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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

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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

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.

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

Corewell ID	Segment	Date Sampled	Date Received	Date Extruded	Inches Extruded*	Liquid Recovered (g)	Solids Recovered (g)	Sample Description
Field Blank	Field Blank	4/11/97	4/15/97	4/21/97	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	150.3--Lower Half 161.2--Upper Half	Solids were black and resembled a wet sludge slurry.
97-61	2	4/11/97	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	4/11/97	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	4/11/97	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	4/11/97	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.
97-065	6	4/11/97	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.
97-066	7	4/11/97	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	4/11/97	4/15/97	4/18/97	19.0	0.0	193.1--Lower Half 159.5--Upper Half	Solids were black and resembled a dry sludge.
97-68	9	4/11/97	4/15/97	4/21/97	17.0	0.0	153.7--Lower Half 173.9--Upper Half	Solids were black and resembled a dry sludge.
97-69	10	4/11/97	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

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

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- 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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Attachment 1

T-204
Core:188
Seg: Field Blank
S97T000568

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

T-204
Core:188
Seg: 1
S97T000451

Attachment 1

T-204
Core:188
Seg: 2
S97T000534

Attachment 1

T-204
Core:188
Seg: 3
S97T000535

Attachment 1

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

T-204
Core:188
Seg: 4
S97T000536

Attachment 1

Upper
Half

HOMGNZ01

S97T000573

Lower
Half

HOMGNZ01
BLKDEND1

S97T000572

SAMPANT1
DOSE-01
DSC-01
DSC-02
TGA-01

S97T000580

ARCHIV01

S97T000581

SAMPANT1
DOSE-01
DSC-01
DSC-02
TGA-01

S97T000576

ARCHIV01

S97T000579

FUSION01
@ALPHA01
DOSE-02

S97T000590

T-204
Core:188
Seg: 5
S97T000565

Attachment 1

T-204
Core:188
Seg: 6
S97T000564

Attachment 1

T-204
Core:188
Seg: 7
S97T000563

Attachment 1

22

T-204
Core:188
Seg: 8
S97T000566

Attachment 1

T-204
Core:188
Seg: 9
S97T000567

Attachment 1

T-204
Core:188
Seg: 10
S97T000569

Attachment 1

Upper
Half

S97T000632

Lower
Half

S97T000614

S97T000638

S97T000644

S97T000608

S97T000620

S97T000626

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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

T-204
Core:188
Composite:Solids

Attachment 1

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

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

SAMPLE DATA SUMMARY

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

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Table 2. Data Summary Table
T-204

CORE NUMBER: 188
SEGMENT #: Core Composite

SEGMENT PORTION: Core Composite

Sample#	R	A#	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
S97T001197			Bulk 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
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
S97T001197			% Water by TGA on Perkin Elmer	%	98.59	n/a	75.87	74.32	75.09	2.06	n/a	n/a	n/a
S97T001197			TIC 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
S97T001197			TOC by Persulfate/Coulometry	ug/g	101.0	1.800	3.46e+02	278.0	312.0	21.8	83.30	40.00	n/a
S97T001198			F Strontium-89/90 High Level	uci/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
S97T001198			F Cobalt-60 by GEA	uci/g	100.0	<2.93e-06	<1.71e-03	<1.48e-3	n/a	n/a	n/a	2.00e-03	n/a
S97T001198			F Cesium-137 by GEA	uci/g	100.9	<4.20e-06	7.75e-03	7.77e-03	7.76e-03	0.26	n/a	n/a	28.1
S97T001198			F Europium-154 by GEA	uci/g	n/a	<8.98e-06	<4.39e-03	<4.03e-3	n/a	n/a	n/a	4.00e-03	n/a
S97T001198			F Europium-155 by GEA	uci/g	n/a	<7.34e-06	<3.53e-03	<3.29e-3	n/a	n/a	n/a	4.00e-03	n/a
S97T001198			F Americium-241 by GEA	uci/g	n/a	<1.92e-05	2.26e-02	2.62e-02	2.44e-02	14.8	n/a	n/a	39.5
S97T001199			A Silver -ICP-Acid Digest	ug/g	120.0	<1.00e-02	< 2.860	<2.81e0	n/a	n/a	127.0	2.860	n/a
S97T001199			A Aluminium -ICP-Acid Digest	ug/g	102.8	1.69e-01	52.90	54.30	53.60	2.61	103.0	14.30	n/a
S97T001199			A Arsenic -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
S97T001199			A Boron -ICP-Acid Digest	ug/g	99.20	1.19e-01	67.20	123.0	95.10	58.7	106.4	14.30	n/a
S97T001199			A Barium -ICP-Acid Digest	ug/g	101.2	<5.00e-02	< 14.30	<1.40e1	n/a	n/a	101.2	14.30	n/a
S97T001199			A Beryllium -ICP-Acid Digest	ug/g	107.0	<5.00e-03	< 1.430	<1.40e0	n/a	n/a	103.4	1.430	n/a
S97T001199			A Bismuth -ICP-Acid Digest	ug/g	99.20	<1.00e-01	5.11e+04	5.19e+04	5.15e+04	1.55	181.2	28.60	n/a
S97T001199			A Calcium -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
S97T001199			A Cadmium -ICP-Acid Digest	ug/g	99.20	<5.00e-03	< 1.430	<1.40e0	n/a	n/a	101.6	1.430	n/a
S97T001199			A Cerium -ICP-Acid Digest	ug/g	104.6	<1.00e-01	61.60	64.30	62.95	4.29	107.0	28.60	n/a
S97T001199			A Cobalt -ICP-Acid Digest	ug/g	101.6	<2.00e-02	6.120	6.920	6.520	12.3	104.4	5.720	n/a
S97T001199			A Chromium -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
S97T001199			A Copper -ICP-Acid Digest	ug/g	95.40	1.70e-02	7.250	6.420	6.835	12.1	95.20	2.860	n/a
S97T001199			A Iron -ICP-Acid Digest	ug/g	98.00	<5.00e-02	3.86e+03	4.21e+03	4.04e+03	8.67	134e+03	14.30	n/a
S97T001199			A Potassium -ICP-Acid Digest	ug/g	92.40	<5.00e-01	6.09e+03	6.15e+03	6.12e+03	0.98	138.8	143.0	n/a
S97T001199			A 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
S97T001199			A 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
S97T001199			A 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
S97T001199			A 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
S97T001199			A Molybdenum -ICP-Acid Digest	ug/g	99.60	<5.00e-02	< 14.30	<1.40e1	n/a	n/a	101.4	14.30	n/a
S97T001199			A Sodium -ICP-Acid Digest	ug/g	102.8	3.36e-01	3.17e+04	3.19e+04	3.18e+04	0.63	208.0	28.60	n/a
S97T001199			A Neodymium -ICP-Acid Digest	ug/g	101.6	<1.00e-01	< 28.60	<2.81e1	n/a	n/a	101.0	28.60	n/a
S97T001199			A Nickel -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
S97T001199			A Phosphorus -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
S97T001199			A Lead -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
S97T001199			A Sulfur -ICP-Acid Digest	ug/g	117.6	1.300	< 28.60	<2.81e1	n/a	n/a	97.20	28.60	n/a
S97T001199			A Antimony -ICP-Acid Digest	ug/g	96.40	<6.00e-02	30.50	36.80	33.65	18.7	97.00	17.20	n/a
S97T001199			A Silicon -ICP-Acid Digest	ug/g	160.4	2.450	1.52e+03	1.47e+03	1.50e+03	3.34	108.0	14.30	n/a
S97T001199			A Samarium -ICP-Acid Digest	ug/g	102.6	<1.00e-01	< 28.60	<2.81e1	n/a	n/a	98.60	28.60	n/a
S97T001199			A 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
S97T001199			A 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
S97T001199			A 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

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Sample#	R	A#	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	W		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	W		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	W		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	W		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	W		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	W		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	W		Sulfate by IC-Dionex 4000/4500	ug/g	100.0	<1.38e-01	4.14e+02	<3.12e2	n/a	n/a	n/a	312.9	n/a
S97T001200	W		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

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

SEGMENT PORTION: Field Blank

Sample#	R A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000647		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		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
S97T000647		Specific Gravity	Sp.g.	100.5	n/a	1.006	1.203	1.105	17.8	n/a	1.00e-02	n/a
S97T000647		% Water by TGA using Mettler	%	99.58	n/a	1.01e+02	100.3	100.5	0.35	n/a	n/a	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	Aluminium-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	<1.00e-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	1.00e-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	<2.00e-02	<2.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S97T000647	D	Iron-ICP-Acid Dil.	ug/mL	93.40	<5.00e-02	1.83e-01	1.81e-01	1.82e-01	1.10	n/a	1.00e-01	n/a
S97T000647	D	Potassium-ICP-Acid Dil.	ug/mL	98.80	<5.00e-01	<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	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a
S97T000647	D	Lithium-ICP-Acid Dil.	ug/mL	99.00	<1.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	n/a	2.00e-02	n/a
S97T000647	D	Magnesium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-01	3.900	3.890	3.895	0.26	n/a	2.00e-01	n/a
S97T000647	D	Manganese-ICP-Acid Dil.	ug/mL	98.60	<1.00e-02	8.95e-02	8.90e-02	8.92e-02	0.56	n/a	2.00e-02	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	1.00e-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	<6.00e-02	<1.20e-01	<1.20e-1	n/a	n/a	n/a	1.20e-01	n/a
S97T000647	D	Selenium-ICP-Acid Dil.	ug/mL	95.00	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Silicon-ICP-Acid Dil.	ug/mL	99.00	<5.00e-02	5.350	5.350	5.350	0.00	n/a	1.00e-01	n/a
S97T000647	D	Samarium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-01	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a
S97T000647	D	Strontium-ICP-Acid Dil.	ug/mL	99.80	<1.00e-02	8.86e-02	8.81e-02	8.83e-02	0.57	n/a	2.00e-02	n/a
S97T000647	D	Titanium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-02	<2.00e-02	<2.00e-2	n/a	n/a	n/a	2.00e-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	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	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		Fluoride-IC-Dionex 4000/4500	ug/mL	90.51	<1.20e-02	<1.92e-01	<1.92e-1	n/a	n/a	n/a	1.92e-01	n/a
S97T000647		Chloride-IC-Dionex 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		Nitrite-IC - Dionex 4000/4500	ug/mL	100.6	<1.08e-01	2.114	<1.73e0	n/a	n/a	n/a	1.728	n/a

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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: 188
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

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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			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
S97T000574			DSC 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	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000571		Bulk Density of Sample	g/mL	n/a	n/a	1.160	n/a	n/a	n/a	n/a	5.00e-01	n/a
S97T000575		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
S97T000575		DSC 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
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
S97T000589	F	Alpha of Digested Solid	uCi/g	86.00	<2.47e-03	1.38e-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. Data 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	F		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

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

Table 2. Data Summary Table
T-204

CORE NUMBER: 188
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			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
S97T000633			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
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			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
S97T000603			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
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

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

Table 2. Data Summary Table
T-204

CORE NUMBER: 188
SEGMENT #: 6

SEGMENT PORTION: U Upper Half of Segment

Sample#	R 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 TGA 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#	R 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 TGA 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

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

Table 2. Data Summary Table
T-204

CORE 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%
S97T000635		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
S97T000635		DSC 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
S97T000635		% 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%
S97T000605		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
S97T000605		DSC 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
S97T000605		% Water by TGA on Perkin Elmer	%	98.82	n/a	76.21	74.04	75.12	2.89	n/a	n/a	n/a
S97T000611		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
S97T000623	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 A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000636		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
S97T000636		DSC 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 A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S97T000606		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
S97T000606		DSC 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

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

Table 2. Data Summary Table
T-204

CORE NUMBER: 188
SEGMENT #: 9

SEGMENT PORTION: U Upper Half of Segment

Sample#	R 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	94.90	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#	R 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

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HNF-SD-WM-DP-265, REV. 0

Table 2. Data Summary Table
T-204

CORE 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	8.46E+00

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HNF-SD-WM-DP-265, REV. 0

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

CHAIN OF CUSTODY FORMS

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

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COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 2004-08-TF (2) Sample Number Field Blank (3) Supervisor Daniel Grier, Daniel Ruge
 (4) Tank T-204 (5) Riser 3 (6) Segment Field Blank (7) Core 188 (8) Cask Serial Number 1013-C

Radiation Survey Data:

(9) FIELD	(33) LABORATORY
Over Top Dose Rate <u>2.5 mR/h</u>	<u>20.5 mR/h</u>
Side Dose Rate <u>2.5 mR/h</u>	<u>20.5 mR/h</u>
Bottom Dose Rate <u>2.5 mR/h</u>	<u>20.5 mR/h</u>
Measurable Contamination <u>220 dpm/cm²</u> (Alpha)	<u><D</u> (Alpha)
<u>415 dpm/cm²</u> (Beta-Gamma)	<u><D</u> (Beta-Gamma)
RCT* <u>[Signature]</u> (HPT) (Signature)	RCT* <u>[Signature]</u> (HPT) (Signature)

(10) Shipment Description

A. Work Package Number WS-96-00306
 B. Cask Seal Number 12204
 C. Sampler Serial Number 96-087
 D. Date and Time Sampler Unseated 4/14/97, 1747
 E. Expected Liquid Content 100%
 F. Expected Solid Content 0%
 G. Dose Rate Through Drill String N/A
 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 Deionized H₂O used for Field Blank

(34) Laboratory Comments

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
<u>T-204</u>	<u>222.5 Lake</u>	<u>STEVEN B CARTER</u>	<u>04-15-97 1305</u>	
(19) Relinquished By (Sign and PRINT)		(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
<u>STEVEN B CARTER</u>		<u>[Signature]</u>	<u>04-15-97 1315</u>	
(23) Relinquished By (Sign and PRINT)		(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments
<u>[Signature]</u>		<u>[Signature]</u>	<u>04-15-97 1415</u>	
(27) Relinquished By (Sign and PRINT)		(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments

(18) Seal Intact Upon Release?

☒ Yes ☐ No

(31) Seal Intact Upon Receipt?

☒ Yes ☐ No

(32) Seal Data Consistent with this Record?

 Shipment No.
☒ Yes ☐ No

 Cask Seal No.
☒ Yes ☐ No

 Sample No.
☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number <u>200W-08-TF</u>	(2) Sample Number <u># 97-60</u>	(3) Supervisor <u>Daniel Dwyer</u>
Tank <u>T-204</u>	(5) Riser <u>3</u>	(6) Segment <u>2</u>
(7) Core <u>188</u>	(8) Cask Serial Number <u>1013-C</u>	

(9) FIELD Over Top Dose Rate <u>< 0.005 mSv</u> Side Dose Rate <u>< 0.005 mSv</u> Bottom Dose Rate <u>< 0.005 mSv</u> Measurable Contamination <u>27200 < 0.334 Bq</u> (Alpha) <u>1-97</u> (Beta-Gamma) <u>< 16.7 Bq</u> RCT* (HPT) <u>[Signature]</u>	(33) LABORATORY Over Top Dose Rate <u>< 0.005 mSv</u> Side Dose Rate <u>< 0.005 mSv</u> Bottom Dose Rate <u>< 0.005 mSv</u> Measurable Contamination <u>< 0.334 Bq</u> (Alpha) <u>1-97</u> (Beta-Gamma) <u>< 16.7 Bq</u> RCT* (HPT) <u>[Signature]</u>	(10) Shipment Description A. Work Package Number <u>WS-96-00304</u> B. Cask Seal Number <u>12209</u> C. Sampler Serial Number <u>96-171</u> D. Date and Time Sampler Unseated <u>3/27/97, 0545 hr</u> E. Expected Liquid Content <u>20%</u> F. Expected Solid Content <u>80%</u> G. Dose Rate Through Drill String <u>2.5 mR/hr</u> H. Expected Sample Length <u>12 3/4"</u>
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INFORMATION (Include statement of laboratory tests to be performed.)

