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Section 1 of 2

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222-S LABORATORY

TANK 241-SY-102, JANUARY 2000 COMPATIBILITY GRAB SAMPLES, ANALYTICAL RESULTS FOR THE FINAL REPORT

Project Coordinator: Kevin Bell

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

by

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NARRATIVE

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222-S LABORATORY

TANK 241-SY-102, JANUARY 2000 COMPATIBILITY GRAB SAMPLES, ANALYTICAL RESULTS FOR THE FINAL REPORT

1.0 INTRODUCTION

This document is the format IV, final report for the tank 241-SY-102 (SY-102) grab samples taken in January 2000 to address waste compatibility concerns. Chemical, radiochemical, and physical analyses on the tank SY-102 samples were performed as directed in *Compatibility Grab Sampling and Analysis Plan for Fiscal Year 2000* (Sasaki 1999). No notification limits were exceeded.

Preliminary data on samples 2SY-99-5, -6, and -7 were reported in "Format II Report on Tank 241-SY-102 Waste Compatibility Grab Samples Taken in January 2000" (Lockrem 2000). The data presented here represent the final results.

2.0 SAMPLE RECEIVING AND APPEARANCE

Five liquid grab samples were taken from riser 3 of tank SY-102 in January 2000 by the River Protection Project (RPP) per the tank sampling and analysis plan (TSAP) (Sasaki 1999). All samples were delivered to the 222-S Laboratory two days later. No field or trip blank samples were delivered to the laboratory. Sampling, appearance, and sampling-depth data for each sample are provided in Table 1. The actual sampling depths differed slightly from those identified in the TSAP.

Samples 2SY-99-5, 2SY-99-6, and 2SY-99-7 contained less than two volume percent settled solids. After the samples sat in the hot cell for 16 to 18 hours, a lighter-colored and more turbid layer had formed in samples 2SY-99-8 and 2SY-99-9. The volume percent settled solids reported in Table 1 and in the data summary report represent the volume of these layers. Within 24 hours, the layers had disappeared and did not reappear before the samples were subsampled on February 8, 2000. The layers were not comprised of solids and appeared to be denser liquid layers rather than gels. The formation and disappearance of the layers may have resulted from temperature fluctuations within the hot cell.

Table 2 provides customer and laboratory sample number information, the sample type, and the analytical disposition of each sample. All tank supernate samples were loaded into the 222-S Laboratory 11A hot cells where they were broken down and subsampled. Sample breakdown diagrams included as Attachment 1 show how each sample was subsampled and the analyses associated with each sample.

Table 1. Sampling and Appearance Information for Tank SY-102 Grab Samples.

[illegible]	[illegible]	[illegible]	Sample Depth[1] (in.)	Settled Solids (%)	[illegible]
2SY-99-5	1/10/00	1/12/00	317	<2	Cloudy, olive-colored liquid. No organic layer.
2SY-99-6	1/10/00	1/12/00	375	<2	Cloudy, yellow liquid. No organic layer.
2SY-99-7	1/10/00	1/12/00	459	<2	Cloudy, yellow liquid. No organic layer.
2SY-99-8	1/10/00	1/12/00	555	8.6	Cloudy, yellow liquid. A less pigmented, bottom liquid layer formed 18 hr after sample load-in to the hot cell. The layer had disappeared before subsampling.
2SY-99-9	1/10/00	1/12/00	639	15.1	Cloudy, yellow liquid. A less pigmented, bottom liquid layer formed 18 hr after sample load-in to the hot cell. The layer had disappeared before subsampling.

[1] Measured from the top of the riser to the mouth of the mouth of the sample bottle.

Table 2. Tank SY-102 Sample and Analysis Information.

