 CL-02	SOLID	6.94e+02	6.53e+02	6.088 RPD	
5 DUP	S97T001200	0 W	④IC-01 NO2-02	SOLID	3.00e+02	2.67e+02	11.640 RPD	
5 DUP	S97T001200	0 W	④IC-01 BR-02	SOLID	<2.83e2	<2.82e2	RPD	
5 DUP	S97T001200	0 W	④IC-01 NO3-02	SOLID	5.74e+04	5.29e+04	8.160 RPD	
5 DUP	S97T001200	0 W	④IC-01 P04-02	SOLID	2.55e+03	2.36e+03	7.739 RPD	
5 DUP	S97T001200	0 W	④IC-01 S04-02	SOLID	4.14e+02	<3.12e2	RPD	
5 DUP	S97T001200	0 W	④IC-01 OXALATE2	SOLID	1.35e+03	1.31e+03	3.008 RPD	

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed Worklist Report for Worklist# 18822

Seq	Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
-----	------	---------	-----	------	--------	--------	-------	-------------	------

Final page for worklist# 18822

Analyst Signature Date

Analyst Signature Date

James M. Lyle 6/26/97

Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 18822

Analyst: YCH Instrument: IC0 1 Book# 72120-a
Method: LA-533-105 Rev/Mod D-1 HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T-204 IC. RCJ

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S97T001200 0 W		@IC-01	SOLID	97000261	T-204
	Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02					
5 DUP	S97T001200 0 W		@IC-01	SOLID		

Final page for worklist # 18822

John W. Wall 6-24-97
Analyst Signature Date

Analyst Signature Date

uploaded 6-25-97

John W. Wall

18822 JWN.CSV

Validated 6/25/97 gm Lye

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

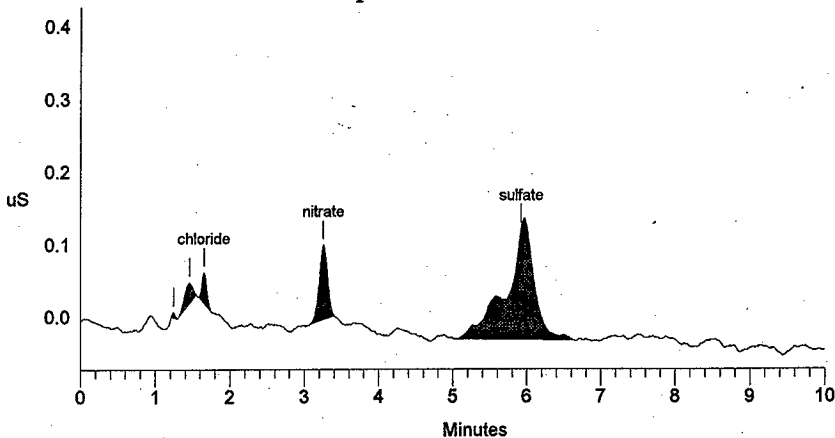
Sample Name: BLANK	Date: 06/24/1997 13:50:11
Data File : C:\DX\DATA\97061941.D09	
Method : C:\DX\METHOD\KIT.MET	HNF-SD-WM-DP-255, REV. 0
ACI Address: 1 System: 1 Inject#: 9	Detector: CDM-1
Analyst : <i>[Signature]</i>	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3000	5Hz	0.00	10.00		30

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	1.46		0.000	27	209	1	
3	1.65	chloride	0.009	41	180	1	3.77
4	3.25	nitrate	0.168	102	781	1	0.10
5	5.92	sulfate	0.292	153	4312	1	-1.77
Totals			0.469	324	5482		

File: 97061941.D09 Sample: BLANK



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 277 TO 281

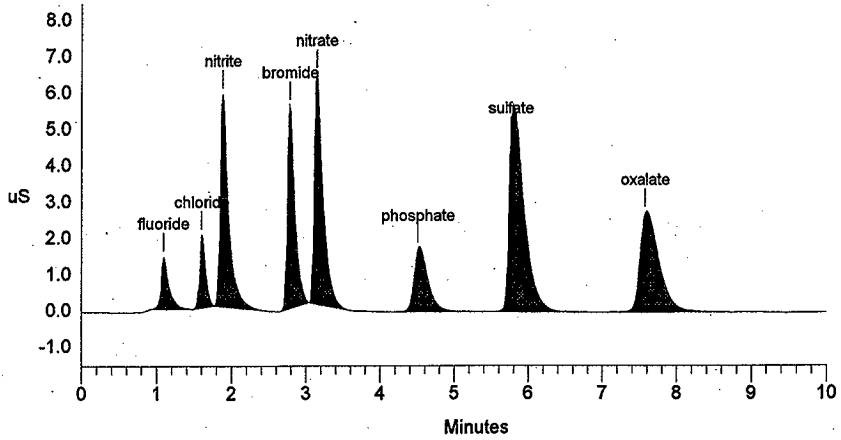
Sample Name: STD 72N20-A Date: 06/24/1997 14:01:42
Data File : C:\DX\DATA\97061941.D10 HNF-SD-WM-DP-255, REV. 0
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 10 Detector: CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject
External 1 101 3000 5Hz 0.00 10.00 30

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.09	fluoride	56.026	1419	10086	1	-2.38
2	1.60	chloride	78.347	1978	10229	1	0.42
3	1.88	nitrite	551.046	5825	43573	1	-2.42
4	2.78	bromide	593.210	5564	37096	1	1.83
5	3.14	nitrate	603.256	6323	50262	1	-3.38
6	4.51	phosphate	516.108	1712	22853	1	-2.31
7	5.76	sulfate	632.032	4671	77590	1	-4.42
8	7.57	oxalate	550.087	2707	48655	1	-3.40
Totals			3580.112	30199	300344		

File: 97061941.D10 Sample: STD 72N20-A



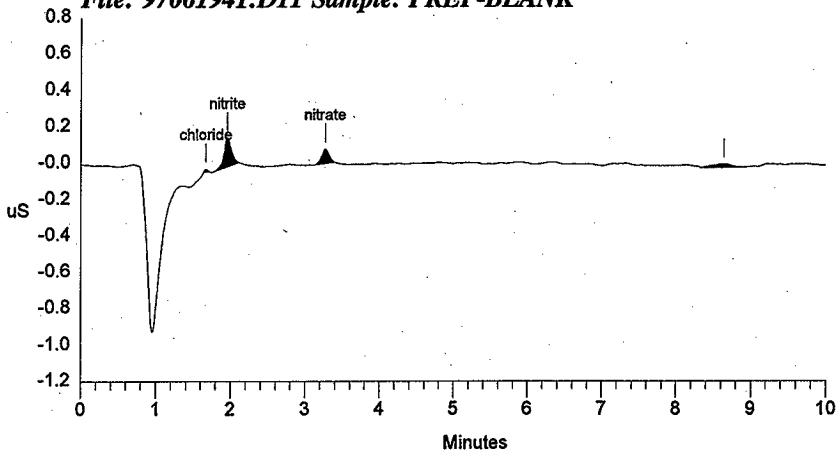
Sample Name: PREP-BLANK Date: 06/24/1997 14:15:22
 Data File : C:\DX\DATA\97061941.D11
 Method : C:\DX\METHOD\KIT.MET HNF-SD-WM-DP-255, REV. 0
 ACI Address: 1 System: 1 Inject#: 11 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3000	5Hz	0.00	10.00		30

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.67	chloride	-0.003	14	35	1	4.60
2	1.95	nitrite	0.232	160	1094	1	1.38
3	3.27	nitrate	0.139	79	542	1	0.51
4	8.64		0.000	17	301	1	
Totals			0.369	269	1971		

File: 97061941.D11 Sample: PREP-BLANK



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Sample Name: S97T001200 SAM                      Date: 06/24/1997 14:31:34
Data File  : C:\DX\DATA\97061941.D12
Method     : C:\DX\METHOD\KIT.MET                HNF-SD-WM-DP-255, REV. 0
ACI Address: 1 System: 1 Inject#: 12              Detector: CDM-1
Analyst    :                                     Column: AG4A/AS4A anion column
=====

