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Tank 241-TX-118, Core 236

Analytical Results for the Final Report

Ruth A. Esch

Waste Management of Hanford, Inc., Richland, WA 99352
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WASTE MANAGEMENT LABORATORY

**TANK 241-TX-118 CORES 236
ANALYTICAL RESULTS FOR THE FINAL REPORT**

Project Coordinator: Ruth A. Esch / Franciska Steen

**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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This document also consists of pages 151.1 thru 151.12, 194.1 and 194.2.
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NARRATIVE

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WASTE MANAGEMENT LABORATORY

TANK 241-TX-118, CORE 236,
ANALYTICAL RESULTS FOR THE FINAL REPORT

This document is the analytical laboratory report for tank 241-TX-118 push mode core segments collected between April 1, 1998 and April 13, 1998. The segments were subsampled and analyzed in accordance with the *Tank 241-TX-118 Push Mode Core Sampling and Analysis Plan* (TSAP) (Benar, 1997), the *Safety Screening Data Quality Objective* (DQO) (Dukelow, et al., 1995), the *Data Quality Objective to Support Resolution of the Organic Complexant Safety Issue* (Organic DQO) (Turner, et al., 1995) and the *Historical Model Evaluation Data Requirements* (Historical DQO) (Simpson, et al., 1995). The analytical results are included in the data summary table (Table 1).

None of the samples submitted for Differential Scanning Calorimetry (DSC) and Total Organic Carbon (TOC) exceeded notification limits as stated in the TSAP (Benar, 1997).

One sample exceeded the Total Alpha Activity (AT) analysis notification limit of $38.4 \mu\text{Ci/g}$ (based on a bulk density of 1.6), core 236 segment 1 lower half solids (S98T001524). Appropriate notifications were made. Plutonium 239/240 analysis was requested as a secondary analysis.

The statistical results of the 95% confidence interval on the mean calculations are provided by the Tank Waste Remediation Systems Technical Basis Group in accordance with the Memorandum of Understanding (Schreiber, 1997) and are not considered in this report.

Appearance and Sample Handling

Attachment 1 is a cross reference to relate the tank farm identification numbers to the 222-S Laboratory LabCore/LIMS sample numbers. The subsamples generated in the laboratory for analyses are identified in these diagrams with their sources shown.

Two cores, each consisting of seven segments, were expected to be taken from tank 241-TX-118. Due to difficulties in sampling only one core, two segments were obtained. There was insufficient sample material for preparation of a core composite. In addition, the Historical DQO gateway analyses were requested on all half segment subsamples.

The request for sample analysis (Attachment 2) received for TX-118 indicated that the samples were polychlorinated biphenyl (PCB) suspects. Therefore, prior to performing the requested analyses, a sample aliquot was submitted to the laboratory for PCB analysis in accordance with the 222-S Laboratory administrative procedure, LAP-101-100. The results of this analysis

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indicated that no PCBs were present at the Toxic Substances Control Act (TSCA) regulated limit of 50 ppm and the samples were handled as non PCB samples. The results and raw data for the PCB analysis are included in this document.

Core 236

Two push mode core segments were removed from tank 241-TX-118 riser 12B between April 1, 1998 and April 13, 1998. Segments were received by the 222-S Laboratory between April 6, 1998 and April 27, 1998. Table 2 summarizes the extrusion information.

The TSAP (Benar, 1997) states the core samples should be transported to the laboratory within three calendar days from the time each segment is removed from the tank, this requirement was not met for the segments from core 236.

Field Blank

No field blank was provided to the 222-S laboratory.

Hydrostatic Head Fluid

A sample of the hydrostatic head fluid (HHF) lithium bromide solution was provided and submitted to the laboratory for IC and ICP analyses.

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Table 2. Sample Receipt and Extrusion Information for 241-TX-118, Core 236.

Customer ID	Segment	Date Sampled	Date Received	Date Extruded	Inches Extruded*	Liquid Recovered (g)	Solids Recovered (g)	Sample Description
236-01	1	04/01/98	04/06/98	04/15/98	8.0	0.0	176.8-Lower half	The solids were black in color and resembled a dry sludge.
236-02	2	04/13/98	04/27/98	05/07/98	7.0	0.0	127.9-Upper half 27.1-Lower half	The upper 5.5 inches of solids were black in color and resembled a dry sludge. The lower 1.5 inches were yellow and black in color and resembled a dry salt.

*Approximate Inches Extruded

Analytical Results Summary

The data summary report (Table 1) compiles the analytical results that satisfy all applicable DQOs.

Inorganic Analyses

Differential Scanning Calorimetry (DSC)

The DSC analyses were performed in duplicate on direct subsamples. The exothermic energy based on the dry weight of the subsample was calculated for all subsamples. The average of the TGA results for each subsample was used in the dry weight correction for that subsample.

For the samples that did not exhibit exothermic energy, the calculation for the Relative Percent Difference (RPD) is indeterminate because of the division by zero. Due to the way the database performs calculations, zero divided by zero is reported as "0.0". The standard recoveries for this analysis were within the required limits of 80%-120%.

Thermogravimetric Analysis (TGA)

The TGA analyses were performed in duplicate on direct subsamples. Typically TGA results are determined by summing the weight loss steps which occur below 250°C; weight loss steps above this are not used to determine the result. More information may be obtained by examining the raw data.

The RPDs were less than 30%. The standard recoveries for this analysis were within the required limits of 80%-120%.

Density

Bulk density was performed on the solid subsamples as required by the TSAP (Benar, 1997) with the exceptions noted below. The results of the bulk density test ranged from 1.54 g/mL to 1.60 g/mL. The bulk density results were greater than the 1.5 g/mL used to determine the solid total alpha activity notification limit stated in the TSAP (Benar, 1997). Therefore the highest bulk density result of 1.60 g/mL was used to recalculate the solid total alpha notification limit for the tank.

The bulk density analysis was not performed on core 236, segment 2, lower half solids due to insufficient sample recovery. There were no quality control (QC) parameters stated in the TSAP (Benar, 1997) for these samples.

Ion Chromatography (IC)

The IC analyses were performed in duplicate on direct subsamples of the liquid as indicated by a blank in the aliquot class (A#) column in Table 1. The solid subsamples were prepared for analysis by performing a water digest. This is indicated with a "W" in the A# column in Table 1.

The results for the IC analytes are included in Table 1. However, the QC review discussed in this report is limited to bromide (Br⁻) for the liquid subsamples and Br⁻, nitrate (NO₃⁻) and sulfate (SO₄⁻²) for the solid subsamples.

High RPDs (>20%) were reported for SO₄⁻². The information is presented in Table 3. The high RPDs were attributed to decreased precision, since the sample results were less than five times the detection limit. No reanalyses were requested.

Table 3. Ion Chromatography RPD Failures

Sample Number	Analyte	RPD
S98T001538	SO ₄ ⁻²	21.0%
S98T001539	SO ₄ ⁻²	49.0%

The RPDs for Br⁻ and NO₃⁻ were less than 20%. The standard recoveries were within the required limits of 80%-120% and the spike recoveries were within the required limits of 75%-125%.

Inductively Coupled Plasma Spectrophotometry (ICP)

The liquid subsamples were prepared for analysis by an acid adjustment of the direct subsample. This is indicated by a "D" in the A# column in Table 1. Solid subsamples were prepared for analysis by performing an acid digest as indicated by an "A" in the A# column in Table 1.

The results for the ICP analytes are included in Table 1. However, the QC review discussed in this report is limited to lithium (Li) for the liquid subsamples and Li, aluminum (Al), chromium (Cr) and sodium (Na) for the solid acid digested subsamples. Al, Cr, iron (Fe), manganese (Mn), Na, nickel (Ni), silicon (Si) and uranium (U) were required as secondary analytes on the subsample from core 236, segment 1, lower half solids (S98T001525) due to the alpha notification. All other analyte results are presented in Appendix A. These results are considered "opportunistic" and do not have customer defined QC parameters. Therefore, any anomalies in those results are not discussed in this report.

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As per the Historical DOQ, the solid subsamples were also prepared for analysis by performing an acid adjustment of a water digest as indicated by an "I" in the A# column in Table 1. The required analytes were Al, Cr, Li and Na. All other analyte results are presented in Appendix A. These results are considered "opportunistic" and do not have customer defined QC parameters. Therefore, any anomalies in those results are not discussed in this report.

High RPDs (>20%) were reported for Al and Si. The information is presented in Table 4. The high RPDs were attributed to sample inhomogeneity and no reanalyses were requested. The RPD failures for Si could have been due to the leaching of the glass during the digestion process.

Table 4. Inductively Coupled Plasma Spectroscopy RPD Failures

Sample Number	Analyte	RPD
S98T001525	Al	33.8%
	Si	41.0%
S98T001537	Si	46.9%

Matrix spike recoveries outside of the 75% to 125% control limits as set by the TSAP (Benar, 1997) were reported for Al, Mn and Na. This was attributed to the high concentration of these analytes in the samples with respect to the amount of spike standard added. A post digestion spike analysis was performed as an additional instrument performance check. The post digestion spike recoveries were within the required limits. More information may be obtained by examining the raw data.

The Al, Mn and Na results were more than four times the concentration of the spike added. Typically, with analyte concentrations higher than 1000 $\mu\text{g/mL}$ it is difficult to add sufficient spike to perform a meaningful analysis. Therefore, the assessment of the accuracy of the measurement for these analytes were also made by comparison of the sample results to those of a serial dilution of the sample. The serial dilution was performed by preparing and analyzing an additional five-fold dilution of the sample. The result obtained from this analysis should be within $\pm 10\%$ of the undiluted sample result. The results of this comparison are presented in Table 5 and indicate the accuracy of this analysis was acceptable. The standard recoveries were within the required limits of 80%-120%.

Table 5: ICP Serial Dilution Results for Tank 241-TX-118

Sample ID	Analyte	Undiluted Sample Result ($\mu\text{g/mL}$)	Serial Dilution Result ($\mu\text{g/mL}$)	Percent Difference (%)
S98T001525	Al	5.55E+01	5.84E+01	5.1
S98T001525	Mn	2.43E+01	2.49E+01	2.2
S98T001537	Al	7.98E+00	8.28E+00	3.7
S98T001537	Na	8.97E+02	9.43E+02	5.1

$$\% \text{ Difference} = (\text{ABS}(\text{Sample} - \text{Serial})) / \text{Sample} \times 100$$

TOC - Total Organic Carbon Persulfate

Total organic carbon (TOC) analyses by persulfate oxidation/coulometry were performed in duplicate on direct subsamples. None of the results exceeded the TOC notification limit of 30,000 $\mu\text{gC/g}$. The results are included in Table 1.

The QC review discussed in this report is limited to TOC. The total inorganic analysis results are presented in Appendix A. These results are considered "opportunistic" and do not have customer defined QC parameters. Therefore, any anomalies in those results are not discussed in this report.

For all TOC analyses, an Analysis Report worksheet is included for each sample as raw data. Due to programming limitations with the instrument software, the sample size listed on the worksheet is incorrect. This value is not used in the final calculations and has no bearing on the results in Table 1. The blank is considered a reagent blank. The value was within the acceptance limits and all results were corrected for the concentration found in the blank.

The RPDs were less than 20%. The spike recoveries were within the required limits of 75% - 125%. The standard recoveries were within the required limits of 80% - 120%.

Total Uranium (U)

Uranium analyses was performed in duplicate on the solid subsamples. The samples were prepared for analysis by performing a fusion digest in duplicate. The fusion digest is indicated with an "F" in the A# column in Table 1. The result listed as Count Err% in Table 1 is actually the percent instrument uncertainty.

There was a small amount of contamination found in the preparation blank. The level of contamination is insignificant when compared to the sample results and does not affect the usability of the data. A high RPD(>20%) was reported for one sample. The sample was reanalyzed with no improvement in the RPD. No further reanalysis was requested. The standard recoveries were within the required limits of 80%-120% and the spike recoveries were within the required limits of 75%-125%.

Polychlorinated Biphenyl - PCB

A PCB screening analysis was performed on the solid portion of core 236, segment 1, lower half solids. The sample was extracted and then analyzed by gas chromatography/mass spectroscopy. The results of this analysis indicated that no PCBs were present at the TSCA regulated limit of 50 ppm. All QC parameters were within the specifications for the method.

Radionuclide Analyses

Total Alpha (AT)

The total alpha (AT) analysis was performed on the solid subsamples. The samples were prepared for analysis by performing a fusion digest in duplicate. The fusion digest is indicated with an "F" in the aliquot class (A#) column in Table 1.

One sample exceeded the AT analysis notification limit of $38.4 \mu\text{Ci/g}$ (based on a bulk density of 1.6), core 236 segment 1 lower half solids (S98T001524). Appropriate notifications were made.

The RPDs were less than 20%. A spike recovery of 74.65% was reported for one sample, core 236, segment 2, lower half solids (S98T001535). Although this spike recovery was outside of the required range (75% - 125%), it was within the laboratory statistical control limits for the QC standard and no reanalysis was requested. The standard recoveries for this analysis were within the required limits of 70%-130%.

Total Beta (TB)

Total beta analysis was performed on the solid subsamples. The samples were prepared for analysis by performing a fusion digest in duplicate. The fusion digest is indicated with an "F" in the aliquot class (A#) column in Table 1.

There was a small amount of contamination detected in the preparation blank. The level of contamination is insignificant when compared to the sample results and does not affect the usability of the data.

The RPDs were less than 20%, the standard recoveries were within the required limits of 80%-120% and the spike recoveries were within the required limits of 75%-125%.

Gamma Energy Analysis (GEA)

Gamma energy analysis was performed on the solid subsamples. The samples were prepared for analysis by performing a fusion digest in duplicate. The fusion digest is indicated with an "F" in the aliquot class (A#) column in Table 1.

The QC review discussed in this report is limited to ^{241}Am , ^{60}Co , ^{137}Cs , ^{154}Eu . The results for ^{155}Eu are considered "opportunistic" and do not have customer defined QC parameters. Therefore, any anomalies in those results are not discussed in this report and the results are presented in Appendix A.

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Actual detection limits for GEA analytes are not currently available. The latest GEA software does not report a minimum detectable activity (MDA). If an analyte is reported as "less than", the value reported is the detection limit.

For the GEA analysis some radionuclides have peak energies that are very close together and cannot always be separated. When this occurs most software will report all isotopes with an energy near the found peak energy. The chemist eliminates the data from the radionuclides that are not present by crossing-out the unused peaks.

The standard recoveries were within the required limits of 80%-120%. The RPDs were less than 20%.

Strontium 90 (⁹⁰Sr)

⁹⁰Sr analysis was performed on the solid subsamples. The samples were prepared for analysis by performing a fusion digest in duplicate. The fusion digest is indicated with an "F" in the A# column in Table 1.

There was a small amount of contamination detected in the preparation blank. The level of contamination is insignificant when compared to the sample results and does not affect the usability of the data.

The RPDs were less than 20%. The standard recoveries were within the required limits of 75% - 125%.

^{239/240}Pu - Plutonium 239/240

^{239/240}Pu analysis was performed on the solid subsamples. Plutonium 239/240 analysis was requested as a secondary analysis due to a total alpha notification on the sample from core 236 segment 1 lower half solids (S98T001524). The samples were prepared for analysis by performing a fusion digest in duplicate. The fusion digest is indicated with an "F" in the A# column in Table 1.

High RPDs (20%) were reported for two of the fourteen subsamples submitted for analysis. The results were near the detection limit which decreased the precision of the analysis. The standard recoveries were within the required limits of 70% - 130%.

Procedures

Table 6 lists the analytical procedures used for performing the sample analyses. Abbreviations for analyses are defined in the table notes.

Table 6. Analytical Procedures			
Analysis	Sample Portion	Preparation Procedure +	Analysis Procedure
DSC	Solid	N/A	LA-514-114 Rev. D-1
TGA	Solid	N/A	LA-514-114 Rev. D-1
Bulk Density	Solid	N/A	LA-519-132 Rev. E-0 LO-160-103 Rev. B-0
IC	Solid Liquid	LA-504-101 Rev. F-0 N/A	LA-533-105 Rev. E-0
ICP	Solid Liquid	LA-505-163 Rev. B-0 N/A	LA-505-161 Rev. C-2
TIC/TOC	Solid	N/A	LA-342-100 Rev. F-1
AT	Solid	LA-549-141 Rev. G-0	LA-508-101 Rev. G-0
Pu239	Solid	LA-549-141 Rev. G-0	LA-953-104 Rev. B-0
Sr90	Solid	LA-549-141 Rev. G-0	LA-220-101 Rev. E-3
GEA	Solid	LA-549-141 Rev. G-0	LA-548-121 Rev. F-0

Table 6. Analytical Procedures

Analysis	Sample Portion	Preparation Procedure +	Analysis Procedure
U	Solid	LA-549-141 Rev. G-0	LA-925-009 Rev. B-0

Abbreviations:

N/A = not applicable (these are direct samples)

DSC = differential scanning calorimetry

TGA = thermogravimetric analysis

Sp.G. = specific gravity

IC = ion chromatography

ICP = inductively coupled plasma

TOC = total organic carbon

TIC = total inorganic carbon

AT = total alpha

Pu239 = plutonium 239

Sr90 = strontium 90

GEA = gamma energy analysis

U = uranium

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SAMPLE BREAKDOWN

ATTACHMENT 1

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TX-118
Core 236
Segment 1
S98T001181

Lower Half Solids

S98T001520

Homogenize
Bulk Density

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TX-118
Core 236
Segment 2
S98T001301

19

HNF-1651 REV.0

TX-118
Core 236
Blank - LiBr
S98T001166

Lithium Bromide Blank

IC: Br
ICP: Li

SAMPLE DATA SUMMARY

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Table 1. Data Summary Report.
TX-118

CORE NUMBER: 236
SEGMENT #: 1

SEGMENT PORTION: L Lower Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98T001520			Bulk Density of Sample	g/mL	n/a	n/a	1.540	n/a	n/a	n/a	n/a	5.00e-01	n/a
S98T001521			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
S98T001521			DSC Exotherm on Perkin Elmer	Joules/g	103.4	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S98T001521			% Water by TGA on Perkin Elmer	%	98.79	n/a	46.47	47.19	46.83	1.54	n/a	n/a	n/a
S98T001521			TOC by Persulfate/Coulometry	%	92.33	9.500	2.11e+04	2.09e+04	2.10e+04	0.95	98.80	40.00	n/a
S98T001522			Aroclor-1016	ug/Kg	n/a	<660.0	<6.60e+02	<660	n/a	n/a	n/a	660.0	n/a
S98T001522			Aroclor-1221	ug/Kg	n/a	<1320.0	<1.32e+03	<1320	n/a	n/a	n/a	1.32e+03	n/a
S98T001522			Aroclor-1232	ug/Kg	n/a	<660.0	<6.60e+02	<660	n/a	n/a	n/a	660.0	n/a
S98T001522			Aroclor-1242	ug/Kg	n/a	<660.0	<6.60e+02	<660	n/a	n/a	n/a	660.0	n/a
S98T001522			Aroclor-1248	ug/Kg	n/a	<660.0	<6.60e+02	<660	n/a	n/a	n/a	660.0	n/a
S98T001522			Aroclor-1254	ug/Kg	74.53	<660.0	<6.60e+02	<660	n/a	n/a	82.24	660.0	n/a
S98T001522			Aroclor-1260	ug/Kg	n/a	<660.0	<6.60e+02	<660	n/a	n/a	n/a	660.0	n/a
S98T001522			Tetrachloro-m-xylene Surr	% Recovery	58.23	64.64	72.50	77.55	75.03	77.5	73.26	1.000	n/a
S98T001522			Decachlorobiphenyl Surr	% Recovery	66.28	75.25	75.32	95.19	85.25	95.2	76.59	1.000	n/a
S98T001524	F		Uranium by Phosphorescence	ug/g	83.01	21.80	2.40e+03	3.43e+03	2.92e+03	35.3	101.6	1.86e-01	3.67e+00
S98T001524	F		Strontium-89/90 High Level	uci/g	101.9	6.99e-01	3.16e+02	307.0	311.5	2.89	n/a	5.00e-02	4.02e-01
S98T001524	F		Pu-239/240 by TRU-SPEC Resin	uci/g	115.2	<1.51e-01	18.30	22.10	20.20	18.8	n/a	9.32e-01	1.64e+00
S98T001524	F		Cobalt-60 by GEA	uci/g	106.8	<3.78e-02	<5.41e-02	<5.52e-2	n/a	n/a	n/a	5.40e-02	n/a
S98T001524	F		Cesium-137 by GEA	uci/g	101.2	<9.52e-02	7.795	7.640	7.717	1.94	n/a	n/a	2.36
S98T001524	F		Europium-154 by GEA	uci/g	n/a	<1.03e-01	5.63e-01	4.68e-01	5.16e-01	18.4	n/a	n/a	16.1
S98T001524	F		Americium-241 by GEA	uci/g	n/a	<2.63e-01	23.34	25.50	24.42	9.02	n/a	n/a	4.10
S98T001524	F		Alpha of Digested Solid	uci/g	92.22	5.30e-02	38.70	40.30	39.50	4.05	87.56	2.70e-02	1.70e+00
S98T001524	F		Beta of Solid Sample	uci/g	104.0	1.400	6.49e+02	643.0	646.0	0.93	102.0	1.33e-01	3.26e-01
S98T001525	A		Aluminum -ICP-Acid Digest	ug/g	97.40	1.42e-01	1.12e+04	7.96e+03	9.58e+03	33.8	-1.570e2	20.20	n/a
S98T001525	A		Chromium -ICP-Acid Digest	ug/g	95.60	<1.00e-02	7.86e+03	8.08e+03	7.97e+03	2.76	76.40	4.040	n/a
S98T001525	A		Iron -ICP-Acid Digest	ug/g	94.20	<5.00e-02	5.70e+03	5.56e+03	5.63e+03	2.49	105.0	20.20	n/a
S98T001525	A		Manganese -ICP-Acid Digest	ug/g	95.40	<1.00e-02	4.91e+03	5.09e+03	5.00e+03	3.60	72.80	4.040	n/a
S98T001525	A		Sodium -ICP-Acid Digest	ug/g	127.6	9.95e-01	1.61e+05	1.55e+05	1.58e+05	3.80	122.2	40.40	n/a
S98T001525	A		Nickel -ICP-Acid Digest	ug/g	96.60	<2.00e-02	1.83e+02	187.0	185.0	2.16	97.40	8.080	n/a
S98T001525	A		Silicon -ICP-Acid Digest	ug/g	143.2	1.670	1.24e+03	818.0	1.03e+03	4.10	108.2	20.20	n/a
S98T001525	A		Uranium -ICP-Acid Digest	ug/g	95.70	<5.00e-01	3.15e+03	3.16e+03	3.16e+03	0.32	93.80	202.0	n/a
S98T001526	W		Bromide by Ion Chromatograph	ug/g	97.30	<1.25e-01	<1.28e+03	<1.25e3	n/a	n/a	99.66	1.28e+03	n/a
S98T001526	W		Nitrate by IC-Dionex 4000/4500	ug/g	99.28	1.71e-01	8.27e+03	8.26e+03	8.27e+03	0.12	93.24	1.43e+03	n/a
S98T001526	W		Sulfate by IC-Dionex 4000/4500	ug/g	94.71	<1.39e-01	<1.42e+03	<1.38e3	n/a	n/a	96.24	1.42e+03	n/a
S98T001527	I		Aluminum -ICP-H2O Dig/Acid	ug/g	97.60	<1.25e-02	1.83e+03	1.94e+03	1.88e+03	5.84	102.0	6.210	n/a
S98T001527	I		Chromium -ICP-H2O Dig/Acid	ug/g	96.40	<1.00e-02	< 6.200	<6.050e	n/a	n/a	92.50	6.210	n/a
S98T001527	I		Lithium -ICP-H2O Dig/Acid	ug/g	98.60	<1.00e-02	< 6.200	<6.050e	n/a	n/a	92.50	6.210	n/a
S98T001527	I		Sodium -ICP-H2O Dig/Acid	ug/g	101.8	3.690	1.75e+05	1.65e+05	1.70e+05	5.88	-5.180e2	62.10	n/a

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Table 1. Data Summary Report.
TX-118

CORE NUMBER: 236
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98T001528			Bulk Density of Sample	g/mL	n/a	n/a	1.600	n/a	n/a	n/a	n/a	5.00e-01	n/a
S98T001530			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
S98T001530			DSC Exotherm on Perkin Elmer	Joules/g	103.1	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S98T001530			% Water by TGA on Perkin Elmer	%	98.79	n/a	43.43	43.68	43.55	0.57	n/a	n/a	n/a
S98T001530			TGC by Persulfate/Coulometry	ug/g	92.33	9.500	2.51e+04	2.48e+04	2.50e+04	1.20	n/a	40.00	n/a
S98T001534	F		Uranium by Phosphorescence	ug/g	83.01	21.80	3.35e+03	3.27e+03	3.31e+03	2.42	n/a	1.88e-01	3.22e+00
S98T001534	F		Strontium-89/90 High Level	uCi/g	101.9	6.99e-01	2.77e+02	2.80e+02	278.5	1.08	n/a	5.00e-02	4.27e-01
S98T001534	F		Cobalt-60 by GEA	uCi/g	106.8	<3.78e-02	<9.82e-02	<8.99e-2	n/a	n/a	n/a	9.80e-02	n/a
S98T001534	F		Cesium-137 by GEA	uCi/g	101.2	<9.52e-02	14.97	14.40	14.69	4.08	n/a	2.43	n/a
S98T001534	F		Europium-154 by GEA	uCi/g	n/a	<1.03e-01	<3.12e-01	4.74e-01	n/a	n/a	n/a	3.12e-01	n/a
S98T001534	F		Americium-241 by GEA	uCi/g	n/a	<2.63e-01	10.59	10.90	10.75	2.79	n/a	11.4	n/a
S98T001534	F		Alpha of Digested Solid	uCi/g	92.22	5.30e-02	10.40	9.500	9.950	9.05	n/a	2.80e-02	3.30e+00
S98T001534	F		Beta of Solid Sample	uCi/g	104.0	1.400	5.68e+02	548.0	558.0	3.58	n/a	1.35e-01	3.51e-01
S98T001536	A		Aluminium -ICP-Acid Digest	ug/g	97.40	1.42e-01	4.11e+03	4.07e+03	4.09e+03	0.98	n/a	29.00	n/a
S98T001536	A		Chromium -ICP-Acid Digest	ug/g	95.60	<1.00e-02	9.97e+03	9.69e+03	9.83e+03	2.85	n/a	5.790	n/a
S98T001536	A		Lithium -ICP-Acid Digest	ug/g	96.80	<1.00e-02	7.620	7.600	7.610	0.26	n/a	5.790	n/a
S98T001536	A		Sodium -ICP-Acid Digest	ug/g	127.6	9.96e-01	1.86e+05	1.78e+05	1.82e+05	4.40	n/a	57.90	n/a
S98T001538	W		Bromide by Ion Chromatograph	ug/g	97.30	<1.25e-01	<1.27e+03	2.38e+03	n/a	n/a	n/a	1.27e+03	n/a
S98T001538	W		Nitrate by IC-Dionex 4000/4500	ug/g	99.28	1.71e-01	2.14e+04	2.19e+04	2.16e+04	2.31	n/a	1.41e+03	n/a
S98T001538	W		Sulfate by IC-Dionex 4000/4500	ug/g	94.71	<1.38e-01	1.84e+03	1.49e+03	1.67e+03	21.0	n/a	1.40e+03	n/a
S98T001540	I		Aluminium -ICP-H2O Dig/Acid	ug/g	96.70	1.23e-01	3.62e+02	360.0	361.0	0.55	n/a	30.60	n/a
S98T001540	I		Chromium -ICP-H2O Dig/Acid	ug/g	96.60	<1.00e-02	4.17e+03	4.30e+03	4.24e+03	3.07	n/a	6.150	n/a
S98T001540	I		Lithium -ICP-H2O Dig/Acid	ug/g	98.40	<1.00e-02	<6.150	<6.05e0	n/a	n/a	n/a	6.150	n/a
S98T001540	I		Sodium -ICP-H2O Dig/Acid	ug/g	101.8	3.690	1.90e+05	1.88e+05	1.89e+05	1.06	n/a	61.50	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%
S98T001531			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
S98T001531			DSC Exotherm on Perkin Elmer	Joules/g	103.1	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S98T001531			% Water by TGA on Perkin Elmer	%	98.79	n/a	49.59	52.46	51.03	5.62	n/a	n/a	n/a
S98T001531			TGC by Persulfate/Coulometry	ug/g	92.33	9.500	3.44e+03	3.76e+03	3.60e+03	8.89	110.0	40.00	n/a
S98T001535	F		Uranium by Phosphorescence	ug/g	83.01	21.80	6.17e+02	618.0	617.5	0.16	78.66	1.87e-01	3.18E+00
S98T001535	F		Strontium-89/90 High Level	uCi/g	101.9	6.99e-01	65.30	60.20	62.75	8.13	n/a	9.00e-03	3.73E-01
S98T001535	F		Cobalt-60 by GEA	uCi/g	106.8	<3.78e-02	<1.96e-02	<1.91e-2	n/a	n/a	n/a	2.00e-02	n/a
S98T001535	F		Cesium-137 by GEA	uCi/g	101.2	<9.52e-02	10.87	10.40	10.63	4.69	n/a	n/a	1.23
S98T001535	F		Europium-154 by GEA	uCi/g	n/a	<1.03e-01	<1.01e-01	1.50e-01	n/a	n/a	n/a	1.01e-01	n/a
S98T001535	F		Americium-241 by GEA	uCi/g	n/a	<2.63e-01	2.663	2.420	2.542	9.45	n/a	n/a	11.6
S98T001535	F		Alpha of Digested Solid	uCi/g	92.22	5.30e-02	2.010	1.760	1.885	13.3	74.65	6.00e-03	3.48E+00
S98T001535	F		Beta of Solid Sample	uCi/g	104.0	1.400	1.41e+02	128.0	134.5	9.67	97.30	2.90e-02	3.27E-01
S98T001537	A		Aluminium -ICP-Acid Digest	ug/g	97.40	1.42e-01	1.54e+03	1.55e+03	1.54e+03	0.65	159.0	28.90	n/a
S98T001537	A		Chromium -ICP-Acid Digest	ug/g	95.60	<1.00e-02	3.71e+03	3.92e+03	3.82e+03	5.50	158.2	5.790	n/a
S98T001537	A		Lithium -ICP-Acid Digest	ug/g	96.80	<1.00e-02	37.20	38.40	37.80	3.17	88.60	5.790	n/a
S98T001537	A		Sodium -ICP-Acid Digest	ug/g	127.6	9.96e-01	1.73e+05	1.73e+05	1.73e+05	0.00	-7.520e2	57.90	n/a

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Sample#	R	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98T001539	W	Bromide by Ion Chromatograph	ug/g	97.30	<1.25e-01	2.29e+03	<1.25e3	n/a	n/a	n/a	1.25e+03	n/a
S98T001539	W	Nitrate by IC-Bionex 4000/4500	ug/g	99.28	1.71e-01	1.96e+04	2.23e+04	2.10e+04	12.9	n/a	1.38e+03	n/a
S98T001539	W	Sulfate by IC-Bionex 4000/4500	ug/g	94.71	<1.38e-01	3.20e+03	1.94e+03	2.57e+03	49.0	n/a	1.38e+03	n/a
S98T001541	I	Aluminum -ICP-H20 Dig/Acid	ug/g	97.60	1.23e-01	4.08e+02	403.0	405.5	1.25	97.80	30.50	n/a
S98T001541	I	Chromium -ICP-H20 Dig/Acid	ug/g	96.60	<1.00e-02	3.06e+03	3.29e+03	3.17e+03	7.57	96.50	6.060	n/a
S98T001541	I	Lithium -ICP-H20 Dig/Acid	ug/g	98.40	<1.00e-02	22.00	20.50	21.25	7.06	94.60	6.060	n/a
S98T001541	I	Sodium -ICP-H20 Dig/Acid	ug/g	101.8	3.690	1.78e+05	1.76e+05	1.77e+05	1.13	163.0	60.60	n/a

Table 1. Data Summary Report.
TX-118

CORE NUMBER: 236
SEGMENT #: 98

SEGMENT PORTION: Hydrostatic Head Fluid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98T001166	D		Lithium-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	1.81e+03	1.79e+03	1.80e+03	1.11	n/a	1.00e-01	n/a
S98T001166			Nitrite-IC - Dionex 4000/4500	ug/mL	101.1	<1.08e-01	<1.20e+02	<1.20e2	n/a	n/a	n/a	120.0	n/a
S98T001166			Bromide by Ion Chromatograph	ug/mL	103.9	<1.25e-01	2.49e+04	2.54e+04	2.52e+04	1.99	n/a	138.9	n/a
S98T001166			Sulfate by IC-Dionex 4000/4500	ug/mL	104.4	<1.38e-01	<1.53e+02	<1.53e2	n/a	n/a	n/a	153.3	n/a

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CHAIN OF CUSTODY FORMS

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CHAIN-OF-CUSTODY RECORD FOR CPO

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(1) Sample Number 236-01		(2) Supervisor/Sampler D.C. Hartley		(9) Seal Intact Upon Release? ☒ Yes ☐ No	
(3) Tank TX118		(4) Riser 12B		(10) Seal Intact Upon Receipt? ☒ Yes ☐ No	
(5) Cask/Pig Serial No. 1013C		(6) Shipment Description: A. Work Package Number WS-97-00134/a B. Cask/Pig Seal Number 13096 C. Date Sample Collected 4-1-98 D. Time Sample Collected 1400		(7) Sampling Data Y N - Lithium Bromide ☐ ☒ Amount N/A Concentration N/A - X-Ray ☐ ☒ - Partial Sample ☒ ☐ - Retrieved Partial Sample Stroke Length 9"-11"	
(8) Field Comments: 9"-11" Sample reads 50 mv/hr.				(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No	
				(12) Laboratory Comments:	
(13) Relinquished By (Sign and PRINT) R.J. Proznik		(14) Received By (Sign and PRINT) V.P. Matthews		(15) Date/Time 1012 4-6-98	
(17) Relinquished By (Sign and PRINT) V.P. Matthews		(18) Received By (Sign and PRINT) Jim Knight		(19) Date/Time 10:55 4/6/98	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)		(23) Date/Time	
(25) Relinquished By (Sign and PRINT)		(26) Received By (Sign and PRINT)		(27) Date/Time	
				(28) Receiver Comments	

CHAIN-OF-CUSTODY RECORD FOR CPO

Sample Number 236-02		(2) Supervisor/Sampler M. F. Jones		(9) Seal Intact Upon Release? ☒ Yes ☐ No	
(4) Riser 1288		(5) Cask/Pig Serial No. C-2017		(10) Seal Intact Upon Receipt? ☒ Yes ☐ No	
Permanent Description:		(7) Sampling Date Y N - Lithium Bromide ☐ ☒ Amount MA Concentration N/A - X-Ray ☐ ☒ - Partial Sample ☒ ☒ - Retrieved Partial Sample Stroke Length 5"		(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No	
Work Package Number WS-97-C0134				(12) Laboratory Comments:	
Cask/Pig Seal Number 11755					
Date Sample Collected 4-13-98 MCA 4-13-98					
Time Sample Collected 1900 1920					
Field Comments: SAMPLE WAS PUSHED ONLY ABOUT 5" BEFORE HITTING HIGH DOWN FORCE.					
(13) Relinquished By (Sign and PRINT) M. F. Jones		(14) Received By (Sign and PRINT) SWATKINS		(15) Date/Time 11:00 AM 4/27/98	
(17) Relinquished By (Sign and PRINT) SWATKINS		(18) Received By (Sign and PRINT) Jim Knight		(19) Date/Time 4/27/98	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)		(23) Date/Time	
(25) Relinquished By (Sign and PRINT)		(26) Received By (Sign and PRINT)		(27) Date/Time	
				(28) Receiver Comments	

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CHAIN-OF-CUSTODY RECORD FOR CPO

Group 98000217

(1) Sample Number <u>NA</u>		(2) Supervisor Sampler <u>R. Frank Frait</u>		(9) Seal Intact Upon Release? ☒ Yes ☐ No	
(3) Tank <u>TX-118</u>		(4) Riser <u>9B</u>		(10) Seal Intact Upon Receipt? ☒ Yes ☐ No	
(5) Cask/Pig Serial No. <u>NA</u>		(6) Shipment Description:		(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6) ☒ Yes ☐ No	
(7) Sampling Data		(8) Field Comments:		(12) Laboratory Comments:	
A. Work Package Number <u>WS-97-00133</u> B. Cask/Pig Seal Number <u>10111</u> C. Date Sample Collected <u>3-26-98</u> D. Time Sample Collected <u>5:00 pm</u>		(7) Sampling Data - Lithium Bromide ☒ Y ☐ N Amount <u>NA</u> Concentration <u>0.3mM/LAR</u> - X-Ray ☐ ☒ - Partial Sample ☐ ☒ - Retrieved Partial Sample Stroke Length <u>NA</u>		(8) Field Comments: <u>① Lithium Bromide Blank</u> <u>33</u>	
(9) Relinquished By (Sign and PRINT) <u>James R. Sickels</u>		(14) Received By (Sign and PRINT) <u>James R. Sickels</u>		(15) Date/Time <u>0820</u> <u>3-31-98</u>	
(17) Relinquished By (Sign and PRINT) <u>James R. Sickels</u>		(18) Received By (Sign and PRINT) <u>James R. Sickels</u>		(19) Date/Time <u>1108</u> <u>3-31-98</u>	
(21) Relinquished By (Sign and PRINT)		(22) Received By (Sign and PRINT)		(23) Date/Time	
(25) Relinquished By (Sign and PRINT)		(26) Received By (Sign and PRINT)		(27) Date/Time	
				(28) Receiver Comments	
				(29) Receiver Comments	
				(30) Receiver Comments	
				(31) Receiver Comments	

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REQUEST FOR SPECIAL ANALYSIS

ATTACHMENT 2

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REQUEST FOR SAMPLE ANALYSIS (RSA)

Group ID No. (For lab use only)

1. Sample Origin

241-TX-118

2. Date Sampled

03/98

4. Requestor's Name

Cheryl J. Benar

6. TPCN

1MDR6

7. Org. Code

7A120

Customer/Project Code

3. Submitted By

CPO

5. Requestor's Phone/MSIN/FAX

372-1256 R2-12 373-6955

8. Customer ID No.

9. Laboratory
Sample No.10. Volume
of Sample11. Matrix
of Sample

12. Requested Analyses

13. Expected Range

See TSAP HNF-SD-WM-TSAP-123; Rev. 1

14. Does sample have a MSDS?

☐ Yes HEHF assigned MSDS No. _____☒ No Description of process that produced waste/sample:

See TSAP

15. Is this sample RCRA listed? ☒ Yes ☐ No

Applicable Listed Waste Codes:

☐ Yes ☐ No P Codes: (list) RCRA Permit

☐ Yes ☐ No U Codes: (list) DOE/RL-88-21

☐ Yes ☐ No K Codes: (list) _____

☐ Yes ☐ No F Codes: (list) _____

Applicable Characteristic Codes:

☐ Yes ☐ No D001: (how determined) _____ Ignitable

☐ Yes ☐ No D002: (how determined) _____ Corrosive

☐ Yes ☐ No D003: (how determined) _____ Reactive

☐ Yes ☐ No Toxic: (list codes) _____

PCB: Does this waste/sample contain PCBs?

☐ Yes Over 500 ppm

☐ Yes Over 50 ppm

☒ Yes PCBs are suspected

☐ No PCBs are suspected

If YES, what is the source of the PCBs?

☐ Transformer, capacitor, or ballast

☐ Other, specify _____

☐ Unknown

16. Sample Disposition

☒ Return to Customer

☐ Samples found to contain PCBs will be returned to the customer

☐ Dispose of per facility procedures with applied charges for analyses and disposal

Sample(s) Date Rate at Contact

HRT Signature

17. QC Required

☐ Per 222-S Laboratory Quality Assurance Plan (HNF-SD-CP-QAPP-016)☒ Other (list reference document or attach) See TSAP

18. Special Instructions (Special Storage Requirements, Reporting format, holding times, etc.)

See TSAP

19. Requested Turnaround Time

☐ 2 Weeks ☐ 4 Weeks

☐ Other _____

20. Sample Received by:

Date:

Time:

21. Chain of Custody

☐ No ☒ Yes

Number: _____

PHOTOGRAPHS

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TX-118 C236 SEG.1

4/15/98

TX-118 Core 236 Segment 2 Riser 12D 5/7/98

SAMPLE HANDLING

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LABCORE Data Entry Template for Worklist# 23436

Analyst: ROH Instrument: BA000 Book # _____

Method: LO-160-103 Rev/Mod C O

Worklist Comment: TX-118 C236 SEG # 1 RISER 12B EXTRUSION

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	<u>20</u>	<u>2000</u>	<u>N/A</u>	
		2	INSTCHK02				EXTRUD01	SOLID	<u>500</u>	<u>50000</u>	<u>N/A</u>	
98000225	TX-118	3	SAMPLE	S98T101181	0		DLIGVOL1	SOLID	<u>N/A</u>	<u>0</u>		ml
98000225	TX-118	4	SAMPLE	S98T101181	0		DLIGWT01	SOLID	<u>N/A</u>	<u>0</u>		g
98000225	TX-118	5	SAMPLE	S98T101181	0		EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>		g/ml
98000225	TX-118	6	SAMPLE	S98T101181	0		EXTRUD01	SOLID	<u>N/A</u>	<u>COMPLETE</u>		
98000225	TX-118	7	SAMPLE	S98T101181	0		LLIGWT01	SOLID	<u>N/A</u>	<u>0</u>		g
98000225	TX-118	8	SAMPLE	S98T101181	0		NOTEBOOK	SOLID	<u>N/A</u>	<u>N-994</u>		
98000225	TX-118	9	SAMPLE	S98T101181	0		SLDVOL01	SOLID	<u>N/A</u>	<u>N/A</u>		ml
98000225	TX-118	10	SAMPLE	S98T101181	0		SLDWT-01	SOLID	<u>N/A</u>	<u>176.8</u>		g
98000225	TX-118	11	SAMPLE	S98T101181	0		APPEAR01	SOLID	<u>N/A</u>	<u>COMPLETE</u>		
98000225	TX-118	12	SAMPLE	S98T101181	0		ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>		ml

Final page for worklist # 23436

Analyst Signature ROH Date 4/11/98

Analyst Signature ROH Date 4/11/98
Validated Ant Date 4.16.98

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# 23709

Analyst: U Instrument: BA000 Book # NA

Method: LO-160-103 Rev/Mod C-O

Worklist Comment: TX-118 C236 SEG # 2 RISER 12D EXTRUSION

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01		EXTRUD01	SOLID	<u>20</u>	<u>20.01</u>	<u>N/A</u>	
		2	INSTCHK02		EXTRUD01	SOLID	<u>500</u>	<u>499.93</u>	<u>N/A</u>	
98000225	TX-118	3	SAMPLE	S98T:01301	0	DLTQVOL1	SOLID	<u>N/A</u>	<u>0</u>	ml
98000225	TX-118	4	SAMPLE	S98T:01301	0	DLTQWT01	SOLID	<u>N/A</u>	<u>0</u>	g
98000225	TX-118	5	SAMPLE	S98T:01301	0	EST.G/ML	SOLID	<u>N/A</u>	<u>0</u>	g/ml
98000225	TX-118	6	SAMPLE	S98T:01301	0	EXTRUD01	SOLID	<u>N/A</u>	<u>complete</u>	
98000225	TX-118	7	SAMPLE	S98T:01301	0	LLTQWT01	SOLID	<u>N/A</u>	<u>0</u>	g
98000225	TX-118	8	SAMPLE	S98T:01301	0	NOTEBOOK	SOLID	<u>N/A</u>	<u>N-994</u>	
98000225	TX-118	9	SAMPLE	S98T:01301	0	SLDVOL01	SOLID	<u>N/A</u>	<u>NA</u>	ml
98000225	TX-118	10	SAMPLE	S98T:01301	0	SLDWT-01	SOLID	<u>N/A</u>	<u>155.0</u>	g
98000225	TX-118	11	SAMPLE	S98T:01301	0	APPEAR01	SOLID	<u>N/A</u>	<u>complete</u>	
98000225	TX-118	12	SAMPLE	S98T:01301	0	ORGVOL01	SOLID	<u>N/A</u>	<u>0</u>	ml

Final page for worklist # 23709

Analyst Signature [Signature] Date 5/17/98

Analyst Signature [Signature] Date 5/17/98
Validated AS 5-7-98

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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LABCORE Data Entry Template for Worklist# 24397

Analyst: gdy Instrument: FUS01 Book # N/A

Method: LA-549-141 Rev/Mod G-Ø

Worklist Comment: TX118, FUSION01, PCB suspect skm Treat waste as Suspect PCB. SKM

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				FUSION01	SOLID	<u>1</u>	<u>.250</u>	<u>N/A</u>	g/L
98000225	TX-118	2	SAMPLE	S98T001524	0	F	FUSION01	SOLID	<u>N/A</u>	<u>1.9884</u>		g/L
				<u>.4971 g</u>								
				<u>→ .250 L</u>								
98000225	TX-118	3	SAMPLE	S98T001524	0		DOSE-02	SQID	<u>N/A</u>	<u>78</u>		mrad/hour
98000225	TX-118	4	DUP	S98T001524	0	F	FUSION01	SOLID	<u>1.9884</u>	<u>1.9756</u>	<u>N/A</u>	g/L
				<u>.4939 g</u>								
				<u>→ .250 L</u>								
98000225	TX-118	5	DUP	S98T001524	0		DOSE-02	SOLID	<u>78</u>	<u>75</u>	<u>N/A</u>	mrad/hour
98000225	TX-118	6	SAMPLE	S98T001534	0	F	FUSION01	SOLID	<u>N/A</u>	<u>1.9644</u>		g/L
				<u>.4911 g</u>								
				<u>→ .250 L</u>								
98000225	TX-118	7	SAMPLE	S98T001534	0		DOSE-02	SOLID	<u>N/A</u>	<u>90</u>		mrad/hour
98000225	TX-118	8	DUP	S98T001534	0	F	FUSION01	SOLID	<u>1.9644</u>	<u>1.9440</u>	<u>N/A</u>	g/L
				<u>.4860 g</u>								
				<u>→ .250 L</u>								
98000225	TX-118	9	DUP	S98T001534	0		DOSE-02	SOLID	<u>90</u>	<u>96</u>	<u>N/A</u>	mrad/hour
98000225	TX-118	10	SAMPLE	S98T001535	0	F	FUSION01	SOLID	<u>N/A</u>	<u>1.9788</u>		g/L
				<u>.4947 g</u>								
				<u>→ .250 L</u>								
98000225	TX-118	11	SAMPLE	S98T001535	0		DOSE-02	SOLID	<u>N/A</u>	<u>21</u>		mrad/hour
98000225	TX-118	12	DUP	S98T001535	0	F	FUSION01	SOLID	<u>1.9788</u>	<u>1.9736</u>	<u>N/A</u>	g/L
				<u>.4934 g</u>								
				<u>→ .250 L</u>								
98000225	TX-118	13	DUP	S98T001535	0		DOSE-02	SOLID	<u>21</u>	<u>21</u>	<u>N/A</u>	mrad/hour

Final page for worklist # 24397

Analyst Signature D. T. 6-4-98 Date

1521 → 1524
1530 → 1534
1531 → 1535

Analyst Signature N/CB Date 4/5/98
validated by: REW 4/5/98

Data Entry Comments:

per KS Tollefson 6-3-98:
manage per LO-100-114 (PCB)

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# 24495

Analyst: Amz Instrument: H2001 Book # N/A

Method: LA-504-101 Rev/Mod F-0

Worklist Comment: TX118,H2ODIG01 Handle as PCB Suspect.

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2ODIG01	SOLID	<u>1</u>	<u>.100</u>	<u>N/A</u>	g/L
98000225	TX-118	2 SAMPLE	S98T001526	0	W	H2ODIG01	SOLID	<u>N/A</u>	<u>4.970</u>	g/L
		<u>4970</u>								
98000225	TX-118	3 SAMPLE	S98T001526	0		DOSE-02	SOLID	<u>N/A</u>	<u>9</u>	mrad/hour
98000225	TX-118	4 DUP	S98T001526	0	W	H2ODIG01	SOLID	<u>4.970</u>	<u>5.098</u>	g/L
		<u>5098</u>								
98000225	TX-118	5 DUP	S98T001526	0		DOSE-02	SOLID	<u>9</u>	<u>9</u>	mrad/hour
98000225	TX-118	6 SAMPLE	S98T001538	0	W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.014</u>	g/L
		<u>5014</u>								
98000225	TX-118	7 SAMPLE	S98T001538	0		DOSE-02	SOLID	<u>N/A</u>	<u>3</u>	mrad/hour
98000225	TX-118	8 DUP	S98T001538	0	W	H2ODIG01	SOLID	<u>5.014</u>	<u>5.093</u>	g/L
		<u>5093</u>								
98000225	TX-118	9 DUP	S98T001538	0		DOSE-02	SOLID	<u>3</u>	<u>3</u>	mrad/hour
98000225	TX-118	10 SAMPLE	S98T001539	0	W	H2ODIG01	SOLID	<u>N/A</u>	<u>5.093</u>	g/L
		<u>5093</u>								
98000225	TX-118	11 SAMPLE	S98T001539	0		DOSE-02	SOLID	<u>N/A</u>	<u>3</u>	mrad/hour
98000225	TX-118	12 DUP	S98T001539	0	W	H2ODIG01	SOLID	<u>5.093</u>	<u>5.099</u>	g/L
		<u>5099</u>								
98000225	TX-118	13 DUP	S98T001539	0		DOSE-02	SOLID	<u>3</u>	<u>3</u>	mrad/hour

Final page for worklist # 24495

Amz 6-12-98
Analyst Signature Date

Kelly S. Hendricks 6-15-98
Analyst Signature Date

S98T001521 → S98T001526
S98T001530 → S98T001538
S98T001531 → S98T001539

Validated 6/15/98
J.Baird

Data Entry Comments:

HPT - Scott Corbaley

HNF-1651 REV. 0

worklistrpt Version 2.1 05/15/95

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06/09/98 16:28

LABCORE Data Entry Template for Worklist# 24516

Analyst: Law 2 Instrument: H2001 Book # N/AMethod: LA-504-101 Rev/Mod F-0

Worklist Comment: TX-118 H2OICP01, Do after WL 24495. PCB Suspect.

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 BLNK-PREP			H2OICP01	SOLID	<u>1</u>	<u>0.100</u>	<u>N/A</u>	g/L
98000225	TX-118	2 SAMPLE	S98T001527	0 I	H2OICP01	SOLID	<u>N/A</u>	<u>4.84</u>		g/L
98000225	TX-118	3 SAMPLE	S98T001527	0	DOSE-02	SOLID	<u>N/A</u>	<u>20.5</u>		mrad/hour
98000225	TX-118	4 DUP	S98T001527	0 I	H2OICP01	SOLID	<u>4.84</u>	<u>4.96</u>	<u>N/A</u>	g/L
98000225	TX-118	5 DUP	S98T001527	0	DOSE-02	SOLID	<u>20.5</u>	<u>20.5</u>	<u>N/A</u>	mrad/hour
98000225	TX-118	6 SAMPLE	S98T001540	0 I	H2OICP01	SOLID	<u>N/A</u>	<u>4.88</u>		g/L
98000225	TX-118	7 SAMPLE	S98T001540	0	DOSE-02	SOLID	<u>N/A</u>	<u>20.5</u>		mrad/hour
98000225	TX-118	8 DUP	S98T001540	0 I	H2OICP01	SOLID	<u>4.88</u>	<u>4.96</u>	<u>N/A</u>	g/L
98000225	TX-118	9 DUP	S98T001540	0	DOSE-02	SOLID	<u>20.5</u>	<u>20.5</u>	<u>N/A</u>	mrad/hour
98000225	TX-118	10 SAMPLE	S98T001541	0 I	H2OICP01	SOLID	<u>N/A</u>	<u>4.96</u>		g/L
98000225	TX-118	11 SAMPLE	S98T001541	0	DOSE-02	SOLID	<u>N/A</u>	<u>20.5</u>		mrad/hour
98000225	TX-118	12 DUP	S98T001541	0 I	H2OICP01	SOLID	<u>4.96</u>	<u>4.97</u>	<u>N/A</u>	g/L
98000225	TX-118	13 DUP	S98T001541	0	DOSE-02	SOLID	<u>20.5</u>	<u>20.5</u>	<u>N/A</u>	mrad/hour

Final page for worklist # 24516

Analyst Signature [Signature] Date 6-15-98Analyst Signature [Signature] Date 6-15-96Validated by [Signature]
Anastos 6-17-98Data Entry Comments: Att - Lisa Spicer

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.

HNF-1651 REV. 0

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worklistrpt Version 2.1 05/15/95
06/08/98 13:53

LABCORE Data Entry Template for Worklist# 24494

Analyst: Jan 2 Instrument: ACD01 Book # WHC-1A 2.5 ml's etcd into
WHC-2 * 50 ml's final volume
D.F. 20x

Method: LA-505-163 Rev/Mod B-0

Worklist Comment: TX118, ACIDIG01, Handle as SUSPECT PCB'S. tdm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
* See note		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>g/L</u>
98000225	TX-118	3 SAMPLE - 2478	S98T001525	0 A	ACIDIG01	SOLID	<u>N/A</u>	<u>4.956</u>		<u>g/L</u>
98000225	TX-118	4 SAMPLE	S98T001525	0	DOSE-02	SOLID	<u>N/A</u>	<u>135</u>		<u>mrad/hour</u>
98000225	TX-118	5 DUP - 2583	S98T001525	0 A	ACIDIG01	SOLID	<u>4.956</u>	<u>5.166</u>	<u>N/A</u>	<u>g/L</u>
98000225	TX-118	6 DUP	S98T001525	0	DOSE-02	SOLID	<u>135</u>		<u>N/A</u>	<u>mrad/hour</u>
98000225	TX-118	7 SPK - 2577	S98T001525	0 A	ACIDIG01	SOLID	<u>5.196</u>	<u>N/A</u>	<u>N/A</u>	<u>g/L</u> * See note
98000225	TX-118	8 SPK	S98T001525	0	DOSE-02	SOLID	<u>135</u>	<u>N/A</u>	<u>N/A</u>	<u>mrad/hour</u>
98000225	TX-118	9 SAMPLE - 2585	S98T001536	0 A	ACIDIG01	SOLID	<u>N/A</u>	<u>5.17</u>		<u>g/L</u>
98000225	TX-118	10 SAMPLE	S98T001536	0	DOSE-02	SOLID	<u>N/A</u>	<u>147</u>		<u>mrad/hour</u>
98000225	TX-118	11 DUP - 2576	S98T001536	0 A	ACIDIG01	SOLID	<u>5.17</u>	<u>5.152</u>	<u>N/A</u>	<u>g/L</u>
98000225	TX-118	12 DUP	S98T001536	0	DOSE-02	SOLID	<u>147</u>	<u>147</u>	<u>N/A</u>	<u>mrad/hour</u>
98000225	TX-118	13 SAMPLE - 2594	S98T001537	0 A	ACIDIG01	SOLID	<u>N/A</u>	<u>5.188</u>		<u>g/L</u>
98000225	TX-118	14 SAMPLE	S98T001537	0	DOSE-02	SOLID	<u>N/A</u>	<u>28</u>		<u>mrad/hour</u>
98000225	TX-118	15 DUP - 2515	S98T001537	0 A	ACIDIG01	SOLID	<u>5.188</u>	<u>5.13</u>	<u>N/A</u>	<u>g/L</u>
98000225	TX-118	16 DUP	S98T001537	0	DOSE-02	SOLID	<u>28</u>	<u>28</u>	<u>N/A</u>	<u>mrad/hour</u>
98000225	TX-118	17 SPK - 2559	S98T001537	0 A	ACIDIG01	SOLID	<u>5.118</u>	<u>N/A</u>	<u>N/A</u>	<u>g/L</u> * See note
98000225	TX-118	18 SPK	S98T001537	0	DOSE-02	SOLID	<u>28</u>	<u>N/A</u>	<u>N/A</u>	<u>mrad/hour</u>

Data Entry Comments:

HPT- Scott Corbally

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# 24494

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

Final page for worklist # 24494

Analyst Signature 6-12-98
Date

Analyst Signature 6-15-98
Date

Validated 6/15/98
J Baird

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.