[illegible]	[illegible] Sample Number	Sample Type	[illegible]
2SY-99-5	S00T000043	Tank Supernate Parent	Appearance Information
2SY-99-5	S00T000048	Tank Supernate Subsample	Inorganic
2SY-99-5	S00T000049	Tank Supernate Subsample	Inorganic & Radiochemical
2SY-99-6	S00T000044	Tank Supernate Parent	Appearance Information
2SY-99-6	S00T000050	Tank Supernate Subsample	Inorganic
2SY-99-6	S00T000054	Tank Supernate Subsample	Inorganic & Radiochemical
2SY-99-7	S00T000045	Tank Supernate Parent	Appearance Information
2SY-99-7	S00T000051	Tank Supernate Subsample	Inorganic
2SY-99-7	S00T000055	Tank Supernate Subsample	Inorganic & Radiochemical
2SY-99-8	S00T000046	Tank Supernate Parent	Appearance Information
2SY-99-8	S00T000052	Tank Supernate Subsample	Inorganic
2SY-99-8	S00T000056	Tank Supernate Subsample	Inorganic & Radiochemical
2SY-99-9	S00T000047	Tank Supernate Parent	Appearance Information
2SY-99-9	S00T000053	Tank Supernate Subsample	Inorganic
2SY-99-9	S00T000057	Tank Supernate Subsample	Inorganic & Radiochemical
2SY-99-8, -9	S00T000154	Centrifuged Solids	PLM/EDS[1], Inorganic

[1]PLM/EDS = Polarized Light Microscopy/Energy Dispersive X-Ray Spectroscopy.

3.0 SAMPLE HANDLING

Copies of the chain-of-custody forms accompanying the samples are provided as Attachment 2. All five samples were loaded into the 222-S 11-A hot cells where they were allowed to stand for approximately 18 hours. The samples did not clear appreciably, therefore they were centrifuged. The clarified supernate was subsampled by pipette.

A small amount of solids was observed in samples 2SY-99-8 and 2SY-99-9. As directed by a revision to the TSAP (Sasaki 2000), the solids were separated from samples 2SY-99-8 and 2SY-99-9 by centrifugation. Separated from sample 2SY-99-8 were 2.3 g of solids. Separated from sample 2SY-99-9 was 0.8 g of solids. Following transfer of the solids from the respective centrifuge cones, the solids were combined and homogenized. A total of 1.20 g of solids was recovered.

First, the solids were analyzed by polarized light microscopy and energy dispersive x-ray spectroscopy (PLM/EDS). The analytical data report for this analysis was issued to RPP personnel by interoffice correspondence (Herting 2000). The report is also presented as Attachment 3. A water digest was performed on the remaining solids. The digestate was analyzed for hydroxide, anions by ion chromatography, and metals by inductively coupled plasma.

4.0 ANALYSIS REQUIREMENTS

All analyses were performed at the 222-S Laboratory. Analyses required by the TSAP are presented in Table 3. Results of all requested analyses except PLM/EDS are reported in the data summary tables as Attachment 4. Some of the analytical methods reported results that were not specifically requested. Those analyte results were opportunistic and are reported in Appendix A. Quality control (QC) parameters for opportunistic results were not evaluated.

The second column in the data summary tables is labeled "A#". This indicates the type of sample preparation performed before analysis. A "D" in column 2 indicates that an acid dilution was performed. A "I" in the second column means that a water-digested sample was acidified. A "W" indicates that a water digest was performed on the sample. No letter designation in the column indicates that the sample was analyzed directly or following dilution with water.

5.0 ANALYTICAL RESULTS DISCUSSION BY TEST

Each analysis was discussed in the Inorganic or Radiochemical section of this narrative. The QC criteria associated with an analysis varied depending on the analysis. All analyses were covered under the 222-S Laboratory quality assurance plan (Markel 1999). In addition, the desired QC parameters for the supernate and centrifuged solids analyses were identified respectively in Table 3-1 and Table 4-1 of the TSAP (Sasaki 1999).

Table 3. Tank SY-102 Required Analyses and Analytical Procedures Used.