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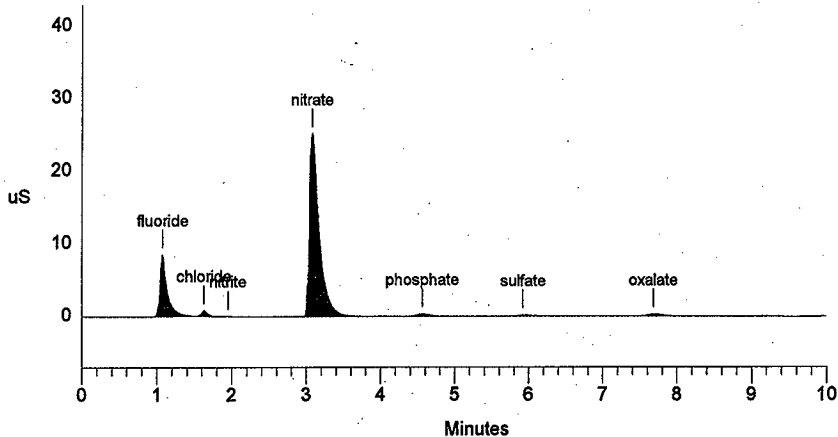
=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1          11    3000  5Hz   0.00 10.00      30
=====

```

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.07	fluoride	29.372	8403	53756	1	-4.17
2	1.63	chloride	3.366	750	4035	1	2.09
3	1.95	nitrite	1.456	52	292	1	1.04
4	3.07	nitrate	278.467	25096	227180	1	-5.44
5	4.56	phosphate	12.375	339	4752	1	-1.16
6	5.92	sulfate	2.006	182	2982	1	-1.77
7	7.68	oxalate	6.549	281	5071	1	-2.04
Totals			333.590	35103	298068		

File: 97061941.D12 Sample: S97T001200 SAM



Data Reprocessed On 06/25/1997 13:36:13

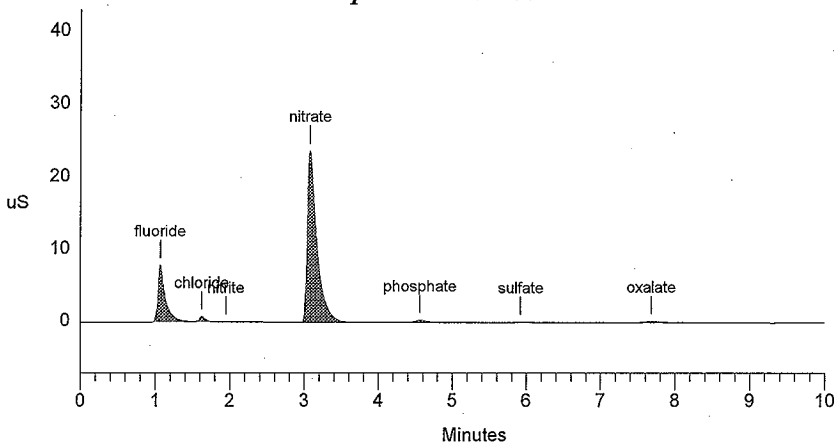
Sample Name: S97T001200 DUP	Date: 06/24/1997 14:46:18
Data File : F:\DATA\97061941.d13	
Method : C:\DX\METHOD\KIT.MET	HNF-SD-WM-DP-255, REV. 0
ACI Address: 1 System: 1 Inject#: 13	Detector: CDM-1
Analyst :	Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	11	3000	5Hz	0.00	10.00		30

***** Peak Report: All Peaks *****

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.07	fluoride	28.327	7795	51681	1	-4.76
2	1.62	chloride	3.182	720	3817	1	1.67
3	1.95	nitrite	1.300	37	178	1	1.04
4	3.07	nitrate	257.475	23638	208784	1	-5.44
5	4.56	phosphate	11.477	346	4385	1	-1.16
6	5.92	sulfate	0.957	122	1829	1	-1.77
7	7.68	oxalate	6.378	269	4933	1	-2.04
Totals			309.095	32926	275607		

File: 97061941.d13 Sample: S97T001200 DUP



LABCORE Data Entry Template for Worklist# 17851

Analyst: JK Sato Instrument: ICP01 JK 430-97 Book# 66848B ^{JK 430-97}
Method: LA-505-154/161 Rev/Mod C-1 HNF-SD-WM-DP-255, REV. 0
Worklist Comment: ICP T-204 (DIRECT)

S Type	Sample#	R A	Test	Matrix	Group#	Project
1	ICV		@ICP-QC	QC		
2	ICB		@ICP-QC	QC		
3	LLS		@ICP-QC	QC		
4	ICSA		@ICP-QC	QC		
5	ICSAB		@ICP-QC	QC		
6	SAMPLE	S97T000647 0 D	@ICP-D01	LIQUID	97000261	T-204
		Analytes Requested: AG-D-01 , AL-D-01 , AS-D-01 , B-D-01 , BA-D-01 , BE-D-01 , BI-D-01 , CA-D-01 , CD-D-01 , CE-D-01 , CO-D-01 , CR-D-01 , CU-D-01 , FE-D-01 , K-D-01 , LA-D-01 , LI-D-01 , MG-D-01 , MN-D-01 , MO-D-01 , NA-D-01 , ND-D-01 , NI-D-01 , P-D-01 , PB-D-01 , S-D-01 , SE-D-01 , SE-D-01 , SI-D-01 , SM-D-01 , SR-D-01 , TI-D-01 , TL-D-01 , U-D-01 , V-D-01 , ZN-D-01 , ZR-D-01				
7	DUP	S97T000647 0 D	@ICP-D01	LIQUID		
8	ICSA		@ICP-QC	QC		
9	ICSAB		@ICP-QC	QC		
10	CCV		@ICP-QC	QC		
11	CCB		@ICP-QC	QC		

Final page for worklist # 17851

JK Sato 04-30-97
Analyst Signature Date
S97T000647 , 3-3 mL, DF 2
S97T000647, 3-3 2

Sam M. Pang 5/5/97
Analyst Signature Date

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

~~HNF-SD-WM-DP-245, REV. 0~~ *note 7-14-97*

Analysis Report

Summary

Wed 04-30-97 11:14:26 AM page 1

~~HNF-SD-WM-DP-255, REV. 0~~

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	970430A	ICP2	04/30/97	09:54	DKS	Q	CONC
2	ICB	970430A	ICP2	04/30/97	09:57	DKS	Q	CONC
3	LLS	970430A	ICP2	04/30/97	10:03	DKS	Q	CONC
4	ICSA	970430A	ICP2	04/30/97	10:06	DKS	Q	CONC
5	ICSAB	970430A	ICP2	04/30/97	10:09	DKS	Q	CONC
6	PREPBLKTJA	970430A	ICP2	04/30/97	10:13	DKS	Q	CONC
7	S97T000518	970430A	ICP2	04/30/97	10:16	DKS	S	CONC
8	S97T000518_D	970430A	ICP2	04/30/97	10:19	DKS	S	CONC
9	CCV	970430A	ICP2	04/30/97	10:23	DKS	Q	CONC
10	CCB	970430A	ICP2	04/30/97	10:27	DKS	Q	CONC
11	S97T000523	970430A	ICP2	04/30/97	10:30	DKS	S	CONC
12	S97T000523_D	970430A	ICP2	04/30/97	10:33	DKS	S	CONC
13	S97T000524	970430A	ICP2	04/30/97	10:36	DKS	S	CONC
14	S97T000524_D	970430A	ICP2	04/30/97	10:39	DKS	S	CONC
15	S97T000647	970430A	ICP2	04/30/97	10:56	DKS	S	CONC
16	S97T000647_D	970430A	ICP2	04/30/97	11:02	DKS	S	CONC
17	ICSA	970430A	ICP2	04/30/97	11:05	DKS	Q	CONC
18	ICSAB	970430A	ICP2	04/30/97	11:08	DKS	Q	CONC
19	CCV_1	970430A	ICP2	04/30/97	11:11	DKS	Q	CONC
20	CCB_1	970430A	ICP2	04/30/97	11:14	DKS	Q	CONC

JK
6-103
 04-30-97

6-103 597T000518
 597T000523
 597T000524

7-204 597T000647

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 283 TO 287

HNF-SD-WM-DP-245, REV. 0 mte 7-14-97

Analysis Report

Averages

Wed 04-30-97 11:17:34 AM

page 2

HNF-SD-WM-DP-255, REV. 0

#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	4.928	4.923	5.216	5.086	5.025	5.106
2	ICB	.0004	-.0009	-.0014	.0060	.0002	-.0001
3	LLS	.0234	.1163	.2348	.1058	.1018	.0109
4	ICSA	.0010	243.7	.0002	-.0004	.0002	.0002
5	ICSAB	.9685	243.2	.0171	-.0019	.4818	.4806
6	PREPBLKTJA	.0006	.0007	.0147	.0040	.0001	-.0002
7	S97T000518	.0557	47.98	.3681	.0614	.0130	-.0017
8	S97T000518_D	.0496	49.56	.5830	.1227	.0148	.0093
9	CCV	4.928	4.933	5.245	5.134	5.057	5.144
10	CCB	.0012	.0043	.0163	.0020	.0001	-.0002
11	S97T000523	.0360	36.16	.4463	.2256	.0149	-.0016
12	S97T000523_D	.0545	36.83	.8012	.2033	.0150	.0038
13	S97T000524	.0424	52.54	.2161	.1641	.0109	.0093
14	S97T000524_D	.0495	51.85	-.0246	.0612	.0189	-.0017
15	S97T000647	-.0003	-.0220	.0212	1.678	.0256	.0001
16	S97T000647_D	.0003	-.0070	.0218	1.708	.0254	-.0005
17	ICSA	.0019	245.7	.0249	-.0032	.0003	.0003
18	ICSAB	.9668	245.0	.0124	.0032	.4830	.4882
19	CCV_1	4.882	4.915	5.240	5.136	5.020	5.155
20	CCB_1	-.0001	.0043	.0025	.0060	.0000	.0001

#	Sample Name	Bi	Ca	Gd	Ce	Co	Cr
1	ICV	5.044	4.960	5.021	4.952	5.216	4.993
2	ICB	-.0127	.0022	.0001	.0087	.0007	-.0005
3	LLS	.1594	.2230	Q.0128	.2134	.0453	.0217
4	ICSA	-.0110	250.3	.0020	.0136	.0029	-.0033
5	ICSAB	-.0136	251.5	.9434	.0185	.4808	.4717
6	PREPBLKTJA	-.0185	-.0009	.0002	.0043	-.0007	-.0005
7	S97T000518	-.1.186	.2224	.0097	.3048	-.0574	3.588
8	S97T000518_D	.2066	.1641	.0602	.2075	.1165	3.713
9	CCV	5.139	5.017	5.028	4.982	5.218	5.001
10	CCB	-.0157	.0036	.0005	.0154	-.0009	.0001
11	S97T000523	-.1.042	.1627	.0478	.2083	.0603	3.970
12	S97T000523_D	-.1.266	.1058	.0099	.2092	.0997	3.815
13	S97T000524	-.6345	.1770	.0218	.1906	-.0238	3.316
14	S97T000524_D	-.1.821	.1732	-.0084	.4343	.0495	3.312
15	S97T000647	-.1127	18.49	.0012	.0140	.0020	.0055
16	S97T000647_D	-.0822	18.42	.0001	.0227	-.0046	.0038
17	ICSA	-.0023	251.9	.0041	.0192	.0029	-.0018
18	ICSAB	-.0390	250.9	.9452	.0168	.4802	.4704
19	CCV_1	5.054	4.977	5.006	4.959	5.190	4.968
20	CCB_1	-.0100	.0017	.0009	.0028	.0006	-.0002

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	5.086	-.0015	4.672	4.942	5.036	4.945
2	ICB	-.0005	.0003	-.0007	-.0096	.0003	.0007
3	LLS	.0181	.0011	.0950	.4749	.1046	.0222
4	ICSA	-.0102	-.0378	94.49	.0018	-.0043	.0034
5	ICSAB	.4547	-.0390	94.39	-.0320	-.0033	1.046

HNF-SD-WM-DP-245, REV. 001497

Analysis Report

Averages

Wed 04-30-97 11:17:34 AM

page 3

#	Sample Name	Cu	Eu	Fe	K	La	Li
6	PREPBLKTJA	.0003	.0006	-.0012	Q297.6	.0003	.0007
7	S97T000518	.0218	.0053	.4649	11420.	.0261	.0556
8	S97T000518_D	.0481	-.0010	.4953	12030.	.0329	.0456
9	CCV	5.116	-.0016	4.699	4.876	5.068	4.974
10	CCB	.0003	.0005	.0004	-.1038	.0020	.0011
11	S97T000523	.0131	.0122	.5563	12030.	.0017	-.0049
12	S97T000523_D	.0394	.0080	1.315	11170.	.0046	.0052
13	S97T000524	.0300	.0015	4.177	11720.	.0192	.0204
14	S97T000524_D	.0148	.0123	.5682	12700.	.0638	.0456
15	S97T000647	.0092	.0148	.9012	.0013	.0013	.0049
16	S97T000647_D	.0096	.0150	1.807	-.0013	.0013	.0059
17	ICSA	-.0097	-.0403	95.09	-.0106	-.0035	.0031
18	ICSAB	.4633	-.0375	94.72	.0983	-.0040	1.063
19	CCV 1	5.117	-.0019	4.675	4.974	5.050	4.974
20	CCB-1	.0002	.0003	-.0007	-.1401	.0007	.0006

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	5.039	4.926	5.185	5.150	5.019	4.972
2	ICB	-.0019	.0002	.0008	.0056	.0015	.0056
3	LLS	.2215	.0204	.1077	.2121	.2055	.0437
4	ICSA	254.6	-.0057	-.0059	197.2	.0016	-.0064
5	ICSAB	254.3	.4479	-.0127	195.8	.0060	.9180
6	PREPBLKTJA	-.0022	.0023	.0001	Q.1013	.0009	Q.2675
7	S97T000518	.0352	.2099	.1513	427.5	.0834	2.106
8	S97T000518_D	.0710	.2244	.2325	427.3	.0538	2.143
9	CCV	5.043	4.923	5.194	5.151	5.062	4.995
10	CCB	.0093	.0003	.0010	.0039	.0037	-.0011
11	S97T000523	-.3861	.3319	.1752	.398.7	.1484	2.289
12	S97T000523_D	.0379	.3231	.1833	404.2	.1986	2.559
13	S97T000524	.0504	.1724	.1918	408.2	.0558	1.529
14	S97T000524_D	.1820	.1752	.2154	410.9	.1362	1.634
15	S97T000647	3.904	.0895	.0056	4.308	.0041	.0046
16	S97T000647_D	3.886	.0890	.0001	4.290	.0091	.0011
17	ICSA	257.1	-.0058	-.0112	198.9	.0026	-.0106
18	ICSAB	256.3	.4466	-.0053	198.0	.0036	.9238
19	CCV 1	5.024	4.896	5.161	5.137	5.019	4.941
20	CCB-1	.0013	.0004	.0012	.0082	.0023	-.0015

#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	5.204	4.904	5.054	4.902	4.750	4.954
2	ICB	-.0066	.0020	.0117	.0069	.0123	.0087
3	LLS	.4122	.2281	.2165	.1156	.2066	.1312
4	ICSA	.0032	.0491	-.0228	.0023	-.0143	.0134
5	ICSAB	.0019	.9934	-.0391	.0094	-.0195	.0080
6	PREPBLKTJA	-.0047	-.0058	.0039	.0074	.0108	.0238
7	S97T000518	3.755	-.3252	9.474	.3357	.0518	.6068
8	S97T000518_D	2.985	.5190	9.943	-.0268	.3675	.7240
9	CCV	5.192	4.890	5.053	4.922	4.805	4.960
10	CCB	-.0005	-.0056	-.0031	.0062	.0176	.0087
11	S97T000523	2.936	.2051	7.147	.3733	1.278	.9084

HNF-SD-WM-DP-255, REV. 0

Analysis Report

Averages

HNF-SD-WM-DP-245, REV. 0

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#	Sample Name	P	Pb	S	Sb	Se	Si
12	S97T000523_D	2.927	-.0842	7.458	.0153	1.020	.9150
13	S97T000524_	4.332	1.926	10.18	.2679	1.053	.6284
14	S97T000524_D	4.202	-.2930	10.63	.3496	.9687	.7400
15	S97T000647_	-.0043	-.0397	6.310	-.0025	.0772	5.350
16	S97T000647_D	-.0337	-.0315	6.306	.0086	.0310	5.347
17	ICSA	.0075	.0206	-.0067	.0049	-.0230	.0107
18	ICSAB	.0097	.9848	-.0141	.0071	-.0075	.0016
19	CCV_1	5.169	4.867	5.049	4.899	4.805	4.940
20	CCB_1	-.0161	.0059	-.0049	.0066	.0296	.0103

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.928	4.986	-.0108	5.015	4.816	9.879
2	ICB	.0017	.0002	.0028	.0003	-.0316	.0178
3	LLS	.2182	.0207	.0047	.0214	.4013	.5588
4	ICSA	.0103	.0023	-.0175	.0010	-.0310	.0569
5	ICSAB	.0171	.0022	-.0197	.0015	.0183	.0710
6	PREPBLKTJA	.0061	.0003	.0003	.0003	-.0166	-.0614
7	S97T000518	.0195	.0135	.2026	-.0085	-.3746	-2.588
8	S97T000518_D	.0021	.0113	.4089	-.0077	-.7713	-2.760
9	CCV	4.969	5.026	-.0077	5.057	4.803	9.962
10	CCB	.0084	.0001	.0005	.0000	-.0167	.0350
11	S97T000523	.0390	.0135	.2566	.0131	-1.290	-2.786
12	S97T000523_D	.1508	.0113	.2123	.0130	-1.113	-2.518
13	S97T000524_	-.1269	.0113	.4141	.0031	-.0511	-3.391
14	S97T000524_D	.2262	.0135	.2939	.0243	-1.309	-2.992
15	S97T000647_	.0183	.0886	-.0026	.0010	-.0344	.1730
16	S97T000647_D	.0301	.0881	-.0025	.0015	-.0930	.1974
17	ICSA	.0043	.0022	-.0096	.0012	.0056	.0449
18	ICSAB	.0037	.0022	-.0138	.0010	.0134	.0369
19	CCV_1	4.958	5.005	.0003	5.054	4.755	9.908
20	CCB_1	.0068	.0001	.0034	.0005	-.0228	.0202

#	Sample Name	V	Y	Zn	Zr
1	ICV	5.182	.0054	4.936	5.075
2	ICB	.0006	.0002	-.0000	.0001
3	LLS	.1088	.0009	.0220	.0230
4	ICSA	.0022	.0068	.0058	-.0008
5	ICSAB	.4812	.0073	.9493	.0008
6	PREPBLKTJA	.0019	.0003	-.0020	.0008
7	S97T000518	.0038	.0075	-.0142	-.0290
8	S97T000518_D	-.0130	.0044	.0208	-.0283
9	CCV	5.203	.0052	4.927	5.099
10	CCB	.0013	.0005	.0005	.0011
11	S97T000523	.0205	.0108	-.0046	-.0013
12	S97T000523_D	.0611	.0107	-.0168	.0175
13	S97T000524_	-.0118	.0014	.0122	-.0439
14	S97T000524_D	.0205	.0173	-.0015	-.0041
15	S97T000647_	.0031	.0012	.0042	.0019
16	S97T000647_D	.0030	.0016	.0114	.0026
17	ICSA	.0018	.0067	.0066	-.0018

HNF-SD-WM-DP-255, REV. 0

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~~HNF-SD-WM-DP-245, REV. 0~~ *mtg 4-14-97*

Analysis Report

Averages

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#	Sample Name	V	Y	Zn	Zr
18	ICSAB	.4821	.0066	.9452	-.0016
19	CCV 1	5.178	.0050	4.882	5.072
20	CGB_1	.0014	.0003	.0004	.0005

OK
04-30-97

HNF-SD-WM-DP-255, REV. 0

LABCORE Data Entry Template for Worklist# 19295

Analyst: JKS Instrument: ICP01 Book# 67848AMethod: LA-505-151/161 Rev/Mod E-1Worklist Comment: 7-15-97 ICP T-204 (SOLID ACID DIGEST)

S Type	Sample#	R A	Test	Matrix	Group#	Project
1	ICV		@ICP-QC	QC		
2	ICB		@ICP-QC	QC		
3	LLS		@ICP-QC	QC		
4	ICSA		@ICP-QC	QC		
5	ICSAB		@ICP-QC	QC		
6	PREPSTDARL		@ICP-A01	SOLID		
7	PREPBLKARL		@ICP-A01	SOLID		
8	SERDIL	S97T001199 0 A	@ICP-A01	SOLID		
9	SAMPLE	S97T001199 0 A	@ICP-A01	SOLID	97000261	T-204
	Analytes Requested: AG-A-01 , AL-A-01 , AS-A-01 , B-A-01 , BA-A-01 , BE-A-01 , BI-A-01 , CA-A-01 , CD-A-01 , CE-A-01 , CO-A-01 , CR-A-01 , CU-A-01 , FE-A-01 , K-A-01 , LA-A-01 , LI-A-01 , MG-A-01 , MN-A-01 , MO-A-01 , NA-A-01 , ND-A-01 , NI-A-01 , P-A-01 , PB-A-01 , S-A-01 , SB-A-01 , SI-A-01 , SM-A-01 , SR-A-01 , TI-A-01 , TL-A-01 , U-A-01 , V-A-01 , ZN-A-01 , ZR-A-01					
10	DUP	S97T001199 0 A	@ICP-A01	SOLID		
11	SPK-PREDIG	S97T001199 0 A	@ICP-A01	SOLID		
12	ICSA		@ICP-QC	QC		
13	ICSAB		@ICP-QC	QC		
14	CCV		@ICP-QC	QC		
15	CCB		@ICP-QC	QC		

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 19295

S Type	Sample#	R A Test	Matrix	Group#	Project
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Final page for worklist # 19295

Dennis K. Lott
Analyst Signature Date 07-15-97

Revised + Validated by:
Paul M. Parry
Analyst Signature Date 7/16/97

PrepStd/ERL direct 1
PrepBlk/ERL direct 1

5977001199-1 4-4-28 10

5977001199 4-4 2

5977001199-2 4-4 2

5977001199-S 4-4 2

5977001199-X 4-4-19 20

5977001199-QX 4-4-19 20, 1ml sample + 1ml each xWHC 28+35 + 7ml HNO₃

Post Spike:

$$Ag = \left(\frac{167.772}{20} \right) - 0 \times 100 = 83.9\%$$

$$La = \left(\frac{286.589}{20} \right) - \left(\frac{80.735}{20} \right) \times 100 = 102.9\%$$

$$Bi = \left(\frac{579.454}{20} \right) - \left(\frac{370.594}{20} \right) \times 100 = 104.4\%$$

$$Mn = \left(\frac{308.370}{20} \right) - \left(\frac{104.562}{20} \right) \times 100 = 101.9\%$$

$$Fe = \left(\frac{230.882}{20} \right) - \left(\frac{28.434}{20} \right) \times 100 = 101.2\%$$

$$Ala = \left(\frac{431.156}{20} \right) - \left(\frac{232.149}{20} \right) \times 100 = 99.5\%$$

$$K = \left(\frac{237.583}{20} \right) - \left(\frac{48.237}{20} \right) \times 100 = 94.7\%$$

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

File # 970715G JGT

HNF-SD-WM-DP-255, REV. 0

Identity 1: ICV Identity 2: Quality Control

9:57 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.074	5.254	5.356	4.945	5.225	5.375	5.241	5.102
S.D.	0.015	0.016	0.029	0.006	0.013	0.019	0.017	0.012
% R.S.D.	0.289	0.299	0.546	0.114	0.243	0.357	0.323	0.238
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.417	5.238	5.082	5.084	4.959	5.201	4.958	10.025
S.D.	0.013	0.005	0.021	0.019	0.015	0.014	0.037	0.025
% R.S.D.	0.236	0.088	0.408	0.371	0.310	0.275	0.751	0.250
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.233	5.210	5.197	5.455	5.295	5.277	5.488	5.363
S.D.	0.013	0.014	0.018	0.038	0.031	0.013	0.018	0.003
% R.S.D.	0.253	0.263	0.344	0.705	0.586	0.241	0.322	0.062
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.405	5.352	5.140	5.069	5.260	5.064	5.065	5.206
S.D.	0.013	0.012	0.015	0.014	0.016	0.024	0.002	0.013
% R.S.D.	0.249	0.231	0.285	0.274	0.296	0.476	0.049	0.247
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	4.855	5.231	5.244	5.242				
S.D.	0.039	0.015	0.018	0.022				
% R.S.D.	0.813	0.293	0.342	0.422				

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07-15-97

T-204

HNF-SD-WM-DP-255, REV. 0

Identity 1: ICB Identity 2: Quality Control 10:03 AM July 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.000	0.008	-0.001	-0.007	-0.003	-0.001	0.000
S.D.	0.001	0.000	0.003	0.001	0.001	0.000	0.000	0.000
% R.S.D.	38.618	173.205	35.122	94.474	9.075	0.057	22.776	915816.136

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.000	-0.005	-0.000	-0.000	0.001	0.001	-0.000	-0.023
S.D.	0.000	0.002	0.004	0.001	0.000	0.002	0.004	0.004
% R.S.D.	4024.826	38.750	738.611	227.899	6.186	259.655	1473.167	19.356

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.013	-0.027	0.000	0.004	-0.010	-0.000	-0.001	0.001
S.D.	0.003	0.003	0.000	0.007	0.005	0.000	0.003	0.001
% R.S.D.	24.803	9.723	624.500	163.123	47.985	86.665	472.843	86.633

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.001	0.000	0.003	-0.000	-0.000	-0.000	-0.056	-0.001
S.D.	0.000	0.001	0.008	0.000	0.000	0.000	0.007	0.000
% R.S.D.	49.486	110.157	248.333	16.225	228.616	101.228	11.845	34.759

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.013	-0.001	-0.000	0.005
S.D.	0.019	0.001	0.000	0.005
% R.S.D.	144.828	70.874	56.796	111.813

HNF-SD-WM-DP-255, REV. 0

Identity 1: LLS

Identity 2: Quality Control

10:06 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.019	0.021	0.216	0.108	0.111	0.043	0.021	0.022
S.D.	0.001	0.000	0.005	0.001	0.004	0.005	0.000	0.000
% R.S.D.	5.737	0.191	2.101	0.532	3.978	10.504	1.212	0.498
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.022	0.041	0.100	0.106	0.209	0.024	0.219	0.366
S.D.	0.000	0.001	0.005	0.005	0.000	0.001	0.010	0.038
% R.S.D.	0.029	2.335	4.515	4.617	0.082	2.969	4.418	10.377
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.222	0.185	0.106	0.438	0.206	0.227	0.217	0.215
S.D.	0.008	0.007	0.000	0.006	0.003	0.000	0.002	0.001
% R.S.D.	3.439	3.901	0.156	1.455	1.559	0.148	0.817	0.585
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.106	0.026	0.239	0.019	0.011	0.107	0.590	0.021
S.D.	0.001	0.001	0.001	0.000	0.001	0.001	0.009	0.000
% R.S.D.	1.410	2.022	0.548	1.174	9.115	0.636	1.488	1.781
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.127	0.108	0.012	0.424				
S.D.	0.017	0.001	0.000	0.022				
% R.S.D.	13.444	0.669	3.500	5.135				

HNF-SD-WM-DP-255, REV. 0

Identity 1: ICSA Identity 2: Quality Control

10:09 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.003	-0.036	0.026	213.484	0.003	-0.000	0.001
S.D.	0.001	0.000	0.005	0.004	0.371	0.002	0.000	0.000
% R.S.D.	56.100	1.619	14.145	14.729	0.174	72.298	68.807	12.766
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.006	0.004	0.001	101.011	102.746	0.001	0.004	-0.036
S.D.	0.000	0.001	0.004	0.355	0.279	0.000	0.013	0.025
% R.S.D.	7.686	29.827	317.655	0.352	0.272	9.575	326.660	69.170
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.026	0.005	0.002	0.008	0.001	97.638	-0.018	193.835
S.D.	0.007	0.005	0.000	0.010	0.007	0.072	0.006	0.759
% R.S.D.	27.436	96.674	10.073	120.443	1242.398	0.074	32.980	0.392
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.002	0.002	0.035	-0.000	0.003	0.015	0.108	0.013
S.D.	0.001	0.000	0.004	0.000	0.001	0.001	0.008	0.001
% R.S.D.	34.412	17.997	11.332	214.590	44.685	4.068	7.105	4.050
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.017	0.001	0.003	0.004				
S.D.	0.012	0.001	0.000	0.001				
% R.S.D.	69.905	106.268	14.070	24.561				

HNF-SD-WM-DP-255, REV. 0

Identity 1: ICSAB Identity 2: Quality Control

10:14 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.002	0.002	-0.030	0.021	212.264	0.520	0.507	0.959
S.D.	0.001	0.000	0.006	0.003	0.525	0.004	0.001	0.002
% R.S.D.	71.900	3.125	18.664	16.758	0.248	0.751	0.290	0.217

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.039	1.039	0.003	100.399	102.420	0.532	-0.001	0.042
S.D.	0.002	0.003	0.001	0.166	0.112	0.007	0.004	0.050
% R.S.D.	0.171	0.278	25.784	0.165	0.109	1.317	352.914	118.457

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.016	0.027	0.529	0.014	-0.013	94.333	-0.023	192.604
S.D.	0.012	0.008	0.000	0.008	0.007	0.188	0.007	0.346
% R.S.D.	75.326	29.483	0.070	53.207	54.654	0.199	32.647	0.180

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.001	1.109	1.079	0.001	1.045	0.014	0.003	0.534
S.D.	0.001	0.003	0.029	0.001	0.001	0.000	0.016	0.000
% R.S.D.	134.238	0.263	2.665	108.896	0.109	3.159	549.239	0.049

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.018	0.510	0.518	0.017
S.D.	0.009	0.000	0.001	0.025
% R.S.D.	48.218	0.070	0.188	149.188

HNF-SD-WM-DP-255, REV. 0

Identity 1: PREPSTDARL Identity 2: Direct

10:18 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.933	5.084	4.964	8.020	5.140	5.082	4.767	4.957
S.D.	0.004	0.002	0.023	0.013	0.017	0.008	0.006	0.016
% R.S.D.	0.090	0.030	0.471	0.158	0.321	0.159	0.135	0.326

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	4.871	5.099	5.110	4.898	4.982	4.912	5.076	9.692
S.D.	0.009	0.013	0.008	0.032	0.007	0.012	0.007	0.021
% R.S.D.	0.176	0.257	0.151	0.649	0.134	0.240	0.131	0.213

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.234	5.132	5.064	5.033	5.883	5.046	5.250	5.144
S.D.	0.012	0.003	0.004	0.012	0.020	0.013	0.015	0.015
% R.S.D.	0.231	0.056	0.080	0.243	0.333	0.263	0.288	0.283

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	4.982	1.200	4.801	4.474	4.960	4.959	4.624	4.966
S.D.	0.002	0.003	0.023	0.004	0.017	0.014	0.028	0.013
% R.S.D.	0.037	0.229	0.481	0.085	0.342	0.279	0.602	0.263

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.820	4.898	5.347	4.888
S.D.	0.017	0.009	0.005	0.028
% R.S.D.	0.361	0.190	0.101	0.569

†

HNF-SD-WM-DP-255, REV. 0

Identity 1: PREPBLK Identity 2: Quality Control

10:22 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.002	-0.001	2.447	0.169	0.006	0.017	0.001
S.D.	0.001	0.000	0.005	0.016	0.006	0.002	0.000	0.000
% R.S.D.	40.966	4.348	586.673	0.673	3.705	34.610	1.168	5.249

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.037	0.001	0.001	0.037	0.208	-0.022	0.020	-0.146
S.D.	0.000	0.003	0.000	0.000	0.001	0.002	0.003	0.015
% R.S.D.	1.268	396.672	0.521	0.985	0.307	7.406	17.118	10.005

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.031	-0.022	0.002	0.041	1.299	0.040	0.000	0.336