BULK DENSITY WORKSHEETS

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Bulk Density Worksheet

Date: 6/2/98

Requestor: R Escott

Tank: TX-118
Core: 236
Seg: 1LH
Auger: mk
Sample ID: _____

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

Jar#: 14251
Jar/Vial Size: 250 mL
Initial Weight: 373.5 g
Final Weight: 241.9 g
Net Weight: _____ g

Cone#: 51 mL
Final Vol: 6.5
Initial Weight: 7.71 g
Final Weight: 17.73 g
Net Weight: 10.02 g

Sample ID:

Appearance/Narrative:

15/6/21

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

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

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

Cone#: 2 mL
 Final Vol: _____ g
 Initial Weight: 62 g
 Final Weight: 62 g
 Net Weight: _____ g
 Sample ID: _____

Reference/Narrative:

54

Bulk Density Worksheet

Requestor: RESH

Date: 6/2/98

Tank: TX-118
Core: 236
Seg: 20A
Auger: NA

Sample ID: _____

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

Jar#: 13000
Jar/Vial Size: 125 mL
Initial Weight: 230.2 g
Final Weight: _____ g
Net Weight: _____ g

Cone#: 60
Final Vol: 8.5 mL
Initial Weight: 7.65 g
Final Weight: 21.23 g
Net Weight: 13.58 g
Sample ID: 5981001528

Appearance/Narrative:

$$13.58 / 8.5 = 1.60 \text{ g/mL}$$

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:

INORGANIC ANALYSIS

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LABCORE Completed Worklist Report for Worklist# 24398

Analyst: krm

Instrument: DSC03

Book# 12N14B

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

Worklist Comment: TX118, DSC-03, SUSPECT PCB Run under nitrogen. skm

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0	DSC-03	SOLID	28.45	29.34	103.128 % Recovery	
2 SAMPLE	S98T001530 0	DSC-03	SOLID	N/A	0	Joules/g	
3 DUP	S98T001530 0	DSC-03	SOLID	0	0	0.000 RPD	
4 SAMPLE	S98T001531 0	DSC-03	SOLID	N/A	0	Joules/g	
5 DUP	S98T001531 0	DSC-03	SOLID	0	0	0.000 RPD	

Final page for worklist# 24398

Analyst Signature _____ Date _____

Analyst Signature _____ Date 6-5-98

Reviewer Signature _____ Date 6/6/98

HNF-1651 REV. 0

worklistrpt Version 2.1 05/15/95

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06/03/98 08:56

LABCORE Data Entry Template for Worklist# 24398

Analyst:

KRM

Instrument: DSC0

3

Book #

12N14B

Method: LA-514-114 Rev/Mod

D-1*Great waste as suspect PCB. skm*

Worklist Comment: TX118, DSC-03, SUSPECT PCB

Run under nitrogen. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>88.45</u>	<u>29.34</u>	<u>N/A</u>	Joules/g
98000225	TX-118	2 SAMPLE	S98T001530	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
98000225	TX-118	3 DUP	S98T001530	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g
98000225	TX-118	4 SAMPLE	S98T001531	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
98000225	TX-118	5 DUP	S98T001531	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 24398

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

KS Tollefson6/3/98Mag per CO-100-114 (PCB)

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: CAL060304 Wed Jun 3 14:50:55 1998
 Sample Weight: 11.270 mg
 STD 12N14-B

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

Curve 1: DSC

File info: SAM060307 Wed Jun 3 22:34:15 1998

Sample Weight: 21.590 mg

S98T001530

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 3 22:37:56 1998

HNF-1651 REV. 0

Curve 1: DSC
 File Info: SAM060308 Wed Jun 3 23:27:32 1998
 Sample Weight: 30.500 mg
 S98T001530 DUP

KR MONTEITH
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed Jun 3 23:42:24 1998

N2 10C/min
 Temp 35.8 °C
 TIME: 0.0 min RATE: 10.0 C/min

Curve 1: DSC

File info: SAM060309 Thu Jun 4 00:31:54 1998

Sample Weight: 11.980 mg

S98T001531

N2 10C/min

TEMP1: 35.0 °C
TEMP2: 500.0 °C

TIME1: 0.0 min RATE1: 10.0 °C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 4 01:36:11 1998

HNF-1651 REV.0

Curve 1: DSC

File info: SAM060311 Thu Jun 4 02:26:27 1998

Sample Weight: 22.090 mg

S98T001531 DUP

64

HNF-1651 REV. 0

N2 10C/min

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 4 04:23:17 1998

LABCORE Completed Worklist Report for Worklist# 24399

Analyst: krm

Instrument: DSC03

Book# 12N14B

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

Worklist Comment: TX118, DSC-03, SUSPECT PCB Run under nitrogen. skm

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		DSC-03	SOLID	28.45	29.41	103.374 % Recovery	
2	SAMPLE	S98T001521	0		DSC-03	SOLID	N/A	0		Joules/g
3	DUP	S98T001521	0		DSC-03	SOLID	0	0	0.000 RPD	

Final page for worklist# 24399

Analyst Signature

Date

Maya Tracy
Analyst Signature

6-5-98
Date

Bachelor
Reviewer Signature

6/8/98
Date

LABCORE Data Entry Template for Worklist# 24399

Analyst: SKM Instrument: DSC0 3 Book # 12N14B
Method: LA-514-114 Rev/Mod D-1
Worklist Comment: TX118, DSC-03, SUSPECT PCB Run under nitrogen. skm
Heat waste as suspect PCB. SKM

GROUP	PROJECT	S TYPE	SAMPLE#	R A	TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			DSC-03	SOLID	<u>38.45</u>	<u>29.41</u>	<u>N/A</u>	Joules/g
98000225	TX-118	2 SAMPLE	S98T001521	0	DSC-03	SOLID	<u>N/A</u>	<u>0</u>		Joules/g
98000225	TX-118	3 DUP	S98T001521	0	DSC-03	SOLID	<u>0</u>	<u>0</u>	<u>N/A</u>	Joules/g

Final page for worklist # 24399

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

MSF
mg manage per 10-100-114 (PCB)
Kathy Tolson 6-3-98

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: CAL060304 Wed Jun 3 14:50:55 1998
 Sample Weight: 11.270 mg
 STD 12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 67 TO 70

N2, EXOTHERM DOWN
 TEMP: 140.0 °C TIME: 0.0 min RATE: 10.0 °C/min
 PP BACHELOR
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed Jun 3 14:51:59 1998

Curve 1: DSC

File info: SAM060301 Wed Jun 3 19:44:26 1998

Sample Weight: 11.780 mg

S98T001521

89

N2 10C/min

TEMP: 30.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 3 19:47:50 1998

Curve 1: DSC

File info: SAM060306 Wed Jun 3 21:03:07 1998

Sample Weight: 19.600 mg

S98T001521 DUP

69

N2 10C/min

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

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 3 21:41:04 1998

LABCORE Completed Worklist Report for Worklist# 24503

Analyst: ppb

Instrument: DSC0

Book# NA

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

Worklist Comment: TX-118

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	SAMPLE	S98T001521	0		DSC-02	SOLID	N/A	0		Joules/g Dry
2	DUP	S98T001521	0		DSC-02	SOLID	0	0	0.000	RPD
3	SAMPLE	S98T001530	0		DSC-02	SOLID	N/A	0		Joules/g Dry
4	DUP	S98T001530	0		DSC-02	SOLID	0	0	0.000	RPD
5	SAMPLE	S98T001531	0		DSC-02	SOLID	N/A	0		Joules/g Dry
6	DUP	S98T001531	0		DSC-02	SOLID	0	0	0.000	RPD

Final page for worklist# 24503

Analyst Signature

6-9-98
Date

Analyst Signature

Date

Reviewer Signature

6/9/98
Date

LABCORE Completed Worklist Report for Worklist# 24400

Analyst: krm

Instrument: TGA03

Book# 103N8A

Method: LA-5/4-114 Rev/Mod D-1

Worklist Comment: TX118, TGA-03, SUSPECT PCB Run under nitrogen. skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD		0	TGA-03	SOLID	5.94601	58.68	98.788 % Recovery	
2 SAMPLE	S98T001530	0	TGA-03	SOLID	N/A	43.43	%	
3 DUP	S98T001530	0	TGA-03	SOLID	43.43	43.68	0.574 RPD	
4 SAMPLE	S98T001531	0	TGA-03	SOLID	N/A	49.59	%	
5 DUP	S98T001531	0	TGA-03	SOLID	49.59	52.46	5.625 RPD	

Final page for worklist# 24400

Analyst Signature _____ Date _____

[Signature] 6-5-98
Analyst Signature Date

[Signature] 6/5/98
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 24400

Analyst: KRM Instrument: TGA0 3 Book # 103N8A

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

Worklist Comment: TX118, TGA-03, SUSPECT PCB Run under nitrogen. skm

Great waste as suspect PCB. skm

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-----TEST-----	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD			TGA-03	SOLID	<u>59.4</u>	<u>58.68</u>	<u>N/A</u>	%
98000225	TX-118	2 SAMPLE	S98T001530	0	TGA-03	SOLID	<u>N/A</u>	<u>43.43</u>		%
98000225	TX-118	3 DUP	S98T001530	0	TGA-03	SOLID	<u>43.43</u>	<u>43.68</u>	<u>N/A</u>	%
98000225	TX-118	4 SAMPLE	S98T001531	0	TGA-03	SOLID	<u>N/A</u>	<u>49.59</u>		%
98000225	TX-118	5 DUP	S98T001531	0	TGA-03	SOLID	<u>49.59</u>	<u>52.46</u>	<u>N/A</u>	%

Final page for worklist # 24400

Analyst Signature [Signature] Date 6-3-98

Analyst Signature [Signature] Date

Data Entry Comments:

Mug per

Kathy Tolleson 6/3/98
CO-100-114 (PCB)

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: TER060301 Wed Jun 3 06:11:29 1998
 Sample Weight: 27.543 mg
 103NB-A STD

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 73 TO 82.

10C/MIN N2
 TEMP: 35.0 °C
 TIME: 355.0 s
 0.0 min RATE: 10.0 C/min
 Temperature (°C)
 AD PURINTON
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed Jun 3 16:31:24 1998

Curve 1: TGA

File info: SAM060307 Wed Jun 3 22:31:32 1998

Sample Weight: 20.789 mg

S98T001530

10C/MIN N2

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 °C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 3 22:36:29 1998

HNF-1651 REV.0

003

Curve 1: TGA

File info: SAM060308 Wed Jun 3 23:38:56 1998

Sample Weight: 23.636 mg

S98T001530 DUP

SL

HNF-1651 REV. 0

10C/MIN N2

TEMP: 35.0 °C
TEMP: 500.0 °C

TIME: 0.0 min RATE: 10.0 C/min

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 3 23:39:50 1998

HNF-1651 REV. 0

Curve 1: TGA
 File info: SAM060305 Wed Jun 3 19: 48: 27 1998
 Sample Weight: 6.946 mg
 S98T001531

KR MONTEITH
 PERKIN-ELMER
 7 Series Thermal Analysis System
 Wed Jun 3 19: 48: 41 1998

Curve 1: T6A

File info: SAM060306 Wed Jun 3 21:05:16 1998

Sample Weight: 12.746 mg

S98T001531 DUP

10C/MIN N2

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

TEMP2: 500.0 °C

Temperature (°C)

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 3 21:40:27 1998

HNF-1651 REV.0

LABCORE Completed Worklist Report for Worklist# 24401

Analyst: krm

Instrument: TGA03

Book# 103NBA

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

Worklist Comment: TX118, TGA-03, SUSPECT PCB Run under nitrogen. skm

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		TGA-03	SOLID	5.94601	58.68	98.788 % Recovery	
2	SAMPLE	S98T001521	0		TGA-03	SOLID	N/A	46.47	%	
3	DUP	S98T001521	0		TGA-03	SOLID	46.47	47.19	1.537 RPD	

Final page for worklist# 24401

Analyst Signature

Date

Mary Frey 6-5-98
Analyst Signature Date

B. Mahelo 6/8/98
Reviewer Signature Date

LABCORE Data Entry Template for Worklist# 24401

Analyst: KRM Instrument: TGA0 3 Book # 103NBA
 Method: LA-514-114 Rev/Mod D-1 *Great water as suspect PCB. skm*
 Worklist Comment: TX118, TGA-03, SUSPECT PCB 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>58.68</u>	<u>N/A</u>	%
98000225	TX-118	2 SAMPLE	S98T001521 0		TGA-03	SOLID	<u>N/A</u>	<u>46.47</u>		%
98000225	TX-118	3 DUP	S98T001521 0		TGA-03	SOLID	<u>46.47</u>	<u>47.19</u>	<u>N/A</u>	%

Final page for worklist # 24401

 Analyst Signature

 Date 6-3-98

Analyst Signature

Date

Data Entry Comments:

KT
 K Stollefson 5-~~6~~-98
 Manage per 10-100-114 (PCB)

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: TER060301 Wed Jun 3 06:11:29 1998

Sample Weight: 27.543 mg

103N8-A STD

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 50 TO 82

10C/MIN N2

TEMP1: 35.0 °C TIME: 0.0 min RATE: 10.0 °C/min
TEMP2: 300.0 °C

Temperature (°C)

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Jun 3 06:25:03 1998

Curve 1: T6A

File info: SAM060309 Thu Jun 4 00:46:34 1998

Sample Weight: 13.725 mg

S98T001521

81

10C/MIN N2

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

Temperature (°C)

KR MONTEITH
PERKIN-ELMER7 Series Thermal Analysis System
Thu Jun 4 01:37:08 1998

Curve 1: T6A
File info: SAM060311 Thu Jun 4 02:28:27 1998
Sample Weight: 22.812 mg
S98T001521 DUP

KR MONTEITH
PERKIN-ELMER
7 Series Thermal Analysis System
Thu Jun 4 04:21:31 1998

10C/MIN N2
TEMP: 35.0 °C
TIME: 550.0 s
0.0 min RATE: 10.0 C/min

LABCORE Completed Worklist Report for Worklist# 25583

Analyst: glm2

Instrument: IC40S1

Book# 149N20C

Method: 14-533-105 Rev/Mod E-0

Worklist Comment: TX118 used to be wkl 24608

Seq Type	Sample#	RA	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	0	0IC-QC F	QC	1	<1.20e-2		ug/mL
1 CCB	0	0	0IC-QC CL	QC	1	<1.70e-2		ug/mL
1 CCB	0	0	0IC-QC NO2	QC	1	<1.08e-1		ug/mL
1 CCB	0	0	0IC-QC BR	QC	1	<1.25e-1		ug/mL
1 CCB	0	0	0IC-QC NO3	QC	1	1.47e-01	0.147	ug/mL
1 CCB	0	0	0IC-QC P04	QC	1	<1.20e-1		ug/mL
1 CCB	0	0	0IC-QC S04	QC	1	<1.38e-1		ug/mL
1 CCB	0	0	0IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2 ICV	0	0	0IC-QC F	QC	5.99e1	5.80e+01	98.305 %	Recovery
2 ICV	0	0	0IC-QC CL	QC	8.00e1	7.74e+01	96.750 %	Recovery
2 ICV	0	0	0IC-QC NO2	QC	5.42e2	5.57e+02	102.768 %	Recovery
2 ICV	0	0	0IC-QC BR	QC	5.86e2	5.85e+02	99.829 %	Recovery
2 ICV	0	0	0IC-QC NO3	QC	5.92e2	5.59e+02	94.426 %	Recovery
2 ICV	0	0	0IC-QC P04	QC	5.47e2	5.16e+02	94.333 %	Recovery
2 ICV	0	0	0IC-QC S04	QC	6.38e2	6.01e+02	94.201 %	Recovery
2 ICV	0	0	0IC-QC OXALATE2	QC	5.29e2	5.08e+02	96.030 %	Recovery
3 CCV	0	0	0IC-QC F	QC	6.40e1	5.87e+01	91.719 %	Recovery
3 CCV	0	0	0IC-QC CL	QC	9.00e1	8.39e+01	93.222 %	Recovery
3 CCV	0	0	0IC-QC NO2	QC	5.43e2	5.30e+02	97.606 %	Recovery
3 CCV	0	0	0IC-QC BR	QC	6.30e2	6.13e+02	97.302 %	Recovery
3 CCV	0	0	0IC-QC NO3	QC	6.98e2	6.93e+02	99.284 %	Recovery
3 CCV	0	0	0IC-QC P04	QC	6.32e2	5.92e+02	93.671 %	Recovery
3 CCV	0	0	0IC-QC S04	QC	6.99e2	6.62e+02	94.707 %	Recovery
3 CCV	0	0	0IC-QC OXALATE2	QC	5.30e2	5.07e+02	95.660 %	Recovery
4 BLNK-PREP	0	0	0IC-01 F-02	SOLID	1	<1.20e-2		ug/g
4 BLNK-PREP	0	0	0IC-01 CL-02	SOLID	1	1.90e-02	0.019	ug/g
4 BLNK-PREP	0	0	0IC-01 NO2-02	SOLID	1	<1.08e-1		ug/g
4 BLNK-PREP	0	0	0IC-01 BR-02	SOLID	1	<1.25e-1		ug/g
4 BLNK-PREP	0	0	0IC-01 NO3-02	SOLID	1	1.71e-01	0.171	ug/g
4 BLNK-PREP	0	0	0IC-01 P04-02	SOLID	1	<1.20e-1		ug/g
4 BLNK-PREP	0	0	0IC-01 S04-02	SOLID	1	<1.38e-1		ug/g
4 BLNK-PREP	0	0	0IC-01 OXALATE2	SOLID	1	<1.05e-1		ug/g
5 SAMPLE	S98T001526	0 W	0IC-01 BR-02	SOLID	N/A	< 1.283e+03	1283.000	ug/g
5 SAMPLE	S98T001526	0 W	0IC-01 NO3-02	SOLID	N/A	8.271e+03	1426.000	ug/g
5 SAMPLE	S98T001526	0 W	0IC-01 S04-02	SOLID	N/A	< 1.416e+03	1416.000	ug/g
6 DUP	S98T001526	0 W	0IC-01 BR-02	SOLID	<1.28e3	<1.25e3		RPD
6 DUP	S98T001526	0 W	0IC-01 NO3-02	SOLID	8.27e+03	8.26e+03	0.121	RPD
6 DUP	S98T001526	0 W	0IC-01 S04-02	SOLID	<1.42e3	<1.38e3		RPD
7 SPK	S98T001526	0 W	0IC-01 BR-02	SOLID	5.86e2	5.84e+02	99.659 %	Recovery
7 SPK	S98T001526	0 W	0IC-01 NO3-02	SOLID	5.92e2	5.52e+02	93.243 %	Recovery
7 SPK	S98T001526	0 W	0IC-01 S04-02	SOLID	6.38e2	6.14e+02	96.238 %	Recovery

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

LABCORE Completed Worklist Report for Worklist# 25583

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
8 SAMPLE	S98T001538	0 W	@IC-01	BR-02	SOLID	N/A	1.271e+03	1271.000 ug/g
8 SAMPLE	S98T001538	0 W	@IC-01	NO3-02	SOLID	N/A	2.139e+04	1414.000 ug/g
8 SAMPLE	S98T001538	0 W	@IC-01	SO4-02	SOLID	N/A	1.842e+03	1404.000 ug/g
9 DUP	S98T001538	0 W	@IC-01	BR-02	SOLID	<1.27e3	2.38e+03	RPD
9 DUP	S98T001538	0 W	@IC-01	NO3-02	SOLID	2.14e+04	2.19e+04	2.309 RPD
9 DUP	S98T001538	0 W	@IC-01	SO4-02	SOLID	1.84e+03	1.49e+03	21.021 RPD
10 SAMPLE	S98T001539	0 W	@IC-01	BR-02	SOLID	N/A	2.286e+03	1252.000 ug/g
10 SAMPLE	S98T001539	0 W	@IC-01	NO3-02	SOLID	N/A	1.961e+04	1392.000 ug/g
10 SAMPLE	S98T001539	0 W	@IC-01	SO4-02	SOLID	N/A	3.198e+03	1382.000 ug/g
11 DUP	S98T001539	0 W	@IC-01	BR-02	SOLID	2.29e+03	<1.25e3	RPD
11 DUP	S98T001539	0 W	@IC-01	NO3-02	SOLID	1.98e+04	2.23e+04	12.888 RPD
11 DUP	S98T001539	0 W	@IC-01	SO4-02	SOLID	3.20e+03	1.94e+03	49.027 RPD

Final page for worklist# 25583

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Reviewer Signature _____ Date 8/20/98

LABCORE Data Entry Template for Worklist# 25583

Analyst: GLM² Instrument: IC 4051 Book# 149N20-C

Method: LA-533-105 Rev/Mod E-O

Worklist Comment: TX118 used to be wkl 24608

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	CCB				@IC-QC	QC		
2	ICV				@IC-QC	QC		
3	CCV				@IC-QC	QC		
4	BLNK-PREP				@IC-01	SOLID		
5	SAMPLE	S98T001526	0	W	@IC-01	SOLID	98000225	TX-118
		Analytes Requested:		BR-02		, NO3-02 , SO4-02		
6	DUP	S98T001526	0	W	@IC-01	SOLID		
7	SPK	S98T001526	0	W	@IC-01	SOLID		
8	SAMPLE	S98T001538	0	W	@IC-01	SOLID	98000225	TX-118
		Analytes Requested:		BR-02		, NO3-02 , SO4-02		
9	DUP	S98T001538	0	W	@IC-01	SOLID		
10	SAMPLE	S98T001539	0	W	@IC-01	SOLID	98000225	TX-118
		Analytes Requested:		BR-02		, NO3-02 , SO4-02		
11	DUP	S98T001539	0	W	@IC-01	SOLID		

Final page for worklist # 25583

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Validated 8/19/98 GML

Data Entry Comments:

UPLOADED 8-17-98

John Wessell

25583AUG.CSV

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

06/16/98 08:03

Page: 1

A-0004-1

LABCORE Data Entry Template for Worklist# 24608

Analyst: GLM Instrument: IC0 1 Book# 148N 20-C
149N 20-CMethod: LA-533-105 Rev/Mod EOWorklist Comment: TX118, @IC-01, High alpha and suspect PCB skm *not PCB Gm F 7/31/98*

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
<i>DEVILCS</i>			@IC-QC	QC		
2 CCV			@IC-QC	QC		
3 BLNK-PREP			@IC-01	SOLID		
4 SAMPLE	S98T001526 0 W	@IC-01	SOLID	98000225 TX-118		
	Analytes Requested: BR-02		, NO3-02 , SO4-02			
5 DUP	S98T001526 0 W	@IC-01	SOLID			
6 SPK	S98T001526 0 W	@IC-01	SOLID			
7 SAMPLE	S98T001538 0 W	@IC-01	SOLID	98000225 TX-118		
	Analytes Requested: BR-02		, NO3-02 , SO4-02			
8 DUP	S98T001538 0 W	@IC-01	SOLID			
9 SAMPLE	S98T001539 0 W	@IC-01	SOLID	98000225 TX-118		
	Analytes Requested: BR-02		, NO3-02 , SO4-02			
10 DUP	S98T001539 0 W	@IC-01	SOLID			
11 SPK	S98T001539 0 W	@IC-01	SOLID			

Final page for worklist # 24608

GLM 8-2-98
 Analyst Signature Date

Analyst Signature Date

Data Entry Comments:

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

HNF-1651 REV. 0

Sample Name: CCV 149N20-C Date: 08/01/1998 10:51:33
 Data File : C:\DX\DATA\98080101.D29
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 29 Detector: CDM-1
 Analyst : SM/Advent 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	0.86		0.000	83	360	2	
2	1.01	fluoride	57.984	2607	12017	2	0.33
3	1.37		0.000	19	88	1	
4	1.53	chloride	77.443	2264	10473	1	-0.43
5	1.83	nitrite	556.645	9152	49664	1	-0.72
6	2.74	bromide	585.291	5814	36295	1	-1.08
7	3.11	nitrate	558.896	6303	45554	1	-1.38
8	4.43	phosphate	515.713	1696	20529	1	-3.56
9	5.81	sulfate	600.770	4448	64078	1	-3.59
10	7.63	oxalate	508.237	2278	40135	1	-3.34
Totals			3460.980	34663	279193		

File: 98080101.D29 Sample: CCV 149N20-C

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 87 TO 97.

CCV GMP 8/17/98

=====

Sample Name: ICV 148N20-C Date: 08/01/1998 10:38:46

Data File : C:\DX\DATA\98080101.D28

Method : C:\DX\METHOD\KIT.MET

ACI Address: 1 System: 1 Inject#: 28 Detector: CDM-1

Analyst: *SM* 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	0.85		0.000	81	302	1	
2	1.00	fluoride	58.661	2712	12161	1	-0.99
3	1.51	chloride	83.935	2547	11360	1	-1.74
4	1.80	nitrite	529.884	8943	47235	1	-2.17
5	2.70	bromide	612.578	6222	38044	1	-2.53
6	3.07	nitrate	692.947	7632	56886	1	-2.65
7	4.37	phosphate	592.354	1924	23691	1	-4.72
8	5.76	sulfate	661.968	4827	70621	1	-4.48
9	7.57	oxalate	507.207	2243	40053	1	-4.01

Totals 3739.534 37131 300351

File: 98080101.D28 Sample: ICV 148N20-C

HNF-1651 REV. 0

```

=====
Sample Name: CCB                               Date: 08/01/1998 10:26:54
Data File  : C:\DX\DATA\98080101.D27
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 27           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	1.13		0.000	11	34	1	
2	3.15	nitrate	0.147	13	69	1	-0.11
Totals			0.147	24	103

```

=====
Sample Name: PREP BLANK                      Date: 08/01/1998 11:03:38
Data File  : C:\DK\DATA\98080101.D30
Method     : C:\DK\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 30          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	1.27		0.000	63	576	1	
2	1.51	chloride	0.019	47	262	1	-1.30
3	3.13	nitrate	0.171	44	269	1	-0.74
Totals			0.190	153	1107		

File: 98080101.D30 Sample: PREP BLANK

Sample Name: S98T001526 Date: 08/01/1998 11:50:44
 Data File : C:\DX\DATA\98080101.D33
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 33 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	51	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	0.86		0.000	97	421	2	
2	1.01	fluoride	83.564	7555	35030	2	0.33
3	1.52	chloride	1.588	82	421	1	-0.87
4	1.82	nitrite	15.700	383	2116	1	-1.09
5	3.14	nitrate	41.106	799	5590	1	-0.32
6	4.40	phosphate	822.889	5583	67856	1	-4.14
7	5.87	sulfate	0.297	68	907	1	-2.71
8	7.63	oxalate	447.823	4080	70454	1	-3.34
Totals			1412.967	18647	182795		

File: 98080101.D33 Sample: S98T001526

```

=====
Sample Name: S98T001526 DUP                      Date: 08/01/1998 12:06:18
Data File  : C:\DX\DATA\98080101.D34
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 34              Detector: CDM-1
Analyst    :                               Column: AG4A/AS4A anion column
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1          51    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	0.86		0.000	84	341	2	
2	1.01	fluoride	79.902	7312	33469	2	0.33
3	1.53	chloride	1.401	75	371	1	-0.43
4	1.83	nitrite	15.572	400	2093	1	-0.72
5	3.13	nitrate	42.120	815	5757	1	-0.53
6	4.40	phosphate	795.106	5405	65445	1	-4.14
7	5.87	sulfate	0.574	71	964	1	-2.71
8	7.57	oxalate	430.384	3645	67679	1	-4.01
Totals			1365.059	17808	176121		

File: 98080101.D34 Sample: S98T001526 DUP

```

=====
Sample Name: S98T001526 SPK (149N20-C)      Date: 08/01/1998 12:18:45
Data File  : C:\DX\DATA\98080101.D35
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 - System: 1  Inject#: 35      Detector: CDM-1
Analyst    :                               Column: AG4A/AS4A anion column
=====
  
```

```

-----
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1          51    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	0.85		0.000	177	684	2	
2	1.01	fluoride	109.012	10514	45904	2	-0.33
3	1.51	chloride	40.473	2187	10843	1	-1.30
4	1.81	nitrite	288.861	9287	51063	1	-1.45
5	2.72	bromide	291.901	5748	35833	1	-1.81
6	3.09	nitrate	316.856	6961	51347	1	-2.01
7	4.37	phosphate	1085.354	7449	91046	1	-4.72
8	5.81	sulfate	306.870	4952	64821	1	-3.59
9	7.52	oxalate	711.503	5761	112636	1	-4.69
Totals			3150.829	53036	464175		

File: 98080101.D35 Sample: S98T001526 SPK (149N20-C)

```

=====
Sample Name: S98T001538                      Date: 08/01/1998 14:05:03
Data File  : F:\DATA\98080101.D36
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 36          Detector: CDM-1
Analyst    :                               Column: AG4A/AS4A anion column
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External          1          51 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	0.83		0.000	114	428	2	
2	0.99	fluoride	80.483	7531	33717	2	-1.65
3	1.49	chloride	2.682	147	712	1	-2.61
4	1.79	nitrite	30.139	907	4695	1	-2.90
5	3.08	nitrate	107.227	2274	16488	1	-2.22
6	4.35	phosphate	827.177	5729	68229	1	-5.30
7	5.81	sulfate	9.238	211	2746	1	-3.59
8	7.52	oxalate	494.062	4344	77820	1	-4.69
Totals			1551.008	21256	204835		

File: 98080101.D36 Sample: S98T001538

Sample Name: S98T001538 DUP Date: 08/01/1998 14:21:41
 Data File : C:\DX\DATA\98080101.D37
 Method : C:\DX\METHOD\KIT.MET
 ACI Address: 1 System: 1 Inject#: 37 Detector: CDM-1
 Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	51	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	0.85		0.000	141	696	2	
2	1.01	fluoride	60.150	5361	25073	2	0.33
3	1.53	chloride	3.280	165	871	1	-0.43
4	1.83	nitrite	39.004	1168	6279	1	-0.72
5	2.76	bromide	12.117	137	829	1	-0.36
6	3.13	nitrate	111.579	2398	17207	1	-0.74
7	4.37	phosphate	1259.060	8568	106830	1	-4.72
8	5.87	sulfate	7.565	181	2401	1	-2.71
9	7.63	oxalate	126.864	1071	19680	1	-3.34
Totals			1619.620	19191	179867		

File: 98080101.D37 Sample: S98T001538 DUP

HNF-1651 REV. 0

```

=====
Sample Name: S98T001539      Date: 08/01/1998 14:33:17
Data File  : C:\DX\DATA\98080101.D38
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 38      Detector: CDM-1
Analyst    :      Column: AG4A/AS4A anion column
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
-----
External      1      51      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	0.86		0.000	110	490	2	
2	1.01	fluoride	60.324	5197	25147	2	-0.33
3	1.52	chloride	2.892	148	767	1	-0.87
4	1.82	nitrite	32.178	951	5060	1	-1.09
5	2.75	bromide	11.643	128	771	1	-0.84
6	3.13	nitrate	99.870	2097	15274	1	-0.74
7	4.40	phosphate	943.407	6574	78410	1	-4.14
8	5.87	sulfate	16.286	180	4196	1	-2.71
9	7.63	oxalate	237.808	2104	37161	1	-3.34
Totals			1404.408	17490	167276		

File: 98080101.D38 Sample: S98T001539

HNF-1651 REV. 0

```

=====
Sample Name: S98T001539 DUP                      Date: 08/01/1998 14:45:35
Data File  : C:\DX\DATA\98080101.D39
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 39              Detector: CDM-1
Analyst    :                               Column: AG4A/AS4A anion column
=====