Field Comments		(34) Laboratory Comments	
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Point of Origin <u>204</u>	(14) Destination <u>222-5 lab.</u>	(15) Sender Name (Sign and PRINT) <u>James Sickle</u>	(16) Date/Time <u>4-1-97</u>	(17) Sender Comments
Relinquished By (Sign and PRINT) <u>James Sickle</u>	(20) Received By (Sign and PRINT) <u>James Sickle</u>	(21) Date/Time <u>4-1-97</u>	(22) Receiver Comments	
Relinquished By (Sign and PRINT) <u>James Sickle</u>	(24) Received By (Sign and PRINT) <u>James Sickle</u>	(25) Date/Time <u>4-1-97</u>	(26) Receiver Comments	
Relinquished By (Sign and PRINT) <u>James Sickle</u>	(28) Received By (Sign and PRINT) <u>James Sickle</u>	(29) Date/Time <u>4-1-97</u>	(30) Receiver Comments	

(3) Seal Intact Upon Release? ☒ Yes ☐ No	(31) Seal Intact Upon Receipt? ☒ Yes ☐ No	(32) Seal Date Consistent with this Record? ☒ Yes ☐ No
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CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY 200W-08-TF (1) Shipper's Name (2) Sample Number 97-61 (3) Supervisor R. Leach First
(4) Tank 204 (5) Riser 3 (6) Segment 2 (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	<0.5 mR/hr	A. Work Package Number	WS-96-00306
Side Dose Rate	<0.5 mR/hr	<0.5 mR/hr	B. Cask Seal Number	1152
Bottom Dose Rate	<0.5 mR/hr	<0.5 mR/hr	C. Sampler Serial Number	96-175
Smearable Contamination	<20 dpm	<20 DPM	D. Date and Time Sampler Unsealed	4-11-97 / 0302
	(Alpha)	(Alpha)	E. Expected Liquid Content	WATER SLUDGE
	<1000 dpm	<1000 DPM	F. Expected Solid Content	Sludge
	(Beta-Gamma)	(Beta-Gamma)	G. Dose Rate Through Drill String	0mR
RCT (HPT)	Signature: [Signature]	RCT (HPT)	Signature: [Signature]	H. Expected Sample Length
	(Signature)		(Signature)	19"

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

(12) Field Comments: universal samples Bottom of sampler clean	(13) Laboratory Comments: 597T000534
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(13) Point of Origin 204	(14) Destination 222's Lab	(15) Sender Name (Sign and PRINT) James Sickels	(16) Date/Time 4-11-97	(17) Sender Comments
(19) Relinquished By (Sign and PRINT) James Sickels	(20) Received By (Sign and PRINT) James Sickels	(21) Date/Time 4-11-97	(22) Receiver Comments	
(23) Relinquished By (Sign and PRINT) James Sickels	(24) Received By (Sign and PRINT) James Sickels	(25) Date/Time 4-11-97	(26) Receiver Comments	
(27) Relinquished By (Sign and PRINT) James Sickels	(28) Received By (Sign and PRINT) James Sickels	(29) Date/Time 4-11-97	(30) Receiver Comments	

(18) Seal Intact Upon Release? ☒ Yes ☐ No	(31) Seal Intact Upon Receipt? ☒ Yes ☐ No	(32) Seal Data Consistent with this Record? ☒ Yes ☐ No
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HNF-SD-WM-CP-285, REV. C

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

COPY 200W-08-TF (1) Shipper/Receiver (2) Sample Number 97-62 (3) Supervisor R. Lusk Hunt
(4) Tank 204 (5) Riser 3 (6) Segment 3 (7) Core 188 (8) Cask Serial Number 76

Radiation Survey Date:		(9) FIELD	(33) LABORATORY	(110) Shipment Description
Over Top Dose Rate	20.5 mR/hr	20.5 mR/hr	A. Work Package Number	WS-96-00306
Side Dose Rate	20.5 mR/hr	20.5 mR/hr	B. Cask Seal Number	1153
Bottom Dose Rate	20.5 mR/hr	20.5 mR/hr	C. Sampler Serial Number	96-176
Smearable Contamination	220 mR/hr-dpm (Alpha)	220 DPM (Alpha)	D. Date and Time Sampler Unseated	4-11-97/0425
	21000 dpm (Beta-Gamma)	21000 DPM (Beta-Gamma)	E. Expected Liquid Content	WST Sludge
RCT (HPT)	Severing (Signature)	RCT (HPT)	F. Expected Solid Content	OMR
	(Signature)		G. Dose Rate Through Drill String	19"
			H. Expected Sample Length	

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

(12) Field Comments	(13) Laboratory Comments
<p>48</p> <p>Universal samples 2 samples, has small amount of waste on bottom.</p>	<p>597T000535</p>

(13) Point of Origin	(14) Destination	(15) Sender Name (Sign and PRINT)	(16) Date/Time	(17) Sender Comments
204	222's LAB	James Sickel	4-11-97	
(19) Relinquished By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments	
James Sickel	James Sickel	4-11-97		
(23) Relinquished By (Sign and PRINT)	(24) Received By (Sign and PRINT)	(25) Date/Time	(26) Receiver Comments	
James Sickel	James Sickel	4-11-97		
(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

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

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Sample Number 97-63
 (4) Tank T-204
 Date 08-08-77

(2) Sample Number 97-63
 (3) Supervisor R. Frank Frost

(5) Filter 3 (6) Segment 4 (7) Core 188 (8) Cask Serial Number 69

Radiation Survey Date:

(9) FIELD
 <0.5 mR/hr
 <0.5 mR/hr
 <0.5 mR/hr
 <20dpm
 <1000dpm
 (Signature)
 (HPT)

(3) LABORATORY
 <0.5 mR/hr
 <0.5 mR/hr
 <0.5 mR/hr
 <20dpm
 <1000dpm
 (Signature)
 (HPT)

(10) Shipment Description
 A. Work Package Number
 B. Cask Seal Number
 C. Sampler Serial Number
 D. Date and Time Sampler Unloaded
 E. Expected Liquid Content
 F. Expected Solid Content
 G. Dose Rate Through Drill String
 H. Expected Sample Length

MS-96-00306
 1154
 96-173
 4-11-97/0523
 wet
 Sledge
 6 mR
 19"

(11) Field Comments

① unusual anomaly
 ② small amount of waste on bottom of sample.

(12) Laboratory Comments

5977000536

(13) Point of Origin

3223 LMB

(14) Sampler Name (Sign and PRINT)

James Dick James Sickel

(15) Received By (Sign and PRINT)

James Dick James Sickel

(16) Received By (Sign and PRINT)

James Dick James Sickel

(17) Received By (Sign and PRINT)

James Dick James Sickel

(18) Received By (Sign and PRINT)

James Dick James Sickel

(19) Seal Intact Upon Release?

(20) Seal Intact Upon Receipt?

Yes ☒ No ☐

Shipment No.

Yes ☒ No ☐

Cask Seal No.

Yes ☒ No ☐

Sample No.

Yes ☒ No ☐

(21) Seal Date Consistent with the Record?

(22) Receiver Comments

(23) Receiver Comments

(24) Receiver Comments

(25) Sender Comments

DISTRIBUTION: White - Office of Sample Management Yellow - Receipt of Sample Pink - Core Sampling, 56-55 Gold-colored - Tank Farm Operations, 54-43

BC-6000-309 (02/794)

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

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Current Number	188	(7) Date	4-15-2004	(8) Cask Serial Number	188
Segment	5	(6) Segment	5	(5) Riser	3
Sample Number	97-64	(4) Sample Number	97-64	(3) Supervisor	M.C. Jones
Form 08-TF					

(9) FIELD	(33) LABORATORY
Top Dose Rate 0.005 mSv/hr	Top Dose Rate 0.005 mSv/hr
Dose Rate 0.005 mSv/hr	Dose Rate 0.005 mSv/hr
m Dose Rate 0.005 mSv/hr	m Dose Rate 0.005 mSv/hr
Probable Contamination 7.967 Bq/cm ²	Probable Contamination 7.967 Bq/cm ²
(Alpha) 0.005 mSv/hr	(Alpha) 0.005 mSv/hr
(Beta-Gamma) 0.005 mSv/hr	(Beta-Gamma) 0.005 mSv/hr
(HPT) 0.005 mSv/hr	(HPT) 0.005 mSv/hr
(Signature) <i>[Signature]</i>	(Signature) <i>[Signature]</i>
(10) Shipment Description MS-96-00306	(10) Shipment Description MS-96-00306
A. Work Package Number 12455	A. Work Package Number 12455
B. Cask Seal Number 96-189	B. Cask Seal Number 96-189
C. Sampler Serial Number 96-11-97/0950	C. Sampler Serial Number 96-11-97/0950
D. Date and Time Sampler Unloaded 2006/0	D. Date and Time Sampler Unloaded 2006/0
E. Expacted Liquid Content 0.005 mSv/hr	E. Expacted Liquid Content 0.005 mSv/hr
F. Expacted Solid Content 0.005 mSv/hr	F. Expacted Solid Content 0.005 mSv/hr
G. Dose Rate Through Drill String 0.005 mSv/hr	G. Dose Rate Through Drill String 0.005 mSv/hr
H. Expacted Sample Length 191	H. Expacted Sample Length 191

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

စာအုပ်အမျိုးအမည်

05

DP-255, REV. 0-7-60

(14) Destination 22A.S		(15) Sender Name (Sign and PRINT) STEVEN E. CARTER		(16) Date/Tmo 04-15-77		(17) Sender Comments	
(18) Received By (Sign and PRINT) STEVEN E. CARTER		(19) Received By (Sign and PRINT) STEVEN E. CARTER		(20) Date/Tmo 04-15-77		(21) Date/Tmo 04-15-77	
(22) Received By (Sign and PRINT) STEVEN E. CARTER		(23) Received By (Sign and PRINT) STEVEN E. CARTER		(24) Date/Tmo 04-15-77		(25) Date/Tmo 04-15-77	
(26) Received By (Sign and PRINT) STEVEN E. CARTER		(27) Received By (Sign and PRINT) STEVEN E. CARTER		(28) Date/Tmo 04-15-77		(29) Date/Tmo 04-15-77	
(30) Received By (Sign and PRINT) STEVEN E. CARTER		(31) Received By (Sign and PRINT) STEVEN E. CARTER		(32) Date/Tmo 04-15-77		(33) Date/Tmo 04-15-77	

COPY

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

BC-6000-309 (02/84)

361dantod - Tank Farm Operations, 64-43

Pink - Core Sampling, SB-85

Yellow - Resolution of Sample

of Sample Management

100 - 1014/74 - 10011410

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number 222-08-TF (2) Sample Number 97-065 (3) Supervisor M.C. Jones M.C. Jones
 (4) Tank T-204 (5) Risor 3 (6) Segment 6 (7) Core 188 (8) Cask Serial Number 27-G

Radiation Survey Data:

(9) FIELD (33) LABORATORY

Over Top Dose Rate 1.5 hr R/h 10.5 mR/h
 Side Dose Rate 1.5 hr R/h 10.5 mR/h
 Bottom Dose Rate 1.5 hr R/h 10.5 mR/h
 Smearable Contamination 1.20 hr R/100cm² 10.5 mR/h (Alpha) (Beta-Gamma)
 (Alpha) (Beta-Gamma)
 RCT* (HPT) (Signature) RCT* (HPT) (Signature)
R. Klein D. Knight
 (Signature) (Signature)

(10) Shipment Description

A. Work Package Number WS-96-00306
 B. Cask Seal Number 12453
 C. Sampler Serial Number 96-174
 D. Date and Time Sampler Unseated 4-11-97 / 1308
 E. Expected Liquid Content 80%
 F. Expected Solid Content 4-11-97 80% 20%
 G. Dose Rate Through Drill String 0805 mSv/h 1.5 hr R/h
 H. Expected Sample Length 19"

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

(12) Field Comments

(14) Laboratory Comments

COPY

(13) Point of Origin T-204 (14) Destination 222-S (15) Sender Name (Sign and PRINT) Steve White STEVEN B CARTER (16) Date/Time 04-15-97 0959 (17) Sender Comments
 (19) Relinquished By (Sign and PRINT) Steve White STEVEN B CARTER (20) Received By (Sign and PRINT) James C. Knight JAMES C. KNIGHT (21) Date/Time 04-15-97 1031 (22) Receiver Comments
 (23) Relinquished By (Sign and PRINT) James C. Knight JAMES C. KNIGHT (24) Received By (Sign and PRINT) James C. Knight JAMES C. KNIGHT (25) Date/Time 04-15-97 1050 (26) Receiver Comments
 (27) Relinquished By (Sign and PRINT) James C. Knight JAMES C. KNIGHT (28) Received By (Sign and PRINT) James C. Knight JAMES C. KNIGHT (29) Date/Time 04-15-97 1050 (30) Receiver Comments

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

Shipment No. ☒ Yes ☐ No Cask Seal No. ☒ Yes ☐ No Sample No. ☒ Yes ☐ No

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

Shipment Number 200W-08-TE (2) Sample Number 97-066 (3) Supervisor M.C. Jones
 Rank T-204 (5) Riser 3 (6) Segment 7 (7) Core 188 (8) Cask Serial Number SN-58

(9) FIELD Core Top Dose Rate <u>2.5 mR/hr</u> Core Dose Rate <u>2.5 mR/hr</u> Bottom Dose Rate <u>2.5 mR/hr</u> Measurable Contamination <u>2.0 dpm/100cm²</u> (Alpha) <u>2.1 Kdpm/100cm²</u> (Beta-Gamma) <u>1200</u> RCT* (HPT) (Signature)		(33) LABORATORY Core Top Dose Rate <u>2.5 mR/hr</u> Core Dose Rate <u>2.0 mR/hr</u> Bottom Dose Rate <u>2.0 mR/hr</u> Measurable Contamination <u>2.0</u> (Alpha) <u>2.0</u> (Beta-Gamma) <u>1200</u> RCT* (HPT) (Signature) <u>ED - NO Counters Above Background</u>		(10) Shipment Description A. Work Package Number <u>WS-96-00306</u> B. Cask Seal Number <u>12454</u> C. Sampler Serial Number <u>96-092</u> D. Date and Time Sampler Unseated <u>4-11-97/1400</u> E. Expected Liquid Content <u>90 g</u> F. Expected Solid Content <u>20 g</u> G. Dose Rate Through Drill String <u>0.005 mSv/hr</u> H. Expected Sample Length <u>19"</u>	
--	--	--	--	---	--

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

Field Comments		(34) Laboratory Comments	
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(14) Destination <u>222-S</u>	(15) Sender Name (Sign and PRINT) <u>Stephen B. Carter</u>	(16) Date/Time <u>04-15-97 1005</u>	(17) Sender Comments
(18) Receiver Name (Sign and PRINT) <u>Stephen B. Carter</u>	(20) Receiver By (Sign and PRINT) <u>James C. Edwards</u>	(21) Date/Time <u>04-15-97 1030</u>	(22) Receiver Comments
(19) Receiver Name (Sign and PRINT) <u>James C. Edwards</u>	(24) Receiver By (Sign and PRINT) <u>James C. Edwards</u>	(25) Date/Time <u>04-15-97 1052</u>	(26) Receiver Comments
(23) Receiver Name (Sign and PRINT) <u>James C. Edwards</u>	(28) Receiver By (Sign and PRINT) <u>James C. Edwards</u>	(29) Date/Time	(30) Receiver Comments

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

DISTRIBUTION: White - Office of Sample Management Yellow - Receipt of Sample Pink - Core Sampling, 88-85 Goldenrod - Tank Farm Operations, 84-43 BC-8000-309 (02/94)

04/15/97 11:05

6508 373 5047

222S HAZMAT UNIT *** LAB DATA MGMT

2004

COPY

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipmen 200W-08-TR (2) Sample Number # 97-67 (3) Supervisor Daniel Carrig Daniel Carrig
 (4) Tank 7-04 (5) Riser 3 (6) Segment 48 (7) Core 1881 (8) Cask Serial Number 546

Radiation Survey Date:		(9) FIELD	(33) LABORATORY	(10) Shipment Description
Over Top Dose Rate	<u>< 0.5 mR/hr</u>	<u>< 0.5 mR/hr</u>	A. Work Package Number	<u>W3-96-00306</u>
Side Dose Rate	<u>< 0.5 mR/hr</u>	<u>< 0.5 mR/hr</u>	B. Cask Seal Number	<u>12219</u>
Bottom Dose Rate	<u>< 0.5 mR/hr</u>	<u>< 0.5 mR/hr</u>	C. Sampler Serial Number	<u>96-252</u>
Smearable Contamination	<u>< 20 dpm/100 cm²</u> (Alpha)	<u>< D</u> (Alpha)	D. Date and Time Sampler Unseated	<u>4/11/97, 1702 hr</u>
	<u>< 10 dpm/100 cm²</u> (Beta-Gamma)	<u>< D</u> (Beta-Gamma)	E. Expected Liquid Content	<u>60%</u>
RCT* (HPT)	<u>12/00a</u> (Signature)	RCT* (HPT)	F. Expected Solid Content	<u>40%</u>
			G. Dose Rate Through Drill String	<u>0.005 Sv</u>
		<u>< D No Counts Above Background</u>	H. Expected Sample Length	<u>19"</u>

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

(12) Field Comments <u>Sampler has a small Tund at Bottom of Sample</u>	(34) Laboratory Comments
--	--------------------------

(13) Point of Origin <u>T-2070</u>	(14) Destination <u>222-5 Lake</u>	(15) Sender Name (Sign and PRINT) <u>Steven B Carter</u>	(16) Date/Time <u>04-15-97 1310</u>	(17) Sender Comments
(19) Relinquished By (Sign and PRINT) <u>Steven B Carter</u>	(20) Received By (Sign and PRINT) <u>James R. Fisher</u>	(21) Date/Time <u>04-15-97</u>	(22) Receiver Comments	
(23) Relinquished By (Sign and PRINT) <u>James R. Fisher</u>	(24) Received By (Sign and PRINT) <u>Jim Knight</u>	(25) Date/Time <u>04-15-97</u>	(26) Receiver Comments	
(27) Relinquished By (Sign and PRINT)	(28) Received By (Sign and PRINT)	(29) Date/Time	(30) Receiver Comments	

(18) Seal Intact Upon Release? ☒ Yes ☐ No	(31) Seal Intact Upon Receipt? ☒ Yes ☐ No	(32) Seal Data Consistent with this Record? ☒ Yes ☐ No	Shipment No. ☒ Yes ☐ No	Cask Seal No. ☒ Yes ☐ No	Sample No. ☒ Yes ☐ No
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HNF-SD-WM-DP-255, REV. 0

(4) Tank

Over T

Slide D

Bottom

Summary

1111) INFORMATION (include statement of laboratory tests to be performed.)