S.D.	0.004	0.005	0.000	0.010	0.010	0.001	0.002	0.002
% R.S.D.	12.379	24.413	2.619	24.149	0.735	1.925	563.387	0.649

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.000	0.002	0.049	0.001	0.001	0.119	0.150	0.001
S.D.	0.001	0.000	0.010	0.000	0.000	0.002	0.009	0.000
% R.S.D.	2440.827	23.829	19.786	38.512	94.061	1.587	6.312	41.805

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.037	0.004	0.001	0.018
S.D.	0.018	0.000	0.000	0.013
% R.S.D.	48.582	10.301	0.314	69.892

HNF-SD-WM-DP-255, REV. 0

Identity 1: S97T001199.L Identity 2: acid dig, 4-4-2-8 ml

10:27 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 10.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.008	3.465	368.878	10.949	0.343	0.070	0.045	0.004
S.D.	0.006	0.009	0.608	0.018	0.017	0.022	0.001	0.002
% R.S.D.	73.465	0.252	0.165	0.162	4.844	31.817	2.277	54.135

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ce (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.407	1.732	80.566	28.215	1.526	33.041	0.200	-1.891
S.D.	0.006	0.015	0.037	0.222	0.002	0.093	0.043	0.332
% R.S.D.	1.441	0.872	0.046	0.786	0.128	0.283	21.269	17.560

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.380	-0.249	-0.076	19.000	-0.005	0.276	1.694	230.439
S.D.	0.127	0.064	0.001	0.334	0.031	0.001	0.074	1.688
% R.S.D.	33.455	25.862	1.639	1.756	616.481	0.464	4.362	0.733

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.014	-0.014	2.510	0.020	0.006	0.524	46.536	104.141
S.D.	0.011	0.005	0.084	0.001	0.009	0.008	0.296	0.092
% R.S.D.	72.640	34.076	3.339	2.893	150.510	1.517	0.637	0.089

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.114	0.035	0.002	2.652
S.D.	0.078	0.006	0.000	0.242
% R.S.D.	68.235	16.693	3.127	9.141

HNF-SD-WM-DP-255, REV. 0

Identity 1: S97T001199 Identity 2: acid dig, 4-4 ml

10:31 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 2.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.004	3.455	356.856	10.603	0.369	0.043	0.051	0.001
S.D.	0.001	0.005	0.325	0.004	0.006	0.004	0.001	0.000
% R.S.D.	37.312	0.144	0.091	0.037	1.530	91.795	1.053	33.963
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.378	1.690	79.194	26.979	1.426	31.487	0.006	-1.799
S.D.	0.002	0.011	0.091	0.021	0.001	0.039	0.018	0.099
% R.S.D.	0.415	0.680	0.115	0.079	0.101	0.124	321.654	5.530
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.430	-0.121	-0.068	18.370	0.050	0.245	1.448	221.640
S.D.	0.022	0.010	0.000	0.137	0.012	0.000	0.015	1.532
% R.S.D.	5.089	8.497	0.159	0.746	24.255	0.107	1.047	0.691
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.010	0.004	2.150	0.024	0.003	0.469	42.526	98.266
S.D.	0.001	0.001	0.017	0.000	0.002	0.002	0.267	0.072
% R.S.D.	14.436	27.803	0.785	0.397	69.062	0.427	0.628	0.073
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.213	0.029	0.001	2.025				
S.D.	0.034	0.000	0.000	0.033				
% R.S.D.	15.927	1.241	64.485	1.633				

HNF-SD-WM-DP-255, REV. 0

Identity 1: S97T001199_D Identity 2: acid dig,4-4 ml

10:34 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 2.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.006	3.574	369.493	10.477	0.387	0.049	0.046	0.002
S.D.	0.001	0.004	0.301	0.011	0.015	0.009	0.001	0.000
% R.S.D.	21.296	0.119	0.081	0.101	3.820	17.729	1.387	19.365
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.508	1.720	83.266	29.967	1.479	31.849	0.020	-1.834
S.D.	0.002	0.015	0.120	0.035	0.001	0.084	0.006	0.038
% R.S.D.	0.473	0.851	0.144	0.116	0.067	0.264	29.281	2.086
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.458	-0.152	-0.052	18.947	-0.167	0.243	1.486	226.929
S.D.	0.011	0.006	0.000	0.172	0.013	0.001	0.024	1.387
% R.S.D.	2.464	4.145	0.830	0.909	7.638	0.262	1.640	0.611
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.013	0.008	2.221	0.025	0.004	0.875	43.778	100.002
S.D.	0.002	0.001	0.005	0.001	0.001	0.004	0.340	0.191
% R.S.D.	18.412	15.609	0.240	5.522	17.841	0.479	0.776	0.191
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.262	0.031	-0.000	2.191				
S.D.	0.081	0.002	0.001	0.022				
% R.S.D.	30.942	6.025	233.656	1.016				

7.1

HNF-SD-WM-DP-255, REV. 0

Identity 1: S97T001199_S Identity 2: acid dig,4-4 ml

10:37 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 2.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Sf (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.002	8.441	365.921	16.002	5.516	5.267	4.815	4.848
S.D.	0.013	0.012	0.263	0.045	0.021	0.031	0.009	0.023
% R.S.D.	0.253	0.138	0.072	0.279	0.384	0.594	0.179	0.469

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.384	6.958	87.075	93.926	6.353	37.453	5.047	7.792
S.D.	0.029	0.021	0.126	0.167	0.009	0.178	0.024	0.091
% R.S.D.	0.530	0.296	0.145	0.178	0.141	0.475	0.472	1.173

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.779	4.931	5.058	24.076	4.862	5.423	6.840	232.050
S.D.	0.054	0.016	0.006	0.129	0.031	0.023	0.023	0.725
% R.S.D.	0.927	0.316	0.116	0.537	0.641	0.421	0.338	0.312

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.068	1.268	7.166	4.556	5.078	5.785	49.467	106.052
S.D.	0.011	0.005	0.042	0.012	0.007	0.009	0.188	0.315
% R.S.D.	0.220	0.361	0.584	0.267	0.143	0.150	0.380	0.297

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.068	5.043	5.168	7.307
S.D.	0.070	0.013	0.013	0.063
% R.S.D.	1.377	0.260	0.242	0.869

HNF-SD-WM-DP-255, REV. 0

Identity 1: S97T001199_X Identity 2: acid dig,4-4-1-9 ml

10:43 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 20.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.024	3.477	370.594	11.256	0.228	0.057	0.022	-0.000
S.D.	0.010	0.013	1.987	0.031	0.072	0.001	0.005	0.007
% R.S.D.	41.922	0.375	0.536	0.275	31.624	0.991	25.208	1744527.942

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.397	1.716	80.735	28.434	1.609	33.238	-0.214	-0.299
S.D.	0.006	0.028	0.393	0.300	0.005	0.322	0.171	0.145
% R.S.D.	1.419	1.613	0.486	1.054	0.323	0.968	79.786	48.395

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.159	0.123	-0.083	19.485	-0.022	0.293	1.593	232.149
S.D.	0.109	0.069	0.003	0.160	0.040	0.002	0.057	1.336
% R.S.D.	68.819	56.377	3.907	0.822	180.586	0.849	3.552	0.576

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.012	-0.036	2.623	0.036	0.008	0.552	48.237	104.562
S.D.	0.008	0.004	0.111	0.005	0.007	0.018	0.306	0.417
% R.S.D.	63.108	11.443	4.233	14.286	94.110	3.241	0.634	0.399

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	1.473	0.026	0.006	1.834
S.D.	0.208	0.011	0.005	0.252
% R.S.D.	14.144	42.049	90.968	13.725

HNF-SD-WM-DP-255, REV. 0

Identity 1: S97T001199_AX Identity 2: acid dig,4-4-1-9 ml

10:46 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 20.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	205.379	214.478	579.454	217.858	210.426	212.702	196.733	197.785
S.D.	0.540	0.716	1.302	0.260	0.660	1.192	0.271	1.381
% R.S.D.	0.263	0.334	0.225	0.120	0.314	0.561	0.138	0.698
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	207.752	212.173	286.569	230.882	206.357	241.083	196.801	395.454
S.D.	0.782	0.497	0.323	0.646	0.283	0.517	0.358	0.863
% R.S.D.	0.376	0.234	0.113	0.280	0.137	0.214	0.182	0.218
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	215.547	207.511	208.073	233.577	207.082	215.008	213.583	431.156
S.D.	1.549	0.404	0.254	2.045	2.159	0.864	0.549	3.497
% R.S.D.	0.718	0.195	0.122	0.876	1.042	0.402	0.257	0.811
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	212.281	167.772	210.911	206.058	210.052	199.368	237.583	308.370
S.D.	1.027	0.716	0.919	0.693	0.532	0.223	2.087	0.529
% R.S.D.	0.484	0.427	0.436	0.336	0.254	0.112	0.878	0.172
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	202.356	206.512	205.185	218.233				
S.D.	0.753	0.512	0.340	1.103				
% R.S.D.	0.372	0.248	0.166	0.505				

HNF-SD-WM-DP-255, REV. 0

Identity 1: ICSA Identity 2: Quality Control

11:01 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.003	0.002	-0.020	0.036	216.312	-0.003	-0.001	0.000
S.D.	0.001	0.000	0.009	0.005	0.172	0.002	0.000	0.000
% R.S.D.	18.733	4.537	46.882	12.784	0.079	71.629	25.318	63.423

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.006	0.002	0.003	101.534	103.497	0.000	0.024	0.084
S.D.	0.000	0.002	0.001	0.061	0.161	0.001	0.002	0.040
% R.S.D.	7.077	83.239	26.359	0.060	0.155	1201.124	9.255	46.897

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Hg (ppm)	As (ppm)	Na (ppm)
Mean	0.021	0.016	0.002	0.006	0.005	98.931	-0.024	190.415
S.D.	0.011	0.008	0.000	0.006	0.005	0.307	0.007	0.128
% R.S.D.	53.273	51.053	16.013	97.415	92.908	0.310	28.225	0.067

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.000	0.028	0.000	0.001	0.003	0.015	0.118	0.013
S.D.	0.001	0.002	0.008	0.000	0.002	0.000	0.007	0.001
% R.S.D.	300.002	8.881	1591.243	24.427	73.055	3.001	6.142	5.608

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.069	0.001	0.003	0.005
S.D.	0.039	0.001	0.000	0.028
% R.S.D.	56.381	72.346	4.696	604.621

HNF-SD-WM-DP-255, REV. 0

Identity 1: ICSAB Identity 2: Quality Control 11:04 AM July 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.003	0.003	-0.031	0.021	215.202	0.529	0.507	0.944
S.D.	0.001	0.000	0.006	0.004	0.269	0.004	0.002	0.007
% R.S.D.	31.368	0.000	19.298	20.629	0.125	0.756	0.315	0.722
	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.043	1.047	-0.000	99.877	102.165	0.532	0.022	0.033
S.D.	0.003	0.001	0.001	0.267	0.096	0.002	0.013	0.021
% R.S.D.	0.288	0.113	584.656	0.267	0.094	0.450	58.428	63.896
	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.025	0.016	0.534	0.021	0.027	95.790	-0.005	191.031
S.D.	0.007	0.009	0.002	0.006	0.004	0.245	0.008	1.281
% R.S.D.	29.086	54.245	0.301	28.033	14.982	0.256	137.389	0.670
	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	-0.003	1.111	1.055	-0.000	1.052	0.012	0.035	0.532
S.D.	0.001	0.003	0.025	0.000	0.004	0.000	0.011	0.002
% R.S.D.	48.087	0.242	2.359	1067.639	0.333	2.343	31.787	0.292
	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)				
Mean	0.015	0.511	0.517	-0.020				
S.D.	0.017	0.001	0.001	0.011				
% R.S.D.	111.726	0.292	0.159	54.737				

HNF-SD-WM-DP-255, REV. 0

Identity 1: CCV Identity 2: Quality Control 11:13 AM July 15, 1997
 Task name : OPTIMA
 Sample Weight : 1.0000 Solution Volume : 1.00
 On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.105	5.221	5.371	4.959	5.248	5.504	5.148	4.789
S.D.	0.003	0.005	0.046	0.012	0.015	0.011	0.006	0.017
% R.S.D.	0.056	0.100	0.853	0.243	0.285	0.204	0.109	0.360

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.524	5.325	5.163	5.226	4.966	5.342	5.061	9.744
S.D.	0.011	0.006	0.008	0.019	0.005	0.013	0.006	0.007
% R.S.D.	0.196	0.122	0.150	0.360	0.093	0.242	0.116	0.072

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.188	5.118	5.133	5.478	5.289	5.386	5.493	5.071
S.D.	0.028	0.008	0.002	0.026	0.008	0.016	0.008	0.023
% R.S.D.	0.544	0.151	0.038	0.470	0.159	0.304	0.145	0.454

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	5.445	5.447	5.240	5.061	5.358	5.128	4.995	5.327
S.D.	0.020	0.012	0.014	0.009	0.010	0.011	0.028	0.014
% R.S.D.	0.376	0.221	0.276	0.170	0.191	0.214	0.551	0.262

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.853	5.316	5.291	5.293
S.D.	0.023	0.009	0.005	0.018
% R.S.D.	0.478	0.166	0.093	0.336

HNF-SD-WM-DP-255, REV. 0

Identity 1: CCB

Identity 2: Quality Control

11:18 AM July 15, 1997

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.000	-0.000	-0.008	0.006	-0.006	-0.005	-0.002	-0.000
S.D.	0.000	0.000	0.002	0.000	0.005	0.002	0.000	0.000
% R.S.D.	530.505	21.651	23.715	6.736	84.625	43.426	2.841	50.916

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.000	-0.000	0.002	0.003	0.001	-0.002	0.002	0.043
S.D.	0.000	0.001	0.002	0.003	0.000	0.001	0.003	0.009
% R.S.D.	150.464	302.636	113.380	82.568	10.000	71.581	170.088	20.166

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.029	0.003	-0.000	-0.006	-0.008	-0.000	-0.003	0.004
S.D.	0.005	0.003	0.000	0.004	0.001	0.000	0.002	0.002
% R.S.D.	16.225	85.631	12.385	70.830	8.448	43.353	63.092	50.002

	Mo (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)	Mn (ppm)
Mean	0.001	-0.000	0.031	0.000	-0.000	0.002	0.108	-0.002
S.D.	0.001	0.000	0.007	0.000	0.000	0.000	0.010	0.000
% R.S.D.	77.273	54.330	23.777	41.089	100.077	13.317	9.398	11.561

	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.021	-0.001	0.000	-0.016
S.D.	0.020	0.000	0.000	0.007
% R.S.D.	96.806	34.177	1886.097	41.493

JK
07-15-97

LABCORE Completed Worklist Report for Worklist# 18752

Analyst: krm

Instrument: CARB2

Book# 25N12A
26N12A

Method: LA-342-100 Rev/Mod E-O

Worklist Comment: T-204 @TICTOC1 *RERUN*

HNF-SD-WM-DP-255, REV. 0

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLNK	0		@TICTOC1 TIC-02	SOLID	1	3.10E+0	3.100	ug/g
1 BLNK	0		@TICTOC1 TOC-02	SOLID	1	1.80E+0	1.800	ug/g
2 STD	0		@TICTOC1 TIC-02	SOLID	6.02E+02	5.86E+2	97.342	% Recovery
2 STD	0		@TICTOC1 TOC-02	SOLID	3.00E+03	3.03E+3	101.000	% Recovery
3 SAMPLE	S97T001197	0	@TICTOC1 TIC-02	SOLID	N/A	1.41E+03	5.000	ug/g
3 SAMPLE	S97T001197	0	@TICTOC1 TOC-02	SOLID	N/A	3.46E+02	40.000	ug/g
4 DUP	S97T001197	0	@TICTOC1 TIC-02	SOLID	1.41E+3	1.38E+3	2.351	RPD
4 DUP	S97T001197	0	@TICTOC1 TOC-02	SOLID	3.46E+2	2.78E+2	21.795	RPD
5 SPK	S97T001197	0	@TICTOC1 TIC-02	SOLID	1.00E+02	8.63E+01	86.300	% Recovery
5 SPK	S97T001197	0	@TICTOC1 TOC-02	SOLID	1.00E+02	8.33E+01	83.300	% Recovery

Final page for worklist# 18752

Analyst Signature _____ Date _____

Susan Bu 6/23/97
Analyst Signature Date

Rw. Schneider 6/23/97
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 18752

Analyst: KRM Instrument: CARB2 Book# 25 N 12 A
26 N 12 A

Method: LA-342-100 Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T-204 @TICTOC1 *RERUN*

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK			@TICTOC1	SOLID		
2 STD			@TICTOC1	SOLID		
3 SAMPLE	S97T001197 0		@TICTOC1	SOLID	97000261	T-204
	Analytes Requested: TIC-02 , TOC-02					
4 DUP	S97T001197 0		@TICTOC1	SOLID		
5 SPK	S97T001197 0		@TICTOC1	SOLID		

Final page for worklist # 18752


Analyst Signature Date 6-21-97

Analyst Signature Date

Data Entry Comments:

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.2262	0.2262
BLNK	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	9.4	29.6
18752	µg of Carbon from Baseline (C2)	6.3	31.4

Test Code
@TICTOC1

Matrix
SOLID

Batch Number
97002841

Rerun
0

Sample Prep
N/A

Sample #
BLANK

Instrument Code
CARB2

Prepared By
SKB

Chemist
RWS

Analyst
KRM

Date Complete
06/23/97

Analysis Date
06/21/97

Analysis Time
05:00 AM

Sample Point
T-204

µg of Carbon = |C1-C2|

HNF-SD-WM-DP-255, REV. 0

		TIC	TOC
Analysis Time	Method Detection Limit in ug/g	5	40
Sample Point	µg of Carbon	3.10E+00	1.80E+00

Data Entered By:	SKB	Date:	06/23/97
Signature of Chemist:	<i>RW Schneider</i>	Date:	6/23/97

BLANK.WB1 REV 1.0

342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (E-0)

LIQUIDS

		TIC	TOC
Type	Sample Size in mL (SS)	1.0000	0.2000
STD	Dilution Factor (DF)	1	1
Work List	Final Coulometer Reading in µg (C1)	592.7	637.3
18752	µg of Carbon from Baseline (C2)	6.3	31.4
Test Code	Standard Book Number	25N12A	26N12A
@TICTOC1	Standard Value (µg/ml)	602	3000

HNF-SD-WM-DP-255, REV. 0

Matrix
LIQUID
Batch Number
97002841
Rerun
0
Sample Prep
N/A
Sample #
STD
Instrument Code
CARB2
Prepared By
SKB
Chemist
RWS
Analyst
KRM
Date Complete
06/23/97
Analysis Date
06/21/97
Analysis Time
05:00 AM
Sample Point
T-204

QC Actual in µg/mL = Standard Value (µg/mL)

QC Found in µg/mL = (C1 - C2) * DF / SS

QC Found in µg/mL for TIC = 5 if C1 < C2

QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in µg/mL	5	40
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	5.86E+02	3.03E+03
Percent Standard Recovery	97.4	101.0

Data Entered By:	SKB	Date:	06/23/97
Signature of Chemist:	<i>RWS</i>	Date:	6/23/97

STANDARD.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.2262	0.2262
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	324.4	109.6
18752	µg of Carbon from Baseline (C2)	6.3	31.4
Test Code			
@TICTOC1			

Matrix
SOLID

Batch Number
97002841

Rerun
0

Sample Prep
N/A

Sample #
S97T001197

Instrument Code
CARB2

Prepared By
SKB

Chemist
RWS

Analyst
KRM

Date Complete
06/23/97

Analysis Date
06/21/97

Analysis Time
05:00 AM

Sample Point
T-204

HNF-SD-WM-DP-255, REV. 0

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.41E+03	3.46E+02

Data Entered By:	SKB	Date: 06/23/97
Signature of Chemist:	<i>RWS</i>	Date: 6/23/97

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (E-0)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.3003	0.3003
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	421.7	114.8
18752	µg of Carbon from Baseline (C2)	6.3	31.4
Test Code	Known µg of C from Original Sample	1.41E+3	3.46E+2
@TICTOC1			

Matrix
SOLID
Batch Number
97002841
Rerun
0
Sample Prep
N/A
Sample #
S97T001197
Instrument Code
CARB2
Prepared By
SKB
Chemist
RWS
Analyst
KRM
Date Complete
06/23/97
Analysis Date
06/21/97
Analysis Time
05:00 AM
Sample Point
T-204

HNF-SD-WM-DP-255, REV. 0

µg of Carbon/g = (C1-C2) * DF / SS
 µg of Carbon/g for TIC = 5 if C1 < C2
 µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.38E+03	2.78E+02

Data Entered By:	SKB	Date: 06/23/97
Signature of Chemist:	<i>RWS</i>	Date: 6/25/97

TIC/TOC : LA-342-100 (E-0)

SOLIDS

Type	Sample Vial Data	TIC	TOC
SPK	Sample Size in g (SS)	0.2262	0.2262
Work List	Final Coulometer Reading in µg (C1)	324.4	109.6
18752	Spiked Vial Data		
Test Code	Sample Size in g (SPK SS)	0.3147	0.3147
@TICTOC1	Amount of Spike Std. in mL (SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in µg (C2)	711	402.5
SOLID	Spike Book Number	25N12A	26N12A
Batch Number	Spike Standard Value in µg/mL (SPK CONC)	602	3000
97002841			
Rerun			
0			
Sample Prep			
N/A			
Sample #	Percent Spike Recovery = $(C2 - C1 * (SPK SS) / SS) / ((SPK CONC) * (SPK VOL)) * 1$		
S97T001197			
Instrument Code	QC Actual in µg/mL = Spike Value (µg/mL)		
CARB2	QC Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100		
Prepared By			
SKB			
Chemist			
RWS			
Analyst			
KRM			
Date Complete			
06/23/97			
Analysis Date			
06/21/97			
Analysis Time			
05:00 AM	QC Actual in µg/mL	6.02E+02	3.00E+03
Sample Point	QC Found in µg/mL	5.19E+02	2.50E+03
T-204	Percent Spike Recovery	86.3	83.3

Data Entered By:

SKB

Date: 06/23/97

Signature of Chemist:

RW Schroeder

Date: 6/23/97

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV. 2.0

<<< BLANK ANALYSIS >>> HNF-SD-WM-DP-255, REV. 0

Sample: BASE1

Date: 06/20/97

Time: 21:33:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASE1
Blank Value = N/A

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

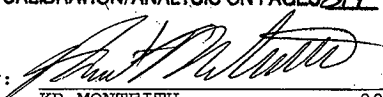
== Reading ==	== Analysis Time ==	== Coulometer ==	== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.50	80.00
3	1.50	0.70	28.57
4	2.00	1.00	30.00
5	2.50	1.20	16.67
6	3.00	1.60	25.00
7	3.50	2.00	20.00
8	4.00	2.40	16.67
9	4.50	2.60	7.69
10	5.00	3.10	16.13
11	5.50	3.30	6.06
12	6.00	3.60	8.33
13	6.50	3.90	7.69
14	7.00	4.10	4.88
15	7.50	4.60	10.87
16	8.00	4.70	2.13
17	8.50	5.00	6.00
18	9.00	5.40	7.41
19	9.50	5.50	1.82
20	10.00	5.80	5.17
21	10.50	6.00	3.33
22	11.00	6.30	4.76

BLANK VALUE = 6.3 micrograms carbon

BLANK FACTOR = 6.3 / 10.99768 =

+5.7E-01 ug/min Carbon

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 314 TO 327

Sample Run By: 

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

HNF-SD-WM-DP-255, REV. 0

Sample: BASE1

Date: 06/20/97

Time: 21:46:33

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASE1
Blank Value = N/A

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	0.80	50.00
3	1.51	1.20	33.33
4	2.01	5.00	76.00
5	2.51	12.00	58.33
6	3.00	18.00	33.33
7	3.50	22.00	18.18
8	4.00	24.40	9.84
9	4.50	25.70	5.06
10	5.00	26.60	3.38
11	5.50	27.20	2.21
12	6.00	27.70	1.81
13	6.50	28.20	1.77
14	7.00	28.70	1.74
15	7.50	29.10	1.37
16	8.00	29.40	1.02
17	8.50	29.80	1.34
18	9.00	30.10	1.00
19	9.50	30.50	1.31
20	10.00	30.80	0.97
21	10.50	31.10	0.96
22	11.00	31.40	0.96

BLANK VALUE = 31.4 micrograms carbon

BLANK FACTOR = 31.4 / 10.99878 = +2.85E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: STD1

Date: 06/20/97

Time: 22:17:21

Sample Size = 1000 uL

Dil Factor = 1

Blank ID # =

Blank Value = .57 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.70	0.00
2	1.01	1.10	36.36
3	1.51	5.00	78.00
4	2.00	40.90	87.78
5	2.50	106.40	61.56
6	3.00	193.30	44.96
7	3.50	290.70	33.51
8	4.00	381.50	23.80
9	4.50	455.00	16.15
10	5.00	508.20	10.47
11	5.50	541.60	6.17
12	6.00	562.70	3.75
13	6.50	575.20	2.17
14	7.00	581.90	1.15
15	7.50	585.80	0.67
16	8.00	588.20	0.41
17	8.50	589.50	0.22
18	9.00	590.50	0.17
19	9.50	591.20	0.12
20	10.00	591.70	0.08
21	10.50	592.40	0.12
22	11.00	592.70	0.05

USER INPUT BLANK VALUE

BLANK VALUE = 6.269304 micrograms carbon

BLANK FACTOR = 6.269304 / 10.99878 = +5.7E-01 ug/min Carbon

SAMPLE RESULTS:

(592.7 - 6.268817) (1)/(1000) = +5.864E-01 g/L Carbon
(592.7 - 6.268817) (1)/(1000) (12) = +4.887E-02 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: STD1

Date: 06/20/97

Time: 22:30:30

Sample Size = 200 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.85 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference ==