```

```

=====
Calibration Volume Dilution Points Rate Start Stop Area Reject
=====
External          1          51  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	0.85		0.000	110	432	2	
2	1.01	fluoride	82.946	7484	34766	2	-0.33
3	1.51	chloride	3.039	157	807	1	-1.30
4	1.81	nitrite	32.356	962	5092	1	-1.45
5	3.11	nitrate	113.640	2419	17548	1	-1.16
6	4.37	phosphate	853.624	5604	70533	1	-4.72
7	5.81	sulfate	9.896	196	2881	1	-3.59
8	7.57	oxalate	525.919	4738	82903	1	-4.01
Totals			1621.420	21671	214960		

File: 98080101.D39 Sample: S98T001539 DUP

LABCORE Completed Worklist Report for Worklist# 27020

Analyst: kjt

Instrument: IC40S2

Book#: 28N21B

Method: LA-533-105

Rev/Mod F-0

Worklist Comment: AZ102 & TX118 @IC-01 skm

Seq Type	Sample#	RA	Test	Matrix	Actual	Found	DL or Yield	Unit
1 CCB	0	0	0IC-QC	F	QC	1	<1.20e-2	ug/mL
1 CCB	0	0	0IC-QC	CL	QC	1	<1.70e-2	ug/mL
1 CCB	0	0	0IC-QC	NO2	QC	1	<1.08e-1	ug/mL
1 CCB	0	0	0IC-QC	BR	QC	1	<1.25e-1	ug/mL
1 CCB	0	0	0IC-QC	NO3	QC	1	<1.39e-1	ug/mL
1 CCB	0	0	0IC-QC	PO4	QC	1	<1.20e-1	ug/mL
1 CCB	0	0	0IC-QC	SO4	QC	1	<1.38e-1	ug/mL
1 CCB	0	0	0IC-QC	OXALATE2	QC	1	<1.05e-1	ug/mL
2 LCS-INST	0	0	0IC-QC	F	QC	5.90e1	6.33e+01	107.288 % Recovery
2 LCS-INST	0	0	0IC-QC	CL	QC	8.00e1	8.37e+01	104.625 % Recovery
2 LCS-INST	0	0	0IC-QC	NO2	QC	5.48e2	5.54e+02	101.095 % Recovery
2 LCS-INST	0	0	0IC-QC	BR	QC	5.86e2	6.09e+02	103.925 % Recovery
2 LCS-INST	0	0	0IC-QC	NO3	QC	5.92e2	5.87e+02	99.155 % Recovery
2 LCS-INST	0	0	0IC-QC	PO4	QC	5.47e2	5.41e+02	98.903 % Recovery
2 LCS-INST	0	0	0IC-QC	SO4	QC	6.38e2	6.55e+02	104.383 % Recovery
2 LCS-INST	0	0	0IC-QC	OXALATE2	QC	5.40e2	5.54e+02	102.593 % Recovery
3 CCV	0	0	0IC-QC	F	QC	6.40e1	6.46e+01	100.937 % Recovery
3 CCV	0	0	0IC-QC	CL	QC	9.00e1	9.86e+01	109.556 % Recovery
3 CCV	0	0	0IC-QC	NO2	QC	5.62e2	5.62e+02	103.559 % Recovery
3 CCV	0	0	0IC-QC	BR	QC	6.30e2	6.82e+02	108.254 % Recovery
3 CCV	0	0	0IC-QC	NO3	QC	6.98e2	7.26e+02	104.011 % Recovery
3 CCV	0	0	0IC-QC	PO4	QC	6.32e2	6.19e+02	97.943 % Recovery
3 CCV	0	0	0IC-QC	SO4	QC	6.99e2	7.24e+02	103.577 % Recovery
3 CCV	0	0	0IC-QC	OXALATE2	QC	5.53e2	5.92e+02	107.052 % Recovery
4 SAMPLE	S98T003192	0	0IC-01	F-02	LIQUID	N/A	1.132e+03	13.330 ug/mL
4 SAMPLE	S98T003192	0	0IC-01	CL-02	LIQUID	N/A	7.170e+01	18.890 ug/mL
4 SAMPLE	S98T003192	0	0IC-01	NO2-02	LIQUID	N/A	3.537e+04	120.000 ug/mL
4 SAMPLE	S98T003192	0	0IC-01	BR-02	LIQUID	N/A	1.389e+02	138.900 ug/mL
4 SAMPLE	S98T003192	0	0IC-01	NO3-02	LIQUID	N/A	2.127e+04	154.400 ug/mL
4 SAMPLE	S98T003192	0	0IC-01	PO4-02	LIQUID	N/A	4.119e+02	133.300 ug/mL
4 SAMPLE	S98T003192	0	0IC-01	SO4-02	LIQUID	N/A	2.019e+04	153.300 ug/mL
4 SAMPLE	S98T003192	0	0IC-01	OXALATE2	LIQUID	N/A	4.121e+03	116.700 ug/mL
5 SAMPLE	S98T003193	0	0IC-01	F-02	LIQUID	N/A	1.144e+03	13.330 ug/mL
5 SAMPLE	S98T003193	0	0IC-01	CL-02	LIQUID	N/A	9.947e+01	18.890 ug/mL
5 SAMPLE	S98T003193	0	0IC-01	NO2-02	LIQUID	N/A	3.578e+04	120.000 ug/mL
5 SAMPLE	S98T003193	0	0IC-01	BR-02	LIQUID	N/A	1.389e+02	138.900 ug/mL
5 SAMPLE	S98T003193	0	0IC-01	NO3-02	LIQUID	N/A	2.071e+04	154.400 ug/mL
5 SAMPLE	S98T003193	0	0IC-01	PO4-02	LIQUID	N/A	4.249e+02	133.300 ug/mL
5 SAMPLE	S98T003193	0	0IC-01	SO4-02	LIQUID	N/A	2.012e+04	153.300 ug/mL
5 SAMPLE	S98T003193	0	0IC-01	OXALATE2	LIQUID	N/A	4.087e+03	116.700 ug/mL
6 SAMPLE	S98T003194	0	0IC-01	F-02	LIQUID	N/A	1.151e+03	13.330 ug/mL

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

LABCORE Completed Worklist Report for Worklist# 27020

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 SAMPLE	S98T003194	0	QIC-01	CL-02	LIQUID	N/A	9.915e+01	18.890 ug/mL
6 SAMPLE	S98T003194	0	QIC-01	NO2-02	LIQUID	N/A	3.558e+04	120.000 ug/mL
6 SAMPLE	S98T003194	0	QIC-01	BR-02	LIQUID	N/A	1.389e+02	138.900 ug/mL
6 SAMPLE	S98T003194	0	QIC-01	NO3-02	LIQUID	N/A	2.142e+04	154.400 ug/mL
6 SAMPLE	S98T003194	0	QIC-01	PO4-02	LIQUID	N/A	3.728e+02	133.300 ug/mL
6 SAMPLE	S98T003194	0	QIC-01	S04-02	LIQUID	N/A	2.078e+04	153.300 ug/mL
6 SAMPLE	S98T003194	0	QIC-01	OxALATE2	LIQUID	N/A	4.200e+03	116.700 ug/mL
7 SAMPLE	S98T001166	0	QIC-01	F-02	LIQUID	N/A	1.333e+01	13.330 ug/mL
7 SAMPLE	S98T001166	0	QIC-01	CL-02	LIQUID	N/A	1.889e+01	18.890 ug/mL
7 SAMPLE	S98T001166	0	QIC-01	NO2-02	LIQUID	N/A	1.200e+02	120.000 ug/mL
7 SAMPLE	S98T001166	0	QIC-01	BR-02	LIQUID	N/A	2.492e+04	138.900 ug/mL
7 SAMPLE	S98T001166	0	QIC-01	NO3-02	LIQUID	N/A	1.544e+02	154.400 ug/mL
7 SAMPLE	S98T001166	0	QIC-01	PO4-02	LIQUID	N/A	1.333e+02	133.300 ug/mL
7 SAMPLE	S98T001166	0	QIC-01	S04-02	LIQUID	N/A	1.533e+02	153.300 ug/mL
7 SAMPLE	S98T001166	0	QIC-01	OxALATE2	LIQUID	N/A	1.167e+02	116.700 ug/mL
8 DUP	S98T001166	0	QIC-01	F-02	LIQUID	<1.33e1	<1.33e1	RPD
8 DUP	S98T001166	0	QIC-01	CL-02	LIQUID	<1.89e1	<1.89e1	RPD
8 DUP	S98T001166	0	QIC-01	NO2-02	LIQUID	<1.20e2	<1.20e2	RPD
8 DUP	S98T001166	0	QIC-01	BR-02	LIQUID	2.49e+04	2.54e+04	1.388 RPD
8 DUP	S98T001166	0	QIC-01	NO3-02	LIQUID	<1.54e2	<1.54e2	RPD
8 DUP	S98T001166	0	QIC-01	PO4-02	LIQUID	<1.33e2	<1.33e2	RPD
8 DUP	S98T001166	0	QIC-01	S04-02	LIQUID	<1.53e2	<1.53e2	RPD
8 DUP	S98T001166	0	QIC-01	OxALATE2	LIQUID	<1.17e2	<1.17e2	RPD

Final page for worklist# 27020

Analyst Signature

Date

Analyst Signature

Date

James M. Lyle
Reviewer Signature Date 11/16/98

LABCORE Data Entry Template for Worklist# 27020

Analyst: JSF Instrument: IC 4000 sys 2 Book# 291021B

Method: LA-533-105 Rev/Mod F-0

Worklist Comment: AZ102 & TX118, @IC-01 skm. S98T001166 - QC for Br only. SKM

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 CCB			@IC-QC	QC		
2 LCS-INST			@IC-QC	QC		
3 CCV			@IC-QC	QC		
4 SAMPLE	S98T003192 0		@IC-01	LIQUID	98000550	AZ-102 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5 SAMPLE	S98T003193 0		@IC-01	LIQUID	98000550	AZ-102 (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
6 SAMPLE	S98T003194 0		@IC-01	LIQUID	98000550	AZ-102. (P)
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
7 SAMPLE	S98T001166 0		@IC-01	LIQUID	98000217	TX-118
Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
8 DUP	S98T001166 0		@IC-01	LIQUID		

Final page for worklist # 27020

Analyst Signature

Date

Analyst Signature

Date

Data Entry Comments:

uploaded 11-12-98

validated 11/16/98 JM Lye

JL Warrell

27020NOV.CSV

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

Sample Name: CCB Date: 11/11/1998 09:04:20
 Data File : C:\DX\DATA\98100851.D01
 Method : C:\DX\METHOD\4000SYS2.MET
 ACI Address: 1 System 2 Inject#: 1 Detector: CDM-1
 Analyst : *R. Shonake* 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	1.29		0.000	50	232	1	
Totals			0.000	50	232		

File: 98100851.D01 Sample: CCB

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 101 TO 105.

Data Reprocessed On 11/11/1998 09:36:21

Sample Name: LCS 29N21B Date: 11/11/1998 09:29:54
 Data File : C:\DX\DATA\98100861.D02
 Method : C:\DX\METHOD\4000SYS2.MET
 ACI Address: 1 System 2 Inject#: 2 Detector: CDM-1
 Analyst : *K. S. H. M. S. H.* 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	0.79		0.000	75	279	2	
2	0.95	fluoride	63.264	1912	5477	2	0.35
3	1.28		0.000	23	99	1	
4	1.47	chloride	83.652	1492	4684	1	-2.21
5	1.77	nitrite	554.267	5584	21650	1	-3.46
6	2.69	bromide	608.538	3097	15719	1	-4.39
7	3.07	nitrate	587.777	3345	20185	1	-0.11
8	4.48	phosphate	541.313	848	9249	1	-3.45
9	5.92	sulfate	665.726	1950	2829	1	-3.48
10	7.79	oxalate	554.167	1048	18613	1	-3.31
Totals			3658.704	19375	124247		

File: 98100861.D02 Sample: LCS 29N21B

Data Reprocessed On 11/11/1998 09:46:25

Sample Name: CCV 28N21B Date: 11/11/1998 09:41:44
 Data File : C:\DX\DATA\98100861.D03
 Method : C:\DX\METHOD\4000SYS2.MET
 ACI Address: 1 System: 2 Inject#: 3 Detector: CDM-1
 Analyst : *KS Thomas* 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	0.79		0.000	78	310	2	
2	0.95	fluoride	64.578	1931	5593	2	0.35
3	1.29		0.000	35	204	2	
4	1.47	chloride	98.643	1675	5541	2	-2.65
5	1.77	nitrite	581.743	5790	22756	1	-3.46
6	2.69	bromide	682.445	3359	17689	1	-4.39
7	3.06	nitrate	725.925	4108	25088	1	0.00
8	4.48	phosphate	619.276	992	10610	1	-3.45
9	5.92	sulfate	724.305	2167	30835	1	-3.48
10	7.79	oxalate	592.062	1095	19894	1	-3.31
Totals			4088.977	21229	138521		

File: 98100861.D03 Sample: CCV 28N21B

Sample Name: S98T001166 Date: 11/11/1998 13:25:34
 Data File : C:\DX\DATA\98100871.D07
 Method : C:\DX\METHOD\4000SYS2.MET
 ACI Address: 1 System: 2 Inject#: 7 Detector: CDM-1
 Analyst : *KS Thornike* Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1111	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	0.80		0.000	21	64	1	
2	2.67	bromide	24915.736	12075	62447	1	-4.86
Totals			24915.736	12096	62511		

File: 98100871.D07 Sample: S98T001166

1-10-1-10

HNF-1651 REV.0

Sample Name: S98T001166 DUP Date: 11/11/1998 13:38:25
Data File : C:\DX\DATA\98100871.D08
Method : C:\DX\METHOD\4000SYS2.MET
ACI Address: 1 System: 2 Inject#: 8 Detector: CDM-1
Analyst : *KS Thorne* Column: AG4A/AS4A anion column

Calibration Volume Dilution Points Rate Start Stop Area Reject

External 1 1111 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	0.79		0.000	27	100	1	
2	1.47	chloride	14.779	18	57	1	-2.21
3	2.67	bromide	25394.583	12192	63758	1	-4.86
Totals			25409.361	12237	63915		

File: 98100871.D08 Sample: S98T001166 DUP

•1-10-1-10

LABCORE Data Entry Template for Worklist# 23601

Analyst: JK Sato Instrument: ICP01 2 428-98 Book# 718488
 Method: LA-505-151/161 Rev/Mod C-2
 Worklist Comment: ICP TX-118 HHF for Li only (DIRECT)

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 ICV			@ICP-QC	QC		
2 ICB			@ICP-QC	QC		
3 LLS			@ICP-QC	QC		
4 ICSA			@ICP-QC	QC		
5 ICSAB			@ICP-QC	QC		
6 SAMPLE	S98T001166 0 D		@ICP-D01	LIQUID	98000217	TX-118
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	S98T001166 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 # 23601

JK Sato 04-28-98

Analyst Signature	Date	Analyst Signature	Date
S98T001166, 1-9, JFK			
S98T001166, 1-9, 10			

Data Entry Comments: uploaded 4-29-98 Validated by JK Sato 4-30-98

HNF-1651 REV. 0

Analysis Report

Summary

Tue 04-28-98 02:32:20 PM

page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	980428C	ICP2	04/28/98	13:52	DKS	Q	CONC
2	ICB	980428C	ICP2	04/28/98	13:56	DKS	Q	CONC
3	LIS	980428C	ICP2	04/28/98	13:58	DKS	Q	CONC
4	ICSA	980428C	ICP2	04/28/98	14:02	DKS	Q	CONC
5	ICSA	980428C	ICP2	04/28/98	14:05	DKS	Q	CONC
6	S98T001166	980428C	ICP2	04/28/98	14:10	DKS	S	CONC
7	S98T001166_D	980428C	ICP2	04/28/98	14:13	DKS	S	CONC
8	ICSA	980428C	ICP2	04/28/98	14:18	DKS	Q	CONC
9	ICSA	980428C	ICP2	04/28/98	14:21	DKS	Q	CONC
10	CCV	980428C	ICP2	04/28/98	14:25	DKS	Q	CONC
11	CCB	980428C	ICP2	04/28/98	14:29	DKS	Q	CONC

K. J. J.

04-28-98

Worklist # 23601

TX-118

5887001166

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
 COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 161 TO 169.

HNF-1651 REV. 0

Analysis Report

Averages

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#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	4.9109	4.8992	5.0961	4.9701	4.9828	5.0490
2	ICB	.00223	.01130	-.00037	.00660	.00017	.00025
3	LLS	.02179	.10819	.18696	.10348	.09935	.01081
4	ICSA	.00506	.237.23	-.03012	-.00172	.00233	.00050
5	ICSAB	.94496	.239.38	.05372	.00061	.46287	.47783
6	S98T001166	-.00901	-.01087	-.01070	-.05707	.05891	.00210
7	S98T001166_D	.01703	.10896	-.05398	.06174	.05931	.00335
8	ICSA	.00154	.238.23	.03066	-.00377	.00208	.00038
9	ICSAB	.94853	.241.88	-.02043	-.00396	.46956	.48533
10	CCV	4.8877	4.8235	5.0571	4.9010	4.8849	4.9934
11	CCB	.00214	.00578	.00087	.00396	.00013	.00029

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	4.9140	4.9846	4.9707	5.0265	5.0905	4.8224
2	ICB	.01674	.00756	.00060	.01319	-.00151	-.00053
3	LLS	.19973	.23004	.01070	.21068	.04144	.02045
4	ICSA	.02294	.254.26	.00341	.02463	.00228	-.00152
5	ICSAB	-.01035	.254.90	.93120	.00541	.46503	.45765
6	S98T001166	.25263	.39088	-.00844	-.00527	.00361	.01087
7	S98T001166_D	.14306	.61943	.00663	.14023	.02866	.01278
8	ICSA	-.02305	.255.78	.00225	.00171	-.00184	-.00365
9	ICSAB	.00288	.255.63	.93472	-.00002	.46553	.45831
10	CCV	4.8454	5.0152	4.9491	4.9244	5.0609	4.8025
11	CCB	.02594	.01134	.00068	.01533	.00295	.00195

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	4.7616	.00490	4.8628	4.8334	4.9939	4.9127
2	ICB	.00001	-.00015	.00111	.05101	.00167	.00046
3	LLS	.01724	.00003	.09822	.52189	.10280	.02174
4	ICSA	.00266	-.00151	91.708	.41544	-.00105	.00430
5	ICSAB	.46003	.00224	92.081	.16035	-.00523	.95139
6	S98T001166	.01007	.02442	-.02073	1.5540	-.00832	1806.3
7	S98T001166_D	.01047	.02457	-.01598	2.6278	.01289	1785.3
8	ICSA	.00097	-.00202	92.094	-.13666	-.00538	.00442
9	ICSAB	.46777	.00433	92.849	-.26520	-.00519	.96548
10	CCV	4.6690	.00601	4.8242	4.7082	4.9068	4.7677
11	CCB	.00139	.00144	.00143	.12543	.00236	.00209

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	5.0876	4.8778	4.9102	5.0578	4.8357	4.8713
2	ICB	.01476	.00019	.00125	-.00582	.00014	.00358
3	LLS	.21488	.01938	.09897	.20710	.19591	.04813
4	ICSA	250.96	-.00652	-.01401	187.07	.00250	-.00214
5	ICSAB	252.75	.44050	-.01605	190.13	.00235	.90425
6	S98T001166	.06255	.00738	.04904	5.3708	.02107	.04600
7	S98T001166_D	.14495	.00875	.04075	5.3087	.03416	.07994
8	ICSA	251.74	-.00671	-.01554	188.08	-.00201	-.00761

HNF-1651 REV. 0

Analysis Report

Averages

Tue 04-28-98 02:32:20 PM

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#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
9	ICSAB	254.89	.44273	-.01689	193.35	-.00216	.91842
10	CCV	5.0014	4.8537	4.8860	4.9050	4.7286	4.8581
11	CCB	.01336	.00051	.00168	-.02784	.00649	.01045

#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	4.9292	4.9034	4.9523	4.9636	4.7067	5.0533
2	ICB	.03135	-.00419	-.01216	.00952	.05678	.00373
3	LLS	.41315	.19793	.19692	.10562	.23932	Q.22714
4	ICSA	.04356	.03576	-.01570	.00382	.05657	-.00050
5	ICSAB	.03544	.99115	-.00887	.01332	.06091	-.00372
6	S98T001166	.24618	-.00386	1.5774	-.04540	.78182	2.0600
7	S98T001166_D	.24613	.00185	1.5646	.02689	.67923	2.0652
8	ICSA	.03068	.02204	-.00356	-.00085	.05271	.00095
9	ICSAB	.03465	.98072	-.02929	.00921	.05477	-.00703
10	CCV	4.8881	4.8768	4.9157	4.9227	4.6843	5.0271
11	CCB	.02263	.00840	-.00395	.00591	.05814	.00680

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.8590	5.0510	.19309	4.5345	4.7775	9.7583
2	ICB	.00322	.00008	.00736	.00024	.00183	.00964
3	LLS	.20100	.02032	.01391	.02039	.40714	.48249
4	ICSA	-.00271	-.00248	.02549	.00227	-.03302	.03664
5	ICSAB	-.00514	-.00250	.01158	.00222	-.02950	.04218
6	S98T001166	.23013	.01470	-.06088	.00626	-.05796	.89008
7	S98T001166_D	.26215	.01469	.01865	.00876	-.18817	1.0120
8	ICSA	-.00403	-.00253	.01869	.00071	-.03408	.02128
9	ICSAB	-.01309	-.00253	.01925	.00159	-.01607	.00852
10	CCV	4.7620	4.9626	.19348	Q4.4876	4.7160	9.5615
11	CCB	.01804	.00030	.00875	.00135	.00649	.06207

#	Sample Name	V	Y	Zn	Zr
1	ICV	5.0933	.00721	5.0397	5.0265
2	ICB	.00063	.00038	.00072	.00007
3	LLS	.10040	.00073	.02043	.01992
4	ICSA	.00451	.00829	-.00304	-.00246
5	ICSAB	.46723	.00821	.91487	-.00221
6	S98T001166	.06236	.01686	-.11622	.05423
7	S98T001166_D	.06698	.01838	-.11434	.05133
8	ICSA	.00407	.00829	-.00343	-.00230
9	ICSAB	.46983	.00759	.91401	-.00469
10	CCV	5.0526	.00777	5.0422	4.9645
11	CCB	.00356	.00122	.00089	.00148

JK 160

04-28-98

LABCORE Data Entry Template for Worklist# 24610

Analyst: MSJ Instrument: ICP01 24-14-98 Book# 728485Method: LA-505-151/161 Rev/Mod C-3Worklist Comment: 4-16-98 ICP TX-118 (SOLID ACID DIGEST) PCB SUSPECT

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	PREPSTDITJA		@ICP-A01	SOLID		
7	PREPBKLTJA		@ICP-A01	SOLID		
8	SERDIL	S98T001525 O A	@ICP-A01	SOLID		
9	SAMPLE	S98T001525 O A	@ICP-A01	SOLID	98000225 TX-118	
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 , SE-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	S98T001525 O A	@ICP-A01	SOLID		
11	SPX-PREDIG	S98T001525 O A	@ICP-A01	SOLID		
12	CCV	<u>SPX/C 4x (10 ppn) 4-14-98</u>	@ICP-QC	QC		
13	CCB		@ICP-QC	QC		
14	SAMPLE	S98T001536 O A	@ICP-A01	SOLID	98000225 TX-118	
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 ,						

Data Entry Comments:

uploaded 6-17-98
John Warrall

Validated by:

Sal M. Paring6/18/98

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

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
					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
					SE-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		
15	DUP	S98T001536	0	A	@ICP-A01	SOLID		
16	SERDIL	S98T001537	0	A	@ICP-A01	SOLID		
17	SAMPLE	S98T001537	0	A	@ICP-A01	SOLID	98000225	TX-118
		Analytes Requested:						
					AG-A-01	AL-A-01	AS-A-01	B-A-01
					BR-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
					SE-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		
18	DUP	S98T001537	0	A	@ICP-A01	SOLID		
19	SPK-PREDIG	S98T001537	0	A	@ICP-A01	SOLID		
20	ICSA	<i>sample SPK of (10ppm) 306-14-98</i>						
					@ICP-QC	QC		
1	ICSAB				@ICP-QC	QC		
2	CCV				@ICP-QC	QC		
3	CCB				@ICP-QC	QC		

Final page for worklist # 24610

Analyst Signature	Date
Presbitt JC	6/26/2014
Presbitt JC	6/26/2014
58870013535-1	4-4-2, #10
58870013535	4-4
58870013535-0	4-4
58870013535-5	4-4
58870013535-X	4-4-1-9
58870013535-6X	4-4-1-9
58870013536	3-4, #1
58870013536-0	3-4

Data Entry Comments:

	Analyst Signature	Date
578700/1537.L	3-6-18	01/12
578700/1537	3-6	3
578700/1537.B	3-6	3
578700/1537.S	3-6	3
578700/1537.X	3-6-19	30
578700/1537.Q	3-6-19	30, 1 ml sample x 1 ml each x 40K 18 x 35 x 7 ml 403

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

S98T001525

$$Fe = 28.239 \frac{\text{ug}}{\text{ml}} \times \frac{1}{4.956 \frac{\text{g}}{\text{L}} \times \frac{1\text{L}}{1000\text{ml}}} = 5.70 \pm 3 \frac{\text{ug}}{\text{g}}$$

Pre-dig Spk

$$Fe = \frac{33.494 - 28.239}{5} \times 100 = 105.1\%$$

Post dig:

$$Al = \frac{\left(\frac{252.22}{20}\right) - \left(\frac{59.290}{20}\right)}{10} \times 100 = 96.5\%$$

S98T001537

$$Fe = 3.5769 \frac{\text{ug}}{\text{ml}} \times \frac{1}{5.188 \frac{\text{g}}{\text{L}} \times \frac{1\text{L}}{1000\text{ml}}} = 6.89 \pm 2 \frac{\text{ug}}{\text{g}}$$

Pre-dig Spk:

$$Fe = \frac{9.4079 - 3.5769}{5} \times 100 = 116.6\%$$

Post dig:

$$Al = \frac{\left(\frac{296.53}{30}\right) - \left(\frac{8.5698}{30}\right)}{10} \times 100 = 96.0\%$$

$$Cr = \frac{\left(\frac{323.23}{30}\right) - \left(\frac{20.258}{30}\right)}{10} \times 100 = 101.0\%$$

$$Mn = \frac{\left(\frac{1222.4}{30}\right) - \left(\frac{940.96}{30}\right)}{10} \times 100 = 93.8\%$$

$$P = \frac{\left(\frac{642.53}{30}\right) - \left(\frac{352.58}{30}\right)}{10} \times 100 = 96.7\%$$

598T001525

$$M_n = 24.329 \frac{\mu\text{g}}{\text{ml}} \times \frac{1}{4.956 \frac{\text{g}}{\text{L}} \times \frac{1\text{L}}{1000\text{ml}}} = 4.91\text{e}+3 \frac{\mu\text{g}}{\text{g}}$$

Pre-dig spk:

$$M_n = \frac{31.604 - 24.329}{5} \times 100 = 145.5\%$$

Post spk:

$$M_n = \frac{\left(\frac{228.18}{20}\right) - \left(\frac{25.294}{20}\right)}{10} \times 100 = 101.4\%$$

598T001537

$$S_i = 4.6007 \frac{\mu\text{g}}{\text{ml}} \times \frac{1}{5.188 \frac{\text{g}}{\text{L}} \times \frac{1\text{L}}{1000\text{ml}}} = 8.87\text{e}+2 \frac{\mu\text{g}}{\text{g}}$$

Pre-dig spk:

$$S_i = \frac{14.334 - 4.6007}{5} \times 100 = 195\%$$

Post spk:

$$S_i = \frac{\left(\frac{303.44}{30}\right) - \left(\frac{5.1935}{30}\right)}{10} \times 100 = 99.4\%$$

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Analysis Report

Summary

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#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	980616A	ICP2	06/16/98	09:26	DKS	Q	CONC
2	ICB	980616A	ICP2	06/16/98	09:30	DKS	Q	CONC
3	LLS	980616A	ICP2	06/16/98	09:35	DKS	Q	CONC
4	ICSA	980616A	ICP2	06/16/98	09:38	DKS	Q	CONC
5	ICSAB	980616A	ICP2	06/16/98	09:41	DKS	Q	CONC
6	PREPSTDTJA	980616A	ICP2	06/16/98	09:45	DKS	Q	CONC
7	PREPBLKTJA	980616A	ICP2	06/16/98	09:49	DKS	Q	CONC
8	S98T001525_L	980616A	ICP2	06/16/98	11:35	DKS	S	CONC
9	S98T001525	980616A	ICP2	06/16/98	11:38	DKS	S	CONC
10	S98T001525_D	980616A	ICP2	06/16/98	11:42	DKS	S	CONC
11	S98T001525_S	980616A	ICP2	06/16/98	11:45	DKS	S	CONC
12	S98T001525_X	980616A	ICP2	06/16/98	11:51	DKS	S	CONC
13	S98T001525_AX	980616A	ICP2	06/16/98	11:55	DKS	S	CONC
14	CCV	980616A	ICP2	06/16/98	12:04	DKS	Q	CONC
15	CCB	980616A	ICP2	06/16/98	12:07	DKS	Q	CONC
16	S98T001536	980616A	ICP2	06/16/98	12:10	DKS	S	CONC
17	S98T001536_D	980616A	ICP2	06/16/98	12:13	DKS	S	CONC
18	S98T001537_L	980616A	ICP2	06/16/98	12:16	DKS	S	CONC
19	S98T001537	980616A	ICP2	06/16/98	12:20	DKS	S	CONC
20	S98T001537_D	980616A	ICP2	06/16/98	12:23	DKS	S	CONC
21	S98T001537_S	980616A	ICP2	06/16/98	12:26	DKS	S	CONC
22	S98T001537_X	980616A	ICP2	06/16/98	12:32	DKS	S	CONC
23	S98T001537_AX	980616A	ICP2	06/16/98	12:35	DKS	S	CONC
24	ICSA	980616A	ICP2	06/16/98	12:55	DKS	Q	CONC
25	ICSAB	980616A	ICP2	06/16/98	12:58	DKS	Q	CONC
26	CCV_1	980616A	ICP2	06/16/98	13:02	DKS	Q	CONC
27	CCB_1	980616A	ICP2	06/16/98	13:05	DKS	Q	CONC

DX 660
06-16-98
Work/157# 24610

TX-118
S98T001525
S98T001536
S98T001537

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 114 TO 118.

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#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	5.0145	4.8526	5.1241	4.9435	4.8636	5.0324
2	ICB	-.00013	-.00175	.00392	.00315	-.00006	-.00004
3	LLS	.02173	.10626	.20339	.10423	.09852	.01054
4	ICSA	.00169	242.34	.04653	-.00509	.00224	.00018
5	ICSAB	.97773	244.81	.03551	.00820	.47601	.49169
6	PREPSTD TJJA	Q.19007	4.8749	4.8164	5.4324	4.9285	4.9975
7	PREPBLKTJA	.00081	Q.14236	-.00119	Q.62465	.00060	.00000
8	S98T001525 L	.32382	58.363	.19566	1.0243	.21635	.00335
9	S98T001525 S	.30136	55.511	.09306	.96128	.20710	.00383
10	S98T001525 D	.32254	41.133	.10310	1.1348	.21616	.00345
11	S98T001525 X	1.2802	39.821	4.9642	5.9153	4.7665	4.9645
12	S98T001525 AX	.31924	59.290	.17645	1.1508	.22072	.00824
13	CCV	165.67	252.22	203.24	200.45	199.57	201.27
14	CCB	5.0500	4.8859	5.1627	4.9687	4.9199	5.0457
15	ICB	.00923	.00899	-.00387	.00406	.00007	.00030
16	S98T001536	.34575	21.229	.07967	1.5983	.18387	.00339
17	S98T001536 D	.24759	20.949	.09364	1.5817	.17638	.00315
18	S98T001537 L	.12461	8.2814	-.02665	1.2332	.04074	.00067
19	S98T001537 D	.11802	7.9835	.04695	1.2114	.03906	.00093
20	S98T001537 S	1.2168	7.9372	.02462	1.2182	.03927	.00067
21	S98T001537 X	1.1032	15.931	5.0238	5.9282	4.6569	4.8990
22	S98T001537 AX	1.14083	8.5698	5.21136	1.2740	.04615	.00399
23	ICSA	229.76	296.53	300.65	296.58	296.68	297.92
24	ICSAB	.00646	242.35	.05596	-.00833	.00217	.00032
25	ICV	.98312	243.72	.03653	-.00593	.47424	.48863
26	CCV 1	5.0663	4.9233	5.2041	4.9976	4.9805	5.0799
27	CCB 1	.00259	.00247	.00308	.00316	-.00002	.00017

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	4.9500	5.0964	5.0856	4.9424	5.0325	4.9205
2	ICB	-.01119	-.00155	-.00044	-.00777	-.00024	.00052
3	LLS	.21887	.24076	.01098	.20576	.04078	.02097
4	ICSA	.01853	262.90	.00613	.00235	-.00076	-.00179
5	ICSAB	-.00345	262.10	.96757	.00028	.47511	.46995
6	PREPSTD TJJA	4.6555	5.3290	4.7649	4.9928	4.7710	4.7801
7	PREPBLKTJA	.00075	Q.43469	.00035	.00220	.00153	.00232
8	S98T001525 L	5.2424	2.5842	.49529	.45364	.05308	41.245
9	S98T001525 S	5.0188	2.4397	.46854	.40048	.04765	38.950
10	S98T001525 D	5.3455	2.7103	.50369	.43220	.05283	41.717
11	S98T001525 X	9.8838	7.4380	5.3074	5.1134	4.8124	46.596
12	S98T001525 AX	5.5199	2.6643	.50876	.41514	.05804	42.043
13	CCV	206.75	210.10	202.05	199.37	201.70	243.71
14	CCB	4.9931	5.1699	5.1049	4.9566	5.0619	4.9506
15	ICB	-.00302	-.00098	-.00070	.00003	.00049	-.00085
16	S98T001536	3.2058	2.0174	.47413	.39331	.05475	51.320
17	S98T001536 D	2.9674	2.1788	.45501	.38310	.05357	48.947
18	S98T001537 L	.52125	1.0872	.08612	.08056	.00609	20.129
19	S98T001537 S	.63257	1.0956	.07672	.08452	.00438	19.264
20	S98T001537 D	.61122	1.3157	.07855	.10510	.01667	20.125
21	S98T001537 X	5.4733	5.9561	5.0269	4.8033	4.8841	27.174
22	S98T001537 AX	1.3628	1.7011	.12021	.17959	.02642	20.258

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#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
23	S98T001537_AX	303.25	312.58	301.07	294.31	301.25	323.23
24	ICSA	.02065	261.93	.00466	.00193	.00127	-.00121
25	ICSA	.00332	264.83	.96791	.00406	.48102	.47259
26	CCV 1	5.0039	5.2206	5.1090	4.9969	5.0763	4.9696
27	CCB_1	-.01281	-.00163	.00017	-.00679	-.00083	-.00043

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	4.6679	.00709	4.8998	4.9311	4.9029	4.6934
2	ICB	.00056	.00012	-.00049	.07728	-.00105	.00000
3	LLS	.01819	.00083	.10026	.49994	.10049	.02065
4	ICSA	.00343	-.01479	93.502	.11609	-.00475	.00261
5	ICSA	.48133	-.00904	93.649	.09570	-.00499	.96489
6	PREPSTDITJA	4.6234	.00539	4.7141	4.8106	4.9916	4.8379
7	PREPBLKTJA	.00366	-.00087	.02247	.12899	-.00044	-.00090
8	S98T001525 L	-.06867	.00721	29.938	1.4340	.24333	.03324
9	S98T001525-	-.07396	.00506	28.239	.47720	.23775	.03107
10	S98T001525 D	-.08148	.00831	28.704	1.0178	.24765	.03304
11	S98T001525 S	4.3134	.01401	33.494	5.0692	4.9277	4.4753
12	S98T001525 X	-.05348	.01837	30.423	3.1160	.23296	.03723
13	S98T001525_AX	185.56	.25785	223.61	189.51	199.01	191.36
14	CCV	4.6915	.00686	4.9352	4.7630	4.9297	4.7665
15	CCB	.00024	.00075	-.00072	-.07733	-.00074	.00070
16	S98T001536	-.11223	.00768	18.128	1.4701	.23760	.03941
17	S98T001536 D	-.10501	.00842	17.517	1.4040	.22676	.03915
18	S98T001537 L	-.03622	.02069	3.7023	-.44487	.03342	.21364
19	S98T001537-	-.02759	.00470	3.5769	1.0912	.04917	.19320
20	S98T001537 D	-.03339	.00685	3.6552	.94099	.05272	.19681
21	S98T001537 S	4.3840	.01332	9.4079	5.3763	4.7619	4.6184
22	S98T001537 X	-.02264	.05370	3.7377	4.9771	.09383	.24068
23	S98T001537_AX	274.64	.38380	293.18	285.07	294.07	281.81
24	ICSA	.00416	-.01489	93.302	.16521	-.00482	.00261
25	ICSA	.47432	-.01577	93.706	.17050	-.00499	.96067
26	CCV 1	4.7386	.00734	4.9501	4.8785	4.9693	4.8666
27	CCB_1	.00018	.00053	-.00076	.05021	-.00131	.00050

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	5.0317	4.9655	5.0351	4.8893	4.7731	4.9777
2	ICB	.00252	.00009	.00015	-.00720	.00038	.00033
3	LLS	.20684	.02009	.10261	.18018	.19599	.03453
4	ICSA	.251.94	-.00597	-.01577	187.43	-.00064	-.01207
5	ICSA	253.56	.45570	-.01676	192.11	-.00678	.94229
6	PREPSTDITJA	4.7952	4.7728	4.7089	6.3785	4.8896	4.8270
7	PREPBLKTJA	.02242	.00063	.00012	Q.99649	.00016	-.00067
8	S98T001525 L	6.3177	24.864	-.01592	845.44	.48060	.92696
9	S98T001525-	5.8561	24.329	.01140	796.39	.45249	.90475
10	S98T001525 D	6.2488	26.275	.00354	802.62	.47123	.96477
11	S98T001525 S	10.822	31.604	4.7105	808.60	5.0104	5.7748
12	S98T001525 X	6.4314	25.294	-.00045	853.71	.46496	.93931
13	S98T001525_AX	211.88	228.18	201.54	1045.1	193.56	202.54
14	CCV	5.0696	4.9920	5.0721	4.9345	4.7835	4.9894

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#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
15	CCB	.00320	.00039	-.00180	-.01581	-.00174	-.00135
16	S98T001536	6.0123	23.543	.02917	959.18	.42029	.89097
17	S98T001536 D	5.9514	22.718	.02882	916.28	.40211	.85483
18	S98T001537 L	1.0284	5.7078	.01752	942.60	.09909	.08743
19	S98T001537	1.0208	5.5023	.01388	896.83	.08636	.14501
20	S98T001537 D	1.1532	5.5369	.02355	859.77	.10553	.14935
21	S98T001537 S	6.1526	11.518	4.7843	859.77	4.6575	5.1497
22	S98T001537 X	1.7176	5.7525	-.02529	940.96	.12253	.16177
23	S98T001537 AX	307.46	306.43	300.72	1222.4	285.29	301.92
24	ICSA	252.23	-.00617	-.01517	189.03	-.00212	-.01165
25	ICSAB	253.15	.45454	-.01845	190.86	-.00359	.93956
26	CCV 1	5.0807	5.0006	5.0906	5.0161	4.8361	5.0173
27	CCB_1	-.00951	.00012	-.00044	-.00927	-.00274	-.00011

#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	4.9936	4.9898	5.0605	4.9685	4.7357	5.0082
2	ICB	.00173	.01271	.00880	-.00175	.00856	.00133
3	LLS	.39281	.21648	.20991	.10389	.20243	Q.15120
4	ICSA	.02513	.03157	.00058	-.00582	.05047	.00007
5	ICSAB	.01952	1.0056	.00369	.00227	.03769	-.00522
6	PREPSTD TJJA	4.6101	4.5603	4.5262	4.5756	4.5513	7.1590
7	PREPBLKTJA	.03908	.01063	Q.06765	.00342	.02372	Q1.6655
8	S98T001525 L	244.90	2.7207	1.5918	-.03808	.28870	6.4133
9	S98T001525	233.44	2.5094	1.5061	-.00094	.02390	6.1229
10	S98T001525 D	237.62	2.5801	1.5814	.01107	.05289	4.2263
11	S98T001525 S	242.05	7.2898	6.2638	4.6745	4.5635	16.945
12	S98T001525 X	247.44	2.8281	1.5616	-.06163	.53854	6.6133
13	S98T001525 AX	446.55	206.21	197.87	202.39	196.68	206.17
14	CCV	4.9934	5.0274	5.0680	5.0153	4.7359	5.0319
15	CCB	.00675	.00814	.00535	-.00171	.02552	.00515
16	S98T001536	254.03	1.9048	5.0606	.00739	.06481	10.649
17	S98T001536 D	244.31	2.0085	4.9493	.03513	.05449	11.177
18	S98T001537 L	352.34	.44606	3.3956	-.05056	.28263	4.8480
19	S98T001537	341.73	.33315	3.2819	.00245	.02561	4.6007
20	S98T001537 D	339.65	.34380	3.5078	.00460	.08026	7.3553
21	S98T001537 S	323.07	5.2677	8.4574	4.7774	4.7118	14.334
22	S98T001537 X	352.58	.63095	3.5002	.03675	.66640	5.1935
23	S98T001537 AX	642.53	306.49	297.08	302.87	292.15	303.44
24	ICSA	.03020	.02708	.01333	.00663	.05006	-.00118
25	ICSAB	.02112	1.0107	.01475	-.00096	.05146	-.00140
26	CCV 1	4.9723	5.0304	5.0975	5.0479	4.7772	5.0631
27	CCB_1	.01119	-.00210	.00914	.00399	.02134	.00326

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.7175	4.9810	.20643	4.7254	4.7809	9.4425
2	ICB	-.00167	.00004	-.00183	.00021	.00037	.00041
3	LLS	.19687	.02036	.00944	.02044	.42519	.49198
4	ICSA	-.01691	-.00266	.00561	.00163	-.03112	-.14749
5	ICSAB	-.02613	-.00268	.00965	.00120	-.05532	-.16499
6	PREPSTD TJJA	4.8336	5.0482	.20476	4.3636	4.5747	9.5718

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#	Sample Name	Sm	Sr	Th	Ti	Ti	U
7	PREPBLKTJA	.01707	.00046	.00720	.00136	.00931	-.04664
8	S98T001525 L	.09688	.11686	.82491	.06650	.01802	16.402
9	S98T001525	.07471	.11101	.78568	.05329	.03823	15.627
10	S98T001525 D	.10580	.11231	.83704	.05764	.02793	16.342
11	S98T001525 S	4.5864	4.8540	1.0473	4.2569	4.4810	25.011
12	S98T001525 X	15786	11939	81997	40594	40482	16.795
13	S98T001525 AX	192.45	197.75	9.3387	200.06	196.23	391.20
14	CCV	4.7552	5.0037	21014	4.7543	4.7825	9.5302
15	CCB	.00723	.00021	-.00552	.00019	-.02106	.02835
16	S98T001536	.10086	.06081	.86485	.04556	.02245	17.380
17	S98T001536 D	.10587	.05842	.83813	.04379	-.00124	16.718
18	S98T001537 L	.17994	.01447	.32513	.01664	-.00026	3.2039
19	S98T001537	.04417	.01157	.32445	.01142	-.04249	2.5178
20	S98T001537 D	.05737	.01182	.32569	.01479	.03239	2.5465
21	S98T001537 S	4.5598	4.7667	.55755	4.2267	4.5324	12.079
22	S98T001537 X	.50379	.02143	.35594	.03341	.02231	4.3910
23	S98T001537 AX	283.40	292.70	13.177	296.62	290.19	555.44
24	ICSA	-.02351	-.00271	.00004	.00206	.01488	-.16312
25	IC SAB	-.02007	-.00273	.00408	.00119	-.00783	-.16553
26	CCV 1	4.8089	5.0575	21437	4.7853	4.7832	9.6055
27	CCB 1	.00283	.00012	-.00527	-.00024	-.00164	.01049

#	Sample Name	V	Y	Zn	Zr
1	ICV	5.1305	.00758	5.0529	4.9998
2	ICB	.00035	.00000	-.00048	.00013
3	ILS	.10373	.00057	.02132	.02006
4	ICSA	.00250	.00750	-.00299	-.00289
5	IC SAB	.47804	.00704	.94801	-.00391
6	PREPSTDTJA	4.9277	.00588	4.3488	4.8464
7	PREPBLKTJA	-.00241	-.00107	.00853	.00046
8	S98T001525 L	.31237	.10273	.77037	.51254
9	S98T001525	.29131	.09788	.72686	.49520
10	S98T001525 D	.31305	.10416	.78269	.45055
11	S98T001525 S	5.1486	.11145	5.3873	4.5301
12	S98T001525 X	.34153	.10883	.79220	.54116
13	S98T001525 AX	200.35	.40262	191.63	198.99
14	CCV	5.1597	.00770	5.0772	5.0245
15	CCB	.00208	.00037	.00044	.00133
16	S98T001536	.39853	.09604	.70217	.41596
17	S98T001536 D	.38881	.09233	.68458	.40419
18	S98T001537 L	.18819	.03154	.12934	.13994
19	S98T001537	.14397	.02079	.12806	.11303
20	S98T001537 D	.15339	.02219	.13498	.10999
21	S98T001537 S	5.0604	.03518	4.8939	4.3614
22	S98T001537 X	27584	.04514	.16120	.17926
23	S98T001537 AX	297.96	.47856	287.21	294.86
24	ICSA	.00135	.00719	-.00286	-.00274
25	IC SAB	.47995	.00759	.95548	-.00290
26	CCV 1	5.1884	.00759	5.0780	5.0505
27	CCB 1	.00087	.00023	.00027	.00101

DK L&S

06-16-98

File #: 980617Q.TXT

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LABCORE Data Entry Template for Worklist# 24613

Analyst: JH 566 Instrument: ICP01-2 6-17-98 Book# 72848B

Method: LA-505-154/161 Rev/Mod C-2

Worklist Comment: 6-17-98 ICP TX-118 (SOLID WATER DIGEST) PCB SUSPECT

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	PREPBLKTJA		@ICP-I01	SOLID		
7	SERDIL	S98T001527	0 I	@ICP-I01	SOLID	
8	SAMPLE	S98T001527	0 I	@ICP-I01	SOLID	98000225 TX-118
Analytes Requested: AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 , MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 , SM-I-01 , SR-I-01 , TI-I-01 , TL-I-01 , U-I-01 , V-I-01 , ZN-I-01 , ZR-I-01						
9	DUP	S98T001527	0 I	@ICP-I01	SOLID	
10	SPK (1ppm) Sample X	S98T001527	0 I	@ICP-I01	SOLID	
11	CCV (10 ppm) 6-17-98			@ICP-QC	QC	
12	CCB			@ICP-QC	QC	
13	SAMPLE	S98T001540	0 I	@ICP-I01	SOLID	98000225 TX-118
Analytes Requested: AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 , MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 ,						

Data Entry Comments:

uploaded 6-18-98
John Waneil

Validated by:
Saul N. Paring

6/18/98

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

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A-0004-1

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LABCORE Data Entry Template for Worklist# 24613

S Type	Sample#	R A	Test	Matrix	Group#	Project
			SM-I-01 , SR-I-01 , ZN-I-01 , ZR-I-01		TI-I-01 , TL-I-01 , U-I-01 , V-I-01 ,	
14 DUP	S98T001540	0 I	@ICP-I01	SOLID		
15 SERDIL	S98T001541	0 I	@ICP-I01	SOLID		
16 SAMPLE	S98T001541	0 I	@ICP-I01	SOLID	98000225 TX-118	
	Analytes Requested: AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 , MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 , SM-I-01 , SR-I-01 , TI-I-01 , TL-I-01 , U-I-01 , V-I-01 , ZN-I-01 , ZR-I-01					
17 DUP	S98T001541	0 I	@ICP-I01	SOLID		
18 SPK Sample X	S98T001541	0 I	@ICP-I01	SOLID		
19 ICSA Spk of (10ppm) 46-17-98			@ICP-QC	QC		
20 ICSAB			@ICP-QC	QC		
21 CCV			@ICP-QC	QC		
22 CCB			@ICP-QC	QC		

Final page for worklist # 24613

 Analyst Signature

 06-17-98
 Date

Prep Blk 77A, direct, DF 1
 5187001517.L 3-6-1-8, DF 15
 5187001517 3-6 3
 5187001517.D 3-6 3
 5187001517.Q 3-6 3, 3 ml sample + 1.8 ml SST + 4.2 ml H₂O
 5187001517.X 3-6-1-9 30
 5187001517.U 3-6-1-9 30, 1 ml sample + 1 ml each x 4 HCl 35 + 7 ml H₂O
 5187001540 3-6, DF 3
 5187001540.D 3-6 3

Analyst Signature

Date

5187001541.L 3-6-1-8, DF 15
 5187001541 3-6 3
 5187001541.D 3-6 3
 5187001541.Q 3-6 3, 3 ml sample + 1.8 ml SST + 4.2 ml H₂O
 5187001541.X 3-6-1-9 30
 5187001541.U 3-6-1-9 30, 1 ml sample + 1 ml each x 4 HCl 35 + 7 ml H₂O

Data Entry Comments:

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

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Analysis Report

Summary

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#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	980617A	ICP2	06/17/98	09:03	DKS	Q	CONC
2	ICB	980617A	ICP2	06/17/98	09:06	DKS	Q	CONC
3	LLS	980617A	ICP2	06/17/98	09:10	DKS	Q	CONC
4	ICSA	980617A	ICP2	06/17/98	09:14	DKS	Q	CONC
5	ICSA	980617A	ICP2	06/17/98	09:16	DKS	Q	CONC
6	PREPBLKTJA	980617A	ICP2	06/17/98	09:20	DKS	Q	CONC
7	S98T001527 L	980617A	ICP2	06/17/98	10:07	DKS	S	CONC
8	S98T001527	980617A	ICP2	06/17/98	10:11	DKS	S	CONC
9	S98T001527 D	980617A	ICP2	06/17/98	10:14	DKS	S	CONC
10	S98T001527 A	980617A	ICP2	06/17/98	10:18	DKS	S	CONC
11	S98T001527 X	980617A	ICP2	06/17/98	10:23	DKS	S	CONC
12	S98T001527 AX	980617A	ICP2	06/17/98	10:27	DKS	S	CONC
13	CCV	980617A	ICP2	06/17/98	10:34	DKS	Q	CONC
14	CCB	980617A	ICP2	06/17/98	10:37	DKS	Q	CONC
15	S98T001540	980617A	ICP2	06/17/98	10:40	DKS	S	CONC
16	S98T001540 D	980617A	ICP2	06/17/98	10:44	DKS	S	CONC
17	S98T001541 L	980617A	ICP2	06/17/98	10:47	DKS	S	CONC
18	S98T001541	980617A	ICP2	06/17/98	10:50	DKS	S	CONC
19	S98T001541 D	980617A	ICP2	06/17/98	10:53	DKS	S	CONC
20	S98T001541 A	980617A	ICP2	06/17/98	10:56	DKS	S	CONC
21	S98T001541 X	980617A	ICP2	06/17/98	11:01	DKS	S	CONC
22	S98T001541 AX	980617A	ICP2	06/17/98	11:04	DKS	S	CONC
23	ICSA	980617A	ICP2	06/17/98	11:11	DKS	Q	CONC
24	ICSA	980617A	ICP2	06/17/98	11:14	DKS	Q	CONC
25	CCV 1	980617A	ICP2	06/17/98	11:18	DKS	Q	CONC
26	CCB 1	980617A	ICP2	06/17/98	11:21	DKS	Q	CONC

DK

TX-118

06-17-98

598700/527

Worklist #24613

598700/540

598700/541

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 121 TO 126.

Analysis Report

Averages

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#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	4.9293	4.8825	5.1068	4.9672	4.9659	5.0363
2	ICB	.00000	.00460	.00164	.00629	.00012	.00035
3	LLS	.02143	.09005	.19708	.10024	.09884	.01042
4	ICSA	.00266	241.17	.05911	-.00215	.00213	.00032
5	ICSAB	.97008	240.60	.05119	-.00714	.46563	.48091
6	PREPBLKTJA	-.00076	Q.12257	.00173	Q3.212	.00209	.00026
7	S98T001527_L	.06880	1.5853	-.02265	2.3662	.00850	.00684
8	S98T001527	.06865	1.3609	.07796	3.3941	.00845	.00140
9	S98T001527_D	.06878	1.5963	.09247	3.1429	.01154	.00086
10	S98T001527_A	3.0329	4.2471	3.2322	5.2863	2.8362	3.0053
11	S98T001527_X	.06317	1.5234	-.03467	2.5080	.00756	.01081
12	S98T001527_AX	300.63	293.31	303.23	302.24	301.29	301.34
13	CCV	4.9954	4.8808	5.1419	4.9702	4.9285	5.0497
14	CCB	-.00063	-.00029	-.00197	.00495	-.00004	.00035
15	S98T001540	.07272	1.7678	.10726	2.7755	.00261	.00188
16	S98T001540_D	.07315	1.7846	.07144	2.4574	.00231	.00201
17	S98T001541_L	.08244	2.1762	-.09434	3.2893	.00435	.00541
18	S98T001541	.06114	2.0248	.01758	3.2743	.00274	.00091
19	S98T001541_D	.06721	2.0028	.04807	3.3120	.00373	.00121
20	S98T001541_A	2.8784	4.9616	3.1483	6.2443	2.8507	2.9717
21	S98T001541_X	.08140	2.1704	-.14585	3.4510	-.00035	.01074
22	S98T001541_AX	299.48	292.24	302.38	300.19	298.41	299.02
23	ICSA	.00352	239.25	.04307	-.00521	.00223	.00058
24	ICSAB	.96102	239.66	.02472	-.00740	.46536	.48002
25	CCV_1	4.9479	4.8664	5.0850	4.9379	4.9285	5.0247
26	CCB_1	.00081	.00664	.00204	.00810	.00006	.00035

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	4.9534	4.9219	5.0034	5.0191	4.9597	4.8297
2	ICB	-.00572	-.00437	-.00048	-.00582	-.00178	.00037
3	LLS	.23045	.23699	.00924	.19883	.00248	.02094
4	ICSA	-.00012	259.45	.00528	-.00308	.00056	-.00201
5	ICSAB	.00686	260.89	.95578	-.00137	.47357	.46713
6	PREPBLKTJA	-.01695	.02610	-.00027	-.00679	-.00167	.00081
7	S98T001527_L	.07608	.16206	.01652	.00062	.00007	8.9747
8	S98T001527	.23672	.26451	.01451	.00613	-.00282	8.8429
9	S98T001527_D	.30044	.19905	.02030	.00244	-.00172	9.6431
10	S98T001527_A	3.1924	3.3629	3.0593	2.9260	3.0028	11.919
11	S98T001527_X	.59860	1.2236	.02084	.02237	-.00286	9.1271
12	S98T001527_AX	305.79	307.91	300.73	300.82	300.64	310.76
13	CCV	4.9646	5.1298	5.0646	4.9581	5.0274	4.9175
14	CCB	-.01814	-.00038	-.00046	-.00707	-.00057	.00000
15	S98T001540	.02958	.12779	.00131	.00402	.00288	20.350
16	S98T001540_D	.04999	.10371	.00248	.00012	.00145	21.316
17	S98T001541_L	.22347	.09637	.00800	.12329	-.01756	15.393
18	S98T001541	.00614	.09888	-.00081	-.02236	-.01286	15.108
19	S98T001541_D	.04873	.17550	.00500	.01198	.00292	18.345
20	S98T001541_A	3.0807	3.1154	3.0002	2.9481	2.9615	18.007
21	S98T001541_X	.31063	-.04302	-.02238	-.19193	.03647	15.426
22	S98T001541_AX	302.05	308.52	298.97	296.17	299.11	316.22
23	ICSA	-.01215	257.85	.00579	.00458	.00008	-.00271

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#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
24	ICSAB	.00436	258.77	.94580	-.00315	.47201	.46200
25	CCV 1	4.9661	5.0852	5.0105	4.9466	4.9797	4.8644
26	CCB 1	-.01463	.00257	.00020	.00530	-.00032	.00027

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	4.7739	.00638	4.8440	5.0030	4.9889	4.9236
2	ICB	.00001	.00040	-.00006	.05230	-.00069	.00070
3	LLS	.01708	.00110	.09820	.53817	.10081	.02181
4	ICSA	.00260	-.00884	92.516	.03108	-.00380	.00364
5	ICSAB	.46785	-.00880	92.382	.20782	-.00384	.93875
6	PREPBLKTJA	.00037	.00070	.00783	-.07470	-.00054	.00202
7	S98T001527 L	-.00629	.00660	1.2926	.66669	.01509	.00908
8	S98T001527	-.01638	.00178	1.2795	.71202	.00771	.00483
9	S98T001527 D	-.01543	.00352	1.8661	.74169	.01090	.00604
10	S98T001527 A	2.7572	.00936	4.2080	3.3373	2.9018	2.7783
11	S98T001527 X	-.01015	.04014	1.3068	3.5506	.01436	.04540
12	S98T001527 AX	281.78	.38955	290.92	4.9712	299.83	292.91
13	CCV	4.6978	.00779	4.9025	4.9122	4.9283	4.8058
14	CCB	-.00075	.00132	-.00049	-.05045	-.00019	.00141
15	S98T001540	-.03947	.00268	.07822	1.3050	.00131	.00576
16	S98T001540 D	-.04262	.00259	.08175	1.3397	-.00077	.00515
17	S98T001541 L	-.03577	.02188	.14154	2.4126	.02308	.13040
18	S98T001541	-.04029	.00435	.12884	.62403	-.00192	.10920
19	S98T001541 D	-.03309	.00460	.20717	1.5866	.00497	.10192
20	S98T001541 A	2.7519	.00776	3.0132	3.5012	2.8920	2.9506
21	S98T001541 X	-.02893	.04335	.12400	3.3626	-.01979	.14553
22	S98T001541 AX	277.50	.43227	288.25	290.44	295.05	290.46
23	ICSA	.00312	-.00780	91.528	.24192	-.00351	.00354
24	ICSAB	.46817	-.00622	91.672	.25072	-.00389	.95129
25	CCV 1	4.7042	.00787	4.8523	4.8956	4.9136	4.8837
26	CCB 1	-.00101	.00196	-.00002	.19094	.00098	.00151

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	5.0783	4.8839	4.9835	5.0885	4.8765	4.9019
2	ICB	-.00343	.00014	.00061	-.00277	.00024	-.00069
3	LLS	.20441	.01972	.10048	.19214	.20060	.03976
4	ICSA	250.77	-.00586	-.01604	187.93	.00039	-.00219
5	ICSAB	250.08	.45180	-.01475	187.68	-.00148	.93770
6	PREPBLKTJA	-.00217	.00039	-.00120	Q3.6918	-.00024	.00535
7	S98T001527 L	.50346	.64235	.00672	868.05	.04852	.05037
8	S98T001527	.40094	.63422	.00403	844.75	.01027	.03275
9	S98T001527 D	.48317	.88940	.01460	820.83	.02363	.04794
10	S98T001527 A	3.4168	3.5567	3.0324	829.20	2.8187	2.9949
11	S98T001527 X	.48597	.66352	-.00386	862.01	.06786	-.01074
12	S98T001527 AX	310.54	300.82	299.73	1156.7	291.27	300.65
13	CCV	5.0549	4.9655	5.0276	4.9589	4.7748	4.8668
14	CCB	-.00231	.00044	.00169	-.02592	.00187	.00043
15	S98T001540	.04329	.05893	.02895	.926.67	.00736	.00944
16	S98T001540 D	.03183	.05419	.03579	.932.54	.00737	.00296
17	S98T001541 L	.29182	.11643	.05966	896.19	.02809	.05882

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#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
18	S98T001541	.08625	.10641	.01735	882.41	-.02903	.00261
19	S98T001541 D	.34300	.15480	.02455	875.87	.01477	.00904
20	S98T001541 A	3.0878	2.9724	3.0087	887.30	2.8109	2.9229
21	S98T001541 X	.06372	.12088	.05975	908.11	.13445	.15180
22	S98T001541 AX	308.82	299.22	298.11	1199.3	285.59	298.09
23	ICSA	249.20	-.00574	-.01771	186.96	-.00184	-.00613
24	ICSAB	249.31	.44709	-.01430	188.16	-.00157	.92045
25	CCV_1	5.0534	4.9130	4.9856	4.9956	4.7569	4.9154
26	CCB_1	-.00004	.00065	-.00026	-.03008	.00098	-.00115

#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	4.9920	4.8755	4.9733	4.9535	4.7112	4.9551
2	ICB	.01097	.00672	-.00398	-.00050	.00618	.00233
3	LLS	.40494	.22794	.20838	.09299	.21457	Q.14948
4	ICSA	.03791	.02814	.01323	.01198	.03463	.00286
5	ICSAB	.03941	1.0020	.00715	-.00221	.06073	.00331
6	PREFBLKTJA	.00107	.01249	Q.06656	.00128	.01725	Q.66845
7	S98T001527 L	243.16	.27635	1.5813	-.04035	.06534	10.689
8	S98T001527	246.03	.10472	1.5795	-.01029	.00875	11.015
9	S98T001527 D	240.35	.17464	1.6826	-.00837	.03139	13.975
10	S98T001527 A	249.73	3.1206	4.6452	3.0193	2.9125	14.375
11	S98T001527 X	248.23	.65951	1.5162	-.11512	.58560	11.213
12	S98T001527 AX	542.17	302.60	294.27	303.70	295.65	311.67
13	CCV	4.9794	5.0030	5.0049	4.9927	4.7323	5.0221
14	CCB	.01823	.01522	.00982	.00254	.01231	.01134
15	S98T001540	247.64	.02096	4.8045	.00514	.01815	12.325
16	S98T001540 D	245.61	.00214	5.0432	-.01171	.03750	11.740
17	S98T001541 L	321.83	.14319	3.6764	.10951	.35316	11.867
18	S98T001541	322.71	-.07862	3.6600	-.00919	.05448	11.740
19	S98T001541 D	291.30	.02609	3.9821	-.00074	.03114	12.661
20	S98T001541 A	324.29	2.9674	6.6349	3.0281	2.8904	15.059
21	S98T001541 X	322.13	.34827	3.8279	-.15192	.74552	12.119
22	S98T001541 AX	618.73	301.76	297.27	301.62	291.96	315.11
23	ICSA	.03240	.03200	.00198	.01547	.04973	.01339
24	ICSAB	.03841	.98321	.00562	.00394	.04778	.00948
25	CCV_1	4.9723	4.9089	4.9751	4.9874	4.6632	4.9835
26	CCB_1	.02058	.00097	-.00422	-.00417	.02763	.01459

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.8281	5.0601	.21703	4.7604	4.7599	9.6785
2	ICB	.00419	.00000	-.00005	.00000	.01805	.01341
3	LLS	.20478	.02043	.00441	.02021	.43633	.49855
4	ICSA	-.00778	-.00257	.00826	.00097	-.03232	-.12386
5	ICSAB	-.00772	-.00257	.00678	.00164	.00207	-.12374
6	PREFBLKTJA	.00662	.00042	.00082	.00134	.02939	.01565
7	S98T001527 L	.05132	.00577	.03593	.00675	.20325	.33547
8	S98T001527	.02040	.00525	.03156	.00806	.03074	.28524
9	S98T001527 D	.03150	.00627	.04109	.01205	.04614	.45299
10	S98T001527 A	2.8259	2.9411	.16552	2.8454	2.9085	5.9798
11	S98T001527 X	.42201	.01269	.05069	.01327	.11610	1.9020

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#	Sample Name	Sm	Sr	Th	Ti	Tl	U
12	S98T001527_AX	290.65	298.04	13.436	299.87	293.01	568.03
13	CCV	4.7658	5.0031	.22150	4.7631	4.7599	9.5298
14	CCB	.01278	.00025	-.00004	.00000	-.00009	.05148
15	S98T001540	.02294	.00179	.02741	.01017	.03342	.07325
16	S98T001540 D	.02292	.00140	.02890	.01017	.08646	.08464
17	S98T001541_L	.26599	.00507	.12150	.00707	.30864	.95876
18	S98T001541	.04893	.00166	.00057	.00201	.07855	.13506
19	S98T001541 D	.04263	.00230	.03906	.01019	.06417	.17973
20	S98T001541_A	2.8127	2.9280	.17453	2.8295	2.7872	5.6732
21	S98T001541_X	.42867	.00761	-.08185	.03312	.38926	1.5136
22	S98T001541_AX	285.94	293.92	13.462	296.99	291.35	557.26
23	ICSA	-.00732	-.00260	.01322	.00167	.04953	-.13259
24	ICSAB	-.01045	-.00263	.00137	.00163	.02066	-.14571
25	CCV_1	4.7706	4.9922	.23027	4.7571	4.7813	9.5289
26	CCB_1	.02029	.00033	.00193	.00022	.00527	.06808

#	Sample Name	V	Y	Zn	Zr
1	ICV	5.0851	.00685	4.8969	5.0128
2	ICB	.00032	.00000	-.00022	.00062
3	LLS	.10238	.00057	.01974	.02105
4	ICSA	.00303	.00788	-.00252	-.00206
5	ICSAB	.47507	.00804	.94430	-.00113
6	PREPBLKTJA	.00102	.00022	.00107	.00087
7	S98T001527 L	.26794	.00573	.06531	.02553
8	S98T001527	.26858	.00434	.06579	.02980
9	S98T001527 D	.26758	.00615	.03767	.05566
10	S98T001527_A	3.3371	.01109	3.1406	2.9945
11	S98T001527_X	.35472	.02739	.07317	.08956
12	S98T001527_AX	298.41	.45674	283.39	296.86
13	CCV	5.1335	.00793	5.0248	5.0089
14	CCB	.00254	.00076	-.00025	.00185
15	S98T001540	.34201	.00208	.00073	.01026
16	S98T001540 D	.34567	.00160	.00383	.00918
17	S98T001541_L	.19032	.01369	.00440	.03757
18	S98T001541	.14841	.00299	.00290	.01700
19	S98T001541 D	.19407	.00344	.00636	.01500
20	S98T001541_A	3.1698	.00652	3.0182	2.9464
21	S98T001541_X	.21886	.02286	-.00855	.07102
22	S98T001541_AX	296.44	.46837	284.23	293.56
23	ICSA	.00407	.00789	-.00287	-.00203
24	ICSAB	.47167	.00774	.93424	-.00159
25	CCV_1	5.0889	.00770	4.9606	4.9723
26	CCB_1	.00373	.00091	.00043	.00232

JK LAD
06-17-98

S98T001527

$$al = 1.3609 \frac{\mu g}{ml} \times \frac{1}{4.84 \frac{g}{L} \times \frac{1L}{1000ml}} = 2.81 \pm 2 \frac{\mu g}{g}$$

$$Spk: \\ al = \frac{\left(\frac{4.2471}{3}\right) - \left(\frac{1.3609}{3}\right)}{1} \times 100 = 96.2\%$$

Post Spk:

$$Na = \frac{\left(\frac{1156.7}{30}\right) - \left(\frac{862.01}{30}\right)}{10} \times 100 = 98.2\%$$

S98T001541

$$al = 2.0248 \frac{\mu g}{ml} \times \frac{1}{4.96 \frac{g}{L} \times \frac{1L}{1000ml}} = 4.08 \pm 2 \frac{\mu g}{g}$$

$$Spk: \\ al = \frac{\left(\frac{4.9616}{3}\right) - \left(\frac{2.0248}{3}\right)}{1} \times 100 = 97.9\%$$

Post Spk:

$$Na = \frac{\left(\frac{1199.3}{30}\right) - \left(\frac{908.11}{30}\right)}{10} \times 100 = 97.1\%$$

LABCORE Completed Worklist Report for Worklist# 24416

Analyst: slh

Instrument: CARB2

Book# _____

Method: _____ Rev/Mod F1

Worklist Comment: TX118, @TICTOC1, SUSPECT PCB; STD: TIC=1.0mL, TOC=.200ml skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLNK	0		@TICTOC1 TIC-02	SOLID	1	2.70E+0	2.700	ug/g
1 BLNK	0		@TICTOC1 TOC-02	SOLID	1	9.50E+0	9.500	ug/g
2 STD	0		@TICTOC1 TIC-02	SOLID	6.02E+02	5.94E+2	98.671	% Recovery
2 STD	0		@TICTOC1 TOC-02	SOLID	3.00E+03	2.77E+3	92.333	% Recovery
3 SAMPLE	S98T001521	0	@TICTOC1 TIC-02	SOLID	N/A	2.24E+03	5.000	ug/g
3 SAMPLE	S98T001521	0	@TICTOC1 TOC-02	SOLID	N/A	2.11E+04	40.000	ug/g
4 DUP	S98T001521	0	@TICTOC1 TIC-02	SOLID	2.24E+3	2.10E+3	6.452	RPD
4 DUP	S98T001521	0	@TICTOC1 TOC-02	SOLID	2.11E+4	2.09E+4	0.952	RPD
5 SPK	S98T001521	0	@TICTOC1 TIC-02	SOLID	1.00E+02	9.92E+01	99.200	% Recovery
5 SPK	S98T001521	0	@TICTOC1 TOC-02	SOLID	1.00E+02	9.88E+01	98.800	% Recovery
6 SAMPLE	S98T001530	0	@TICTOC1 TIC-02	SOLID	N/A	2.68E+03	5.000	ug/g
6 SAMPLE	S98T001530	0	@TICTOC1 TOC-02	SOLID	N/A	2.51E+04	40.000	ug/g
7 DUP	S98T001530	0	@TICTOC1 TIC-02	SOLID	2.68E+3	2.79E+3	4.022	RPD
7 DUP	S98T001530	0	@TICTOC1 TOC-02	SOLID	2.51E+4	2.48E+4	1.202	RPD
8 SAMPLE	S98T001531	0	@TICTOC1 TIC-02	SOLID	N/A	1.73E+03	5.000	ug/g
8 SAMPLE	S98T001531	0	@TICTOC1 TOC-02	SOLID	N/A	3.44E+03	40.000	ug/g
9 DUP	S98T001531	0	@TICTOC1 TIC-02	SOLID	1.73E+3	1.76E+3	1.719	RPD
9 DUP	S98T001531	0	@TICTOC1 TOC-02	SOLID	3.44E+3	3.76E+3	8.889	RPD
10 TRIPL	S98T001531	0	@TICTOC1 TIC-02	SOLID	1.73E+3	1.62E+3	6.567	RPD
10 TRIPL	S98T001531	0	@TICTOC1 TOC-02	SOLID	3.44E+3	3.76E+3	8.889	RPD
11 SPK	S98T001531	0	@TICTOC1 TIC-02	SOLID	1.00E+02	1.04E+02	104.000	% Recovery
11 SPK	S98T001531	0	@TICTOC1 TOC-02	SOLID	1.00E+02	1.10E+02	110.000	% Recovery

Final page for worklist# 24416

Analyst Signature

Date

Analyst Signature

Date

Reviewer Signature

Date

06/04/98 08:32

A-0004-1

Page: 1

LABCORE Data Entry Template for Worklist# 24416

Analyst: SLH Instrument: CARB2 Book# TIC 25N12-CMethod: LA-342-100 Rev/Mod F-1 Great Waste do PCB suspect. SKM
TOC 26N12-E

Worklist Comment: TX118, @TICTOC1, SUSPECT PCB, STD: TIC=1.0mL, TOC=.200ml skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK			@TICTOC1	SOLID		
2 STD			@TICTOC1	SOLID		
3 SAMPLE	S98T001521 0		@TICTOC1	SOLID	98000225	TX-118
Analytes Requested: TIC-02 , TOC-02						
4 DUP	S98T001521 0		@TICTOC1	SOLID		
5 SPK	S98T001521 0		@TICTOC1	SOLID		
6 SAMPLE	S98T001530 0		@TICTOC1	SOLID	98000225	TX-118
Analytes Requested: TIC-02 , TOC-02						
7 DUP	S98T001530 0		@TICTOC1	SOLID		
8 SAMPLE	S98T001531 0		@TICTOC1	SOLID	98000225	TX-118
Analytes Requested: TIC-02 , TOC-02						
9 DUP	S98T001531 0		@TICTOC1	SOLID		
10 SPK	S98T001531 0		@TICTOC1	SOLID		

Final page for worklist # 24416

Analyst Signature

Date

6-16-98

Analyst Signature

Date

Data Entry Comments:

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

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (F-1)

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)	600.6	590.7
24416	μg of Carbon from Baseline (C2)	6.7	36.9
Test Code	Standard Book Number	25N12C	26N12E
@TICTOC1	Standard Value ($\mu\text{g}/\text{mL}$)	602	3000

Matrix
LIQUIDBatch Number
98002883Rerun
0Sample Prep
N/A

Sample #

Instrument Code
CARB2Prepared By
JROChemist
MJLAnalyst
SLHDate Complete
06/24/98Analysis Date
06/16/98Analysis Time
04:30 PMSample Point
TX118QC Actual in $\mu\text{g}/\text{mL}$ = Standard Value ($\mu\text{g}/\text{mL}$)QC Found in $\mu\text{g}/\text{mL}$ = (C1 - C2) * DF / SSQC Found in $\mu\text{g}/\text{mL}$ for TIC = 5 if C1 < C2QC Found in $\mu\text{g}/\text{mL}$ for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

		TIC	TOC
Analysis Time	Method Detection Limit in $\mu\text{g}/\text{mL}$	5	40
04:30 PM	QC Actual in $\mu\text{g}/\text{mL}$	6.02E+02	3.00E+03
Sample Point	QC Found in $\mu\text{g}/\text{mL}$	5.94E+02	2.77E+03
TX118	Percent Standard Recovery	98.7	92.3

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

Data Entered By:	JRO	Date:	06/24/98
Signature of Chemist:	<i>[Signature]</i>	Date:	6/25/98

STANDARD.WB1 REV 1.0

342100ML

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (F-1)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0000	0.0000
BLNK	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	9.4	27.4
24416	µg of Carbon from Baseline (C2)	6.7	36.9
Test Code	µg of Carbon = C1-C2		
@TICTOC1			
Matrix			
SOLID			
Batch Number			
98002883			
Rerun			
0			
Sample Prep			
N/A			
Sample #			
BLK			
Instrument Code			
CARB2			
Prepared By			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time	Method Detection Limit in ug/g	5	40
04:30 PM			
Sample Point	µg of Carbon	2.70E+00	9.50E+00
TX118			

Data Entered By:	JRO	Date:	06/24/98
Signature of Chemist:	<i>N/A</i>	Date:	

BLANK WB1 REV 1.0

342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (F-1)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0453	0.0453
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	108.1	993.2
24416	µg of Carbon from Baseline (C2)	6.7	36.9
Test Code			
@TICTOC1			
Matrix			
SOLID			
Batch Number			
98002883			
Rerun			
0			
Sample Prep			
N/A			
Sample #			
S98T001521			
Instrument Code			
CARB2			
Prepared By			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time	Method Detection Limit in ug/g	5	40
04:30 PM			
Sample Point	µg of Carbon/g	2.24E+03	2.11E+04
TX118			

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

Data Entered By:	JRO	Date:	06/24/98
Signature of Chemist:	<i>NA</i>	Date:	

SAMPLE.WB1 REV 1.0

342100ML

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WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (F-1)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0371	0.0371
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	84.6	813.6
24416	µg of Carbon from Baseline (C2)	6.7	36.9
Test Code	Known µg of C from Original Sample	2.24E+3	2.11E+4
@TIC/TOC1			

Matrix
SOLID
Batch Number
98002883
Rerun
0
Sample Prep
N/A
Sample #
S98T001521
Instrument Code
CARB2
Prepared By
JRO
Chemist
MJL
Analyst
SLH
Date Complete
06/24/98
Analysis Date
06/16/98
Analysis Time
04:30 PM
Sample Point
TX118

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

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	2.10E+03	2.09E+04

Data Entered By:	JRO	Date:	06/24/98
Signature of Chemist:	<i>NA</i>	Date:	

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SPIKE5

TIC/TOC : LA-342-100 (F-1)

SOLIDS

Type	Sample Vial Data	TIC	TOC
SPK	Sample Size in g (SS)	0.0453	0.0453
Work List	Final Coulometer Reading in µg (C1)	108.1	993.2
24416	Spiked Vial Data		
Test Code	Sample Size in g (SPK SS)	0.0276	0.0276
@TIC/TOC1	Amount of Spike Std. in mL (SPK VOL)	0.500	0.200
Matrix	Final Coulometer Reading in µg (C2)	367.2	1212.4
SOLID	Spike Book Number	25N12C	26N12E
Batch Number	Spike Standard Value in µg/mL (SPK CONC)	602	3000
98002883	µg C in baseline (BL)	6.7	36.9
Rerun			
0			
Sample Prep			
N/A			
Sample #	Percent Spike Recovery = ((C2-BL) - (C1-BL) * (SPK SS) / SS) / ((SPK CONC) * (SPK VOL)) * 100		
S98T001521			
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			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time			
04:30 PM	QC Actual in µg/mL	6.02E+02	3.00E+03
Sample Point	QC Found in µg/mL	5.97E+02	2.96E+03
TX118	Percent Spike Recovery	99.2	98.8

Data Entered By:	JRO	Date:	06/24/98
Signature of Chemist:	<i>NA</i>	Date:	

SPIKE WB1 REV 1.3

342100ML

WORKBOOK PAGE: SAM6

TIC/TOC : LA-342-100 (F-1)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0340	0.0340
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	97.9	890.3
24416	µg of Carbon from Baseline (C2)	6.7	36.9
Test Code			
@TICTOC1			
Matrix			
SOLID			
Batch Number			
98002883			
Rerun			
0			
Sample Prep			
N/A			
Sample #			
S98T001530			
Instrument Code			
CARB2			
Prepared By			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
04:30 PM		5	40
Sample Point	µg of Carbon/g	2.68E+03	2.51E+04
TX118			

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

Data Entered By:

JRO

Date: 06/24/98

Signature of Chemist:

NA

Date:

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP7

TIC/TOC : LA-342-100 (F-1)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0352	0.0352
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	104.9	909.2
24416	µg of Carbon from Baseline (C2)	6.7	36.9
Test Code	Known µg of C from Original Sample	2.68E+3	2.51E+4
@TICTOC1			
Matrix			
SOLID			
Batch Number			
98002883			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S98T001530			
Instrument Code			
CARB2			
Prepared By			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
04:30 PM		5	40
Sample Point	µg of Carbon/g	2.79E+03	2.48E+04
TX116			

Data Entered By:

JRO

Date: 06/24/98

Signature of Chemist:

NA

Date:

WORKBOOK PAGE: SAM8

TIC/TOC : LA-342-100 (F-1)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0255	0.0255
SAMPLE	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	50.9	124.7
24416	µg of Carbon from Baseline (C2)	6.7	36.9
Test Code			
@TICTOC1			
Matrix			
SOLID			
Batch Number			
98002883			
Rerun			
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		
Sample Prep			
N/A			
Sample #			
S98T001531			
Instrument Code			
CARB2			
Prepared By			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time	Method Detection Limit in ug/g	5	40
04:30 PM			
Sample Point	µg of Carbon/g	1.73E+03	3.44E+03
TX118			

Data Entered By:	JRO	Date:	06/24/98
Signature of Chemist:	<i>NA</i>	Date:	

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: DUP9

TIC/TOC : LA-342-100 (F-1)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0621	0.0621
DUP	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	115.8	270.7
24416	µg of Carbon from Baseline (C2)	6.7	36.9
Test Code	Known µg of C from Original Sample	1.73E+3	3.44E+3
@TICTOC1			
Matrix			
SOLID			
Batch Number			
98002883			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S98T001531			
Instrument Code			
CARB2			
Prepared By			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
04:30 PM		5	40
Sample Point	µg of Carbon/g	1.76E+03	3.76E+03
TX116			

Data Entered By:

JRO

Date:

06/24/98

Signature of Chemist:

Date:

SAMPLE.WB1 REV 1.0

342100ML

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WORKBOOK PAGE: TRIPL10

TIC/TOC : LA-342-100 (F-1)

SOLIDS

		TIC	TOC
Type	Sample Size in g (SS)	0.0699	0.0699
TRIPL	Dilution Factor (DF)	1	1
Work List	µg of Carbon in Sample (C1)	120.1	299.9
24416	µg of Carbon from Baseline (C2)	6.7	36.9
Test Code	Known µg of C from Original Sample	1.73E+3	3.44E+3
@TICTOC1	Duplicate Result	1.76E+3	3.76E+3
Matrix			
SOLID			
Batch Number			
98002883			
Rerun	µg of Carbon/g = (C1-C2) * DF / SS		
0	µg of Carbon/g for TIC = 5 if C1 < C2		
Sample Prep	µg of Carbon/g for TOC = 40 if C1 < C2		
N/A			
Sample #			
S98T001531			
Instrument Code			
CARB2			
Prepared By			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time	Method Detection Limit in ug/g	TIC	TOC
04:30 PM		5	40
Sample Point	µg of Carbon/g	1.62E+03	3.76E+03
TX116			

Data Entered By:	JRO	Date:	06/24/98
Signature of Chemist:	<i>NA</i>	Date:	

SAMPLE.WB1 REV 1.0

342100ML

WORKBOOK PAGE: SPIKE11

TIC/TOC : LA-342-100 (F-1)

SOLIDS

Type	Sample Vial Data	TIC	TOC
SPK	Sample Size in g (SS)	0.0255	0.0255
Work List	Final Coulometer Reading in µg (C1)	50.9	124.7
24416	Spiked Vial Data		
Test Code	Sample Size in g (SPK SS)	0.0595	0.0595
@TICTOC1	Amount of Spike Std. in mL (SPK VOL)	0.500	0.200
Matrix	Final Coulometer Reading in µg (C2)	422.9	901.4
SOLID	Spike Book Number	25N12C	26N12E
Batch Number	Spike Standard Value in µg/mL (SPK CONC)	602	3000
98002883	µg C in baseline (BL)	6.7	36.9
Rerun			
0			
Sample Prep			
N/A			
Sample #	Percent Spike Recovery = ((C2-BL) - (C1-BL) * (SPK SS) / SS) / ((SPK CONC) * (SPK VOL)) * 100		
S98T001531			
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			
JRO			
Chemist			
MJL			
Analyst			
SLH			
Date Complete			
06/24/98			
Analysis Date			
06/16/98			
Analysis Time			
04:30 PM	QC Actual in µg/mL	6.02E+02	3.00E+03
Sample Point	QC Found in µg/mL	6.26E+02	3.30E+03
TX118	Percent Spike Recovery	104.0	109.9

Data Entered By:	JRO	Date:	06/24/98
Signature of Chemist:	<i>NA</i>	Date:	

SPIKE WB1 REV 1.3

342100ML

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2

Date: 06/16/98

Time: 09:39:35

Sample Size = 1000 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.40	0.00
2	1.01	19.10	97.91
3	1.51	160.20	88.08
4	2.00	340.50	52.95
5	2.50	474.40	28.23
6	3.00	545.80	13.08
7	3.50	577.00	5.41
8	4.00	588.30	1.92
9	4.50	592.30	0.68
10	5.00	594.00	0.29
11	5.50	595.10	0.18
12	6.00	595.70	0.10
13	6.50	596.40	0.12
14	7.00	597.00	0.10
15	7.50	597.40	0.07
16	8.00	598.10	0.12
17	8.50	598.40	0.05
18	9.00	598.90	0.08
19	9.50	599.40	0.08
20	10.00	599.90	0.08
21	10.50	600.30	0.07
22	11.00	600.60	0.05

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT
COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 140 TO 151/2

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(600.6 - 6.708176) (1) / (1000)	=	+5.939E-01	g/L Carbon
(600.6 - 6.708176) (1) / (1000) (12)	=	+4.949E-02	Molar Carbon

Sample Run By:

SL HOOD

00002

Inl = 25N12-C

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2

Date: 06/16/98

Time: 09:52:40

Sample Size = 200 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.36 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.30	0.00
2	1.00	1.30	76.92
3	1.50	24.80	94.76
4	2.00	127.30	80.52
5	2.50	323.80	60.69
6	3.00	480.30	32.58
7	3.50	547.50	12.27
8	4.00	571.20	4.15
9	4.50	578.30	1.23
10	5.00	581.50	0.55
11	5.50	582.80	0.22
12	6.00	584.00	0.21
13	6.50	585.00	0.17
14	7.00	585.40	0.07
15	7.50	586.20	0.14
16	8.00	587.10	0.15
17	8.50	587.70	0.10
18	9.00	588.30	0.10
19	9.50	588.90	0.10
20	10.00	589.40	0.08
21	10.50	590.10	0.12
22	11.00	590.70	0.10

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(590.7 - 36.94995) (1) / (200) = +2.769E+00 g/L Carbon
 (590.7 - 36.94995) (1) / (200) (12) = +2.307E-01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

200ml spk 26/12-E

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>>

Sample: BASE 2

Date: 06/16/98

Time: 09:08:33

Sample Size = 1 uL

Dil Factor = 1

Blank ID # = BASE 2

Blank Value = N/A

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.20	0.00
2	1.01	0.50	60.00
3	1.51	0.80	37.50
4	2.00	1.20	33.33
5	2.50	1.60	25.00
6	3.00	1.90	15.79
7	3.50	2.30	17.39
8	4.00	2.50	8.00
9	4.50	2.80	10.71
10	5.00	3.10	9.68
11	5.50	3.40	8.82
12	6.00	3.60	5.56
13	6.50	3.90	7.69
14	7.00	4.30	9.30
15	7.50	4.60	6.52
16	8.00	4.80	4.17
17	8.50	5.20	7.69
18	9.00	5.50	5.45
19	9.50	5.80	5.17
20	10.00	6.10	4.92
21	10.50	6.40	4.69
22	11.00	6.70	4.48

BLANK VALUE = 6.7 micrograms carbon

BLANK FACTOR = 6.7 / 10.9989 =

+6.1E-01

ug/min Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT

TICTOC REV.2.0

<<< BLANK ANALYSIS >>>

Sample: BASE 2

Date: 06/16/98

Time: 09:23:00

Sample Size = 1 uL
 Dil Factor = 1
 Blank ID # = BASE 2
 Blank Value = N/A

Analyst : SL HOOD
 Min Readings = 22
 Max Readings = 22
 % Difference = 10

== Reading ==	Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.90	77.78
3	1.50	5.50	83.64
4	2.00	12.60	56.35
5	2.50	20.30	37.93
6	3.00	25.00	18.80
7	3.50	27.40	8.76
8	4.00	28.80	4.86
9	4.50	29.70	3.03
10	5.00	30.60	2.94
11	5.50	31.50	2.86
12	6.00	32.20	2.17
13	6.50	32.80	1.83
14	7.00	33.40	1.80
15	7.50	34.00	1.76
16	8.00	34.40	1.16
17	8.50	34.90	1.43
18	9.00	35.20	0.85
19	9.50	35.60	1.12
20	10.00	36.00	1.11
21	10.50	36.40	1.10
22	11.00	36.90	1.36

BLANK VALUE = 36.9 micrograms carbon

BLANK FACTOR = 36.9 / 10.99701 =

+3.36E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK

Date: 06/16/98

Time: 10:24:19

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute C

Analyst : SL HOOD

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	1.51	1.90	57.89
4	2.00	2.80	32.14
5	2.50	3.30	15.15
6	3.00	3.80	13.16
7	3.50	4.20	9.52
8	4.00	4.60	8.70
9	4.50	4.90	6.12
10	5.00	5.30	7.55
11	5.50	5.60	5.36
12	6.00	5.90	5.08
13	6.50	6.30	6.35
14	7.00	6.60	4.55
15	7.50	7.00	5.71
16	8.00	7.30	4.11
17	8.50	7.70	5.19
18	9.00	8.10	4.94
19	9.50	8.30	2.41
20	10.00	8.70	4.60
21	10.50	9.10	4.40
22	11.00	9.40	3.19

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(9.4 - 6.709256) (1)/(1)	=	+2.7E+00	g/L Carbon
(9.4 - 6.709256) (1)/(1) (12)	=	+2.2E-01	Molar Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2

Date: 06/16/98

Time: 10:40:20

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 3.36 ug/minute C

% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.30	0.00
2	1.01	1.10	72.73
3	1.50	6.60	83.33
4	2.00	12.80	48.44
5	2.50	17.00	24.71
6	3.00	19.70	13.71
7	3.50	20.80	5.29
8	4.00	21.60	3.70
9	4.50	22.20	2.70
10	5.00	22.70	2.20
11	5.50	23.30	2.58
12	6.00	23.60	1.27
13	6.50	24.00	1.67
14	7.00	24.50	2.04
15	7.50	24.80	1.21
16	8.00	25.20	1.59
17	8.50	25.60	1.56
18	9.00	26.00	1.54
19	9.50	26.40	1.52
20	10.00	26.80	1.49
21	10.50	27.00	0.74
22	11.00	27.40	1.46

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(27.4 - 36.95282) (1)/(1) = < 5.00 E-3 g/L Carbon
 (27.4 - 36.95282) (1)/(1) (12) = < 4.17 E-4 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T001521

Date: 06/16/98

Time: 10:59:03

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.30	0.00
2	1.01	0.90	66.67
3	1.51	3.60	75.00
4	2.00	12.80	71.88
5	2.50	32.80	60.98
6	3.00	56.50	41.95
7	3.50	73.40	23.02
8	4.00	82.50	11.03
9	4.50	87.10	5.28
10	5.00	90.00	3.22
11	5.50	92.20	2.39
12	6.00	93.90	1.81
13	6.50	95.60	1.78
14	7.00	97.30	1.75
15	7.50	98.70	1.42
16	8.00	100.20	1.50
17	8.50	101.60	1.38
18	9.00	103.00	1.36
19	9.50	104.50	1.44
20	10.00	105.70	1.14
21	10.50	107.00	1.21
22	11.00	108.10	1.02

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(108.1 - 6.708176) (1) / (1) = +1.014E+02 g/L Carbon
 (108.1 - 6.708176) (1) / (1) (12) = +8.449E+00 Molar Carbon

Sample Run By:

SL HOOD

00002

55 = .0453g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV. 2.0

Sample: S98T001521

Date: 06/16/98

Time: 11:12:02

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.36 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	1.40	0.00
2	1.01	67.00	97.91
3	1.51	609.50	89.01
4	2.00	866.50	29.66
5	2.50	939.30	7.75
6	3.00	966.00	2.76
7	3.50	975.90	1.01
8	4.00	980.00	0.42
9	4.50	982.40	0.24
10	5.00	984.20	0.18
11	5.50	985.70	0.15
12	6.00	986.80	0.11
13	6.50	987.70	0.09
14	7.00	988.50	0.08
15	7.50	989.30	0.08
16	8.00	990.10	0.08
17	8.50	990.60	0.05
18	9.00	991.20	0.06
19	9.50	991.80	0.06
20	10.00	992.30	0.05
21	10.50	992.80	0.05
22	11.00	993.20	0.04

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(993.2 - 36.95282) (1)/(1) = +9.562E+02 g/L Carbon
 (993.2 - 36.95282) (1)/(1) (12) = +7.969E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .0453g

147

TIC-- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T01521 DUP

Date: 06/16/98

Time: 11:25:26

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute. C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference ==
1	0.51	0.40	0.00
2	1.01	1.20	66.67
3	1.51	3.40	64.71
4	2.00	10.20	66.67
5	2.50	24.90	59.04
6	3.00	42.90	41.96
7	3.50	56.60	24.20
8	4.00	63.50	10.87
9	4.50	67.90	5.93
10	5.00	69.70	3.16
11	5.50	71.20	2.11
12	6.00	72.70	2.06
13	6.50	73.90	1.62
14	7.00	75.30	1.86
15	7.50	76.60	1.70
16	8.00	77.80	1.54
17	8.50	79.00	1.52
18	9.00	80.20	1.50
19	9.50	81.30	1.35
20	10.00	82.70	1.69
21	10.50	83.50	0.96
22	11.00	84.60	1.30

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99761 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(84.6 - 6.709814) (1)/(1)	=	+7.79E+01	g/L Carbon
(84.6 - 6.709814) (1)/(1) (12)	=	+6.49E+00	Molar Carbon

Sample Run By:

SL HOOD

00002

SS = .0371g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T01521 DUP

Date: 06/16/98

Time: 11:38:14

Sample Size = 1 uL

Analyst : SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = 3.36 ug/minute C

% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.50	1.10	0.00
2	1.00	8.10	86.42
3	1.50	234.10	96.54
4	2.00	512.60	54.33
5	2.50	676.30	24.21
6	3.00	753.50	10.25
7	3.50	786.40	4.18
8	4.00	797.90	1.44
9	4.50	802.10	0.52
10	5.00	804.40	0.29
11	5.50	805.90	0.19
12	6.00	807.20	0.16
13	6.50	808.20	0.12
14	7.00	809.10	0.11
15	7.50	809.70	0.07
16	8.00	810.40	0.09
17	8.50	811.00	0.07
18	9.00	811.60	0.07
19	9.50	812.10	0.06
20	10.00	812.60	0.06
21	10.50	813.30	0.09
22	11.00	813.60	0.04

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(813.6 - 36.9438) (1)/(1) = +7.767E+02 g/L Carbon
 (813.6 - 36.9438) (1)/(1) (12) = +6.472E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .037/g

149

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T01521 SPK

Date: 06/16/98

Time: 11:53:13

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.40	0.00
2	1.00	1.20	66.67
3	1.51	39.30	96.95
4	2.00	138.50	71.62
5	2.50	233.30	40.63
6	3.00	295.00	20.92
7	3.50	330.10	10.63
8	4.00	345.60	4.48
9	4.50	351.90	1.79
10	5.00	354.90	0.85
11	5.50	356.70	0.50
12	6.00	357.90	0.34
13	6.50	359.00	0.31
14	7.00	360.00	0.28
15	7.50	361.00	0.28
16	8.00	362.00	0.28
17	8.50	363.00	0.28
18	9.00	364.00	0.27
19	9.50	364.70	0.19
20	10.00	365.60	0.25
21	10.50	366.40	0.22
22	11.00	367.20	0.22

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 =

+6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(367.2 - 6.709293) (1)/(1) =

+3.605E+02 g/L Carbon

(367.2 - 6.709293) (1)/(1) (12) =

+3.004E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

SS = .0276g + .500ml spk 25N12-C

TOC- Total Organic Carbon Analysis Report

See previous page for "Raw Data" title

Sample # 5987001521 Spk

JF 11/17/98

3	1.50	320.90	94.89
4	2.00	683.00	53.02
5	2.50	986.10	30.74
6	3.00	1127.00	12.50
7	3.50	1177.20	4.26
8	4.00	1195.30	1.51
9	4.50	1200.40	0.42
10	5.00	1203.10	0.22
11	5.50	1204.60	0.12
12	6.00	1205.70	0.09
13	6.50	1206.90	0.10
14	7.00	1207.80	0.07
15	7.50	1208.40	0.05
16	8.00	1209.30	0.07
17	8.50	1209.80	0.04
18	9.00	1210.40	0.05
19	9.50	1210.90	0.04
20	10.00	1211.40	0.04
21	10.50	1211.90	0.04
22	11.00	1212.40	0.04

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 =

+3.4E+00

ug/min Carbon

SAMPLE RESULTS:

(1212.4 - 36.94995) (1)/(1) =

+1.1755E+03 g/L Carbon

(1212.4 - 36.94995) (1)/(1) (12) =

+9.7954E+01 Molar Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .0276g + .200 ml spk 26N12-E

151

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T001530

Date: 06/16/98

Time: 13:41:52

Sample Size = 1 uL

Analyst SL HOOD

Dil Factor = 1

Min Readings = 22

Blank ID # =

Max Readings = 22

Blank Value = .61 ug/minute C

% Difference = 10