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

(34) Laboratory Comments

131 Prof.

7-2

7

231 9/11/11

2000

(18) S

15

DISTRIBUTION: White - Office of Sample Management
Yellow - Recipient of Sample
Pink - Core Sampling, S8-95
Goldendred - Tank Farm Operations, S4-93
BC-6000-309 (02/93)

DISTRIBUTION: White - Office of Sample Management
Yellow - Recipient of Sample
Pink - Core Sampling, S8-95
Goldendred - Tank Farm Operations, S4-93
BC-6000-309 (02/93)

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) Riser 3 (6) Segment #10 (7) Core 188 (8) Cask Serial Number C-1036

On Survey Date: (3) FIELD		(10) Shipment Description	
or Top Dose Rate	<u>2.5 mR/hr</u>	A. Work Package Number	<u>WS-19-00306</u>
o Dose Rate	<u>2.5 mR/hr</u>	B. Cask Seal Number	<u>12220</u>
Item Deep Rate	<u>2.5 mR/hr</u>	C. Sampler Serial Number	<u>96-247</u>
Corrosion Contamination	<u>2.20 spm/100cm²</u>	D. Date and Time Sampler Unseated	<u>4/11/97, 2000 hrs</u>
	<u>2.20 spm/100cm²</u>	E. Expected Liquid Content	<u>10%</u>
	<u>2.20 spm/100cm²</u>	F. Expected Solid Content	<u>90%</u>
	<u>2.20 spm/100cm²</u>	G. Dose Rate Through Drill String	<u>0.005 Sv</u>
	<u>2.20 spm/100cm²</u>	H. Expected Sample Length	<u>14 1/2"</u>

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

55

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

(34) Laboratory Comments

Field Comments
Only pushed 14 1/2" and HBD
went off

(11) Destination	(15) Shipment Name (Sign and PRINT)	(19) Detector/Type	(17) Sender Comments
222-5 Labs	<u>Steven B Carter</u>	<u>1405</u>	
(14) Dispatched By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
<u>Steven B Carter</u>	<u>Steven B Carter</u>	<u>04-11-97</u>	
(14) Dispatched By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
<u>Steven B Carter</u>	<u>Steven B Carter</u>	<u>04-11-97</u>	
(14) Dispatched By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
<u>Steven B Carter</u>	<u>Steven B Carter</u>	<u>04-11-97</u>	
(14) Dispatched By (Sign and PRINT)	(20) Received By (Sign and PRINT)	(21) Date/Time	(22) Receiver Comments
<u>Steven B Carter</u>	<u>Steven B Carter</u>	<u>04-11-97</u>	

(32) Seal Data Consistent with this Record?

Sample No.
☒ Yes ☐ No

EC-6000-309 (02/94)

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

PHOTOGRAPHS

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7-204 C188 Field Blank

T-204 C188 Seg 1

T-204 C188 Seq 2

T-204 C188 Seg 3

T-204 C188 Seg 4

F204 C168 Seg 5

T-204 C188 Seg 6

T-204 C188 Seq 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

09:39
09:49

0509 373 5047
0509 373 5545

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

0025
0003

Date: 5/27/97

Bank: T 204

Sample PARENT

ID: S91T000494

5 grams

Auger/

Core: 188

Segment: 1 LH

Jar# 12197

Jar/Vial Size: 250 mL

Initial Weight: 200.0 g

Final Weight: 253.4 g

Net Weight: 66 g

Sample PARENT

ID: S91T000495

5 grams

Auger/

Core: 188

Segment: 1 LH

Jar# 12139

Jar/Vial Size: 250 mL

Initial Weight: 286.7 g

Final Weight: 281.0 g

Net Weight: 5.7 g

10 grams

Auger/

Core: 188

Segment: 2 LH

Jar# 12118 (Bin 105)

Jar/Vial Size: 60 mL

Initial Weight: 1448 g

Final Weight: 133.5 g

Net Weight: 11.3 g

10 grams

Auger/

Core: 188

Segment: 3 LH

Jar# 12535

Jar/Vial Size: 250 mL

Initial Weight: 310.5 g

Final Weight: 298.3 g

Net Weight: 12.2 g

P.C. Nuzum
Phone# 373-3199

Sample PARENT

ID: S91T000571

Auger/

Core: 188

Segment: 3 LH

Jar# 12535

Jar/Vial Size: 250 mL

Initial Weight: 310.5 g

Final Weight: 298.3 g

Net Weight: 12.2 g

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

Homogenization

Time (Min.): 5

XAN-73

Jar# 11835

Jar/Vial Size: 25 mL

Final Weight: 226.1 g

Initial Weight: 20.5 g

Net Weight: 105.6 g

(after final subsample added)

Start Time: _____
End Time: _____

Tests:

COMPOS 61
HOMGN 201
BLK DEN 101

Special Instructions: Composite using weights listed above

Page 1 of 5

Composite Worksheet

06/13/97 09:48 2509 373 5047
05/29/97 09:38 2509 373 0545

222S HAZMAT UNIT → LAB DATA MGMT
LAB DATA MGMT

024
002

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

P.C. Nuzum
Phone# 373-3199

te: 5/27/97
lk: 1204

Sample PARENT
ID: S91T000572
Auger/
Core: 188
Segment: 4 LH

Jar#: 12532
Jar/Vial Size: 250 mL
Initial Weight: 240.3 g
Final Weight: 253.4 g
Net Weight: 6.1 g

Sample PARENT
ID: S91T000573
Auger/
Core: 188
Segment: 4 LH

Jar#: 12536
Jar/Vial Size: 250 mL
Initial Weight: 240.9 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: 244.9 g
Net Weight: 6.2 g

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

See Parent
Jar# 11435
on Page #1

Special Instructions:

Page 2 of 5

Composite Worksheet

Date: 5/27/97

Bank: T204

Sample PARENT
ID: 9AT000610
Auger/
Core: 188
Segment: 6 LH
Jar #: 12538

Jar/Vial Size: 250 mL
Initial Weight: 290.5 g
Final Weight: 222.6 g
Net Weight: 7.9 g

Sample PARENT
ID: 9AT000628
Auger/
Core: 188
Segment: 6 LH
Jar #: 12539

Jar/Vial Size: 250 mL
Initial Weight: 296.0 g
Final Weight: 287.5 g
Net Weight: 8.5 g

Sample PARENT
ID: 9AT000611
Auger/
Core: 188
Segment: 7 LH
Jar #: 12540

Jar/Vial Size: 250 mL
Initial Weight: 274.5 g
Final Weight: 266.1 g
Net Weight: 8.4 g

Jar #: 12544
Jar/Vial Size: 250 mL
Initial Weight: 294.6 g
Final Weight: 288.6 g
Net Weight: 6.0 g

P.C. Nuzum
Phone # 373-3199

Sample PARENT
ID: 9AT000629
Auger/
Core: 188
Segment: 7 LH

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

See Parent
Jar # 11835
on Page #1

Special Instructions:

Composite Worksheet

P.C. Nu2um

Phone# 373-3199

te: 5/27/97

nk: 1204

Sample PARENT

ID: S91T000630

Auger/

Core: 188

Segment: 9UH

5 grams

Auger/

Core: 188

Segment: 9LH

Sample PARENT

ID: S91T000613

Auger/

Core: 188

Segment: 9LH

5 grams

Auger/

Core: 188

Segment: 9UH

Sample PARENT

ID: S91T000630

Auger/

Core: 188

Segment: 9UH

5 grams

Auger/

Core: 188

Segment: 9LH

Sample PARENT

ID: S91T000613

Auger/

Core: 188

Segment: 9LH

5 grams

Auger/

Core: 188

Segment: 9UH

Sample PARENT
ID: S91T000612
Auger/ 188
Core: 188
Segment: 9LH
Jar/Vial Size: 250 mL
Initial Weight: 277.1 g
Final Weight: 267.4 g
Net Weight: 9.7 g

Sample PARENT
ID: S91T000630
Auger/ 188
Core: 188
Segment: 9UH
Jar/Vial Size: 250 mL
Initial Weight: 273.3 g
Final Weight: 264.7 g
Net Weight: 8.6 g

Sample PARENT
ID: S91T000613
Auger/ 188
Core: 188
Segment: 9LH
Jar/Vial Size: 250 mL
Initial Weight: 273.6 g
Final Weight: 265.1 g
Net Weight: 8.5 g

Sample PARENT
ID: S91T000631
Auger/ 188
Core: 188
Segment: 9UH
Jar/Vial Size: 250 mL
Initial Weight: 266.1 g
Final Weight: 266.9 g
Net Weight: 9.2 g

See Parent

Jar# 11635

on Page #1

Special Instructions:

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

LAB DATA MGMT

0509 373 0545

09:41

05/29/97

2225 HAZMAT UNIT +++ LAB DATA MGMT

0509 373 5047

09:47

06/13/97

Composite Worksheet

P.C. Nuzum
Phone# 373-311

Date: 5/27/97

Tank: T204

Sample PARENT
ID: SA110000614
Auger/ 188
Core: 188
Segment: 10LH

Jar#: 12551
Jar/Vial Size: 250 mL
Initial Weight: 2610 g
Final Weight: 2509 g
Net Weight: 101 g

Sample PARENT
ID: SA110000632
Auger/ 188
Core: 188
Segment: 10UH

Jar#: 12549
Jar/Vial Size: 250 mL
Initial Weight: 3140 g
Final Weight: 3043 g
Net Weight: 95 g

Sample
ID: ABC
Auger/ ABC
Core: ABC
Segment: 5-2-9

Jar#: 12549
Jar/Vial Size: 250 mL
Initial Weight: 3140 g
Final Weight: 3043 g
Net Weight: 95 g

Sample
ID: ABC
Auger/ ABC
Core: ABC
Segment: 5-2-9

Jar#: 12549
Jar/Vial Size: 250 mL
Initial Weight: 3140 g
Final Weight: 3043 g
Net Weight: 95 g

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

See Parent
Jar# 11435
on Page #1

75

Special Instructions:

Page 5 of 5

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 grams
- 13) Sample from segment jar 12542 to composite jar = 7.9 grams
- 14) Sample from segment jar 12543 to composite jar = 5.9 grams
- 15) " " " " 12541 " " " " = 5.0 grams
- 16) " " " " " 12545 " " " " = 5.1 grams
- 17) " " " " " 12551 " " " " = 5.3 grams
- 18) " " " " " 12549 " " " " = 5.2 grams

abc
6-11-97 Total grams collected in composite jar # _____ = 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>500.18</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>W4CN-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. Jones 4/9/97
Analyst Signature Date
N. Lapins 4-10-97

Jessie S. Jones 4/9/97
Analyst Signature Date

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17566

Analyst: CE Instrument# A000 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>510</u>		g
97000261	T-204	8 SAMPLE	S97T000534	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>N-1392</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

CE 4-18-97
Analyst Signature Date

CE 4-18-97
Analyst Signature Date

Validated by: J. Lapins 4-18-97

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17567

Analyst: CC Instrument BA000 Book # NA

Method: LO-160-103 Rev/Mod BD

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

CC 4-18-97
Analyst Signature Date

Validated by: W Lapins 4-18-97

CC 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: W. 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>3554</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: AK Instrument EA000

Book #

N/A

Method: LO-160-103 Rev/Mod

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>N/A</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

Alan B Campbell 4/21/97
Analyst Signature Date

Alan B Campbell 4/21/97
Analyst Signature Date

Validated by N Lapins 4-21-97

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17571

Analyst: ABC Instrument# EA000 Book # NA

Method: LO-160-103 Rev/Mod B0 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	DLIQVL01	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 N Lapins 4-21-97

Alan B Campbell 4/21/97
Analyst Signature Date

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17602

Analyst: ASC 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	20	20.00	N/A	
		2 INSTCHK02			EXTRUD01	SOLID	500	500.15	N/A	
97000261	T-204	3 SAMPLE	S97T000566	0	DLIQVOL1	SOLID	N/A	0		mL
97000261	T-204	4 SAMPLE	S97T000566	0	DLIQWT01	SOLID	N/A	0		g
97000261	T-204	5 SAMPLE	S97T000566	0	EST.G/ML	SOLID	N/A	0		g/mL
97000261	T-204	6 SAMPLE	S97T000566	0	EXTRUD01	SOLID	N/A	Complete		
97000261	T-204	7 SAMPLE	S97T000566	0	LLIQWT01	SOLID	N/A	0		g
97000261	T-204	8 SAMPLE	S97T000566	0	NOTEBOOK	SOLID	N/A	N-1392		
97000261	T-204	9 SAMPLE	S97T000566	0	SLDVOL01	SOLID	N/A	NA		mL
97000261	T-204	10 SAMPLE	S97T000566	0	SLDWT-01	SOLID	N/A	352.6		g
97000261	T-204	11 SAMPLE	S97T000566	0	APPEAR01	SOLID	N/A	Complete		
97000261	T-204	12 SAMPLE	S97T000566	0	ORGVOL01	SOLID	N/A	0		mL

Final page for worklist # 17602

Alan B. Campbell 4/21/97
Analyst Signature Date
Validated by 77 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 BO 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:

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>900.21</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:

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

SAMPLE PREPARATIONS

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Apr. 30. 1997 12:59AM

WHC 222S LAB ROOM 2F BACKSIDE

No. 2571 P. 2/2

worklistrpt Version 2.1 05/15/95
04/29/97 19:43

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

Page

LABCORE Data Entry Template for Worklist# 17711

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			FUSION01	SOLID	<u>1</u>	<u>.250</u>	N/A	g/L
97000261	T-204	2 SAMPLE	S97T000587 0 F		FUSION01	SOLID	<u>N/A</u>	<u>2.0260</u>		g/L
		<u>.5065</u> → <u>.250L</u>								
97000261	T-204	3 SAMPLE	S97T000587 0 F		DOSE-02	SOLID	<u>N/A</u>	<u>1.5</u>		mrad/hour
97000261	T-204	4 DUP	S97T000587 0 F		FUSION01	SOLID	<u>2.0260</u>	<u>2.0688</u>	N/A	g/L
		<u>.5172</u> → <u>.250L</u>								
97000261	T-204	5 DUP	S97T000587 0 F		DOSE-02	SOLID	<u>1.5</u>	<u>1.5</u>	N/A	mrad/hour
97000261	T-204	6 SAMPLE	S97T000588 0 F		FUSION01	SOLID	<u>N/A</u>	<u>1.9084</u>		g/L
		<u>.4771</u> → <u>.250L</u>								
97000261	T-204	7 SAMPLE	S97T000588 0 F		DOSE-02	SOLID	<u>N/A</u>	<u>1.5</u>		mrad/hour
97000261	T-204	8 DUP	S97T000588 0 F		FUSION01	SOLID	<u>1.9084</u>	<u>1.9712</u>	N/A	g/L
		<u>.4928</u> → <u>.250L</u>								
97000261	T-204	9 DUP	S97T000588 0 F		DOSE-02	SOLID	<u>1.5</u>	<u>1.5</u>	N/A	mrad/hour
97000261	T-204	10 SAMPLE	S97T000589 0 F		FUSION01	SOLID	<u>N/A</u>	<u>1.9248</u>		g/L
		<u>.4812</u> → <u>.250L</u>								
97000261	T-204	11 SAMPLE	S97T000589 0 F		DOSE-02	SOLID	<u>N/A</u>	<u>1.5</u>		mrad/hour
97000261	T-204	12 DUP	S97T000589 0 F		FUSION01	SOLID	<u>1.9248</u>	<u>1.8448</u>	N/A	g/L
		<u>.4612</u> → <u>.250L</u>								
97000261	T-204	13 DUP	S97T000589 0 F		DOSE-02	SOLID	<u>1.5</u>	<u>1.5</u>	N/A	mrad/hour

Final page for worklist # 17711

Kim Thomas 4-30-97
Analyst Signature Date

Jay Kamm 4-30-97
Analyst Signature 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.