1	0.51	0.40	0.00
2	1.01	1.00	60.00
3	1.50	1.40	28.57
4	2.00	2.90	51.72
5	2.50	12.50	76.80
6	3.00	54.50	77.06
7	3.50	173.40	68.57
8	4.00	405.00	57.19
9	4.50	546.90	25.95
10	5.00	603.20	9.33
11	5.50	623.20	3.21
12	6.00	630.20	1.11
13	6.50	632.90	0.43
14	7.00	634.50	0.25
15	7.50	634.60	0.02
16	8.00	634.80	0.03
17	8.50	635.10	0.05
18	9.00	635.50	0.06
19	9.50	636.00	0.08
20	10.00	636.30	0.05
21	10.50	636.70	0.06
22	11.00	637.30	0.09

USER INPUT BLANK VALUE

BLANK VALUE = 31.34652 micrograms carbon

BLANK FACTOR = 31.34652 / 10.99878 = +2.8E+00 ug/min Carbon

SAMPLE RESULTS:

(637.3 - 31.34408) (1)/(200) = +3.030E+00 g/L Carbon
 (637.3 - 31.34408) (1)/(200) (12) = +2.525E-01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: BLK1

Date: 06/20/97

Time: 22:44:13

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .57 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.80	0.00
2	1.01	1.40	42.86
3	1.51	1.90	26.32
4	2.00	2.40	20.83
5	2.50	2.90	17.24
6	3.00	3.50	17.14
7	3.50	4.00	12.50
8	4.00	4.40	9.09
9	4.50	4.80	8.33
10	5.00	5.20	7.69
11	5.50	5.60	7.14
12	6.00	6.00	6.67
13	6.50	6.40	6.25
14	7.00	6.70	4.48
15	7.50	7.20	6.94
16	8.00	7.40	2.70
17	8.50	7.80	5.13
18	9.00	8.20	4.88
19	9.50	8.40	2.38
20	10.00	8.80	4.55
21	10.50	9.10	3.30
22	11.00	9.40	3.19

USER INPUT BLANK VALUE

BLANK VALUE = 6.269304 micrograms carbon

BLANK FACTOR = 6.269304 / 10.99878 = +5.7E-01 ug/min Carbon

SAMPLE RESULTS:

(9.4 - 6.268887) (1)/(1) =

+3.1E+00 g/L Carbon

(9.4 - 6.268887) (1)/(1)(12) =

+2.6E-01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: BLK1

Date: 06/20/97

Time: 22:56:37

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.85 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.40	0.00
2	1.01	0.80	50.00
3	1.51	1.70	52.94
4	2.00	5.80	70.69
5	2.50	10.40	44.23
6	3.00	15.10	31.13
7	3.50	18.60	18.82
8	4.00	21.20	12.26
9	4.50	22.90	7.42
10	5.00	24.00	4.58
11	5.50	24.90	3.61
12	6.00	25.50	2.35
13	6.50	26.10	2.30
14	7.00	26.50	1.51
15	7.50	27.00	1.85
16	8.00	27.40	1.46
17	8.50	27.80	1.44
18	9.00	28.10	1.07
19	9.50	28.50	1.40
20	10.00	28.80	1.04
21	10.50	29.20	1.37
22	11.00	29.60	1.35

USER INPUT BLANK VALUE

BLANK VALUE = 31.34652 micrograms carbon

BLANK FACTOR = 31.34652 / 10.99878 = +2.8E+00 ug/min Carbon

SAMPLE RESULTS:

(29.6 - 31.34652) (1) / (1) = < 5.00 E-3 g/L Carbon
 (29.6 - 31.34652) (1) / (1) (12) = < 4.17 E-4 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!!>>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: S97T1197-1

Date: 06/20/97

Time: 23:22:10

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .57 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ===== % Difference ==

1	0.50	0.30	0.00
2	1.00	0.70	57.14
3	1.50	4.20	83.33
4	2.00	21.50	80.47
5	2.50	57.80	62.80
6	3.00	108.80	46.88
7	3.50	163.50	33.46
8	4.00	211.00	22.51
9	4.50	249.20	15.33
10	5.00	275.80	9.64
11	5.50	292.60	5.74
12	6.00	302.20	3.18
13	6.50	308.20	1.95
14	7.00	312.10	1.25
15	7.50	314.90	0.89
16	8.00	317.10	0.69
17	8.50	318.80	0.53
18	9.00	320.40	0.50
19	9.50	321.90	0.47
20	10.00	322.80	0.28
21	10.50	323.70	0.28
22	11.00	324.40	0.22

USER INPUT BLANK VALUE

BLANK VALUE = 6.269304 micrograms carbon

BLANK FACTOR = 6.269304 / 10.99878 = +5.7E-01 ug/min Carbon

SAMPLE RESULTS:

(324.4 - 6.26833) (1)/(1) = +3.181E+02 g/L Carbon
(324.4 - 6.26833) (1)/(1) (12) = +2.651E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: S97T1197-1

Date: 06/20/97

Time: 23:34:17

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.85 ug/minute C

Analyst: KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.90	0.00
2	1.05	1.40	35.71
3	1.55	3.50	60.00
4	2.05	12.80	72.66
5	2.54	22.90	44.10
6	3.04	32.30	29.10
7	3.54	44.50	27.42
8	4.04	57.10	22.07
9	4.54	67.50	15.41
10	5.04	75.10	10.12
11	5.54	80.70	6.94
12	6.04	85.20	5.28
13	6.54	89.00	4.27
14	7.04	92.00	3.26
15	7.54	94.90	3.06
16	8.04	97.50	2.67
17	8.54	99.90	2.40
18	9.04	102.00	2.06
19	9.54	104.20	2.11
20	10.04	106.30	1.98
21	10.54	107.80	1.39
22	11.04	109.60	1.64

USER INPUT BLANK VALUE

BLANK VALUE = 31.34652 micrograms carbon

BLANK FACTOR = 31.34652 / 10.99878 = +2.8E+00 ug/min Carbon

SAMPLE RESULTS:

(109.6 - 31.45854) (1)/(1) = +7.814E+01 g/L Carbon
(109.6 - 31.45854) (1)/(1) (12) = +6.512E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: S97T1197DUP-1

Date: 06/21/97

Time: 01:33:33

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .57 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.30	0.00
2	1.01	0.80	62.50
3	1.50	2.60	69.23
4	2.00	13.60	80.88
5	2.50	41.70	67.39
6	3.00	83.10	49.82
7	3.50	132.50	37.28
8	4.00	183.80	27.91
9	4.50	232.40	20.91
10	5.00	273.60	15.06
11	5.50	305.50	10.44
12	6.00	331.30	7.79
13	6.50	352.00	5.88
14	7.00	369.00	4.61
15	7.50	382.20	3.45
16	8.00	392.70	2.67
17	8.50	400.70	2.00
18	9.00	407.20	1.60
19	9.50	411.80	1.12
20	10.00	415.70	0.94
21	10.50	419.10	0.81
22	11.00	421.70	0.62

USER INPUT BLANK VALUE

BLANK VALUE = 6.269304 micrograms carbon

BLANK FACTOR = 6.269304 / 10.99878 = +5.7E-01 ug/min Carbon

SAMPLE RESULTS:

(421.7 - 6.268856) (1)/(1) = +4.154E+02 g/L Carbon
(421.7 - 6.268856) (1)/(1) (12) = +3.462E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: S97T1197DUP-1

Date: 06/21/97

Time: 01:47:38

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 2.85 ug/minute C

Analyst : KR MONTEITH

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.90	0.00
2	1.01	1.40	35.71
3	1.50	3.20	56.25
4	2.00	12.40	74.19
5	2.50	23.60	47.46
6	3.00	32.60	27.61
7	3.50	45.00	27.56
8	4.00	59.20	23.99
9	4.50	70.30	15.79
10	5.00	78.50	10.45
11	5.50	84.70	7.32
12	6.00	89.30	5.15
13	6.50	93.30	4.29
14	7.00	96.40	3.22
15	7.50	99.50	3.12
16	8.00	102.20	2.64
17	8.50	104.70	2.39
18	9.00	106.90	2.06
19	9.50	109.00	1.93
20	10.00	111.20	1.98
21	10.50	112.80	1.42
22	11.00	114.80	1.74

USER INPUT BLANK VALUE

BLANK VALUE = 31.34652 micrograms carbon

BLANK FACTOR = 31.34652 / 10.99878 = +2.8E+00 ug/min Carbon

SAMPLE RESULTS:

(114.8 - 31.34382) (1)/(1) = +8.346E+01 g/L Carbon
 (114.8 - 31.34382) (1)/(1)(12) = +6.955E+00 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

KR MONTEITH

00000

~~HNF-SD-WM-DP-245, REV. 0~~
TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: S97T1197SPK-1 Date: 06/21/97 Time: 02:41:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .57 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	61.30	98.53
3	1.50	147.20	58.36
4	2.00	237.10	37.92
5	2.50	326.40	27.36
6	3.00	421.90	22.64
7	3.50	506.10	16.64
8	4.00	570.20	11.24
9	4.50	615.70	7.39
10	5.00	646.90	4.82
11	5.50	667.00	3.01
12	6.00	679.70	1.87
13	6.50	687.80	1.18
14	7.00	693.40	0.81
15	7.50	697.40	0.57
16	8.00	700.80	0.49
17	8.50	703.60	0.40
18	9.00	705.70	0.30
19	9.50	707.40	0.24
20	10.00	708.60	0.17
21	10.50	710.00	0.20
22	11.00	711.00	0.14

USER INPUT BLANK VALUE

BLANK VALUE = 6.269304 micrograms carbon

BLANK FACTOR = 6.269304 / 10.99878 = +5.7E-01 ug/min Carbon

SAMPLE RESULTS:

(711 - 6.268278) (1)/(1) = +7.047E+02 g/L Carbon
(711 - 6.268278) (1)/(1) (12) = +5.873E+01 Molar Carbon

Sample Run By:

KR MONTEITH

00000

~~HNF-SD-WM-DP-245, REV. 0~~
TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

HNF-SD-WM-DP-255, REV. 0

Sample: S97T1197SPK-1 Date: 06/21/97 Time: 02:53:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.85 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.40	0.00
2	1.01	2.50	44.00
3	1.50	8.50	70.59
4	2.00	20.00	57.50
5	2.50	30.70	34.85
6	3.00	53.10	42.18
7	3.50	107.90	50.79
8	4.00	186.60	42.18
9	4.50	261.00	28.51
10	5.00	315.50	17.27
11	5.50	349.30	9.68
12	6.00	367.60	4.98
13	6.50	376.90	2.47
14	7.00	382.20	1.39
15	7.50	386.10	1.01
16	8.00	389.00	0.75
17	8.50	391.90	0.74
18	9.00	394.20	0.58
19	9.50	396.70	0.63
20	10.00	398.80	0.53
21	10.50	400.60	0.45
22	11.00	402.50	0.47

USER INPUT BLANK VALUE

BLANK VALUE = 31.34652 micrograms carbon

BLANK FACTOR = 31.34652 / 10.99878 = +2.8E+00 ug/min Carbon

SAMPLE RESULTS:

(402.5 - 31.34665) (1)/(1) = +3.712E+02 g/L Carbon
(402.5 - 31.34665) (1)/(1) (12) = +3.093E+01 Molar Carbon
<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>

Sample Run By:

KR MONTEITH

00000

HNF-SD-WM-DP-255, REV. 0

RADIOCHEMICAL ANALYSES

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LABCORE Completed RadChem Report for Worklist#: 17815

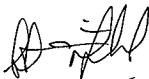
Analyst: scl Instrument: AB15 Book# _____
Method: _____ Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T204, @ALPHA01, Deter s.s. by Ludlum. Std: 1.0mL skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		@ALPHA01 ALPHA01 LIQUID		2.00E-04	1.50E-4	90.000	% Recovery
1 STD	0		@ALPHA01 ALPHA01M LIQUID		1.00	3.57E+00	3.570	% Ct. Error
2 BLNK	0		@ALPHA01 ALPHA01 LIQUID		1	<5.06E-7		uCi/mL
2 BLNK	0		@ALPHA01 ALPHA01E LIQUID		1.00	5.00E+02	500.000	uCi/mL
3 BLNK/BKG	0		@ALPHA01 ALPHA01 LIQUID		1.00E+00	6.11E+00	6.110	BLNK/BKG
4 SAMPLE	S97T000647	0	@ALPHA01 ALPHA01 LIQUID		N/A	1.15E-06	397.0e-009	uCi/mL
4 SAMPLE	S97T000647	0	@ALPHA01 ALPHA01M LIQUID		N/A	4.83E+01	0.0e+000	% Ct. Error
5 DUP	S97T000647	0	@ALPHA01 ALPHA01 LIQUID		1.15E-6	9.51E-7	18.943	RPD
5 DUP	S97T000647	0	@ALPHA01 ALPHA01E LIQUID		1.00	5.15E+01	51.500	% Ct. Error

Final page for worklist# 17815

Analyst Signature _____ Date _____ Analyst Signature _____ Date _____
Reviewer Signature _____ Date _____

BLNK value is near detection limit. Value is acceptable.


5/5/97

LABCORE Data Entry Template for Worklist# 17815

Analyst: S. L. Instrument: AB00 15 Book# 19B 56

Method: LA-508-101 Rev/Mod G-0

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, @ALPHA01, Deter s.s. by Ludlum. Std: 1.0mL skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@ALPHA01	LIQUID		
2 BLNK			@ALPHA01	LIQUID		
3 BLNK/BKG			@ALPHA01	LIQUID		
4 SAMPLE	S97T000647 0		@ALPHA01	LIQUID	97000261	T-204
	Analytes Requested: ALPHA01 , ALPHA01E					
5 DUP	S97T000647 0		@ALPHA01	LIQUID		

Final page for worklist # 17815

Sue L. 5-2-97
Analyst Signature Date

C. J. Quinn 5/5/97
Analyst Signature Date
S. L. Quinn 5/5/97

Data Entry Comments:

and down samples

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1) LA-508-113 (B-0) STANDARD

Type	DETECTOR NUMBER	STANDARD	REPLICATE
STD	DISH SIZE (1, 2, or 6)	(MS)	2
WorkList	GROSS COUNTS	(GC)	3013
17815	COUNT TIME in MINUTES	(CT)	30
AlphaBkg	BACKGROUND in cpm	(BKG)	0.03
AT	SAMPLE SIZE in mL	(SS)	1.000
TestCode	DILUTION FACTOR	(DF)	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	79B56
Matrix	EFFICIENCY FACTOR	(EFF)	0.2701
LIQUID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE		115.103
BatchNumber	Standard Value in $\mu\text{Ci/mL}$	2.00E-04	
97001824	Concentration in $\mu\text{Ci/L}$	=	1.67E-01
Recur	Replicate Concentration in $\mu\text{Ci/L}$	=	1.92E-01
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$	=	1.7970E-01
SampleDrop			
N/A	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$		
WL17815	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L} / 1000\text{mL/L}$		
Instrument Code	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ =	1.80E-04	DETECTION LEVEL
Analyst			
SCL			
Date Complete			3.97E-07 $\mu\text{Ci/mL}$
05/05/97	RELATIVE COUNTING ERROR =	3.6%	
Analysis Date			
05/02/97			
Analysis Time			
10:10 AM			
Sample Point			
T-204			

Analyst:	CJO	Date: 05-May-97
Signature of Chemist:	SLF	Date: 5/5/97
STANDARD.WB1 Rev. 1.0	508101ML	

The RPD for the STD + STD/REP is slightly elevated however, due to the low level of the samples, a recur would not increase data quality. No recur requested.

[Signature]
5/5/97

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (E-1)

LIQUIDS

		BLNK	REPLICATE
Type	DETECTOR NUMBER	15	15
BLNK	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	1	10
17815	COUNT TIME in MINUTES (CT)	30	30
Alpha Bkg	BACKGROUND in cpm (BKG)	0.03	0.03
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.079	0.303
Batch Number			
97001824	Blank Concentration in $\mu\text{Ci/L}$	< 1.32E-04	
ReRun	Replicate Concentration in $\mu\text{Ci/L}$	5.06E-04	
0	Maximum Concentration in $\mu\text{Ci/L}$	< 5.0587E-04	
Sample Prep			
N/A			
Sample	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
WL17815	ALPHA TOTAL $\mu\text{Ci/L}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} * \text{DDF} / (\text{EFF} * \text{SS} * 2220000\text{dpm}/\mu\text{Ci})$		
Instrument Code	ALPHA TOTAL $\mu\text{Ci/mL}$ = $\text{ALPHA TOTAL } \mu\text{Ci/L} / 1000\text{mL/L}$		
WB26872	Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
Prepared By	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/mL}$ (Maximum) =	< 5.06E-07	DETECTION LEVEL
Analyst	LESS THAN Value was Determined from Rmax.		
SCL			
Date Complete	RELATIVE COUNTING ERROR	500.0%	3.97E-07 $\mu\text{Ci/mL}$
05/05/97			
Analysis Date			
05/02/97			
Analysis Time			
10:10 AM			
Sample Point			
T-204			

Analyst:	SCL	Date: 05-May-97
Signature of Chemist:	SLF	Date: 5/5/97

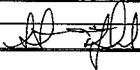
508101ML

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1)

LIQUIDS

		SAMPLE	REPLICATE
TYPE	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	19	24
17815	COUNT TIME in MINUTES (CT)	30	30
Alpha Bk	BACKGROUND in cpm (BKG)	0.03	0.03
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Inst Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.603	0.770
Batch Number			
97001824	Blank Concentration in $\mu\text{Ci/L}$	1.01E-03	
ReRun	Replicate Concentration in $\mu\text{Ci/L}$	1.28E-03	
0	Average Concentration in $\mu\text{Ci/L}$	1.1452E-03	
Sample Prep			
N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	ALPHA TOTAL $\mu\text{Ci/L}$ = $R_s * 1000\text{mL/L} * DF * DDF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$		
S97T000647	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L} / 1000\text{mL/L}$		
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared by			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/mL}$ (Average) =	1.15E-06	DETECTION LEVEL
Analyst			
SCL			
Date Complete			3.97E-07 $\mu\text{Ci/mL}$
05/05/97	RELATIVE COUNTING ERROR	48.3%	
Analysis Date			
05/02/97			
Analysis Time			
10:10 AM			
Sample Point			
T-204			

Analyst:		SCL	Date: 05-May-97
Signature of Chemist:		SLF	Date: 5/4/92
SAMPLE.WB1 Rev. 1.0	508101ML		

WORKBOOK PAGE: DUP5

AT : LA-508-101 (E-1)

LIQUIDS

	DUP	REPLICATE
Type	DETECTOR NUMBER	15
DUP	DISH SIZE (1, 2, or 5) (MS)	2
Work List	GROSS COUNTS (GC)	19
17815	COUNT TIME in MINUTES (CT)	30
Alor 157	BACKGROUND in cpm (BKG)	0.03
AT	SAMPLE SIZE in mL (SS)	1.000
Test Code	DILUTION FACTOR (DF)	1
@ALPHA01	DIGEST DILUTION FACTOR (DDF)	1
Matrix	EFFICIENCY FACTOR (EFF)	0.2701
LIQUID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.603
Batch Number		
97001824	Blank Concentration in $\mu\text{Ci/L}$	1.01E-03
ReRun	Replicate Concentration in $\mu\text{Ci/L}$	8.95E-04
0	Average Concentration in $\mu\text{Ci/L}$	9.5060E-04
Sample Prep		
N/A	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$	
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} * \text{DDF} / (\text{EFF} * \text{SS} * 2220000\text{dpm}/\mu\text{Ci})$	
S97T000647	ALPHA TOTAL $\mu\text{Ci/mL}$ = $\text{ALPHA TOTAL } \mu\text{Ci/L} / 1000\text{mL/L}$	
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$	
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.	
Prepared By		
CJO		
Chemist		
SLF	ALPHA TOTAL in $\mu\text{Ci/mL}$ (Average) =	9.51E-07
Analyst		
SCL		
Date Complete		
05/05/97	RELATIVE COUNTING ERROR	51.5%
Analysis Date		
05/02/97		
Analysis Time		
10:10 AM		
Sample Point		
T-204		

Analyst:	SCL	Date: 05-May-97
Signature of Chemist:	SLF	Date: 5/5/97
SAMPLE.WB1 Rev. 1.0	508101ML	

LABCORE Completed RadChem Report for Worklist#: 17817

Analyst: adp

Instrument: AB14

Book# _____

Method: _____ Rev/Mod _____

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, @ALPHA01, Deter s.s. by Ludlum. Std: 1.0mL skm

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0	@ALPHA01 ALPHA01 SOLID		2.00E-04	1.61E-4	80.500	% Recovery
1 STD	0	@ALPHA01 ALPHA01E SOLID		1.00	3.65E+00	3.650	% Ct. Error
2 BLNK-PREP	0	@ALPHA01 ALPHA01 SOLID		1	2.51E-3	25.100E-004	uCi/g
2 BLNK-PREP	0	@ALPHA01 ALPHA01E SOLID		1.00	1.43E+02	143.000	uCi/g
3 BLNK/BKG	0	@ALPHA01 ALPHA01 SOLID		1.00E+00	5.71E-00	5.710	BLNK/BKG
4 SAMPLE	S97T000590 0 F	@ALPHA01 ALPHA01 SOLID		N/A	1.38E-01	240.0E-005	uCi/g
4 SAMPLE	S97T000590 0 F	@ALPHA01 ALPHA01E SOLID		N/A	8.68E+00	0.0E+000	% Ct. Error
5 DUP	S97T000590 0 F	@ALPHA01 ALPHA01 SOLID		1.38E-1	1.36E-1	1.460	RPD
5 DUP	S97T000590 0 F	@ALPHA01 ALPHA01E SOLID		1.00	8.94E+00	8.940	% Ct. Error
6 SPK	S97T000590 0 F	@ALPHA01 ALPHA01 SOLID		2.63E-02	2.04E-02	77.567	% Recovery
7 SAMPLE	S97T000621 0 F	@ALPHA01 ALPHA01 SOLID		N/A	1.27E-01	248.0E-005	uCi/g
7 SAMPLE	S97T000621 0 F	@ALPHA01 ALPHA01E SOLID		N/A	9.10E+00	0.0E+000	% Ct. Error
8 DUP	S97T000621 0 F	@ALPHA01 ALPHA01 SOLID		1.27E-1	1.65E-1	26.027	RPD
8 DUP	S97T000621 0 F	@ALPHA01 ALPHA01E SOLID		1.00	7.92E+00	7.920	% Ct. Error
9 SAMPLE	S97T000622 0 F	@ALPHA01 ALPHA01 SOLID		N/A	1.29E-01	258.0E-005	uCi/g
9 SAMPLE	S97T000622 0 F	@ALPHA01 ALPHA01E SOLID		N/A	9.06E+00	0.0E+000	% Ct. Error
10 DUP	S97T000622 0 F	@ALPHA01 ALPHA01 SOLID		1.29E-1	1.20E-1	6.742	RPD
10 DUP	S97T000622 0 F	@ALPHA01 ALPHA01E SOLID		1.00	8.36E+00	8.360	% Ct. Error

Final page for worklist# 17817

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Reviewer Signature _____ Date _____

BLNK value is acceptable (value near detection limit with high counting error).
Replicate counts for 621 + its Dup indicate that the elevated RPD is due to inhomogeneity between sample + dup.
No remark requested.

[Signature]
5/17/97

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 17817

ADP
Analyst: S.L. Instrument: AB00 14 Book# 79B56
Method: LA-508-101 Rev/Mod 6-0 HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, @ALPHA01, Deter s.s. by Ludlum. Std: 1.0mL skm

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	SOLID		
2	BLNK-PREP				@ALPHA01	SOLID		
3	BLNK/BKG				@ALPHA01	SOLID		
4	SAMPLE	S97T000590	0	F	@ALPHA01	SOLID	97000261	T-204
		Analytes Requested: ALPHA01 , ALPHA01E						
5	DUP	S97T000590	0	F	@ALPHA01	SOLID		
6	SPK	S97T000590	0	F	@ALPHA01	SOLID		
7	SAMPLE	S97T000621	0	F	@ALPHA01	SOLID	97000261	T-204
		Analytes Requested: ALPHA01 , ALPHA01E						
8	DUP	S97T000621	0	F	@ALPHA01	SOLID		
9	SAMPLE	S97T000622	0	F	@ALPHA01	SOLID	97000261	T-204
		Analytes Requested: ALPHA01 , ALPHA01E						
10	DUP	S97T000622	0	F	@ALPHA01	SOLID		

Final page for worklist # 17817

Ch. Quinn
Analyst Signature 5-5-97
Date

Ch. Quinn
Analyst Signature 5/6/97
Date

Sigma 2 Ch. Quinn
5/6/97

Data Entry Comments:

soil down samples
SPike# 131B43

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1) LA-508-113 (B-0) STANDARD

	STANDARD	REPLICATE
TYPE	DETECTOR NUMBER	14
STD	DISH SIZE (1, 2, or 5) (MS)	2
W676181	GROSS COUNTS (GC)	2886
17817	COUNT TIME in MINUTES (CT)	30
W676182	BACKGROUND in cpm (BKG)	0.07
AT	SAMPLE SIZE in mL (SS)	1.000
W676183	DILUTION FACTOR (DF)	1
@ALPHA01	STANDARD BOOK NUMBER (Std BN)	79B56
Matrix	EFFICIENCY FACTOR (EFF)	0.2692
LIQUID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	96.097
Batch Number	Standard Value in $\mu\text{Ci/mL}$	2.00E-04
97001826	Concentration in $\mu\text{Ci/L}$ =	1.61E-01
ReRun	Replicate Concentration in $\mu\text{Ci/L}$ =	1.62E-01
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$ =	1.6133E-01
Sample Prep		
N/A	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$	
Sample	ALPHA TOTAL $\mu\text{Ci/L}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * 2220000\text{dpm}/\mu\text{Ci})$	
WL17817	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L}$ / 1000mL/L	
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$	
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.	
Prepared by		
CJO		
Checked by		
SLF	ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ =	1.61E-04
Analyst		DETECTION LEVEL 5.29E-07 $\mu\text{Ci/mL}$
ADP		
Data Complete		
05/06/97	RELATIVE COUNTING ERROR =	3.7%
Analysis Date		
05/05/97		
Analysis Time		
03:30 AM		
Sample Point		
T-204		

Analyst:	CJO	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/2/97

STANDARD.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (E-1)

SOLIDS

		BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER	14	14
BLNK-PREP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worksheet	GROSS COUNTS (GC)	18	6
17817	COUNT TIME in MINUTES (CT)	30	30
Arithmetic	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.2032	2.2032
Matrix	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.530	0.130
Batch Number			
97001826	Blank Concentration in $\mu\text{Ci/g}$	4.03E-03	
Rebut	Replicate Concentration in $\mu\text{Ci/g}$	9.87E-04	
0	Average Concentration in $\mu\text{Ci/g}$	2.5063E-03	
Sample Prep			
N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared by			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	2.51E-03	DETECTION LEVEL 2.40E-03 $\mu\text{Ci/g}$
Analyst			
ADP			
Date Complete	RELATIVE COUNTING ERROR	143.0%	
05/06/97			
Analysis Date			
05/05/97			
Analysis Time			
03:30 AM			
Sample Point			
T-204			