Method	Required Analyte	
Visual	Organic Layer, Settled Solids	LA-519-151, Rev. G-3
Differential Scanning Calorimetry	Reaction Exotherm	LA-514-114, Rev. D-4
Thermogravimetric Analysis	Percent Water	LA-514-114, Rev. D-4
Gravimetry	Specific Gravity	LA-510-112, Rev. E-2
Oxidation/Coulometry	Total Organic Carbon	LA-342-100, Rev. F-4
Coulometry	Total Inorganic Carbon	LA-342-100, Rev. F-4
Hydrogen Ion Electrode	pH	LA-212-106, Rev. C-6
Titration	Hydroxide	LA-211-102, Rev. D-3
Ammonia Electrode	Ammonia	LA-631-001, Rev. D-2
Ion Chromatography[1]	Cl^-, F^-, NO_2^-, NO_3^-, SO_4^{2-}, PO_4^{3-}, $C_2O_4^{2-}$	LA-533-105, Rev. F-2
Inductively Coupled Plasma[1]	Al, Fe, Mn, Ni, Cr	LA-505-161, Rev. C-5
Microscopy/X-ray Spectroscopy	Crystal identification	LT-161-100, Rev. A-1
ICP/Mass Spectroscopy[1]	^{235}U, ^{238}U	LA-506-101, Rev. A-3
Phosphorescence	Total Uranium	LA-925-009, Rev. D-1
Separation/Beta Counting	^{90}Sr	LA-220-101, Rev. E-5
Gamma Energy Analysis[1]	^{137}Cs, ^{60}Co, ^{154}Eu, ^{155}Eu	LA-548-121, Rev. F-2
Separation/Alpha Energy Analysis	^{238}Pu, $^{239/240}Pu$, ^{241}Am, $^{243/244}Cm$	LA-953-104, Rev. B-3

[1] Method provides opportunistic data.

5.1 INORGANIC ANALYSES

5.1.1 Ammonia by Ion-Specific Electrode (ISE)

Ammonia was measured on each supernate sample using an ammonia-specific electrode. The detection limit for ammonia was 125 or 250 μg/mL depending on the sample analyzed. Ammonia was detected in all samples. Mean concentrations ranged from 346 μg/mL in sample 2SY-99-7 (S00T000051) to 844.5 μg/mL in sample 2SY-99-6 (S00T000050).

One sample had a relative percent difference (RPD) between sample and duplicate analyses of 65.2, which was greater than the TSAP limit of 20. A triplicate analysis was performed (see raw data) with an RPD between sample and triplicate of 31.05%. No further reanalysis was performed because the ammonia concentrations were only two to four times the detection limit. All remaining QC requirements were met.

5.1.2 Differential Scanning Calorimetry (DSC)

The five supernate samples were analyzed by DSC. Heat absorbed by the sample from a net endothermic reaction or process, or heat given up by the sample from a net exothermic reaction or process was measured as a function of temperature. The samples were heated from approximately 25° C to 500° C. Exotherms of 14.04 and 5.98 J/g were observed in samples 2SY-99-5 (S00T000048) and 2SY-99-7 (S00T000051), respectively. On a dry weight basis, these exotherms became 49.76 and 18.19 J/g, thus the 480 J/g notification limit was not exceeded.

The reported RPD values for the two samples with an exotherm were 200 because the exotherms were observed on either the sample or duplicate run. The samples were not re-analyzed because the exotherms were small and difficult to identify from the DSC scans. The reported exotherms resulted from a conservative interpretation of the DSC scans.

5.1.3 Hydroxide

Hydroxide concentrations were determined by titration directly on the supernate samples and on the water-digested solid material from samples 2SY-99-8 and -9. The mean hydroxide concentrations in supernate from samples 2SY-99-6, -7, -8, and -9 were nearly the same at 1.78×10^4 to 1.82×10^4 μg/mL. Sample 2SY-99-5 was slightly less concentrated with a mean concentration of 1.02×10^4 μg/mL. No hydroxide was detected in the water-digested sample. The results were below 1.73×10^4 μg/g. There were no QC failures associated with the hydroxide analyses.

5.1.4 Anions by Ion Chromatography (IC)

The concentrations of the anions chloride, fluoride, nitrate, nitrite, oxalate, phosphate, and sulfate were measured by IC. The results for bromide were opportunistic and appear in Appendix A. The supernate samples were analyzed directly following dilution. The water digest of the solid sample was also analyzed.