[Signature] 4-30-97
REVIEWER SIGNATURE DATE

Apr. 30. 1997 12:59 AM
04/29/97 19:44

WHC 2225 LAB ROOM 2F BACKSIDE
on 2. 03/13/95

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

LABCORE Data Entry Template for Worklist# 17712

Analyst: KRW 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	1	.250	N/A	g/L
97000261	T-204	2 SAMPLE .5508 → .250L	S97T000590	0 F	FUSION01	SOLID	N/A	2.2032		g/L
97000261	T-204	3 SAMPLE	S97T000590	0 F	DOSE-02	SOLID	N/A	2.5		mrad/hour
97000261	T-204	4 DUP .5466 → .250L	S97T000590	0 F	FUSION01	SOLID	2.2032	2.1864	N/A	g/L
97000261	T-204	5 DUP	S97T000590	0 F	DOSE-02	SOLID	2.5	2.5	N/A	mrad/hour
97000261	T-204	6 SAMPLE .5335 → .250L	S97T000621	0 F	FUSION01	SOLID	N/A	2.1340		g/L
97000261	T-204	7 SAMPLE	S97T000621	0 F	DOSE-02	SOLID	N/A	2.5		mrad/hour
97000261	T-204	8 DUP .5282 → .250L	S97T000621	0 F	FUSION01	SOLID	2.1340	2.1128	N/A	g/L
97000261	T-204	9 DUP	S97T000621	0 F	DOSE-02	SOLID	2.5	2.5	N/A	mrad/hour
97000261	T-204	10 SAMPLE .5118 → .250L	S97T000622	0 F	FUSION01	SOLID	N/A	2.0472		g/L
97000261	T-204	11 SAMPLE	S97T000622	0 F	DOSE-02	SOLID	N/A	2.5		mrad/hour
97000261	T-204	12 DUP .5799 → .250L	S97T000622	0 F	FUSION01	SOLID	2.0472	2.3196	N/A	g/L
97000261	T-204	13 DUP	S97T000622	0 F	DOSE-02	SOLID	2.5	2.5	N/A	mrad/hour

Final page for worklist # 17712

Analyst Signature

Date

Analyst Signature

Date

S97T000576 → S97T000590

S97T000603 → S97T000621

S97T000604 → S97T000622

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

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

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

Page: 1

LABCORE Data Entry Template for Worklist# 17713

Analyst: *K/BN*

Instrument: FUS01

Book # *2179*

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	<i>1</i>	<i>250</i>	N/A	g/L
97000261	T-204	2 SAMPLE	S97T000623	0 F	FUSION01	SOLID	N/A	<i>1.9188</i>		g/L
		<i>41797</i> → <i>250 l</i>								
97000261	T-204	3 SAMPLE	S97T000623	0 F	DOSE-02	SOLID	N/A	<i>20.5</i>		mrad/hour
97000261	T-204	4 DUP	S97T000623	0 F	FUSION01	SOLID	<i>1.9188</i>	<i>1.992</i>	N/A	g/L
		<i>41798</i> → <i>250 l</i>								
97000261	T-204	5 DUP	S97T000623	0 F	DOSE-02	SOLID	<i><0.5</i>	<i>20.5</i>	N/A	mrad/hour
97000261	T-204	6 SAMPLE	S97T000624	0 F	FUSION01	SOLID	N/A	<i>1.8076</i>		g/L
		<i>4519</i> → <i>250 l</i>								
97000261	T-204	7 SAMPLE	S97T000624	0 F	DOSE-02	SOLID	N/A	<i>20.5</i>		mrad/hour
97000261	T-204	8 DUP	S97T000624	0 F	FUSION01	SOLID	<i>1.8076</i>	<i>1.8541</i>	N/A	g/L
		<i>4636</i> → <i>250 l</i>								
97000261	T-204	9 DUP	S97T000624	0 F	DOSE-02	SOLID	<i><0.5</i>	<i>20.5</i>	N/A	mrad/hour
97000261	T-204	10 SAMPLE	S97T000625	0 F	FUSION01	SOLID	N/A	<i>1.9620</i>		g/L
		<i>4905</i> → <i>250 l</i>								
97000261	T-204	11 SAMPLE	S97T000625	0 F	DOSE-02	SOLID	N/A	<i>20.5</i>		mrad/hour
97000261	T-204	12 DUP	S97T000625	0 F	FUSION01	SOLID	<i>1.9620</i>	<i>1.9276</i>	N/A	g/L
		<i>4819</i> → <i>250 l</i>								
97000261	T-204	13 DUP	S97T000625	0 F	DOSE-02	SOLID	<i><0.5</i>	<i>20.5</i>	N/A	mrad/hour
97000261	T-204	14 SAMPLE	S97T000626	0 F	FUSION01	SOLID	N/A	<i>1.9784</i>		g/L
		<i>4946</i> → <i>250 l</i>								
97000261	T-204	15 SAMPLE	S97T000626	0 F	DOSE-02	SOLID	N/A	<i>20.5</i>		mrad/hour
97000261	T-204	16 DUP	S97T000626	0 F	FUSION01	SOLID	<i>1.9784</i>	<i>1.9340</i>	N/A	g/L
		<i>4835</i> → <i>250 l</i>								
97000261	T-204	17 DUP	S97T000626	0 F	DOSE-02	SOLID	<i><0.5</i>	<i>20.5</i>	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.

May. -2. 1997

3:51AM

WHC 222S LAB ROOM 2F BACKSIDE

No. 2644

P. 1/1

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

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

note 7-14-97

Page: 2

LABCORE Data Entry Template for Worklist# 17713

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

Final page for worklist # 17713

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# 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>	N/A	g/L
97000261	T-204	2	SAMPLE S97T001198 0 F <u>.5485</u> → <u>.250L</u>		DOSE-02	SOLID	N/A	<u>2.194</u>		mmrad/hour
97000261	T-204	3	SAMPLE S97T001198 0 F		FUSION01	SOLID	N/A	<u>2.5</u>		g/L
97000261	T-204	4	DUP S97T001198 0 F <u>.5436</u> → <u>.250L</u>		DOSE-02	SOLID	<u>2.194</u>	<u>2.174</u>	N/A	mmrad/hour
97000261	T-204	5	DUP S97T001198 0 F		FUSION01	SOLID	<u>2.5</u>	<u>2.5</u>	N/A	g/L

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: RSW 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			H20D1G01	SOLID	<u>1</u>	<u>.100</u>	<u>N/A</u>	g/L
97000261	T-204	2 SAMPLE	S97T001200 0 W		H20D1G01	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		H20D1G01	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

RSW 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

worklistprt Version 2.1 05/15/95
07/08/97 11:00HNF-SD-WM-DP-255,
REV. 0

Page: 1

LABCORE Data Entry Template for Worklist# 19176

Analyst: DCD Instrument: ACD01 Book # WMC-1A > 2.5 ml each
WMC-2 to 50 ml final
 Method: LA-505-163 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>						<u>→ 0.050 g</u>		
97000261	T-204	4	SAMPLE	S97T001199	0	A	DOSE-02	SOLID	<u>N/A</u>	<u><.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>0.3562 g</u>						<u>→ 0.050 g</u>		
97000261	T-204	6	DUP	S97T001199	0	A	DOSE-02	SOLID	<u><.5</u>	<u><.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>0.3599 g</u>						<u>→ 0.050 g</u>		
97000261	T-204	8	SPK	S97T001199	0	A	DOSE-02	SOLID	<u>N/A</u>	<u><.5</u>	<u>N/A</u>	<u>mrad/hour</u>

Final page for worklist # 19176

Daniel D. Dene 7-9-97
 Analyst Signature Date

Cal D 7-14-97
 Analyst Signature Date

Data Entry Comments:

Found by Finding Higher
HPT CHARLIE Cooper 2-9-97 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.

validated
 20 H
 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

Requestor: ANZDate: 4/21/97Tank: I-204Core: 138Seg: 1 LHAuger: —Sample ID: SETT00444

Start Time: 12:19
 End Time: 12:47
 Homogenization Time (Min.): 27

Jar #:

Jar/Vial Size: 12197 mLInitial Weight: — gFinal Weight: — gNet Weight: — g

Core #:

Final Vol: 12.197 mLInitial Weight: 11.5 gFinal Weight: 7.17 gNet Weight: 20.64 g

Sample ID:

Appearance/Narrative: 13.7Bulk Den = 1.15 = 115 g/mL

Tank:

Core:

Seg:

Auger:

Sample ID:

Start Time:

End Time:

Homogenization Time (Min.):

Jar #:

Jar/Vial Size:

Initial Weight:

Final Weight:

Net Weight:

Core #:

Final Vol:

Initial Weight:

Final Weight:

Net Weight:

Sample ID:

Appearance/Narrative:

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

Bulk Density Worksheet

Date: 4/22/97Requestor: Nizom

Tank: T204
 Core: 148
 Seg: 244
 Auger: ---

Sample ID: 59TT000570

Start Time: 13:57
 End Time: 14:05
 Homogenization Time (Min.): ---

Jar#: 12534
 Jar/Vial Size: 44 mL
 Initial Weight: 44.47 g
 Final Weight: --- g
 Net Weight: --- g

Cone#: 34
 Final Vol: 11.6 mL
 Initial Weight: 7.44 g
 Final Weight: 20.01 g
 Net Weight: 13.57 g

Sample ID: ---

Appearance/Narrative: 13.57 g / 11.6 mL = 1.17 g/mL
BULK DENS = 1.17 g/mL

Tank: ---
 Core: ---
 Seg: ---
 Auger: ---

Sample ID: 4299

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: ---

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

Bulk Density Worksheet

Date: 4/23/97

Requestor: Duzawa

Tank: T 204

Core: 188

Seg: 31H

Auger: _____

Sample ID: 1253 597000571

Start Time: _____

End Time: _____

Homogenization Time (Min.): _____

Jar #: 12535

Jar/Vial Size: 444 mL

Initial Weight: 444 g

Final Weight: _____ g

Net Weight: _____ g

Cone #: 35

Final Vol: 10.0 mL

Initial Weight: 743 g

Final Weight: 19.05 g

Net Weight: 11.62 g

Sample ID: _____

Appearance/Narrative: _____

BULK DENSITY = 10.02 / 10.0 = 1.62 g/mL

Net 4/23/97

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: ANZU

Date: 4-21-97

Tank: 7-204

Core: 188

Seg: 41H

Auger:

Sample ID: 5977000572

Start Time:
End Time:
Homogenization
Time (Min.): 4:50/97

Jar#: 12532

Jar/Vial Size: mL

Initial Weight: 082 g

Final Weight: 487.97 g

Net Weight: g

Cone#: 32

Final Vol: 11.0 mL

Initial Weight: 2.45 g

Final Weight: 20.69 g

Net Weight: 13.24 g

Sample ID:

Appearance/Narrative:

BULK DENSITY = 13.24 g / 11.0 mL = 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: NAZUM

Date: 4-24-97

Tank: T-204
Core: 183
Seg: 5 LH
Auger: —
Sample ID: 97700609

Start Time: —
End Time: —
Homogenization
Time (Min.): 0.5

Jar#: 12536
Jar/Vial Size: — mL
Initial Weight: — g
Final Weight: — g
Net Weight: 4.8397 g

Cone#: 36
Final Vol: 9.5 mL
Initial Weight: 7.46 g
Final Weight: 16.92 g
Net Weight: 11.46 g
Sample ID: —

Appearance/Narrative:

$$BLK DENS Q1 = 11.46 / 9.5 = 1.21 \text{ g/mL}$$

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: U070M

Date: 4/24/97

Tank: F204

Core: 146

Seg: Co LH

Auger: AN

Sample ID: 397000G10

Start Time: 15:30
End Time: 15:34
Homogenization Time (Min.): 4

Jar #: 146/24/97
Jar/Vial Size: mL
Initial Weight: g
Final Weight: g
Net Weight: g

Cone #: 346
Final Vol: 14.5 mL
Initial Weight: 7.50 g
Final Weight: 24.50 g
Net Weight: 17 g

Sample ID:

Appearance/Narrative: 6.140E5 @ 1 = 17.00 / 14.5 = 1.17 g/mL

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

Jar #: 146/24/97
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: Nuzem

Tank: 118-1-204

Core: 180

Seg: 7

Auger: —

Sample ID: SAT000611

Start Time: 10:30
End Time: 10:35
Homogenization Time (Min.): 5

Jar#: 12540

Jar/Vial Size: 12540 mL

Initial Weight: 14.0 g

Final Weight: 14.0 g

Net Weight: 0 g

Cone#: 12540

Final Vol: 14.0 mL

Initial Weight: 7.3 g

Final Weight: 7.3 g

Net Weight: 0 g

Sample ID: —

Appearance/Narrative: 118-1-204 = 6.18 g/mL

Date: 4/28/97

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/97

Cone#: —

Final Vol: — mL

Initial Weight: — g

Final Weight: — g

Net Weight: — g

Sample ID: —

Appearance/Narrative: —

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

2225 HAZMAT UNIT →→→ LAB DATA MGMT

001

Bulk Density Worksheet

Date: 4/28/97equestor: NazomTank: 7-204Core: 188Seg: 82HAuger: Sample ID: S977000612Start Time: End Time: Homogenization Time (Min.): Jar#: 12542Jar/Vial Size: 250 mLInitial Weight: 401.6 gFinal Weight: gNet Weight: g Cone#: 12542Final Vol: 102.15 mLInitial Weight: 7.47 gFinal Weight: 21.3 gNet Weight: 13.8 gSample ID: S977000612 Appearance/Narrative: Bulk Density: 13.89 g/mLSample ID: 120 g/LTank: Core: Seg: Auger: Sample ID: Start Time: End Time: Homogenization Time (Min.): Jar#: Jar/Vial Size: mLInitial Weight: gFinal Weight: gNet Weight: g Cone#: Final Vol: mLInitial Weight: gFinal Weight: gNet Weight: gSample ID: Appearance/Narrative:

Bulk Density Worksheet

Requestor: SLZ

Date: 4-28-97

Tank: 1-204

Core: 188

Seg: 9

Auger: 4H

Sample ID: SAT000013

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

Jar#: 12541

Jar/Vial Size: _____ mL

Initial Weight: _____ g

Final Weight: _____ g

Net Weight: _____ 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: B/L DEWET 10.5% 1.18 g/mL

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

Jar#: _____

Jar/Vial Size: _____ mL

Initial Weight: 7.0 g

Final Weight: 9.0 g

Net Weight: 2.0 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: 101H
Auger:
Sample ID: 5971020614

Start Time:
End Time:
Homogenization Time (Min.): 14:55
Jar#: 12551
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:

Bulk Den = 10.7 / 3.25 = 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

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

Requestor: NWZwm

Date: 6/12/97

Tank: T-204
Core: Comp 5/6

Seg: ---
Auger: ---

Sample ID: S97001191

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

Jar#: 97001191
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 Liquid

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: ---

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

INORGANIC ANALYSES

HNF-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. Dulfer 5-3-97
Analyst Signature Date

[Signature] 5-6-97
Analyst Signature Date

Validated 5/8/97 [Signature] Bachelor

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

11-Nov-11

Ident: 0.0

222-S Laboratory

5-3-97

SMH

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

HNF-SD-WM-DP-245, REV. 0 11/11/11

Signature 5-3-97 °C

S97T000647 N2

9.760 mg

Rate: 10.0 °C/min

File: 00121.001

DSC METTLER

~~11-Nov-11~~

Ident: 0.0

222-S Laboratory

9-3-97

88mf

HNF-SD-WM-DP-265, REV.0

HNF-SD-WM-DP-245, REV.0 ¹¹⁻¹⁰⁻⁹⁷

S97T000647 DUP N2

10.043 mg

Rate: 10.0 °C/min

File: 00123.001

DSC METTLER

11-Nov-11

Ident: 0.0

222-S Laboratory

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

HNF-SD-WM-DP-246, REV. 0
11/11/11

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

[Signature] 5-6-97
Analyst Signature Date

Validated 5/8/97 [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.