Analyst:	ADP	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/7/97
BLANK.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
TYPE	DETECTOR NUMBER	14	14
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	581	516
17817	COUNT TIME in MINUTES (CT)	30	30
Analysis	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
PSK Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.2032	2.2032
Matrix	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	19.297	17.130

Batch Number	
97001826	Blank Concentration in $\mu\text{Ci/g}$ 1.47E-01
ReRun	Replicate Concentration in $\mu\text{Ci/g}$ 1.30E-01
0	Average Concentration in $\mu\text{Ci/g}$ 1.3833E-01

Sample Prep	
FUSION01	$R_s \text{ (Sample Count Rate)} = (TC / CT) - BKG$
Sample	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
S97T000590	
Instrument Code	Relative Counting Error = $[(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By			
CJO			
chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	1.38E-01
Analyst			DETECTION
ADP			LEVEL
Date Complete			2.40E-03
05/06/97	RELATIVE COUNTING ERROR	8.7%	$\mu\text{Ci/g}$
Analysis Date			
05/05/97			
Analysis Time			
03:30 AM			
Sample Point			
T-204			

Analyst:	ADP	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/2/97
SAMPLE.WB1 Rev. 1.0	508101ML	

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
INSTRUMENT	DETECTOR NUMBER	14	14
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	487	582
17817	COUNT TIME in MINUTES (CT)	30	30
ALPHA01	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.1864	2.1864
Matrix	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	16.163	19.330

Batch Number	
97001826	Blank Concentration in $\mu\text{Ci/g}$ 1.24E-01
Replicate	Replicate Concentration in $\mu\text{Ci/g}$ 1.48E-01
0	Average Concentration in $\mu\text{Ci/g}$ 1.3582E-01

Sample Prep	
FUSION01	$R_s \text{ (Sample Count Rate)} = (TC / CT) - BKG$
Sample	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
S97T000590	
Instrument Code	Relative Counting Error = $[(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	
CJO	
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) = 1.36E-01
Analyst	
ADP	
Date Complete	
05/06/97	RELATIVE COUNTING ERROR 8.9%
Analysis Date	
05/05/97	
Analysis Time	
03:30 AM	
Sample Point	
T-204	

Analyst:	ADP	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/7/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SPK8

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	14	14
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work Unit	TOTAL COUNTS (TC)	36956	37144
17817	COUNT TIME in MINUTES (CT)	30	30
Acquired By	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.2032	2.2032
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97001826	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	2.6295E-02	2.6295E-02
Rein	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2692	0.2692
0	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	9.36E+00	9.40E+00
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	1.3833E-01	
FUSION01			
Sample #			
S97T000590	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WB27807	QC ACTUAL = SVal		
Prepared By	QC FOUND = $((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/(SVol*1000)))/(DF/SS/Dg/L)))$		
CJO	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Operator			
SLF			
Analyst			
ADP			
Instrument Operator			
05/06/97			
Analysis Date			
05/05/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	2.04E-02	
03:30 AM	AVG. PERCENT SPIKE RECOVERY =	77.4%	
Sample Point			
T-204			

Analyst:	CJO	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/7/97
SPIKE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM7

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
TYPE	DETECTOR NUMBER	14	14
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	470	509
17817	COUNT TIME in MINUTES (CT)	30	30
ANALYST	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.134	2.134
Matrix	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	15.597	16.897
Batch Number			
97001826	Blank Concentration in $\mu\text{Ci/g}$	1.22E-01	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	1.32E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.2739E-01	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
S97T000621			
Instrument Code	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.27E-01	DETECTION LEVEL
Analyst			
ADP			
Date Complete			2.48E-03
05/06/97	RELATIVE COUNTING ERROR	9.1%	$\mu\text{Ci/g}$
Analysis Date			
05/05/97			
Analysis Time			
03:30 AM			
Sample Point			
T-204			

Analyst:	ADP	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/7/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP8

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
WPS	DETECTOR NUMBER	14	14
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	637	618
17817	COUNT TIME in MINUTES (CT)	30	30
Analysis	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.1128	2.1128
Matrix	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	21.163	20.630
Batch Number			
97001826	Blank Concentration in $\mu\text{Ci/g}$	1.68E-01	
Replic	Replicate Concentration in $\mu\text{Ci/g}$	1.63E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.6510E-01	
Sample Prep			
FUSION01	$Rs \text{ (Sample Count Rate)} = (TC / CT) - BKG$		
Sample #	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = Rs * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S97T000621			
Instrument Code	$\text{Relative Counting Error} = [(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.65E-01	DETECTION LEVEL
Analyst			
ADP			
Data Complete			2.50E-03
05/06/97	RELATIVE COUNTING ERROR	7.9%	$\mu\text{Ci/g}$
Analysis Date			
05/06/97			
Analysis Time			
03:30 AM			
Sample Point			
T-204			

Analyst:	ADP	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/7/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM9

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
ANALYST	DETECTOR NUMBER	14	14
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
WORKLIST	GROSS COUNTS (GC)	476	474
17817	COUNT TIME in MINUTES (CT)	30	30
ANALYST	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
TEST CODE	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.0472	2.0472
MATRIX	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	15.797	15.730
BATCH NUMBER			
97001826	Blank Concentration in $\mu\text{Ci/g}$	1.29E-01	
ROUN	Replicate Concentration in $\mu\text{Ci/g}$	1.29E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.2884E-01	
SAMPLE PREP			
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
SAMPLE	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S97T000622			
INSTRUMENT CODE	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
PREPARED BY			
CJO			
CHEMIST			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.29E-01	DETECTION LEVEL
ANALYST			
ADP			
DATE COMPLETE			2.58E-03
05/06/97	RELATIVE COUNTING ERROR	9.1%	$\mu\text{Ci/g}$
ANALYSIS DATE			
05/05/97			
ANALYSIS TIME			
03:30 AM			
SAMPLE POINT			
T-204			

Analyst:	ADP	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/7/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP10

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
WV01	DETECTOR NUMBER	14	14
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	556	599
17817	COUNT TIME in MINUTES (CT)	30	30
Worklist	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.3196	2.3196
Matrix	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	18.463	19.897
Batch Number			
97001826	Blank Concentration in $\mu\text{Ci/g}$	1.33E-01	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	1.44E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.3836E-01	
Sample Prep			
FUSION01	$\text{Rs (Sample Count Rate) = (TC / CT) - BKG}$		
Sample	$\text{ALPHA TOTAL } \mu\text{Ci/g} = \text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S97T000622			
Instrument Code	$\text{Relative Counting Error} = [(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.38E-01	DETECTION LEVEL
Analyst			
ADP			
Date complete			2.28E-03 $\mu\text{Ci/g}$
05/06/97	RELATIVE COUNTING ERROR	8.4%	
Analysis Date			
05/06/97			
Analysis time			
03:30 AM			
Sample Point			
T-204			

Analyst:	ADP	Date: 06-May-97
Signature of Chemist:	SLF	Date: 5/2/97
SAMPLE.WB1 Rev. 1.0	508101ML	

LABCORE Completed RadChem Report for Worklist#: 17901

Analyst: scl Instrument: AB15 Book# _____

Method: _____ Rev/Mod _____

Worklist Comment: T204, @ALPHA01 Deter s.s. by Ludlum. Std: 1.0mL skm

Seq Type	Sample#	RA	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		@ALPHA01 ALPHA01	SOLID	2.00E-04	1.77E-4	88.500	% Recovery
1 STD	0		@ALPHA01 ALPHA01E	SOLID	1.00	3.49E+00	3.490	% Ct. Erro
2 BLNK-PREP	0		@ALPHA01 ALPHA01	SOLID	1	<1.92E-3		uCi/g
2 BLNK-PREP	0		@ALPHA01 ALPHA01E	SOLID	1.00	5.00E+02	500.000	uCi/g
3 BLNK/BKG	0		@ALPHA01 ALPHA01	SOLID	1.00E+00	6.17E-01	0.617	BLNK/BKG
4 SAMPLE	S97T000623	0 F	@ALPHA01 ALPHA01	SOLID	N/A	3.16E-03	464.0e-005	uCi/g
4 SAMPLE	S97T000623	0 F	@ALPHA01 ALPHA01E	SOLID	N/A	5.00E+02	0.0e+000	% Ct. Error
5 DUP	S97T000623	0 F	@ALPHA01 ALPHA01	SOLID	<3.16E-3	1.46E-1		RPD
5 DUP	S97T000623	0 F	@ALPHA01 ALPHA01E	SOLID	1.00	9.18E+00	9.180	% Ct. Erro
6 SAMPLE	S97T000624	0 F	@ALPHA01 ALPHA01	SOLID	N/A	1.84E-01	492.0e-005	uCi/g
6 SAMPLE	S97T000624	0 F	@ALPHA01 ALPHA01E	SOLID	N/A	8.39E+00	0.0e+000	% Ct. Error
7 DUP	S97T000624	0 F	@ALPHA01 ALPHA01	SOLID	1.84E-1	1.58E-1	15.205	RPD
7 DUP	S97T000624	0 F	@ALPHA01 ALPHA01E	SOLID	1.00	9.36E+00	9.360	% Ct. Erro
8 SAMPLE	S97T000625	0 F	@ALPHA01 ALPHA01	SOLID	N/A	2.08E-01	453.0e-005	uCi/g
8 SAMPLE	S97T000625	0 F	@ALPHA01 ALPHA01E	SOLID	N/A	7.52E+00	0.0e+000	% Ct. Error
9 DUP	S97T000625	0 F	@ALPHA01 ALPHA01	SOLID	2.08E-1	1.89E-1	9.572	RPD
9 DUP	S97T000625	0 F	@ALPHA01 ALPHA01E	SOLID	1.00	7.99E+00	7.990	% Ct. Erro
10 SAMPLE	S97T000626	0 F	@ALPHA01 ALPHA01	SOLID	N/A	1.57E-01	450.0e-005	uCi/g
10 SAMPLE	S97T000626	0 F	@ALPHA01 ALPHA01E	SOLID	N/A	9.46E+00	0.0e+000	% Ct. Error
11 DUP	S97T000626	0 F	@ALPHA01 ALPHA01	SOLID	1.57E-1	1.41E-1	10.738	RPD
11 DUP	S97T000626	0 F	@ALPHA01 ALPHA01E	SOLID	1.00	9.71E+00	9.710	% Ct. Erro

Final page for worklist# 17901

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Reviewer Signature _____

Date 5/13/97

LABCORE Data Entry Template for Worklist# 17901

Analyst: S-L Instrument: AB00 15 Book# 7785-6

Method: LA-508-101 Rev/Mod 67-0

Worklist Comment: T204, @ALPHA01 Deter s.s. by Ludlum. Std: 1.0mL skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@ALPHA01	SOLID		
2 BLNK-PREP			@ALPHA01	SOLID		
3 BLNK/BKG			@ALPHA01	SOLID		
4 SAMPLE	S97T000623	0 F	@ALPHA01	SOLID	97000261	T-204
	Analytes Requested: ALPHA01 , ALPHA01E					
5 DUP	S97T000623	0 F	@ALPHA01	SOLID		
6 SAMPLE	S97T000624	0 F	@ALPHA01	SOLID	97000261	T-204
	Analytes Requested: ALPHA01 , ALPHA01E					
7 DUP	S97T000624	0 F	@ALPHA01	SOLID		
8 SAMPLE	S97T000625	0 F	@ALPHA01	SOLID	97000261	T-204
	Analytes Requested: ALPHA01 , ALPHA01E					
9 DUP	S97T000625	0 F	@ALPHA01	SOLID		
10 SAMPLE	S97T000626	0 F	@ALPHA01	SOLID	97000261	T-204
	Analytes Requested: ALPHA01 , ALPHA01E					
11 DUP	S97T000626	0 F	@ALPHA01	SOLID		

Final page for worklist # 17901

Analyst Signature Sue La Date 5-7-97

Analyst Signature Sue E. Nogen Date 5/8/97

Data Entry Comments: tail down sample

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1) LA-508-113 (B-0) STANDARD

	STANDARD	REPLICATE
Type	DETECTOR NUMBER	15
STD	DISH SIZE (1, 2, or 5) (MS)	2
Worklist	GROSS COUNTS (GC)	3186
17901	COUNT TIME in MINUTES (CT)	30
AK01137	BACKGROUND in cpm (BKG)	0.27
AT	SAMPLE SIZE in mL (SS)	1.000
Test Code	DILUTION FACTOR (DF)	1
@ALPHA01	STANDARD BOOK NUMBER (Std BN)	79B56
Matrix	EFFICIENCY FACTOR (EFF)	0.2701
LIQUID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE	106.930
Batch Number	Standard Value in µCi/mL	2.00E-04
97001917	Concentration in µCi/L =	1.77E-01
Repun	Replicate Concentration in µCi/L =	1.77E-01
0	AVERAGE CONCENTRATION in µCi/L =	1.7686E-01

Sample Prep: N/A
 Sample #: ALPHA TOTAL µCi/L = $Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/\mu Ci)$
 WL17901 ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L
 Instrument Code: Relative Counting Error = $[(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
 WB26872 Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	CJO	
Chemist	SLF	ALPHA TOTAL CONCENTRATION in µCi/mL = 1.77E-04
Analyst		DETECTION LEVEL
SCL		
Date Complete		8.90E-07 µCi/mL
05/08/97	RELATIVE COUNTING ERROR = 3.5%	
Analysis Date		
05/07/97		
Analysis Time		
01:30 PM		
Sample Point		
T-204		

Analyst:	CJO	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97

STANDARD.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (E-1)

SOLIDS

		BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER	15	15
BLNK-PREP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	5	5
17901	COUNT TIME in MINUTES (CT)	30	30
Alpha-B?	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
TestCode	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9188	1.9188
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.221	0.221
BatchNumber			
97001917	Blank Concentration in $\mu\text{Ci/g}$	< 1.92E-03	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	< 1.92E-03	
0	Maximum Concentration in $\mu\text{Ci/g}$	< 1.9240E-03	
Sample Prep			
N/A	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
WL17901			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) =	< 1.92E-03	DETECTION LEVEL
Analyst	LESS Than Value was Determined from Lc.		
SCL			4.64E-03
Date/Complete	RELATIVE COUNTING ERROR	500.0%	$\mu\text{Ci/g}$
05/08/97			
Analysis Date			
05/07/97			
Analysis Time			
01:30 PM			
Sample Point			
T-204			

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
BLANK.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worksheet	GROSS COUNTS (GC)	10	19
17901	COUNT TIME in MINUTES (CT)	30	30
Alpha/Beta	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Isotopes	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9188	1.9188
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	0.297	0.363
Batch Number			
97001917	Blank Concentration in $\mu\text{Ci/g}$	< 2.58E-03	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	3.16E-03	
0	Maximum Concentration in $\mu\text{Ci/g}$	< 3.1679E-03	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sample #	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S97T000623			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) =	< 3.16E-03	DETECTION LEVEL
Analyst			
SCL	LESS THAN Value was Determined from Rmax.		
Date/Complete			4.64E-03 $\mu\text{Ci/g}$
05/08/97	RELATIVE COUNTING ERROR	500.0%	
Analysis Date			
05/07/97			
Analysis Time			
01:30 PM			
Sample Point			
T-204			

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
SAMPLE.WB1 Rev. 1.0 508101ML		

WORKBOOK PAGE: DUP5

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	15	15
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	480	546
17901	COUNT TIME in MINUTES (CT)	30	30
Attrib B?	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9192	1.9192
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE	15.730	17.930
Batch Number			
97001917	Blank Concentration in $\mu\text{Ci/g}$	1.37E-01	
Repun	Replicate Concentration in $\mu\text{Ci/g}$	1.56E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.4625E-01	
Sample Prep			
FUSION01	$Rs \text{ (Sample Count Rate)} = (TC / CT) - BKG$		
Sample #	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
S977000623			
Instrument Code	Relative Counting Error = $[(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.46E-01	DETECTION LEVEL
Analyst			
SCL			
Date/Complete			4.64E-03 $\mu\text{Ci/g}$
05/08/97	RELATIVE COUNTING ERROR	9.2%	
Analysis Date			
05/07/97			
Analysis Time			
01:30 PM			
Sample Point			
T-204			

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM6

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	646	570
17901	COUNT TIME in MINUTES (CT)	30	30
AT or TB?	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.8076	1.8076
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	21.263	18.730
Batch Number			
97001917	Blank Concentration in µCi/g	1.96E-01	
Rerun	Replicate Concentration in µCi/g	1.73E-01	
0	Average Concentration in µCi/g	1.8449E-01	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG		
Sample #	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)		
S97T000624			
Instrument Code	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in µCi/g (Average) =	1.84E-01	DETECTION LEVEL
Analyst			
SCL			
Date Complete			4.92E-03
05/08/97	RELATIVE COUNTING ERROR	8.4%	µCi/g
Analysis Date			
05/07/97			
Analysis Time			
01:30 PM			
Sample Point			
T-204			

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP7

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Detector Number	15	15	
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	462	607
17901	COUNT TIME in MINUTES (CT)	30	30
Alpha 15	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.8544	1.8544
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	15.130	19.963
Batch Number			
97001917	Blank Concentration in $\mu\text{Ci/g}$	1.36E-01	
Repun	Replicate Concentration in $\mu\text{Ci/g}$	1.80E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.5780E-01	

Sample Prep	
FUSION01	$Rs \text{ (Sample Count Rate)} = (TC / CT) - BKG$
Sample #	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = Rs * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
S97T000624	
Instrument Code	$\text{Relative Counting Error} = [(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	1.58E-01
Analyst			
SCL			
Date Complete			
05/08/97	RELATIVE COUNTING ERROR	9.4%	
Analysis Date			
05/07/97			
Analysis Time			
01:30 PM			
Sample Point			
T-204			

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM8

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	778	704
17901	COUNT TIME in MINUTES (CT)	30	30
Av Cont B?	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.962	1.962
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	25.663	23.197
Batch Number			
97001917	Blank Concentration in $\mu\text{Ci/g}$	2.18E-01	
Rerun	Replicate Concentration in $\mu\text{Ci/g}$	1.97E-01	
0	Average Concentration in $\mu\text{Ci/g}$	2.0766E-01	

Sample Prep	
FUSION01	$R_s \text{ (Sample Count Rate)} = (TC / CT) - BKG$
Sampler	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
S97T000625	
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	
CJO	
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) = 2.08E-01
Analyst	
SCL	
Date Complete	
05/08/97	RELATIVE COUNTING ERROR 7.5%
Analysis Date	
05/07/97	
Analysis Time	
01:30 PM	
Sample Point	
T-204	

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP9

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	15	15
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	703	625
17901	COUNT TIME in MINUTES (CT)	30	30
Alpha/Beta	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9276	1.9276
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	23.163	20.563
Batch Number			
97001917	Blank Concentration in µCi/g	2.00E-01	
Rerun	Replicate Concentration in µCi/g	1.78E-01	
0	Average Concentration in µCi/g	1.8916E-01	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG		
Sample	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)		
S97T000625			
Instrument Code	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in µCi/g (Average) =	1.89E-01	DETECTION LEVEL
Analyst			
SCL			4.61E-03
Date Complete	RELATIVE COUNTING ERROR	8.0%	µCi/g
05/08/97			
Analysis Date			
05/07/97			
Analysis time			
01:30 PM			
Sample Point			
T-204			

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	16	15
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	575	561
17901	COUNT TIME in MINUTES (CT)	30	30
Analysis?	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9784	1.9784
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	18.897	18.430
Batch Number			
97001917	Blank Concentration in $\mu\text{Ci/g}$	1.59E-01	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	1.55E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.573E-01	
Sample Prep			
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S977000626			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.57E-01	DETECTION LEVEL
Analyst			
SCL			
Date Complete			4.50E-03
05/08/97	RELATIVE COUNTING ERROR	8.5%	$\mu\text{Ci/g}$
Analysis Date			
05/07/97			
Analysis Time			
01:30 PM			
Sample Point			
T-204			

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP11

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	15	15
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	567	431
17901	COUNT TIME in MINUTES (CT)	30	30
Alpha B ?	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.934	1.934
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	18.630	14.097
Batch Number			
97001917	Blank Concentration in µCi/g	1.61E-01	
ReRun	Replicate Concentration in µCi/g	1.22E-01	
0	Average Concentration in µCi/g	1.411E-01	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG		
Sample	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)		
S97T000626			