Nitrate then nitrite were the most abundant target anions in the liquid and solid samples. The supernate from samples 2SY-99-6, -7, -8, and –9 showed little variation with respect to their nitrate and nitrite concentrations, which were approximately 1.2×10^5 and 6.0×10^4 μg/mL. As with hydroxide, sample 2SY-99-5 was slightly less concentrated in nitrate and nitrite with respective concentrations of 1.09×10^5 and 4.69×10^4 μg/mL. Respective mean nitrate and nitrite concentrations in the water-digested solid sample were 9.98×10^4 and 4.83×10^4 μg/g.

The next most abundant anions in the supernate and solid samples were chloride, sulfate then phosphate. Concentrations of these anions in the supernate were more varied from sample to sample compared to nitrate and nitrite. Average chloride levels ranged from 3.82×10^3 μg/mL in sample 2SY-99-5 (S00T000049) to 5.13×10^3 μg/mL in sample 2SY-99-8 (S00T000056).

The sulfate and phosphate concentrations were very close. Except for sample S00T000054, the samples were slightly more concentrated in sulfate with average concentrations ranging from 3.14×10^3 µg/mL in sample 2SY-99-9 (S00T000057) to 3.92×10^3 µg/mL in sample 2SY-99-8 (S00T000056). Average phosphate concentrations ranged from 1.59×10^3 to 3.86×10^3 µg/mL in samples 2SY-99-9 and 2SY-99-6, respectively. Respective average chloride, sulfate, and phosphate concentrations in the water-digested solid were 4.10×10^3, 2.70×10^3, and 2.11×10^4 µg/g.

Detected oxalate concentrations in the supernate varied from 990 µg/mL in samples 2SY-99-6 and -7 (S00T000054 and S00T000056) to 1.78×10^3 µg/mL in sample 2SY-99-5 (S00T000049). The water-digested solid sample had a concentration of 3.60×10^3 µg/g. Fluoride was the least abundant target anion in the solid and liquid samples. The supernate samples had average fluoride concentrations from 402.3 to 534.6 µg/mL. The water digest of the solid sample had a fluoride concentration of 404.6 µg/g.

Matrix spikes were added to supernate sample 2SY-99-7 (S00T000055) and to the water-digested solid sample. The matrix spike solution was added after the water digest. All of the QC requirements were met except for three RPD values that exceeded the TSAP limit of 20. The RPD value for phosphate analysis of supernate sample 2SY-99-9 (S00T000057) was 36.0. The sample and duplicate results were less than five times the detection limit and the sample was not re-analyzed. The RPD values for fluoride and phosphate analyses of the water-digested solid sample were 29.9 and 85.0 respectively. The reported fluoride and phosphate results on this sample represent a re-analysis. The fluoride and phosphate results were less than five times the detection limit. This was most likely the reason for the poor precision. Initial results that were rejected due to a RPD failure are presented in Table 4 along with the reported results.

Table 4. Tank SY-102 Initial and Re-Run IC Data on Results with High RPD Values.

Analyte	Sample	Initial Results (µg/g)			Reported Results (µg/g)		
		Sample	Duplicate	RPD	Sample	Duplicate	RPD
fluoride	S00T000154	3.75×10^2	4.77×10^3	23.9	3.44×10^2	4.65×10^2	29.9
phosphate	S00T000154	1.16×10^4	2.82×10^4	83.4	1.21×10^4	3.00×10^4	85.0

5.1.6 Metals by Inductively Coupled Plasma (ICP)

Inductively coupled plasma together with atomic emission spectroscopy was used to determine the concentrations of aluminum (Al), chromium (Cr), iron (Fe), manganese (Mn), and nickel (Ni) in the supernate samples and in a water-digested solid sample. Concentrations of additional metals, determined opportunistically, are shown in Appendix A.