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 119 TO 123.

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

Integration
Delta H 388 mJ
25.7 J/g
Peak 148.4 °C
-25.1 mW

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

Anthony Purnell 050397

120. 140. 160. 180. °C

S97T000498 SAM N2
26.053 mg
Rate: 10.0 °C/min
File: 00130.001 DSC METTLER 11-Nov-11
Ident: 0.0 222-S Laboratory

S97T000498 DUP N2

25.000 mg

Rate: 10.0 °C/min

File: 00132.001

DSC METTLER

11-Nov-11

Ident: 0.0

222-S Laboratory

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

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

S97T000499 SAM N2

19.399 mg

Rate: 10.0 °C/min

File: 00134.001

DSC METTLER

11-Nov-11

Ident: 0.0

222-S Laboratory

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

HNF-SD-WM-DP-246, REV. 0 ^{2/14/97}

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

S97T000499 DUP N2
13.115 mg

File: 00001.001
Ident: 0.0

DSC METTLER
222-S Laboratory

11-Nov-11

Rate: 10.0 °C/min

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:

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

Anthony Perreault 5-14-97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Samples Run on DSC-03. 992 5/14/97

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: 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 126 TO 130

N2, EXOTHERM DOWN

TEMP: 140.0 °C TIMES: 0.0 min RATE: 10.0 °C/min
TEMP: 180.0 °C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Tue May 13 21:11:11 1997

Curve 1: DSC

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

Sample Weight: 38.380 mg

S97T000574 SAM

N2 10C/min

TEMP: 38.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

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

HNF-SD-WM-DP-245, REV. 0.0515
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC

File info: SAM070514 Wed May 14 04: 44: 46 1997

Sample Weight: 32.350 mg

S97T000574 DUP

HNF-SD-WM-DP-245-REV-0 122
7/14/97

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

N2 10C/min

TEMP: 86.0 °C
TEMP: 800.0 °C

TIMES: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

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 06:35:26 1997

Sample Weight: 12.720 mg

S97T000575

N2 10C/min

TEMP1: 35.0 °C
TEMP2: 500.0 °C

TIMES: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 14 06:48:44 1997

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

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

Curve 1: DSC

File info: SAM051402 Wed May 14 07:39:36 1997

Sample Weight: 10.280 mg

S97T000575 DUP

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

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

LABCORE Data Entry Template for Worklist# 17830

Analyst: SMF Instrument: DSC0 3 Book # 12N14B

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

HNFS-D-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>27.00*</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 # 12014B

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

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

Analyst Signature Date

Data Entry Comments:

Samples run on DSC-03. 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.

N2, EXOTHERM DOWN

TEMP1: 140.0 °C TIME1: 0.0 min RATE1: 10.0 °C/min
TEMP2: 180.0 °C

Curve 1: DSC

File info: SAM051505 Thu May 15 13:52:15 1997

Sample Weight: 24.410 mg

S97T000576

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIMES: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 14:20:43 1997

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

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

Curve 1: DSC

File info: SAM051506 Thu May 15 15:13:51 1997

Sample Weight: 27.350 mg

S97T000576 DUP

N2 10C/min

TEMP: 25.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

SM FULTON

PERKIN-ELMER

7 Series Thermal Analysis System

Thu May 15 17:34:46 1997

HNF-SD-WM-DP-245, REV. 0
HNF-SD-WM-DP-255, REV. 0

135
1497

Curve 1: DSC

File info: SAM051507 Thu May 15 18:38:49 1997

Sample Weight: 16.260 mg

S97T000580 SAM

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 18:39:43 1997

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

HNF-SD-WM-DP-246, REV. 0
7-14-97

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

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

 5/16/97
Analyst Signature Date

Validated 5/16/97

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# 17831

Analyst: ADD 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 Pueretto 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: 140.0 °C TIME: 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

R. Macleod 5/16/97

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

HNF-SD-WM-DP-245, REV.0/106
7-11-97

Curve 1: DSC

File info: SAM051509 Thu May 15 23:26:09 1997

Sample Weight: 24.200 mg

S97T000603 SAM

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

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 23:58:37 1997

HNF-SD-WM-DP-246, REV. 0
141-97
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC

File Info: SAM051510 Fri May 16 00:48:01 1997

Sample Weight: 19.620 mg

S97T000603 DUP

N2 10C/min

TEMP: 35.0 °C
TEMP: 600.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 16 00:50:38 1997

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

HNF-SD-WM-DP-245, REV.0
1997/5/16

Curve 1: DSC

File info: SAM051511 Fri May 16 01:45:37 1997

Sample Weight: 37.770 mg

S97T000604 SAM

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 16 01:59:34 1997

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

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

Curve 1: DSC

File info: SAM051513 Fri May 16 02:54:17 1997

Sample Weight: 24.970 mg

S97T000604 DUP

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

HNF-SD-WM-DP-245, REV. 0.445
7/14/97
HNF-SD-WM-DP-255, REV. 0

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. 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>27.01</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

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

Analyst Signature Date

Data Entry Comments:

Samples run on DSC-03. 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 157.

N2, EXOTHERM DOWN

TEMP: 140.0 °C
TIME: 180.0 s
RATES: 0.0 min RATE: 10.0 °C/min

Curve 1: DSC

File info: SAM051601 Fri May 16 04:23:55 1997

Sample Weight: 18.940 mg

S97T000605 SAM

148

N2 10C/min

TEMP: 35.0 °C
TIME: 600.0 s

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 16 08:17:12 1997

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

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

Curve 1: DSC
File info: SAM051602 Fri May 16 19:36:05 1997
Sample Weight: 49.440 mg
S97T000605DUP

149

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

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 16 21:25:35 1997

HNF-SD-WM-DP-245, REV. 0 *11-14-97*
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC

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

Sample Weight: 29.680 mg

S97T000606

N2 10C/min

TEMP: 25.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat May 17 00:40:37 1997

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

HNF-SD-WM-DP-245, REV. 0
4/14/97

Curve 1: DSC

File info: SAM051701 Sat May 17 01:41:32 1997

Sample Weight: 35.030 mg

S97T000606DUP

151

N2 10C/min

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

Temperature (°C)

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

HNF-SD-WM-DP-265, REV. 0

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

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. 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# 17833

Analyst: Com Instrument: DSC0 3 Book # 12M4B

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			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

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: TER051702 Sat May 17 20:57:32 1997

Sample Weight: 8.850 mg

12N14-B

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

N2, EXOTHERM DOWN

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

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat May 17 21:01:23 1997
Handwritten signature: "K. L. D. for RDM"

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

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

154

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

N2 10C/min
 TEMP: 25.8 °C
 TIME: 0.0 min RATE: 10.0 C/min
 RD 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

N2 10C/min

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

Temperature (°C)

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

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

HNF-SD-WM-DP-245, REV. 0
3/14/97

Curve 1: DSC

File info: SAM051801 Sun May 18 01:26:43 1997

Sample Weight: 26.950 mg

S97T000608

N2 10C/min

TEMP: 35.0 °C
TIME: 600.0 s

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

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

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

HNF-SD-WM-DP-245, REV. 0
17/11/97

Curve 1: DSC
File Info: SAM051602 Sun May 16 02:23:51 1997
Sample Weight: 24.700 mg
S97T000508DUP

N2 10C/min
TIME: 55.88
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 # 12N14 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>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

Susan Bee 5/22/97
Analyst Signature Date

Validated 5/30/97 B. Brachels

Data Entry Comments:

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

Jds 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: IND051803 Sun May 18 16:24:45 1997

Sample Weight: 8.850 mg

12K14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 161 TO 165.

~~HNF-SD-WM-DP-245, REV. 0~~
7-1497

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

161

Heat Flow (mW)

N2, EXOTHERM DOWN

Temperature: 160.0 °C
Time: 0.0 min
Rate: 40.0 °C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Sun May 18 16:25:57 1997

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

N2 10C/min

TEMP: 25.0 °C
TEMP: 500.0 °C

TIMES: 0.0 min RATE: 10.0 C/min

Temperature (°C)

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

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

HNF-SD-WM-DP-246, REV. 0
JUL 97

Curve 1: DSC

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

Sample Weight: 38.950 mg

S97T000633DUP

163

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

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

HNF-SD-WM-DP-265, REV. 0

HNF-SD-WM-DP-245, REV. 0
15-10-97

Curve 1: DSC

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

Sample Weight: 35.880 mg

S97T000634

N2 10C/min

TEMP1: 35.0 °C
TEMP2: 500.0 °C

TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

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

HNF-SD-WM-DP-245, REV. 0
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC
File info: SAM051806 Mon May 19 03:13:11 1997
Sample Weight: 33.240 mg
S97T000634DUP

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

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

HNF-SD-WM-DP-245, REV. 0
HNF-SD-WM-DP-255, REV. 0

LABCORE Data Entry Template for Worklist# 17835

Analyst: PJM 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>26.43</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 _____

Susan Bee
Analyst Signature _____ Date 5/22/97

Validated 6/2/97 B. Pacheloz

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.

Curve 1: DSC

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

N2, EXOTHERM DOWN

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

Temperature (°C)

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Tue May 20 22:57:28 1997

168

HNF-SD-WM-DP-245, REV. 0.014-97
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC

File info: SAM052101 Wed May 21 00:56:23 1997

Sample Weight: 14.940 mg

S97T000635

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

PJ MCCOWN

PERKIN-ELMER

7 Series Thermal Analysis System

Wed May 21 01:21:36 1997

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

HNF-SD-WM-DP-255, REV. 0 1/24/97

Curve 1: DSC

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

Sample Weight: 13.860 mg

S97T000635 DUP

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

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

HNF-SD-WM-DP-245, REV. 0
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC

File info: SAM052103 Wed May 21 03:26:03 1997

Sample Weight: 11.940 mg

S97T000636

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIMES: 0.0 min RATE: 10.0 C/min

Temperature (°C)

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 03:38:37 1997

HNF-SD-WM-DP-245, REV. 0
HNF-SD-WM-DP-265, REV. 0

Curve 1: DSC

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

Sample Weight: 13.120 mg

S977000636 DUP

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

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

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

N2 10C/min
TEMP: 25.0 °C
TIME: 00:02
RATE: 0.0 min RATE: 10.0 C/min

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

[Signature] 5-29-97
Analyst Signature Date

Validated 5/30/97 [Signature]

Data Entry Comments:

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. ~~BB~~ 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

N2, EXOTHERM DOWN

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

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 02:39:03 1997

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

HNF-SD-WM-DP-245, REV. 0
1-11-97

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

N2 10C/min
TEMP: 35.0 °C
TEMP: 500.0 °C
TIME: 0.0 min RATE: 10.0 °C/min

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 08:02:25 1997

HNF-SD-WM-DP-245, REV. 01/14/97

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

Curve 1: DSC

File info: SAM051502 Thu May 15 09:24:28 1997

Sample Weight: 10.870 mg

S97T000637 DUP

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

HNF-SD-WM-DP-245, REV. 03905
7-14-97
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC

File info: SAM051503 Thu May 15 11:18:26 1997

Sample Weight: 34.860 mg

S97T000638 SAM

N2 10C/min

TEMP: 55.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

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

HNF-SD-WM-DP-245, REV. 0
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC
File info: SAM051504 Thu May 15 12:39:54 1997
Sample Weight: 18.250 mg
S97T000638 DUP

N2 10C/min
TEMP1: 25.0 °C
TEMP2: 500.0 °C
TIME1: 0.0 min
RATE1: 10.0 °C/min

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

HNF-SD-WM-DP-245, REV. 0
HNF-SD-WM-DP-255, REV. 0

LABCORE Data Entry Template for Worklist# 18349

Analyst: ppb Instrument: DSC0 2 Book # N/A

Method: LA-514-113 Rev/Mod 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

Analyst Signature

5/29/97
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: EA-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	N/A	0		Joules/g Dry
97000261	T-204	2 DUP	S97T000606	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000261	T-204	3 SAMPLE	S97T000607	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000261	T-204	4 DUP	S97T000607	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000261	T-204	5 SAMPLE	S97T000608	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000261	T-204	6 DUP	S97T000608	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000261	T-204	7 SAMPLE	S97T000633	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000261	T-204	8 DUP	S97T000633	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000261	T-204	9 SAMPLE	S97T000634	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000261	T-204	10 DUP	S97T000634	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000261	T-204	11 SAMPLE	S97T000635	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000261	T-204	12 DUP	S97T000635	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000261	T-204	13 SAMPLE	S97T000636	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000261	T-204	14 DUP	S97T000636	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000261	T-204	15 SAMPLE	S97T000637	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000261	T-204	16 DUP	S97T000637	0	DSC-02	SOLID	0	0	N/A	Joules/g Dry
97000261	T-204	17 SAMPLE	S97T000638	0	DSC-02	SOLID	N/A	0		Joules/g Dry
97000261	T-204	18 DUP	S97T000638	0	DSC-02	SOLID	0	0	N/A	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. Pacheco 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 # NA

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

[Signature] 6-26-97
Analyst Signature Date

Validated 6/26/97 [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# 18689

Analyst: ADP

Instrument: DSC0 3

Book # 12N14-B

Method: LA-514-113 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-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 P. Puro 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 08:09:50 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.

N2, EXOTHERM DOWN

TEMP: 140.0 °C
TIME: 160.0 s
RATES: 0.0 min RATE: 10.0 °C/min

HNF-SD-WM-DP-245, REV. 04/86
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

N2 10C/min

TEMP: 35.0 C
TEMP: 500.0 C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

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

HNF-SD-WM-DP-245, REV. 0
HNF-SD-WM-DP-255, REV. 0

Curve 1: DSC

File info: SAM061902 Thu Jun 19 12:05:11 1997

Sample Weight: 37.710 mg

S97T001197 DUP

189

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

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

N2 10C/min

TEMP: 25.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

AD PURINTON
PERKIN-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 # N/A

Method: LA 514-113 Rev/Mod 00 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>6</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>	N/A	%
97000261	T-204	2	SAMPLE	S97T000498	0		TGA-01	SOLID	N/A	<u>79.53</u>		%
97000261	T-204	3	DUP	S97T000498	0		TGA-01	SOLID	<u>79.53</u>	<u>78.89</u>	N/A	%
97000261	T-204	4	SAMPLE	S97T000499	0		TGA-01	SOLID	N/A	<u>88.58</u>		%
97000261	T-204	5	DUP	S97T000499	0		TGA-01	SOLID	<u>88.58</u>	<u>80.95</u>	N/A	%

Final page for worklist # 17838

Anthony P. Puro 05-03-97
Analyst Signature Date

John J. Puro 5-6-97
Analyst Signature Date

Validated 5/8/97 JP

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

TG

METTLER

02-May-97

Ident: 0.0

222-S Laboratory

Step Analysis

Height-12.15 mg

-59.10 %

ResiC. 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 ^{05/05/97}

S97T000498 SAM N2

25.673 mg

Rate: 10.0 °C/min

File: 00131.001

TG

METTLER

03-May-97

Ident: 0.0

222-S Laboratory

Step Analysis

Height-20.42 mg

-79.53 %

Resid. 5.26 mg

20.47 %

Dpeak 119.0 °C

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

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

S97T000498 DUP N2

34.274 mg

Rate: 10.0 °C/min

File: 00133.001

TG

METTLER

03-May-97

Ident: 0.0

222-S Laboratory

Step Analysis

Height-27.04 mg

-78.89 %

ResidC. 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 03-11-97

100.

200.

300.

400.

°C

S97T000499 SAM N2

29.997 mg

Rate: 10.0 °C/min

File: 00135.001

Ident: 0.0

TG METTLER 03-May-97

222-S Laboratory

Step Analysis

Height-26.57 mg

-88.58 %

ResidC. 3.42 mg

11.42 %

Dpeak 135.0 °C

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

HNF-SD-WM-DP-246, REV. 0 JUNE 7-14-97

S97T000499 DUP N2

35.193 mg

Rate: 10.0 °C/min

File: 00002.001

TG

METTLER

03-May-97

Ident: 0.0

222-S Laboratory

Step Analysis

Height-28.49 mg

-80.95 %

Resid. 6.70 mg

19.05 %

Dpeak 135.0 °C

10. mg

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

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

100.

200.

300.

400.