```

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==
  1           0.51           0.00           0.00
  2           1.01           1.90          100.00
  3           1.51           5.50           65.45
  4           2.00          16.80           67.26
  5           2.50          35.30           52.41
  6           3.00          53.70           34.26
  7           3.50          66.60           19.37
  8           4.00          73.80            9.76
  9           4.50          77.70            5.02
 10           5.00          80.50            3.48
 11           5.50          82.50            2.42
 12           6.00          84.30            2.14
 13           6.50          85.90            1.86
 14           7.00          87.50            1.83
 15           7.50          89.00            1.69
 16           8.00          90.30            1.44
 17           8.50          91.80            1.63
 18           9.00          93.00            1.29
 19           9.50          94.20            1.27
 20          10.00          95.70            1.57
 21          10.50          96.70            1.03
 22          11.00          97.90            1.23

```

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 =

+6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(97.9 - 6.709814) (1)/(1) =

+9.12E+01 g/L Carbon

(97.9 - 6.709814) (1)/(1) (12) =

+7.60E+00 Molar Carbon

Sample Run By:

SL HOOD

00002

\$ = .0340g

151.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T001530

Date: 06/16/98

Time: 11:54:52

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.36 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading == Analysis Time == Coulometer == % Difference ==

1	0.51	1.30	0.00
2	1.01	23.40	94.44
3	1.50	423.70	94.48
4	2.00	717.10	40.91
5	2.50	819.60	12.51
6	3.00	859.80	4.68
7	3.50	874.40	1.67
8	4.00	878.90	0.51
9	4.50	881.10	0.25
10	5.00	882.60	0.17
11	5.50	883.80	0.14
12	6.00	884.60	0.09
13	6.50	885.50	0.10
14	7.00	886.20	0.08
15	7.50	886.90	0.08
16	8.00	887.60	0.08
17	8.50	888.20	0.07
18	9.00	888.50	0.03
19	9.50	889.10	0.07
20	10.00	889.50	0.04
21	10.50	890.00	0.06
22	11.00	890.30	0.03

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(890.3 - 36.94708) (1)/(1) = +8.534E+02 g/L Carbon
 (890.3 - 36.94708) (1)/(1) (12) = +7.111E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .0340g

151.2

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC-REV 2.0

Sample: S98T01530 DUP

Date: 06/16/98

Time: 14:07:30

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference ==
1	0.51	0.40	0.00
2	1.01	1.90	78.95
3	1.50	6.30	69.84
4	2.00	17.10	63.16
5	2.50	35.50	51.83
6	3.00	55.90	36.49
7	3.50	71.20	21.49
8	4.00	79.60	10.55
9	4.50	84.20	5.46
10	5.00	87.10	3.33
11	5.50	89.10	2.24
12	6.00	90.90	1.98
13	6.50	92.50	1.73
14	7.00	94.10	1.70
15	7.50	95.70	1.67
16	8.00	97.10	1.44
17	8.50	98.60	1.52
18	9.00	99.90	1.30
19	9.50	101.20	1.28
20	10.00	102.50	1.27
21	10.50	103.80	1.25
22	11.00	104.90	1.05

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 =

+6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(104.9 - 6.709293) (1)/(1) =

+9.819E+01 g/L Carbon

(104.9 - 6.709293) (1)/(1) (12) =

+8.183E+00 Molar Carbon

Sample Run By:

SL HOOD

00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T01530 DUP

Date: 06/16/98

Time: 14:19:28

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.36 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	1.20	0.00
2	1.01	19.60	93.88
3	1.51	391.00	94.99
4	2.01	700.60	44.19
5	2.50	818.80	14.44
6	3.00	868.80	5.76
7	3.50	889.70	2.35
8	4.00	896.30	0.74
9	4.50	898.90	0.29
10	5.00	900.70	0.20
11	5.50	902.10	0.16
12	6.00	903.00	0.10
13	6.50	904.00	0.11
14	7.00	904.70	0.08
15	7.50	905.60	0.10
16	8.00	906.20	0.07
17	8.50	906.70	0.06
18	9.00	907.30	0.07
19	9.50	907.90	0.07
20	10.00	908.40	0.06
21	10.50	908.80	0.04
22	11.00	909.20	0.04

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(909.2 - 36.94975) (1)/(1) = +8.723E+02 g/L Carbon
 (909.2 - 36.94975) (1)/(1) (12) = +7.269E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .0352g

151.4

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T001531

Date: 06/16/98

Time: 14:31:32

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.50	0.50	0.00
2	1.00	1.40	64.29
3	1.50	7.80	82.05
4	2.00	16.50	52.73
5	2.50	25.20	34.52
6	3.00	32.70	22.94
7	3.50	38.50	15.06
8	4.00	42.30	8.98
9	4.50	44.60	5.16
10	5.00	45.70	2.41
11	5.50	46.50	1.72
12	6.00	47.10	1.27
13	6.50	47.50	0.84
14	7.00	48.00	1.04
15	7.50	48.40	0.83
16	8.00	48.80	0.82
17	8.50	49.10	0.61
18	9.00	49.40	0.61
19	9.50	49.80	0.80
20	10.00	50.20	0.80
21	10.50	50.50	0.59
22	11.00	50.90	0.79

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(50.9 - 6.708697) (1)/(1) = +4.42E+01 g/L Carbon
 (50.9 - 6.708697) (1)/(1) (12) = +3.68E+00 Molar Carbon

Sample Run By:

SL HOOD

00002

SS = 0.0255g

151. 5

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T001531

Date: 06/16/98

Time: 14:44:54

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.36 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	4.30	90.70
3	1.51	52.20	91.76
4	2.01	89.10	41.41
5	2.51	106.10	16.02
6	3.01	112.70	5.86
7	3.50	115.50	2.42
8	4.00	117.10	1.37
9	4.50	118.10	0.85
10	5.00	118.90	0.67
11	5.50	119.50	0.50
12	6.00	120.10	0.50
13	6.50	120.70	0.50
14	7.00	121.20	0.41
15	7.50	121.60	0.33
16	8.00	122.20	0.49
17	8.50	122.70	0.41
18	9.00	123.10	0.32
19	9.50	123.50	0.32
20	10.00	123.90	0.32
21	10.50	124.40	0.40
22	11.00	124.70	0.24

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(124.7 - 36.9559) (1)/(1) = +8.774E+01 g/L Carbon
 (124.7 - 36.9559) (1)/(1) (12) = +7.312E+00 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = 0.0255g

151, 6

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T01531 DUP

Date: 06/16/98

Time: 15:11:08

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	1.10	72.73
3	1.50	10.00	89.00
4	2.00	30.20	66.89
5	2.50	55.90	45.97
6	3.00	80.40	30.47
7	3.50	96.60	16.77
8	4.00	103.90	7.03
9	4.50	107.30	3.17
10	5.00	109.00	1.56
11	5.50	110.00	0.91
12	6.00	110.70	0.63
13	6.50	111.30	0.54
14	7.00	111.80	0.45
15	7.50	112.30	0.45
16	8.00	112.90	0.53
17	8.50	113.40	0.44
18	9.00	114.00	0.53
19	9.50	114.40	0.35
20	10.00	114.80	0.35
21	10.50	115.30	0.43
22	11.00	115.80	0.43

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.93701 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(115.8 - 6.709256) (1)/(1) =

+1.091E+02 g/L Carbon

(115.8 - 6.709256) (1)/(1) (12) =

+9.091E+00 Molar Carbon

Sample Run By:

SL HOOD

00002

SS = .0621g

151, 7

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T001531 DUP Date: 06/16/98 Time: 15:24:35

Sample Size = 1 uL Analyst : SL HOOD
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = 3.36 ug/minute:C % Difference = 10

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==

1	0.51	0.50	0.00
2	1.00	1.90	73.68
3	1.50	52.50	96.38
4	2.00	139.00	62.23
5	2.50	202.50	31.36
6	3.00	238.20	14.99
7	3.50	253.50	6.04
8	4.00	259.10	2.16
9	4.50	261.40	0.88
10	5.00	262.90	0.57
11	5.50	263.90	0.38
12	6.00	264.70	0.30
13	6.50	265.50	0.30
14	7.00	266.30	0.30
15	7.50	266.90	0.22
16	8.00	267.60	0.26
17	8.50	268.10	0.19
18	9.00	268.60	0.19
19	9.50	269.20	0.22
20	10.00	269.70	0.19
21	10.50	270.30	0.22
22	11.00	270.70	0.15

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(270.7 - 36.95918) (1)/(1) = +2.337E+02 g/L Carbon
(270.7 - 36.95918) (1)/(12) = +1.948E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

36 = .0621g

36 = .0255g
6-15-98

151.8

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T01531 TRP

Date: 06/16/98

Time: 15:38:42

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = .61 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	Analysis Time	Coulometer	% Difference ==
1	0.51	0.50	0.00
2	1.01	1.00	50.00
3	1.50	10.30	90.29
4	2.00	31.20	66.99
5	2.50	58.10	46.30
6	3.00	83.40	30.34
7	3.50	99.70	16.35
8	4.00	108.00	7.69
9	4.50	111.80	3.40
10	5.00	113.50	1.50
11	5.50	114.50	0.87
12	6.00	115.30	0.69
13	6.50	115.80	0.43
14	7.00	116.50	0.60
15	7.50	116.90	0.34
16	8.00	117.30	0.34
17	8.50	117.80	0.42
18	9.00	118.40	0.51
19	9.50	118.80	0.34
20	10.00	119.30	0.42
21	10.50	119.60	0.25
22	11.00	120.10	0.42

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 =

+6.1E-01

ug/min Carbon

SAMPLE RESULTS:

(120.1 - 6.707692) (1)/(1) =

+1.134E+02 g/L Carbon

(120.1 - 6.707692) (1)/(1) (12) =

+9.449E+00 Molar Carbon

Sample Run By:

SL HOOD

00002

SS = .0699g

151.9

HNF-1651 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T01531 TRP

Date: 06/16/98

Time: 15:54:40

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.36 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

```

== Reading ==== Analysis Time ==== Coulometer ==== % Difference ==
 1          0.51          0.40          0.00
 2          1.01          2.80          85.71
 3          1.50          65.70          95.74
 4          2.00          163.40         59.79
 5          2.50          230.30         29.05
 6          3.00          266.30         13.52
 7          3.50          281.80          5.50
 8          4.00          287.70          2.05
 9          4.50          290.50          0.96
10          5.00          291.80          0.45
11          5.50          293.00          0.41
12          6.00          294.10          0.37
13          6.50          295.00          0.31
14          7.00          295.70          0.24
15          7.50          296.40          0.24
16          8.00          297.10          0.24
17          8.50          297.60          0.17
18          9.00          298.10          0.17
19          9.50          298.50          0.13
20         10.00          299.10          0.20
21         10.50          299.40          0.10
22         11.00          299.90          0.17

```

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