The most abundant target metal was Al. Mean supernate concentrations were very similar among samples 2SY-99-6, -7, -8 and -9, varying from $1.78x10^4$ to $1.87x10^4$ μg/mL. The average concentration in sample 2SY-99-5 was $1.11x10^4$ μg/mL. The water-digested solid sample had a Al concentration of $9.82x10^3$ μg/g. The next most plentiful target analyte was Cr. Again, supernate from sample 2SY-99-5 was less concentrated at 129.5 μg/mL while the remaining supernate samples had similar concentrations from 677.5 to 725.5 μg/mL. The concentration of Cr in the solid sample was 649.5 μg/g. Supernate sample 2SY-99-5 (S00T000049) had the highest Ni concentration. The lowest average concentration was 37.4 μg/mL found in sample 2SY-99-9. The solid sample had a Ni concentration of 36.8 μg/g.

No Fe or Mn was detected in any samples. The corresponding detection limits for Fe and Mn were 30.1 and 6.01 μg/mL for the supernate samples and 61.2 and 12.2 μg/g for the water-digested solid sample.

Matrix spikes were added to supernate sample 2SY-99-7 (S00T000055) and to the water-digested solid sample. The matrix spike solution was added after the water digest. In addition to matrix spikes, serial dilutions were performed on the same samples to assess the accuracy of the ICP method. The 5X serial dilution results in the raw data were denoted with a "L" suffix on the sample number. The serial dilution results should be within 10% of the initial dilution. Serial dilution results for the detected metals are shown in Table 5. As shown, the results indicate that the accuracy of these analyses was acceptable. All other QC requirements were met as well.

Table 5. Tank SY-102 ICP Serial Dilution Results for Detected Analytes.

Sample	Analyte	Sample Result (μg/mL)	Serial Dilution Result (μg/mL)	[illegible]
S00T000055	Al	$1.82x10^4$	$1.84x10^4$	1.093
	Cr	$6.95x10^2$	$6.97x10^2$	0.2874
	Na	$1.30x10^5$	$1.35x10^5$	3.774
S00T000154	Al	$9.65x10^3$	$9.81x10^3$	1.644
	Cr	$6.66x10^2$	$6.61x10^2$	0.754
	Na	$1.23x10^5$	$1.28x10^5$	3.984

5.1.7 Percent Water by Thermogravimetric Analysis (TGA)

Thermogravimetric analysis was performed on all supernate samples. The percentage of water in a sample was determined through TGA by measuring the total weight loss of the sample between 25° C and approximately 230° C. Additional information may be obtained by examining the raw data.

The mean percent-water values in the supernate samples were very close. All results were between 66.46 and 71.84%. Sample 2SY-99-5 had the highest result. This was consistent with the lower concentrations of most other analytes in the sample. There were no QC failures.

5.1.8 pH

The mean pH of the samples ranged from 13.30 on sample 2SY-99-5 (S00T000048) to 13.48 on sample 2SY-99-6 (S00T000050). These pH values were consistent with the hydroxide concentrations of the samples, which were approximately 1M. (See Table 6.) All QC parameters were met.

5.1.9 Polarized Light Microscopy/Energy Dispersive X-Ray Spectroscopy (PLM/EDS)

The solids collected from samples 2SY-99-8 and -9 were analyzed by PLM/EDS to identify the major crystalline constituents of the solids. The complete data report is presented as Attachment 3.

Between 60 and 90 percent by weight of the solids consisted of $Na_3PO_4 \bullet 12H_2O$ and $Na_7F(PO_4)_2 \bullet 19H_2O$. Two other phases of undetermined composition were present. The phase in the highest concentration was rich in calcium and accounted for 10 to 20 weight percent of the solids.

5.1.10 Specific Gravity

Specific gravity measurements were taken of the five supernate samples. All results were very similar. Mean values ranged from 1.226 on sample 2SY-99-5 to 1.283 on sample 2SY-99-9. All QC parameters were met.

5.1.11 Total Inorganic Carbon (TIC)

Total inorganic carbon was measured on the supernate samples by acid addition followed by coulometric titration of the resulting carbon dioxide. Average concentrations of TIC in the samples varied from 2.76×10^3 μg/mL in sample 2SY-99-6 (S00T000054) to 3.47×10^3 μg/mL in sample 2SY-99-5 (S00T000049).