°C

LABCORE Data Entry Template for Worklist# 17839

Analyst: ADP Instrument: TGA0 3 Book # 97 NBA
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>58.51</u>	N/A	%
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>	N/A	%
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>	N/A	%

Final page for worklist # 17839

See Attached for Additional Signatures
Analyst Signature _____ Date _____

Jim Macle 5-15-97
Analyst Signature _____ Date _____

Jim Fulton 5-14-97
Validated 5/15/97 Macle

Data Entry Comments:

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 Anthony Perini Date 5-14-97

Analyst Signature _____ Date _____

Data Entry Comments:

Ran samples on TGA-03. 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
TEMP: 300.0 C

TIME: 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

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

HNF-SD-WM-DP-245, REV. 0
5/14/97

Curve 1: TGA

File info: SAM050514 Wed May 14 03:46:29 1997

Sample Weight: 9.154 mg

S97T000574 SAM

10C/MIN N2

TEMP: 35.0 C TIME: 0.0 min RATE: 10.0 C/min
TEMP: 500.0 C

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

HNF-SD-WM-DP-245, REV. 0
7-14-97
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: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 14 05:31:20 1997

HNF-SD-WM-DP-245, REV. 01/24/97
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA

File info: SAM051401 Wed May 14 06:38:53 1997

Sample Weight: 15.065 mg

S97T000575

10C/MIN N2

TEMP: 35.0 C TIMES: 0.0 min RATE: 10.0 C/min

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 14 06:54:02 1997

HNF-SD-WM-DP-255, REV. 0
7/14/97
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA

File info: SAM051402 Wed May 14 07:45:28 1997

Sample Weight: 8.665 mg

S97T000575 DUP

10C/MIN N2

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

Temperature (°C)

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

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

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

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>	<u>%</u>
97000261	T-204	2 SAMPLE	S97T000605	0	TGA-03	SOLID	<u>N/A</u>	<u>76.21</u>		<u>%</u>
97000261	T-204	3 DUP	S97T000605	0	TGA-03	SOLID	<u>76.21</u>	<u>74.04</u>	<u>N/A</u>	<u>%</u>
97000261	T-204	4 SAMPLE	S97T000606	0	TGA-03	SOLID	<u>N/A</u>	<u>73.21</u>		<u>%</u>
97000261	T-204	5 DUP	S97T000606	0	TGA-03	SOLID	<u>73.21</u>	<u>69.64</u>	<u>N/A</u>	<u>%</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:

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

Cherry Purnell 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 97N8-A

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

N2 10C/MIN

TEMP: 35.0 °C
TEMP: 300.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

AD P. PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri May 16 03: 44: 13 1997

HNF-SD-WM-DP-245, REV. 0
15497
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA

File info: SAM051601 Fri May 16 04:44:58 1997

Sample Weight: 37.374 mg

S97T000605 SAM

10C/MIN N2

TEMP: 500.0 °C TIME: 0.0 min RATE: 10.0 °C/min

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

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

Curve 1: TGA

File Info: SAM051602 Fri May 16 19:40:25 1997

Sample Weight: 5.819 mg

S97T000605DUP

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

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

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

10C/MIN N2
 TEMP: 35.0 °C
 TIME: 00:08
 0.0 MIN RATE: 10.0 C/min
 Temperature (°C)
 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

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat May 17 04:08:13 1997

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

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

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 # T1N8A

Method: LA-560-112 Rev/Mod D-D 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 97NB-A

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

N2 10C/MIN

TEMP: 35.0 °C

TIME: 0.0 min

RATE: 10.0 °C/min

Temperature (°C)

RD MEYERS

PERKIN-ELMER

7 Series Thermal Analysis System

Sat May 17 20: 51: 42 1997

Residue Diagram for RDm

HNF-SD-WM-DP-246, REV. 01/96
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA

File info: SAM051704 Sat May 17 21:44:54 1997

Sample Weight: 7.724 mg

S97T000607

21A

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

Temperature (°C)

RD MEYERS
PERKIN-ELMER
7 Series Thermal Analysis System
Sat May 17 21:50:36 1997

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

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

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

Curve 1: TGA
 File info: SAM051801 Sun May 18 01:31:29 1997
 Sample Weight: 6.790 mg
 S97T000608

10C/MIN N2
 TEMPS 55.8 8
 TIME 11: 0.0 min RATE: 10.0 C/min
 RD MEYERS
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Sun May 18 01:39:06 1997

Curve 1: TGA

File info: SAM051802 Sun May 18 02:38:29 1997

Sample Weight: 9.511 mg

S97T000608DUP

10C/MIN N2
TEMP: 35.0 °C
TIME: 500.0 s
TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

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

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

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

LABCORE Data Entry Template for Worklist# 17844

Analyst: JDS 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>58.76</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 Date

Signature 5-21-97
Analyst Signature Date

Validated 5/22/97 Signature

Data Entry Comments:

LABCORE Data Entry Template for Worklist# 17844

Analyst: Jds Instrument: TGA0 3 Book # 97NFA
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	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. 8/3 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: TERO51801 Sun May 18 17:59:02 1997

Sample Weight: 17.368 mg

TGA STD 97NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES ~~210~~ 234.

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

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

N2 10C/MIN
TEMP: 35.0 °C
TIME: 305.0 s

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System

Sun May 18 18:12:38 1997

Curve 1: TGA

File info: SAM051803 Sun May 18 19:30:29 1997

Sample Weight: 24.624 mg

S97T000633

10C/MIN N2
TEMP: 35.0 C
TEMP: 500.0 C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Tue May 20 14:36:38 1997

HNF-SD-WM-DP-245, REV. 0
7-11-97
HNF-SD-WM-DP-255, REV. 0

HNF-SD-WM-DP-245, REV. 0 *DATE 7-14-87*

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

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

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

Curve 1: TGA

File info: SAM051805 Mon May 19 01:35:14 1997

Sample Weight: 16.615 mg

S97T000634

10C/MIN N2

TEMP: 38.0 °C
TEMP2: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

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

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

HNF-SD-WM-DP-245, REV. 0
5/14/97

Curve 1: TGA

File info: SAM051806 Mon May 19 03:07:32 1997

Sample Weight: 22.823 mg

S97T000634DUP

10C/MIN N2
TEMP: 35.0 C
TEMP: 500.0 C
TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon May 19 03:46:23 1997

HNF-SD-MM-DP-245, REV. 0114
HNF-SD-MM-DP-255, REV. 0

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 Date

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. 983 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 227 TO 231.

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

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

PJ MCCOWN
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

S97T000635

10C/MIN N2

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

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

HNF-SD-WM-DP-255, REV. 01/96
7/14/97
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA

File info: SAM052102 Wed May 21 02:16:12 1997

Sample Weight: 12.983 mg

S97T000635 DUP

10C/MIN N2

TEMP: 38.0 °C
TEMP: 500.0 °C

TIMES: 0.0 min RATE: 10.0 C/min

Temperature (°C)

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

HNF-SD-WM-DP-245, REV. 0.1147
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

10C/MIN N2

TEMP1: 30.0 °C
TEMP2: 500.0 °C

TIME1: 0.0 min RATE1: 10.0 °C/min

Temperature (°C)

PJ MCCOWN

PERKIN-ELMER

7 Series Thermal Analysis System

Wed May 21 03:33:04 1997

HNF-SD-MM-DP-245, REV. 0
7-14-97
HNF-SD-MM-DP-255, REV. 0

Curve 1: TGA

File info: SAM052104 Wed May 21 04:38:54 1997

Sample Weight: 14.953 mg

S97T000636 DUP

10C/MIN N2

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

Temperature (°C)

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

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

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

Wm Bui 5/16/97
Analyst Signature Date

Rejected 5/21/97 Michael

Data Entry Comments:

Low STD recovery. Rerun samples. JB

LABCORE Data Entry Template for Worklist# 17846

Analyst: ADP Instrument: TGA0 3 Book # 97N8A

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

ADP 5-15-97
Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

Samples run on TGA-03. 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: TGA

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

Sample Weight: 14.820 mg

TGA STD 97NB-A

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

234

Weight (Wt. %)

N2 10C/MIN

TEMP: 38.0 °C TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 03:05:30 1997

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

HNF-SD-WM-DP-245, REV. 01/95
7-14-97

Curve 1: TGA

File info: SAM051501 Thu May 15 04:10:16 1997

Sample Weight: 12.397 mg

S97T000637 SAM

10C/MIN N2

TEMP: 25.0 °C TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 07:56:19 1997

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

HNF-SD-WM-DP-245, REV. 0.106
2/11/97

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

10C/MIN N2
 TEMPI: 35.0 °C
 TEMPE: 600.0 °C
 TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

KR MONTEITH
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 15 09:42:06 1997

HNF-SD-WM-DP-245, REV. 01/14/97
 7-14-97
 HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA

File info: SAM051503 Thu May 15 11:18:44 1997

Sample Weight: 16.905 mg

S97T000638 SAM

10C/MIN N2

TEMP: 25.0 C
TIME: 500.0 C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 15 11:39:48 1997

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

HNF-SD-WM-DP-246, REV. 0
1/14/97

Curve 1: TGA

File info: SAM051504 Thu May 15 12:43:13 1997

Sample Weight: 14.848 mg

S97T000638 DUP

238

Weight (Wt. %)

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

HNF-SD-WM-DP-245, REV. 0 *noted*
7/11/97

10C/MIN N2

TEMP: 25.0 C
TIME: 000.0

TIME1: 0.0 min RATE1: 10.0 C/min

Temperature (°C)

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>	N/A	%
97000261	T-204	2	SAMPLE	S97T000647	0		TGA-01	LIQUID	N/A	<u>100.69</u>		%
97000261	T-204	3	DUP	S97T000647	0		TGA-01	LIQUID	<u>100.69</u>	<u>100.34</u>	N/A	%

Final page for worklist # 17847

Lurie M. Tilton 5-3-97
Analyst Signature Date

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

Validated 5/8/97 Brachelor

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

Rate: 10.0 °C/min

File: 00119.001

TG

METTLER

02-May-97

Ident: 0.0

222-S Laboratory

Step Analysis

Height-12.15 mg

-59.15 %

ResidC. 8.40 mg

40.85 %

Dpeak 112.5 °C

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

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

Signature 200. 5-3-97 °C

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

File: 00422.001 TG METTLER 02-May-97
Ident: 0.0 222-S Laboratory

Rate: 10.0 °C/min

S97T000647 N2
9.801 mg

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

Step Analysis

Height-10.08 mg

-100.34 %

ResiC. -0.03 mg

-0.34 %

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

HNF-SD-WM-DP-255, REV. 0
2/14/97

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:

5977000580 ran in triplicate. Blm. Samples ran on TGA-03.
High RPD 5977000580 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.

244

10C/MIN N2

TEMP: 300.0 °C TIME: 0.0 min RATE: 10.0 °C/min

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 16:16:12 1997

Realized by PJM

HNF-SD-WM-DP-255, REV. 0
HNF-SD-WM-DP-245, REV. 01/96
7-14-97

Curve 1: TGA

File info: SAM052113 Wed May 21 20:03:28 1997

Sample Weight: 17.934 mg

S97T000576

10C/MIN N2

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 20:21:39 1997

HNF-SD-WM-DP-246, REV. 0
HNF-SD-WM-DP-255, REV. 0

HNF-SD-WM-DP-246, REV. 0
7-11-97

Curve 1: TGA

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

Sample Weight: 17.903 mg

S97T000576 DUP

246

10C/MIN N2

TEMP: 25.0 °C
TIME: 600.0 s

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 21:16:52 1997

HNF-SD-WM-DP-246, REV. 0
7-14-97
HNF-SD-WM-DP-255, REV. 0

Curve 1: TGA

File info: SAM052115 Wed May 21 22: 29: 46 1997

Sample Weight: 13.218 mg

S97T000580

10C/MIN N2
TEMP: 25.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

PJ MCCONN
PERKIN-ELMER
7 Series Thermal Analysis System
Wed May 21 22: 30: 54 1997

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

HNF-SD-WM-DP-255, REV. 0
7/14/97

Curve 1: TGA

File info: SAM052201 Wed May 21 23:54:15 1997

Sample Weight: 18.480 mg

S97T000580 DUP

10C/MIN N2

TEMP: 30.0 °C
TIME: 558.0 s

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 00:13:25 1997

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

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

Curve 1: TGA

File info: SAM052202 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

TEMP: 500.0 C

Temperature (°C)

PJ MCCOWN

PERKIN-ELMER

7 Series Thermal Analysis System

Thu May 22 01:15:21 1997

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

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

Curve 1: TGA

File info: SAM052203 Thu May 22 02:16:48 1997

Sample Weight: 16.693 mg

S97T000603

HNF-SD-WM-DP-245, REV. 0.0
7-14-97
HNF-SD-WM-DP-255, REV. 0

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

Temperature (°C)

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 02:20:55 1997

Curve 1: TGA

File info: SAM052204 Thu May 22 03:27:02 1997

Sample Weight: 17.267 mg

S97T000603 DUP

251

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

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

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

Temperature (°C)

PJ MCCOWN
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 03:29:52 1997

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

ADP 5-22-97
Analyst Signature Date
Validated 6/2/97 Bachelor

Jay J. Hummel 5-27-97
Analyst Signature Date

Data Entry Comments:

Reproducible high RPD for S97T000638. No further reruns. 6/2/97

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: 25.0 °C TIME: 0.0 min RATE: 10.0 °C/min
TEMP: 300.0 °C

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

HNF-SD-WM-DP-246, REV. 0
7-14-97

Curve 1: TGA
 File info: SAM052206 Thu May 22 07:35:36 1997
 Sample Weight: 14.756 mg
 S97T000604 SAM

254

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

Temperature (°C)

AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 22 09:03:36 1997

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

HNF-SD-WM-DP-255, REV. 0
 7-11-97

Curve 1: TGA
 File info: SAM052207 Thu May 22 09:57:27 1997
 Sample Weight: 14.472 mg
 S97T000604 DUP

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

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

Curve 1: TGA

File info: SAM052208 Thu May 22 11:05:28 1997

Sample Weight: 20.778 mg

S97T000637 SAM

10C/MIN N2
TEMP: 30.0 C
TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 11:07:36 1997

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

Curve 1: TGA

File info: SAM052209 Thu May 22 12:11:09 1997

Sample Weight: 14.932 mg

S97T000637 DUP

257

HNF-SD-WM-DP-246, REV. 0
7-14-97

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

10C/MIN N2

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

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Thu May 22 12:24:47 1997

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

HNF-SD-WM-DP-245, REV. 011496
HNF-SD-WM-DP-255, REV. 0
7-14-97

Curve 1: TGA
 File info: SAM052211 Thu May 22 14: 37: 28 1997
 Sample Weight: 22.898 mg
 S97T000638 DUP

259

Weight (Wt. %)

10C/MIN N2

Temperature (°C)

TEMP: 35.0 C TIME: 0.0 min RATE: 10.0 C/min

AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Thu May 22 14: 39: 41 1997

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

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	5.90e01	58.17	98.593 % Recovery	
2	SAMPLE	S97T001197	0	TGA-03	SOLID	N/A	75.87	%	
3	DUP	S97T001197	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

LABCORE Data Entry Template for Worklist# 18685

Analyst: JS Instrument: TGA0 3 Book # 103NBA

Method: 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

JS 7/18/97
Analyst Signature Date
Validated 7/22/97 Q. Pacheco

RG Jones 7-18-97
Analyst Signature Date

Data Entry Comments:

Samples run on TGA-03. Q. 7/22/97

Curve 1: TGA

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 2102 TO 2104

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

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

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Jul 18 14:07:35 1997

Curve 1: TGA

File info: SAM061901 Thu Jun 19 10:25:28 1997

Sample Weight: 25.501 mg

S97T001197 SAM

10C/MIN N2

TIME: 55.8 s

TIME: 55.8 s

0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON

PERKIN-ELMER

7 Series Thermal Analysis System

Fri Jul 18 14:15:14 1997

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

Curve 1: TGA

File info: SAM061902 Thu Jun 19 12:01:56 1997

Sample Weight: 23.601 mg

S97T001197 DUP

10C/MIN N2

TIME: 35.0 s

RATE: 0.0 min RATE: 10.0 C/min

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Fri Jul 18 14:17:28 1997

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

LABCORE Data Entry Template for Worklist# 17820

Analyst: RJS 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 Schroeder 5/5/97

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.