```

( 299.9 - 36.95282 ) (1)/(1) = +2.629E+02 g/L Carbon
( 299.9 - 36.95282 ) (1)/(1)(12) = +2.191E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

```

Sample Run By:

SL HOOD

00002

36.0699g

151.10

HNF-1651 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S98T001531 spk Date: 06/16/98 Time: 16:06:16

Sample Size = 1 uL Analyst : SL HOOD
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = .61 ug/minute C % Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	1.40	64.29
3	1.50	7.60	81.58
4	2.00	64.30	88.18
5	2.50	169.40	62.04
6	3.00	268.60	36.93
7	3.50	336.50	20.18
8	4.00	377.80	10.93
9	4.50	400.70	5.72
10	5.00	410.00	2.27
11	5.50	413.80	0.92
12	6.00	415.90	0.50
13	6.50	417.10	0.29
14	7.00	418.20	0.26
15	7.50	419.00	0.19
16	8.00	419.70	0.17
17	8.50	420.40	0.17
18	9.00	420.90	0.12
19	9.50	421.50	0.14
20	10.00	422.00	0.12
21	10.50	422.50	0.12
22	11.00	422.90	0.09

USER INPUT BLANK VALUE

BLANK VALUE = 6.708176 micrograms carbon

BLANK FACTOR = 6.708176 / 10.99701 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:

(422.9 - 6.708176) (1) / (1) = +4.162E+02 g/L Carbon
(422.9 - 6.708176) (1) / (1) (12) = +3.468E+01 Molar Carbon

Sample Run By:

SL HOOD

00002

SS = .0595g + .500ml spk 25N12-C

151.11

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV. 2.0

Sample: S98T01531 SPK

Date: 06/16/98

Time: 16:22:29

Sample Size = 1 uL

Dil Factor = 1

Blank ID # =

Blank Value = 3.36 ug/minute C

Analyst : SL HOOD

Min Readings = 22

Max Readings = 22

% Difference = 10

== Reading ==	==== Analysis Time ==	==== Coulometer ==	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	1.00	40.00
3	1.51	43.50	97.70
4	2.00	172.10	74.72
5	2.50	382.90	55.05
6	3.00	638.20	40.00
7	3.50	788.10	19.02
8	4.00	848.70	7.14
9	4.50	877.20	3.25
10	5.00	887.00	1.10
11	5.50	890.80	0.43
12	6.00	892.80	0.22
13	6.50	894.30	0.17
14	7.00	895.40	0.12
15	7.50	896.30	0.10
16	8.00	897.20	0.10
17	8.50	898.10	0.10
18	9.00	898.80	0.08
19	9.50	899.50	0.08
20	10.00	900.20	0.08
21	10.50	900.90	0.08
22	11.00	901.40	0.06

USER INPUT BLANK VALUE

BLANK VALUE = 36.94995 micrograms carbon

BLANK FACTOR = 36.94995 / 10.99701 = +3.4E+00 ug/min Carbon

SAMPLE RESULTS:

(901.4 - 36.9561) (1)/(1) = +8.644E+02 g/L Carbon
 (901.4 - 36.9561) (1)/(1) (12) = +7.204E+01 Molar Carbon
 <<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By:

SL HOOD

00002

SS = .0595g + .200 ml spk 26N12 E
151.12

151.12

LABCORE Completed Worklist Report for Worklist# 24609

Analyst: jro

Instrument: U01

Book# _____

Method: _____ Rev/Mod _____

Worklist Comment: TX118, @U-01, STD= 10.0mL, High alpha, suspect PCB. skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLNK-PREP	0	0U-01	U-02	SOLID	1	2.18E+1	21.800	ug/g
1 BLNK-PREP	0	0U-01	U-02E	SOLID	1	5.65E+00	5.650	Ratio
2 STD	0	0U-01	U-02	SOLID	6.12E-02	5.08E-01	8.3	% Recovery
2 STD	0	0U-01	U-02E	SOLID	1	3.33E+00	3.330	Ratio
3 SAMPLE	S98T001524	0 F	0U-01	U-02	SOLID	N/A	2.40E+03	0.186 ug/g
3 SAMPLE	S98T001524	0 F	0U-01	U-02E	SOLID	N/A	3.67E+00	% Inst Error
4 DUP	S98T001524	0 F	0U-01	U-02	SOLID	2.40E+3	3.43E+3	35.334 RPD
4 DUP	S98T001524	0 F	0U-01	U-02E	SOLID	1	3.20E+00	3.200 Ratio
5 SPK	S98T001524	0 F	0U-01	U-02	SOLID	4.92E+01	5.00E+01	101.626 % Recovery
6 SAMPLE	S98T001534	0 F	0U-01	U-02	SOLID	N/A	3.35E+03	0.188 ug/g
6 SAMPLE	S98T001534	0 F	0U-01	U-02E	SOLID	N/A	3.22E+00	% Inst Error
7 DUP	S98T001534	0 F	0U-01	U-02	SOLID	3.35E+3	3.27E+3	2.417 RPD
7 DUP	S98T001534	0 F	0U-01	U-02E	SOLID	1	3.32E+00	3.320 Ratio
8 SAMPLE	S98T001535	0 F	0U-01	U-02	SOLID	N/A	6.17E+02	0.187 ug/g
8 SAMPLE	S98T001535	0 F	0U-01	U-02E	SOLID	N/A	3.18E+00	% Inst Error
9 DUP	S98T001535	0 F	0U-01	U-02	SOLID	6.17E+2	6.18E+2	0.162 RPD
9 DUP	S98T001535	0 F	0U-01	U-02E	SOLID	1	3.07E+00	3.070 Ratio
10 SPK	S98T001535	0 F	0U-01	U-02	SOLID	4.92E+01	3.87E+01	78.659 % Recovery

Final page for worklist# 24609

Analyst Signature

Date

5/16/98

Analyst Signature

Date

Reviewer Signature

Date

LABCORE Data Entry Template for Worklist# 24609

Analyst: JRO Instrument: U01 _____ Book# 33357

Method: LA-925-009 Rev/Mod B-0

Worklist Comment: TX118, @U-01, STD= 10.0mL, High alpha, suspect PCB. skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 BLNK-PREP			@U-01	SOLID		
2 STD			@U-01	SOLID		
3 SAMPLE	S98T001524 0 F	@U-01	SOLID	98000225 TX-118		
	Analytes Requested: U-02		, U-02E			
4 DUP	S98T001524 0 F	@U-01	SOLID			
5 SPK	S98T001524 0 F	@U-01	SOLID			
6 SAMPLE	S98T001534 0 F	@U-01	SOLID	98000225 TX-118		
	Analytes Requested: U-02		, U-02E			
7 DUP	S98T001534 0 F	@U-01	SOLID			
8 SAMPLE	S98T001535 0 F	@U-01	SOLID	98000225 TX-118		
	Analytes Requested: U-02		, U-02E			
9 DUP	S98T001535 0 F	@U-01	SOLID			
10 SPK	S98T001535 0 F	@U-01	SOLID			

Final page for worklist # 24609

Sgt. J. Olsen 6/18/98
Analyst Signature Date

Sgt. J. Olsen 6/29/98
Analyst Signature Date
Sgt. J. Olsen 6/29/98

Data Entry Comments:

WORKBOOK PAGE: STD2

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type		STANDARD
STD		33b57
Work List	STANDARD BOOK #	
24609	VOLUME OF SAMPLE (mL) (SS)	10.00
Test Code	DILUTION FACTOR OF SAMPLE (DF)	1.00
@U-01	PREPARATION FACTOR OF SAMPLE (PF)	1.00
Matrix	LIFETIME IN MICROSECONDS	189.00
LIQUID	R2 VALUE	0.9982
Batch Number	RANGE (HIGH OR LOW)	HIGH
98003096	INSTRUMENT UNCERTAINTY (IU)	1.69E-06
Rerun	INSTRUMENT RESULT (IR)	5.08E-05
0	DETECTION LEVEL (µg/mL)	3.70E-05
Sample Prep		
N/A	RESULT (µg/mL)	5.08E-02
Sample #	VALUE OF STANDARD	6.12E-02
STANDARD	%RECOVERY	83.01
Instrument Code	RELATIVE % UNCERTAINTY	3.3
U01		
Prepared By		
CJO	Result = DF * PF * IR * 1000	
Chemist		
MJL	Detection Level = 3.70 E-08 * DF * PF * 1000	
Analyst		
JRO	% Recovery = Result / Value of Standard * 100	
Date Complete		
06/29/98	Relative % Uncertainty = IU / IR * 100	
Analysis Date		
06/18/98		
Analysis Time		
09:00 AM		
Sample Point		
TX-118		

Analyst:

JRO

Date: 29-Jun-98

Signature of Chemist:

MJL

Date:

STANDARD.WB1 REV 2.0

925009ML

WORKBOOK PAGE: BLANK1

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type	BLNK-PREP		BLANK
Work List	VOLUME OF SAMPLE (mL)	(SS)	1.00
24609	DILUTION FACTOR OF SAMPLE	(DF)	1.00
Test Code	PREPARATION FACTOR OF SAMPLE	(PF)	10.00
@U-01	DIGEST FACTOR	(Dg/L)	1.9884
Matrix	LIFETIME IN MICROSECONDS		155.00
SOLID	R2 VALUE		0.9784
Batch Number	RANGE (HIGH OR LOW)		LOW
98003096	INSTRUMENT UNCERTAINTY	(IU)	2.45E-07
Rerun	INSTRUMENT RESULT	(IR)	4.34E-06
0	DETECTION LEVEL µg/g		1.86E-01
Sample Prep			
N/A	CONCENTRATION IN SOLUTION (g/L)		4.34E-05
Sample #	RESULT (µg/g)		2.18E+01
blank prep	RELATIVE % UNCERTAINTY		5.6
Instrument Code			
U01			
Prepared By	Result = Conc. in Solution (g/L) * 1000000 / Dg/L		
CJO			
Chemist	Detection Level = 3.70 E-08 * DF * PF * 1000000 / DF		
MJL			
Analyst	Relative % Uncertainty = IU / IR * 100		
JRO			
Date Complete	Concentration in Solution (g/L) = IR * DF * PF		
06/29/98			
Analysis Date			
06/18/98			
Analysis Time			
09:00 AM			
Sample Point			
TX-118			

Analyst:	JRO	Date:	29-Jun-98
Signature of Chemist:		MJL	Date:

BLANK.WB1 REV 2.0

925009ML

WORKBOOK PAGE: SAM3

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type		SAMPLE
SAMPLE		
Work List	VOLUME OF SAMPLE (mL) (SS)	1.00
24609	DILUTION FACTOR OF SAMPLE (DF)	1.00
Test Code	PREPARATION FACTOR OF SAMPLE (PF)	10.00
@U-01	DIGEST FACTOR (Dg/L)	1.9684
Matrix	LIFETIME IN MICROSECONDS	186.00
SOLID	R2 VALUE	0.9958
Batch Number	RANGE (HIGH OR LOW)	HIGH
98003096	INSTRUMENT UNCERTAINTY (IU)	1.75E-05
Rerun	INSTRUMENT RESULT (IR)	4.77E-04
1	DETECTION LEVEL $\mu\text{g/g}$	1.86E-01
Sample Prep		
FUSION01	CONCENTRATION IN SOLUTION (g/L)	4.77E-03
Sample #	RESULT ($\mu\text{g/g}$)	2.40E+03
S98T001524	RELATIVE % UNCERTAINTY	3.7
Instrument Code		
U01		
Prepared By	Result = Conc. in Solution (g/L) * 1000000 / Dg/L	
CJO		
Chemist	Detection Level = $3.70 \text{ E-08} * \text{DF} * \text{PF} * 1000000 / \text{DF}$	
M.J.L.		
Analyst	Relative % Uncertainty = $\text{IU} / \text{IR} * 100$	
JRO		
Date Complete	Concentration in Solution (g/L) = $\text{IR} * \text{DF} * \text{PF}$	
06/29/98		
Analysis Date		
06/18/98		
Analysis Time		
09:00 AM		
Sample Point		
TX-118		

Analyst:	JRO	Date: 29-Jun-98
Signature of Chemist:	MJL	Date:

SAMPLE.WB1 REV 2.0

925009ML

WORKBOOK PAGE: DUP4

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type			DUP
DUP			
Work List	VOLUME OF SAMPLE (mL)	(SS)	1.00
24609	DILUTION FACTOR OF SAMPLE	(DF)	1.00
Test Code	PREPARATION FACTOR OF SAMPLE	(PF)	10.00
@U-01	DIGEST FACTOR	(Dg/L)	1.9756
Matrix	LIFETIME IN MICROSECONDS		192.00
SOLID	R2 VALUE		0.9990
Batch Number	RANGE (HIGH OR LOW)		HIGH
98003096	INSTRUMENT UNCERTAINTY	(IU)	2.17E-05
Rerun	INSTRUMENT RESULT	(IR)	6.78E-04
1	DETECTION LEVEL $\mu\text{g/g}$		1.87E-01
Sample Prep			
FUSION01	CONCENTRATION IN SOLUTION (g/L)		6.78E-03
Sample #	RESULT ($\mu\text{g/g}$)		3.43E+03
S98T001524	RELATIVE % UNCERTAINTY		3.2
Instrument Code			
U01			
Prepared By	Result = Conc. in Solution (g/L) * 1000000 / Dg/L		
CJO			
Chemist	Detection Level = $3.70 \text{ E-}08 * \text{DF} * \text{PF} * 1000000 / \text{DF}$		
MJL			
Analyst	Relative % Uncertainty = $\text{IU} / \text{IR} * 100$		
JRO			
Date Complete	Concentration in Solution (g/L) = $\text{IR} * \text{DF} * \text{PF}$		
06/29/98			
Analysis Date			
06/18/98			
Analysis Time			
09:00 AM			
Sample Point			
TX-118			

Analyst:	JRO	Date:	29-Jun-98
Signature of Chemist:	MJL	Date:	

SAMPLE.WB1 REV 2.0

925009ML

WORKBOOK PAGE: SPIKE5

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type	SPIKE
SPK	SPIKE BOOK #
98003096	32B65
VOLUME OF SAMPLE + SPIKE (mL)	(SS) 1.10
DILUTION FACTOR OF SAMPLE + SPIKE	(DF) 1.00
PREPARATION FACTOR OF SAMPLE + SPIKE	(PF) 10.00
DIGEST FACTOR OF SAMPLE	(DDF) 1.9984
LIFETIME IN MICROSECONDS	175.00
R2 VALUE	0.9934
RANGE (HIGH OR LOW)	HIGH
INSTRUMENT RESULT	(IR) 9.77E-04
CONCENTRATION IN SOLUTION (g/L)	(CONC) 9.77E-03
SPIKE VALUE (g/L)	(SV) 4.92E-02
INITIAL VOLUME OF SPIKE (mL)	(IV) 0.10
ORIGINAL SAMPLE VOLUME BEFORE PREP (mL)	(OSV) 1.00
CONCENTRATION IN SOLN (g/L) FROM SAMPLE FORM	(SR) 4.77E-03
<p>S98T001624</p> <p>Instrument Code</p> <p>U01</p> <p>Prepared By</p> <p>CJO</p> <p>QC Actual (µg/mL) = SV (g/L) * 1000</p> <p>Chemist</p> <p>MJL</p> <p>QC Found (µg/mL) = (CONC - SR) * OSV / IV * 1000</p> <p>Analyst</p> <p>JRO</p> <p>% Recovery = QC FOUND / QC ACTUAL</p> <p>Date Complete</p> <p>06/29/98</p> <p>Analysis Date</p> <p>06/18/98</p> <p>QC ACTUAL = 4.92E+01 µg/mL</p> <p>QC FOUND = 5.00E+01 µg/mL</p> <p>% SPIKE RECOVERY = 101.6%</p> <p>Analysis Time</p> <p>06:00 AM</p> <p>Sample Point</p> <p>TX-110</p>	

Analyst:	JRO	Date:	29-Jun-98
Signature of Chemist:	MJL	Date:	

SPIKE.WB1 REV 2.0

925009ML

WORKBOOK PAGE: SAM6

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type		SAMPLE
SAMPLE		
Work List	VOLUME OF SAMPLE (mL) (SS)	1.00
24609	DILUTION FACTOR OF SAMPLE (DF)	1.00
Test Code	PREPARATION FACTOR OF SAMPLE (PF)	10.00
@U-01	DIGEST FACTOR (Dg/L)	1.9644
Matrix	LIFETIME IN MICROSECONDS	184.00
SOLID	R2 VALUE	0.9989
Batch Number	RANGE (HIGH OR LOW)	HIGH
98003096	INSTRUMENT UNCERTAINTY (IU)	2.12E-05
Rerun	INSTRUMENT RESULT (IR)	6.58E-04
1	DETECTION LEVEL µg/g	1.88E-01
Sample Prep		
FUSION01	CONCENTRATION IN SOLUTION (g/L)	6.58E-03
Sample #	RESULT (µg/g)	3.35E+03
S98T001534	RELATIVE % UNCERTAINTY	3.2
Instrument Code		
U01		
Prepared By	Result = Conc. in Solution (g/L) * 1000000 / Dg/L	
CJO		
Chemist	Detection Level = 3.70 E-08 * DF * PF * 1000000/ DF	
MJL		
Analyst	Relative % Uncertainty = IU / IR * 100	
JRO		
Date Complete	Concentration in Solution (g/L) = IR * DF * PF	
06/29/98		
Analysis Date		
06/18/98		
Analysis Time		
09:00 AM		
Sample Point		
TX-118		

Analyst:	JRO	Date: 29-Jun-98
Signature of Chemist:	MJL	Date:

SAMPLE.WB1 REV 2.0

925009ML

WORKBOOK PAGE: DUP7

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type		DUP
DUP		
Work List	VOLUME OF SAMPLE (mL) (SS)	1.00
24609	DILUTION FACTOR OF SAMPLE (DF)	1.00
Test Code	PREPARATION FACTOR OF SAMPLE (PF)	10.00
@U-01	DIGEST FACTOR (Dg/L)	1.9440
Matrix	LIFETIME IN MICROSECONDS	169.00
SOLID	R2 VALUE	0.9986
Batch Number	RANGE (HIGH OR LOW)	HIGH
98003096	INSTRUMENT UNCERTAINTY (IU)	2.11E-05
Rerun	INSTRUMENT RESULT (IR)	6.36E-04
1	DETECTION LEVEL µg/g	1.90E-01
Sample Prep		
FUSION01	CONCENTRATION IN SOLUTION (g/L)	6.36E-03
Sample #	RESULT (µg/g)	3.27E+03
S98T001534	RELATIVE % UNCERTAINTY	3.3
Instrument Code		
U01		
Prepared By	Result = Conc. in Solution (g/L) * 1000000 / Dg/L	
CJO		
Chemist	Detection Level = 3.70 E-08 * DF * PF * 1000000 / DF	
MJL		
Analyst	Relative % Uncertainty = IU / IR * 100	
JRO		
Date Complete	Concentration in Solution (g/L) = IR * DF * PF	
06/29/98		
Analysis Date		
06/18/98		
Analysis Time		
09:00 AM		
Sample Point		
TX-118		

Analyst:	JRO	Date:	29-Jun-98
Signature of Chemist:	MJL	Date:	

SAMPLE.WB1 REV 2.0

925009ML

WORKBOOK PAGE: SAM8

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type		
SAMPLE	SAMPLE	
Work List	VOLUME OF SAMPLE (mL) (SS)	1.00
24609	DILUTION FACTOR OF SAMPLE (DF)	1.00
Test Code	PREPARATION FACTOR OF SAMPLE (PF)	10.00
@U-01	DIGEST FACTOR (Dg/L)	1.9788
Matrix	LIFETIME IN MICROSECONDS	167.00
SOLID	R2 VALUE	0.9993
Batch Number	RANGE (HIGH OR LOW)	HIGH
98003096	INSTRUMENT UNCERTAINTY (IU)	3.88E-06
Rerun	INSTRUMENT RESULT (IR)	1.22E-04
1	DETECTION LEVEL $\mu\text{g/g}$	1.87E-01
Sample Prep		
FUSION01	CONCENTRATION IN SOLUTION (g/L)	1.22E-03
Sample #	RESULT ($\mu\text{g/g}$)	6.17E+02
S98T001535	RELATIVE % UNCERTAINTY	3.2
Instrument Code		
U01		
Prepared By	Result = Conc. in Solution (g/L) * 1000000 / Dg/L	
CJO		
Chemist	Detection Level = $3.70 \text{ E-}08 * \text{DF} * \text{PF} * 1000000 / \text{DF}$	
MJL		
Analyst	Relative % Uncertainty = $\text{IU} / \text{IR} * 100$	
JRO		
Date Complete	Concentration in Solution (g/L) = $\text{IR} * \text{DF} * \text{PF}$	
06/29/98		
Analysis Date		
06/18/98		
Analysis Time		
09:00 AM		
Sample Point		
TX-118		

Analyst:	JRO	Date:	29-Jun-98
Signature of Chemist:	MJL	Date:	

SAMPLE WB1 REV 2.0

925009ML

WORKBOOK PAGE: DUP9

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type		DUP
DUP		
Work List	VOLUME OF SAMPLE (mL) (SS)	1.00
24609	DILUTION FACTOR OF SAMPLE (DF)	1.00
Test Code	PREPARATION FACTOR OF SAMPLE (PF)	10.00
@U-01	DIGEST FACTOR (Dg/L)	1.9738
Matrix	LIFETIME IN MICROSECONDS	211.00
SOLID	R2 VALUE	0.9999
Batch Number	RANGE (HIGH OR LOW)	HIGH
98003096	INSTRUMENT UNCERTAINTY (IU)	3.74E-06
Rerun	INSTRUMENT RESULT (IR)	1.22E-04
1	DETECTION LEVEL $\mu\text{g/g}$	1.87E-01
Sample Prep		
FUSION01	CONCENTRATION IN SOLUTION (g/L)	1.22E-03
Sample #	RESULT ($\mu\text{g/g}$)	6.18E+02
S98T001535	RELATIVE % UNCERTAINTY	3.1
Instrument Code		
U01		
Prepared By	Result = Conc. in Solution (g/L) * 1000000 / Dg/L	
CJO		
Chemist	Detection Level = $3.70 \text{ E-}08 * \text{DF} * \text{PF} * 1000000 / \text{DF}$	
MJL		
Analyst	Relative % Uncertainty = $\text{IU} / \text{IR} * 100$	
JRO		
Date Complete	Concentration in Solution (g/L) = $\text{IR} * \text{DF} * \text{PF}$	
06/29/98		
Analysis Date		
06/18/98		
Analysis Time		
09:00 AM		
Sample Point		
TX-118		

Analyst:	JRO	Date:	29-Jun-98
Signature of Chemist:		MJL	Date:

SAMPLE.WB1 REV 2.0

925009ML

WORKBOOK PAGE: SPIKE10

Uranium by Phosphorescence: LA-925-009 (B-0) LIQUID/SOLID

Type	SPIKE
SPK	32B55
Work Log	VOLUME OF SAMPLE + SPIKE (mL) (SS) 4.99
24609	DILUTION FACTOR OF SAMPLE + SPIKE (DF) 1.00
Test Code	PREPARATION FACTOR OF SAMPLE + SPIKE (PF) 10.00
@U-01	DIGEST FACTOR OF SAMPLE (DDF) 1.9788
Matrix	LIFETIME IN MICROSECONDS 180.00
SOLID	R2 VALUE 0.9943
Batch Number	RANGE (HIGH OR LOW) HIGH
98003096	INSTRUMENT RESULT (IR) 5.09E-04
Refun	CONCENTRATION IN SOLUTION (g/L) (CONC) 5.09E-03
1	SPIKE VALUE (g/L) (SV) 4.92E-02
Sample Prep	INITIAL VOLUME OF SPIKE (mL) (IV) 0.10
FUSION01	ORIGINAL SAMPLE VOLUME BEFORE PREP (mL) (OSV) 1.00
Sample Number	CONCENTRATION IN SOLN (g/L) FROM SAMPLE FORM (SR) 1.22E-03
S98T001535	
Instrument Code	
U01	Concentration = IR * DF * PF
Prepared By	
CJO	QC Actual (µg/mL) = SV (g/L) * 1000
Chemist	
M.J.L.	QC Found (µg/mL) = (CONC - SR) * OSV / IV * 1000
Analyst	
JRO	% Recovery = QC FOUND / QC ACTUAL
Date Complete	
06/29/98	
Analysis Date	
06/18/98	
Analysis Time	
09:00 AM	
Sample Point	
TX-116	

QC ACTUAL	=	4.92E+01	µg/mL
QC FOUND	=	3.87E+01	µg/mL
% SPIKE RECOVERY	=	78.7%	

Analyst:	JRO	Date:	29-Jun-98
Signature of Chemist:	M.J.L.	Date:	

SPIKE.WB1 REV 2.0

925009ML

Standard Report

Standard for HIGH Range - 9.90E-04 g/L

Laser Pulses 1000

Date/Time 06/18/98/09:21:07

Reference		Standard	
Intensity	6756	Intensity	50036
Lifetime	304.54 + 2 us	Lifetime	278.97 + .73 us
R2	.99813	R2	.9997
Intercept	7578.5	Intercept	58221.87 + 2.41E+02

Standard Report

Standard for HIGH Range - 4.98E-04 g/L

Laser Pulses 1000

Date/Time 06/18/98/09:38:16

Reference		Standard	
Intensity	6834	Intensity	27192
Lifetime	302.76 + 2.12 us	Lifetime	261.28 + .74 us
R2	.99789	R2	.9997
Intercept	7571.37	Intercept	31855.71 + 1.78E+02

Standard Report

Standard for LOW Range - 2.48E-06 g/L

Laser Pulses 1000

Date/Time 06/18/98/09:47:11

Reference		Standard	
Intensity	6813	Intensity	7401
Lifetime	305.02 + 2.2 us	Lifetime	227.03 + .74 us
R2	.99776	R2	.9995
Intercept	7535.28	Intercept	9093.5 + 95.36

Sample ID blkprep
 Description blk
 Ref. Ratio .99
 Laser Pulses 1000
 Lifetime 155 + 3.5 us
 R2 .9784
 Integrated 147586
 Range: LOW

Date/Time 06/18/98/13:42:59

Cal Y=3.67E+09X0

Intensity 15132 (t= 39 us)

Conc 4.34E-06 + 2.45E-07 g/L

Dilution Factor 1 mL/mL

FINAL RESULT 4.34E-06 + 2.45E-07 g/L

Sample ID 33b57 Date/Time 06/18/98/14:20:50
Description std Cal Y=5.88E+07X+850.916
Ref. Ratio 1.049 Intensity 2686 (t= 39 us)
Laser Pulses 1000 Conc 5.08E-05 + 1.69E-06 g/L
Lifetime 189 + 1.237 us Dilution Factor 1 mL/mL
R2 .9982
Integrated 41316 FINAL RESULT 5.08E-05 + 1.69E-06 g/L
Range: HIGH

Sample ID S98T001524 Date/Time 06/18/98/14:26:13
Description sam Cal Y=5.88E+07X+850.916
Ref. Ratio 1.041 Intensity 25062 (t= 39 us)
Laser Pulses 1000 Conc 4.77E-04 + 1.75E-05 g/L
Lifetime 186 + 1.854 us Dilution Factor 1 mL/mL
R2 .9958
Integrated 314947 FINAL RESULT 4.77E-04 + 1.75E-05 g/L
Range: HIGH

Sample ID S98T001524 Date/Time 06/18/98/14:28:36
Description dup Cal Y=5.88E+07X+850.916
Ref. Ratio 1.072 Intensity 32939 (t= 39 us)
Laser Pulses 1000 Conc 6.78E-04 + 2.17E-05 g/L
Lifetime 192 + .941 us Dilution Factor 1 mL/mL
R2 .999
Integrated 454636 FINAL RESULT 6.78E-04 + 2.17E-05 g/L
Range: HIGH

Sample ID S98T001524 Date/Time 06/18/98/14:32:30
Description spk Cal Y=5.88E+07X+850.916
Ref. Ratio 1.065 Intensity 53830 (t= 39 us)
Laser Pulses 1000 Conc 9.77E-04 + 4.00E-05 g/L
Lifetime 176 + 2.233 us Dilution Factor 1 mL/mL
R2 .9931
Integrated 604161 FINAL RESULT 9.77E-04 + 4.00E-05 g/L
Range: HIGH

Sample ID S98T001534 Date/Time 06/18/98/14:35:32
Description sam Cal Y=5.88E+07X+850.916
Ref. Ratio 1.047 Intensity 31443 (t= 39 us)
Laser Pulses 1000 Conc 6.58E-04 + 2.12E-05 g/L
Lifetime 184 + .92 us Dilution Factor 1 mL/mL
R2 .9989
Integrated 421426 FINAL RESULT 6.58E-04 + 2.12E-05 g/L
Range: HIGH

Sample ID S98T001534 Date/Time 06/18/98/14:56:14
Description dup Cal Y=5.88E+07X+850.916
Ref. Ratio 1.087 Intensity 30307 (t= 39 us)
Laser Pulses 1000 Conc 6.36E-04 + 2.11E-05 g/L
Lifetime 169 + .972 us Dilution Factor 1 mL/mL
R2 .9986
Integrated 371256 FINAL RESULT 6.36E-04 + 2.11E-05 g/L
Range: HIGH

HNF-1651 REV. 0

Sample ID S98T001535 Date/Time 06/18/98/14:41:24
 Description sam Cal Y=5.88E+07X+850.916
 Ref. Ratio 1.08 Intensity 5790 (t= 39 us)
 Laser Pulses 1000 Conc 1.22E-04 + 3.88E-06 g/L
 Lifetime 167 + .684 us Dilution Factor 1 mL/mL
 R2 .9993
 Integrated 75105 FINAL RESULT 1.22E-04 + 3.88E-06 g/L
 Range: HIGH

Sample ID S98T001535 Date/Time 06/18/98/14:43:27
 Description dup Cal Y=5.88E+07X+850.916
 Ref. Ratio 1.093 Intensity 6165 (t= 39 us)
 Laser Pulses 1000 Conc 1.22E-04 + 3.74E-06 g/L
 Lifetime 211 + .302 us Dilution Factor 1 mL/mL
 R2 .9999
 Integrated 98121 FINAL RESULT 1.22E-04 + 3.74E-06 g/L
 Range: HIGH

Sample ID S98T001535 Date/Time 06/18/98/14:46:44
 Description dup Cal Y=5.88E+07X+850.916
 Ref. Ratio 1.096 Intensity 6292 (t= 39 us)
 Laser Pulses 1000 Conc 1.23E-04 + 3.78E-06 g/L
 Lifetime 221 + .512 us Dilution Factor 1 mL/mL
 R2 .9998
 Integrated 103369 FINAL RESULT 1.23E-04 + 3.78E-06 g/L
 Range: HIGH

Sample ID S98T001535 Date/Time 06/18/98/14:49:18
 Description spk Cal Y=5.88E+07X+850.916
 Ref. Ratio 1.083 Intensity 27446 (t= 39 us)
 Laser Pulses 1000 Conc 5.09E-04 + 1.98E-05 g/L
 Lifetime 180 + 2.092 us Dilution Factor 1 mL/mL
 R2 .9943
 Integrated 325836 FINAL RESULT 5.09E-04 + 1.98E-05 g/L
 Range: HIGH

RADIOCHEMICAL ANALYSIS

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LABCORE Completed Worklist Report for Worklist# 24402

Analyst: akl Instrument: AB18 Book#

Method: Rev/Mod

Worklist Comment: TX118, @AB-01, SUSPECT PCB, SS by Ludlum. Std=1.0mL skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0	0AB-01	ALPHA01	SOLID	1.80E-04	1.66E-4	92.222 % Recovery	
1 STD	0	0AB-01	ALPHA01E	SOLID	1	3.67E+00	3.670 % Ct. Error	
1 STD	0	0AB-01	BETA-01	SOLID	2.00E-03	2.08E-3	104.000 % Recovery	
1 STD	0	0AB-01	BETA-01E	SOLID	1	8.10E-01	0.810 % Ct. Error	
2 BLNK-PREP	0	0AB-01	ALPHA01	SOLID	1	5.31E-2	0.053 uCi/g	
2 BLNK-PREP	0	0AB-01	ALPHA01E	SOLID	1.00	5.75E+01	57.500 uCi/g	
2 BLNK-PREP	0	0AB-01	BETA-01	SOLID	1	1.40E+0	1.400 uCi/g	
2 BLNK-PREP	0	0AB-01	BETA-01E	SOLID	1.00	9.10E+00	9.100 uCi/g	
3 BLNK/BKG	0	0AB-01	ALPHA01	SOLID	1.00E+00	9.76E+00	9.760 BLNK/BKG	
3 BLNK/BKG	0	0AB-01	BETA-01	SOLID	1.00E+00	4.30E+00	4.300 BLNK/BKG	
4 SAMPLE	S98T001524	0 F	0AB-01	ALPHA01	SOLID	N/A	3.87E+01	2.74E-002 uCi/g
4 SAMPLE	S98T001524	0 F	0AB-01	ALPHA01E	SOLID	N/A	1.70E+00	% Ct. Error
4 SAMPLE	S98T001524	0 F	0AB-01	BETA-01	SOLID	N/A	6.49E+02	0.133 uCi/g
4 SAMPLE	S98T001524	0 F	0AB-01	BETA-01E	SOLID	N/A	3.26E-01	% Ct. Error
5 DUP	S98T001524	0 F	0AB-01	ALPHA01	SOLID	3.87E+1	4.03E+1	4.051 RPD
5 DUP	S98T001524	0 F	0AB-01	ALPHA01E	SOLID	1.00	1.67E+00	1.670 % Ct. Error
5 DUP	S98T001524	0 F	0AB-01	BETA-01	SOLID	5.49E+2	6.43E+2	0.929 RPD
5 DUP	S98T001524	0 F	0AB-01	BETA-01E	SOLID	1.00	3.29E-01	0.329 % Ct. Error
6 SPK	S98T001524	0 F	0AB-01	ALPHA01	SOLID	4.34E-02	3.80E-02	87.558 % Recovery
6 SPK	S98T001524	0 F	0AB-01	BETA-01	SOLID	1.48E-01	1.51E-01	102.027 % Recovery
7 SAMPLE	S98T001534	0 F	0AB-01	ALPHA01	SOLID	N/A	1.04E+01	2.77E-002 uCi/g
7 SAMPLE	S98T001534	0 F	0AB-01	ALPHA01E	SOLID	N/A	3.30E+00	% Ct. Error
7 SAMPLE	S98T001534	0 F	0AB-01	BETA-01	SOLID	N/A	5.68E+02	0.135 uCi/g
7 SAMPLE	S98T001534	0 F	0AB-01	BETA-01E	SOLID	N/A	3.51E-01	% Ct. Error
8 DUP	S98T001534	0 F	0AB-01	ALPHA01	SOLID	1.04E+1	9.50E+0	9.045 RPD
8 DUP	S98T001534	0 F	0AB-01	ALPHA01E	SOLID	1.00	3.54E+00	3.540 % Ct. Error
8 DUP	S98T001534	0 F	0AB-01	BETA-01	SOLID	5.68E+2	5.48E+2	3.584 RPD
8 DUP	S98T001534	0 F	0AB-01	BETA-01E	SOLID	1.00	3.61E-01	0.361 % Ct. Error
9 SAMPLE	S98T001535	0 F	0AB-01	ALPHA01	SOLID	N/A	2.01E+00	5.99E-003 uCi/g
9 SAMPLE	S98T001535	0 F	0AB-01	ALPHA01E	SOLID	N/A	3.48E+00	% Ct. Error
9 SAMPLE	S98T001535	0 F	0AB-01	BETA-01	SOLID	N/A	1.41E+02	2.92E-002 uCi/g
9 SAMPLE	S98T001535	0 F	0AB-01	BETA-01E	SOLID	N/A	3.27E-01	% Ct. Error
10 DUP	S98T001535	0 F	0AB-01	ALPHA01	SOLID	2.01E+0	1.76E+0	13.263 RPD
10 DUP	S98T001535	0 F	0AB-01	ALPHA01E	SOLID	1.00	3.73E+00	3.730 % Ct. Error
10 DUP	S98T001535	0 F	0AB-01	BETA-01	SOLID	1.41E+2	1.28E+2	9.665 RPD
10 DUP	S98T001535	0 F	0AB-01	BETA-01E	SOLID	1.00	3.45E-01	0.345 % Ct. Error
11 SPK	S98T001535	0 F	0AB-01	ALPHA01	SOLID	4.34E-02	3.24E-02	74.654 % Recovery
11 SPK	S98T001535	0 F	0AB-01	BETA-01	SOLID	1.48E-01	1.44E-01	97.297 % Recovery

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

LABCORE Completed Worklist Report for Worklist# 24402

Seq	Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
-----	------	---------	-----	------	--------	--------	-------	-------------	------

Final page for worklist# 24402

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

Reviewer Signature _____ Date 9 June 98

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

LABCORE Data Entry Template for Worklist# 24402

Analyst: AKL Instrument: AB00 18 Book# 31657Method: LA-508-101 Rev/Mod 60Worklist Comment: TX118, @AB-01, SUSPECT PCB, SS by Ludlum. Std=1.0mL skm
That was as suspect PCB

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@AB-01	SOLID		
2	BLNK-PREP				@AB-01	SOLID		
3	BLNK/BKG				@AB-01	SOLID		
4	SAMPLE	S98T001524	0	F	@AB-01	SOLID	98000225	TX-118
		Analytes Requested: ALPHA01, ALPHA01E, BETA-01, BETA-01E						
5	DUP	S98T001524	0	F	@AB-01	SOLID		
6	SPK	S98T001524	0	F	@AB-01	SOLID		
7	SAMPLE	S98T001534	0	F	@AB-01	SOLID	98000225	TX-118
		Analytes Requested: ALPHA01, ALPHA01E, BETA-01, BETA-01E						
8	DUP	S98T001534	0	F	@AB-01	SOLID		
9	SAMPLE	S98T001535	0	F	@AB-01	SOLID	98000225	TX-118
		Analytes Requested: ALPHA01, ALPHA01E, BETA-01, BETA-01E						
10	DUP	S98T001535	0	F	@AB-01	SOLID		
11	SPK	S98T001535	0	F	@AB-01	SOLID		

Final page for worklist # 24402

Analyst Signature Alita Huron Date 6/5/98Analyst Signature McB... Date 6-7-98McB... 6/3/98

Data Entry Comments:

AS Tollefson 6/3/98
Mng. in Accord w/ 60-100-114 (PCB)

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

WORKBOOK PAGE: STD1

TB : LA-508-101 (G-0) LA-508-113 (B-0) STANDARD

	STANDARD	REPLICATE
Type	DETECTOR NUMBER	18
STD	DISH SIZE (1, 2, or 5) (MS)	2
Worksheet	GROSS COUNTS (GC)	59402
24402	COUNT TIME in MINUTES (CT)	30
Attribution?	BACKGROUND in cpm (BKG)	7.9
TB	SAMPLE SIZE in mL (SS)	1.000
Test Code	DILUTION FACTOR (DF)	1
@AB-01	STANDARD BOOK NUMBER (Std BN)	31B57
Matrix	EFFICIENCY FACTOR (EFF)	0.4260
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	1972.167
Batch Number	Standard Value in $\mu\text{Ci/mL}$	2.00E-03
98002882	Concentration in $\mu\text{Ci/L}$ =	2.09E+00
ReRun	Replicate Concentration in $\mu\text{Ci/L}$ =	2.08E+00
0	AVERAGE CONCENTRATION in $\mu\text{Ci/L}$ =	2.0833E+00
Sample Prep		
N/A		
Sample	Rs (Sample Count Rate) = (TC / CT) - BKG	
WL24402-STD	TOTAL BETA $\mu\text{Ci/L}$ = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/ μCi)	
Instrument Code	TOTAL BETA $\mu\text{Ci/mL}$ = TOTAL BETA $\mu\text{Ci/L}$ / 1000mL/L	
WB27809	Relative Counting Error = [(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.	
EMB		
Chemist		
SAC	TOTAL BETA CONCENTRATION in $\mu\text{Ci/mL}$ =	2.08E-03
Analyst		
AKL		
Date Complete		
06/07/98	RELATIVE COUNTING ERROR =	0.8%
Analysis Date		
06/05/98		
Analysis Time		
01:40 PM		
Sample Point		
TX-118		

DETECTION
LEVEL2.63E-06
 $\mu\text{Ci/mL}$

Analyst:	EMB	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 June 98
STANDARD.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: STD2

AT : LA-508-101 (G-0)

LA-508-113 (B-0) STANDARD

	STANDARD	REPLICATE
Type	DETECTOR NUMBER	18
STD	DISH SIZE (1, 2, or 5) (MS)	2
Worklist	GROSS COUNTS (GC)	2983
24402	COUNT TIME in MINUTES (CT)	30
Alpha157	BACKGROUND in cpm (BKG)	0.07
AT	SAMPLE SIZE in mL (SS)	1.000
TestCode	DILUTION FACTOR (DF)	1
@AB-01	STANDARD BOOK NUMBER (Std BN)	31B57
Matrix	EFFICIENCY FACTOR (EFF)	0.2644
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE	99.363
Batch Number	Standard Value in µCi/mL	1.80E-04
98002882	Concentration in µCi/L =	1.69E-01
Reron	Replicate Concentration in µCi/L =	1.62E-01
0	AVERAGE CONCENTRATION in µCi/L =	1.6588E-01
Sample Prep		
N/A		
Sample	Rs (Sample Count Rate) = (TC / CT) - BKG	
WL24402-STD	ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)	
Instrument Code	ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L	
WB27809	Relative Counting Error = [(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.	
EMB		
Chemist		
SAC	ALPHA TOTAL CONCENTRATION in µCi/mL =	1.66E-04
Analyst		
AKL		
Date Complete		
06/07/98	RELATIVE COUNTING ERROR =	3.7%
Analysis Date		
06/05/98		
Analysis Time		
01:40 PM		
Sample Point		
TX-118		

DETECTION
LEVEL5.39E-07
µCi/mL

Analyst:	EMB	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 7/2/98

STANDARD.WB1 Rev. 1.0

508101ML

WORKBOOK PAGE: BLANK3

TB : LA-508-101 (G-0)

SOLIDS

		BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER	18	18
BLNK-PREP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	992	1046
24402	COUNT TIME in MINUTES (CT)	30	30
24402	BACKGROUND in cpm (BKG)	7.9	7.9
TB	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9884	1.9884
Matrix	EFFICIENCY FACTOR (EFF)	0.4260	0.4260
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	25.167	26.967
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	1.35E+00	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	1.45E+00	
0	Average Concentration in $\mu\text{Ci/g}$	1.4000E+00	
Sample Prep			
N/A	Rs (Sample Count Rate) = $(TC / CT) - BKG$		
Sampler	TOTAL BETA $\mu\text{Ci/g}$ = $Rs * 1000\text{mL} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WL24402 BLNK-PREP			
Instrument Code	Relative Counting Error = $[(The Square Root of TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
EMB			
Chemist			
SAC	TOTAL BETA in $\mu\text{Ci/g}$ (Average) =	1.40E+00	DETECTION LEVEL
Analyst			
AKL			
Date Complete			1.33E-01 $\mu\text{Ci/g}$
06/07/98	RELATIVE COUNTING ERROR	9.1%	
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
BLANK WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: BLANK4

AT : LA-508-101 (G-0)

SOLIDS

		BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER	18	18
BLNK-PREP	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	17	24
24402	COUNT TIME in MINUTES (CT)	30	30
ANALYST	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9884	1.9884
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	0.497	0.730
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	4.30E-02	
Repur	Replicate Concentration in $\mu\text{Ci/g}$	6.32E-02	
0	Average Concentration in $\mu\text{Ci/g}$	5.3076E-02	
Sample Prep			
N/A	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sampler	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
WL24402 BLNK-PREP			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
EMB			
Chemist			
SAC	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	5.31E-02	DETECTION LEVEL
Analyst			
AKL			
Date Complete			2.74E-02 $\mu\text{Ci/g}$
06/07/98	RELATIVE COUNTING ERROR	57.5%	
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
BLANK.WB1 Rev. 1.0	508101ML	

TB : LA-508-101 (G-0)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	18	18
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	361369	364446
24402	COUNT TIME in MINUTES (CT)	30	30
Author (BY)	BACKGROUND in cpm (BKG)	7.9	7.9
TB	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9884	1.9884
Matrix	EFFICIENCY FACTOR (EFF)	0.4260	0.4260
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	12037.733	12140.300
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	6.47E+02	
Rerun	Replicate Concentration in $\mu\text{Ci/g}$	6.52E+02	
0	Average Concentration in $\mu\text{Ci/g}$	6.4930E+02	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sample /	TOTAL BETA $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S98T001524			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
EMB			
Chemist			
SAC	TOTAL BETA in $\mu\text{Ci/g}$ (Average) =	6.49E+02	DETECTION LEVEL
Analyst			
AKL			1.33E-01
Date Complete	RELATIVE COUNTING ERROR	0.3%	$\mu\text{Ci/g}$
06/07/98			
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jan 98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: SAM8

AT : LA-508-101 (G-0)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	18	18
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	13353	13493
24402	COUNT TIME in MINUTES (CT)	30	30
Atomically	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9884	1.9884
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE	445.030	449.697
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	3.85E+01	
Rerun	Replicate Concentration in $\mu\text{Ci/g}$	3.89E+01	
0	Average Concentration in $\mu\text{Ci/g}$	3.8714E+01	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S98T001524			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
EMB			
Chemist			
SAC	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	3.87E+01	DETECTION LEVEL
Analyst			
AKL			2.74E-02
Date Complete			$\mu\text{Ci/g}$
06/07/98	RELATIVE COUNTING ERROR	1.7%	
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 June 98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: DUP9

TB : LA-508-101 (G-0)

SOLIDS

	DUP	REPLICATE
Type	18	18
DUP	2	2
Worklist	356633	357853
24402	30	30
ANALYST	7.9	7.9
TB	1.000	1.000
Test Code	101	101
@AB-01	1.9756	1.9756
Matrix	0.4260	0.4260
SOLID	11879.867	11920.533
Batch Number		
98002882	6.42E+02	
Rerun	6.44E+02	
0	6.4330E+02	
Sample Prep		
FUSION01		
Sample #		
S98T001524		
Instrument Code		
WB27809		
Prepared By		
EMB		
Chemist		
SAC		
Analyst		
AKL		
Date Complete		
06/07/98		
Analysis Date		
06/05/98		
Analysis Time		
01:40 PM		
Sample Point		
TX-118		

DETECTOR NUMBER	18	18
DISH SIZE (1, 2, or 5)	(MS)	2
GROSS COUNTS	(GC)	356633
COUNT TIME in MINUTES	(CT)	30
BACKGROUND in cpm	(BKG)	7.9
SAMPLE SIZE in mL	(SS)	1.000
DILUTION FACTOR	(DF)	101
DIGEST GRAMS of SOLIDS / L	(Dg/L)	1.9756
EFFICIENCY FACTOR	(EFF)	0.4260
Lc, Rmax, or Rs (SAMPLE RATE) as APPROPRIATE		11879.867
Blank Concentration in $\mu\text{Ci/g}$		6.42E+02
Replicate Concentration in $\mu\text{Ci/g}$		6.44E+02
Average Concentration in $\mu\text{Ci/g}$		6.4330E+02

Rs (Sample Count Rate) = (TC / CT) - BKG	
TOTAL BETA $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$	
Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$	
Detection Levels and Less Than Values are determined from Procedure LA-508-02.	

TOTAL BETA in $\mu\text{Ci/g}$ (Average)	=	6.43E+02	DETECTION LEVEL
			1.34E-01 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		0.3%	

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: DUP10

AT : LA-508-101 (G-0)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	18	18
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	13763	13990
24402	COUNT TIME in MINUTES (CT)	30	30
AvorityBY	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9756	1.9756
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	458.697	466.263
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	4.00E+01	
Repin	Replicate Concentration in $\mu\text{Ci/g}$	4.06E+01	
0	Average Concentration in $\mu\text{Ci/g}$	4.0281E+01	

Sample Prep	
FUSION01	$\text{Rs (Sample Count Rate)} = (\text{TC} / \text{CT}) - \text{BKG}$
Sample #	$\text{ALPHA TOTAL } \mu\text{Ci/g} = \text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
S98T001524	
Instrument Code	$\text{Relative Counting Error} = [(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By			
EMB			
Chemist			
SAC	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	4.03E+01	DETECTION LEVEL
Analyst			
AKL			2.75E-02
Date Complete			$\mu\text{Ci/g}$
06/07/98	RELATIVE COUNTING ERROR	1.7%	
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	<i>AKL</i>	Date: 9 Jun 98
SAMPLE.WB1 Rev. 1.	SAC	
	508101ML	

HNF-1651 REV. 0

WORKBOOK PAGE: SPK11

TB : LA-508-101 (G-0) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	18	18
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	785835	796720
24402	COUNT TIME in MINUTES (CT)	30	30
Alport Br	BACKGROUND in cpm (BKG)	7.9	7.9
TB	SAMPLE VOLUME in mL (Spiked Vial) (SS)	1.000	1.000
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9884	1.9884
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	21B57	21B57
98002882	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	1.4797E-01	1.4797E-01
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.426	0.426
0	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	1.41E+03	1.43E+03
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	6.4930E+02	
FUSION01			
Sample#			
S98T001524	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	SAMPLE + SPIKE $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
WB27809	QC ACTUAL = SVal		
Prepared By	QC FOUND = $((S+S \mu\text{Ci/g} - \text{SAMPLE } \mu\text{Ci/g}) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))$		
EMB	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Chemist			
SAC			
Analyst			
AKL			
Date Complete			
06/07/98			
Analysis Date			
06/05/98	QC ACTUAL =	1.48E-01	
Analysis Time	QC FOUND =	1.51E-01	
01:40 PM	AVG. PERCENT SPIKE RECOVERY =	102.0%	
Sample Point			
TX-118			

Analyst:	EMB	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
SPIKE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SPK12

AT : LA-508-101 (G-0) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	18	18
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Worklist	TOTAL COUNTS (TC)	79184	81526
24402	COUNT TIME in MINUTES (CT)	30	30
Atom B7	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	1.000	1.000
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9884	1.9884
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	146B43	146B43
98002882	SPIKE VALUE in $\mu\text{Ci}/\text{mL}$ (SVal)	4.3375E-02	4.3375E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2644	0.2644
0	SAMPLE + SPIKE $\mu\text{Ci}/\text{g}$ (S+S)	2.28E+02	2.35E+02
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci}/\text{g}$ in SAMPLE	3.8714E+01	
FUSION01			
Sample #			
S98T001524	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	$SAMPLE + SPIKE \mu\text{Ci}/\text{g} = R_s * 1000\text{mL}/L * DF / ((EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci}))$		
WB27809	QC ACTUAL = SVal		
Prepared By	QC FOUND = $((S+S \mu\text{Ci}/\text{g} - SAMPLE \mu\text{Ci}/\text{g}) * ((SDF/(SVol*1000)))/(DF/SS/Dg/L)))$		
EMB	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Chemist			
SAC			
Analyst			
AKL			
Para Complete			
06/07/98			
Analysis Date			
06/05/98	QC ACTUAL =	4.34E-02	
Analysis Time	QC FOUND =	3.80E-02	
01:40 PM	AVG. PERCENT SPIKE RECOVERY =	87.6%	
Sample Point			
TX-118			

Analyst:	EMB	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 7 Jun 98
SPIKE.WB1 Rev. 1.0	508101ML	

TB : LA-508-101 (G-0)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	18	18
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	313341	313598
24402	COUNT TIME IN MINUTES (CT)	30	30
At Fort B.Y.	BACKGROUND in cpm (BKG)	7.9	7.9
TB	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9644	1.9644
Matrix	EFFICIENCY FACTOR (EFF)	0.4260	0.4260
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	10436.800	10445.367
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	5.67E+02	
Rerun	Replicate Concentration in $\mu\text{Ci/g}$	5.68E+02	
0	Average Concentration in $\mu\text{Ci/g}$	5.6764E+02	
Sample Prep			
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	TOTAL BETA $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
S98T001534			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
EMB			
Chemist			
SAC	TOTAL BETA in $\mu\text{Ci/g}$ (Average) =	5.68E+02	DETECTION LEVEL
Analyst			
AKL			
Date Complete			1.35E-01
06/07/98	RELATIVE COUNTING ERROR	0.4%	$\mu\text{Ci/g}$
Analysis Date			
06/05/98			
Analysis time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
SAMPLE.WB1 Rev. 1. 508101ML		

AT : LA-508-101 (G-0)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	18	18
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	3536	3575
24402	COUNT TIME in MINUTES (CT)	30	30
ANALYST	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9644	1.9644
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	117.797	119.097
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	1.03E+01	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	1.04E+01	
0	Average Concentration in $\mu\text{Ci/g}$	1.0375E+01	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sample	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S98T001534			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
EMB			
Chemist			
SAC	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	1.04E+01	DETECTION LEVEL
Analyst			
AKL			
Date Complete			2.77E-02 $\mu\text{Ci/g}$
06/07/98	RELATIVE COUNTING ERROR	3.3%	
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
SAMPLE.WB1 Rev. 1. 508101ML		

WORKBOOK PAGE: DUP15

TB : LA-508-101 (G-0)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	18	18
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
WorkList	GROSS COUNTS (GC)	295605	303209
24402	COUNT TIME in MINUTES (CT)	30	30
Alt or BK?	BACKGROUND in cpm (BKG)	7.9	7.9
TB	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.944	1.944
Matrix	EFFICIENCY FACTOR (EFF)	0.4260	0.4260
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	9845.600	10099.067
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	5.41E+02	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	5.55E+02	
0	Average Concentration in $\mu\text{Ci/g}$	5.4785E+02	
Sample Prep			
FUSION01	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Sample	TOTAL BETA $\mu\text{Ci/g}$ = $R_s * 1000\text{mL/L} * DF / (EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci})$		
S98T001534	Relative Counting Error = $[(\text{The Square Root of } TC + BKG * CT) / (TC - BKG * CT)] * 1.96 * 100$		
Instrument Code	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
WB27809			
Prepared By			
EMB			
Chemist			
SAC	TOTAL BETA in $\mu\text{Ci/g}$ (Average) =	5.48E+02	DETECTION LEVEL
Analyst			
AKL			
Date Complete			1.37E-01
06/07/98	RELATIVE COUNTING ERROR	0.4%	$\mu\text{Ci/g}$
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 8 Jun 98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: DUP16

AT : LA-508-101 (G-0)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	18	18
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Work List	GROSS COUNTS (GC)	3080	3364
24402	COUNT TIME in MINUTES (CT)	30	30
AT or TB ?	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	1.000	1.000
Test Code	DILUTION FACTOR (DF)	101	101
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.944	1.944
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	102.597	112.063
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	9.08E+00	
Rerun	Replicate Concentration in $\mu\text{Ci/g}$	9.92E+00	
0	Average Concentration in $\mu\text{Ci/g}$	9.5002E+00	
Sample Prep			
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sample #	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S98T001534			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
EMB			
Chemist			
SAC	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	9.50E+00	DETECTION LEVEL
Analyst			
AKL			
Date Complete			2.80E-02 $\mu\text{Ci/g}$
06/07/98	RELATIVE COUNTING ERROR	3.5%	
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: SAM17

TB : LA-508-101 (G-0)

SOLIDS

		SAMPLE	REPLICATE
Type	DETECTOR NUMBER	18	18
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	359289	360041
24402	COUNT TIME in MINUTES (CT)	30	30
Analysis	BACKGROUND in cpm (BKG)	7.9	7.9
TB	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	11	11
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9788	1.9788
Matrix	EFFICIENCY FACTOR (EFF)	0.4260	0.4260
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	11968.400	11993.467

Batch Number	
98002882	Blank Concentration in $\mu\text{Ci/g}$ 1.41E+02
Rerun	Replicate Concentration in $\mu\text{Ci/g}$ 1.41E+02
0	Average Concentration in $\mu\text{Ci/g}$ 1.4085E+02

Sample Prep	
FUSION01	$\text{Rs (Sample Count Rate)} = (\text{TC} / \text{CT}) - \text{BKG}$
Sample /	$\text{TOTAL BETA } \mu\text{Ci/g} = \text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$
S98T001535	
Instrument Code	$\text{Relative Counting Error} = [((\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT}))] * 1.96 * 100$
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By	
EMB	
Chemist	
SAC	TOTAL BETA in $\mu\text{Ci/g}$ (Average) = 1.41E+02
Analyst	
AKL	
Date Complete	
06/07/98	RELATIVE COUNTING ERROR 0.3%
Analysis Date	
06/05/98	
Analysis Time	
01:40 PM	
Sample Point	
TX-118	

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: SAM18

AT : LA-508-101 (G-0)

SOLIDS

		SAMPLE	REPLICATE
TYPE	DETECTOR NUMBER	18	18
SAMPLE	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	3172	3208
24402	COUNT TIME in MINUTES (CT)	30	30
Author:BY	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	11	11
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9788	1.9788
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	105.663	106.863
Batch Number			
98002882	Blank Concentration in $\mu\text{Ci/g}$	2.00E+00	
ReRun	Replicate Concentration in $\mu\text{Ci/g}$	2.02E+00	
0	Average Concentration in $\mu\text{Ci/g}$	2.0127E+00	
Sample/Rep			
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$		
Sample#	ALPHA TOTAL $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$		
S98T001535			
Instrument Code	Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$		
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.		
Prepared By			
EMB			
Chemist			
SAC	ALPHA TOTAL in $\mu\text{Ci/g}$ (Average) =	2.01E+00	DETECTION LEVEL
Analyst			
AKL			5.99E-03 $\mu\text{Ci/g}$
Date Complete	RELATIVE COUNTING ERROR	3.5%	
06/07/98			
Analysis Date			
06/05/98			
Analysis Time			
01:40 PM			
Sample Point			
TX-118			

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: DUP19

TB : LA-508-101 (G-0)

SOLIDS

	DUP	REPLICATE
Type	DETECTOR NUMBER	18
DUP	DISH SIZE (1, 2, or 5) (MS)	2
WorkList	GROSS COUNTS (GC)	323974
24402	COUNT TIME in MINUTES (CT)	30
Av or TBV	BACKGROUND in cpm (BKG)	7.9
TB	SAMPLE SIZE in mL (SS)	0.500
Test Code	DILUTION FACTOR (DF)	11
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9736
Matrix	EFFICIENCY FACTOR (EFF)	0.4260
SOLID	Lc, Rmax, or Rs, (SAMPLE RATE) as APPROPRIATE	10791.233
Batch Number		10896.967
98002882	Blank Concentration in $\mu\text{Ci/g}$	1.27E+02
Rerun	Replicate Concentration in $\mu\text{Ci/g}$	1.28E+02
0	Average Concentration in $\mu\text{Ci/g}$	1.2782E+02
Sample Prep		
FUSION01	Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$	
Sampler	TOTAL BETA $\mu\text{Ci/g}$ = $\text{Rs} * 1000\text{mL/L} * \text{DF} / (\text{EFF} * \text{SS} * \text{Dg/L} * 2220000\text{dpm}/\mu\text{Ci})$	
S98T001535		
Instrument Code	Relative Counting Error = $[(\text{The Square Root of TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$	
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.	
Prepared By		
EMB		
Chemist		
SAC	TOTAL BETA in $\mu\text{Ci/g}$ (Average) =	1.28E+02
Analyst		DETECTION LEVEL
AKL		2.93E-02
Date Complete	RELATIVE COUNTING ERROR	0.3%
06/07/98		
Analysis Date		
06/05/98		
Analysis Time		
01:40 PM		
Sample Point		
TX-118		

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9/1/98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: DUP20

AT : LA-508-101 (G-0)

SOLIDS

		DUP	REPLICATE
Type	DETECTOR NUMBER	18	18
DUP	DISH SIZE (1, 2, or 5) (MS)	2	2
Worklist	GROSS COUNTS (GC)	2768	2794
24402	COUNT TIME in MINUTES (CT)	30	30
AT or (B)	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE SIZE in mL (SS)	0.500	0.500
Test Code	DILUTION FACTOR (DF)	11	11
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9736	1.9736
Matrix	EFFICIENCY FACTOR (EFF)	0.2644	0.2644
SOLID	Lc, Rmax, or Rs.(SAMPLE RATE) as APPROPRIATE	92.197	93.063

Batch Number	
98002882	Blank Concentration in $\mu\text{Ci/g}$ 1.75E+00
ReRun	Replicate Concentration in $\mu\text{Ci/g}$ 1.77E+00
0	Average Concentration in $\mu\text{Ci/g}$ 1.7591E+00

Sample Prep

FUSION01

Sample #

S98T001535

Instrument Code

WB27809

Prepared By

EMB

Chemist

SAC

Analyst

AKL

Date Complete

06/07/98

Analysis Date

06/05/98

Analysis Time

01:40 PM

Sample Point

TX-118

Rs (Sample Count Rate) = $(\text{TC} / \text{CT}) - \text{BKG}$

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

Relative Counting Error = $[(\text{The Square Root of } \text{TC} + \text{BKG} * \text{CT}) / (\text{TC} - \text{BKG} * \text{CT})] * 1.96 * 100$

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

ALPHA TOTAL in $\mu\text{Ci/g}$ (Average)	=	1.76E+00	DETECTION LEVEL
			6.00E-03 $\mu\text{Ci/g}$
RELATIVE COUNTING ERROR		3.7%	

Analyst:	AKL	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9 Jun 98
SAMPLE.WB1 Rev. 1.	508101ML	

WORKBOOK PAGE: SPK21

TB : LA-508-101 (G-0) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	18	18
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Worklist	TOTAL COUNTS (TC)	763931	773464
24402	COUNT TIME in MINUTES (CT)	30	30
Abort TB?	BACKGROUND in cpm (BKG)	7.9	7.9
TB	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	11	11
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9788	1.9788
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	21B57	21B57
98002882	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	1.4797E-01	1.4797E-01
Rerun	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.426	0.426
0	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	2.99E+02	3.03E+02
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	1.4085E+02	
FUSION01			
Sample			
S98T001535	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	$SAMPLE + SPIKE \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / ((EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci}))$		
WB27809	QC ACTUAL = SVal		
Prepared By	$QC \text{ FOUND} = (((S+S \mu\text{Ci/g} - SAMPLE \mu\text{Ci/g}) * ((SDF/(SVol*1000)))/(DF/SS/Dg/L))))$		
EMB	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Chemist			
SAC			
Analyst			
AKL			
Date Complete			
06/07/98			
Analysis Date			
06/05/98	QC ACTUAL =	1.48E-01	
Analysis Time	QC FOUND =	1.44E-01	
01:40 PM	AVG. PERCENT SPIKE RECOVERY =	97.4%	
Sample Point			
TX-118			

Analyst:	EMB	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 7 June 98
SPIKE.WB1 Rev. 1.0	508101ML	

WORKBOOK PAGE: SPK22

AT : LA-508-101 (G-0) LA-508-113 (B-0) SPIKED SAMPLE

		SPIKE	REPLICATE
Type	DETECTOR NUMBER	18	18
SPK	DISH SIZE 1, 2, or 5 (MS)	2	2
Work List	TOTAL COUNTS (TC)	58903	61530
24402	COUNT TIME in MINUTES (CT)	30	30
Attn By	BACKGROUND in cpm (BKG)	0.07	0.07
AT	SAMPLE VOLUME in mL (Spiked Vial) (SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial) (DF)	11	11
@AB-01	DIGEST GRAMS of SOLIDS / L (Dg/L)	1.9788	1.9788
Matrix	SPIKE VOLUME in mL (SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR (SDF)	1	1
Batch Number	SPIKE BOOK NUMBER (Spk BN)	146B43	146B43
98002882	SPIKE VALUE in $\mu\text{Ci/mL}$ (SVal)	4.3375E-02	4.3375E-02
Run	INSTRUMENT EFFICIENCY FACTOR (EFF)	0.2644	0.2644
0	SAMPLE + SPIKE $\mu\text{Ci/g}$ (S+S)	3.72E+01	3.88E+01
Sample Prep	AVERAGE or MAXIMUM $\mu\text{Ci/g}$ in SAMPLE	2.0127E+00	
FUSION01			
Sample			
S98T001535	R_s (Sample Count Rate) = $(TC / CT) - BKG$		
Instrument Code	$SAMPLE + SPIKE \mu\text{Ci/g} = R_s * 1000\text{mL/L} * DF / ((EFF * SS * Dg/L * 2220000\text{dpm}/\mu\text{Ci}))$		
WB27809	QC ACTUAL = SVal		
Prepared By	QC FOUND = $((S+S \mu\text{Ci/g} - SAMPLE \mu\text{Ci/g}) * ((SDF/(SVol*1000)))/(DF/SS/Dg/L)))$		