For TIC analyses, Total Inorganic Carbon Analysis Report worksheets are included for each sample in the raw data section. Due to programming limitations with the instrument software, the sample size listed on the worksheet may be incorrect. The incorrect values are not used to calculate the TIC concentrations and have no bearing on the reported results. All raw data in the spreadsheets are correct.

As is usually the case, a small amount of TIC was found in the analytical blank. The concentration was 3.00 μg/mL and was negligible compared to the levels in the samples. The source of the TIC was most likely carbon dioxide absorbed from the atmosphere. A matrix spike was added to sample 2SY-99-7. The spike recovery and all other QC requirements were acceptable.

5.1.12 Total Organic Carbon (TOC)

Total organic carbon was measured on the supernate samples by persulfate oxidation followed by coulometric titration of the resulting carbon dioxide. The TOC concentration trend was the same as that for TIC. Sample 2SY-99-6 was the least concentrated sample at 3.29×10^3 μg/mL and sample 2SY-99-5 was the most concentrated sample at 5.76×10^3 μg/mL.

For TOC analyses, Total Organic Carbon Analysis Report worksheets are included for each sample in the raw data section. Due to programming limitations with the instrument software, the sample size listed on the worksheet may be incorrect. The incorrect values are not used to calculate the TOC concentrations and have no bearing on the reported results. All raw data in the spreadsheets are correct.

The TSAP notification limit for TOC is 4.5×10^4 μg/g on a dry-weight basis. The highest dry-weight TOC result was calculated by dividing the mean TOC concentration in sample 2SY-99-5 by that sample's specific gravity, then correcting to zero percent moisture using the percent water in the sample. This gave 1.66×10^4 μg/g as the result, which was well below the notification limit.

A small amount of TOC was detected in the analytical blank. The concentration was 2.5 μg/mL and was negligible compared to the sample concentrations. A matrix spike was added to sample 2SY-99-7. The spike recovery and all other QC requirements were acceptable.

5.1.13 Total Uranium by Phosphorescence

Total uranium was measured on each supernate sample by LASER phosphorescence. The result for each sample compares very well with the result for ^{238}U obtained by ICP/MS with the exception of one sample. The mean phosphorescence result on sample 2SY-99-8 (S00T000052) was 1.72 μg/mL. This was low compared to the ^{238}U result of 4.043 μg/mL by ICP/MS. This result was believed to be low for the following reasons. For most other analytes, including ^{238}U by ICP/MS, results on samples 2SY-99-6, -7, -8, and -9 were very similar. The lower total uranium result on sample 2SY-99-8 was inconsistent with that trend. Secondly, the ICP/MS method is much less subject to interferences that may bias a result high or low. This second reason is why the ICP/MS results are most likely more accurate than the phosphorescence results.

All the QC parameters were met, a uranium result by ICP/MS was available, and the highest uranium concentration found was only 4.74 μg/mL. For these reasons, a re-run of sample 2SY-99-8 was not requested. The sample will be re-analyzed if the customer desires. The opportunistic uranium results by ICP were below the detection limit of approximately 300 μg/mL precluding a comparison with results by that method.

5.1.14 Uranium Isotopics by ICP/Mass Spectroscopy (MS)

All supernate samples were analyzed for the isotopes ^{235}U and ^{238}U by ICP/MS. Only ^{238}U was detected despite a ^{235}U detection limit of 0.244 μg/mL. Mean concentrations of ^{238}U were in the 1.324 to 4.471 μg/mL range.

A matrix spike for ^{235}U and ^{238}U was added to the sample 2SY-99-7. All QC requirements were within the TSAP limits.

5.2 RADIOCHEMICAL ANALYSES

5.2.1 Americium-241 and Cm-243/244

Supernate samples were analyzed for ^{241}Am and $^{243/244}Cm$ activities by chemical separation followed by alpha counting. Detectable activities of ^{241}Am were present in all samples. Mean results varied from 4.20×10^{-3} μCi/mL in sample 2SY-99-6 (S00T000054) to 1.12×10^{-2} μCi/mL in sample 2SY-99-5 (S00T00049).