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		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 = $[(W2-W1) \times 1000 \mu\text{L/mL}] / [\text{Vol. of Solution } \mu\text{L} \times 1.000 \text{ g/mL}]$		
Date			
04/30/97	v RESULT v		
Time	Specific Gravity Average =	1.404	
02:00 PM			

Data Entry by: <i>Dan Hammond</i>	Date: 04/30/97
Approved by: <i>RW Schoed</i>	Date: ^{RWS} 5/5/97

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	$\checkmark$ RESULT $\checkmark$		
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
Form 510112L1 Rev. 1.1	Page 1 of 1

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

LABCORE Completed Worklist Report for Worklist# 17900

Analyst: smf

Instrument: IC01

Book# *SD 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		RPD
4 DUP	S97T000647 0	@IC-01 CL-02	LIQUID	7.93e+00	8.36e+00	5.279	RPD
4 DUP	S97T000647 0	@IC-01 NO2-02	LIQUID	2.11e+00	<1.73e0		RPD
4 DUP	S97T000647 0	@IC-01 BR-02	LIQUID	<2.00e0	<2.00e0		RPD
4 DUP	S97T000647 0	@IC-01 NO3-02	LIQUID	4.70e+00	5.48e+00	15.324	RPD
4 DUP	S97T000647 0	@IC-01 P04-02	LIQUID	2.08e+00	<1.92e0		RPD
4 DUP	S97T000647 0	@IC-01 S04-02	LIQUID	1.78e+01	1.82e+01	2.222	RPD
4 DUP	S97T000647 0	@IC-01 OXALATE2	LIQUID	1.73e+00	<1.68e0		RPD

Final page for worklist# 17900

Analyst Signature Date

Analyst Signature Date

John W. Lays 5/13/97

LABCORE Data Entry Template for Worklist# 17900

Analyst: SMF Instrument: IC0 1

Book# 50N20-1

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

Susie M. Julton 5-7-97
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 400ml)

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 : *Jean J. J...* 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 : *Smith* 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

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

worklistdata Version 1.0 05/15/96
07/23/97 11:40

Page: 1

LABCORE Completed Worklist Report for Worklist# 19440

Analyst: kgh

Instrument: IC01

Book# 7211204

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+03	272.100	ug/g
4 SAMPLE	S97T001200	0 W @IC-01 S04-02	SOLID	N/A	4.195e+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
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Final page for worklist# 19440

Analyst Signature	Date
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Analyst Signature	Date
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<u>James M. Furr</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

*JM Lye for K6H 7/23/97**re-uploaded 7-23-97**JM Lye**19440JUL.CSV**Validated 7/23/97 JM Lye*

Data Entry Comments:

Data from 18822 was reuploaded to 19440. No real resun was done. JM Lye

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

*PC had wanted spike run, but resun was impossible due to air quality problems in 4D. JM Lye**Worklist 18822 is attached.**273.3*

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	@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	94.315 % 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+03	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.

LABCORE Completed Worklist Report for Worklist# 18822

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
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Final page for worklist# 18822