EMB	PERCENT SPIKE RECOVERY = $(QC \text{ FOUND} / QC \text{ ACTUAL}) * 100$		
Chemist			
SAC			
Analyst			
AKL			
Print Complete			
06/07/98			
Analysis Date			
06/05/98	QC ACTUAL =	4.34E-02	
Analysis Time	QC FOUND =	3.24E-02	
01:40 PM	AVG. PERCENT SPIKE RECOVERY =	74.7%	
Sample Point			
TX-118			

Analyst:	EMB	Date: 07-Jun-98
Signature of Chemist:	SAC	Date: 9/6/98
SPIKE.WB1 Rev. 1.0	508101ML	

LABCORE Completed Worklist Report for Worklist# 24443

Analyst: crj

Instrument: GEA03

Book#

Method: Rev/Mod

Worklist Comment: TX118, @GEA-02, SUSPECT PCB, STD=1.0mL, SS=see traveler skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		GEA-02 C060-02 SOLID		4.792e-03	5.12e-03	106.845 % Recovery	
1 STD	0		GEA-02 C060-02E SOLID		1	2.70	2.700 % Ct Error	
1 STD	0		GEA-02 CS13702 SOLID		7.527e-03	7.62e-03	101.236 % Recovery	
1 STD	0		GEA-02 CS13702E SOLID		1	2.67	2.670 % Ct Error	
2 BLNK-PREP	0		GEA-02 C060-02 SOLID		1	<3.78e-2	uCi/g	
2 BLNK-PREP	0		GEA-02 CS13702 SOLID		1	<9.52e-2	uCi/g	
2 BLNK-PREP	0		GEA-02 EU15402 SOLID		1	<1.03e-1	uCi/g	
2 BLNK-PREP	0		GEA-02 EU15502 SOLID		1	<8.30e-2	uCi/g	
2 BLNK-PREP	0		GEA-02 AM24102 SOLID		1	<2.63e-1	uCi/g	
3 SAMPLE	S98T001524	0 F	GEA-02 C060-02 SOLID		N/A	< 5.408e-02	5.41e-002	uCi/g
3 SAMPLE	S98T001524	0 F	GEA-02 C060-02E SOLID		N/A	n/a	% Ct Error	
3 SAMPLE	S98T001524	0 F	GEA-02 CS13702 SOLID		N/A	7.795e+00	uCi/g	
3 SAMPLE	S98T001524	0 F	GEA-02 CS13702E SOLID		N/A	2.36	% Ct Error	
3 SAMPLE	S98T001524	0 F	GEA-02 EU15402 SOLID		N/A	5.633e-01	uCi/g	
3 SAMPLE	S98T001524	0 F	GEA-02 EU15402E SOLID		N/A	16.1	% Ct Error	
3 SAMPLE	S98T001524	0 F	GEA-02 EU15502 SOLID		N/A	< 3.191e-01	0.319	uCi/g
3 SAMPLE	S98T001524	0 F	GEA-02 EU15502E SOLID		N/A	n/a	% Ct Error	
3 SAMPLE	S98T001524	0 F	GEA-02 AM24102 SOLID		N/A	2.334e+01	uCi/g	
3 SAMPLE	S98T001524	0 F	GEA-02 AM24102E SOLID		N/A	4.10	% Ct Error	
4 DUP	S98T001524	0 F	GEA-02 C060-02 SOLID		<5.41e-2	<5.52e-2	RPD	
4 DUP	S98T001524	0 F	GEA-02 C060-02E SOLID		1	n/a	% Ct Error	
4 DUP	S98T001524	0 F	GEA-02 CS13702 SOLID		7.79e+00	7.64e+00	1.944 RPD	
4 DUP	S98T001524	0 F	GEA-02 CS13702E SOLID		1	2.45	2.450 % Ct Error	
4 DUP	S98T001524	0 F	GEA-02 EU15402 SOLID		5.63e-01	4.68e-01	18.429 RPD	
4 DUP	S98T001524	0 F	GEA-02 EU15402E SOLID		1	18.1	18.100 % Ct Error	
4 DUP	S98T001524	0 F	GEA-02 EU15502 SOLID		<3.19e-1	<4.04e-1	RPD	
4 DUP	S98T001524	0 F	GEA-02 EU15502E SOLID		1	n/a	% Ct Error	
4 DUP	S98T001524	0 F	GEA-02 AM24102 SOLID		2.33e+01	2.55e+01	9.016 RPD	
4 DUP	S98T001524	0 F	GEA-02 AM24102E SOLID		1	4.25	4.250 % Ct Error	
5 SAMPLE	S98T001534	0 F	GEA-02 C060-02 SOLID		N/A	< 9.821e-02	9.82e-002	uCi/g
5 SAMPLE	S98T001534	0 F	GEA-02 C060-02E SOLID		N/A	n/a	% Ct Error	
5 SAMPLE	S98T001534	0 F	GEA-02 CS13702 SOLID		N/A	1.497e+01	uCi/g	
5 SAMPLE	S98T001534	0 F	GEA-02 CS13702E SOLID		N/A	2.43	% Ct Error	
5 SAMPLE	S98T001534	0 F	GEA-02 EU15402 SOLID		N/A	< 3.121e-01	0.312	uCi/g
5 SAMPLE	S98T001534	0 F	GEA-02 EU15402E SOLID		N/A	n/a	% Ct Error	
5 SAMPLE	S98T001534	0 F	GEA-02 EU15502 SOLID		N/A	< 3.185e-01	0.339	uCi/g
5 SAMPLE	S98T001534	0 F	GEA-02 EU15502E SOLID		N/A	n/a	% Ct Error	
5 SAMPLE	S98T001534	0 F	GEA-02 AM24102 SOLID		N/A	1.059e+01	uCi/g	
5 SAMPLE	S98T001534	0 F	GEA-02 AM24102E SOLID		N/A	11.4	% Ct Error	
6 DUP	S98T001534	0 F	GEA-02 C060-02 SOLID		<9.82e-2	<8.99e-2	RPD	
6 DUP	S98T001534	0 F	GEA-02 C060-02E SOLID		1	n/a	% Ct Error	

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

LABCORE Completed Worklist Report for Worklist# 24443

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 DUP	S98T001534	0 F	@GEA-02	CS13702	SOLID	1.50e+01	1.44e+01	4.082 RPD
6 DUP	S98T001534	0 F	@GEA-02	CS13702E	SOLID	1	2.45	2.450 % Ct Error
6 DUP	S98T001534	0 F	@GEA-02	EU15402	SOLID	<3.12e-1	4.74e-01	RPD
6 DUP	S98T001534	0 F	@GEA-02	EU15402E	SOLID	1	43.9	43.900 % Ct Error
6 DUP	S98T001534	0 F	@GEA-02	EU15502	SOLID	<3.39e-1	<3.52e-1	RPD
6 DUP	S98T001534	0 F	@GEA-02	EU15502E	SOLID	1	n/a	% Ct Error
6 DUP	S98T001534	0 F	@GEA-02	AM24102	SOLID	1.06e+01	1.09e+01	2.791 RPD
6 DUP	S98T001534	0 F	@GEA-02	AM24102E	SOLID	1	11.4	11.400 % Ct Error
7 SAMPLE	S98T001535	0 F	@GEA-02	CO60-02	SOLID	N/A	<1.964e-02	1.96e-002 uCi/g
7 SAMPLE	S98T001535	0 F	@GEA-02	CO60-02E	SOLID	N/A	n/a	% Ct Error
7 SAMPLE	S98T001535	0 F	@GEA-02	CS13702	SOLID	N/A	1.087e+01	uCi/g
7 SAMPLE	S98T001535	0 F	@GEA-02	CS13702E	SOLID	N/A	1.23	% Ct Error
7 SAMPLE	S98T001535	0 F	@GEA-02	EU15402	SOLID	N/A	<1.009e-01	0.101 uCi/g
7 SAMPLE	S98T001535	0 F	@GEA-02	EU15402E	SOLID	N/A	n/a	% Ct Error
7 SAMPLE	S98T001535	0 F	@GEA-02	EU15502	SOLID	N/A	<8.917e-02	8.92e-002 uCi/g
7 SAMPLE	S98T001535	0 F	@GEA-02	EU15502E	SOLID	N/A	n/a	% Ct Error
7 SAMPLE	S98T001535	0 F	@GEA-02	AM24102	SOLID	N/A	2.663e+00	uCi/g
7 SAMPLE	S98T001535	0 F	@GEA-02	AM24102E	SOLID	N/A	11.6	% Ct Error
8 DUP	S98T001535	0 F	@GEA-02	CO60-02	SOLID	<1.96e-2	<1.91e-2	RPD
8 DUP	S98T001535	0 F	@GEA-02	CO60-02E	SOLID	1	n/a	% Ct Error
8 DUP	S98T001535	0 F	@GEA-02	CS13702	SOLID	1.09e+01	1.04e+01	4.695 RPD
8 DUP	S98T001535	0 F	@GEA-02	CS13702E	SOLID	1	1.25	1.250 % Ct Error
8 DUP	S98T001535	0 F	@GEA-02	EU15402	SOLID	<1.01e-1	1.50e-01	RPD
8 DUP	S98T001535	0 F	@GEA-02	EU15402E	SOLID	1	21.9	21.900 % Ct Error
8 DUP	S98T001535	0 F	@GEA-02	EU15502	SOLID	<8.92e-2	<8.65e-2	RPD
8 DUP	S98T001535	0 F	@GEA-02	EU15502E	SOLID	1	n/a	% Ct Error
8 DUP	S98T001535	0 F	@GEA-02	AM24102	SOLID	2.66e+00	2.42e+00	9.449 RPD
8 DUP	S98T001535	0 F	@GEA-02	AM24102E	SOLID	1	11.5	11.500 % Ct Error

Comments Section:

Comments for sample# S98T001524 and test @GEA-02 .
DL=0 => n/a.

Comments for sample# S98T001534 and test @GEA-02 .
DL=0 => n/a.

Comments for sample# S98T001535 and test @GEA-02 .
DL=0 => n/a.

Final page for worklist# 24443

Analyst Signature _____ Date _____

Analyst Signature _____ Date _____

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

LABCORE Completed Worklist Report for Worklist# 24443

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
					<u>John Redden</u>		<u>6/11/98</u>			
					Reviewer Signature		Date			

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

LABCORE Completed Worklist Report for Worklist# 24443

Analyst: crj

Instrument: GEA03

Book#: 28B57

Method: LA-548-121 Rev/Mod _____

Worklist Comment: TX118, @GEA-02, SUSPECT PCB, STD=1.0mL, SS=see traveler skm

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0	0GEA-02 C060-02 SOLID		4.792e-03	5.12e-03	106.045 % Recovery	
1 STD	0	0GEA-02 C060-02E SOLID		1	2.70	2.700 % Ct Error	
1 STD	0	0GEA-02 CS13702 SOLID		7.527e-03	7.62e-03	101.236 % Recovery	
1 STD	0	0GEA-02 CS13702E SOLID		1	2.67	2.670 % Ct Error	
2 BLNK-PREP	0	0GEA-02 C060-02 SOLID		1	<3.78e-2		uCi/g
2 BLNK-PREP	0	0GEA-02 CS13702 SOLID		1	<9.52e-2		uCi/g
2 BLNK-PREP	0	0GEA-02 EU15402 SOLID		1	<1.03e-1		uCi/g
2 BLNK-PREP	0	0GEA-02 EU15502 SOLID		1	<8.30e-2		uCi/g
2 BLNK-PREP	0	0GEA-02 AM24102 SOLID		1	<2.63e-1		uCi/g
3 SAMPLE	S98T001524 0 F	0GEA-02 C060-02 SOLID		N/A	< 5.408e-02	5.41e-002	uCi/g
3 SAMPLE	S98T001524 0 F	0GEA-02 C060-02E SOLID		N/A	n/a		% Ct. Error
3 SAMPLE	S98T001524 0 F	0GEA-02 CS13702 SOLID		N/A	7.795e+00		uCi/g
3 SAMPLE	S98T001524 0 F	0GEA-02 CS13702E SOLID		N/A	2.36		% Ct. Error
3 SAMPLE	S98T001524 0 F	0GEA-02 EU15402 SOLID		N/A	5.633e-01		uCi/g
3 SAMPLE	S98T001524 0 F	0GEA-02 EU15402E SOLID		N/A	16.1		% Ct. Error
3 SAMPLE	S98T001524 0 F	0GEA-02 EU15502 SOLID		N/A	< 3.191e-01	0.319	uCi/g
3 SAMPLE	S98T001524 0 F	0GEA-02 EU15502E SOLID		N/A	n/a		% Ct. Error
3 SAMPLE	S98T001524 0 F	0GEA-02 AM24102 SOLID		N/A	2.334e+01		uCi/g
3 SAMPLE	S98T001524 0 F	0GEA-02 AM24102E SOLID		N/A	4.10		% Ct. Error
4 DUP	S98T001524 0 F	0GEA-02 C060-02 SOLID		<5.41e-2	<5.52e-2		RPD
4 DUP	S98T001524 0 F	0GEA-02 C060-02E SOLID		1	n/a		% Ct Error
4 DUP	S98T001524 0 F	0GEA-02 CS13702 SOLID		7.79e+00	7.64e+00	1.944	RPD
4 DUP	S98T001524 0 F	0GEA-02 CS13702E SOLID		1	2.45	2.450	% Ct Error
4 DUP	S98T001524 0 F	0GEA-02 EU15402 SOLID		5.63e-01	4.68e-01	18.429	RPD
4 DUP	S98T001524 0 F	0GEA-02 EU15402E SOLID		1	18.1	18.100	% Ct Error
4 DUP	S98T001524 0 F	0GEA-02 EU15502 SOLID		<3.19e-1	<4.04e-1		RPD
4 DUP	S98T001524 0 F	0GEA-02 EU15502E SOLID		1	n/a		% Ct Error
4 DUP	S98T001524 0 F	0GEA-02 AM24102 SOLID		2.33e+01	2.55e+01	9.016	RPD
4 DUP	S98T001524 0 F	0GEA-02 AM24102E SOLID		1	4.25	4.250	% Ct Error
5 SAMPLE	S98T001534 0 F	0GEA-02 C060-02 SOLID		N/A	< 9.821e-02	9.82e-002	uCi/g
5 SAMPLE	S98T001534 0 F	0GEA-02 C060-02E SOLID		N/A	n/a		% Ct. Error
5 SAMPLE	S98T001534 0 F	0GEA-02 CS13702 SOLID		N/A	1.497e+01		uCi/g
5 SAMPLE	S98T001534 0 F	0GEA-02 CS13702E SOLID		N/A	2.43		% Ct. Error
5 SAMPLE	S98T001534 0 F	0GEA-02 EU15402 SOLID		N/A	< 3.121e-01	0.312	uCi/g
5 SAMPLE	S98T001534 0 F	0GEA-02 EU15402E SOLID		N/A	n/a		% Ct. Error
5 SAMPLE	S98T001534 0 F	0GEA-02 EU15502 SOLID		N/A	< 3.385e-01	0.339	uCi/g
5 SAMPLE	S98T001534 0 F	0GEA-02 EU15502E SOLID		N/A	n/a		% Ct. Error
5 SAMPLE	S98T001534 0 F	0GEA-02 AM24102 SOLID		N/A	1.059e+01		uCi/g
5 SAMPLE	S98T001534 0 F	0GEA-02 AM24102E SOLID		N/A	11.4		% Ct. Error
6 DUP	S98T001534 0 F	0GEA-02 C060-02 SOLID		<9.82e-2	<8.99e-2		RPD
6 DUP	S98T001534 0 F	0GEA-02 C060-02E SOLID		1	n/a		% Ct Error

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

LABCORE Completed Worklist Report for Worklist# 24443

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 DUP	S98T001534	O F	AGEA-02	CS13702	SOLID	1.50e+01	1.44e+01	4.082 RPD
6 DUP	S98T001534	O F	AGEA-02	CS13702E	SOLID	1	2.45	2.450 % Ct Error
6 DUP	S98T001534	O F	AGEA-02	EU15402	SOLID	<3.12e-1	4.74e-01	RPD
6 DUP	S98T001534	O F	AGEA-02	EU15402E	SOLID	1	43.9	43.900 % Ct Error
6 DUP	S98T001534	O F	AGEA-02	EU15502	SOLID	<3.39e-1	<3.52e-1	RPD
6 DUP	S98T001534	O F	AGEA-02	EU15502E	SOLID	1	n/a	% Ct Error
6 DUP	S98T001534	O F	AGEA-02	AM24102	SOLID	1.04e+01	1.09e+01	2.791 RPD
6 DUP	S98T001534	O F	AGEA-02	AM24102E	SOLID	1	11.4	11.400 % Ct Error
7 SAMPLE	S98T001535	O F	AGEA-02	CO60-02	SOLID	N/A	1.964e-02	1.96e-002 uCi/g
7 SAMPLE	S98T001535	O F	AGEA-02	CO60-02E	SOLID	N/A	n/a	% Ct. Error
7 SAMPLE	S98T001535	O F	AGEA-02	CS13702	SOLID	N/A	1.087e+01	uCi/g
7 SAMPLE	S98T001535	O F	AGEA-02	CS13702E	SOLID	N/A	1.23	% Ct. Error
7 SAMPLE	S98T001535	O F	AGEA-02	EU15402	SOLID	N/A	< 1.009e-01	0.101 uCi/g
7 SAMPLE	S98T001535	O F	AGEA-02	EU15402E	SOLID	N/A	n/a	% Ct. Error
7 SAMPLE	S98T001535	O F	AGEA-02	EU15502	SOLID	N/A	< 8.917e-02	8.92e-002 uCi/g
7 SAMPLE	S98T001535	O F	AGEA-02	EU15502E	SOLID	N/A	n/a	% Ct. Error
7 SAMPLE	S98T001535	O F	AGEA-02	AM24102	SOLID	N/A	2.663e+00	uCi/g
7 SAMPLE	S98T001535	O F	AGEA-02	AM24102E	SOLID	N/A	11.6	% Ct. Error
8 DUP	S98T001535	O F	AGEA-02	CO60-02	SOLID	<1.96e-2	<1.91e-2	RPD
8 DUP	S98T001535	O F	AGEA-02	CO60-02E	SOLID	1	n/a	% Ct Error
8 DUP	S98T001535	O F	AGEA-02	CS13702	SOLID	1.09e+01	1.04e+01	4.695 RPD
8 DUP	S98T001535	O F	AGEA-02	CS13702E	SOLID	1	1.25	1.250 % Ct Error
8 DUP	S98T001535	O F	AGEA-02	EU15402	SOLID	<1.01e-1	1.50e-01	RPD
8 DUP	S98T001535	O F	AGEA-02	EU15402E	SOLID	1	21.9	21.900 % Ct Error
8 DUP	S98T001535	O F	AGEA-02	EU15502	SOLID	<8.92e-2	<8.65e-2	RPD
8 DUP	S98T001535	O F	AGEA-02	EU15502E	SOLID	1	n/a	% Ct Error
8 DUP	S98T001535	O F	AGEA-02	AM24102	SOLID	2.66e+00	2.62e+00	9.449 RPD
8 DUP	S98T001535	O F	AGEA-02	AM24102E	SOLID	1	11.5	11.500 % Ct Error

Comments Section:

Comments for sample# S98T001524 and test @GEA-02 .
DL=0 => n/a.

Comments for sample# S98T001534 and test @GEA-02 .
DL=0 => n/a.

Comments for sample# S98T001535 and test @GEA-02 .
DL=0 => n/a.

Final page for worklist# 24443

Analyst Signature Date

Analyst Signature Date

LABCORE Data Entry Template for Worklist# 24443

Analyst: CRS Instrument: GEA00 3 Book# 28859

Method: LA-548-121 Rev/Mod F-0 Just waste as PCB suspect. skm

Worklist Comment: TX118, @GEA-02, SUSPECT PCB, STD=1.0mL, SS=see traveler skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@GEA-02	SOLID		
2 BLNK-PREP			@GEA-02	SOLID		
3 SAMPLE	S98T001524 0 F		@GEA-02	SOLID	98000225	TX-118
Analytes Requested: AM24102 , AM24102E, CO60-02 , CO60-02E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E						
4 DUP	S98T001524 0 F		@GEA-02	SOLID		
5 SAMPLE	S98T001534 0 F		@GEA-02	SOLID	98000225	TX-118
Analytes Requested: AM24102 , AM24102E, CO60-02 , CO60-02E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E						
6 DUP	S98T001534 0 F		@GEA-02	SOLID		
7 SAMPLE	S98T001535 0 F		@GEA-02	SOLID	98000225	TX-118
Analytes Requested: AM24102 , AM24102E, CO60-02 , CO60-02E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E						
8 DUP	S98T001535 0 F		@GEA-02	SOLID		

Final page for worklist # 24443

C. Johnson 6/9/98
Analyst Signature Date

MEB 6/11/98
Analyst Signature Date

Data Entry Comments:

Halby Tellefsen 6/5/98
mg waste/sample in accord
w/ 20-100-114 (PCB)

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

 * 222-S Laboratory Counting Room 9-JUN-1998 14:43:13.96

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

Worklist #: 24443
 Sample ID: WL24443-STD
 Sample Size: 1.00000E-03 L
 Dilution Factor: 1.00000E+00

Removed by:

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

Detector ID: GEA3
 File Number: dka300:[spec.GEA3]3g3988.cnf
 Geometry: 42
 Count Time: 0 00:50:00.00 sec
 Real Time: 0 00:50:02.79 sec
 Dead Time: 0.1%

Verified by:

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

Sample Count Time: 9-JUN-1998 13:52:34.25
 Decayed to: 9-JUN-1998 13:52:34.25
 Standard Deviations: 2
 Analysis Library: ENVGEA
 Analyst: SLH2
 Background Subtract: DKA300:[SPEC.GEA3]3GBACK

>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<

Date of last energy calibration: 6-JAN-1998 15:35:32.20
 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	661.35*	6741	1.60	1323.61	1315	16	2.7		CS-137	7.62
0	1173.27	3215	1.88	2347.01	2337	19	3.8		CO-60	5.07
0	1332.67	2956	1.94	2665.70	2657	17	3.8		CO-60	5.17

Summary of Nuclide Activity

Page : 2

Sample ID : WL24443-STD

Acquisition date : 9-JUN-1998 13:52:34

Total number of lines in spectrum	3	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	3	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			uCi/L	uCi/L	2-Sigma Error	%Error	
CO-60	5.27Y	1.00	5.121E+00	5.121E+00	0.138E+00	2.70	
CS-137	30.00Y	1.00	7.619E+00	7.619E+00	0.204E+00	2.67	
Total Activity :			1.274E+01	1.274E+01			

Grand Total Activity :	1.274E+01	1.274E+01
------------------------	-----------	-----------

Flags: "K" = Keyline not found
 "E" = Manually edited

"M" = Manually accepted
 "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Page : 3

Sample ID : WL24443-STD

Acquisition date : 9-JUN-1998 13:52:34

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	370.	477.59	6.5297E-01
NA-24	6.	1368.55	2.5664E-02
K-40	100.	1460.75	8.6605E-01
AR-41	26.	1293.60	5.3254E-02
SC-46	131.	1120.55	8.4829E-02
CR-51	368.	320.08	4.9015E-01
MN-54	163.	834.83	7.3011E-02
CO-56	146.	846.76	7.0241E-02
CO-57	429.	122.06	3.6832E-02
CO-58	162.	810.78	7.1424E-02
FE-59	164.	1099.25	1.6407E-01
ZN-65	138.	1115.55	1.7040E-01
SE-75	446.	264.66	8.0596E-02
KR-85	238.	514.00	1.3348E+01
SR-85	238.	514.01	6.0343E-02
Y-88	5.	1836.06	2.8859E-02
Y-91	61.	1204.67	2.1006E+01
NB-94	178.	871.09	7.8971E-02
NB-95	142.	765.78	6.3638E-02
ZR-95	144.	756.73	1.1598E-01
RU-103	295.	497.08	6.8648E-02
RURH-106	160.	621.93	1.1336E+00
AG-108m	154.	722.94	6.9032E-02
CD-109	380.	88.03	1.1507E+00
AG-110M	496.	657.76	1.0768E-01
SN-113	300.	391.69	8.1333E-02
TE-123m	413.	159.00	3.7210E-02
SB-124	155.	602.73	5.5109E-02
SB-125	425.	427.89	2.2499E-01
TE-125m	404.	109.27	1.1660E+01
I-129	358.	39.60	0.0000E+00
I-131	345.	364.48	6.5141E-02
XE-131m	418.	163.93	1.6283E+00
BA-133	348.	356.02	8.3967E-02
CS-134	146.	604.70	5.3872E-02
CS-136	158.	818.51	7.0896E-02
CS-138	15.	1435.86	8.1579E-02
CE-139	426.	165.85	4.0497E-02
BA-140	217.	537.31	2.3591E-01
LA-140	9.	1596.21	3.6085E-02
CE-141	417.	145.44	6.3522E-02
CE-144	407.	133.51	2.7202E-01
CEPR-144	408.	133.51	5.4361E-01
EU-152	421.	121.78	1.1049E-01
EU-154	25.	1274.51	1.2619E-01
EU-155	373.	86.54	1.2927E-01
HF-181	306.	482.18	7.7156E-02
TA-182	347.	67.75	1.8743E-01
HG-203	438.	279.20	5.9601E-02
BI-207	156.	569.70	5.2692E-02
TL-208	434.	277.36	7.6156E-01

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : WL24443-STD

Acquisition date : 9-JUN-1998 13:52:34

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-210	327.	46.50	0.0000E+00
BI-212	148.	727.18	9.3126E-01
PB-212	536.	238.63	1.0958E-01
BI-214	191.	609.31	1.3438E-01
PB-214	379.	351.92	2.6809E-01
RA-224	501.	240.99	1.1780E+00
RA-226	474.	186.10	1.0462E+00
AC-228	231.	911.21	3.4925E-01
TH-228	351.	84.37	3.4084E+00
TH-229	374.	88.47	1.6553E-01
U-232	400.	57.78	9.6354E+01
PA-233	350.	312.17	1.2247E-01
PA-234M	166.	1001.03	1.0285E+01
TH-234	363.	92.60	6.7007E-01
U-235	460.	185.71	6.2661E-02
NP-237	373.	86.48	3.4238E-01
U-237	410.	59.54	4.5554E-01
NP-238	179.	984.45	3.1827E-01
NP-239	366.	106.12	1.4092E-01
PU-239	399.	129.30	4.6799E+02
AM-241	410.	59.54	4.3694E-01
AM-243	317.	74.67	9.0665E-02

 * 222-S Laboratory Counting Room 9-JUN-1998 17:17:27.61

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

Worklist #: 24443
 Sample ID: WL24443-BLNK
 Sample Size: 2.00000E-04 L
 Dilution Factor: 1.00000E+00

Removed by:

SLV

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

Detector ID: GEA3
 File Number: dka300:[spec.GEA3]3g3989.cnf
 Geometry: 42
 Count Time: 0 02:30:00.00 sec
 Real Time: 0 02:30:02.03 sec
 Dead Time: 0.0%

Verified by:

D. Jones 6-11-98

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

Sample Count Time: 9-JUN-1998 14:46:54.68
 Decayed to: 9-JUN-1998 14:46:54.68
 Standard Deviations: 2
 Analysis Library: ENVGEA
 Analyst: MB
 Background Subtract: DKA300:[SPEC.GEA3]3GBACK

>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<

Date of last energy calibration: 6-JAN-1998 15:35:32.20
 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	609.14*	44	1.61	1219.22	1213	11 92.1			

Summary of Nuclide Activity

Page : 2

Sample ID : WL24443-BLNK

Acquisition date : 9-JUN-1998 14:46:54

Total number of lines in spectrum

1

Number of unidentified lines

0

Number of lines tentatively identified by NID

1

100.00%

**** There are no nuclides meeting summary criteria ****

Flags: "K" = Keyline not found

"M" = Manually accepted

"E" = Manually edited

"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Page : 3

Sample ID : WL24443-BLNK

Acquisition date : 9-JUN-1998 14:46:54

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	109.	477.59	6.0419E-01
NA-24	24.	1368.55	8.0422E-02
K-40	360.	1460.75	2.6660E+00
AR-41	25.	1293.60	1.1441E-01
SC-46	68.	1120.55	1.0382E-01
CR-51	153.	320.08	5.3518E-01
MN-54	50.	834.83	6.9655E-02
CO-56	56.	846.76	7.4343E-02
CO-57	235.	122.06	4.5860E-02
CO-58	46.	810.78	6.5865E-02
FE-59	38.	1099.25	1.3842E-01
CO-60	25.	1332.50	7.5219E-02
ZN-65	37.	1115.55	1.5343E-01
SE-75	210.	264.66	9.3342E-02
KR-85	101.	514.00	1.4757E+01
SR-85	101.	514.01	6.6660E-02
Y-88	7.	1836.06	5.5460E-02
Y-91	39.	1204.67	2.8441E+01
NB-94	48.	871.09	7.1065E-02
NB-95	59.	765.78	7.0286E-02
ZR-95	53.	756.73	1.2057E-01
RU-103	90.	497.08	6.4891E-02
RURH-106	62.	621.93	1.2050E+00
AG-108m	53.	722.94	6.9716E-02
CD-109	223.	88.03	1.4825E+00
AG-110M	87.	657.76	7.7690E-02
SN-113	130.	391.69	9.0901E-02
TE-123m	231.	159.00	4.6798E-02
SB-124	75.	602.73	6.5308E-02
SB-125	108.	427.89	1.9376E-01
TE-125m	238.	109.27	1.5030E+01
I-129	155.	39.60	0.0000E+00
I-131	149.	364.48	7.2734E-02
XE-131m	256.	163.93	2.1427E+00
BA-133	131.	356.02	8.7373E-02
CS-134	67.	604.70	6.2216E-02
CS-136	53.	818.51	7.0544E-02
CS-137	442.	661.66	1.8920E-01
CS-138	19.	1435.86	3.1349E-01
CE-139	241.	165.85	5.1217E-02
BA-140	91.	537.31	2.6028E-01
LA-140	9.	1596.21	6.1101E-02
CE-141	265.	145.44	8.5031E-02
CE-144	251.	133.51	3.5896E-01
CEPR-144	251.	133.51	7.1706E-01
EU-152	235.	121.78	1.3901E-01
EU-154	23.	1274.51	2.0438E-01
EU-155	215.	86.54	1.6502E-01
HF-181	101.	482.18	7.5539E-02
TA-182	195.	67.75	2.3658E-01
HG-203	207.	279.20	6.9076E-02

HNF-1651 REV. 0

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : WL24443-BLNK

Acquisition date : 9-JUN-1998 14:46:54

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-207	84.	569.70	6.5639E-02
TL-208	219.	277.36	9.1228E-01
PB-210	166.	46.50	0.0000E+00
BI-212	69.	727.18	1.0852E+00
PB-212	272.	238.63	1.3147E-01
BI-214	165.	609.31	2.0845E-01
PB-214	201.	351.92	7.3163E-01
RA-224	258.	240.99	1.4333E+00
RA-226	283.	186.10	1.3573E+00
AC-228	76.	911.21	3.4359E-01
TH-228	235.	84.37	4.6762E+00
TH-229	220.	88.47	2.1333E-01
U-232	182.	57.78	1.0983E+02
PA-233	157.	312.17	1.3910E-01
PA-234M	36.	1001.03	8.3529E+00
TH-234	260.	92.60	9.5058E-01
U-235	280.	185.71	8.2190E-02
NP-237	216.	86.48	4.3784E-01
U-237	207.	59.54	5.4700E-01
NP-238	35.	984.45	2.4818E-01
NP-239	232.	106.12	1.9040E-01
PU-239	243.	129.30	6.1433E+02
AM-241	207.	59.54	5.2283E-01
AM-243	245.	74.67	1.3351E-01

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	58.84	6176	1.16	119.18	113	12	4.1	<i>ok</i>	U-232	1.036E+04
0	85.80	341	1.06	173.08	168	10	51.5	<i>10/13/20 ok</i>	AM-241	46.4
								<i>ok</i>	TH-228	21.6
								<i>ok</i>	NP-237	2.10
0	104.80	235	1.38	211.07	207	8	59.3		EU-155	0.794
0	122.41	734	1.20	246.27	242	10	22.6		EU-155	0.634
								<i>ok</i>	EO-57	0.455
									EU-154	0.965
0	609.31*	73	1.53	1219.57	1214	12	75.1			
0	661.39*	8241	1.58	1323.69	1315	16	2.4		CS-137	15.5
0	724.24	148	2.52	1449.33	1442	20	38.4			
0	872.89	81	2.39	1746.49	1740	12	38.9		EU-154	1.36
0	996.29	61	1.11	1993.19	1987	13	51.2		EU-154	1.34
0	1004.88	85	1.55	2010.37	2005	13	40.1		EU-154	1.09
0	1173.81	36	1.08	2348.10	2340	12	72.5			
0	1274.57	131	1.58	2549.55	2544	11	21.3		EU-154	1.07

Summary of Nuclide Activity

Page : 2

Sample ID : S98T1524-SAM

Acquisition date : 9-JUN-1998 17:19:52

Total number of lines in spectrum	12	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	12	100.00%

Nuclide Type :

Nuclide	Hlfe	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	2-Sigma Error	%Error	Flags
			Uncorrected	Decay Corr					
			uCi/L	uCi/L					
GO-57	271.80D	1.00	4.553E-01	4.553E-01	1.029E-01	22.60			
CS-137	30.00Y	1.00	1.552E+01	1.552E+01	0.037E+01	2.36			
EU-154	8.59Y	1.00	1.124E+00	1.124E+00	0.181E+00	16.14			
EU-155	4.68Y	1.00	6.344E-01	6.344E-01	3.760E-01	59.27			
TH-228	1.91Y	1.00	2.156E+01	2.156E+01	1.110E+01	51.48			
U-232	68.90Y	1.00	1.036E+04	1.036E+04	0.042E+04	4.10			
NP-237	2.14E+06Y	1.00	2.103E+00	2.103E+00	1.082E+00	51.48			
AM-241	432.20Y*****		4.644E+01	4.644E+01	0.190E+01	4.10			
Total Activity :			1.045E+04	1.045E+04					

Grand Total Activity :	1.045E+04	1.045E+04
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Flags: "K" = Keyline not found
 "E" = Manually edited

"M" = Manually accepted
 "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Page : 3

Sample ID : S98T1524-SAM

Acquisition date : 9-JUN-1998 17:19:52

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	399.	477.59	1.1293E+00
NA-24	27.	1368.55	8.4309E-02
K-40	406.	1460.75	2.8272E+00
AR-41	23.	1293.60	1.1153E-01
SC-46	57.	1120.55	9.5501E-02
CR-51	503.	320.08	9.5157E-01
MN-54	58.	834.83	7.4537E-02
CO-56	79.	846.76	8.7181E-02
CO-58	64.	810.78	7.6479E-02
FE-59	50.	1099.25	1.5677E-01
CO-60	54.	1332.50	1.0753E-01
ZN-65	39.	1115.55	1.5656E-01
SE-75	587.	264.66	1.5357E-01
KR-85	284.	514.00	2.4220E+01
SR-85	284.	514.01	1.0944E-01
Y-88	4.	1836.06	4.5360E-02
Y-91	43.	1204.67	2.9844E+01
NB-94	94.	871.09	9.7031E-02
NB-95	80.	765.78	8.1043E-02
ZR-95	90.	756.73	1.5443E-01
RU-103	306.	497.08	1.1655E-01
RURH-106	150.	621.93	1.8350E+00
AG-108m	165.	722.94	1.1902E-01
CD-109	1558.	88.03	3.8256E+00
AG-110M	508.	657.76	1.8152E-01
SN-113	413.	391.69	1.5841E-01
TE-123m	1035.	159.00	9.7210E-02
SB-124	148.	602.73	9.0043E-02
SB-125	456.	427.89	3.8800E-01
TE-125m	1402.	109.27	3.5714E+01
I-129	1176.	39.60	0.0000E+00
I-131	450.	364.48	1.2389E-01
XE-131m	1020.	163.93	4.2047E+00
BA-133	438.	356.02	1.5644E-01
CS-134	139.	604.70	8.7573E-02
CS-136	64.	818.51	7.7388E-02
CS-138	21.	1435.86	3.2924E-01
CE-139	996.	165.85	1.0231E-01
BA-140	196.	537.31	3.7471E-01
LA-140	20.	1596.21	8.4828E-02
CE-141	1109.	145.44	1.7082E-01
CE-144	1281.	133.51	7.9408E-01
CEPR-144	1281.	133.51	1.5867E+00
EU-152	2004.	121.78	3.9601E-01
HF-181	345.	482.18	1.3627E-01
TA-182	1257.	67.75	5.8646E-01
HG-203	514.	279.20	1.0735E-01
BI-207	142.	569.70	8.4034E-02
TL-208	540.	277.36	1.4126E+00
PB-210	1128.	46.50	0.0000E+00
BI-212	101.	727.18	1.2926E+00

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : S98T1524-SAM

Acquisition date : 9-JUN-1998 17:19:52

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	751.	238.63	2.1548E-01
BI-214	250.	609.31	2.5494E-01
PB-214	527.	351.92	1.1657E+00
RA-224	732.	240.99	2.3773E+00
RA-226	971.	186.10	2.4771E+00
AC-228	114.	911.21	4.1626E-01
TH-229	1502.	88.47	5.4451E-01
PA-233	489.	312.17	2.4044E-01
PA-234M	71.	1001.03	1.1463E+01
TH-234	1471.	92.60	2.2137E+00
U-235	944.	185.71	1.4849E-01
U-237	7146.	59.54	3.1134E+00
NP-238	55.	984.45	3.0672E-01
NP-239	1535.	106.12	4.7866E-01
PU-239	1263.	129.30	1.3715E+03
AM-243	1372.	74.67	3.0913E-01

* 222-S Laboratory Counting Room 9-JUN-1998 23:19:41.65 *

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

Worklist #: 24443
 Sample ID: S98T1524-DUP
 Sample Size: 2.00000E-04 L
 Dilution Factor: 1.00000E+00

Removed by:

Mr. Bauler

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

Detector ID: GEA3
 File Number: dka300:[spec.GEA3]3g3991.cnf
 Geometry: 42
 Count Time: 0 02:30:00.00 sec
 Real Time: 0 02:30:04.25 sec
 Dead Time: 0.0%

Verified by:

W. Jones 6-11-98

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

Sample Count Time: 9-JUN-1998 20:49:07.58
 Decayed to: 9-JUN-1998 20:49:07.58
 Standard Deviations: 2
 Analysis Library: ENVGEA
 Analyst: EMB
 Background Subtract: DKA300:[SPEC.GEA3]3GBACK

>>>>>>> CALIBRATION INFORMATION <<<<<<<<<

Date of last energy calibration: 6-JAN-1998 15:35:32.20
 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	58.84	6690	1.15	119.18	112	14	4.2		U-232	1.122E+04
									AM-241	50.3
0	85.92	176	0.78	173.33	170	8	84.0		NP-237	1.08
									EU-155	0.410
0	104.63	296	1.44	210.71	206	10	56.0		EU-155	0.799
0	122.45	515	1.17	246.33	242	10	33.4		CO-57	0.319
									EU-154	0.677
0	661.39*	8032	1.63	1323.68	1316	17	2.5		CS-137	15.1
0	723.14	90	1.02	1447.12	1442	11	45.5		EU-154	0.778
0	873.05	46	0.79	1746.81	1741	11	75.7		EU-154	0.776
0	996.24	39	1.49	1993.09	1988	12	85.5		EU-154	0.863
0	1005.00	73	2.06	2010.60	2004	14	43.3		EU-154	0.932
0	1274.92	125	1.64	2550.24	2543	16	23.9		EU-154	1.03

Summary of Nuclide Activity

Page : 2

Sample ID : S98T1524-DUP

Acquisition date : 9-JUN-1998 20:49:07

Total number of lines in spectrum 10
 Number of unidentified lines 0
 Number of lines tentatively identified by NID 10 100.00%

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-57	271.80D	1.00	3.193E-01	3.194E-01	1.066E-01	33.38	ray
CS-137	30.00Y	1.00	1.513E+01	1.513E+01	0.037E+01	2.45	
EU-154	8.59Y	1.00	9.245E-01	9.245E-01	1.678E-01	18.15	
EU-155	4.68Y	1.00	7.993E-01	7.993E-01	4.477E-01	56.00	ray
U-232	68.90Y	1.00	1.122E+04	1.122E+04	0.048E+04	4.25	ray
NP-237	2.14E+06Y	1.00	1.085E+00	1.085E+00	0.911E+00	83.96	ray
AM-241	432.20Y*****		5.030E+01	5.030E+01	0.214E+01	4.25	6/11/98
Total Activity :			1.129E+04	1.129E+04			

Grand Total Activity : 1.129E+04 1.129E+04

Flags: "K" = Keyline not found

"E" = Manually edited

"M" = Manually accepted

"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Page : 3

Sample ID : S98T1524-DUP

Acquisition date : 9-JUN-1998 20:49:07

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	374.	477.59	1.0936E+00
NA-24	22.	1368.55	7.6854E-02
K-40	374.	1460.75	2.7183E+00
AR-41	26.	1293.60	1.1823E-01
SC-46	86.	1120.55	1.1580E-01
CR-51	489.	320.08	9.3846E-01
MN-54	65.	834.83	7.9047E-02
CO-56	80.	846.76	8.7830E-02
CO-58	76.	810.78	8.3066E-02
FE-59	27.	1099.25	1.1857E-01
CO-60	56.	1332.50	1.0909E-01
ZN-65	57.	1115.55	1.8728E-01
SE-75	622.	264.66	1.5800E-01
KR-85	301.	514.00	2.4883E+01
SR-85	300.	514.01	1.1246E-01
Y-88	14.	1836.06	7.5724E-02
Y-91	50.	1204.67	3.1719E+01
NB-94	102.	871.09	1.0111E-01
NB-95	63.	765.78	7.2515E-02
ZR-95	92.	756.73	1.5647E-01
RU-103	281.	497.08	1.1187E-01
RURH-106	121.	621.93	1.6567E+00
AG-108m	167.	722.94	1.1993E-01
CD-109	1499.	88.03	3.7532E+00
AG-110M	554.	657.76	1.8940E-01
SN-113	396.	391.69	1.5524E-01
TE-123m	1037.	159.00	9.7297E-02
SB-124	134.	602.73	8.5687E-02
SB-125	451.	427.89	3.8599E-01
TE-125m	1358.	109.27	3.5151E+01
I-129	1128.	39.60	0.0000E+00
I-131	440.	364.48	1.2243E-01
XE-131m	1012.	163.93	4.1887E+00
BA-133	398.	356.02	1.4933E-01
CS-134	143.	604.70	8.8912E-02
CS-136	65.	818.51	7.7766E-02
CS-138	23.	1435.86	3.4264E-01
CE-139	1030.	165.85	1.0398E-01
BA-140	186.	537.31	3.6575E-01
LA-140	18.	1596.21	8.0612E-02
CE-141	1123.	145.44	1.7186E-01
CE-144	1185.	133.51	7.6446E-01
CEPR-144	1186.	133.51	1.5278E+00
EU-152	1953.	121.78	3.9097E-01
HF-181	335.	482.18	1.3447E-01
TA-182	1252.	67.75	5.8524E-01
HG-203	581.	279.20	1.1403E-01
BI-207	143.	569.70	8.4215E-02
TL-208	548.	277.36	1.4232E+00
PB-210	1216.	46.50	0.0000E+00
BI-212	61.	727.18	1.0228E+00

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : S98T1524-DUP

Acquisition date : 9-JUN-1998 20:49:07

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	750.	238.63	2.1529E-01
BI-214	226.	609.31	2.4258E-01
PB-214	506.	351.92	1.1426E+00
RA-224	686.	240.99	2.3031E+00
RA-226	953.	186.10	2.4542E+00
AC-228	94.	911.21	3.7871E-01
TH-228	1608.	84.37	1.1966E+01
TH-229	1444.	88.47	5.3415E-01
PA-233	494.	312.17	2.4161E-01
PA-234M	51.	1001.03	9.8667E+00
TH-234	1452.	92.60	2.1992E+00
U-235	953.	185.71	1.4916E-01
U-237	7719.	59.54	3.2351E+00
NP-238	48.	984.45	2.8893E-01
NP-239	1519.	106.12	4.7614E-01
PU-239	1256.	129.30	1.3673E+03
AM-243	1380.	74.67	3.1007E-01

* 222-S Laboratory Counting Room 11-JUN-1998 06:35:32.88 *

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

Worklist #: 24443
 Sample ID: S98T1534-SAM
 Sample Size: 1.00000E-04 L
 Dilution Factor: 1.00000E+00

Removed by:

SLH

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

Detector ID: GEA3
 File Number: NI3AC:1.enf-36.3974.cnf
 Geometry: 42
 Count Time: 0 02:30:00.00 sec
 Real Time: 0 02:30:03.49 sec
 Dead Time: 0.0%

Verified by:

RA Jones 6-11-98

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

Sample Count Time: 10-JUN-1998 03:33:41.13
 Decayed to: 10-JUN-1998 03:33:41.13
 Standard Deviations: 2
 Analysis Library: ENVGEA
 Analyst: SLH2
 Background Subtract: DKA300:[SPEC.GEA3]3GBACK

>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<

Date of last energy calibration: 6-JAN-1998 15:35:32.20
 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	58.90	1386	1.20	119.32	114	12	11.4		U-232	4.649E+03
									AM-241	20.8
0	122.25	346	1.19	245.94	240	12	43.4		CO-57	0.429
									EU-154	0.910
0	661.41*	7813	1.60	1323.72	1316	15	2.4		CS-137	29.4
0	724.73	41	1.18	1450.31	1446	12	98.6			
0	1274.93	38	0.78	2550.27	2544	13	70.7		EU-154	0.613

Summary of Nuclide Activity

Page : 2

Sample ID : S98T1534-SAM

Acquisition date : 10-JUN-1998 03:33:41

Total number of lines in spectrum	5	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	5	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	2-Sigma	Flags
			Uncorrected	Decay Corr				
			uCi/L	uCi/L		2-Sigma	Error	
CO-57	271.80D	1.00	4.294E-01	4.295E-01	1.866E-01	43.44		NAJ
CS-137	30.00Y	1.00	2.944E+01	2.944E+01	0.072E+01	2.43		
EU-154	8.59Y	1.00	6.130E-01	6.130E-01	4.333E-01	70.68		NAJ
U-232	68.90Y	1.00	4.649E+03	4.649E+03	0.530E+03	11.41		NAJ
AM-241	432.20Y	1.00	2.084E+01	2.084E+01	0.238E+01	11.41		6/11/98
Total Activity :			4.701E+03	4.701E+03				

Grand Total Activity :	4.701E+03	4.701E+03
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Flags: "K" = Keyline not found

"M" = Manually accepted

"E" = Manually edited

"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Page : 3

Sample ID : S98T1534-SAM

Acquisition date : 10-JUN-1998 03:33:41

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	349.	477.59	2.1175E+00
NA-24	14.	1368.55	1.2567E-01
K-40	415.	1460.75	5.7134E+00
AR-41	30.	1293.60	2.5092E-01
SC-46	67.	1120.55	2.0574E-01
CR-51	427.	320.08	1.7567E+00
MN-54	52.	834.83	1.4194E-01
CO-56	67.	846.76	1.6195E-01
CO-58	52.	810.78	1.3974E-01
FE-59	39.	1099.25	2.8018E-01
CO-60	43.	1332.50	1.9292E-01
ZN-65	44.	1115.55	3.3231E-01
SE-75	492.	264.66	2.8176E-01
KR-85	278.	514.00	4.7951E+01
SR-85	278.	514.01	2.1664E-01
Y-88	7.	1836.06	1.1125E-01
Y-91	26.	1204.67	4.7426E+01
NB-94	76.	871.09	1.7602E-01
NB-95	73.	765.78	1.5528E-01
ZR-95	59.	756.73	2.5369E-01
RU-103	269.	497.08	2.1928E-01
RURH-106	113.	621.93	3.1981E+00
AG-108m	105.	722.94	1.9229E-01
CD-109	866.	88.03	5.7337E+00
AG-110M	460.	657.76	3.4585E-01
SN-113	390.	391.69	3.0819E-01
TE-123m	684.	159.00	1.5875E-01
SB-124	127.	602.73	1.6708E-01
SB-125	378.	427.89	7.0876E-01
TE-125m	811.	109.27	5.4589E+01
I-129	633.	39.60	0.0000E+00
I-131	362.	364.48	2.2286E-01
XE-131m	659.	163.93	6.7905E+00
BA-133	374.	356.02	2.8998E-01
CS-134	113.	604.70	1.5866E-01
CS-136	61.	818.51	1.5092E-01
CS-138	12.	1435.86	5.1008E-01
CE-139	707.	165.85	1.7301E-01
BA-140	181.	537.31	7.2067E-01
LA-140	15.	1596.21	1.4869E-01
CE-141	738.	145.44	2.7985E-01
CE-144	798.	133.51	1.2592E+00
CEPR-144	798.	133.51	2.5160E+00
EU-152	1116.	121.78	5.9366E-01
EU-155	907.	86.54	6.6499E-01
HF-181	294.	482.18	2.5242E-01
TA-182	773.	67.75	9.2356E-01
HG-203	489.	279.20	2.0956E-01
BI-207	172.	569.70	1.8408E-01
TL-208	495.	277.36	2.7066E+00
PB-210	652.	46.50	0.0000E+00

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : S98T1534-SAM

Acquisition date : 10-JUN-1998 03:33:41

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	75.	727.18	2.2468E+00
PB-212	589.	238.63	3.8277E-01
BI-214	216.	609.31	4.7468E-01
PB-214	406.	351.92	2.0527E+00
RA-224	574.	240.99	4.2232E+00
RA-226	704.	186.10	4.2308E+00
AC-228	84.	911.21	7.2157E-01
TH-228	901.	84.37	1.7998E+01
TH-229	852.	88.47	8.2413E-01
PA-233	416.	312.17	4.4443E-01
PA-234M	47.	1001.03	1.8980E+01
TH-234	902.	92.60	3.4816E+00
U-235	715.	185.71	2.5920E-01
NP-237	908.	86.48	1.7622E+00
U-237	1980.	59.54	3.2976E+00
NP-238	46.	984.45	5.6828E-01
NP-239	881.	106.12	7.2847E-01
PU-239	716.	129.30	2.0755E+03
AM-243	898.	74.67	5.0218E-01

* 222-S Laboratory Counting Room 11-JUN-1998 06:37:26.08 *

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

Worklist #: 24443
 Sample ID: S98T1534-DUP
 Sample Size: 1.00000E-04 L
 Dilution Factor: 1.00000E+00

Removed by:

SLU

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

Detector ID: GEA3
 File Number: NI3AC:1.cnf 36.3996.cnf
 Geometry: 42
 Count Time: 0 02:30:00.00 sec
 Real Time: 0 02:30:03.41 sec
 Dead Time: 0.0%

Verified by:

RA Jones 6-11-98

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

Sample Count Time: 10-JUN-1998 06:30:33.92
 Decayed to: 10-JUN-1998 06:30:33.92
 Standard Deviations: 2
 Analysis Library: ENVGEA
 Analyst: SLH2
 Background Subtract: DKA300:[SPEC.GEA3]3GBACK

>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<

Date of last energy calibration: 6-JAN-1998 15:35:32.20
 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	58.69	1407	1.08	118.88	113	12	11.4		U-232	4.722E+03
									AM-241	21.2
0	122.47	224	1.03	246.39	243	8	46.4		CO-57	0.278
									EU-154	0.588
0	661.42*	7435	1.61	1323.74	1318	13	2.4		CS-137	28.0
0	723.47	37	1.05	1447.79	1443	10	86.6		EU-154	0.647
0	1274.58	75	2.41	2549.56	2540	19	47.9		EU-154	1.22

10/13/98
RA
RA

Summary of Nuclide Activity

Page : 2

Sample ID : S98T1534-DUP

Acquisition date : 10-JUN-1998 06:30:33

Total number of lines in spectrum	5	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	5	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	Flags
			Uncorrected	Decay Corr			
			uCi/L	uCi/L	2-Sigma Error	%Error	
CO-57	271.80D	1.00	2.775E-01	2.776E-01	1.288E-01	46.41	raj
CS-137	30.00Y	1.00	2.801E+01	2.801E+01	0.069E+01	2.45	
EU-154	8.59Y	1.00	9.218E-01	9.218E-01	4.048E-01	43.91	
U-232	68.90Y	1.00	4.722E+03	4.722E+03	0.540E+03	11.44	raj
AM-241	432.20Y	1.00	2.116E+01	2.116E+01	0.242E+01	11.44	6/1/98
Total Activity :			4.773E+03	4.773E+03			

Grand Total Activity : 4.773E+03 4.773E+03

Flags: "K" = Keyline not found

"M" = Manually accepted

"E" = Manually edited

"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Page : 3

Sample ID : S98T1534-DUP

Acquisition date : 10-JUN-1998 06:30:33

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	352.	477.59	2.1241E+00
NA-24	20.	1368.55	1.4965E-01
K-40	388.	1460.75	5.5330E+00
AR-41	26.	1293.60	2.3457E-01
SC-46	66.	1120.55	2.0399E-01
CR-51	386.	320.08	1.6731E+00
MN-54	56.	834.83	1.4689E-01
CO-56	45.	846.76	1.3453E-01
CO-58	68.	810.78	1.5794E-01
FE-59	48.	1099.25	3.0738E-01
CO-60	34.	1332.50	1.7481E-01
ZN-65	37.	1115.55	3.0563E-01
SE-75	445.	264.66	2.6853E-01
KR-85	281.	514.00	4.8199E+01
SR-85	281.	514.01	2.1775E-01
Y-88	7.	1836.06	1.1385E-01
Y-91	39.	1204.67	5.6826E+01
NB-94	76.	871.09	1.7642E-01
NB-95	70.	765.78	1.5163E-01
ZR-95	66.	756.73	2.6793E-01
RU-103	229.	497.08	2.0292E-01
RURH-106	121.	621.93	3.3122E+00
AG-108m	103.	722.94	1.9012E-01
CD-109	891.	88.03	5.8123E+00
AG-110M	429.	657.76	3.3433E-01
SN-113	319.	391.69	2.7943E-01
TE-123m	723.	159.00	1.6303E-01
SB-124	134.	602.73	1.7162E-01
SB-125	378.	427.89	7.0844E-01
TE-125m	792.	109.27	5.3960E+01
I-129	601.	39.60	0.0000E+00
I-131	370.	364.48	2.2525E-01
XE-131m	677.	163.93	6.8784E+00
BA-133	414.	356.02	3.0449E-01
CS-134	141.	604.70	1.7651E-01
CS-136	65.	818.51	1.5532E-01
CS-138	16.	1435.86	5.8713E-01
CE-139	707.	165.85	1.7301E-01
BA-140	171.	537.31	7.0229E-01
LA-140	14.	1596.21	1.4541E-01
CE-141	746.	145.44	2.8121E-01
CE-144	781.	133.51	1.2460E+00
CEPR-144	782.	133.51	2.4902E+00
EU-152	959.	121.78	5.5095E-01
EU-155	963.	86.54	6.8463E-01
HF-181	303.	482.18	2.5602E-01
TA-182	745.	67.75	9.0704E-01
HG-203	447.	279.20	2.0064E-01
BI-207	123.	569.70	1.5667E-01
TL-208	464.	277.36	2.6231E+00
PB-210	602.	46.50	0.0000E+00

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : S98T1534-DUP

Acquisition date : 10-JUN-1998 06:30:33

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	67.	727.18	2.1300E+00
PB-212	592.	238.63	3.8357E-01
BI-214	197.	609.31	4.5458E-01
PB-214	427.	351.92	2.1053E+00
RA-224	556.	240.99	4.1577E+00
RA-226	746.	186.10	4.3544E+00
AC-228	87.	911.21	7.3121E-01
TH-228	945.	84.37	1.8428E+01
TH-229	888.	88.47	8.4122E-01
PA-233	445.	312.17	4.5934E-01
PA-234M	43.	1001.03	1.8154E+01
TH-234	860.	92.60	3.4001E+00
U-235	738.	185.71	2.6322E-01
NP-237	967.	86.48	1.8171E+00
U-237	1967.	59.54	3.2869E+00
NP-238	40.	984.45	5.3306E-01
NP-239	894.	106.12	7.3376E-01
PU-239	788.	129.30	2.1757E+03
AM-243	809.	74.67	4.7692E-01

JL Baker

Rayner 6-11-98

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	58.69	1752	1.13	118.89	112	12	11.6	10/13/18 KCC AK	U-232	1.176E+03
									AM-241	5.27
0	86.01	205	1.23	173.50	170	8	70.9		NP-237	0.505
0	122.45	347	1.20	246.33	242	10	50.7		EO-57	8.616E-02
									EU-154	0.183
0	661.41*	28467	1.57	1323.72	1316	16	1.2		CS-137	21.5
0	724.02	84	4.04	1448.89	1438	33	104.2			
0	1275.48	61	0.81	2551.35	2543	16	50.6		EU-154	0.200
0	1765.54*	11	1.88	3531.16	3524	14	146.9			

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Summary of Nuclide Activity

Page : 2

Sample ID : S98T1535-SAM

Acquisition date : 10-JUN-1998 10:56:29

Total number of lines in spectrum	7	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	7	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	2-Sigma Error	%Error	Flags
			Uncorrected	Decay Corr					
			uCi/L	uCi/L					
CO-57	271.80D	1.00	8.615E-02	8.616E-02	4.364E-02	50.65	1.23	1.23	RMJ
CS-137	30.00Y	1.00	2.145E+01	2.145E+01	0.026E+01	1.23	1.23	1.23	RMJ
EU-154	8.59Y	1.00	1.997E-01	1.997E-01	1.011E-01	50.62	11.61	11.61	RMJ
U-232	68.90Y	1.00	1.176E+03	1.176E+03	0.137E+03	11.61	70.89	70.89	RMJ
NP-237	2.14E+06Y	1.00	5.049E-01	5.049E-01	3.580E-01	11.61	11.61	11.61	RMJ
AM-241	432.20Y	1.00	5.268E+00	5.268E+00	0.612E+00	11.61			6/11/98
Total Activity :			1.203E+03	1.203E+03					

Grand Total Activity : 1.203E+03 1.203E+03

Flags: "K" = Keyline not found
 "E" = Manually edited

"M" = Manually accepted
 "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Page : 3

Sample ID : S98T1535-SAM

Acquisition date : 10-JUN-1998 10:56:29

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	1019.	477.59	7.1410E-01
NA-24	23.	1368.55	3.1442E-02
K-40	368.	1460.75	1.0782E+00
AR-41	29.	1293.60	4.8978E-02
SC-46	78.	1120.55	4.4130E-02
CR-51	936.	320.08	5.1573E-01
MN-54	78.	834.83	3.4309E-02
CO-56	43.	846.76	2.6318E-02
CO-58	66.	810.78	3.1035E-02
FE-59	46.	1099.25	6.0333E-02
CO-60	43.	1332.50	3.8872E-02
ZN-65	52.	1115.55	7.1648E-02
SE-75	1084.	264.66	8.2993E-02
KR-85	585.	514.00	1.3755E+01
SR-85	584.	514.01	6.2177E-02
Y-88	9.	1836.06	2.4710E-02
Y-91	47.	1204.67	1.2409E+01
NB-94	71.	871.09	3.4153E-02
NB-95	71.	765.78	3.0478E-02
ZR-95	72.	756.73	5.5880E-02
RU-103	653.	497.08	6.7417E-02
RURH-106	261.	621.93	9.5618E-01
AG-108m	131.	722.94	4.2655E-02
CD-109	1468.	88.03	1.4859E+00
AG-110M	1442.	657.76	1.2108E-01
SN-113	945.	391.69	9.4944E-02
TE-123m	1304.	159.00	4.3555E-02
SB-124	258.	602.73	4.6986E-02
SB-125	1089.	427.89	2.3766E-01
TE-125m	1390.	109.27	1.4224E+01
I-129	1157.	39.60	0.0000E+00
I-131	951.	364.48	7.1416E-02
XE-131m	1333.	163.93	1.9186E+00
BA-133	915.	356.02	8.9706E-02
CS-134	273.	604.70	4.8471E-02
CS-136	70.	818.51	3.2291E-02
CS-138	18.	1435.86	1.2307E-01
CE-139	1309.	165.85	4.6800E-02
BA-140	402.	537.31	2.1201E-01
LA-140	15.	1596.21	2.9965E-02
CE-141	1406.	145.44	7.6785E-02
CE-144	1499.	133.51	3.4317E-01
CEPR-144	1498.	133.51	6.8566E-01
EU-152	1877.	121.78	1.5334E-01
EU-155	1612.	86.54	1.7644E-01
HF-181	859.	482.18	8.5079E-02
TA-182	1278.	67.75	2.3650E-01
HG-203	1026.	279.20	6.0258E-02
BI-207	286.	569.70	4.7021E-02
TL-208	1047.	277.36	7.8141E-01
PB-210	1133.	46.50	0.0000E+00

HNF-1651 REV.0

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : S98T1535-SAM

Acquisition date : 10-JUN-1998 10:56:29

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	67.	727.18	4.2760E-01
PB-212	1325.	238.63	1.1390E-01
BI-214	337.	609.31	1.1776E-01
PB-214	993.	351.92	6.3592E-01
RA-224	1241.	240.99	1.2326E+00
RA-226	1534.	186.10	1.2405E+00
AC-228	114.	911.21	1.6600E-01
TH-228	1650.	84.37	4.8482E+00
TH-229	1448.	88.47	2.1391E-01
PA-233	954.	312.17	1.3333E-01
PA-234M	52.	1001.03	3.9795E+00
TH-234	1515.	92.60	8.9830E-01
U-235	1532.	185.71	7.5360E-02
U-237	2764.	59.54	7.7771E-01
NP-238	50.	984.45	1.1721E-01
NP-239	1542.	106.12	1.9189E-01
PU-239	1532.	129.30	6.0318E+02
AM-243	1448.	74.67	1.2698E-01

* 222-S Laboratory Counting Room 10-JUN-1998 17:27:29.18 *

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

Worklist #: 24443
 Sample ID: S98T1535-DUP
 Sample Size: 5.00000E-04 L
 Dilution Factor: 1.00000E+00

Removed by:

SL Under

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

Detector ID: GEA3
 File Number: dka300:[spec.GEA3]3g3998.cnf
 Geometry: 42
 Count Time: 0 02:30:00.00 sec
 Real Time: 0 02:30:05.97 sec
 Dead Time: 0.1%

Verified by:

R. Jones 6-11-98

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

Sample Count Time: 10-JUN-1998 14:56:54.33
 Decayed to: 10-JUN-1998 14:56:54.33
 Standard Deviations: 2
 Analysis Library: ENVGEA
 Analyst: SLH2
 Background Subtract: DKA300:[SPEC.GEA3]3GBACK

>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<

Date of last energy calibration: 6-JAN-1998 15:35:32.20
 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	58.81	1586	1.24	119.13	114	11	11.5			
0	122.36	521	1.16	246.15	241	10	31.7			
0	661.40*	27273	1.58	1323.71	1316	16	1.3			
0	723.20	98	0.93	1447.24	1441	12	32.4			
0	873.69	46	1.44	1748.09	1745	11	68.0			
0	996.98	26	1.47	1994.58	1987	12	119.7			
0	1005.13	47	1.50	2010.88	2003	11	62.4			
0	1275.62	89	2.45	2551.63	2543	21	40.0			
0	1765.78*	15	1.08	3531.64	3523	18	120.0			

10/13/98
 U-232
 AM-241
 CO-57
 EU-154
 CS-137
 EU-154
 EU-154
 EU-154
 EU-154
 EU-154

Summary of Nuclide Activity

Page : 2

Sample ID : S98T1535-DUP

Acquisition date : 10-JUN-1998 14:56:54

Total number of lines in spectrum 9
 Number of unidentified lines 0
 Number of lines tentatively identified by NID 9 100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean	Wtd Mean	Decay Corr	2-Sigma	2-Sigma Error	%Error	Flags
			Uncorrected	Decay Corr					
			uCi/L	uCi/L					
CO-57	271.80D	1.00	1.293E-01	1.293E-01	0.410E-01	31.72			<i>nmj</i>
CS-137	30.00Y	1.00	2.055E+01	2.055E+01	0.026E+01	1.25			
EU-154	8.59Y	1.00	2.967E-01	2.967E-01	0.650E-01	21.90			
U-232	68.90Y	1.00	1.065E+03	1.065E+03	0.123E+03	11.51			<i>nmj</i>
AM-241	432.20Y	1.00	4.771E+00	4.771E+00	0.549E+00	11.51			
Total Activity :			1.090E+03	1.090E+03					<i>6/11/28</i>

Grand Total Activity : 1.090E+03 1.090E+03

Flags: "K" = Keyline not found

"M" = Manually accepted

"E" = Manually edited

"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report

Page : 3

Sample ID : S98T1535-DUP

Acquisition date : 10-JUN-1998 14:56:54

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	960.	477.59	6.9367E-01
NA-24	21.	1368.55	3.0570E-02
K-40	378.	1460.75	1.0922E+00
AR-41	20.	1293.60	4.1792E-02
SC-46	65.	1120.55	4.0537E-02
CR-51	926.	320.08	5.1298E-01
MN-54	45.	834.83	2.6637E-02
CO-56	59.	846.76	3.0483E-02
CO-58	58.	810.78	2.9226E-02
FE-59	47.	1099.25	6.0980E-02
CO-60	41.	1332.50	3.7730E-02
ZN-65	35.	1115.55	6.0326E-02
SE-75	1118.	264.66	8.4249E-02
KR-85	517.	514.00	1.2946E+01
SR-85	516.	514.01	5.8526E-02
Y-88	8.	1836.06	2.3915E-02
Y-91	40.	1204.67	1.1509E+01
NB-94	93.	871.09	3.8764E-02
NB-95	65.	765.78	2.9357E-02
ZR-95	97.	756.73	6.4253E-02
RU-103	611.	497.08	6.5309E-02
RURH-106	245.	621.93	9.2767E-01
AG-108m	128.	722.94	4.2142E-02
CD-109	1427.	88.03	1.4654E+00
AG-110M	1385.	657.76	1.1870E-01
SN-113	922.	391.69	9.3832E-02
TE-123m	1297.	159.00	4.3444E-02
SB-124	242.	602.73	4.5534E-02
SB-125	1070.	427.89	2.3557E-01
TE-125m	1425.	109.27	1.4398E+01
I-129	1100.	39.60	0.0000E+00
I-131	903.	364.48	6.9623E-02
XE-131m	1218.	163.93	1.8357E+00
BA-133	862.	356.02	8.7106E-02
CS-134	244.	604.70	4.5934E-02
CS-136	59.	818.51	2.9764E-02
CS-138	18.	1435.86	1.2346E-01
CE-139	1299.	165.85	4.6621E-02
BA-140	408.	537.31	2.1361E-01
LA-140	20.	1596.21	3.3970E-02
CE-141	1278.	145.44	7.3261E-02
CE-144	1400.	133.51	3.3191E-01
CEPR-144	1400.	133.51	6.6321E-01
EU-152	1783.	121.78	1.4952E-01
EU-155	1508.	86.54	1.7074E-01
HF-181	824.	482.18	8.3389E-02
TA-182	1268.	67.75	2.3556E-01
HG-203	978.	279.20	5.8850E-02
BI-207	269.	569.70	4.5681E-02
TL-208	973.	277.36	7.5363E-01
PB-210	1102.	46.50	0.0000E+00

Minimum Detectable Activity Report (continued)

Page : 4

Sample ID : S98T1535-DUP

Acquisition date : 10-JUN-1998 14:56:54

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	63.	727.18	4.1601E-01
PB-212	1233.	238.63	1.0994E-01
BI-214	311.	609.31	1.1325E-01
PB-214	952.	351.92	6.2295E-01
RA-224	1164.	240.99	1.1944E+00
RA-226	1462.	186.10	1.2116E+00
AC-228	97.	911.21	1.5387E-01
TH-228	1505.	84.37	4.6328E+00
TH-229	1427.	88.47	2.1240E-01
PA-233	898.	312.17	1.2947E-01
PA-234M	51.	1001.03	3.9426E+00
TH-234	1416.	92.60	8.6907E-01
U-235	1488.	185.71	7.4294E-02
NP-237	1510.	86.48	4.5258E-01
U-237	2568.	59.54	7.4999E-01
NP-238	41.	984.45	1.0758E-01
NP-239	1487.	106.12	1.8845E-01
PU-239	1355.	129.30	5.6783E+02
AM-243	1318.	74.67	1.2125E-01

LABCORE Completed Worklist Report for Worklist# 24444

Analyst: ak1 Instrument: AB10 Book#

Method: Rev/Mod

Worklist Comment: TX118, @SR90-01, STD:1.0mL, SS by Ludlum. Suspect PCB skm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		@SR90-01 SR90-01 SOLID		1.05E-03	1.07E-3	101.905 % Recovery	
1 STD	0		@SR90-01 SR90-01C SOLID		100	8.94E+01	89.400 % Recovery	
1 STD	0		@SR90-01 SR90-01E SOLID		1.00	2.08E+00	2.080 % Ct. Err	
2 BLNK-PREP	0		@SR90-01 SR90-01 SOLID		1	6.99E-1	0.699 uCi/g	
2 BLNK-PREP	0		@SR90-01 SR90-01C SOLID		100	8.91E+01	89.100 % Recovery	
2 BLNK-PREP	0		@SR90-01 SR90-01E SOLID		1.00	9.87E+00	9.870 uCi/g	
3 SAMPLE	S98T001524	0 F	@SR90-01 SR90-01 SOLID		N/A	3.16E+02	5.00E-002 uCi/g	
3 SAMPLE	S98T001524	0 F	@SR90-01 SR90-01C SOLID		N/A	8.79E+01	% Recovery	
3 SAMPLE	S98T001524	0 F	@SR90-01 SR90-01E SOLID		N/A	4.02E-01	% Ct. Error	
4 DUP	S98T001524	0 F	@SR90-01 SR90-01 SOLID		3.16E+2	3.07E+2	2.889 RPD	
4 DUP	S98T001524	0 F	@SR90-01 SR90-01C SOLID		100	8.82E+01	88.200 % Recovery	
4 DUP	S98T001524	0 F	@SR90-01 SR90-01E SOLID		1.00	4.08E-01	0.408 % Ct. Err	
5 SAMPLE	S98T001534	0 F	@SR90-01 SR90-01 SOLID		N/A	2.77E+02	4.95E-002 uCi/g	
5 SAMPLE	S98T001534	0 F	@SR90-01 SR90-01C SOLID		N/A	8.93E+01	% Recovery	
5 SAMPLE	S98T001534	0 F	@SR90-01 SR90-01E SOLID		N/A	4.27E-01	% Ct. Error	
6 DUP	S98T001534	0 F	@SR90-01 SR90-01 SOLID		2.77E+2	2.80E+2	1.077 RPD	
6 DUP	S98T001534	0 F	@SR90-01 SR90-01C SOLID		100	8.94E+01	89.400 % Recovery	
6 DUP	S98T001534	0 F	@SR90-01 SR90-01E SOLID		1.00	4.26E-01	0.426 % Ct. Err	
7 SAMPLE	S98T001535	0 F	@SR90-01 SR90-01 SOLID		N/A	6.53E+01	8.89E-003 uCi/g	
7 SAMPLE	S98T001535	0 F	@SR90-01 SR90-01C SOLID		N/A	8.90E+01	% Recovery	
7 SAMPLE	S98T001535	0 F	@SR90-01 SR90-01E SOLID		N/A	3.73E-01	% Ct. Error	
8 DUP	S98T001535	0 F	@SR90-01 SR90-01 SOLID		6.53E+1	6.02E+1	8.127 RPD	
8 DUP	S98T001535	0 F	@SR90-01 SR90-01C SOLID		100	8.98E+01	89.800 % Recovery	
8 DUP	S98T001535	0 F	@SR90-01 SR90-01E SOLID		1.00	3.86E-01	0.386 % Ct. Err	

Final page for worklist# 24444

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# 24444

Analyst: AKL Instrument: AB00 10 Book# 28657
Method: LA-220-101 Rev/Mod E3 Next waste as suspect PCB. skm
Worklist Comment: TX118, @SR90-01, STD:1.0mL, SS by Ludlum. Suspect PCB skm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@SR90-01	SOLID		
2 BLNK-PREP			@SR90-01	SOLID		
3 SAMPLE	S98T001524	0 F	@SR90-01	SOLID	98000225	TX-118
Analytes Requested: SR90-01 , SR90-01C, SR90-01E						
4 DUP	S98T001524	0 F	@SR90-01	SOLID		
5 SAMPLE	S98T001534	0 F	@SR90-01	SOLID	98000225	TX-118
Analytes Requested: SR90-01 , SR90-01C, SR90-01E						
6 DUP	S98T001534	0 F	@SR90-01	SOLID		
7 SAMPLE	S98T001535	0 F	@SR90-01	SOLID	98000225	TX-118
Analytes Requested: SR90-01 , SR90-01C, SR90-01E						
8 DUP	S98T001535	0 F	@SR90-01	SOLID		

Final page for worklist # 24444

Alita Hudson 6/9/98
Analyst Signature Date

Shahid 6-9-98
Analyst Signature Date
MES 6/10/98

Data Entry Comments:

Kathy Tellefsen 6/5/98
Mg waste/sample per CO-100-114

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

WORKBOOK PAGE: STD1

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5) LIQUIDS

				STANDARD	
Type	DETECTOR NUMBER	10	CARRIER ADDED in mL (CVA)	1.000	
STD	TOTAL COUNTS (TC)	9135	GROSS WEIGHT (W2)	7.8599	
Work List	COUNT TIME in MINUTES (CT)	10	TARE WEIGHT (W1)	7.7705	
24444	BACKGROUND in cpm (BKG)	9.3	NET WEIGHT (W3)	0.0894	
Test Code	SAMPLE VOLUME in mL (SS)	1.000	DELTA TIME (HOURS) (DT)	4.08	