Instrument Code	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in µCi/g (Average) =	1.41E-01	DETECTION LEVEL
Analyst			
SCL			
Date Complete			4.60E-03
05/08/97	RELATIVE COUNTING ERROR	9.7%	µCi/g
Analysis Date			
05/07/97			
Analysis time			
01:30 PM			
Sample Point			
T-204			

Analyst:	SCL	Date: 08-May-97
Signature of Chemist:	SLF	Date: 5/13/97
SAMPLE.WB1 Rev. 1.0	508101ML	

LABCORE Completed RadChem Report for Worklist#: 17950

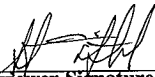
Analyst: scl Instrument: AB15 Book# _____
Method: _____ Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0
Worklist Comment: Use .1 mL sample size. Rerun #1. SLF

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		@ALPHA01 ALPHA01 SOLID		2.00E-04	1.72E-4	86.000	% Recovery
1 STD	0		@ALPHA01 ALPHA01H SOLID		1.00	3.62E+00	3.620	% Ct. Erro
2 BLNK-PREP	0		@ALPHA01 ALPHA01 SOLID		1	<2.47E-3		uCi/g
2 BLNK-PREP	0		@ALPHA01 ALPHA01E SOLID		1.00	5.00E+02	500.000	uCi/g
3 BLNK/BKG	0		@ALPHA01 ALPHA01 SOLID		1.00E+00	2.33E+00	2.330	BLNK/BKG
4 SAMPLE	S97T000587	0 F	@ALPHA01 ALPHA01 SOLID		N/A	1.76E-01	296.0e-005	uCi/g
4 SAMPLE	S97T000587	0 F	@ALPHA01 ALPHA01H SOLID		N/A	8.02E+00	0.0e+000	% Ct. Error
5 DUP	S97T000587	0 F	@ALPHA01 ALPHA01 SOLID		1.76E-1	1.51E-1	15.291	RPD
5 DUP	S97T000587	0 F	@ALPHA01 ALPHA01H SOLID		1.00	8.43E+00	8.430	% Ct. Error
6 SAMPLE	S97T000588	0 F	@ALPHA01 ALPHA01 SOLID		N/A	1.38E-01	315.0e-005	uCi/g
6 SAMPLE	S97T000588	0 F	@ALPHA01 ALPHA01E SOLID		N/A	9.17E+00	0.0e+000	% Ct. Error
7 DUP	S97T000588	0 F	@ALPHA01 ALPHA01 SOLID		1.38E-1	1.49E-1	7.666	RPD
7 DUP	S97T000588	0 F	@ALPHA01 ALPHA01H SOLID		1.00	8.61E+00	8.610	% Ct. Error
8 SPK	S97T000588	0 F	@ALPHA01 ALPHA01 SOLID		2.63E-02	1.98E-02	75.285	% Recovery
9 SAMPLE	S97T000589	0 F	@ALPHA01 ALPHA01 SOLID		N/A	1.38E-01	312.0e-005	uCi/g
9 SAMPLE	S97T000589	0 F	@ALPHA01 ALPHA01E SOLID		N/A	9.18E+00	0.0e+000	% Ct. Error
10 DUP	S97T000589	0 F	@ALPHA01 ALPHA01 SOLID		1.38E-1	1.16E-1	17.323	RPD
10 DUP	S97T000589	0 F	@ALPHA01 ALPHA01H SOLID		1.00	1.08E+01	10.800	% Ct. Error

Final page for worklist# 17950

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____


Reviewer Signature _____ Date 5/8/97

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 17950

Analyst: S.L. Instrument: AB00 15 Book# 7985-6

Method: LA-508-101 Rev/Mod G-0

HNF-SD-WM-DP-255, REV. 0

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

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@ALPHA01	SOLID		
2 BLNK-PREP			@ALPHA01	SOLID		
3 BLNK/BKG			@ALPHA01	SOLID		
4 SAMPLE	S97T000587 0 F		@ALPHA01	SOLID	97000261	T-204
	Analytes Requested: ALPHA01 , ALPHA01E					
5 DUP	S97T000587 0 F		@ALPHA01	SOLID		
6 SAMPLE	S97T000588 0 F		@ALPHA01	SOLID	97000261	T-204
	Analytes Requested: ALPHA01 , ALPHA01E					
7 DUP	S97T000588 0 F		@ALPHA01	SOLID		
8 SPK	S97T000588 0 F		@ALPHA01	SOLID		
9 SAMPLE	S97T000589 0 F		@ALPHA01	SOLID	97000261	T-204
	Analytes Requested: ALPHA01 , ALPHA01E					
10 DUP	S97T000589 0 F		@ALPHA01	SOLID		

Final page for worklist # 17950

Sue Lan 5-6-97
Analyst Signature Date

Sue E. Hogan 5-7-97
Analyst Signature Date
Debra Z. Cochran 5-7-97

Data Entry Comments:

boil down samples

WORKBOOK PAGE: STD1

AT : LA-508-101 (E-1) LA-508-113 (B-0) STANDARD

		STANDARD	REPLICATE
Type	DETECTOR NUMBER	15	15
STD	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	3263	2947
17950	COUNT TIME in MINUTES (CT)	30	30
Analysis By	BACKGROUND in cpm (BKG)	0.1	0.1
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER (Std BN)	79B56	79B56
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
LIQUID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	108.667	98.133
Batch Number	Standard Value in $\mu\text{Ci/mL}$	2.00E-04	
97001966	Concentration in $\mu\text{Ci/L}$ =	1.81E-01	
Rerun	Replicate Concentration in $\mu\text{Ci/L}$ =	1.64E-01	
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$ =	1.7244E-01	
Sample Prep			
N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$		
WL17950	ALPHA TOTAL $\mu\text{Ci/mL}$ = ALPHA TOTAL $\mu\text{Ci/L}$ / 1000mL/L		
Instrument Code	Relative Counting Error = $[((\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT))] * 1.96 * 100$		
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ =	1.72E-04	DETECTION LEVEL
Analyst			
SCL			
Date Complete			6.01E-07 $\mu\text{Ci/mL}$
05/07/97	RELATIVE COUNTING ERROR =	3.6%	
Analysis Date			
05/06/97			
Analysis Time			
03:10 PM			
Sample Point			
T-204			

Analyst:	SEH	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/18/97
STANDARD.WB1 Rev. 1.0	508101ML	

7-14-97

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (E-1) SOLIDS

	BLNK-PREP	REPLICATE
Detector Number	15	15
BLNK-PREP		
DISH SIZE (1, 2, or 5)	(MS)	2
Work List	(GC)	2
GROSS COUNTS		12
17950	(CT)	30
COUNT TIME in MINUTES		30
AT Non-IB	(BKG)	0.1
BACKGROUND in cpm		0.1
AT	(SS)	0.100
SAMPLE SIZE in mL		0.100
Test Code	(DF)	1
DILUTION FACTOR		1
@ALPHA01	(Dg/L)	2.026
DIGEST GRAMS of SOLIDS / L		2.026
Matrix	(EFF)	0.2701
EFFICIENCY FACTOR		0.2701
SOLID		0.135
Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		0.300

Batch Number	
97001966	Blank Concentration in $\mu\text{Ci/g}$ < 1.11E-03
Return	Replicate Concentration in $\mu\text{Ci/g}$ 2.47E-03
0	Maximum Concentration in $\mu\text{Ci/g}$ < 2.4695E-03

Sample Prep	
N/A	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$

Instrument Code	
WB26872	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
Prepared By	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

SEH	
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum) = < 2.47E-03
Analyst	
SCL	LESS Than Value was Determined from Lc.
Date Complete	
05/07/97	RELATIVE COUNTING ERROR 500.0%

Analysis Date	
05/06/97	
Analysis Time	
03:10 PM	
Sample Point	
T-204	

Analyst:	SCL	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/8/97

BLANK.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SAM4

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
TYPE	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE (1, 2, or 5)	(MS)	2
Worklist	GROSS COUNTS	(GC)	680
17950	COUNT TIME in MINUTES	(CT)	30
AT for IB	BACKGROUND in cpm	(BKG)	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100
Test Code	DILUTION FACTOR	(DF)	1
ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.026
Matrix	EFFICIENCY FACTOR	(EFF)	0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	22.567	20.100
Batch Number		1.86E-01	
97001966	Blank Concentration in µCi/g	1.65E-01	
Rerun	Replicate Concentration in µCi/g	1.7561E-01	
1	Average Concentration in µCi/g		
Sample Prep			
FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG		
Sample #	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)		
S97T000587	Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
Instrument Code	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
WB26872			
Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in µCi/g (Average)	= 1.76E-01	DETECTION LEVEL
Analyst			2.96E-03
SCL			µCi/g
Date Complete	RELATIVE COUNTING ERROR	8.0%	
05/07/97			
Analysis Date			
05/06/97			
Analysis Time			
03:10 PM			
Sample Point			
T-204			

(/ system;exit) yes~

Analyst:	SCL	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/8/97
SAMPLE.WB1 Rev. 1.0		
508101ML		

WORKBOOK PAGE: DUP5

AT : LA-508-101 (E-1) SOLIDS

			DUP	REPLICATE
Detector Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1, 2, or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	549	578
17950	COUNT TIME in MINUTES	(CT)	30	30
AT for IB?	BACKGROUND In cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE In mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0688	2.0688
Matrix	EFFICIENCY FACTOR	(EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		18.200	19.167

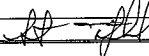
Batch Number	
97001966	Blank Concentration in $\mu\text{Ci/g}$ 1.47E-01
Retrun	Replicate Concentration in $\mu\text{Ci/g}$ 1.55E-01
1	Average Concentration in $\mu\text{Ci/g}$ 1.5081E-01

Sample Prep	
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample #	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
S97T000687	
Instrument Code	Relative Counting Error = $[(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	SEH
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) = 1.51E-01
Analyst	
SCL	
Date Complete	
05/07/97	RELATIVE COUNTING ERROR 8.4%
Analysis Date	
05/06/97	
Analysis Time	
03:10 PM	
Sample Point	
T-204	

DETECTION
LEVEL
2.90E-03
 $\mu\text{Ci/g}$

(/ system;exit)yes~

Analyst:		SCL	Date: 07-May-97
Signature of Chemist:		SLF	Date: 5/8/97

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: SAM6

AT : LA-508-101 (E-1)

SOLIDS

			SAMPLE	REPLICATE
Sample Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1, 2, or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	488	466
17950	COUNT TIME in MINUTES	(CT)	30	30
Alt for Bl	BACKGROUND In cpm	(BKG)	0.1	0.1
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	1.9084	1.9084
Matrix	EFFICIENCY FACTOR	(EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		16.167	15.433

Batch Number	
97001966	Blank Concentration in $\mu\text{Ci/g}$ 1.41E-01
Rerun	Replicate Concentration in $\mu\text{Ci/g}$ 1.35E-01
1	Average Concentration in $\mu\text{Ci/g}$ 1.3807E-01

Sample Prep	
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
S97T000688	
Instrument Code	Relative Counting Error = $[(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	
SEH	
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) = 1.38E-01
Analyst	
SCL	
Date Complete	
05/07/97	RELATIVE COUNTING ERROR 9.2%
Analysis Date	
05/06/97	
Analysis Time	
03:10 PM	
Sample Point	
T-204	

DETECTION

LEVEL

3.15E-03
 $\mu\text{Ci/g}$

(! system exit) yes~

Analyst:		SCL	Date: 07-May-97
Signature of Chemist:		SLF	Date: 5/8/97
SAMPLE.WB1 Rev. 1.0	508101ML		

WORKBOOK PAGE: DUP7

AT : LA-508-101 (E-1)

SOLIDS

	DUP	REPLICATE
Type	DETECTOR NUMBER	15
DUP	DISH SIZE (1, 2, or 5) (MS)	2
Work List	GROSS COUNTS (GC)	538
17950	COUNT TIME in MINUTES (CT)	30
ALPHA B72	BACKGROUND in cpm (BKG)	0.1
AT	SAMPLE SIZE in mL (SS)	0.100
Test Code	DILUTION FACTOR (DF)	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9712
Matrix	EFFICIENCY FACTOR (EFF)	0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	17.633

Batch Number	
97001966	Blank Concentration in $\mu\text{Ci/g}$ 1.51E-01
Rerun	Replicate Concentration in $\mu\text{Ci/g}$ 1.48E-01
1	Average Concentration in $\mu\text{Ci/g}$ 1.4933E-01

Sample Prep	
FUSION01	$R_s \text{ (Sample Count Rate)} = (TC / CT) - BKG$
Sample #	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
S97T000588	
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	
SEH	
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) = 1.49E-01
Analyst	
SCL	
Date Complete	
05/07/97	RELATIVE COUNTING ERROR 8.6%
Analysis Date	
05/06/97	
Analysis Time	
03:10 PM	
Sample Point	
T-204	

(/ system exit) yes~

Analyst:	SCL	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/8/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SPK8

AT : LA-508-101 (E-1) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	15	15
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	36615	35571
17950	COUNT TIME in MINUTES (CT)	30	30
Ator: TB	BACKGROUND in cpm (BKG)	0.1	0.1
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9084	1.9084
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	131B43	131B43
97001966	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	2.6295E-02	2.6295E-02
Return	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2701	0.2701
1	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	1.07E+01	1.04E+01
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	1.3807E-01	
FUSION01			
Sample			
S97T000588	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	$SAMPLE + SPIKE \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WB26872	QC ACTUAL = SVal		
Prepared By	$QC \text{ FOUND} = (((S+S \mu\text{Ci/g} - SAMPLE \mu\text{Ci/g}) * ((SDF/(SVol*1000)) / (DF/SS/Dg/L))))$		
SEH	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Chemist			
SLF			
Analyst			
SCL			
Date complete			
05/07/97			
Analysis Date			
05/06/97	QC ACTUAL =	2.63E-02	
Analysis Time	QC FOUND =	1.98E-02	
03:10 PM	AVG. PERCENT SPIKE RECOVERY =	75.3%	
Sample Point			
T-204			

Analyst:	SEH	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/8/97
SPIKE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SAM9

AT : LA-508-101 (E-1) SOLIDS

	SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15 15
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2 2
Work List	GROSS COUNTS (GC)	465 494
17950	COUNT TIME in MINUTES (CT)	30 30
A) or (B)	BACKGROUND in cpm (BKG)	0.1 0.1
AT	SAMPLE SIZE in mL (SS)	0.100 0.100
Test Code	DILUTION FACTOR (DF)	1 1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9248 1.9248
Matrix	EFFICIENCY FACTOR (EFF)	0.2701 0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	15.400 16.367

Batch Number	
97001966	Blank Concentration in $\mu\text{Ci/g}$ 1.33E-01
Rerun	Replicate Concentration in $\mu\text{Ci/g}$ 1.42E-01
1	Average Concentration in $\mu\text{Ci/g}$ 1.3762E-01

Sample Prep	
FUSION01	R_s (Sample Count Rate) = (TC / CT) - BKG
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
S97T000589	
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	
SEH	
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) = 1.38E-01
Analyst	
SCL	
Date Complete	
05/07/97	RELATIVE COUNTING ERROR 9.2%
Analysis Date	
05/06/97	
Analysis Time	
03:10 PM	
Sample Point	
T-204	

/ system;exit;yes~

Analyst:	SCL	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/8/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP10

AT : LA-508-101 (E-1) SOLIDS

	DUP	REPLICATE
Type	DETECTOR NUMBER	15
DUP	DISH SIZE (1, 2, or 5)	2
Work List	GROSS COUNTS	434
17950	COUNT TIME in MINUTES	30
AT	BACKGROUND in cpm	0.1
AT	SAMPLE SIZE in mL	0.100
Test Code	DILUTION FACTOR	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	1.8448
Matrix	EFFICIENCY FACTOR	0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	14.367

Batch Number	
97001966	Blank Concentration in $\mu\text{Ci/g}$
Rerun	Replicate Concentration in $\mu\text{Ci/g}$
1	Average Concentration in $\mu\text{Ci/g}$

Sample Prep	
FUSION01	R_s (Sample Count Rate) = (TC / CT) - BKG
Sample	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
S97T000589	
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	
SEH	
Chemist	
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) = 1.16E-01
Analyst	
SCL	
Date Complete	
05/07/97	RELATIVE COUNTING ERROR 10.8%
Analysis Date	
05/06/97	
Analysis Time	
03:10 PM	
Sample Point	
T-204	

(/ system;exit)yes-

Analyst:	SCL	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/8/97
SAMPLE.WB1 Rev. 1.0	508101ML	

LABCORE Completed RadChem Report for Worklist#: 18873

Analyst: rdm Instrument: GEA03 Book# _____
Method: _____ Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T204, GEA. Use 5.0 mL sample size. 1 mL std. RERUN! If

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0	@GEA-02 C060-02 SOLID		6.339e-03	6.34e-03	100.016	% Recovery
1 STD	0	@GEA-02 C060-02R SOLID		1	2.44	2.440	% Ct Error
1 STD	0	@GEA-02 CS13702E SOLID		5.787e-03	5.84e-03	100.916	% Recovery
1 STD	0	@GEA-02 CS13702E SOLID		1	3.18	3.180	% Ct Error
2 BLNK-PREP	0	@GEA-02 C060-02 SOLID		1	<2.93e-6		uCi/g
2 BLNK-PREP	0	@GEA-02 CS13702E SOLID		1	<4.20e-6		uCi/g
2 BLNK-PREP	0	@GEA-02 EU15402E SOLID		1	<0.98e-6		uCi/g
2 BLNK-PREP	0	@GEA-02 EU15502E SOLID		1	<7.34e-6		uCi/g
2 BLNK-PREP	0	@GEA-02 AM24102E SOLID		1	<1.92e-5		uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 C060-02 SOLID		N/A	< 1.708e-03	170.8e-005	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 C060-02R SOLID		N/A	n/a	0.0e+000	% Ct. Error
3 SAMPLE	S97T001198 0 F	@GEA-02 CS13702E SOLID		N/A	7.748e-03	0.0e+000	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 CS13702E SOLID		N/A	28.1	0.0e+000	% Ct. Error
3 SAMPLE	S97T001198 0 F	@GEA-02 EU15402E SOLID		N/A	< 4.389e-03	438.9e-005	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 EU15402E SOLID		N/A	n/a	0.0e+000	% Ct. Error
3 SAMPLE	S97T001198 0 F	@GEA-02 EU15502E SOLID		N/A	< 3.527e-03	352.7e-005	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 EU15502E SOLID		N/A	n/a	0.0e+000	% Ct. Error
3 SAMPLE	S97T001198 0 F	@GEA-02 AM24102E SOLID		N/A	2.265e-02	0.0e+000	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 AM24102E SOLID		N/A	39.5	0.0e+000	% Ct. Error
4 DUP	S97T001198 0 F	@GEA-02 C060-02 SOLID		<1.71e-3	<1.48e-3		RPD
4 DUP	S97T001198 0 F	@GEA-02 C060-02R SOLID		1	n/a		% Ct. Error
4 DUP	S97T001198 0 F	@GEA-02 CS13702E SOLID		7.75e-03	7.77e-03	0.258	RPD
4 DUP	S97T001198 0 F	@GEA-02 CS13702E SOLID		1	29.7	29.700	% Ct. Error
4 DUP	S97T001198 0 F	@GEA-02 EU15402E SOLID		<4.39e-3	<4.03e-3		RPD
4 DUP	S97T001198 0 F	@GEA-02 EU15402E SOLID		1	n/a		% Ct. Error
4 DUP	S97T001198 0 F	@GEA-02 EU15502E SOLID		<3.53e-3	<3.29e-3		RPD
4 DUP	S97T001198 0 F	@GEA-02 EU15502E SOLID		1	n/a		% Ct. Error
4 DUP	S97T001198 0 F	@GEA-02 AM24102E SOLID		2.26e-02	2.62e-02	14.754	RPD
4 DUP	S97T001198 0 F	@GEA-02 AM24102E SOLID		1	41.1	41.100	% Ct. Error

Comments Section:

Comments for sample# S97T001198 and test @GEA-02 .

DL=0 => n/a.
DL=0 => n/a.

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Completed RadChem Report for Worklist#: 18873

Seq	Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
-----	------	---------	-----	------	--------	--------	-------	-------------	------

Final page for worklist# 18873

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

 1 Jul 97
Reviewer Signature _____ Date _____

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 18873

Analyst: PM Instrument: GEA00 3 Book# 75856

Method: LA-548-121 Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, GEA. Use 5.0 mL sample size. 1 mL std. RERUN! llf

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@GEA-02	SOLID		
2 BLNK-PREP			@GEA-02	SOLID		
3 SAMPLE	S97T001198	0 F	@GEA-02	SOLID	97000261	T-204
Analytes Requested: AM24102 , AM24102E, CO60-02 , CO60-02E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E						
4 DUP	S97T001198	0 F	@GEA-02	SOLID		

Final page for worklist # 18873

PM 6/27/97
Analyst Signature Date

PM 6/30/97
Analyst Signature Date

Data Entry Comments:

Summary of Nuclide Activity
Sample ID : WL18873-STD

~~WLF-1467~~
~~HNF-SD-WM-DP-245, REV. 0~~ Page : 2
Acquisition date : 26-JUN-1997 09:55:45

Total number of lines in spectrum 3
Number of unidentified lines 0 HNF-SD-WM-DP-255, REV. 0
Number of lines tentatively identified by NID 3 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			uCi/L	uCi/L	2-Sigma Error	%Error	
CO-60	5.27Y	1.00	6.344E+00	6.344E+00	0.155E+00	2.44	
CS-137	30.00Y	1.00	5.842E+00	5.842E+00	0.186E+00	3.18	
Total Activity :			1.219E+01	1.219E+01			

Grand Total Activity : 1.219E+01 1.219E+01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L) HNF-SD-WM-DP-255, REV. 0
BE-7	311.	477.59	6.0051E-01
NA-22	33.	1274.53	4.9898E-02
NA-24	13.	1368.55	3.5239E-02
K-40	127.	1460.75	9.6946E-01
CR-51	312.	320.08	4.5209E-01
MN-54	174.	834.83	7.5269E-02
CO-56	186.	846.76	7.8793E-02
CO-57	372.	122.06	3.4407E-02
CO-58	188.	810.78	7.6581E-02
FE-59	213.	1099.25	1.8619E-01
SE-75	400.	264.66	7.6485E-02
SR-85	273.	514.01	6.4475E-02
Y-88	2.	1836.06	2.0280E-02
NB-94	216.	871.09	8.6662E-02
ZRNB-95	157.	724.18	1.4539E-01
RU-103	220.	497.08	5.9582E-02
RURH-106	173.	621.93	1.1765E+00
AG-108m	154.	722.94	6.9235E-02
CD-109	327.	88.03	1.0692E+00
AG-110M	240.	657.76	7.5784E-02
SN-113	336.	391.69	8.5922E-02
TE-123m	370.	159.00	3.5277E-02
SB-124	167.	602.73	5.7161E-02
SB-125	306.	427.89	1.9193E-01
TE-125m	330.	109.27	1.0566E+01
I-131	302.	364.48	6.1009E-02
CS-134	176.	604.70	5.8844E-02
BA-140	182.	537.31	2.1648E-01
LA-140	8.	1596.21	3.3055E-02
CEPR-144	374.	133.51	5.2112E-01
EU-152	10.	1408.01	1.5063E-01
EU-154	33.	1274.51	1.4489E-01
EU-155	329.	105.31	1.4085E-01
HG-203	384.	279.20	5.5908E-02
TL-208	386.	277.36	7.1997E-01
BI-212	160.	727.18	9.6707E-01
PB-212	469.	238.63	1.0270E-01
BI-214	208.	609.31	1.3974E-01
PB-214	333.	351.92	2.5160E-01
RA-224	463.	240.99	1.1336E+00
RA-226	401.	186.10	9.6471E-01
AC-228	240.	911.21	3.5622E-01
TH-228	341.	84.37	3.3627E+00
TH-229	319.	88.47	1.5309E-01
PA-233	334.	312.17	1.1982E-01
UTH-233	428.	245.34	4.0907E+01
PA-234M	215.	1001.03	1.6521E-01
TH-234	281.	63.29	2.0635E+00
U-235	403.	185.71	5.8782E-02
NP-237	346.	86.48	3.3027E-01
NP-239	341.	106.12	1.3613E-01

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : WL18873-STD

Acquisition date : 26-JUN-1997 09:55:45

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)	HNF-SD-WM-DP-255, REV. 0
PU-239	373.	129.30	4.5304E+02	
AM-241	323.	59.54	3.8917E-01	
AM-243	321.	74.67	9.1243E-02	

Wt 1497
~~HNF-SD-WM-DP-245, REV. 0~~

* 222-S Laboratory Counting Room 26-JUN-1997 13:22:34.96

>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<

Worklist #: 18873
Sample ID: WL18873-BLK
Sample Size: 5.00000E-03 L
Dilution Factor: 1.00000E+00

Removed by:

Removed by: Lee E. Hogan

>>>>>>>>> COUNT INFORMATION <<<<<<<<<<