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

James M. Lyle
Reviewer Signature _____ Date *6/26/97*

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

[Signature] 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

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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    : [Signature] Column: AG4A/AS4A anion column
=====

```

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=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
External      1      101    3000  5Hz   0.00 10.00      30
=====

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***** 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

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

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: ICP01.1 JK 430-77 Book# 66B48B JK 430-77
Method: LA-505-151/161 Rev/Mod C-1
Worklist Comment: ICP T-204 (DIRECT) HNF-SD-WM-DP-255, REV. 0

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, SB-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

Analyst Signature JK Sato Date 04-30-97

Reviewed by: Laith. Pang Date 5/5/97
Analyst Signature

597T000647 , 3-3 AL, IF 2
597T000647 3-3 2

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 11:14:30 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	PREPBILKTJA	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 Ldt
04-30-97

6-103 5977000518
5977000523
5977000524

7-204 5977000647

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

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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	.463	.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	.0286	.0001
16	S97T000647_D	.0003	-.0070	.0218	1.708	.0254	-.0035
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	Cd	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	.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. 0 *note 7-14-97*

Analysis Report

Averages

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#	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	.4177	11720.	.0192	.0204
14	S97T000524_D	.0148	.0123	.5682	12700.	.0638	.0456
15	S97T000647	.0092	.0148	.1831	.7344	.0013	.0049
16	S97T000647_D	.0096	.0150	.1807	.9012	.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

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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	.1042	.0019
16	S97T000647_D	.0030	.0016	.1014	.0026
17	ICSA	.0018	.0067	.0066	-.0018

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

~~HNF-SD-WM-DP-245, REV. 0~~ ^{note} 4-97

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	CCB_1	.0014	.0003	.0004	.0005

OK ^{6/8}

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

Daniel L. Lott
Analyst Signature Date 07-15-97

Revised + Validated by:
Paul M. Parry
Analyst Signature Date 7/16/97

PrepStd QRL, direct, SF 1
PrepBlk QRL, direct, 1
5977001199-L, 4-4-28, 10
5977001199, 4-4, 2
5977001199-D, 4-4, 2
5977001199-S, 4-4, 2
5977001199-X, 4-4-1-9, 20
5977001199-QK, 4-4-1-9, 20, 1ml sample + 1ml each xWHC 28+35 + 7ml HNO₃

Post Spike:

$$Ag = \frac{\left(\frac{167.772}{20}\right) - 0}{10} \times 100 = 83.9\%$$

$$La = \frac{\left(\frac{286.589}{20}\right) - \left(\frac{80.735}{20}\right)}{10} \times 100 = 102.9\%$$

$$Bi = \frac{\left(\frac{579.454}{20}\right) - \left(\frac{370.594}{20}\right)}{10} \times 100 = 104.4\% \quad Mn = \frac{\left(\frac{308.370}{20}\right) - \left(\frac{104.562}{20}\right)}{10} \times 100 = 101.9\%$$

$$Fe = \frac{\left(\frac{230.882}{20}\right) - \left(\frac{28.434}{20}\right)}{10} \times 100 = 101.2\% \quad Na = \frac{\left(\frac{431.156}{20}\right) - \left(\frac{222.149}{20}\right)}{10} \times 100 = 99.5\%$$

$$K = \frac{\left(\frac{237.583}{20}\right) - \left(\frac{48.237}{20}\right)}{10} \times 100 = 94.7\%$$

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

File #: 970715Q 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

DK JGT

597T0C1199

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: ICSC 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)	Ca (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

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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				

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)	Si (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

K. R. D.
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	2.151	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

R.W. Schroeder 6/23/97
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 18752

Analyst:

ARM

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 µg/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>BW 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

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

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

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>RW Schneider</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>Raw Schneider</i>	Date: 6/23/97

SAMPLE.WB1 REV 1.0

342100ML

311

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

$\mu\text{g of Carbon/g} = (C1-C2) * DF / SS$
 $\mu\text{g of Carbon/g for TIC} = 5 \text{ if } C1 < C2$
 $\mu\text{g of Carbon/g for TOC} = 40 \text{ if } C1 < C2$

	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

WORKBOOK PAGE: SPIKE5

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

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:

R. W. Schroeder

Date: 6/23/97

SPIKE.WB1 REV 1.1

342100ML

313

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

~~HNF-SD-WM-DP-245, REV. 0~~ ^{mc} 7-14-97
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~~
 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	Analyst : KR MONTEITH
Dil Factor = 1	Min Readings = 22
Blank ID # =	Max Readings = 22
Blank Value = 2.85 ug/minute C	% 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	1.80E-4	90.000	% Recovery
1 STD	0	@ALPHA01	ALPHA01H	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	ALPHA01H	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 5/5/97

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. O'Brien 5/5/97
Analyst Signature Date
Sylvia Z. Capone 5/5/97

Data Entry Comments:

oil 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 5)	(MS)	2
WorkList	GROSS COUNTS	(GC)	3013
17815	COUNT TIME in MINUTES	(CT)	30
At for Bkg	BACKGROUND in cpm	(BKG)	0.03
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		115.103
Batch Number	Standard Value in $\mu\text{Ci/mL}$	2.00E-04	
97001824	Concentration in $\mu\text{Ci/L}$	=	1.67E-01
ReRun	Replicate Concentration in $\mu\text{Ci/L}$	=	1.92E-01
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$	=	1.7970E-01
Sample Drop			
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 $\mu\text{Ci/L}$ / 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 $\mu\text{Ci/mL}$ =	1.80E-04	DETECTION LEVEL
Analyst			
SCL			
Date Complete			3.97E-07
05/05/97	RELATIVE COUNTING ERROR =	3.6%	$\mu\text{Ci/mL}$
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 rerun would not increase data quality. No rerun 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
Atom IB7	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 = $[((\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT}))] * 1.96 * 100$		
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			3.97E-07
05/05/97	RELATIVE COUNTING ERROR	500.0%	$\mu\text{Ci/mL}$
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
BLANK.WB1 Rev. 1.0	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 BY	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 = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
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: 5/4/97
SAMPLE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: DUP5

AT : LA-508-101 (E-1)

LIQUIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	15	15
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	19	17
17815	COUNT TIME in MINUTES (CT)	30	30
Auto 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	0.603	0.537
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	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) =	9.51E-07	DETECTION LEVEL
Analyst			
SCL			
Date Complete			3.97E-07
05/05/97	RELATIVE COUNTING ERROR	51.5%	$\mu\text{Ci/mL}$
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		1.00E-04	1.51E-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	25.10E+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	1.38E-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 5/7/97

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 rerun requested.

5/7/97

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 17817

Analyst: ADP 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

Anthony Furuta 5-5-97
Analyst Signature Date

Ch. Quinn 5/6/97
Analyst Signature Date

Sigma 2 Cham 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 6) (MS)	2
WORKBOOK	GROSS COUNTS (GC)	2886
17817	COUNT TIME in MINUTES (CT)	30
WORKBOOK	BACKGROUND in cpm (BKG)	0.07
AT	SAMPLE SIZE in mL (SS)	1.000
WORKBOOK	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
Repin	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		
Chemist		
SLF	ALPHA TOTAL CONCENTRATION in $\mu\text{Ci/mL}$ =	1.61E-04
Analyst		
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: 5/7/97
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
Work Unit	GROSS COUNTS (GC)	18	6
17817	COUNT TIME in MINUTES (CT)	30	30
Arora B V	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	
ReRun	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	$Rs \text{ (Sample Count Rate)} = (TC / CT) - BKG$		
Sample	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
Instrument Code	$Relative \text{ Counting Error} = [(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
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) =	2.51E-03	DETECTION LEVEL 2.40E-03 $\mu\text{Ci/g}$
Analyst			
ADP			
Date Complete			
05/06/97	RELATIVE COUNTING ERROR	143.0%	
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
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	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	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
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	
ADP	
Date/Complete	
05/06/97	RELATIVE COUNTING ERROR 8.7%
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	

AT : LA-508-101 (E-1)

SOLIDS

		DUP	REPLICATE
Info	DETECTOR NUMBER	14	14
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
WorkList	GROSS COUNTS (GC)	487	582
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
IsotCode	DILUTION FACTOR (DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L (Dg/L)	2.1864	2.1864
Matdx	EFFICIENCY FACTOR (EFF)	0.2692	0.2692
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	16.163	19.330
BatchNumber			
97001826	Blank Concentration in µCi/g	1.24E-01	
ReRun	Replicate Concentration in µCi/g	1.48E-01	
0	Average Concentration in µCi/g	1.3582E-01	
Sample Prep			
FUSION01	$Rs \text{ (Sample Count Rate)} = (TC / CT) - BKG$		
Sample	$ALPHA \text{ TOTAL } \mu Ci/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/\mu Ci)$		
S97T000590			
InstrumentCode	$Relative \text{ Counting Error} = [(The \text{ Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
CJO			
Chemist			
SLF	ALPHA TOTAL in µCi/g (Average)	=	1.36E-01
Analyst			DETECTION LEVEL
ADP			
Date Complete			2.42E-03
05/06/97	RELATIVE COUNTING ERROR	8.9%	µCi/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: 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
Worklist	TOTAL COUNTS (TC)	36956	37144
17817	COUNT TIME in MINUTES (CT)	30	30
AcqPrtBy	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
Recon	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	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	$SAMPLE + SPIKE \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WB27807	QC ACTUAL = SVal		
Prepared By	QC FOUND = $((S+S \mu\text{Ci/g} - SAMPLE \mu\text{Ci/g}) * ((SDF/(SVol*1000)) / (DF/SS/Dg/L))))$		
CJO	PERCENT SPIKE RECOVERY = $(QC FOUND / QC ACTUAL) * 100$		
Chemist			
SLF			
Analyst			
ADP			
Print Complete			
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
Worksheet	GROSS COUNTS (GC)	470	509
17817	COUNT TIME in MINUTES (CT)	30	30
AT 02152	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Lab 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	$Rs \text{ (Sample Count Rate)} = (TC / CT) - BKG$		
Sample	$ALPHA \text{ TOTAL } \mu\text{Ci/g} = Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
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) =	1.27E-01	DETECTION LEVEL
Analyst			
ADP			
Date Complete			2.48E-03 $\mu\text{Ci/g}$
05/06/97	RELATIVE COUNTING ERROR	9.1%	
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
Type	14	14
DUP	2	2
Worklist	637	618
17817	30	30
APPROPRIATE	0.07	0.07
AT	0.100	0.100
Test Code	1	1
@ALPHA01	2.1128	2.1128
Matrix	0.2692	0.2692
SOLID	21.163	20.630
Batch Number		
97001826	1.68E-01	
ReRun	1.63E-01	
0	1.6510E-01	
Sample Prep		
FUSION01		
Sampler		
S97T000621		
Instrument Code		
WB27807		
Prepared by		
CJO		
Chemist		
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.65E-01
Analyst		DETECTION LEVEL
ADP		
Date Complete		2.50E-03
05/06/97	RELATIVE COUNTING ERROR	7.9%
Analysis Date		$\mu\text{Ci/g}$
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: SAM9

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
TYPE	DETECTOR NUMBER	14	14
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Workcell	GROSS COUNTS (GC)	476	474
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)	2.0472	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	
Recon	Replicate Concentration in $\mu\text{Ci/g}$	1.29E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.2884E-01	
Sample Rep			
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
Type	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
Alpha 517	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
05/06/97	RELATIVE COUNTING ERROR	8.4%	$\mu\text{Ci/g}$
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	

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#	R A	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

Sue La 5-7-97
Analyst Signature Date

Sue E. Nogan 5/8/97
Analyst Signature Date

Data Entry Comments:

tail down samples

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	15
STD	DISH SIZE (1, 2, or 6) (MS)	2	2
WorkList	GROSS COUNTS (GC)	3186	3193
17901	COUNT TIME in MINUTES (CT)	30	30
AtorIB77	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
TestCode	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	106.930	106.163
BatchNumber	Standard Value in $\mu\text{Ci/mL}$	2.00E-04	
97001917	Concentration in $\mu\text{Ci/L}$ =	1.77E-01	
ReRun	Replicate Concentration in $\mu\text{Ci/L}$ =	1.77E-01	
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$ =	1.7686E-01	
SamplePrep			
N/A	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Sample #	ALPHA TOTAL $\mu\text{Ci/L}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * 2220000\text{dpm}/\mu\text{Ci})$		
WL17901	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 $\mu\text{Ci/mL}$ =	1.77E-04	DETECTION LEVEL
Analyst			
SCL			8.90E-07
Date Complete	RELATIVE COUNTING ERROR =	3.5%	$\mu\text{Ci/mL}$
05/08/97			
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
Worksheet	GROSS COUNTS (GC)	5	5
17901	COUNT TIME in MINUTES (CT)	30	30
AT or B?	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Task Code	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
Batch Number			
97001917	Blank Concentration in $\mu\text{Ci/g}$	< 1.92E-03	
Return	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	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WL17901			
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 $\mu\text{Ci/g}$ (Maximum) =	< 1.92E-03	DETECTION LEVEL
Analyst	LESS Than Value was Determined from Lc.		
SCL			
Date Complete			4.64E-03
05/08/97	RELATIVE COUNTING ERROR	500.0%	$\mu\text{Ci/g}$
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
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
Work List	GROSS COUNTS (GC)	10	19
17901	COUNT TIME in MINUTES (CT)	30	30
ALPHA01	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)	1.9188	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 $\mu\text{Ci/g}$	< 3.1579E-03	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sampler	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	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 $\mu\text{Ci/g}$ (Maximum) =	< 3.16E-03	DETECTION LEVEL
Analyst			
SCL	LESS THAN Value was Determined from Rmax.		
Date Complete	RELATIVE COUNTING ERROR	500.0%	4.64E-03 $\mu\text{Ci/g}$
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

SAMPLE.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: DUP5

AT : LA-508-101 (E-1)

SOLIDS

	DUP	REPLICATE
Detector Number	15	15
DUP	2	2
DISH SIZE (1, 2, or 6) (MS)		
GROSS COUNTS (GC)	480	546
COUNT TIME in MINUTES (CT)	30	30
BACKGROUND in cpm (BKG)	0.27	0.27
SAMPLE SIZE in mL (SS)	0.100	0.100
DILUTION FACTOR (DF)	1	1
DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9192	1.9192
EFFICIENCY FACTOR (EFF)	0.2701	0.2701
Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE	15.730	17.930
Blank Concentration in $\mu\text{Ci/g}$	1.37E-01	
Replicate Concentration in $\mu\text{Ci/g}$	1.56E-01	
Average Concentration in $\mu\text{Ci/g}$	1.4625E-01	
Rs (Sample Count Rate) = (TC / CT) - BKG		
ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
Relative Counting Error = [(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100		
Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.46E-01	DETECTION LEVEL
RELATIVE COUNTING ERROR	9.2%	4.64E-03 $\mu\text{Ci/g}$

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 For	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 $\mu\text{Ci/g}$	1.96E-01	
Rerun	Replicate Concentration in $\mu\text{Ci/g}$	1.73E-01	
0	Average Concentration in $\mu\text{Ci/g}$	1.8449E-01	

Sample Prep	Rs (Sample Count Rate) = $(TC / CT) - BKG$
FUSION01	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
Sample #	
S97T000624	
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) =	1.84E-01
Analyst		DETECTION LEVEL
SCL		
Date Complete		4.92E-03
05/08/97	RELATIVE COUNTING ERROR	$\mu\text{Ci/g}$
05/07/97		
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	

WORKBOOK PAGE: DUP7

AT : LA-508-101 (E-1)

SOLIDS

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)			462	607
17901	COUNT TIME in MINUTES (CT)			30	30
Atom 15-2	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	
ReRun	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 (Sample Count Rate) = (TC / CT) - BKG				
Sample #	ALPHA TOTAL $\mu\text{Ci/g}$ = 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				
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
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)	1.962	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 (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	$ALPHA\ TOTAL\ \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
S97T000625			
Instrument Code	Relative Counting Error = $[(The\ Square\ Root\ of\ TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
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	DETECTION LEVEL
Analyst			
SCL			
Date Complete			4.53E-03
05/08/97	RELATIVE COUNTING ERROR	7.5%	$\mu\text{Ci/g}$
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: 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
Work List	GROSS COUNTS (GC)	703	625
17901	COUNT TIME in MINUTES (CT)	30	30
Alpha Bkg	BACKGROUND in cpm (BKG)	0.27	0.27
AT	SAMPLE SIZE in mL (SS)	0.100	0.100
Inst 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	15	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
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)	1.9784	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 $\mu\text{Ci/g}$	1.5732E-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 6) (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
Matdx	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	1.4110E-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 ALPHA01R	SOLID	1.00	3.62E+00	3.620	% Ct. Error
2 BLNK-PREP	0		@ALPHA01 ALPHA01	SOLID	1	<2.47E-3		uCi/g
2 BLNK-PREP	0		@ALPHA01 ALPHA01R	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
3 BLNK/BKG	0		@ALPHA01 ALPHA01R	SOLID	N/A	1.76E-01	296.0e+005	uCi/g
4 SAMPLE	S97T000587	0 F	@ALPHA01 ALPHA01	SOLID	N/A	8.02E+00	0.0e+000	% Ct. Error
4 SAMPLE	S97T000587	0 F	@ALPHA01 ALPHA01R	SOLID	N/A	1.76E-1	15.291	RPD
5 DUP	S97T000587	0 F	@ALPHA01 ALPHA01	SOLID	1.00	8.43E+00	8.430	% Ct. Error
5 DUP	S97T000587	0 F	@ALPHA01 ALPHA01R	SOLID	N/A	1.38E-01	315.0e+005	uCi/g
6 SAMPLE	S97T000588	0 F	@ALPHA01 ALPHA01	SOLID	N/A	9.17E+00	0.0e+000	% Ct. Error
6 SAMPLE	S97T000588	0 F	@ALPHA01 ALPHA01R	SOLID	1.38E-1	1.49E-1	7.666	RPD
7 DUP	S97T000588	0 F	@ALPHA01 ALPHA01	SOLID	1.00	8.61E+00	8.610	% Ct. Error
7 DUP	S97T000588	0 F	@ALPHA01 ALPHA01R	SOLID	2.63E-02	1.98E-02	75.285	% Recovery
8 SPK	S97T000588	0 F	@ALPHA01 ALPHA01	SOLID	N/A	1.38E-01	312.0e+005	uCi/g
8 SPK	S97T000588	0 F	@ALPHA01 ALPHA01R	SOLID	N/A	9.18E+00	0.0e+000	% Ct. Error
9 SAMPLE	S97T000589	0 F	@ALPHA01 ALPHA01	SOLID	1.38E-1	1.16E-1	17.323	RPD
10 DUP	S97T000589	0 F	@ALPHA01 ALPHA01	SOLID	1.00	1.08E+01	10.800	% Ct. Error
10 DUP	S97T000589	0 F	@ALPHA01 ALPHA01R	SOLID				

Final page for worklist# 17950

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

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. Colman 5-7-97

Data Entry Comments:

soil 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)	2	2
WorkList	GROSS COUNTS	3263	2947
17950	COUNT TIME in MINUTES	30	30
Alpha Total	BACKGROUND in cpm	0.1	0.1
AT	SAMPLE SIZE in mL	1.000	1.000
Test Code	DILUTION FACTOR	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			
Sampler Point			
T-204			

Analyst:	SEH	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/18/97
STANDARD.WB1 Rev. 1.0	508101ML	

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	2
GROSS COUNTS	(GC) 2	12
COUNT TIME in MINUTES	(CT) 30	30
BACKGROUND in cpm	(BKG) 0.1	0.1
SAMPLE SIZE in mL	(SS) 0.100	0.100
DILUTION FACTOR	(DF) 1	1
DIGEST GRAMS of SOLIDS / L	(Dg/L) 2.026	2.026
EFFICIENCY FACTOR	(EFF) 0.2701	0.2701
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	0.135	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.

Prepared By			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Maximum)	=	< 2.47E-03
Analyst	LESS Than Value was Determined from Lc.		DETECTION LEVEL
SCL			
Date Complete			2.96E-03
05/07/97	RELATIVE COUNTING ERROR	500.0%	$\mu\text{Ci/g}$
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
BLANKWB1 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)	2	2
Work List	GROSS COUNTS	680	606
17950	COUNT TIME in MINUTES	30	30
AT	BACKGROUND in cpm	0.1	0.1
AT	SAMPLE SIZE in mL	0.100	0.100
Test Code	DILUTION FACTOR	1	1
@ALPHA01	DIGEST GRAMS OF SOLIDS / L	2.026	2.026
Matrix	EFFICIENCY FACTOR	0.2701	0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	22.567	20.100
Batch Number			
97001966	Blank Concentration in $\mu\text{Ci/g}$	1.86E-01	
Retunt	Replicate Concentration in $\mu\text{Ci/g}$	1.65E-01	
1	Average Concentration in $\mu\text{Ci/g}$	1.7561E-01	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $Rs * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm/pCi})$		
S97T000587			
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) =	1.76E-01	
Analyst			
SCL			
Date/Complete			
05/07/97	RELATIVE COUNTING ERROR	8.0%	
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
Type	DETECTOR NUMBER	15	15
DUP	DISH SIZE (1, 2, or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	549
17950	COUNT TIME in MINUTES	(CT)	30
AT	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)	2.0688
Matrix	EFFICIENCY FACTOR	(EFF)	0.2701
SOLID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE		18.200
Batch Number			19.167
97001966	Blank Concentration in $\mu\text{Ci/g}$	1.47E-01	
Run	Replicate Concentration in $\mu\text{Ci/g}$	1.55E-01	
1	Average Concentration in $\mu\text{Ci/g}$	1.5061E-01	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/ μCi)		
S977000587			
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			
SEH			
Chemist			
SLF	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.51E-01	
Analyst			DETECTION LEVEL
SCL			2.90E-03
Date Complete			$\mu\text{Ci/g}$
05/07/97	RELATIVE COUNTING ERROR	8.4%	
Analysis Date			
05/08/97			
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: SAM6

AT : LA-508-101 (E-1)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	15	15
SAMPLE	DISH SIZE (1, 2, or 5)	(MS)	2
Work List	GROSS COUNTS	(GC)	488
17950	COUNT TIME in MINUTES	(CT)	30
At For TB?	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)	1.9084
Matrix	EFFICIENCY FACTOR	(EFF)	0.2701
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	16.167	15.433

Batch Number	
97001966	Blank Concentration in $\mu\text{Ci/g}$
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	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
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) = 1.38E-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	15
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
WorkList	GROSS COUNTS (GC)	538	527
17950	COUNT TIME in MINUTES (CT)	30	30
At 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)	1.9712	1.9712
Matrix	EFFICIENCY FACTOR (EFF)	0.2701	0.2701
SOLID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE	17.833	17.467
Batch Number			
97001966	Blank Concentration in $\mu\text{Ci/g}$	1.51E-01	
Re-run	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 = $[\sqrt{(TC + BKG * CT) / (TC - BKG * CT)}] * 1.96 * 100$		
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	DETECTION LEVEL
Analyst			
SCL			3.05E-03
Date Complete			$\mu\text{Ci/g}$
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:	BCL	Date: 07-May-97
Signature of Chemist:	SLF	Date: 5/8/97
SAMPLE.VB1 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	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
Re-run	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 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
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2
Work List	GROSS COUNTS (GC)	465
17950	COUNT TIME in MINUTES (CT)	30
A for T/B	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)	1.9248
Matrix	EFFICIENCY FACTOR (EFF)	0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	15.400

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	$\text{ALPHA TOTAL } \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
S97T000589	
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	

/ 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) (MS)	2
Work List	GROSS COUNTS (GC)	434
17950	COUNT TIME in MINUTES (CT)	30
AT	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)	1.8448
Matrix	EFFICIENCY FACTOR (EFF)	0.2701
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	14.367

Batch Number	
97001966	Blank Concentration in $\mu\text{Ci/g}$ 1.30E-01
Rerun	Replicate Concentration in $\mu\text{Ci/g}$ 1.02E-01
1	Average Concentration in $\mu\text{Ci/g}$ 1.158E-01

Sample Prep	
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$
Sample	$ALPHA\ TOTAL\ \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$
S97T000589	
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	
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 CS13702 SOLID		5.787e-03	5.84e-03	100.916	% Recovery
1 STD	0	@GEA-02 CS13702R 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 CS13702 SOLID		1	<4.20e-6		uCi/g
2 BLNK-PREP	0	@GEA-02 EU15402 SOLID		1	<8.98e-6		uCi/g
2 BLNK-PREP	0	@GEA-02 EU15502 SOLID		1	<7.34e-6		uCi/g
2 BLNK-PREP	0	@GEA-02 AM24102 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 CS13702 SOLID		N/A	7.748e-03	0.0e+000	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 CS13702R SOLID		N/A	28.1	0.0e+000	% Ct. Error
3 SAMPLE	S97T001198 0 F	@GEA-02 EU15402 SOLID		N/A	< 4.389e-03	438.9e-005	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 EU15402R SOLID		N/A	n/a	0.0e+000	% Ct. Error
3 SAMPLE	S97T001198 0 F	@GEA-02 EU15502 SOLID		N/A	< 3.527e-03	352.7e-005	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 EU15502R SOLID		N/A	n/a	0.0e+000	% Ct. Error
3 SAMPLE	S97T001198 0 F	@GEA-02 AM24102 SOLID		N/A	2.265e-02	0.0e+000	uCi/g
3 SAMPLE	S97T001198 0 F	@GEA-02 AM24102R 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 CS13702 SOLID		7.75e-03	7.77e-03	0.258	RPD
4 DUP	S97T001198 0 F	@GEA-02 CS13702R SOLID		1	29.7	29.700	% Ct. Error
4 DUP	S97T001198 0 F	@GEA-02 EU15402 SOLID		<4.39e-3	<4.03e-3		RPD
4 DUP	S97T001198 0 F	@GEA-02 EU15402R SOLID		1	n/a		% Ct. Error
4 DUP	S97T001198 0 F	@GEA-02 EU15502 SOLID		<3.53e-3	<3.29e-3		RPD
4 DUP	S97T001198 0 F	@GEA-02 EU15502R SOLID		1	n/a		% Ct. Error
4 DUP	S97T001198 0 F	@GEA-02 AM24102 SOLID		2.26e-02	2.62e-02	14.754	RPD
4 DUP	S97T001198 0 F	@GEA-02 AM24102R 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! If

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

MTCS 6/30/97
Analyst Signature Date

Data Entry Comments:

 * 222-S Laboratory Counting Room 26-JUN-1997 10:46:24.52

>>>>>>> SAMPLE INFORMATION <<<<<<<<<

Worklist #: 18873
 Sample ID: WL18873-STD
 Sample Size: 1.00000E-03 L
 Dilution Factor: 1.00000E+00

Removed by:

Luc E. Doga

>>>>>>> COUNT INFORMATION <<<<<<<<<

Detector ID: GEA3
 File Number: dka300:[spec.GEA3]3g3357.cnf
 Geometry: 42
 Count Time: 0 00:50:00.00 sec
 Real Time: 0 00:50:02.62 sec
 Dead Time: 0.1%

Verified by:

BB 30 Jun 97

mt 7-14-97

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

>>>>>>> ANALYSIS INFORMATION <<<<<<<<<

Sample Count Time: 26-JUN-1997 09:55:45.27
 Decayed to: 26-JUN-1997 09:55:45.27
 Standard Deviations: 2
 Analysis Library: ENVGEA
 Analyst: CJO
 Background Subtract: DKA300:[SPEC.GEA3]3GBACK

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	661.91*	5169	1.57	1324.00	1317	15	3.2		CS-137	5.84
0	1172.93	4105	1.86	2346.13	2338	17	3.5		CO-60	6.47
0	1332.02	3557	2.08	2664.42	2656	17	3.4		CO-60	6.23

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 Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
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 "M" = Manually accepted
"E" = Manually edited "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

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	

~~WEE-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:

Sue 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:

BB 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

11-7-1497
 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	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 %Error	Flags
			Uncorrected uCi/L	Decay Corr uCi/L			
CS-137	30.00Y	1.00	4.199E-03	4.199E-03	4.147E-03	98.78	OK
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	

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	

WTE-1497
~~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:

AFH 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

Wt 27-14-97
~~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
~~DATE 1-19-97~~
Acquisition date : 26-JUN-1997 14:11:02

Total number of lines in spectrum 3 HNF-SD-WM-DP-255, REV. 0
Number of unidentified lines 0
Number of lines tentatively identified by NID 3 100.00%

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	1.698E-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

MTS-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

Removed by:
A. J. L. H. T.

>>>>>>> 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%

Verified by:
A. J. L. H. T. 30 Jun 97

>>>>>>> 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

~~WKE7-14-97~~
~~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	59.61	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

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	

Minimum Detectable Activity Report (continued)

Page : 4

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

Wt 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	0	@SR90-01 SR90-01	SOLID	1.67E-03	1.72E-3	102.994	% Recovery
1 STD	0	0	@SR90-01 SR90-01C	SOLID	100	8.87E+01	88.700	% Recovery
1 STD	0	0	@SR90-01 SR90-01E	SOLID	1.00	1.60E+00	1.600	% Ct. Err
2 BLNK-PREP	0	0	@SR90-01 SR90-01	SOLID	1	2.63E-3	0.003	uCi/g
2 BLNK-PREP	0	0	@SR90-01 SR90-01C	SOLID	100	9.09E+01	90.900	% Recovery
2 BLNK-PREP	0	0	@SR90-01 SR90-01E	SOLID	1.00	3.84E+01	38.400	uCi/g
3 BLNK/BKG	0	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.e.

LABCORE Data Entry Template for Worklist# 18756

Analyst: *HB* 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] 9/21/97
Analyst Signature Date

Sue E. Hogan 6-23-97
Analyst Signature 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 Hat	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 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)	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			
Date 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

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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
Work List	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
Rerun	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 Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100			
06/23/97				
Analysis Date				DETECTION LEVEL 1.03E-03 µCi/g
06/21/97	Sr-89/90 CONCENTRATION	2.63E-03	µCi/g	
Analysis Time				
05:30 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
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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
Work List	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
Refun	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					
Analysis Date					
06/21/97	Sr-89/90 CONCENTRATION	3.46E-03		µCi/g	DETECTION LEVEL 1.07E-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

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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	
Work Unit	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1) 7.0466	
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	(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)	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
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