@SR90-01	DILUTION FACTOR (DF)	1			
Matrix	DIGEST DILUTION FACTOR DDF	1			
LIQUID	SAMPLE COUNT RATE (Rs)	904.20	Sr-90 EFFICIENCY FACTO (C1)	0.4051	
Batch Number	CRITICAL LEVEL (Lc)	1.84	Y-90 EFFICIENCY FACTOR (C2)	0.4503	
98002917	TIME OF SEPARATION (ST)	10:45	Rmax	N/A	
Rerun	DATE OF SEPARATION (SD)	06/09/98	DETECTION LIMIT (Ld)	3.77	
0	TIME OF COUNT (TOC)	14:50	Sr-89/90 CONC. in µCi/L	1.0732E+00	
Sample Prep	DATE OF COUNT (DOC)	06/09/98			
N/A	STANDARD BOOK #	28B57			
Sample #	STANDARD VALUE in µCi/mL	1.0538E-03			
WL24444-STD					
Instrument Code					
WB26870					
Prepared By	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)				
SLH2	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				
Chemist	RS*DF*DDF*1000/((C1+C2*(1-e to the power of ((-natural log 2)/(64.2*DT))))*SS*REC*2220000)				
SAC	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))				
Analyst	Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)				
AKL	Percent Carrier Recovery = (Net Weight / Expected weight) * 100				
Date Complete	NOTE: Expected weight = CVA * 0.1				
06/10/98	Detection Levels and Less Than Values are determined from Procedure LA-508-002.				
Analysis Date	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100				
06/09/98	Sr-89/90 CONCENTRATION	1.07E-03	µCi/mL	DETECTION LEVEL 4.47E-06 µCi/L	
Analysis Time					
02:40 PM	RELATIVE COUNTING ERROR	2.1%			
Sample Point					
TX-118	PERCENT CARRIER RECOVERY	89.4%			

Analyst:	AKL	Date:	10-Jun-98
Signature of Chemist:	SAC	Date:	10 Jun 98

STANDARD.WB1 REV 2.0

22010NML

WORKBOOK PAGE: BLANK2

LA-220-101 / E-3 Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

BLNK-PREP

Detector Type	DETECTOR NUMBER	10	CARRIER ADDED in mL	(CVA)	1.000
BLNK-PREP	TOTAL COUNTS (TC)	625	GROSS WEIGHT	(W2)	7.8839
Work List	COUNT TIME in MINUTES (CT)	10	TARE WEIGHT	(W1)	7.7948
24444	BACKGROUND in cpm (BKG)	9.3	NET WEIGHT	(W3)	0.0891
Test Code	SAMPLE VOLUME in mL (SS)	0.500	DELTA TIME (HOURS)	(DT)	4.35
@SR90-01	DILUTION FACTOR (DF)	11			
Matrix	DIGEST FACTOR (g/L) (D g/L)	1.9884			
SOLID	SAMPLE COUNT RATE (Rs)	53.20	SR-90 EFFICIENCY FACTOR	(C1)	0.4051
Batch Number	CRITICAL LEVEL (Lc)	1.84	Y-90 EFFICIENCY FACTOR	(C2)	0.4503
98002917	TIME OF SEPARATION (ST)	10:45	Rmax		N/A
Re-run	DATE OF SEPARATION (SD)	06/09/98	DETECTION LIMIT	(Ld)	3.77
0	TIME OF COUNT (TOC)	15:06	Sr-89/90 CONC in $\mu\text{Ci/g}$		6.9893E-01
Sample Prep	DATE OF COUNT (DOC)	06/09/98			
N/A					
Sample #					
WL24444-BLNK					
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)				
WB26870	Sr-89/90 CONC in $\mu\text{Ci/g}$ 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*22200000)				
SLH2	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				
AKL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.				
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100				
06/10/98					
Analysis Date					DETECTION LEVEL 4.95E-02 $\mu\text{Ci/g}$
06/09/98	Sr-89/90 CONCENTRATION	6.99E-01	$\mu\text{Ci/g}$		
Analysis Time					
02:40 PM	RELATIVE COUNTING ERROR	9.9%			
Sample Point					
TX-118	PERCENT CARRIER RECOVERY	89.1%			

Analyst:	AKL	Date:	10-Jun-98
Signature of Chemist:	SAC	Date:	10 Jun 98

BLANK.WB1 REV 2.0

22010NML

WORKBOOK PAGE: SAM3

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

					SAMPLE	
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	238217	GROSS WEIGHT	(W2)	7.8882
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.8003
24444	BACKGROUND in cpm	(BKG)	9.3	NET WEIGHT	(W3)	0.0879
Test Code	SAMPLE VOLUME in mL	(SS)	0.500	DELTA TIME (HOURS)	(DT)	4.67
@SR90-01	DILUTION FACTOR	DF	11			
Matrix	DIGEST FACTOR (g/L)	(D g/L)	1.9884			
SOLID	SAMPLE COUNT RATE	(Rs)	23812.40	SR-90 EFFICIENCY FACTOR	(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.84	Y-90 EFFICIENCY FACTOR	(C2)	0.4503
98002917	TIME OF SEPARATION	(ST)	10:45	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	06/09/98	DETECTION LIMIT	(Ld)	3.77
0	TIME OF COUNT	(TOC)	15:25	Sr-89/90 CONC in µCi/g		3.1603E+02
Sample Prep	DATE OF COUNT	(DOC)	06/09/98			
FUSION01						
Sample #						
S98T001524						
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)					
WB26870	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*22200000)					
SLH2	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					
AKL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.					
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100					
06/10/98						
Analysis Date						DETECTION LEVEL 5.00E-02 µCi/g
06/09/98	Sr-89/90 CONCENTRATION	3.16E+02	µCi/g			
Analysis Time	RELATIVE COUNTING ERROR	0.4%				
02:40 PM						
Sample Point						
TX-118	PERCENT CARRIER RECOVERY	87.9%				

Analyst:	AKL	Date:	10-Jun-98
Signature of Chemist:	SAC	Date:	10 Jun 98

SAMPLE.WB1 REV 2.0

22010NML

HNF-1651 REV. 0

WORKBOOK PAGE: DUP4

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

					DUP
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA) 1.000
DUP	TOTAL COUNTS	(TC)	231116	GROSS WEIGHT	(W2) 7.7420
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1) 7.6538
24444	BACKGROUND in cpm	(BKG)	9.3	NET WEIGHT	(W3) 0.0882
Test Code	SAMPLE VOLUME in mL	(SS)	0.500	DELTA TIME (HOURS)	(DT) 4.92
@SR90-01	DILUTION FACTOR	DF	11		
Main	DIGEST FACTOR (g/L)	(D g/L)	1.9756		
SOLID	SAMPLE COUNT RATE	(Rs)	23102.30	SR-90 EFFICIENCY FACTOR	(C1) 0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.84	Y-90 EFFICIENCY FACTOR	(C2) 0.4503
98002917	TIME OF SEPARATION	(ST)	10:45	Rmax	N/A
Retun	DATE OF SEPARATION	(SD)	06/09/98	DETECTION LIMIT	(Ld) 3.77
0	TIME OF COUNT	(TOC)	15:40	Sr-89/90 CONC in $\mu\text{Ci/g}$	3.0671E+02
Sample Prep	DATE OF COUNT	(DOC)	06/09/98		
FUSION01					
Sample #					
S98T001524					
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)				
WB26870	Sr-89/90 CONC in $\mu\text{Ci/g}$ Replace RS with RMAX if $RS \leq Lc$ 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)				
SLH2	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				
AKL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.				
Data Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100				
06/10/98					
Analysis Date	Sr-89/90 CONCENTRATION				DETECTION LEVEL 5.00E-02 $\mu\text{Ci/g}$
06/09/98	3.07E+02 $\mu\text{Ci/g}$				
Analysis Time	RELATIVE COUNTING ERROR				
02:40 PM	0.4%				
Sample Point	PERCENT CARRIER RECOVERY				
TX-118	88.2%				

Analyst:	AKL	Date:	10-Jun-98
Signature of Chemist:	SAC	Date:	10 Jun 98
SAMPLE.WB1 REV 2.0		22010NML	

WORKBOOK PAGE: SAM5

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

					SAMPLE	
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	210600	GROSS WEIGHT	(W2)	7.8826
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.7933
24444	BACKGROUND in cpm	(BKG)	9.3	NET WEIGHT	(W3)	0.0893
Test Code	SAMPLE VOLUME in mL	(SS)	0.500	DELTA TIME (HOURS)	(DT)	5.17
@SR90-01	DILUTION FACTOR	DF	11			
Matrix	DIGEST FACTOR (g/L)	(D g/L)	1.9644			
SOLID	SAMPLE COUNT RATE	(Rs)	21050.70	Sr-90 EFFICIENCY FACTOR	(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.84	Y-90 EFFICIENCY FACTOR	(C2)	0.4503
98002917	TIME OF SEPARATION	(ST)	10:50	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	06/09/98	DETECTION LIMIT	(Ld)	3.77
0	TIME OF COUNT	(TOC)	16:00	Sr-89/90 CONC in $\mu\text{Ci/g}$		2.7686E+02
Sample Prep	DATE OF COUNT	(DOC)	06/09/98			
FUSION01						
Sample #						
S98T001534						
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)					
WB26870	Sr-89/90 CONC in $\mu\text{Ci/g}$ Replace RS with RMAX if $RS \leq Lc$ 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)					
SLH2	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					
AKL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.					
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100					
06/10/98						
Analysis Date						DETECTION LEVEL 4.95E-02 $\mu\text{Ci/g}$
06/09/98	Sr-89/90 CONCENTRATION	2.77E+02		$\mu\text{Ci/g}$		
Analysis Time						
02:40 PM	RELATIVE COUNTING ERROR	0.4%				
Sample Point						
TX-118	PERCENT CARRIER RECOVERY	89.3%				

Analyst:	AKL	Date:	10-Jun-98
Signature of Chemist:	SAC	Date:	10 Jun 98
SAMPLE.WB1 REV 2.0 22010NML			

HNF-1651 REV.0

WORKBOOK PAGE: DUP6

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

				DUP	
Type	DETECTOR NUMBER	10	CARRIER ADDED in mL	(CVA)	1.000
DUP	TOTAL COUNTS (TC)	212164	GROSS WEIGHT (W2)		7.7387
Work List	COUNT TIME in MINUTES (CT)	10	TARE WEIGHT (W1)		7.6493
24444	BACKGROUND in cpm (BKG)	9.3	NET WEIGHT (W3)		0.0894
Test Code	SAMPLE VOLUME in mL (SS)	0.500	DELTA TIME (HOURS) (DT)		5.80
@SR90-01	DILUTION FACTOR (DF)	11			
Matrix	DIGEST FACTOR (g/L) (D g/L)	1.944			
SOLID	SAMPLE COUNT RATE (Rs)	21207.10	SR-90 EFFICIENCY FACTOR (C1)		0.4051
Batch Number	CRITICAL LEVEL (Lc)	1.84	Y-90 EFFICIENCY FACTOR (C2)		0.4503
98002917	TIME OF SEPARATION (ST)	10:50	Rmax		N/A
Re-run	DATE OF SEPARATION (SD)	06/09/98	DETECTION LIMIT (Ld)		3.77
0	TIME OF COUNT (TOC)	16:38	Sr-89/90 CONC in $\mu\text{Ci/g}$		2.7964E+02
Sample Prep	DATE OF COUNT (DOC)	06/09/98			
FUSION01					
Sample #					
S98T001534					
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)				
WB26870	Sr-89/90 CONC in $\mu\text{Ci/g}$ Replace RS with RMAX if $RS \leq Lc$ and $RS > 0$ or Replace RS with Lc if $RS < 0$				
Prepared By	$RS * 1000 * DF / ((C1 + C2 * (1 - e \text{ to the power of } ((- \text{natural log } 2) / 64.2 * DT))) * SS * (Dg/L) * REC * 22200000)$				
SLH2	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 = $CVA * 0.1$				
AKL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.				
Date Complete	Delta Time (hours) = $((DOC - SD) * 24) + (TOC - ST) / 100$				
06/10/98					
Analysis Date					DETECTION LEVEL 4.97E-02 $\mu\text{Ci/g}$
06/09/98	Sr-89/90 CONCENTRATION	2.80E+02	$\mu\text{Ci/g}$		
Analysis Time					
02:40 PM	RELATIVE COUNTING ERROR	0.4%			
Sample Point					
TX-118	PERCENT CARRIER RECOVERY	89.4%			

Analyst:	AKL	Date:	10-Jun-98
Signature of Chemist:	SAC	Date:	10 Jun 98

SAMPLE.WB1 REV 2.0

22010NML

WORKBOOK PAGE: SAM7

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

					SAMPLE	
TYPE	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	276962	GROSS WEIGHT	(W2)	7.7219
Worksheet	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.6329
24444	BACKGROUND in cpm	(BKG)	9.3	NET WEIGHT	(W3)	0.0890
Test Code	SAMPLE VOLUME in mL	(SS)	0.250	DELTA TIME (HOURS)	(DT)	6.05
@SR90-01	DILUTION FACTOR	DF	1			
Matrix	DIGEST FACTOR (g/L)	(D g/L)	1.9788			
SOLID	SAMPLE COUNT RATE	(Rs)	27686.90	SR-90 EFFICIENCY FACTOR	(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.84	Y-90 EFFICIENCY FACTOR	(C2)	0.4503
98002917	TIME OF SEPARATION	(ST)	10:50	Rmax		N/A
Rerun	DATE OF SEPARATION	(SD)	06/09/98	DETECTION LIMIT	(Ld)	3.77
0	TIME OF COUNT	(TOC)	16:53	Sr-89/90 CONC in $\mu\text{Ci/g}$		6.5332E+01
Sample Prep	DATE OF COUNT	(DOC)	06/09/98			
FUSION01						
Sample						
S98T001535						
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)					
WB26870	Sr-89/90 CONC in $\mu\text{Ci/g}$ Replace RS with RMAX if $RS \leq Lc$ and $RS > 0$ or Replace RS with Lc if $RS < 0$					
Prepared By	$RS * 1000 * DF / ((C1 + C2 * (1 - e \text{ to the power of } ((-\text{natural log } 2) / 64.2 * DT))) * SS * (Dg/L) * REC * 22200000)$					
SLH2	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					
AKL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.					
Date Complete	Delta Time (hours) = $((DOC - SD) * 24) + (TOC - ST) / 100$					
06/10/98						
Analysis Date						DETECTION LEVEL 8.89E-03 $\mu\text{Ci/g}$
06/09/98	Sr-89/90 CONCENTRATION	6.53E+01	$\mu\text{Ci/g}$			
Analysis Time						
02:40 PM	RELATIVE COUNTING ERROR	0.4%				
Sample Point						
TX-118	PERCENT CARRIER RECOVERY	89.0%				

Analyst:	AKL	Date:	10-Jun-98
Signature of Chemist:	SAC	Date:	10 Jun 98

SAMPLE.WB1 REV 2.0

22010NML

WORKBOOK PAGE: DUP8

Sr-89/90 : LA-220-101 (E-3), 102 (INACTIVE), 104 (E-5)

					DUP	
Type	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)	1.000
DUP	TOTAL COUNTS	(TC)	257887	GROSS WEIGHT	(W2)	7.8892
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)	7.7994
24444	BACKGROUND in cpm	(BKG)	9.3	NET WEIGHT	(W3)	0.0898
Test Code	SAMPLE VOLUME in mL	(SS)	0.250	DELTA TIME (HOURS)	(DT)	6.37
@SR90-01	DILUTION FACTOR	DF	1			
Matrix	DIGEST FACTOR (g/L)	(D g/L)	1.9736			
SOLID	SAMPLE COUNT RATE	(Rs)	25779.40	SR-90 EFFICIENCY FACTOR	(C1)	0.4051
Batch Number	CRITICAL LEVEL	(Lc)	1.84	Y-90 EFFICIENCY FACTOR	(C2)	0.4503
98002917	TIME OF SEPARATION	(ST)	10:50	Rmax		N/A
Run	DATE OF SEPARATION	(SD)	06/09/98	DETECTION LIMIT	(Ld)	3.77
0	TIME OF COUNT	(TOC)	17:12	Sr-89/90 CONC in $\mu\text{Ci/g}$ 6.0248E+01		
Sample Prep	DATE OF COUNT	(DOC)	06/09/98			
FUSION01						
Sample #						
S98T001535						
Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)					
WB26870	Sr-89/90 CONC in $\mu\text{Ci/g}$ Replace RS with RMAX if $RS \leq Lc$ 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)					
SLH2	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					
AKL	Detection Levels and Less Than Values are determined from Procedure LA-508-002.					
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100					
06/10/98						
Analysis Date						DETECTION LEVEL 8.80E-03 $\mu\text{Ci/g}$
06/09/98	Sr-89/90 CONCENTRATION	6.02E+01			$\mu\text{Ci/g}$	
Analysis time						
02:40 PM	RELATIVE COUNTING ERROR	0.4%				
Sample Point						
TX-118	PERCENT CARRIER RECOVERY	89.8%				

Analyst:	AKL	Date:	10-Jun-98
Signature of Chemist:	SAC	Date:	10 Jun 98
SAMPLE.WB1 REV 2.0		22010NML	

LABCORE Completed Worklist Report for Worklist# 24506

Analyst: gay

Instrument: AB18

Book#

Method: Rev/Mod

Worklist Comment: TX118,@PU23901,Handle sample as Suspect PCBs.tdm

Seq Type	Sample#	R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 STD	0		@PU23901 PU23901	SOLID	1.12E+04	1.29E+4	115.179	% Recovery
1 STD	0		@PU23901 PU23901T	SOLID	100	8.66E+01	86.600	% Recovery
1 STD	0		@PU23901 PU23901E	SOLID	1	1.88E+00	1.880	% Ct Error
2 BLNK-PREP	0		@PU23901 PU23901	SOLID	1	<1.51E-1		uCi/g
2 BLNK-PREP	0		@PU23901 PU23901T	SOLID	100	9.77E+01	97.700	% Recovery
2 BLNK-PREP	0		@PU23901 PU23901E	SOLID	1	1.00E+02	100.000	uCi/g
3 SAMPLE	S98T001524	0 F	@PU23901 PU23901	SOLID	N/A	1.83E+01	0.932	uCi/g
3 SAMPLE	S98T001524	0 F	@PU23901 PU23901T	SOLID	N/A	8.49E+01		% Recovery
3 SAMPLE	S98T001524	0 F	@PU23901 PU23901E	SOLID	N/A	1.64E+00		% Ct Error
4 DUP	S98T001524	0 F	@PU23901 PU23901	SOLID	1.83E+1	2.21E+1	18.812	RPD
4 DUP	S98T001524	0 F	@PU23901 PU23901T	SOLID	100	8.26E+01	82.600	% Recovery
4 DUP	S98T001524	0 F	@PU23901 PU23901E	SOLID	1.00	1.61E+00	1.610	% Ct Error

Final page for worklist# 24506

Analyst Signature

Date

Analyst Signature

Date

John Relyea 15 June 98
Reviewer Signature Date

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

004-1

LABCORE Data Entry Template for Worklist# 24506

Analyst: gay Instrument: PU01 _____ Book# 28B57Method: LA-953-104 Rev/Mod B-0

Worklist Comment: TX118,@PU23901,Handle sample as Suspect PCB's.tdm

S Type	Sample#	R A	Test	Matrix	Group#	Project
1 STD			@PU23901	SOLID		
2 BLNK-PREP			@PU23901	SOLID		
3 SAMPLE	S98T001524	0 F	@PU23901	SOLID	98000225	TX-118
	Analytes Requested: PU23901 , PU23901E, PU23901T					
4 DUP	S98T001524	0 F	@PU23901	SOLID		

Final page for worklist # 24506

Analyst Signature [Signature] Date 6-10-98Analyst Signature [Signature] Date 6/11/98
MB... 6/11/98

Data Entry Comments:

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

WORKBOOK PAGE: STD1

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0)**LIQUID****STD**

STD	DATE COUNTED	JUN-10-98	PU 236 AEA FRAC (C236)	0.391
Work Date	SAMPLE VOLUME in mL	SS	PU 238 AEA FRAC (C238)	0.000
24506	SAMPLE DILUTION FACTOR	DF	PU 239 AEA FRAC (C239)	0.541
Test C236	TRACER VOLUME in mL	SPKV	TOTAL AT COUNTS	3686
Test C236	DIGEST DILUTION FACTOR	DDF	AT COUNT TIME (MIN)	30
@PU23901	TRACER BOOK NO	145B43	BACKGROUND in cpm (Bkg)	0.030
Matrix	DETECTOR NUMBER	18	PU 236 cpm	39.010
LIQUID	EFFICIENCY FACTOR	EFF	PU 238 cpm	0.000
Batch Number	TRACER PREPARATION DATE	01/19/98	PU 239 cpm	53.960
98002994	TRACER PREPARATION VALUE (dpm/mL)	2270.000	AEA COUNT TIME	480
Return	PU-236 DECAY CORR'D VALUE (dpm/mL)	2065.196	Pu 239/240 $\mu\text{Ci/L}$	1.2871E-01
0	PU-238 TRACER VALUE (dpm/mL)	0.000		
Sample Prep	STANDARD BOOK NO	28B57		
N/A	STANDARD VALUE in $\mu\text{Ci/mL}$	1.120E-04		
Sample No				
WL24506				
Instrument Code	Decay Time = Date Counted - Tracer Preparation Date			
WB27809	Pu-236 Decay Corr'd Value = Pu-236 Preparation Value $\times [e \text{ to the power of } \{(-\ln 2 \times \text{Decay Time}/1040.95)\}]$			
Prepared By	Pu 236 Tracer Recovery = (Total AT Counts / TC - Bkg) $\times 1/\text{EFF} \times \text{C236} \times 100 / \text{Pu-236 Decay Corr'd Value} \times \text{SPKV}$			
SZC	Pu 239/240 $\mu\text{Ci/L}$ = (C239)/(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(2220000 dpm/ μCi)]			
Chemist	Pu 238 dpm = [(Total AT Counts / TC) - Bkg $\times 1/\text{EFF} \times \text{C236}$] - (Pu-238 Tracer Value $\times \text{SPKV} \times \text{Pu 236 Tracer Recovery} / 100)$			
JFR	Pu 238 $\mu\text{Ci/L}$ = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery / 100)(2220000 dpm/ μCi)(D g/L)(SS)]			
Analyst	Relative Counting Error = Square Root of $\{[1/(\text{Pu 236 cpm} \times \text{min})] + [1/(\text{Pu 238 or 239/240 cpm} \times \text{min})]\} \times 1.96 \times 100$			
GAY				
Date Complete				
06/11/98	Pu 239/240 $\mu\text{Ci/mL}$	1.29E-04	DETECTION LEVELS in $\mu\text{Ci/mL}$	
Analysis Date	Relative Counting Error	= 1.9%		
06/10/98				
Analysis Time			Pu 239/240	
03:00 PM			8.24E-06	
Sample Point				
TX-118	Pu 236 Tracer Recovery	= 86.6%		

Analyst:	GAY	Date:	11-Jun-98
Signature of Chemist:	<i>John Relyea</i>	JFR	Date: 15 June 98

STANDARD.WB1 REV 1.0

943128ML

WORKBOOK PAGE: BLANK2

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0))

LI

BLNK-PREP

Type	DATE COUNTED	SEP-10-98	PU 236 AEA FRAC (C236)	0.905
BLNK-PREP	SAMPLE VOLUME in mL SS	1.000	PU 238 AEA FRAC (C238)	0.022
WorkList	SAMPLE DILUTION FACTOR DF	101.000	PU 239 AEA FRAC (C239)	0.000
24506	TRACER VOLUME in mL SPKV	0.100	TOTAL AT COUNTS	1691
Test Code	DIGEST GRAMS of SOLIDS/ Dg/L	1.9884	AT COUNT TIME (MIN)	30
@PU23901	TRACER BOOK NO	145B43	BACKGROUND in cp (Bkg)	0.030
Matrix	DETECTOR NUMBER	18	PU 236 cpm	37.980
SOLID	EFFICIENCY FACTOR EFF	0.2686	PU 238 cpm	0.920
Batch Number	TRACER PREPARATION DATE	01/19/98	PU 239 cpm	0.000
98002994	TRACER PREPARATION VALUE (dpm/mL)	2270.00	AEA COUNT TIME	480
Return	PU-236 DECAY CORR'D VALUE (dpm/mL)	1942.48	Pu 239/240 $\mu\text{Ci/g}$ =	< 1.508E-01
0	PU-238 TRACER VALUE (dpm/m)	0.00		

Sample Prep

N/A

Sample #

WL24506

Instrument Code

WB27809

Prepared By

SZC

Chemist

JFR

Analyst

GAY

Date Complete

06/11/98

Analysis Date

06/10/98

Analysis Time

03:00 PM

Sample Point

TX-118

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value * [e to the power of $\{(-\ln 2 * \text{Decay Time}/1040.95)\}$]

Pu 236 Tracer Recovery = (Total AT Counts / TC - Bkg) * C236 * 100 / (Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 $\mu\text{Ci/g}$ = (C239) * (Pu 236 Decay Corr'd Value) * (SPKV) * (1000 mL/L) * (DF) / [(C236) * (SS) * (D g/L) * (2220000 dpm/ μCi)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value * SPKV * Pu 236 Tracer Recovery / 100)

Pu 238 $\mu\text{Ci/g}$ = [(Pu 238 dpm) * (DF) * (1000 mL/L)] / [(Pu-236 Tracer Recovery / 100) * (2220000 dpm/ μCi) * (D g/L) * (SS)]Relative Counting Error = Square Root of $\{[1 / (\text{Pu 236 cpm} * \text{min})] + [1 / (\text{Pu 238 or 239/240 cpm} * \text{min})]\} * 1.96 * 100$

06/11/98	Pu 239/240 $\mu\text{Ci/g}$	< 1.51E-01	DETECTION LEVELS in $\mu\text{Ci/g}$
06/10/98	Relative Counting Error	= 100.0%	
03:00 PM	NOTE: Pu 238 Result is a LESS THAN Value.		
TX-118	Pu 238 $\mu\text{Ci/g}$	< 1.51E-01	
	Relative Counting Error	= 9.4%	Pu 238
	Pu 236 Tracer Recovery	= 97.7%	1.51E-01

Analyst:	GAY	Date:	11-Jun-98
Signature of Chemist:	<i>John Relyea</i>	Date:	15 June 98

BLANK.WB1 REV 1.0

943128ML

WORKBOOK PAGE: SAM3

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0))

LIQUID /

SAMPLE

TYPE	DATE COUNTED	JUN-10-98	Pu 236 AEA FRAC (C236)	0.179
SAMPLE	SAMPLE VOLUME in mL	SS 1.000	Pu 238 AEA FRAC (C238)	0.093
WORKLIST	SAMPLE DILUTION FACTOR	DF 101.000	Pu 239 AEA FRAC (C239)	0.695
24506	TRACER VOLUME in mL	SPKV 0.100	TOTAL AT COUNTS	7897
Test Code	DIGEST GRAMS OF SOLIDS/L	Dg/L 1.9884	AT COUNT TIME (MIN)	30
@PU23901	TRACER BOOK NO	145B43	BACKGROUND in cpm (Bkg)	0.030
Matrix	DETECTOR NUMBER	18	Pu 236 cpm	37.370
SOLID	EFFICIENCY FACTOR	EFF 0.269	Pu 238 cpm	19.470
Batch Number	TRACER PREPARATION DATE	01/19/98	Pu 239 cpm	145.110
98002994	TRACER PREPARATION VALUE (dpm/mL)	2270.000	AEA COUNT TIME	480
Refun	PU-236 DECAY CORR'D VALUE (dpm/mL)	2065.196	Pu 239/240 μ Ci/g	1.8347E+01
0	PU-238 TRACER VALUE (dpm/mL)	0.000		

Sample Prep
FUSION01Sample #
S98T001524Instrument Code
WB27809Prepared By
SZCChemist
JFRAnalyst
GAYData Complete
06/11/98Analysis Date
06/10/98Analysis Time
03:00 PMSample Point
TX-118

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value * [e to the power of {(-ln2 * Decay Time/1040.95)}]

Pu 236 Tracer Recovery = (Total AT Counts / TC - Bkg) * C236 * 100 / (Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 μ Ci/g = (C239) (Pu 236 Decay Corr'd Value) (SPKV) (1000mL/L) (DF) / [(C236) (SS) (D g/L) (2220000 dpm/ μ Ci)]

Pu 238 dpm = [(Total AT Counts / TC) - Bkg * 1/EFF * C238] - (Pu-238 Tracer Value * SPKV * Pu 236 Tracer Recovery / 100)

Pu 238 μ Ci/g = [(Pu 238 dpm) (DF) (1000mL/L)] / [(Pu-236 Tracer Recovery / 100) (2220000 dpm/ μ Ci) (D g/L) (SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.98 * 100

Pu 239/240 μ Ci/g 1.83E+01
Relative Counting Error = 1.6%DETECTION
LEVELS
in μ Ci/gPu 239/240
9.32E-01
Pu 238
9.32E-01Pu 238 μ Ci/g 2.46E+00
Relative Counting Error = 2.5%
Pu 236 Tracer Recovery = 84.9%

Analyst:	GAY	Date:	11-Jun-98
Signature of Chemist:	<i>John Relyea</i>	Date:	15 June 98

SAMPLE.WB1 REV 1.0

943128ML

WORKBOOK PAGE: DUP4

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-0)

LIQUID /

DUP

DATE COUNTED	JUN-10-98	PU 238 AEA FRAC (C236)	0.154
DUP	SAMPLE VOLUME in mL SS	1.000 PU 238 AEA FRAC (C238)	0.094
Work List	SAMPLE DILUTION FACTOR DF	101.000 PU 239 AEA FRAC (C239)	0.717
24506	TRACER VOLUME in mL SPKV	0.100 TOTAL AT COUNTS	8926
1680000	DIGEST GRAMS OF SOLIDS/L Dg/L	1.9756 AT COUNT TIME (MIN)	30
@PU23901	TRACER BOOK NO	145B43 BACKGROUND in cpm (Bkg)	0.030
Matrix	DETECTOR NUMBER	18 PU 236 cpm	37.430
SOLID	EFFICIENCY FACTOR EFF	0.269 PU 238 cpm	22.980
Batch Number	TRACER PREPARATION DATE	01/19/98 PU 239 cpm	174.440
98002994	TRACER PREPARATION VALUE (dpm/mL)	2270.000 AEA COUNT TIME	480
Refert	PU-236 DECAY CORR'D VALUE (dpm/mL)	2065.196 Pu 239/240 µCi/g	2.2143E+01
0	PU-238 TRACER VALUE (dpm/mL)	0.000	

Sample Prep
FUSION01
Sample
S98T001524
Instrument Code
WB27809
Prepared By
SZC
Chemist
JFR
Analyst
GAY
Date Complete

Decay Time = Date Counted - Tracer Preparation Date

Pu-236 Decay Corr'd Value = Pu-236 Preparation Value 10 to the power of $((-\ln 2 * \text{Decay Time}/1040.95))$

Pu 236 Tracer Recovery = (Total AT Counts / TC - Bkg) * C236 * 100 / (Pu-236 Decay Corr'd Value * SPKV * EFF)

Pu 239/240 µCi/g = (C239) / (Pu 236 Decay Corr'd Value) * (SPKV) * (1000 mL/L) / (DF) / ((C236) / (SS) * (D g/L) * (2220000 dpm/µCi))

Pu 238 dpm = ((Total AT Counts / TC) - Bkg * 1/EFF * C238) - (Pu-238 Tracer Value * SPKV * Pu 236 Tracer Recovery / 100)

Pu 238 µCi/g = ((Pu 238 dpm) / (DF) * (1000 mL/L)) / ((Pu-238 Tracer Recovery / 100) * (2220000 dpm/µCi) * (D g/L) * (SS))

Relative Counting Error = Square Root of $((1 / (\text{Pu 236 cpm} * \text{min})) + (1 / (\text{Pu 238 or 239/240 cpm} * \text{min}))) * 1.96 * 100$

06/11/98	Pu 239/240 µCi/g	2.21E+01	DETECTION LEVELS in µCi/g
Analysis Date	Relative Counting Error	= 1.6%	
06/10/98			
Analysis Time			
03:00 PM	Pu 238 µCi/g	2.90E+00	Pu 239/240
Sample Point	Relative Counting Error	= 2.4%	Pu 238
TX-118	Pu 236 Tracer Recovery	= 82.6%	1.12E+00

Analyst:	GAY	Date:	11-Jun-98
Signature of Chemist:	JFR	Date:	15 June 98

SAMPLE.WB1 REV 1.0

943128ML

222-S Analytical Laboratory
 G E N E R A L A L P H A E N E R G Y A N A L Y S I S
 Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
 WL24506-STD-PU
 File ID: 1a1006.CNF

Counted on: 6/10/98 @17:25
 Detector: AEA1
 Geometry number: 1
 Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height		Peak center		FWHM		Tau	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	1762.9	1762.9	360.357	360.357	10.000	2.440	5.000	1.427
2?	30.6	30.6	301.590	301.568	32.000	7.216	16.000	16.300
3	84.1	84.1	286.434	286.404	8.000	2.442	4.000	2.517
4?	21.5	21.5	268.652	268.543	10.000	4.007	5.000	2.611
5	2838.8	2838.8	227.838	227.838	10.000	2.510	5.000	2.097

PEAK RESULTS

Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid			Count Rate	%err c/m @95	d/m	Activity uCi/ea
			Exp.	Obs.	Diff.				
1	Pu236	0.391	5.755	5.752	0.0030.01	39.01	1.4	163.8	0.738E-04
2		????		5.482		0.82	10.1		
3	Th228	0.015	5.400	5.412	-0.0120.01	1.48	7.7	8.6	0.386E-05
4	Pu239	0.541	5.147	5.142	0.0050.01	53.96	1.2	222.1	0.100E-03
5	Pu240		5.144	5.142	0.002			222.1	0.100E-03
Totals:			0.947	<--valid peaks only-->			94.45		

DETECTOR CALIBRATION

Energy(MEV) = 4.094 + (0.0046)*Channel
 Energy range (MeV): 4.094 TO 6.450
 Efficiency = 0.2430 CPM/DPM
 (Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	47892.0	100.000
Smoothed	47892.0	100.000
Composite fit	45978.6	96.005
Residuals	1913.4	3.995

Analyzed by:

SLH2

1 Legend: Raw = Modeled Peaks = 1,2,..., etc Display Max.: 16931.9

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Raw Data Dump for AEA Spectrum: 1a1006.CNF									
1	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	4.	1.
21	3.	3.	0.	2.	1.	4.	5.	2.	1.
31	3.	2.	3.	2.	4.	5.	3.	2.	2.
41	3.	2.	1.	3.	5.	3.	3.	3.	3.
51	5.	2.	5.	1.	3.	3.	0.	3.	0.
61	2.	3.	4.	7.	5.	2.	5.	0.	2.
71	2.	2.	5.	3.	3.	1.	2.	1.	3.
81	2.	1.	2.	4.	1.	4.	0.	3.	0.
91	3.	5.	4.	1.	1.	3.	2.	2.	7.
101	3.	3.	4.	2.	7.	4.	4.	3.	3.
111	3.	4.	3.	2.	0.	2.	8.	1.	4.
121	10.	6.	3.	4.	4.	1.	1.	2.	5.
131	2.	2.	1.	5.	3.	7.	3.	2.	6.
141	4.	6.	1.	3.	7.	1.	5.	4.	2.
151	3.	3.	6.	3.	5.	1.	3.	2.	6.
161	0.	3.	5.	5.	3.	5.	4.	2.	4.
171	5.	6.	3.	6.	8.	7.	6.	4.	9.
181	5.	7.	4.	2.	6.	9.	5.	11.	10.
191	12.	17.	9.	9.	13.	12.	25.	20.	21.
201	22.	25.	29.	29.	37.	45.	44.	55.	69.
211	96.	113.	152.	192.	293.	362.	463.	601.	616.
221	669.	837.	1082.	1501.	2024.	2671.	3255.	3704.	3388.
231	1061.	304.	53.	23.	6.	3.	3.	0.	7.
241	5.	2.	7.	2.	2.	4.	5.	2.	1.
251	4.	2.	5.	4.	3.	3.	4.	3.	1.
261	10.	5.	9.	7.	12.	15.	18.	27.	35.
271	11.	13.	8.	13.	17.	8.	9.	12.	20.
281	19.	33.	37.	67.	91.	102.	123.	81.	49.
291	13.	3.	13.	16.	15.	11.	20.	13.	26.
301	35.	19.	33.	26.	13.	12.	4.	6.	5.
311	6.	4.	5.	4.	2.	5.	1.	3.	6.
321	7.	7.	10.	4.	7.	9.	17.	15.	15.
331	25.	18.	14.	15.	18.	25.	25.	37.	33.
341	53.	71.	82.	109.	126.	169.	246.	365.	540.
351	779.	777.	619.	538.	632.	759.	1004.	1289.	1873.
361	2343.	1881.	949.	347.	73.	7.	5.	2.	2.
371	0.	1.	1.	3.	1.	1.	3.	0.	1.
381	1.	1.	2.	0.	1.	1.	1.	1.	1.
391	0.	1.	1.	0.	1.	2.	0.	1.	0.
401	0.	0.	3.	0.	0.	0.	0.	0.	0.
411	0.	2.	0.	0.	0.	1.	1.	0.	1.
421	1.	0.	0.	1.	0.	0.	1.	0.	0.
431	1.	1.	0.	1.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	1.	1.	0.
451	0.	0.	1.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	3.	1.
471	5.	5.	3.	1.	1.	2.	3.	0.	2.
481	0.	0.	0.	0.	0.	1.	0.	0.	2.
491	1.	1.	1.	0.	0.	1.	1.	0.	0.
511	0.	0.							

222-S Analytical Laboratory
GENERAL ALPHA ENERGY ANALYSIS
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
WL24506-BLNK-PU
File ID: 2a2099.CNF

Counted on: 6/10/98 @17:26
Detector: AEA2
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height		Peak center		FWHM		Tau	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	1345.6	1345.6	359.354	359.354	10.000	3.102	5.000	1.290
2	23.7	23.7	301.929	301.554	32.000	15.187	16.000	16.551
3	53.0	53.0	285.640	285.459	8.000	2.827	4.000	1.096

PEAK RESULTS

Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid		Count Rate	%err @95	d/m	Activity uCi/ea
		Exp.	Obs.	Diff.	c/m			
1	Pu236	0.905	5.755	5.774	-0.019	37.98	1.5	164.1 0.739E-04
	Cm243		5.779	5.774	0.005			220.3 0.992E-04
2	Am241	0.022	5.479	5.502	-0.023	0.92	11.8	4.1 0.187E-05
	<u>Pu238</u>		5.487	5.502	-0.015			5.4 0.243E-05
3	Th228	0.037	5.400	5.426	-0.026	1.53	7.8	9.2 0.412E-05
JFR 11 June 98								
Totals:		0.963	<--valid peaks only-->			40.43		

DETECTOR CALIBRATION

Energy(MEV) = 4.085 + (0.0047)*Channel
Energy range (MeV): 4.085 TO 6.491
Efficiency = 0.2362 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20145.0	100.000
Smoothed	20144.6	99.998
Composite fit	19409.6	96.349
Residuals	735.4	3.651

Analyzed by:

SLH2

1 Legend: Raw = Modeled Peaks = 1,2,..., etc Display Max.: 8041.7

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Raw	Data	Dump	for	AEA	Spectrum:	2a2099.CNF	HNF-1651	REV. 0				
1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.
21	1.	1.	0.	0.	0.	2.	0.	0.	1.	0.	0.	0.
31	3.	1.	0.	0.	0.	1.	1.	0.	1.	2.	0.	0.
41	1.	3.	2.	2.	1.	2.	1.	0.	2.	1.	3.	1.
51	0.	0.	0.	2.	3.	0.	2.	0.	1.	3.	1.	3.
61	1.	0.	2.	2.	0.	1.	2.	1.	3.	1.	1.	1.
71	3.	0.	1.	1.	3.	0.	2.	0.	1.	1.	1.	1.
81	1.	2.	3.	3.	3.	2.	1.	1.	3.	0.	0.	0.
91	2.	0.	1.	3.	0.	3.	2.	0.	1.	3.	1.	3.
101	1.	0.	1.	1.	1.	1.	0.	2.	1.	1.	1.	1.
111	0.	1.	1.	3.	0.	2.	2.	0.	1.	2.	2.	2.
121	4.	0.	0.	0.	3.	1.	2.	0.	1.	2.	2.	2.
131	3.	2.	3.	1.	1.	1.	3.	0.	3.	3.	3.	3.
141	2.	1.	2.	2.	3.	2.	2.	2.	3.	3.	3.	3.
151	0.	0.	5.	0.	0.	1.	2.	2.	1.	2.	2.	2.
161	1.	1.	3.	1.	1.	2.	1.	5.	2.	0.	0.	0.
171	2.	2.	1.	3.	1.	3.	2.	1.	2.	0.	0.	0.
181	2.	2.	4.	4.	3.	1.	2.	3.	0.	1.	1.	1.
191	1.	3.	0.	1.	1.	1.	0.	2.	1.	5.	5.	5.
201	2.	2.	0.	3.	0.	1.	2.	5.	2.	3.	3.	3.
211	3.	4.	4.	1.	4.	3.	4.	5.	7.	5.	5.	5.
221	7.	6.	5.	11.	7.	7.	11.	9.	5.	6.	6.	6.
231	2.	6.	4.	3.	3.	1.	4.	1.	3.	3.	3.	3.
241	4.	3.	2.	4.	0.	6.	7.	7.	5.	4.	4.	4.
251	6.	4.	3.	9.	7.	9.	7.	9.	10.	10.	10.	10.
261	4.	20.	9.	16.	26.	26.	21.	27.	22.	27.	27.	27.
271	30.	11.	10.	11.	18.	20.	23.	19.	13.	18.	18.	18.
281	35.	37.	52.	54.	61.	70.	62.	48.	18.	12.	12.	12.
291	16.	21.	12.	11.	13.	11.	17.	13.	18.	18.	18.	18.
301	15.	21.	23.	16.	11.	14.	12.	11.	15.	14.	14.	14.
311	7.	13.	16.	17.	21.	18.	26.	19.	27.	32.	32.	32.
321	23.	27.	31.	31.	36.	45.	44.	57.	56.	49.	49.	49.
331	57.	80.	78.	65.	75.	92.	102.	98.	113.	139.	139.	139.
341	138.	167.	213.	251.	290.	346.	416.	525.	595.	672.	672.	672.
351	715.	694.	666.	685.	772.	938.	1097.	1417.	1586.	1682.	1682.	1682.
361	1417.	940.	475.	163.	37.	9.	4.	3.	0.	2.	2.	2.
371	3.	0.	1.	1.	1.	0.	0.	1.	1.	1.	1.	1.
381	1.	1.	0.	0.	0.	1.	1.	0.	1.	0.	0.	0.
391	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.	0.	0.
401	0.	1.	0.	2.	0.	0.	0.	0.	0.	1.	1.	1.
411	1.	0.	0.	1.	0.	1.	0.	0.	0.	1.	1.	1.
421	0.	0.	1.	1.	0.	0.	0.	0.	0.	1.	1.	1.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	2.	0.	0.	0.	0.	0.	0.	1.	0.	1.	1.	1.
451	0.	0.	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.
461	0.	0.	0.	1.	2.	1.	1.	4.	3.	3.	3.	3.
471	4.	3.	6.	2.	1.	1.	0.	1.	0.	0.	0.	0.
481	0.	2.	1.	1.	0.	0.	0.	1.	1.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.										

222-S Analytical Laboratory
 G E N E R A L A L P H A E N E R G Y A N A L Y S I S
 Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
 S98T1524-SAM-PU
 File ID: 3a3192.CNF

Counted on: 6/10/98 @17:27
 Detector: AEA3
 Geometry number: 1
 Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height		Peak center		FWHM		Tau	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	1499.9	1499.9	359.597	359.597	10.000	2.849	5.000	1.427
2	740.4	740.4	301.210	301.209	10.000	3.044	5.000	1.422
3?	19.9	19.9	267.603	266.627	12.000	2.290	6.000	0.623
4	6010.5	6010.5	226.893	226.893	12.000	3.961	6.000	2.558
5?	10.6	10.6	122.401	122.401	162.000	1.000	81.000	0.100

PEAK RESULTS

Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid			Count Rate	%err	Activity
			Exp.	Obs.	Diff.	c/m	@95	d/m uCi/ea
1	Pu236	0.179	5.755	5.753	0.0020.01	37.37	1.5	159.6 0.719E-04
2	Pu238	0.093	5.487	5.484	0.0030.01	19.47	2.0	113.2 0.510E-04
	Am241		5.479	5.484	-.005			86.7 0.390E-04
3		????		5.325		0.71	14.0	
4	Pu239	0.695	5.147	5.142	0.0050.02	145.11	0.7	607.4 0.274E-03
	Pu240		5.144	5.142	0.002			607.4 0.274E-03
5	<i>gA June 98</i>	????		4.662		0.83	9.8	
Totals:			0.968	<--valid peaks only-->		201.95		

DETECTOR CALIBRATION

Energy(MEV) = 4.099 + (0.0046)*Channel
 Energy range (MeV): 4.099 TO 6.454
 Efficiency = 0.2389 CPM/DPM
 (Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	100161.0	100.000
Smoothed	100161.0	100.000
Composite fit	97683.0	97.526
Residuals	2478.0	2.474

Analyzed by: _____

1 Legend: Raw = Modeled Peaks = 1,2,..., etc Display Max.: 37549.3

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Raw Data	Dump	for AEA	Spectrum:	3a3192.CNF					
1	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	1.	3.	6.	6.
21	10.	7.	6.	5.	4.	7.	5.	1.	2.
31	5.	6.	3.	7.	7.	2.	7.	4.	5.
41	10.	7.	3.	4.	6.	4.	3.	5.	4.
51	10.	4.	2.	3.	8.	5.	5.	6.	4.
61	6.	9.	7.	7.	12.	6.	7.	6.	10.
71	5.	5.	10.	3.	6.	6.	5.	5.	7.
81	4.	5.	6.	7.	15.	5.	4.	4.	7.
91	5.	7.	8.	4.	7.	5.	8.	7.	6.
101	14.	11.	8.	9.	5.	6.	6.	3.	12.
111	8.	5.	5.	7.	7.	10.	6.	6.	4.
121	7.	15.	13.	9.	5.	7.	10.	8.	14.
131	10.	7.	12.	18.	12.	11.	11.	13.	14.
141	10.	8.	15.	21.	10.	12.	10.	12.	17.
151	18.	12.	14.	13.	17.	12.	16.	14.	18.
161	14.	8.	14.	19.	15.	16.	15.	15.	24.
171	24.	21.	19.	27.	30.	28.	26.	26.	34.
181	22.	29.	33.	35.	29.	29.	33.	29.	41.
191	46.	39.	42.	55.	53.	59.	76.	82.	63.
201	95.	92.	98.	122.	154.	164.	198.	247.	328.
211	475.	523.	706.	887.	1075.	1378.	1587.	1784.	1960.
221	2626.	3305.	4027.	4906.	6090.	6848.	7204.	6826.	5375.
231	2395.	1266.	526.	157.	39.	12.	11.	5.	15.
241	4.	10.	10.	9.	4.	10.	3.	6.	4.
251	6.	7.	9.	8.	8.	8.	11.	5.	9.
261	13.	22.	12.	27.	22.	40.	31.	31.	31.
271	18.	23.	15.	21.	20.	22.	31.	29.	37.
281	68.	81.	109.	119.	149.	152.	141.	135.	160.
291	252.	327.	320.	369.	361.	367.	425.	512.	629.
301	899.	920.	734.	460.	214.	91.	15.	8.	13.
311	14.	7.	13.	8.	5.	5.	10.	11.	11.
321	11.	11.	12.	14.	14.	16.	15.	12.	15.
331	23.	28.	18.	28.	43.	38.	43.	44.	56.
341	83.	87.	127.	146.	210.	258.	398.	483.	586.
351	694.	642.	647.	660.	725.	898.	1194.	1431.	1771.
361	1670.	1147.	555.	179.	56.	10.	4.	0.	2.
371	3.	1.	2.	3.	0.	2.	3.	1.	1.
381	1.	7.	2.	3.	0.	2.	3.	1.	0.
391	2.	0.	0.	4.	0.	1.	1.	1.	3.
401	1.	0.	0.	0.	0.	2.	0.	1.	0.
411	0.	2.	0.	1.	0.	1.	2.	0.	0.
421	1.	1.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	2.	0.	1.	1.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	2.	0.	0.	1.	0.	0.	0.	0.
461	1.	2.	1.	0.	0.	0.	1.	3.	2.
471	4.	3.	2.	1.	4.	1.	2.	1.	0.
481	0.	0.	0.	1.	0.	0.	0.	0.	0.
491	0.	0.	1.	0.	0.	0.	0.	0.	1.
511	0.	0.							

222-S Analytical Laboratory
GENERAL ALPHA ENERGY ANALYSIS
Rev. 2.10

DATA REDUCTION REPORT

SAMPLE
S98T1524-DUP-PU
File ID: 4a4193.CNF

Counted on: 6/10/98 @17:27
Detector: AEA4
Geometry number: 1
Count time: 28800. Sec

PEAK ANALYSIS

Peak ID	Peak height		Peak center		FWHM		Tau	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	1617.1	1617.1	359.089	359.089	10.000	2.477	5.000	1.341
2	962.4	962.4	301.032	301.031	10.000	2.508	5.000	1.289
3?	19.1	19.1	267.711	266.553	8.000	3.044	4.000	0.835
4	7600.9	7600.9	226.965	226.964	12.000	3.643	6.000	2.511
5?	12.6	12.6	123.621	123.621	164.000	1.000	82.000	0.100
6?	4.0	4.0	100.864	100.378	14.000	3.632	7.000	0.161
7?	6.5	6.5	67.577	67.462	6.000	1.355	3.000	0.639

PEAK RESULTS

Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid			Count Rate c/m	%err @95	Activity	
			Exp.	Obs.	Diff.			d/m	uCi/ea
1	Pu236	0.154	5.755	5.746	0.0090	0.01	37.43	1.5	159.8 0.720E-04
2	Pu238	0.094	5.487	5.479	0.0080	0.01	22.98	1.9	133.6 0.602E-04
3	Am241	0.000	5.479	5.479	0.000			102.3	0.461E-04
4	Pu239	0.717	5.147	5.138	0.0090	0.02	174.44	0.7	729.9 0.329E-03
	Pu240		5.144	5.138	0.006			729.9	0.329E-03
5	????			4.663			0.98	9.0	
6	????			4.556			0.51	19.1	
7	????			4.405			0.15	50.0	

Totals: 0.965 <--valid peaks only--> 234.85

DETECTOR CALIBRATION

Energy(MEV) = 4.094 + (0.0046)*Channel

Energy range (MeV): 4.094 TO 6.450

Efficiency = 0.2390 CPM/DPM

(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	116862.0	100.000
Smoothed	116861.8	100.000
Composite fit	113854.5	97.426

Residuals

3007.5

2.574

HNF-1651 REV.0

Analyzed by:

SLH2

1 Legend: Raw = Modeled Peaks = 1,2,..., etc

Display Max.: 46818.4

HNF-1651 REV. 0

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Raw Data Dump for AEA Spectrum:

4a4193.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	9.	8.	6.
21	6.	9.	6.	7.	10.	11.	7.	8.	5.	8.
31	10.	7.	11.	4.	7.	7.	8.	10.	5.	2.
41	6.	9.	4.	15.	11.	5.	12.	9.	5.	6.
51	3.	3.	7.	4.	9.	7.	3.	6.	8.	5.
61	14.	7.	7.	10.	8.	11.	10.	15.	16.	4.
71	7.	5.	5.	8.	4.	6.	17.	7.	8.	8.
81	6.	7.	8.	11.	11.	7.	5.	9.	7.	9.
91	11.	9.	7.	4.	8.	8.	10.	6.	14.	10.
101	11.	12.	8.	12.	10.	5.	8.	12.	6.	6.
111	12.	12.	12.	9.	17.	9.	14.	11.	10.	11.
121	11.	10.	15.	13.	12.	14.	7.	6.	9.	11.
131	13.	12.	10.	9.	10.	14.	15.	10.	13.	13.
141	16.	10.	12.	13.	12.	11.	12.	14.	19.	16.
151	11.	14.	21.	13.	19.	16.	14.	11.	16.	17.
161	17.	15.	15.	17.	16.	17.	24.	22.	20.	20.
171	24.	21.	23.	23.	18.	25.	24.	26.	22.	27.
181	29.	26.	26.	44.	29.	32.	29.	33.	43.	45.
191	44.	41.	49.	55.	64.	54.	71.	79.	73.	109.
201	84.	103.	114.	120.	178.	168.	194.	220.	308.	356.
211	450.	552.	716.	907.	1258.	1503.	1790.	2017.	2295.	2661.
221	3204.	3902.	4884.	5948.	7365.	8645.	9358.	8644.	6847.	4749.
231	2798.	1400.	431.	115.	21.	10.	9.	8.	12.	6.
241	7.	7.	12.	4.	7.	7.	7.	9.	9.	10.
251	12.	10.	13.	12.	5.	9.	4.	8.	10.	13.
261	17.	22.	16.	27.	28.	29.	25.	36.	31.	22.
271	19.	19.	26.	17.	21.	36.	33.	28.	59.	51.
281	62.	88.	99.	128.	164.	146.	161.	158.	205.	247.
291	345.	418.	435.	408.	390.	428.	525.	674.	827.	1000.
301	1205.	1228.	873.	397.	136.	27.	10.	7.	11.	7.
311	9.	7.	3.	14.	9.	8.	8.	16.	13.	9.
321	8.	18.	7.	14.	7.	11.	13.	11.	17.	25.
331	28.	24.	23.	22.	33.	34.	45.	38.	62.	78.
341	65.	95.	153.	161.	219.	313.	422.	500.	688.	735.
351	674.	597.	602.	708.	770.	1048.	1378.	1697.	2085.	2002.
361	1504.	768.	208.	52.	5.	3.	3.	3.	1.	2.
371	2.	1.	2.	3.	2.	0.	3.	0.	4.	3.
381	5.	1.	0.	0.	0.	0.	1.	1.	0.	0.
391	2.	0.	4.	1.	2.	1.	1.	1.	2.	0.
401	1.	0.	2.	1.	0.	0.	0.	1.	0.	0.
411	1.	0.	1.	1.	1.	0.	1.	1.	2.	1.
421	1.	0.	0.	1.	2.	1.	3.	0.	1.	0.
431	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.
441	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	2.	0.	0.	0.	0.	0.	0.	0.	1.
461	0.	1.	1.	0.	0.	1.	1.	2.	8.	4.
471	5.	7.	5.	2.	3.	4.	2.	0.	1.	1.
481	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
491	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
511	0.	0.								

ORGANIC ANALYSIS

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LABCORE Completed Worklist Report for Worklist# 24667

Analyst: gar

Instrument: GCECD2

Book# _____

Method: _____ Rev/Mod _____

Worklist Comment: Tx-118 suspect PCBs. cjo

Seq Type	Sample# R A	Test	Matrix	Actual	Found	DL or Yield	Unit
1 BLANK	0	OPCBS	AR1016 SOL	<660	<660		ug/Kg
1 BLANK	0	OPCBS	AR1221 SOL	<1320	<1320		ug/Kg
1 BLANK	0	OPCBS	AR1232 SOL	<660	<660		ug/Kg
1 BLANK	0	OPCBS	AR1242 SOL	<660	<660		ug/Kg
1 BLANK	0	OPCBS	AR1248 SOL	<660	<660		ug/Kg
1 BLANK	0	OPCBS	AR1254 SOL	<660	<660		ug/Kg
1 BLANK	0	OPCBS	AR1260 SOL	<660	<660		ug/Kg
1 BLANK	0	OPCBS	TCX-01 SOL	100	64.64	64.640 % Recovery	
1 BLANK	0	OPCBS	DCB-01 SOL	100	75.25	75.250 % Recovery	
2 LCS	0	OPCBS	AR1016 SOL	100	n/a	% Recovery	
2 LCS	0	OPCBS	AR1221 SOL	100	n/a	% Recovery	
2 LCS	0	OPCBS	AR1232 SOL	100	n/a	% Recovery	
2 LCS	0	OPCBS	AR1242 SOL	100	n/a	% Recovery	
2 LCS	0	OPCBS	AR1248 SOL	100	n/a	% Recovery	
2 LCS	0	OPCBS	AR1254 SOL	100	74.53	74.530 % Recovery	
2 LCS	0	OPCBS	AR1260 SOL	100	n/a	% Recovery	
2 LCS	0	OPCBS	TCX-01 SOL	100	58.23	58.230 % Recovery	
2 LCS	0	OPCBS	DCB-01 SOL	100	66.28	66.280 % Recovery	
3 SAMPLE	S98T001522 0	OPCBS	AR1016 SOL	N/A	< 660.0	660.000 ug/Kg	
3 SAMPLE	S98T001522 0	OPCBS	AR1221 SOL	N/A	< 1320.0	1320.000 ug/Kg	
3 SAMPLE	S98T001522 0	OPCBS	AR1232 SOL	N/A	< 660.0	660.000 ug/Kg	
3 SAMPLE	S98T001522 0	OPCBS	AR1242 SOL	N/A	< 660.0	660.000 ug/Kg	
3 SAMPLE	S98T001522 0	OPCBS	AR1248 SOL	N/A	< 660.0	660.000 ug/Kg	
3 SAMPLE	S98T001522 0	OPCBS	AR1254 SOL	N/A	< 660.0	660.000 ug/Kg	
3 SAMPLE	S98T001522 0	OPCBS	AR1260 SOL	N/A	< 660.0	660.000 ug/Kg	
3 SAMPLE	S98T001522 0	OPCBS	TCX-01 SOL	N/A	72.5	1.000 % Recovery	
3 SAMPLE	S98T001522 0	OPCBS	DCB-01 SOL	N/A	75.32	1.000 % Recovery	
4 SURR	S98T001522 0	OPCBS	TCX-01 SOL	100	72.5	72.500 % Recovery	
4 SURR	S98T001522 0	OPCBS	DCB-01 SOL	100	75.32	75.320 % Recovery	
5 DUP	S98T001522 0	OPCBS	AR1016 SOL	<660	<660	RPD	
5 DUP	S98T001522 0	OPCBS	AR1221 SOL	<1320	<1320	RPD	
5 DUP	S98T001522 0	OPCBS	AR1232 SOL	<660	<660	RPD	
5 DUP	S98T001522 0	OPCBS	AR1242 SOL	<660	<660	RPD	
5 DUP	S98T001522 0	OPCBS	AR1248 SOL	<660	<660	RPD	
5 DUP	S98T001522 0	OPCBS	AR1254 SOL	<660	<660	RPD	
5 DUP	S98T001522 0	OPCBS	AR1260 SOL	<660	<660	RPD	
5 DUP	S98T001522 0	OPCBS	TCX-01 SOL	100	77.55	77.550 % Recovery	
5 DUP	S98T001522 0	OPCBS	DCB-01 SOL	100	95.19	95.190 % Recovery	
6 MS	S98T001522 0	OPCBS	AR1016 SOL	100	n/a	% Recovery	
6 MS	S98T001522 0	OPCBS	AR1221 SOL	100	n/a	% Recovery	
6 MS	S98T001522 0	OPCBS	AR1232 SOL	100	n/a	% Recovery	

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

LABCORE Completed Worklist Report for Worklist# 24667

Seq Type	Sample#	K	A	Test	Matrix	Actual	Found	DL or Yield	Unit
6 MS	S98T001522	0	0	PCBS	AR1242	SOL	100	n/a	% Recovery
6 MS	S98T001522	0	0	PCBS	AR1248	SOL	100	n/a	% Recovery
6 MS	S98T001522	0	0	PCBS	AR1254	SOL	100	82.24	82.240 % Recovery
6 MS	S98T001522	0	0	PCBS	AR1260	SOL	100	n/a	% Recovery
6 MS	S98T001522	0	0	PCBS	TCX-01	SOL	100	73.26	73.260 % Recovery
6 MS	S98T001522	0	0	PCBS	DCB-01	SOL	100	76.59	76.590 % Recovery
7 MSD	S98T001522	0	0	PCBS	AR1016	SOL	100	n/a	% Recovery
7 MSD	S98T001522	0	0	PCBS	AR1221	SOL	100	n/a	% Recovery
7 MSD	S98T001522	0	0	PCBS	AR1232	SOL	100	n/a	% Recovery
7 MSD	S98T001522	0	0	PCBS	AR1242	SOL	100	n/a	% Recovery
7 MSD	S98T001522	0	0	PCBS	AR1248	SOL	100	n/a	% Recovery
7 MSD	S98T001522	0	0	PCBS	AR1254	SOL	100	81.88	81.880 % Recovery
7 MSD	S98T001522	0	0	PCBS	AR1260	SOL	100	n/a	% Recovery
7 MSD	S98T001522	0	0	PCBS	TCX-01	SOL	100	69.84	69.840 % Recovery
7 MSD	S98T001522	0	0	PCBS	DCB-01	SOL	100	79.82	79.820 % Recovery
8 SPK-DUP	S98T001522	0	0	PCBS	AR1016	SOL	100	n/a	RPD
8 SPK-DUP	S98T001522	0	0	PCBS	AR1221	SOL	100	n/a	RPD
8 SPK-DUP	S98T001522	0	0	PCBS	AR1232	SOL	100	n/a	RPD
8 SPK-DUP	S98T001522	0	0	PCBS	AR1242	SOL	100	n/a	RPD
8 SPK-DUP	S98T001522	0	0	PCBS	AR1248	SOL	100	n/a	RPD
8 SPK-DUP	S98T001522	0	0	PCBS	AR1254	SOL	82.24	81.88	0.439 RPD
8 SPK-DUP	S98T001522	0	0	PCBS	AR1260	SOL	100	n/a	RPD

Final page for worklist# 24667

C.J. Opain 6/18/98
Analyst Signature Date

PTA Ross 6-18-98
Analyst Signature Date

MA Ross 6-18-98
Reviewer Signature Date

in lab with me 110 pm 1998

Batch 98003154

TX-118

FILE LOCATION:	EXTRACTION PROCEDURE: 5041D LA-523-138	ANALYSIS PROCEDURE:
WORK PKG./R NUMBER	EXTRACTION ANALYST: CJO.	INSTRUMENTAL ANALYST:
MATRIX:	DATE/SYSTEM: 6-8-98/30x	DATE/SYSTEM:

[illegible]

SURR. NAME	VOLUME (uL)	ID NUMBER	CONC.	MATRIX SPIKE NAME	VOLUME (uL)	ID NUMBER	CONC.
TEX DAB	100 μ	A010570	40ppm	Ar-1254	200 μ	A0104154	40ppm

ANALYSIS VOLUME OF EXTRACT USED	INTERNAL STANDARD SUPPLIER	VOLUME ADDED (uL)	ID NUMBER LOT NUMBER	CONC. INITIAL	CONC. FINAL

HNF-1651 REV. 0

page 1

17 Jun 98 02:35 PM

Sequence: C:\HPCHEM\2\SEQUENCE\061698A.SEQ

Sequence Table

Inj.	Seq.	Cal.	Method	From	To	Inj/
Line	Line	Line	Name	Vial	Vial	Vial
FRONT						
	1		PCB-FRNT	1	1	3
	2		PCB-FRNT	2	2	3
	3		PCB-FRNT	3	9	1
	4		PCB-FRNT	10	10	2
	5		PCB-FRNT	11	17	1
	6		PCB-FRNT	17	29	1
	7		PCB-FRNT	30	30	2
REAR						
	1		PCB-REAR	51	51	4
	2		PCB-REAR	52	52	3
	3		PCB-REAR	3	9	1
	4		PCB-REAR	53	53	2
	5		PCB-REAR	11	16	1
	6		PCB-REAR	54	54	2
	7		PCB-REAR	18	29	1
	8		PCB-REAR	55	55	1

Sample Table

Vial	Sample Name	Sample	Multiplier	ISTD
Num:		Amount		Amount
1	2000ng/ml A1254		1	
2	2000ng/ml A1254		1	
3	Iblnk		1	
4	039Mblnk/4-5 <i>MRK 6-17-98</i>		1	
5	043(tk102L)/4-5 <i>MRK 6-17-98</i>		1	
6	045(tk102L)/4-5 <i>MRK 6-17-98</i>		1	
7	047(tk102L)MS/20		1	
8	049tk102L)MSD/20		1	
9	041LCS/20		1	
10	200ng/ml A1254		1	
11	053(tx118)/20		1	
12	055(tx118)/20		1	
13	057(tx118)MS/20		1	
14	059(tx118)MSD/20		1	
15	061LCS/20		1	
16	062Mblnk/20 <i>MRK 6-17-98</i>		1	
17	200ng/ml A1254		1	
18	400ng/ml A1221		1	
19	200ng/ml A1232		1	
20	200ng/ml A1242		1	
21	200ng/ml A1248		1	
22	200ng/ml A1660		1	
23	200ng/ml A1254		1	
24	123(tk100)/20		1	
25	125(tk100)/20		1	
26	127(tk100)/20ms		1	
27	129(tk100)/20msd		1	
28	133 Mblnk/20		1	
29	131 LCS/20		1	
30	200ng/ml A1254		1	
31	2000ng/ml A1254		1	

HNF-1651 REV.0

page 2

17 Jun 98 02:35 PM

Sequence: C:\HPCHEM\2\SEQUENCE\061698A.SEQ

Sample Table

Vial Num.	Sample Name	Sample Amount	Multiplier	ISTD Amount
52	200ng/ml A1254		1	
53	200ng/ml A1254		1	
54	200ng/ml A1254		1	
55	200ng/ml A1254		1	

17 Jun 98 02:35 PM

Sequence: C:\HPCHEM\2\SEQUENCE\061698A.SEQ

Vial Num.	Sample Name
52	200ng/ml A1254
53	200ng/ml A1254
54	200ng/ml A1254
55	200ng/ml A1254

Data File: /chem/gc2.i/061698.b/010f0402.d
 Report Date: 17-Jun-1998 12:28

Page 1

222-S Laboratory

Data file : /chem/gc2.i/061698.b/010f0402.d
 Lab Smp Id: 200ng/ml A1254 Client Smp ID: 200ng/ml A1254
 Inj Date : 16-JUN-98 23:43
 Operator : Gerald Ross Inst ID: gc2.i
 Smp Info : 200ng/ml A1254
 Misc Info : 200ng/ml A1254
 Comment :
 Method : /chem/gc2.i/061698.b/rcrapcb.m
 Meth Date : 16-Jun-1998 10:24 Quant Type: ESTD
 Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
 Als bottle: 1 QC Sample: METHSPIKE
 Dil Factor: 1.000
 Integrator: HP Genie Compound Sublist: AR1254.sub
 Target Version: 3.10 Sample Matrix: WATER

		CONCENTRATIONS					
		ON-COL	FINAL				
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/L)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
27 Aroclor-1254					CAS #:	11097-69-1	
21.743	21.767	-0.024	154576	0.190	3.79		100.00
22.822	22.846	-0.024	198634	0.184	3.68	112.00- 152.00	128.50
24.756	24.780	-0.024	181902	0.188	3.76	96.00- 136.00	117.68
Average of Peak Concentrations =				3.74			

\$ 29 Tetrachloro-m-xylene					CAS #:	877-09-8	
12.642	12.654	-0.012	1285168	0.0872	1.74		100.00

\$ 30 Decachlorobiphenyl					CAS #:	2051-24-3	
42.684	42.728	-0.044	598366	0.0735	1.47		100.00

Data File: /chem/gc2.i/061698.b/010f0402.d
 Report Date: 17-Jun-1998 12:28

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RECOVERY REPORT

Client Name:	Client SDG: 061698
Sample Matrix: LIQUID	Fraction: PEST
Lab Smp Id: 200ng/ml A1254	Client Smp ID: 200ng/ml A1254
Level: LOW	Operator: Gerald Ross
Data Type: GC MULTI COMP	SampleType: METHSPIKE
SpikeList File: Aroclor-1254.spk	Quant Type: ESTD
Method File: /chem/gc2.i/061698.b/rcrapcb.m	
Misc Info: 200ng/ml A1254	

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
27 Aroclor-1254	4.00	3.74	93.64	50-150

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	2.00	1.74	87.16	50-150
\$ 30 Decachlorobiphenyl	2.00	1.47	73.55	50-150

Data File: /chem/gc2.i/061698.b/010f0402.d
Report Date: 17-Jun-1998 12:28

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TARGET COMPOUNDS

Client Name:
Lab Smp Id: 200ng/ml A1254
Sample Location:
Sample Date:
Sample Matrix: WATER
Analysis Type: PEST
Data Type: GC MULTI COMP
Misc Info: 200ng/ml A1254

Client SDG: 061698
Client Smp ID: 200ng/ml A1254
Sample Point:
Date Received:
Quant Type: ESTD
Level: LOW
Operator: Gerald Ross

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/KG) ug/L	Q
---------	----------	--	---

11097-69-1-----Aroclor-1254	3.74	
877-09-8-----Tetrachloro-m-xylene	1.74	
2051-24-3-----Decachlorobiphenyl	1.47	

Data File: /chem/gc2.1/061698.b/010f0402.d
Date: 16-JUN-98 23:43
Client ID: 200ng/ml A1254
Sample Info: 200ng/ml A1254
Volume Injected (uL): 1.0
Column Phase: Xti-5

Instrument: gc2.1

Operator: Gerald Ross
Column diameter: 0.25

/chem/gc2.1/061698.b/010f0402.d (Part 1 of 2)

/chem/gc2.i/061698.b/010f0402.d (Part 2 of 2)

Operator: Gerald Ross
Column diameter: 0.25

Instrument: gc2.i

Data File: /chem/gc2.i/061698.b/010f0402.d
Date: 16-JUN-98 23:43
Client ID: 200ng/ml A1254
Sample Info: 200ng/ml A1254
Volume Injected (ul): 1.0
Column phase: Xt1-5

Data File: /chem/gc2.i/061698.b/011f0501.d
Report Date: 17-Jun-1998 09:15

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Data file : /chem/gc2.i/061698.b/011f0501.d
Lab Smp Id: S98T001522 Client Smp ID: 053(tx118)/20
Inj Date : 17-JUN-98 00:40
Operator : Gerald Ross Inst ID: gc2.i
Smp Info : 053(tx118)/20
Misc Info : 053(tx118)/20
Comment :
Method : /chem/gc2.i/061698.b/rcrapcb.m
Meth Date : 16-Jun-1998 10:24 Quant Type: ESTD
Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
Als bottle: 1
Dil Factor: 20.000
Integrator: HP Genie Compound Sublist: AroclorS.sub
Target Version: 3.10 Sample Matrix: SOIL

CONCENTRATIONS						
		ON-COL		FINAL		
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE
==	=====	=====	=====	=====	=====	=====
22	Aroclor-1016				CAS #:	12674-11-2
Peaks not detected for Quant. or Qual. signal(s).						
23	Aroclor-1221				CAS #:	11104-28-2
Peaks not detected for Quant. or Qual. signal(s).						
24	Aroclor-1232				CAS #:	1114-16-5
Peaks not detected for Quant. or Qual. signal(s).						
25	Aroclor-1242				CAS #:	53469-21-9
Peaks not detected for Quant. or Qual. signal(s).						
26	Aroclor-1248				CAS #:	12672-29-6
Peaks not detected for Quant. or Qual. signal(s).						
27	Aroclor-1254				CAS #:	11097-69-1
Peaks not detected for Quant. or Qual. signal(s).						

Data File: /chem/gc2.i/061698.b/011f0501.d
Report Date: 17-Jun-1998 09:15

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		CONCENTRATIONS							
		ON-COL	FINAL						
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE	RATIO		
==	=====	=====	=====	=====	=====	=====	=====		

28 Aroclor-1260

CAS #: 11096-82-5

Peaks not detected for Quant. or Qual. signal(s).

\$	29	Tetrachloro-m-xylene				CAS #: 877-09-8		
12.642	12.654	-0.012	1069072	0.0725	2920		100.00	

\$	30	Decachlorobiphenyl				CAS #: 2051-24-3		
42.678	42.728	-0.050	612755	0.0753	3040		100.00	

Data File: /chem/gc2.i/061698.b/011f0501.d
Report Date: 17-Jun-1998 13:43

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Data file : /chem/gc2.i/061698.b/011f0501.d
Lab Smp Id: S98T001522 Client Smp ID: 053(tx118)/20
Inj Date : 17-JUN-98 00:40
Operator : Gerald Ross Inst ID: gc2.i
Smp Info : 053(tx118)/20
Misc Info : 053(tx118)/20
Comment :
Method : /chem/gc2.i/061698.b/rcrapcb.m
Meth Date : 16-Jun-1998 10:24 Quant Type: ESTD
Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
Als bottle: 1
Dil Factor: 20.000
Integrator: HP Genie Compound Sublist: AroclorS.sub
Target Version: 3.10 Sample Matrix: SOIL

CONCENTRATIONS						
		ON-COL		FINAL		