```
Detector ID:      GEA3
File Number:     dka300:[spec.GEA3]3g3358.cnf
Geometry:        42
Count Time:      0 02:30:00.00 sec
Real Time:       0 02:30:01.21 sec
Dead Time:       0.0%
```

Verified by:

27th 30 Jun 97

>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<

```

Sample Count Time: 26-JUN-1997 10:51:38.49
Decayed to: 26-JUN-1997 10:51:38.49
Standard Deviations: 2
Analysis Library: ENVGEA
Analyst: SEH
Background Subtract: DKA300:[SPEC.GEA3]3GBACK

```

~~INT-SD-WM-DP-245, REV. 0~~

HNF-SD-WM-DP-255, REV. 0

>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<

```

>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<
Date of last energy calibration: 11-MAR-1994 11:47:01.11
Date of last efficiency calibration: 15-MAR-1994 10:28:40.20
*****

```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	84.90	63	1.86	170.31	167	8	85.4		TH-228	0.160
0	661.89*	56	1.44	1323.96	1318	13	98.8		CS-137	4.199E-03
0	1119.61*	44	2.42	2239.45	2232	14	57.3			
0	1312.97	15	2.92	2626.30	2620	12	116.6			
0	1441.41	9	1.01	2883.29	2877	9	126.3			

Total number of lines in spectrum 5 HNF-SD-WM-DP-255, REV. 0
Number of unidentified lines 2
Number of lines tentatively identified by NID 3 60.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma Error	2-Sigma	Flags
			Uncorrected	Decay Corr				
			uCi/L	uCi/L			%Error	
CS-137	30.00Y	1.00	4.199E-03	4.199E-03	4.147E-03	99.78		
TH-228	1.91Y	1.00	1.603E-01	1.603E-01	1.368E-01	85.35		
Total Activity :			1.645E-01	1.645E-01				

6/30/97

Grand Total Activity : 1.645E-01 1.645E-01

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)	HNF-SD-WM-DP-255, REV. 0
BE-7	90.	477.59	2.2077E-02	
NA-22	28.	1274.53	3.0922E-03	
NA-24	18.	1368.55	2.8608E-03	
K-40	374.	1460.75	1.0865E-01	
CR-51	136.	320.08	2.0220E-02	
MN-54	35.	834.83	2.3824E-03	
CO-56	42.	846.76	2.6171E-03	
CO-57	226.	122.06	1.8016E-03	
CO-58	59.	810.78	2.9611E-03	
FE-59	35.	1099.25	5.3328E-03	
CO-60	23.	1332.50	2.9307E-03	
SE-75	164.	264.66	3.3185E-03	
SR-85	156.	514.01	3.2871E-03	
Y-88	11.	1836.06	2.7087E-03	
NB-94	47.	871.09	2.8100E-03	
ZRNB-95	53.	724.18	5.8075E-03	
RU-103	90.	497.08	2.6027E-03	
RURH-106	62.	621.93	4.8465E-02	
AG-108m	55.	722.94	2.8289E-03	
CD-109	163.	88.03	5.1014E-02	
AG-110M	67.	657.76	2.7447E-03	
SN-113	119.	391.69	3.4793E-03	
TE-123m	231.	159.00	1.8730E-03	
SB-124	74.	602.73	2.5882E-03	
SB-125	116.	427.89	8.0482E-03	
TE-125m	208.	109.27	5.6412E-01	
I-131	120.	364.48	2.6264E-03	
CS-134	75.	604.70	2.6201E-03	
BA-140	91.	537.31	1.0410E-02	
LA-140	14.	1596.21	2.8963E-03	
CEPR-144	253.	133.51	2.8774E-02	
EU-152	23.	1408.01	1.4484E-02	
EU-154	28.	1274.51	8.9837E-03	
EU-155	198.	105.31	7.3433E-03	
HG-203	197.	279.20	2.6974E-03	
TL-208	165.	277.36	3.1863E-02	
BI-212	57.	727.18	3.9494E-02	
PB-212	265.	238.63	5.1953E-03	
BI-214	142.	609.31	7.7574E-03	
PB-214	169.	351.92	2.6897E-02	
RA-224	259.	240.99	5.7407E-02	
RA-226	228.	186.10	4.8968E-02	
AC-228	87.	911.21	1.4610E-02	
TH-229	161.	88.47	7.3411E-03	
PA-233	186.	312.17	6.0270E-03	
UTH-233	197.	245.34	1.8729E+00	
PA-234M	46.	1001.03	5.3365E-03	
TH-234	161.	63.29	1.0509E-01	
U-235	240.	185.71	3.0468E-03	
NP-237	215.	86.48	1.7485E-02	
NP-239	197.	106.12	7.0463E-03	

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : WL18873-BLK

Acquisition date : 26-JUN-1997 10:51:38

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)	HNF-SD-WM-DP-255, REV. 0
PU-239	208.	129.30	2.2775E+01	
AM-241	173.	59.54	1.9209E-02	
AM-243	196.	74.67	4.7987E-03	

Wt 7-14-97
~~HNF-SD-WM-DP-245, REV. 0~~

 * 222-S Laboratory Counting Room 26-JUN-1997 16:41:39.59

>>>>>>> SAMPLE INFORMATION <<<<<<<<<<

Worklist #: 18873
 Sample ID: S97T001198-SAM
 Sample Size: 5.00000E-03 L
 Dilution Factor: 1.00000E+00

Removed by:

K

>>>>>>> COUNT INFORMATION <<<<<<<<<<

Detector ID: GEA3
 File Number: dka300:[spec.GEA3]3g3359.cnf
 Geometry: 42
 Count Time: 0 02:30:00.00 sec
 Real Time: 0 02:30:01.24 sec
 Dead Time: 0.0%

Verified by:

AKH 30 Jun 97

>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<

Sample Count Time: 26-JUN-1997 14:11:02.96
 Decayed to: 26-JUN-1997 14:11:02.96
 Standard Deviations: 2
 Analysis Library: ENVGEA
 Analyst: SEH
 Background Subtract: DKA300:[SPEC.GEA3]3GBACK

W227-14-97
~~HNF-SD-WM-DP-245, REV. 0~~

HNF-SD-WM-DP-255, REV. 0

>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<

Date of last energy calibration: 11-MAR-1994 11:47:01.11
 Date of last efficiency calibration: 15-MAR-1994 10:28:40.20

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	59.41	165	1.11	119.36	115	9	39.5		AM-241	4.970E-02
0	661.87*	225	1.46	1323.92	1316	13	28.1		CS-137	1.698E-02
0	911.05*	30	1.02	1822.27	1816	12	96.7			

Summary of Nuclide Activity
Sample ID : S97T001198-SAM

~~HNF-SD-WM-DP-245, REV. 0~~ Page : 2
~~Wtd 7/0-11~~
Acquisition date : 26-JUN-1997 14:11:02

Total number of lines in spectrum 3
Number of unidentified lines 0
Number of lines tentatively identified by NID 3 100.00%
HNF-SD-WM-DP-255, REV. 0

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.00	1.698E-02	1.698E-02	0.476E-02	28.06	
AM-241	432.20Y	1.00	4.970E-02	4.970E-02	1.961E-02	39.46	
Total Activity :			6.668E-02	6.668E-02			

Grand Total Activity : 6.668E-02 6.668E-02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)	HNF-SD-WM-DP-255, REV. 0
BE-7	114.	477.59	2.4739E-02	
NA-22	33.	1274.53	3.3164E-03	
NA-24	25.	1368.55	3.2899E-03	
K-40	363.	1460.75	1.0715E-01	
CR-51	150.	320.08	2.1233E-02	
MN-54	52.	834.83	2.8413E-03	
CO-56	56.	846.76	2.9667E-03	
CO-57	222.	122.06	1.7848E-03	
CO-58	46.	810.78	2.6430E-03	
FE-59	22.	1099.25	4.2912E-03	
CO-60	40.	1332.50	3.7464E-03	
SE-75	209.	264.66	3.7230E-03	
SR-85	137.	514.01	3.0881E-03	
Y-88	10.	1836.06	2.6191E-03	
NB-94	41.	871.09	2.6450E-03	
ZRNB-95	52.	724.18	5.7494E-03	
RU-103	92.	497.08	2.6247E-03	
RURH-106	69.	621.93	5.0702E-02	
AG-108m	50.	722.94	2.7218E-03	
CD-109	189.	88.03	5.4691E-02	
AG-110M	64.	657.76	2.6982E-03	
SN-113	126.	391.69	3.5780E-03	
TE-123m	223.	159.00	1.8399E-03	
SB-124	64.	602.73	2.4293E-03	
SB-125	102.	427.89	7.5701E-03	
TE-125m	235.	109.27	5.9755E-01	
I-131	137.	364.48	2.7908E-03	
CS-134	72.	604.70	2.5691E-03	
BA-140	89.	537.31	1.0274E-02	
LA-140	17.	1596.21	3.1226E-03	
CEPR-144	249.	133.51	2.8551E-02	
EU-152	28.	1408.01	1.6029E-02	
EU-154	33.	1274.51	9.6295E-03	
EU-155	220.	105.31	7.7376E-03	
HG-203	196.	279.20	2.6927E-03	
TL-208	190.	277.36	3.4060E-02	
BI-212	69.	727.18	4.3167E-02	
PB-212	267.	238.63	5.2070E-03	
BI-214	146.	609.31	7.8660E-03	
PB-214	177.	351.92	2.7489E-02	
RA-224	249.	240.99	5.6362E-02	
RA-226	230.	186.10	4.9200E-02	
AC-228	91.	911.21	1.4927E-02	
TH-228	210.	84.37	1.7732E-01	
TH-229	183.	88.47	7.8109E-03	
PA-233	149.	312.17	5.4270E-03	
UTH-233	203.	245.34	1.9027E+00	
PA-234M	34.	1001.03	4.6096E-03	
TH-234	181.	63.29	1.1137E-01	
U-235	221.	185.71	2.9284E-03	
NP-237	200.	86.48	1.6905E-02	

Sample ID : S97T001198-SAM

Acquisition date : 26-JUN-1997 14:11:02

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
NP-239	219.	106.12	7.4054E-03 HNF-SD-WM-DP-255, REV. 0
PU-239	245.	129.30	2.4662E+01
AM-243	222.	74.67	5.0866E-03

MT-27-14-97
~~HNF-SD-WM-DP-245, REV. 0~~