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE
==	=====	=====	=====	=====	=====	=====

22 Aroclor-1016

CAS #: 12674-11-2

Peaks not detected for Quant. or Qual. signal(s).

23 Aroclor-1221

CAS #: 11104-28-2

Peaks not detected for Quant. or Qual. signal(s).

24 Aroclor-1232

CAS #: 1114-16-5

Peaks not detected for Quant. or Qual. signal(s).

25 Aroclor-1242

CAS #: 53469-21-9

Peaks not detected for Quant. or Qual. signal(s).

26 Aroclor-1248

CAS #: 12672-29-6

Peaks not detected for Quant. or Qual. signal(s).

27 Aroclor-1254

CAS #: 11097-69-1

Peaks not detected for Quant. or Qual. signal(s).

Data File: /chem/gc2.i/061698.b/011f0501.d
Report Date: 17-Jun-1998 13:43

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CONCENTRATIONS						
RT	EXP RT	DLT RT	ON-COL	FINAL	TARGET RANGE	RATIO
==	=====	=====	RESPONSE (ng)	(ug/Kg)		
			=====	=====	=====	=====

28 Aroclor-1260

CAS #: 11096-82-5

Peaks not detected for Quant. or Qual. signal(s).

\$ 29	Tetrachloro-m-xylene		CAS #: 877-09-8		
12.642	12.654	-0.012	1069072	0.0725	2920
					100.00
\$ 30	Decachlorobiphenyl		CAS #: 2051-24-3		
42.678	42.728	-0.050	612755	0.0753	3040
					100.00

Data File: /chem/gc2.i/061698.b/011f0501.d
Report Date: 17-Jun-1998 13:43

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RECOVERY REPORT

Client Name: Client SDG: 061698
Sample Matrix: SOLID Fraction: PEST
Lab Smp Id: S98T001522 Client Smp ID: 053(tx118)/20
Level: LOW Operator: Gerald Ross
Data Type: GC MULTI COMP SampleType: SAMPLE
SpikeList File: RESOLUTION.spk Quant Type: ESTD
Method File: /chem/gc2.i/061698.b/rcrapcb.m
Misc Info: 053(tx118)/20

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	4030	2920	72.50	50-150
\$ 30 Decachlorobiphenyl	4030	3040	75.32	50-150

Data File: /chem/gc2.i/061698.b/011f0501.d
 Report Date: 17-Jun-1998 13:43

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TARGET COMPOUNDS

Client Name:
 Lab Smp Id: S98T001522
 Sample Location:
 Sample Date:
 Sample Matrix: SOIL
 Analysis Type: PEST
 Data Type: GC MULTI COMP
 Misc Info: 053(tx118)/20

Client SDG: 061698
 Client Smp ID: 053(tx118)/20
 Sample Point:
 Date Received:
 Quant Type: ESTD
 Level: LOW
 Operator: Gerald Ross

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) ug/Kg	Q
12674-11-2-----	Aroclor-1016	660	U
11104-28-2-----	Aroclor-1221	1320	U
1114-16-5-----	Aroclor-1232	660	U
53469-21-9-----	Aroclor-1242	660	U
12672-29-6-----	Aroclor-1248	660	U
11097-69-1-----	Aroclor-1254	660	U
11096-82-5-----	Aroclor-1260	660	U
=====			
877-09-8-----	Tetrachloro-m-xylene	2920	
2051-24-3-----	Decachlorobiphenyl	3040	

Data File: /chem/gc2.i/061698.b/011f0501.d
Date : 17-JUN-98 00:40
Client ID: 053(t-x118)/20
Sample Info: 053(t-x118)/20
Volume Injected (uL): 1.0
Column phase: M1-5

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

/chem/gc2.i/061698.b/011f0501.d (Part 2 of 2)

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

Data File: /chem/gc2.i/061698.b/011f0501.d
Date: 17-JUN-98 00:40
Client ID: 063(txx118)/20
Sample Info: 063(txx118)/20
Volume Injected (ul): 1.0
Column phase: Xti-5

Data File: /chem/gc2.i/061698.b/031f0801.d
 Report Date: 18-Jun-1998 08:39

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Data file : /chem/gc2.i/061698.b/031f0801.d
 Lab Smp Id: 055(tx118)/20 Client Smp ID: 055(tx118)/20
 Inj Date : 17-JUN-1998 21:43
 Operator : Gerald Ross Inst ID: gc2.i
 Smp Info : 055(tx118)/20
 Misc Info : 055(tx118)/20
 Comment :
 Method : /chem/gc2.i/061698.b/rcrapcb.m
 Meth Date : 18-Jun-1998 08:23 gar Quant Type: ESTD
 Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
 Als bottle: 1
 Dil Factor: 20.000
 Integrator: HP Genie
 Target Version: 3.10
 Compound Sublist: Aroclors.sub
 Sample Matrix: SOIL

CONCENTRATIONS							
			ON-COL	FINAL			
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====
22	Aroclor-1016					CAS #: 12674-11-2	
Peaks not detected for Quant. or Qual. signal(s).							
23	Aroclor-1221					CAS #: 11104-28-2	
Peaks not detected for Quant. or Qual. signal(s).							
24	Aroclor-1232					CAS #: 1114-16-5	
Peaks not detected for Quant. or Qual. signal(s).							
25	Aroclor-1242					CAS #: 53469-21-9	
Peaks not detected for Quant. or Qual. signal(s).							
26	Aroclor-1248					CAS #: 12672-29-6	
Peaks not detected for Quant. or Qual. signal(s).							
27	Aroclor-1254					CAS #: 11097-69-1	
Peaks not detected for Quant. or Qual. signal(s).							

Data File: /chem/gc2.i/061698.b/031f0801.d
 Report Date: 18-Jun-1998 08:39

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		CONCENTRATIONS							
RT	EXP RT	DLT RT	ON-COL	FINAL	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE	RATIO
==	=====	=====	=====	=====	=====	=====	=====	=====	=====

28 Aroclor-1260

CAS #: 11096-82-5

Peaks not detected for Quant. or Qual. signal(s).

\$ 29 Tetrachloro-m-xylene				CAS #: 877-09-8	
12.642	12.654	-0.012	1143476 0.0775	3200	100.00

\$ 30 Decachlorobiphenyl				CAS #: 2051-24-3	
42.683	42.728	-0.045	774419 0.0952	3920	100.00

Data File: /chem/gc2.i/061698.b/031f0801.d
Report Date: 18-Jun-1998 08:39

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RECOVERY REPORT

Client Name: Client SDG: 061698
Sample Matrix: SOLID Fraction: PEST
Lab Smp Id: 055(tx118)/20 Client Smp ID: 055(tx118)/20
Level: LOW Operator: Gerald Ross
Data Type: GC MULTI COMP SampleType: SAMPLE
SpikeList File: RESOLUTION.spk Quant Type: ESTD
Method File: /chem/gc2.i/061698.b/rcrapcb.m
Misc Info: 055(tx118)/20

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	4120	3200	77.55	50-150
\$ 30 Decachlorobiphenyl	4120	3920	95.19	50-150

Data File: /chem/gc2.i/061698.b/031f0801.d
 Report Date: 18-Jun-1998 08:39

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TARGET COMPOUNDS

Client Name:	Client SDG: 061698
Lab Smp Id: 055(tx118)/20	Client Smp ID: 055(tx118)/20
Sample Location:	Sample Point:
Sample Date:	Date Received:
Sample Matrix: SOIL	Quant Type: ESTD
Analysis Type: PEST	Level: LOW
Data Type: GC MULTI COMP	Operator: Gerald Ross
Misc Info: 055(tx118)/20	

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/KG) ug/Kg	Q
12674-11-2-----	Aroclor-1016	660	U
11104-28-2-----	Aroclor-1221	1320	U
1114-16-5-----	Aroclor-1232	660	U
53469-21-9-----	Aroclor-1242	660	U
12672-29-6-----	Aroclor-1248	660	U
11097-69-1-----	Aroclor-1254	660	U
11096-82-5-----	Aroclor-1260	660	U
=====		=====	=====
877-09-8-----	Tetrachloro-m-xylene	3200	
2051-24-3-----	Decachlorobiphenyl	3920

Instrument: gc2.1
Operator: Gerald Ross
Column diameter: 0.25

Data File: /chem/gc2.1/061698.b/031f0801.d
Date : 17-JUN-1998 21:43
Client ID: 055(x118)/20
Sample Info: 055(x118)/20
Volume Injected (uL): 1.0
Column phase: X1-5

/chem/gc2.i/061698.b/031f0801.d (Part 2 of 2)

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

Data File: /chem/gc2.i/061698.b/031f0801.d
Date : 17-JUN-1998 21:43
Client ID: 055(txx18)/20
Sample Info: 055(txx18)/20
Volume Injected (uL): 1.0
Column phase: Xti-5

Data File: /chem/gc2.i/061698.b/013f0501.d
Report Date: 17-Jun-1998 14:32

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Data file : /chem/gc2.i/061698.b/013f0501.d
Lab Smp Id: S98T001522MS Client Smp ID: 057(tx118)MS/20
Inj Date : 17-JUN-98 02:34
Operator : Gerald Ross Inst ID: gc2.i
Smp Info : 057(tx118)MS/20
Misc Info : 057(tx118)MS/20
Comment :
Method : /chem/gc2.i/061698.b/rcrapcb.m
Meth Date : 16-Jun-1998 10:24 Quant Type: ESTD
Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
Als bottle: 1 QC Sample: MS
Dil Factor: 20.000
Integrator: HP Genie Compound Sublist: AroclorS.sub
Target Version: 3.10 Sample Matrix: SOIL

CONCENTRATIONS						
RT	EXP RT	DLT RT	RESPONSE (ng)	ON-COL	FINAL	TARGET RANGE
==	=====	=====	=====	=====	=====	=====

22 Aroclor-1016 CAS #: 12674-11-2

Peaks not detected for Quant. or Qual. signal(s).

23 Aroclor-1221 CAS #: 11104-28-2

Peaks not detected for Quant. or Qual. signal(s).

24 Aroclor-1232 CAS #: 1114-16-5

Peaks not detected for Quant. or Qual. signal(s).

25 Aroclor-1242 CAS #: 53469-21-9

Peaks not detected for Quant. or Qual. signal(s).

26 Aroclor-1248 CAS #: 12672-29-6

Operator disabled compound identification.

27 Aroclor-1254 CAS #: 11097-69-1					
21.738	21.767	-0.029	134558	0.165	6780
22.817	22.846	-0.029	174968	0.162	6670
24.750	24.780	-0.030	160753	0.166	6830
Average of Peak Concentrations =				6760	

Data File: /chem/gc2.i/061698.b/013f0501.d
Report Date: 17-Jun-1998 14:32

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CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE
==	=====	=====	=====	=====	=====	=====

28 Aroclor-1260

CAS #: 11096-82-5

Operator disabled compound identification.

\$ 29 Tetrachloro-m-xylene					CAS #: 877-09-8	
12.640	12.654	-0.014	1080255	0.0733	3010	100.00

\$ 30 Decachlorobiphenyl					CAS #: 2051-24-3	
42.672	42.728	-0.056	623079	0.0766	3150	100.00

Data File: /chem/gc2.i/061698.b/013f0501.d
 Report Date: 17-Jun-1998 14:32

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RECOVERY REPORT

Client Name: Client SDG: 061698
 Sample Matrix: SOLID Fraction: PEST
 Lab Smp Id: S98T001522MS Client Smp ID: 057(tx118)MS/20
 Level: LOW Operator: Gerald Ross
 Data Type: GC MULTI COMP SampleType: MS
 SpikeList File: Aroclor-1254.spk Quant Type: ESTD
 Method File: /chem/gc2.i/061698.b/rcrapcb.m
 Misc Info: 057(tx118)MS/20

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
27 Aroclor-1254	8220	6760	82.24	50-150

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	4110	3010	73.26	50-150
\$ 30 Decachlorobiphenyl	4110	3150	76.59	50-150

Data File: /chem/gc2.i/061698.b/013f0501.d
 Report Date: 17-Jun-1998 14:32

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TARGET COMPOUNDS

Client Name:	Client SDG: 061698
Lab Smp Id: S98T001522MS	Client Smp ID: 057(tx118)MS/20
Sample Location:	Sample Point:
Sample Date:	Date Received:
Sample Matrix: SOIL	Quant Type: ESTD
Analysis Type: PEST	Level: LOW
Data Type: GC MULTI COMP	Operator: Gerald Ross
Misc Info: 057(tx118)MS/20	

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/KG)	ug/Kg
			Q
12674-11-2-----	Aroclor-1016	660	U
11104-28-2-----	Aroclor-1221	1320	U
1114-16-5-----	Aroclor-1232	660	U
53469-21-9-----	Aroclor-1242	660	U
12672-29-6-----	Aroclor-1248	660	U
11097-69-1-----	Aroclor-1254	6760	
11096-82-5-----	Aroclor-1260	660	U
=====			
877-09-8-----	Tetrachloro-m-xylene	3010	
2051-24-3-----	Decachlorobiphenyl	3150

Data File: /chem/gc2.i/061698.b/013F0501.d
Date : 17-JUN-98 02:34
Client ID: 057(tcx18)MS/20
Sample Info: 057(tcx18)MS/20
Volume Injected (uL): 1.0
Column phase: Xt1-5

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

Instrument: gc2.1
 Operator: Gerald Ross
 Column diameter: 0.25

Data File: /chem/gc2.1/061698.b/013f0501.d
 Date : 17-JUN-98 02:34
 Client ID: 057(4x18)MS/20
 Sample Info: 057(4x18)MS/20
 Volume Injected (uL): 1.0
 Column phase: Xt1-5

Data File: /chem/gc2.i/061698.b/014f0501.d
 Report Date: 17-Jun-1998 14:32

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Data file : /chem/gc2.i/061698.b/014f0501.d
 Lab Smp Id: S98S001522MSD Client Smp ID: 059(tx118)MSD/20
 Inj Date : 17-JUN-98 03:31
 Operator : Gerald Ross Inst ID: gc2.i
 Smp Info : 059(tx118)MSD/20
 Misc Info : 059(tx118)MSD/20
 Comment :
 Method : /chem/gc2.i/061698.b/rcrapcb.m
 Meth Date : 16-Jun-1998 10:24 Quant Type: ESTD
 Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
 Als bottle: 1 QC Sample: MSD
 Dil Factor: 20.000
 Integrator: HP Genie Compound Sublist: AroclorS.sub
 Target Version: 3.10 Sample Matrix: SOIL

		CONCENTRATIONS					
		ON-COL	FINAL				
RT	EXP RT DLT RT	RESPONSE (ng)	(ug/Kg)	TARGET RANGE		RATIO	
==	=====	=====	=====	=====		=====	=====

22 Aroclor-1016 CAS #: 12674-11-2

Peaks not detected for Quant. or Qual. signal(s).

23 Aroclor-1221 CAS #: 11104-28-2

Peaks not detected for Quant. or Qual. signal(s).

24 Aroclor-1232 CAS #: 1114-16-5

Peaks not detected for Quant. or Qual. signal(s).

25 Aroclor-1242 CAS #: 53469-21-9

Peaks not detected for Quant. or Qual. signal(s).

26 Aroclor-1248 CAS #: 12672-29-6

Operator disabled compound identification.

27 Aroclor-1254				CAS #:		11097-69-1		
21.737	21.767	-0.030	133904	0.164	6470			100.00
22.817	22.846	-0.029	173872	0.161	6350	112.00-	152.00	129.85
24.749	24.780	-0.031	160385	0.166	6530	96.00-	136.00	119.78
Average of Peak Concentrations =				6450				

Data File: /chem/gc2.i/061698.b/014f0501.d
 Report Date: 17-Jun-1998 14:32

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CONCENTRATIONS						
RT	EXP RT	DLT RT	ON-COL	FINAL	TARGET RANGE	RATIO
==	=====	=====	RESPONSE (ng)	(ug/Kg)	=====	=====

28 Aroclor-1260

CAS #: 11096-82-5

Peaks not detected for Quant. or Qual. signal(s).

\$ 29	Tetrachloro-m-xylene		CAS #: 877-09-8		
12.640	12.654	-0.014	1029758	0.0698	2750 100.00
\$ 30	Decachlorobiphenyl		CAS #: 2051-24-3		
42.673	42.728	-0.055	649414	0.0798	3140 100.00

Data File: /chem/gc2.i/061698.b/014f0501.d
Report Date: 17-Jun-1998 14:32

222-S Laboratory

RECOVERY REPORT

Client Name: Client SDG: 061698
Sample Matrix: SOLID Fraction: PEST
Lab Smp Id: S98S001522MSD Client Smp ID: 059(tx118)MSD/20
Level: LOW Operator: Gerald Ross
Data Type: GC MULTI COMP SampleType: MSD
SpikeList File: Aroclor-1254.spk Quant Type: ESTD
Method File: /chem/gc2.i/061698.b/rcrapcb.m
Misc Info: 059(tx118)MSD/20

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
27 Aroclor-1254	7870	6450	81.88	50-150

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	3940	2750	69.84	50-150
\$ 30 Decachlorobiphenyl	3940	3140	79.82	50-150

Data File: /chem/gc2.i/061698.b/014f0501.d
 Report Date: 17-Jun-1998 14:32

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TARGET COMPOUNDS

Client Name:	Client SDG: 061698
Lab Smp Id: S98S001522MSD	Client Smp ID: 059(tx118)MSD/20
Sample Location:	Sample Point:
Sample Date:	Date Received:
Sample Matrix: SOIL	Quant Type: ESTD
Analysis Type: PEST	Level: LOW
Data Type: GC MULTI COMP	Operator: Gerald Ross
Misc Info: 059(tx118)MSD/20	

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/KG)	ug/Kg
			Q
12674-11-2-----	Aroclor-1016	660	U
11104-28-2-----	Aroclor-1221	1320	U
1114-16-5-----	Aroclor-1232	660	U
53469-21-9-----	Aroclor-1242	660	U
12672-29-6-----	Aroclor-1248	660	U
11097-69-1-----	Aroclor-1254	6450	
11096-82-5-----	Aroclor-1260	660	U
=====			
877-09-8-----	Tetrachloro-m-xylene	2750	
2051-24-3-----	Decachlorobiphenyl	3140	

Data File: /chem/gc2.i/061698.b/014f0501.d
Date : 17-JUN-98 03:31
Client ID: 059(1318)MSD/20
Sample Info: 059(1318)MSD/20
Volume Injected (uL): 1.0
Column phase: Xti-5

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

/chem/gc2.i/061698.b/014f0501.d (Part 1 of 2)

/chem/gc2.i/061698.b/014f0501.d (Part 2 of 2)

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

Data File: /chem/gc2.i/061698.b/014f0501.d
Date : 17-JUN-98 03:31
Client ID: 059(tx18)MSD/20
Sample Info: 059(tx18)MSD/20
Volume Injected (uL): 1.0
Column phase: XE1-5

Data File: /chem/gc2.i/061698.b/016f0501.d
Report Date: 17-Jun-1998 13:44

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Data file : /chem/gc2.i/061698.b/016f0501.d
Lab Smp Id: 061Mblnk/20 Client Smp ID: 061Mblnk/20
Inj Date : 17-JUN-98 05:25
Operator : Gerald Ross Inst ID: gc2.i
Smp Info : 061Mblnk/20
Misc Info : 061Mblnk/20
Comment :
Method : /chem/gc2.i/061698.b/rcrapcb.m
Meth Date : 16-Jun-1998 10:24 Quant Type: ESTD
Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
Als bottle: 1
Dil Factor: 20.000
Integrator: HP Genie Compound Sublist: AroclorS.sub
Target Version: 3.10 Sample Matrix: SOIL

CONCENTRATIONS						
			ON-COL	FINAL		
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE
==	=====	=====	=====	=====	=====	=====

22 Aroclor-1016 CAS #: 12674-11-2

Peaks not detected for Quant. or Qual. signal(s).

23 Aroclor-1221 CAS #: 11104-28-2

Peaks not detected for Quant. or Qual. signal(s).

24 Aroclor-1232 CAS #: 1114-16-5

Peaks not detected for Quant. or Qual. signal(s).

25 Aroclor-1242 CAS #: 53469-21-9

Peaks not detected for Quant. or Qual. signal(s).

26 Aroclor-1248 CAS #: 12672-29-6

Peaks not detected for Quant. or Qual. signal(s).

27 Aroclor-1254 CAS #: 11097-69-1

Peaks not detected for Quant. or Qual. signal(s).

Data File: /chem/gc2.i/061698.b/016f0501.d
 Report Date: 17-Jun-1998 13:44

		CONCENTRATIONS							
		ON-COL	FINAL						
RT	EXP RT DLT RT	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE	RATIO			
==	=====	=====	=====	=====	=====	=====			

28 Aroclor-1260

CAS #: 11096-82-5

Peaks not detected for Quant. or Qual. signal(s).

\$ 29	Tetrachloro-m-xylene				CAS #: 877-09-8	
12.639	12.654	-0.015	953124	0.0646	2580	100.00

\$ 30	Decachlorobiphenyl				CAS #: 2051-24-3	
42.672	42.728	-0.056	612209	0.0752	3010	100.00

Data File: /chem/gc2.i/061698.b/016f0501.d
Report Date: 17-Jun-1998 13:44

222-S Laboratory

RECOVERY REPORT

Client Name: Client SDG: 061698
Sample Matrix: SOLID Fraction: PEST
Lab Smp Id: 061Mblnk/20 Client Smp ID: 061Mblnk/20
Level: LOW Operator: Gerald Ross
Data Type: GC MULTI COMP SampleType: SAMPLE
SpikeList File: RESOLUTION.spk Quant Type: ESTD
Method File: /chem/gc2.i/061698.b/rcrapcb.m
Misc Info: 061Mblnk/20

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	4000	2580	64.64	50-150
\$ 30 Decachlorobiphenyl	4000	3010	75.25	50-150

Data File: /chem/gc2.i/061698.b/016f0501.d
 Report Date: 17-Jun-1998 13:44

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TARGET COMPOUNDS

Client Name:
 Lab Smp Id: 061Mblnk/20
 Sample Location:
 Sample Date:
 Sample Matrix: SOIL
 Analysis Type: PEST
 Data Type: GC MULTI COMP
 Misc Info: 061Mblnk/20

Client SDG: 061698
 Client Smp ID: 061Mblnk/20
 Sample Point:
 Date Received:
 Quant Type: ESTD
 Level: LOW
 Operator: Gerald Ross

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	ug/Kg	
12674-11-2-----	Aroclor-1016	660		U
11104-28-2-----	Aroclor-1221	1320		U
1114-16-5-----	Aroclor-1232	660		U
53469-21-9-----	Aroclor-1242	660		U
12672-29-6-----	Aroclor-1248	660		U
11097-69-1-----	Aroclor-1254	660		U
11096-82-5-----	Aroclor-1260	660		U
=====				
877-09-8-----	Tetrachloro-m-xylene	2580		
2051-24-3-----	Decachlorobiphenyl	3010		

Data File: /chem/gc2.i/061698.b/016f0501.d
Date : 17-JUN-98 05:25
Client ID: 06161616K/20
Sample Info: 06161616K/20
Volume Injected (uL): 1.0
Column phase: Xi-5

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

/chem/gc2.i/061698.b/016f0501.d (Part 1 of 2)

Data File: /chem/gc2.i/061698.b/016f0501.d
Date: 17-JUN-98 05:25
Client ID: 061hlnk/20
Sample Info: 061hlnk/20
Volume Injected (uL): 1.0
Column Phase: Xi-5

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

/chem/gc2.i/061698.b/016f0501.d (Part 2 of 2)

Data File: /chem/gc2.i/061698.b/015f0501.d
 Report Date: 17-Jun-1998 13:44

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Data file : /chem/gc2.i/061698.b/015f0501.d
 Lab Smp Id: 061LCS/20 Client Smp ID: 061LCS/20
 Inj Date : 17-JUN-98 04:28
 Operator : Gerald Ross Inst ID: gc2.i
 Smp Info : 061LCS/20
 Misc Info : 061LCS/20
 Comment :
 Method : /chem/gc2.i/061698.b/rcrapcb.m
 Meth Date : 16-Jun-1998 10:24 Quant Type: ESTD
 Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
 Als bottle: 1 QC Sample: METHSPIKE
 Dil Factor: 20.000
 Integrator: HP Genie Compound Sublist: AR1254.sub
 Target Version: 3.10 Sample Matrix: SOIL

CONCENTRATIONS						
			ON-COL		FINAL	
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/Kg)	TARGET RANGE
==	=====	=====	=====	=====	=====	=====
27 Aroclor-1254					CAS #:	11097-69-1
21.736	21.767	-0.031	121106	0.148	5940	100.00
22.816	22.846	-0.030	159433	0.148	5910	112.00- 152.00 131.65
24.748	24.780	-0.032	145883	0.151	6030	96.00- 136.00 120.46
Average of Peak Concentrations =				5960		

\$ 29 Tetrachloro-m-xylene					CAS #:	877-09-8
12.638	12.654	-0.016	858547	0.0582	2330	100.00

\$ 30 Decachlorobiphenyl					CAS #:	2051-24-3
42.670	42.728	-0.058	539237	0.0663	2650	100.00

222-S Laboratory

RECOVERY REPORT

Client Name: Client SDG: 061698
Sample Matrix: SOLID Fraction: PEST
Lab Smp Id: 061LCS/20 Client Smp ID: 061LCS/20
Level: LOW Operator: Gerald Ross
Data Type: GC MULTI COMP SampleType: METHSPIKE
SpikeList File: Aroclor-1254.spk Quant Type: ESTD
Method File: /chem/gc2.i/061698.b/rcrapcb.m
Misc Info: 061LCS/20

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
27 Aroclor-1254	8000	5960	74.53	50-150

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	4000	2330	58.23	50-150
\$ 30 Decachlorobiphenyl	4000	2650	66.28	50-150

Data File: /chem/gc2.i/061698.b/015f0501.d
Report Date: 17-Jun-1998 13:44

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TARGET COMPOUNDS

Client Name:
Lab Smp Id: 061LCS/20
Sample Location:
Sample Date:
Sample Matrix: SOIL
Analysis Type: PEST
Data Type: GC MULTI COMP
Misc Info: 061LCS/20

Client SDG: 061698
Client Smp ID: 061LCS/20
Sample Point:
Date Received:
Quant Type: ESTD
Level: LOW
Operator: Gerald Ross

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/KG)	ug/Kg Q
11097-69-1-----	Aroclor-1254	5960	
877-09-8-----	Tetrachloro-m-xylene	2330	
2051-24-3-----	Decachlorobiphenyl	2650	

Data File: /chem/gc2.1/061698.b/015F0501.d
Date: 17-JUN-98 04:28
Client ID: 061LCS/20
Sample Info: 061LCS/20
Volume Injected (uL): 1.0
Column phase: Xi-5

Instrument: gc2.1
Operator: Gerald Ross
Column diameter: 0.25

/chem/gc2.1/061698.b/015F0501.d (Part 1 of 2)

Data File: /chem/gc2.i/061698.b/015F0501.d
Date : 17-JUN-98 04:28
Client ID: 061LIS/20
Sample Info: 061LIS/20
Volume Injected (uL): 1.0
Column Phase: Xi-5

Instrument: gc2.i
Operator: Gerald Ross
Column diameter: 0.25

/chem/gc2.i/061698.b/015F0501.d (Part 2 of 2)

Data File: /chem/gc2.i/061698.b/017f0601.d
 Report Date: 17-Jun-1998 13:44

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Data file : /chem/gc2.i/061698.b/017f0601.d
 Lab Smp Id: 200ng/ml A1254 Client Smp ID: 200ng/ml A1254
 Inj Date : 17-JUN-98 07:19
 Operator : Gerald Ross Inst ID: gc2.i
 Smp Info : 200ng/ml A1254
 Misc Info : 200ng/ml A1254
 Comment :
 Method : /chem/gc2.i/061698.b/rcrapcb.m
 Meth Date : 16-Jun-1998 10:24 Quant Type: ESTD
 Cal Date : 22-MAY-1998 20:13 Cal File: 028f0401.d
 Als bottle: 1 QC Sample: METHSPIKE
 Dil Factor: 1.000
 Integrator: HP Genie Compound Sublist: AR1254.sub
 Target Version: 3.10 Sample Matrix: WATER

CONCENTRATIONS						
			ON-COL		FINAL	
RT	EXP RT	DLT RT	RESPONSE (	ng)	(ug/L)	TARGET RANGE RATIO
==	=====	=====	=====	=====	=====	=====
27 Aroclor-1254					CAS #: 11097-69-1	
21.733	21.767	-0.034	170783	0.209	4.19	100.00
22.812	22.846	-0.034	221788	0.206	4.11 112.00- 152.00	129.86
24.744	24.780	-0.036	205820	0.213	4.25 96.00- 136.00	120.52
Average of Peak Concentrations =					4.18	

\$ 29 Tetrachloro-m-xylene					CAS #: 877-09-8	
12.638	12.654	-0.016	1366423	0.0927	1.85	100.00

\$ 30 Decachlorobiphenyl					CAS #: 2051-24-3	
42.664	42.728	-0.064	770597	0.0947	1.89	100.00

222-S Laboratory

RECOVERY REPORT

Client Name: Client SDG: 061698
Sample Matrix: LIQUID Fraction: PEST
Lab Smp Id: 200ng/ml A1254 Client Smp ID: 200ng/ml A1254
Level: LOW Operator: Gerald Ross
Data Type: GC MULTI COMP SampleType: METHSPIKE
SpikeList File: Aroclor-1254.spk Quant Type: ESTD
Method File: /chem/gc2.i/061698.b/rcrapcb.m
Misc Info: 200ng/ml A1254

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
27 Aroclor-1254	4.00	4.18	104.65	50-150

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	2.00	1.85	92.67	50-150
\$ 30 Decachlorobiphenyl	2.00	1.89	94.72	50-150

Data File: /chem/gc2.i/061698.b/017f0601.d
Report Date: 17-Jun-1998 13:44

222-S Laboratory

TARGET COMPOUNDS

Client Name:
Lab Smp Id: 200ng/ml A1254
Sample Location:
Sample Date:
Sample Matrix: WATER
Analysis Type: PEST
Data Type: GC MULTI COMP
Misc Info: 200ng/ml A1254

Client SDG: 061698
Client Smp ID: 200ng/ml A1254
Sample Point:
Date Received:
Quant Type: ESTD
Level: LOW
Operator: Gerald Ross

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/KG) ug/L	Q
11097-69-1-----	Aroclor-1254	4.18	
877-09-8-----	Tetrachloro-m-xylene	1.85	
2051-24-3-----	Decachlorobiphenyl	1.89

/chem/gc2.1/061698.b/017F0601.d (Part 1 of 2)

Operator: Gerald Ross
Column diameter: 0.25

Instrument: gc2.1

Data File: /chem/gc2.1/061698.b/017F0601.d
Date : 17-JUN-98 07:19
Client ID: 200ng/ml A1254
Sample Info: 200ng/ml A1254
Volume Injected (ul): 1.0
Column phase: X11-5

Data File: /chem/gc2.1/061698.lv/017f0601.d
 Date : 17-JUN-98 07:19
 Client ID: 200ng/ml A1254
 Sample Info: 200ng/ml A1254
 Volume Injected (uL): 1.0
 Column Phase: Xt1-5

Instrument: gc2.1
 Operator: Gerald Ross
 Column diameter: 0.25

/chem/gc2.1/061698.lv/017f0601.d (Part 2 of 2)

Data File: /chem/gc2.i/061698.b/017f0601.d

Report Date: 17-Jun-1998 09:15

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RECOVERY REPORT

Client Name:

Sample Matrix: LIQUID

Lab Smp Id: 200ng/ml A1254

Level: LOW

Data Type: GC MULTI COMP

SpikeList File: Aroclor-1254.spk

Method File: /chem/gc2.i/061698.b/rcrapcb.m

Misc Info: 200ng/ml A1254

Client SDG: 061698

Fraction: PEST

Client Smp ID: 200ng/ml A1254

Operator: Gerald Ross

SampleType: METHSPIKE

Quant Type: ESTD

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
27 Aroclor-1254	4.00	4.18	104.65	50-150

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 29 Tetrachloro-m-xyle	2.00	1.85	92.67	50-150
\$ 30 Decachlorobiphenyl	2.00	1.89	94.72	50-150

OPPORTUNISTIC ANALYTES

APPENDIX A

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Appendix A. Opportunistic Analyte Results.
TX-118

CORE NUMBER: 236
SEGMENT #: 1

SEGMENT PORTION: L Lower Half of Segment

Sample#	R #	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98T001521		TIC by Acid/Coulometry	ug/g	98.67	2.700	2.26e+03	2.10e+03	2.17e+03	6.45	99.20	5.000	n/a
S98T001524	F	Europium-155 by GEA	ug/g	n/a	<8.30e-02	<3.19e-01	<4.04e-1	n/a	n/a	n/a	3.19e-01	n/a
S98T001525	A	Silver -ICP-Acid Digest	ug/g	19.00	<1.00e-02	60.80	62.40	61.60	2.60	97.90	4.040	n/a
S98T001525	A	Arsenic -ICP-Acid Digest	ug/g	96.40	<1.00e-01	< 40.40	<3.87e1	n/a	n/a	99.20	40.40	n/a
S98T001525	A	Boron -ICP-Acid Digest	ug/g	108.6	6.25e-01	1.94e+02	220.0	207.0	12.6	99.00	20.20	n/a
S98T001525	A	Barium -ICP-Acid Digest	ug/g	98.60	<5.00e-02	41.80	41.80	41.80	0.00	91.20	20.20	n/a
S98T001525	A	Beryllium -ICP-Acid Digest	ug/g	100.0	<5.00e-03	< 2.020	<1.94e0	n/a	n/a	99.20	2.020	n/a
S98T001525	A	Bismuth -ICP-Acid Digest	ug/g	93.20	<1.00e-01	1.01e+03	1.03e+03	1.02e+03	1.96	97.40	40.40	n/a
S98T001525	A	Calcium -ICP-Acid Digest	ug/g	106.6	4.35e-01	4.92e+02	525.0	508.5	6.49	100.0	40.40	n/a
S98T001525	A	Cadmium -ICP-Acid Digest	ug/g	95.20	<5.00e-03	94.50	97.50	96.00	3.12	96.80	2.020	n/a
S98T001525	A	Cerium -ICP-Acid Digest	ug/g	99.80	<1.00e-01	80.80	83.70	82.25	3.53	94.20	40.40	n/a
S98T001525	A	Cobalt -ICP-Acid Digest	ug/g	95.40	<2.00e-02	9.610	10.20	9.905	5.96	95.20	8.080	n/a
S98T001525	A	Copper -ICP-Acid Digest	ug/g	92.40	<1.00e-02	< 4.040	<3.87e0	n/a	n/a	86.20	4.040	n/a
S98T001525	A	Potassium -ICP-Acid Digest	ug/g	96.20	<5.00e-01	<2.02e+02	197.0	n/a	n/a	101.4	202.0	n/a
S98T001525	A	Lanthanum -ICP-Acid Digest	ug/g	99.80	<5.00e-02	48.00	47.90	47.95	0.21	93.80	20.20	n/a
S98T001525	A	Magnesium -ICP-Acid Digest	ug/g	96.00	<1.00e-01	1.18e+03	1.21e+03	1.20e+03	2.51	99.40	40.40	n/a
S98T001525	A	Molybdenum -ICP-Acid Digest	ug/g	94.20	<5.00e-02	< 20.20	<1.94e1	n/a	n/a	94.20	20.20	n/a
S98T001525	A	Neodymium -ICP-Acid Digest	ug/g	97.80	<1.00e-01	91.30	91.20	91.25	0.11	91.20	40.40	n/a
S98T001525	A	Phosphorus -ICP-Acid Digest	ug/g	92.20	<2.00e-01	4.71e+04	4.60e+04	4.66e+04	2.36	86.20	80.80	n/a
S98T001525	A	Lead -ICP-Acid Digest	ug/g	91.20	<1.00e-01	5.06e+02	499.0	502.5	1.39	95.60	40.40	n/a
S98T001525	A	Sulfur -ICP-Acid Digest	ug/g	90.60	<1.00e-01	3.04e+02	306.0	305.0	0.66	95.20	40.40	n/a
S98T001525	A	Antimony -ICP-Acid Digest	ug/g	91.60	<6.00e-02	< 24.20	<2.32e1	n/a	n/a	93.40	24.20	n/a
S98T001525	A	Selenium -ICP-Acid Digest	ug/g	91.00	<1.00e-01	< 40.40	<3.87e1	n/a	n/a	91.20	40.40	n/a
S98T001525	A	Samarium -ICP-Acid Digest	ug/g	96.60	<1.00e-01	< 40.40	<3.87e1	n/a	n/a	91.80	40.40	n/a
S98T001525	A	Strontium -ICP-Acid Digest	ug/g	101.0	<1.00e-02	22.40	21.70	22.05	3.17	94.80	4.040	n/a
S98T001525	A	Titanium-ICP-Acid Digest	ug/g	87.20	<1.00e-02	10.80	11.20	11.00	3.64	84.00	4.040	n/a
S98T001525	A	Thallium -ICP-Acid Digest	ug/g	91.40	<2.00e-01	< 80.70	<7.74e1	n/a	n/a	89.60	80.80	n/a
S98T001525	A	Vanadium -ICP-Acid Digest	ug/g	98.60	<5.00e-02	58.80	60.60	59.70	3.02	97.20	20.20	n/a
S98T001525	A	Zinc -ICP-Acid Digest	ug/g	87.00	<1.00e-02	1.47e+02	152.0	149.5	3.34	93.20	4.040	n/a
S98T001525	A	Zirconium -ICP-Acid Digest	ug/g	97.00	<1.00e-02	99.90	87.20	93.55	13.6	80.60	4.040	n/a
S98T001527	I	Silver -ICP-H2O Dig/Acid	ug/g	98.60	<1.00e-02	14.20	13.90	14.05	2.14	n/a	6.210	n/a
S98T001527	I	Arsenic -ICP-H2O Dig/Acid	ug/g	102.2	<1.00e-01	< 62.00	<6.05e1	n/a	n/a	108.0	62.10	n/a
S98T001527	I	Boron -ICP-H2O Dig/Acid	ug/g	99.40	3.220	4.86e+02	634.0	560.0	26.4	97.60	30.90	n/a
S98T001527	I	Barium -ICP-H2O Dig/Acid	ug/g	99.40	<5.00e-02	< 31.00	<3.02e1	n/a	n/a	94.40	30.90	n/a
S98T001527	I	Beryllium -ICP-H2O Dig/Acid	ug/g	100.8	<5.00e-03	< 3.100	<3.02e0	n/a	n/a	100.0	3.090	n/a
S98T001527	I	Bismuth -ICP-H2O Dig/Acid	ug/g	99.00	<1.00e-01	< 62.00	60.60	n/a	n/a	106.0	62.10	n/a
S98T001527	I	Calcium -ICP-H2O Dig/Acid	ug/g	98.40	<1.00e-01	< 62.00	<6.05e1	n/a	n/a	112.0	62.10	n/a
S98T001527	I	Cadmium -ICP-H2O Dig/Acid	ug/g	100.0	<5.00e-03	< 3.100	4.090	n/a	n/a	102.0	3.090	n/a
S98T001527	I	Cerium -ICP-H2O Dig/Acid	ug/g	100.4	<1.00e-01	< 62.00	<6.05e1	n/a	n/a	97.40	62.10	n/a
S98T001527	I	Cobalt -ICP-H2O Dig/Acid	ug/g	99.20	<2.00e-02	< 12.40	<1.21e1	n/a	n/a	100.0	12.40	n/a
S98T001527	I	Copper -ICP-H2O Dig/Acid	ug/g	95.40	<1.00e-02	< 6.200	<6.05e0	n/a	n/a	91.80	6.210	n/a
S98T001527	I	Iron -ICP-H2O Dig/Acid	ug/g	96.80	<5.00e-02	2.64e+02	376.0	320.0	35.0	97.50	30.90	n/a
S98T001527	I	Potassium -ICP-H2O Dig/Acid	ug/g	100.0	<5.00e-01	<3.10e+02	<3.02e2	n/a	n/a	111.0	309.0	n/a
S98T001527	I	Lanthanum -ICP-H2O Dig/Acid	ug/g	99.80	<5.00e-02	< 31.00	<3.02e1	n/a	n/a	96.60	30.90	n/a

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HNF-1651 REV. 0

Sample#	R#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S98T001527	1	Mercurium - ICP-H20 Dig/Acid	ug/g	101.6	<1.00e-01	82.80	97.40	90.10	16.2	100.0	62.10	n/a
S98T001527	1	Mercurium - ICP-H20 Dig/Acid	ug/g	97.60	<1.00e-02	1.31e+02	179.0	155.0	31.0	97.30	6.210	n/a
S98T001527	1	Manganese - ICP-H20 Dig/Acid	ug/g	99.60	<5.00e-02	< 31.00	<3.02e1	n/a	n/a	101.0	30.90	n/a
S98T001527	1	Manganese - ICP-H20 Dig/Acid	ug/g	97.60	<1.00e-01	< 62.00	<6.05e1	n/a	n/a	93.90	62.10	n/a
S98T001527	1	Nickel - ICP-H20 Dig/Acid	ug/g	98.00	<2.00e-02	< 12.40	<1.21e1	n/a	n/a	99.70	12.40	n/a
S98T001527	1	Phosphorus - ICP-H20 Dig/Acid	ug/g	99.80	<2.00e-01	5.08e+04	4.85e+04	4.96e+04	4.63	123.0	124.0	n/a
S98T001527	1	Lead - ICP-H20 Dig/Acid	ug/g	97.60	<1.00e-01	< 62.00	<6.05e1	n/a	n/a	104.0	62.10	n/a
S98T001527	1	Sulfur - ICP-H20 Dig/Acid	ug/g	99.40	<1.00e-01	3.26e+02	339.0	332.5	3.91	102.0	62.10	n/a
S98T001527	1	Antimony - ICP-H20 Dig/Acid	ug/g	99.00	<6.00e-02	< 37.20	<3.63e1	n/a	n/a	101.0	37.20	n/a
S98T001527	1	Selenium - ICP-H20 Dig/Acid	ug/g	94.20	<1.00e-01	< 62.00	<6.05e1	n/a	n/a	97.00	62.10	n/a
S98T001527	1	Silicon - ICP-H20 Dig/Acid	ug/g	99.20	6.68e-01	2.28e+03	2.82e+03	2.55e+03	21.2	112.0	30.90	n/a
S98T001527	1	Samarium - ICP-H20 Dig/Acid	ug/g	96.60	<1.00e-01	< 62.00	<6.05e1	n/a	n/a	94.10	62.10	n/a
S98T001527	1	Strontium - ICP-H20 Dig/Acid	ug/g	101.2	<1.00e-02	< 6.200	<6.05e0	n/a	n/a	97.90	6.210	n/a
S98T001527	1	Titanium - ICP-H20 Dig/Acid	ug/g	95.20	<2.00e-01	<1.24e+02	<1.21e2	n/a	n/a	96.90	124.0	n/a
S98T001527	1	Thallium - ICP-H20 Dig/Acid	ug/g	95.20	<2.00e-01	<3.10e+02	<3.02e2	n/a	n/a	99.50	309.0	n/a
S98T001527	1	Uranium - ICP-H20 Dig/Acid	ug/g	96.80	<5.00e-01	55.30	53.90	54.70	2.93	102.0	30.90	n/a
S98T001527	1	Vanadium - ICP-H20 Dig/Acid	ug/g	101.8	<5.00e-02	13.40	7.590	10.59	56.7	102.0	6.210	n/a
S98T001527	1	Zinc - ICP-H20 Dig/Acid	ug/g	98.00	<1.00e-02	< 6.200	11.20	n/a	n/a	99.70	6.210	n/a
S98T001527	1	Zirconium - ICP-H20 Dig/Acid	ug/g	100.2	<1.00e-01	< 6.200	11.20	n/a	n/a	99.70	6.210	n/a

Appendix A. Opportunistic Analyte Results.
TX-118

CORE NUMBER: 236
SEGMENT #: 2

SEGMENT PORTION: U Upper Half of Segment

Sample#	R #	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S98T001530		TiC by Acid/Coulometry	ug/g	98.67	2.700	2.68e+03	2.79e+03	2.74e+03	4.02	N/A	5.000	N/A	N/A
S98T001534	F	Europium-155 by GEA	uCi/g	N/A	<8.30e-02	<3.39e-01	<3.52e-1	N/A	N/A	N/A	3.39e-01	N/A	N/A
S98T001536	A	Silver - ICP-Acid Digest	ug/g	19.00	<1.00e-02	66.90	48.10	57.50	32.7	N/A	5.790	N/A	N/A
S98T001536	A	Arsenic - ICP-Acid Digest	ug/g	96.40	<1.00e-01	<58.00	<5.80e-1	N/A	N/A	N/A	57.90	N/A	N/A
S98T001536	A	Boron - ICP-Acid Digest	ug/g	108.6	6.25e-01	3.09e+02	307.0	308.0	0.65	N/A	29.00	N/A	N/A
S98T001536	A	Barium - ICP-Acid Digest	ug/g	98.60	<5.00e-02	35.60	34.20	34.90	4.01	N/A	29.00	N/A	N/A
S98T001536	A	Beryllium - ICP-Acid Digest	ug/g	100.0	<5.00e-03	<2.900	<2.91e-1	N/A	N/A	N/A	2.900	N/A	N/A
S98T001536	A	Bismuth - ICP-Acid Digest	ug/g	95.20	<1.00e-01	6.20e+02	576.0	598.0	7.36	N/A	57.90	N/A	N/A
S98T001536	A	Calcium - ICP-Acid Digest	ug/g	106.6	4.35e-01	3.90e+02	423.0	406.5	8.12	N/A	57.90	N/A	N/A
S98T001536	A	Cadmium - ICP-Acid Digest	ug/g	95.20	<5.00e-03	91.70	88.30	90.00	3.78	N/A	2.900	N/A	N/A
S98T001536	A	Cerium - ICP-Acid Digest	ug/g	99.80	<1.00e-01	76.10	74.40	75.25	2.26	N/A	57.90	N/A	N/A
S98T001536	A	Cobalt - ICP-Acid Digest	ug/g	95.40	<2.00e-02	<1.16e1	<1.16e1	N/A	N/A	N/A	11.60	N/A	N/A
S98T001536	A	Copper - ICP-Acid Digest	ug/g	92.40	<1.00e-02	<5.800	<5.82e0	N/A	N/A	N/A	5.790	N/A	N/A
S98T001536	A	Iron - ICP-Acid Digest	ug/g	94.20	<5.00e-02	3.40e+03	3.40e+03	3.46e+03	3.18	N/A	29.00	N/A	N/A
S98T001536	A	Lanthanum - ICP-Acid Digest	ug/g	96.20	<5.00e-01	<2.90e+02	<2.91e2	N/A	N/A	N/A	290.0	N/A	N/A
S98T001536	A	Magnesium - ICP-Acid Digest	ug/g	96.00	<5.00e-01	1.16e+03	1.16e+03	1.16e+03	0.00	N/A	57.90	N/A	N/A
S98T001536	A	Manganese - ICP-Acid Digest	ug/g	95.40	<1.00e-01	4.55e+03	4.41e+03	4.48e+03	3.12	N/A	5.790	N/A	N/A
S98T001536	A	Molybdenum - ICP-Acid Digest	ug/g	94.20	<5.00e-02	<29.00	<2.91e1	N/A	N/A	N/A	29.00	N/A	N/A
S98T001536	A	Neodymium - ICP-Acid Digest	ug/g	97.80	<1.00e-01	81.30	78.00	79.65	4.14	N/A	57.90	N/A	N/A
S98T001536	A	Nickel - ICP-Acid Digest	ug/g	96.60	<2.00e-02	1.72e+02	166.0	169.0	3.55	N/A	11.60	N/A	N/A
S98T001536	A	Phosphorus - ICP-Acid Digest	ug/g	92.20	<2.00e-01	4.91e+04	4.74e+04	4.82e+04	3.52	N/A	116.0	N/A	N/A
S98T001536	A	Lead - ICP-Acid Digest	ug/g	91.20	<1.00e-01	3.68e+02	390.0	379.0	5.80	N/A	57.90	N/A	N/A
S98T001536	A	Sulfur - ICP-Acid Digest	ug/g	90.60	<1.00e-01	9.79e+02	961.0	970.0	1.86	N/A	57.90	N/A	N/A
S98T001536	A	Antimony - ICP-Acid Digest	ug/g	91.00	<6.00e-02	<34.80	<3.47e1	N/A	N/A	N/A	34.80	N/A	N/A
S98T001536	A	Selenium - ICP-Acid Digest	ug/g	91.00	<1.00e-01	<58.00	<5.82e1	N/A	N/A	N/A	57.90	N/A	N/A
S98T001536	A	Silicon - ICP-Acid Digest	ug/g	143.2	1.670	2.06e+03	2.17e+03	2.12e+03	5.20	N/A	29.00	N/A	N/A
S98T001536	A	Samarium - ICP-Acid Digest	ug/g	96.60	<1.00e-01	<58.00	<5.82e1	N/A	N/A	N/A	57.90	N/A	N/A
S98T001536	A	Strontium - ICP-Acid Digest	ug/g	87.20	<1.00e-02	11.80	11.30	11.55	4.33	N/A	5.790	N/A	N/A
S98T001536	A	Titanium - ICP-Acid Digest	ug/g	91.40	<1.00e-02	8.810	8.500	8.655	3.58	N/A	5.790	N/A	N/A
S98T001536	A	Thallium - ICP-Acid Digest	ug/g	97.00	<2.00e-01	<1.16e+02	<1.16e2	N/A	N/A	N/A	116.0	N/A	N/A
S98T001536	A	Uranium - ICP-Acid Digest	ug/g	95.70	<5.00e-01	3.36e+03	3.24e+03	3.30e+03	3.64	N/A	290.0	N/A	N/A
S98T001536	A	Vanadium - ICP-Acid Digest	ug/g	98.60	<5.00e-02	77.10	75.50	76.30	2.10	N/A	29.00	N/A	N/A
S98T001536	A	Zinc - ICP-Acid Digest	ug/g	97.00	<1.00e-02	1.36e+02	133.0	134.5	2.23	N/A	5.790	N/A	N/A
S98T001536	A	Zirconium - ICP-Acid Digest	ug/g	87.00	<1.00e-02	80.50	78.50	79.50	2.52	N/A	5.790	N/A	N/A
S98T001540	I	Silver - ICP-H2O Dig/Acid	ug/g	100.2	<1.00e-02	14.90	14.70	14.80	1.35	N/A	6.150	N/A	N/A
S98T001540	I	Arsenic - ICP-H2O Dig/Acid	ug/g	99.40	<1.00e-01	<61.50	<6.05e1	N/A	N/A	N/A	61.50	N/A	N/A
S98T001540	I	Boron - ICP-H2O Dig/Acid	ug/g	99.40	<5.00e-02	3.69e+02	495.0	532.0	13.9	N/A	30.60	N/A	N/A
S98T001540	I	Barium - ICP-H2O Dig/Acid	ug/g	99.40	<5.00e-02	<30.70	<3.02e1	N/A	N/A	N/A	30.60	N/A	N/A
S98T001540	I	Beryllium - ICP-H2O Dig/Acid	ug/g	100.8	<5.00e-03	<61.50	<6.05e0	N/A	N/A	N/A	3.060	N/A	N/A
S98T001540	I	Bismuth - ICP-H2O Dig/Acid	ug/g	99.00	<1.00e-01	<61.50	<6.05e0	N/A	N/A	N/A	61.50	N/A	N/A
S98T001540	I	Calcium - ICP-H2O Dig/Acid	ug/g	98.40	<1.00e-01	<61.50	<6.05e0	N/A	N/A	N/A	61.50	N/A	N/A
S98T001540	I	Cadmium - ICP-H2O Dig/Acid	ug/g	100.0	<5.00e-03	<3.070	<3.02e1	N/A	N/A	N/A	3.060	N/A	N/A
S98T001540	I	Cerium - ICP-H2O Dig/Acid	ug/g	100.4	<1.00e-01	<61.50	<6.05e1	N/A	N/A	N/A	61.50	N/A	N/A

Sample#	R #	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S981001540	1	Cobalt - ICP-H2O Dig/Acid	ug/g	99.20	<2.00e-02	< 12.30	<1.21e1	n/a	n/a	n/a	12.30	n/a
S981001540	1	Copper - ICP-H2O Dig/Acid	ug/g	95.40	<1.00e-02	< 6.150	<6.05e0	n/a	n/a	n/a	6.150	n/a
S981001540	1	Iron - ICP-H2O Dig/Acid	ug/g	96.80	<5.00e-02	< 30.70	<3.02e1	n/a	n/a	n/a	30.60	n/a
S981001540	1	Potassium - ICP-H2O Dig/Acid	ug/g	100.0	<5.00e-01	< 30.70	<3.02e1	n/a	n/a	n/a	306.0	n/a
S981001540	1	Lanthanum - ICP-H2O Dig/Acid	ug/g	99.80	<5.00e-02	< 30.70	<3.02e1	n/a	n/a	n/a	30.60	n/a
S981001540	1	Magnesium - ICP-H2O Dig/Acid	ug/g	101.6	<1.00e-01	< 61.50	<6.05e1	n/a	n/a	n/a	61.50	n/a
S981001540	1	Manganese - ICP-H2O Dig/Acid	ug/g	97.60	<5.00e-02	< 30.70	<3.02e1	n/a	n/a	n/a	30.60	n/a
S981001540	1	Molybdenum - ICP-H2O Dig/Acid	ug/g	97.60	<5.00e-02	< 30.70	<3.02e1	n/a	n/a	n/a	30.60	n/a
S981001540	1	Neodymium - ICP-H2O Dig/Acid	ug/g	98.00	<2.00e-02	< 12.30	<1.21e1	n/a	n/a	n/a	12.30	n/a
S981001540	1	Nickel - ICP-H2O Dig/Acid	ug/g	99.80	<2.00e-01	< 61.50	<6.05e1	n/a	n/a	n/a	123.0	n/a
S981001540	1	Phosphorus - ICP-H2O Dig/Acid	ug/g	97.60	<1.00e-01	< 61.50	<6.05e1	5.01e+04	2.40	n/a	61.50	n/a
S981001540	1	Sulfur - ICP-H2O Dig/Acid	ug/g	99.40	<1.00e-01	< 36.90	<3.69e1	1.00e+03	3.69	n/a	36.90	n/a
S981001540	1	Selenium - ICP-H2O Dig/Acid	ug/g	94.20	<1.00e-01	< 61.50	<6.05e1	n/a	n/a	n/a	61.50	n/a
S981001540	1	Silicon - ICP-H2O Dig/Acid	ug/g	99.20	<6.68e-01	< 2.53e+03	<2.37e+03	2.45e+03	6.53	n/a	30.60	n/a
S981001540	1	Strontium - ICP-H2O Dig/Acid	ug/g	96.60	<1.00e-01	< 61.50	<6.05e1	n/a	n/a	n/a	61.50	n/a
S981001540	1	Titanium - ICP-H2O Dig/Acid	ug/g	101.2	<1.00e-02	< 6.150	<6.05e0	n/a	n/a	n/a	6.150	n/a
S981001540	1	Thallium - ICP-H2O Dig/Acid	ug/g	95.20	<2.00e-02	< 6.150	<6.05e0	n/a	n/a	n/a	123.0	n/a
S981001540	1	Uranium - ICP-H2O Dig/Acid	ug/g	96.80	<5.00e-01	<1.23e+02	<1.21e2	n/a	n/a	n/a	306.0	n/a
S981001540	1	Vanadium - ICP-H2O Dig/Acid	ug/g	101.8	<5.00e-02	< 70.10	<6.97e1	69.90	0.57	n/a	30.60	n/a
S981001540	1	Zinc - ICP-H2O Dig/Acid	ug/g	98.00	<1.00e-02	< 6.150	<6.05e0	n/a	n/a	n/a	6.150	n/a
S981001540	1	Zirconium - ICP-H2O Dig/Acid	ug/g	100.2	<1.00e-02	< 6.150	<6.05e0	n/a	n/a	n/a	6.150	n/a

L Lower Half of Segment: L Lower Half of Segment

Sample#	R #	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S981001531	1	TIC by Acid/ coulometry	ug/g	98.67	2.700	1.73e+03	1.76e+03	1.74e+03	1.72	104.0	5,000	n/a
S981001535	1	TIC by Acid/155 by deA	ug/g	98.67	<8.30e-02	<8.92e+02	<8.05e+2	n/a	n/a	n/a	8.90e-02	n/a
S981001537	1	Silver - ICP-Acid Digest	ug/g	19.00	<1.00e-02	< 57.80	<5.78e1	23.20	4.31	98.50	5.790	n/a
S981001537	1	Arsenic - ICP-Acid Digest	ug/g	96.40	<1.00e-01	< 22.70	<2.27e1	23.50	1.27	100.4	57.90	n/a
S981001537	1	Boron - ICP-Acid Digest	ug/g	108.6	<6.25e-01	< 28.90	<2.89e1	235.5	1.27	94.40	28.90	n/a
S981001537	1	Barium - ICP-Acid Digest	ug/g	98.60	<5.00e-02	< 2.890	<2.92e1	n/a	n/a	93.20	28.90	n/a
S981001537	1	Beryllium - ICP-Acid Digest	ug/g	100.0	<5.00e-03	< 2.890	<2.92e1	n/a	n/a	98.00	2.890	n/a
S981001537	1	Bismuth - ICP-Acid Digest	ug/g	93.20	<1.00e-01	<1.22e+02	<1.19e2	120.5	2.49	96.80	57.90	n/a
S981001537	1	Calcium - ICP-Acid Digest	ug/g	106.6	<4.35e-01	<14.80	<15.30	233.5	19.3	97.20	57.90	n/a
S981001537	1	Cadmium - ICP-Acid Digest	ug/g	95.20	<5.00e-03	< 57.80	<5.85e1	23.5	3.32	99.00	2.890	n/a
S981001537	1	Cerium - ICP-Acid Digest	ug/g	99.80	<1.00e-01	< 11.60	<11.7e1	n/a	n/a	96.00	57.90	n/a
S981001537	1	Cobalt - ICP-Acid Digest	ug/g	95.40	<2.00e-02	< 5.780	<5.85e1	n/a	n/a	97.60	11.60	n/a
S981001537	1	Copper - ICP-Acid Digest	ug/g	94.20	<1.00e-02	< 6.89e+02	<6.89e2	701.0	3.42	116.6	28.90	n/a
S981001537	1	Iron - ICP-Acid Digest	ug/g	96.20	<5.00e-01	< 28.90	<2.92e1	n/a	n/a	107.6	289.0	n/a
S981001537	1	Potassium - ICP-Acid Digest	ug/g	99.80	<5.00e-02	< 28.90	<2.92e1	n/a	n/a	95.20	28.90	n/a
S981001537	1	Lanthanum - ICP-Acid Digest	ug/g	96.00	<1.00e-01	<1.97e+03	<2.25e3	211.0	13.3	102.6	57.90	n/a
S981001537	1	Magnesium - ICP-Acid Digest	ug/g	95.40	<1.00e-02	< 1.06e+03	<1.08e+03	1.07e+03	1.87	120.4	5.790	n/a
S981001537	1	Manganese - ICP-Acid Digest	ug/g	94.20	<5.00e-02	< 28.90	<2.92e1	n/a	n/a	95.60	28.90	n/a
S981001537	1	Molybdenum - ICP-Acid Digest	ug/g	97.80	<1.00e-01	< 57.80	<5.85e1	n/a	n/a	93.20	57.90	n/a
S981001537	1	Neodymium - ICP-Acid Digest	ug/g	96.60	<2.00e-02	< 28.00	<29.10	28.55	3.85	100.0	11.60	n/a
S981001537	1	Nickel - ICP-Acid Digest	ug/g	92.20	<2.00e-01	<6.59e+04	<6.60e+04	6.60e+04	0.45	-3.74e02	116.0	n/a
S981001537	1	Phosphorus - ICP-Acid Digest	ug/g	98.00	<1.00e-01	< 64.20	<67.00	65.60	4.27	98.60	57.90	n/a

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk	Rec %	Det Limit	Count	Err%
S98T001537	A		Sulfur -ICP-Acid Digest	ug/g	90.60	<1.00e-01	6.33e+02	684.0	658.5	7.74		103.6	57.90	n/a	
S98T001537	A		Antimony -ICP-Acid Digest	ug/g	91.60	<6.00e-02	< 34.70	<3.51e1	n/a	n/a		95.60	34.80	n/a	
S98T001537	A		Selenium -ICP-Acid Digest	ug/g	91.00	<1.00e-01	< 57.80	<5.85e1	n/a	n/a		94.20	57.90	n/a	
S98T001537	A		Silicon -ICP-Acid Digest	ug/g	143.2	1.670	8.87e+02	1.43e+03	1.16e+03	46.9		194.6	28.90	n/a	
S98T001537	A		Samarium -ICP-Acid Digest	ug/g	96.60	<1.00e-01	< 57.80	<5.85e1	n/a	n/a		91.20	57.90	n/a	
S98T001537	A		Strontium -ICP-Acid Digest	ug/g	101.0	<1.00e-02	< 5.780	<5.85e0	n/a	n/a		95.40	5.790	n/a	
S98T001537	A		Titanium -ICP-Acid Digest	ug/g	87.20	<1.00e-02	< 5.780	<5.85e0	n/a	n/a		84.60	5.790	n/a	
S98T001537	A		Thallium -ICP-Acid Digest	ug/g	91.40	<2.00e-01	<1.16e+02	<1.17e2	n/a	n/a		90.60	116.0	n/a	
S98T001537	A		Uranium -ICP-Acid Digest	ug/g	95.70	<5.00e-01	4.85e+02	496.0	490.5	2.24		95.60	289.0	n/a	
S98T001537	A		Vanadium -ICP-Acid Digest	ug/g	98.60	<5.00e-02	< 28.90	29.90	n/a	n/a		101.2	28.90	n/a	
S98T001537	A		Zinc -ICP-Acid Digest	ug/g	87.00	<1.00e-02	24.70	26.30	25.50	6.27		95.40	5.790	n/a	
S98T001537	A		Zirconium -ICP-Acid Digest	ug/g	97.00	<1.00e-02	21.80	21.40	21.60	1.85		85.00	5.790	n/a	
S98T001541	I		Silver -ICP-H2O Dig/Acid	ug/g	98.60	<1.00e-02	12.30	13.50	12.90	9.30		93.80	6.060	n/a	
S98T001541	I		Arsenic -ICP-H2O Dig/Acid	ug/g	102.2	<1.00e-01	< 60.50	<6.04e1	n/a	n/a		105.0	60.60	n/a	
S98T001541	I		Boron -ICP-H2O Dig/Acid	ug/g	99.40	3.220	6.60e+02	666.0	663.0	0.90		98.90	30.30	n/a	
S98T001541	I		Barium -ICP-H2O Dig/Acid	ug/g	99.40	<5.00e-02	< 30.20	<3.02e1	n/a	n/a		94.90	30.30	n/a	
S98T001541	I		Beryllium -ICP-H2O Dig/Acid	ug/g	100.8	<5.00e-03	< 3.020	<3.02e0	n/a	n/a		99.00	3.030	n/a	
S98T001541	I		Bismuth -ICP-H2O Dig/Acid	ug/g	99.00	<1.00e-01	< 60.50	<6.04e1	n/a	n/a		103.0	60.60	n/a	
S98T001541	I		Calcium -ICP-H2O Dig/Acid	ug/g	98.40	<1.00e-01	< 60.50	<6.04e1	n/a	n/a		104.0	60.60	n/a	
S98T001541	I		Cadmium -ICP-H2O Dig/Acid	ug/g	100.0	<5.00e-03	< 3.020	<3.02e0	n/a	n/a		99.90	3.030	n/a	
S98T001541	I		Cerium -ICP-H2O Dig/Acid	ug/g	100.4	<1.00e-01	< 60.50	<6.04e1	n/a	n/a		98.20	60.60	n/a	
S98T001541	I		Cobalt -ICP-H2O Dig/Acid	ug/g	99.20	<2.00e-02	< 12.10	<1.21e1	n/a	n/a		98.60	12.10	n/a	
S98T001541	I		Copper -ICP-H2O Dig/Acid	ug/g	95.40	<1.00e-02	< 6.050	<6.04e0	n/a	n/a		91.60	6.060	n/a	
S98T001541	I		Iron -ICP-H2O Dig/Acid	ug/g	96.80	<5.00e-02	< 30.20	41.70	n/a	n/a		100.0	30.30	n/a	
S98T001541	I		Potassium -ICP-H2O Dig/Acid	ug/g	100.0	<5.00e-01	<3.02e+02	319.0	n/a	n/a		117.0	303.0	n/a	
S98T001541	I		Lanthanum -ICP-H2O Dig/Acid	ug/g	99.80	<5.00e-02	< 30.20	<3.02e1	n/a	n/a		96.30	30.30	n/a	
S98T001541	I		Magnesium -ICP-H2O Dig/Acid	ug/g	101.6	<1.00e-01	< 60.50	69.00	n/a	n/a		103.0	60.60	n/a	
S98T001541	I		Manganese -ICP-H2O Dig/Acid	ug/g	97.60	<1.00e-02	21.50	31.10	26.30	36.5		95.40	6.060	n/a	
S98T001541	I		Molybdenum -ICP-H2O Dig/Acid	ug/g	99.60	<5.00e-02	< 30.20	<3.02e1	n/a	n/a		100.0	30.30	n/a	
S98T001541	I		Neodymium -ICP-H2O Dig/Acid	ug/g	97.60	<1.00e-01	< 60.50	<6.04e1	n/a	n/a		93.60	60.60	n/a	
S98T001541	I		Nickel -ICP-H2O Dig/Acid	ug/g	98.00	<2.00e-02	< 12.10	<1.21e1	n/a	n/a		97.30	12.10	n/a	
S98T001541	I		Phosphorus -ICP-H2O Dig/Acid	ug/g	99.80	<2.00e-01	6.51e+04	5.86e+04	6.18e+04	10.5		52.60	121.0	n/a	
S98T001541	I		Lead -ICP-H2O Dig/Acid	ug/g	97.60	<1.00e-01	< 60.50	<6.04e1	n/a	n/a		98.80	60.60	n/a	
S98T001541	I		Sulfur -ICP-H2O Dig/Acid	ug/g	99.40	<1.00e-01	7.38e+02	801.0	769.5	8.19		99.10	60.60	n/a	
S98T001541	I		Antimony -ICP-H2O Dig/Acid	ug/g	99.00	<6.00e-02	< 36.30	<3.62e1	n/a	n/a		101.0	36.30	n/a	
S98T001541	I		Selenium -ICP-H2O Dig/Acid	ug/g	94.20	<1.00e-01	< 60.50	<6.04e1	n/a	n/a		96.30	60.60	n/a	
S98T001541	I		Silicon -ICP-H2O Dig/Acid	ug/g	99.20	6.68e-01	2.37e+03	2.55e+03	2.46e+03	7.32		111.0	30.30	n/a	
S98T001541	I		Samarium -ICP-H2O Dig/Acid	ug/g	96.60	<1.00e-01	< 60.50	<6.04e1	n/a	n/a		93.70	60.60	n/a	
S98T001541	I		Strontium -ICP-H2O Dig/Acid	ug/g	101.2	<1.00e-02	< 6.050	<6.04e0	n/a	n/a		97.50	6.060	n/a	
S98T001541	I		Titanium -ICP-H2O Dig/Acid	ug/g	95.20	<1.00e-02	< 6.050	<6.04e0	n/a	n/a		94.20	6.060	n/a	
S98T001541	I		Thallium -ICP-H2O Dig/Acid	ug/g	95.20	<2.00e-01	<1.21e+02	<1.21e2	n/a	n/a		92.80	121.0	n/a	
S98T001541	I		Uranium -ICP-H2O Dig/Acid	ug/g	96.80	<5.00e-01	<3.02e+02	<3.02e2	n/a	n/a		94.50	303.0	n/a	
S98T001541	I		Vanadium -ICP-H2O Dig/Acid	ug/g	101.8	<5.00e-02	< 30.20	39.00	n/a	n/a		106.0	30.30	n/a	
S98T001541	I		Zinc -ICP-H2O Dig/Acid	ug/g	98.00	<1.00e-02	< 6.050	<6.04e0	n/a	n/a		101.0	6.060	n/a	
S98T001541	I		Zirconium -ICP-H2O Dig/Acid	ug/g	100.2	<1.00e-02	< 6.050	<6.04e0	n/a	n/a		98.10	6.060	n/a	

Appendix A. Opportunistic Analyte Results.
TX-118

CORE NUMBER: 236
SEGMENT #: 98

SEGMENT PORTION: Hydrostatic Head Fluid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count	Err%
S98T001166	D		Silver-ICP-Acid Dil.	ug/ml	98.20	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	n/a
S98T001166	D		Aluminum-ICP-Acid Dil.	ug/ml	98.00	<5.00e-02	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	n/a
S98T001166	D		Arsenic-ICP-Acid Dil.	ug/ml	102.0	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Boron-ICP-Acid Dil.	ug/ml	99.40	<5.00e-02	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	n/a
S98T001166	D		Barium-ICP-Acid Dil.	ug/ml	99.60	<5.00e-02	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	n/a
S98T001166	D		Beryllium-ICP-Acid Dil.	ug/ml	101.0	<5.00e-03	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	n/a
S98T001166	D		Bismuth-ICP-Acid Dil.	ug/ml	98.20	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Calcium-ICP-Acid Dil.	ug/ml	99.60	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Cadmium-ICP-Acid Dil.	ug/ml	99.40	<5.00e-03	<5.00e-02	<5.00e-2	n/a	n/a	n/a	5.00e-02	n/a	n/a
S98T001166	D		Cerium-ICP-Acid Dil.	ug/ml	100.6	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Cobalt-ICP-Acid Dil.	ug/ml	101.8	<2.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a	n/a
S98T001166	D		Chromium-ICP-Acid Dil.	ug/ml	96.40	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	n/a
S98T001166	D		Copper-ICP-Acid Dil.	ug/ml	95.20	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	n/a
S98T001166	D		Iron-ICP-Acid Dil.	ug/ml	97.20	<5.00e-02	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	n/a
S98T001166	D		Potassium-ICP-Acid Dil.	ug/ml	96.60	<5.00e-01	<5.00e-1	<5.00e0	n/a	n/a	n/a	5.00e-1	n/a	n/a
S98T001166	D		Lanthanum-ICP-Acid Dil.	ug/ml	99.80	<5.00e-02	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	n/a
S98T001166	D		Magnesium-ICP-Acid Dil.	ug/ml	101.8	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Manganese-ICP-Acid Dil.	ug/ml	97.60	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	n/a
S98T001166	D		Molybdenum-ICP-Acid Dil.	ug/ml	98.20	<5.00e-02	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	n/a
S98T001166	D		Sodium-ICP-Acid Dil.	ug/ml	101.2	<1.00e-01	5.370	5.310	5.340	1.12	n/a	1.00e-1	n/a	n/a
S98T001166	D		Neodymium-ICP-Acid Dil.	ug/ml	96.80	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Nickel-ICP-Acid Dil.	ug/ml	97.40	<2.00e-02	<2.00e-01	<2.00e-1	n/a	n/a	n/a	2.00e-01	n/a	n/a
S98T001166	D		Phosphorus-ICP-Acid Dil.	ug/ml	98.60	<2.00e-01	<2.00e-1	<2.00e0	n/a	n/a	n/a	2.00e-1	n/a	n/a
S98T001166	D		Lead-ICP-Acid Dil.	ug/ml	98.00	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Sulfur-ICP-Acid Dil.	ug/ml	99.00	<1.00e-01	1.580	1.560	1.570	1.27	n/a	1.00e-1	n/a	n/a
S98T001166	D		Antimony-ICP-Acid Dil.	ug/ml	99.20	<6.00e-02	<6.00e-01	<6.00e-1	n/a	n/a	n/a	6.00e-01	n/a	n/a
S98T001166	D		Selenium-ICP-Acid Dil.	ug/ml	94.20	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Silicon-ICP-Acid Dil.	ug/ml	101.0	<5.00e-02	2.060	2.070	2.065	0.48	n/a	5.00e-01	n/a	n/a
S98T001166	D		Samarium-ICP-Acid Dil.	ug/ml	97.20	<1.00e-01	<1.00e-1	<1.00e0	n/a	n/a	n/a	1.00e-1	n/a	n/a
S98T001166	D		Strontium-ICP-Acid Dil.	ug/ml	101.0	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	n/a
S98T001166	D		Titanium-ICP-Acid Dil.	ug/ml	90.60	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	n/a
S98T001166	D		Thallium-ICP-Acid Dil.	ug/ml	95.60	<2.00e-01	<2.00e-1	<2.00e0	n/a	n/a	n/a	2.00e-1	n/a	n/a
S98T001166	D		Uranium-ICP-Acid Dil.	ug/ml	97.60	<5.00e-01	<5.00e-1	<5.00e0	n/a	n/a	n/a	5.00e-1	n/a	n/a
S98T001166	D		Vanadium-ICP-Acid Dil.	ug/ml	101.8	<5.00e-02	<5.00e-01	<5.00e-1	n/a	n/a	n/a	5.00e-01	n/a	n/a
S98T001166	D		Zinc-ICP-Acid Dil.	ug/ml	100.8	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	n/a
S98T001166	D		Zirconium-ICP-Acid Dil.	ug/ml	100.6	<1.00e-02	<1.00e-01	<1.00e-1	n/a	n/a	n/a	1.00e-01	n/a	n/a
S98T001166	D		Fluoride-IC-Dionex 4000/4500	ug/ml	107.3	<1.20e-02	<13.33	<1.33e1	n/a	n/a	n/a	13.33	n/a	n/a
S98T001166	D		Chloride-IC-Dionex 4000/4500	ug/ml	104.6	<1.70e-02	<18.89	<1.89e1	n/a	n/a	n/a	18.89	n/a	n/a
S98T001166	D		Nitrite-IC - Dionex 4000/4500	ug/ml	101.1	<1.08e-01	<1.20e+02	<1.20e2	n/a	n/a	n/a	120.0	n/a	n/a
S98T001166	D		Phosphate-IC-Dionex 4000/4500	ug/ml	98.90	<1.20e-01	<1.33e+02	<1.33e2	n/a	n/a	n/a	133.3	n/a	n/a
S98T001166	D		Oxalate-IC-Dionex 4000/450	ug/ml	102.6	<1.05e-01	<1.17e+02	<1.17e2	n/a	n/a	n/a	116.7	n/a	n/a

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