```

*****
* 222-S Laboratory Counting Room 26-JUN-1997 19:31:52.51
*****
>>>>>>> SAMPLE INFORMATION <<<<<<<<<
Worklist #: 18873
Sample ID: S97T1198-DUP
Sample Size: 5.00000E-03 L
Dilution Factor: 1.00000E+00

>>>>>>> COUNT INFORMATION <<<<<<<<<
Detector ID: GEA3
File Number: dka300:[spec.GEA3]3g3361.cnf
Geometry: 42
Count Time: 0 02:30:00.00 sec
Real Time: 0 02:30:01.24 sec
Dead Time: 0.0%

>>>>>>> ANALYSIS INFORMATION <<<<<<<<<
Sample Count Time: 26-JUN-1997 17:01:13.73
Decayed to: 26-JUN-1997 17:01:13.73
Standard Deviations: 2
Analysis Library: ENVGEA
Analyst: VR
Background Subtract: DKA300:[SPEC.GEA3]3GBACK

>>>>>>> CALIBRATION INFORMATION <<<<<<<<<
Date of last energy calibration: 11-MAR-1994 11:47:01.11
Date of last efficiency calibration: 15-MAR-1994 10:28:40.20
*****

```

Removed by:

Verified by:

~~MAE7-14-97~~
~~HNF-SD-WM-DP-245, REV. 0~~
 HNF-SD-WM-DP-255, REV. 0

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	59.61	190	1.18	119.77	115	12	41.1		AM-241	5.703E-02
0	661.97*	224	1.67	1324.12	1318	15	29.7		CS-137	1.689E-02

Summary of Nuclide Activity
Sample ID : S97T1198-DUP

~~HNF-SD-WM-DP-245, REV. 0~~ ^{inst 64-14-97} Page : 2
Acquisition date : 26-JUN-1997 17:01:13

Total number of lines in spectrum 2 HNF-SD-WM-DP-255, REV. 0
Number of unidentified lines 0
Number of lines tentatively identified by NID 2 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.00	1.689E-02	1.689E-02	0.502E-02	29.73	
AM-241	432.20Y	1.00	5.703E-02	5.703E-02	2.347E-02	41.15	
Total Activity :			7.392E-02	7.392E-02			

Grand Total Activity : 7.392E-02 7.392E-02

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)	HNF-SD-WM-DP-255, REV. 0
BE-7	111.	477.59	2.4392E-02	
NA-22	27.	1274.53	3.0205E-03	
NA-24	23.	1368.55	3.1315E-03	
K-40	400.	1460.75	1.1228E-01	
CR-51	159.	320.08	2.1814E-02	
MN-54	42.	834.83	2.5696E-03	
CO-56	54.	846.76	2.9306E-03	
CO-57	237.	122.06	1.8425E-03	
CO-58	44.	810.78	2.5798E-03	
FE-59	30.	1099.25	4.9424E-03	
CO-60	29.	1332.50	3.2267E-03	
SE-75	194.	264.66	3.5891E-03	
SR-85	153.	514.01	3.2503E-03	
Y-88	13.	1836.06	2.9123E-03	
NB-94	34.	871.09	2.4199E-03	
ZRNB-95	70.	724.18	6.6262E-03	
RU-103	82.	497.08	2.4909E-03	
RURH-106	60.	621.93	4.7431E-02	
AG-108m	63.	722.94	3.0328E-03	
CD-109	209.	88.03	5.7449E-02	
AG-110M	72.	657.76	2.8449E-03	
SN-113	135.	391.69	3.6954E-03	
TE-123m	240.	159.00	1.9067E-03	
SB-124	72.	602.73	2.5595E-03	
SB-125	121.	427.89	8.2070E-03	
TE-125m	203.	109.27	5.5675E-01	
I-131	145.	364.48	2.8691E-03	
CS-134	76.	604.70	2.6436E-03	
BA-140	77.	537.31	9.6267E-03	
LA-140	14.	1596.21	2.8573E-03	
CEPR-144	203.	133.51	2.5873E-02	
EU-152	22.	1408.01	1.4196E-02	
EU-154	27.	1274.51	8.7637E-03	
EU-155	187.	105.31	7.1451E-03	
HG-203	181.	279.20	2.5960E-03	
TL-208	181.	277.36	3.3263E-02	
BI-212	66.	727.18	4.2422E-02	
PB-212	292.	238.63	5.4385E-03	
BI-214	156.	609.31	8.1176E-03	
PB-214	209.	351.92	2.9783E-02	
RA-224	246.	240.99	5.6013E-02	
RA-226	239.	186.10	5.0066E-02	
AC-228	78.	911.21	1.3880E-02	
TH-228	214.	84.37	1.7895E-01	
TH-229	205.	88.47	8.2405E-03	
PA-233	181.	312.17	5.9407E-03	
UTH-233	228.	245.34	2.0116E+00	
PA-234M	46.	1001.03	5.3143E-03	
TH-234	183.	63.29	1.1187E-01	
U-235	230.	185.71	2.9861E-03	
NP-237	224.	86.48	1.7822E-02	

Sample ID : S97T1198-DUP

Acquisition date : 26-JUN-1997 17:01:13

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
NP-239	191.	106.12	6.9359E-03
PU-239	232.	129.30	2.4033E+01
AM-243	207.	74.67	4.9151E-03

HNF-SD-WM-DP-255, REV. 0

MS 7-14-97
~~HNF-SD-WM-DP-245, REV. 0~~

LABCORE Completed Worklist Report for Worklist# 18756

Analyst: krq

Instrument: AB12

Book# _____

Method: _____ Rev/Mod _____

HNF-SD-WM-DP-255, REV. 0

Worklist Comment: T204, @SR90-01 S.S. by Ludlum. Std: 1.0mL skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		@SR90-01 SR90-01 SOLID		1.67E-03	1.72E-3	102.994 % Recovery	
1 STD	0		@SR90-01 SR90-01C SOLID		100	8.87E+01	88.700 % Recovery	
1 STD	0		@SR90-01 SR90-01E SOLID		1.00	1.60E+00	1.600 % Ct. Error	
2 BLNK-PREP	0		@SR90-01 SR90-01 SOLID		1	2.63E-3	0.003 uCi/g	
2 BLNK-PREP	0		@SR90-01 SR90-01C SOLID		100	9.09E+01	90.900 % Recovery	
2 BLNK-PREP	0		@SR90-01 SR90-01E SOLID		1.00	3.84E+01	38.400 uCi/g	
3 BLNK/BKG	0		@SR90-01 SR90-01 SOLID		1	3.00E+00	3.000 BLNK/BKG	
4 SAMPLE	S97T001198	0 F	@SR90-01 SR90-01 SOLID		N/A	3.46E-03	1.07e-003 uCi/g	
4 SAMPLE	S97T001198	0 F	@SR90-01 SR90-01C SOLID		N/A	8.73E+01	% Recovery	
4 SAMPLE	S97T001198	0 F	@SR90-01 SR90-01E SOLID		N/A	3.23E+01	% Ct. Error	
5 DUP	S97T001198	0 F	@SR90-01 SR90-01 SOLID		3.46E-3	5.74E-3	49.565 RPD	
5 DUP	S97T001198	0 F	@SR90-01 SR90-01C SOLID		100	8.67E+01	86.700 % Recovery	
5 DUP	S97T001198	0 F	@SR90-01 SR90-01E SOLID		1.00	2.28E+01	22.800 % Ct. Err	

Final page for worklist# 18756

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

 23 June 97
Reviewer Signature _____ Date _____

Sample/Dup RPD is high, however, count rates for both are very low with high counting uncertainties. Results will be accepted. s.a.e.

LABCORE Data Entry Template for Worklist# 18756

Analyst: *ABC* Instrument: AB00 12 Book# 75B56
Method: LA-220-101 Rev/Mod _____ HNF-SD-WM-DP-255, REV. 0
Worklist Comment: T204, @SR90-01 S.S. by Ludlum. Std: 1.0mL skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@SR90-01	SOLID		
2 BLNK-PREP			@SR90-01	SOLID		
3 BLNK/BKG			@SR90-01	SOLID		
4 SAMPLE	S97T001198	0 F	@SR90-01	SOLID	97000261	T-204
Analytes Requested: SR90-01 , SR90-01C, SR90-01E						
5 DUP	S97T001198	0 F	@SR90-01	SOLID		

Final page for worklist # 18756

[Signature]
Analyst Signature

9/21/97
Date

[Signature]
Analyst Signature

6-23-97
Date

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: STD1

Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1) LIQUIDS

				STANDARD
Type	DETECTOR NUMBER	12	CARRIER ADDED in mL (CVA)	1.000
STD	TOTAL COUNTS (TC)	15048	GROSS WEIGHT (W2)	7.1613
Work List	COUNT TIME in MINUTES (CT)	10	TARE WEIGHT (W1)	7.0726
18756	BACKGROUND in cpm (BKG)	2.6	NET WEIGHT (W3)	0.0887
Test Code	SAMPLE VOLUME in mL (SS)	1.000	DELTA TIME (HOURS) (DT)	5.17
@SR90-01	DILUTION FACTOR (DF)	1		
Matrix	DIGEST DILUTION FACTOR DDF	1		
LIQUID	SAMPLE COUNT RATE (Rs)	1502.20	SR-90 EFFICIENCY FACTO (C1)	0.4180
Batch Number	CRITICAL LEVEL (Le)	0.97	Y-90 EFFICIENCY FACTOR (C2)	0.4660
97002839	TIME OF SEPARATION (ST)	02:35	Rmax	N/A
Rein	DATE OF SEPARATION (SD)	06/21/97	DETECTION LIMIT (Ld)	2.03
0	TIME OF COUNT (TOC)	07:45	Sr-89/90 CONC. in µCi/L	1.7210E+00
Sample Prep	DATE OF COUNT (DOC)	06/21/97		
N/A	STANDARD BOOK #	75B56		
Sample	STANDARD VALUE in µCi/mL	1.6688E-03		
WL18756				
Instrument Code				
WB27811	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)			
Prepared By	Sr-89/90 CONC in µCi/mL REPLACE RS WITH RMAX IF RS<=Lc AND RS>=0 OR REPLACE RS WITH Lc IF RS<0			
SEH	RS*DF*DDF*1000/((C1+C2*(1-e to the power of ((-natural log 2)/(64.2*DT))))*SS*REC*2220000)			
Chemist	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))			
SAC	Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)			
Analyst	Percent Carrier Recovery = (Net Weight / Expected weight) * 100			
KRQ	NOTE: Expected weight = CVA * 0.1			
Data Complete	Detection Levels and Less Than Values are determined from Procedure LA-508-002.			
06/23/97	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100			
Analysis Date				
06/21/97	Sr-89/90 CONCENTRATION	1.72E-03	µCi/mL	DETECTION LEVEL
Analysis Time				
05:30 AM	RELATIVE COUNTING ERROR	1.6%		2.33E-06
Sample Point				µCi/L
T-204	PERCENT CARRIER RECOVERY	88.7%		

Analyst:	KRQ	Date:	23-Jun-97
Signature of Chemist:	SAC	Date:	23 Jun 97

STANDARD.WB1 REV 2.0

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WORKBOOK PAGE: BLANK2

LA-220-101 / D-1 Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)

				BLNK-PREP		
Type	DETECTOR NUMBER	12	CARRIER ADDED in mL	(CVA)	1.000	
BLNK-PREP	TOTAL COUNTS (TC)	78	GROSS WEIGHT (W2)		7.0746	
Workfile	COUNT TIME in MINUTES (CT)	10	TARE WEIGHT (W1)		6.9837	
18756	BACKGROUND in cpm (BKG)	2.6	NET WEIGHT (W3)		0.0909	
test Code	SAMPLE VOLUME in mL (SS)	1.000	DELTA TIME (HOURS) (DT)		5.83	
@SR90-01	DILUTION FACTOR (DF)	1				
Matrix	DIGEST FACTOR (g/L) (D g/L)	2.194				
SOLID	SAMPLE COUNT RATE (Rs)	5.20	SR-90 EFFICIENCY FACTOR (C1)		0.4180	
Batch Number	CRITICAL LEVEL (Lc)	0.97	Y-90 EFFICIENCY FACTOR (C2)		0.4660	
97002839	TIME OF SEPARATION (ST)	02:35	Rmax		N/A	
Rebin	DATE OF SEPARATION (SD)	06/21/97	DETECTION LIMIT (Ld)		2.03	
0	TIME OF COUNT (TOC)	08:25	Sr-89/90 CONC in µCi/g		2.6308E-03	
Sample Prep	DATE OF COUNT (DOC)	06/21/97				
N/A						
Sample						
WL18756						
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)					
WB27811	Sr-89/90 CONC in µCi/g Replace RS with RMAX if RS=Lc and RS>0 or Replace RS with Lc if RS<0					
Prepared By	RS*1000*DF/((C1+C2)*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*(Dg/L)*REC*2220000)					
SEH	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))					
Chemist	Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96					
SAC	Percent Carrier Recovery = (Net Weight / Expected weight) * 100					
Analyst	NOTE: Expected weight = CVA * 0.1					
KRQ	Detection Levels and Less Than Values are determined from Procedure LA-508-002.					
Date Completed	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100					
06/23/97						
Analysis Date						
06/21/97	Sr-89/90 CONCENTRATION	2.63E-03	µCi/g	DETECTION LEVEL 1.03E-03 µCi/g		
Analysis Time						
06:30 AM	RELATIVE COUNTING ERROR	38.4%				
Sample Point						
T-204	PERCENT CARRIER RECOVERY	90.9%				

Analyst:	KRQ	Date:	23-Jun-97
Signature of Chemist:	SAC	Date:	23 Jun 97

BLANK.WB1 REV 2.0

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WORKBOOK PAGE: SAM4

Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)

					SAMPLE	
TYPE	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	92	GROSS WEIGHT	(W2)	7.1648
Worklist	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.0775
18756	BACKGROUND in cpm	(BKG)	2.6	NET WEIGHT	(W3)	0.0873
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)	6.17
@SR90-01	DILUTION FACTOR	DF	1			
Matrix	DIGEST FACTOR (g/L)	(D g/L)	2.194			
SOLID	SAMPLE COUNT RATE	(Rs)	6.60	SR-90 EFFICIENCY FACTOR	(C1)	0.4180
Batch Number	CRITICAL LEVEL	(Lc)	0.97	Y-90 EFFICIENCY FACTOR	(C2)	0.4660
97002839	TIME OF SEPARATION	(ST)	02:35	Rmax		N/A
ReRun	DATE OF SEPARATION	(SD)	06/21/97	DETECTION LIMIT	(Ld)	2.03
0	TIME OF COUNT	(TOC)	08:45	Sr-89/90 CONC in µCi/g		3.4645E-03
Sample Prep	DATE OF COUNT	(DOC)	06/21/97			
FUSION01						
Sample #						
S97T001198						
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)					
WB27811	Sr-89/90 CONC in µCi/g Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0					
Prepared By	RS*1000*DF/((C1+C2*(1-e to the power of ((-natural log 2)/(64.2*DT))))*SS*(Dg/L)*REC*2220000)					
SEH	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))					
Chemist	Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96					
SAC	Percent Carrier Recovery = (Net Weight / Expected weight) * 100					
Analyst	NOTE: Expected weight = CVA * 0.1					
KRQ	Detection Levels and Less Than Values are determined from Procedure LA-508-002.					
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100					
06/23/97						DETECTION LEVEL 1.07E-03 µCi/g
Analysis Date						
06/21/97	Sr-89/90 CONCENTRATION	3.46E-03			µCi/g	
Analysis Time						
05:30 AM	RELATIVE COUNTING ERROR	32.3%				
Sample Point						
T-204	PERCENT CARRIER RECOVERY	87.3%				

Analyst:	KRQ	Date:	23-Jun-97
Signature of Chemist:	SAC	Date:	23 Jun 97

SAMPLE.WB1 REV 2.0

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WORKBOOK PAGE: DUP5

Sr-89/90 : LA-220-101 (D-1), 102 (E-3), 104 (D-1)

					DUP
Type	DETECTOR NUMBER		12	CARRIER ADDED in mL	(CVA) 1.000
DUP	TOTAL COUNTS	(TC)	135	GROSS WEIGHT	(W2) 7.1332
Workfile	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1) 7.0465
18756	BACKGROUND in cpm	(BKG)	2.6	NET WEIGHT	(W3) 0.0867
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT) 7.42
@SR90-01	DILUTION FACTOR	DF	1		
Matrix	DIGEST FACTOR (g/L)	(D g/L)	2.174		
SOLID	SAMPLE COUNT RATE	(Rs)	10.90	SR-90 EFFICIENCY FACTOR	(C1) 0.4180
Batch Number	CRITICAL LEVEL	(Le)	0.97	Y-90 EFFICIENCY FACTOR	(C2) 0.4660
97002839	TIME OF SEPARATION	(ST)	02:35	Rmax	N/A
ReRun	DATE OF SEPARATION	(SD)	06/21/97	DETECTION LIMIT	(Ld) 2.03
0	TIME OF COUNT	(TOC)	10:00	Sr-89/90 CONC in µCi/g	5.7395E-03
Sample Prep	DATE OF COUNT	(DOC)	06/21/97		
FUSION01					
Sample					
S97T001198					
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)				
WB27811	Sr-89/90 CONC in µCi/g Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0				
Prepared By	RS*1000*DF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))**SS*(Dg/L)*REC*2220000)				
SEH	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))				
Chemist	Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96				
SAC	Percent Carrier Recovery = (Net Weight / Expected weight) * 100				
Analyst	NOTE: Expected weight = CVA * 0.1				
KRQ	Detection Levels and Less Than Values are determined from Procedure LA-508-002.				
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100				
06/23/97					
Analysis Date					
06/21/97	Sr-89/90 CONCENTRATION	5.74E-03	µCi/g	DETECTION LEVEL 1.07E-03 µCi/g	
Analysis Time					
05:30 AM	RELATIVE COUNTING ERROR	22.8%			
Sample Point					
T-204	PERCENT CARRIER RECOVERY	86.7%			

Analyst:	KRQ	Date:	23-Jun-97
Signature of Chemist:	SAC	Date:	23 Jun 97

SAMPLE.WB1 REV 2.0

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DISTRIBUTION SHEET

DISTRIBUTION SHEET			
To Distribution	From Production Planning & Control	Page 1 of 1	
		Date: 07/24/97	
Project Title/Work Order HNF-SD-WM-DP-255, Rev. 0 "Tank 241-T-204, Core 188 Analytical Results for the Final Report"		EDT NO.: EDT-620412	
		ECN NO.: N/A	
Name	MSIN	Text With all Attach	EDT/ECN ONLY
<u>DE&S Hanford, Inc.</u>			
J. E. Meacham	S7-14	X	
<u>U.S. Department of Energy, RL</u>			
C. A. Babel	S7-54	X	
<u>Lockheed Martin Hanford Corp.</u>			
J. N. Appel	G3-21		X
K. G. Carothers	R2-11		X
T. J. Kelley	S7-21		X
M. J. Kupfer	H5-49		X
J. B. Schaffer	R2-12		X
L. A. Stauffer	R2-11		X
J. A. Voogd	H5-03		X
W. D. Winkelman	R2-12	X	
A. E. Young	R1-10	X	
<u>Lockheed Martin Services, Inc.</u>			
Central Files	A3-88	1	
<u>Los Alamos Technical Associates</u>			
M. T. Ellsworth	T6-06		X*
<u>Pacific Northwest National Laboratory</u>			
S. J. Harris	K7-22	X	
K. L. Silvers	K9-08		X
<u>Waste Management of Hanford, Inc.</u>			
D. C. Hetzer	S6-31		X
J. L. Nuzum	T6-06	X	
K. L. Powell	T6-04		X
C. M. Seidel	T6-04	X	
LTIC	T6-03		X
<u>SGN Eurisys Services Corp.</u>			
B. A. Higley	H5-27		X
<u>Defense Nuclear Federal Safety Board</u>			
Rich Tontodonato		X	
625 Indiana Ave. N. W.			
Washington D.C. 20004			

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