No $^{243/244}Cm$ activity was detected in any sample. The highest result was $< 9.26 \times 10^{-4}$ μCi/mL. There was no matrix spike associated with this analysis; instead, the Am and Cm raw results were corrected by the ^{243}Am tracer recovery. Curium was eluted along with Am from the separation media. All QC parameters were met.

5.2.2 Gamma Energy Analysis (GEA)

The activities of ^{60}Co, ^{137}Cs, ^{154}Eu, and ^{155}Eu were determined by GEA. The activities of additional radionuclides in the same samples were reported in Appendix A on an opportunistic basis. The radionuclide ^{60}Co was detected in all samples, although it was only detected in both the sample and duplicate runs of sample 2SY-99-5 (S00T000049). That sample had the highest activity at 1.29×10^{-2} μCi/mL. The remaining samples had approximately half this activity.

All samples were also found to have detectable ^{137}Cs activities. Sample 2SY-99-5 had the least activity with a mean of 139.5 μCi/mL. Activities in the remaining samples only varied from 180.5 to 183 μCi/mL. The highest activity was below the ^{137}Cs notification limit of 4.10×10^{5} μCi/L or 4.10×10^{2} μCi/mL.

Only sample 2SY-99-5 contained a detectable activity of ^{154}Eu. The mean activity was 2.24×10^{-2} μCi/mL. Activities in the remaining samples were below 1.27×10^{-2} μCi/mL. No ^{155}Eu activity was found in any sample. All results were below 0.136 μCi/mL. There were no QC failures with any of the GEA analyses.

5.2.3 Plutonium 238 and Plutonium-239/240

Determined by chemical separation followed by alpha counting were the ^{238}Pu and $^{239/240}Pu$ activities. No ^{238}Pu was found in any sample. All results were below 3.70×10^{-4} μCi/mL. A mean $^{239/240}Pu$ activity of 5.41×10^{-4} μCi/mL was found in sample 2SY-99-5. Results for the other samples were below 3.81×10^{-4}. The notification limit for $^{239/240}Pu$ was 61.5 μCi/mL.

All QC requirements were met and the reported results were corrected for the ^{236}Pu tracer recovery.

5.2.4 Strontium-89/90

Chemical separation followed by beta counting provided the activity of $^{89/90}Sr$ in each supernate sample. Sample 2SY-99-5 had the highest mean activity at 6.04 μCi/mL. Activities were lower in the remaining samples where mean results ranged from 2.195 μCi/mL in sample 2SY-99-9 (S00T000057) to 2.65 μCi/mL in sample 2SY-99-6 (S00T000054). All activities were corrected for carrier recoveries and all QC requirements were met. No sample results exceeded the notification limit of 2.88×10^{5} μCi/L.

6.0 WASTE COMPATIBILITY CONCERNS

6.1 Nitrate (NO_3^-), Hydroxide (OH^-) and Nitrite (NO_2^-) - Corrosion Decision Rule

The NO_3^-, OH^-, and NO_2^- results with respect to the waste compatibility corrosion rules are presented in Table 6. The table compares the results to the concentration ranges specified in Sasaki (1999) for double-shell tanks with temperatures below 212° F. A "YES" appeared in the appropriate space for the condition that was met. Only one of three sets of conditions must be met for OH^- and NO_2^- based on the range in which the NO_3^- concentration falls. All results for the five samples analyzed were within the acceptable concentration ranges required for corrosion control.

7.0 REFERENCES

Herting, D. L.; Smith, J. R., "Microscopy of Solids From Tank 241-SY-102 Grab Sample", Interoffice Correspondence 8D500-DLH-JRS-00-015 dated March 28, 2000, Fluor Hanford Inc., Richland, Washington, 99352.

Lockrem, L. L.; "Format II Report on Tank 241-SY-102 Waste Compatibility Grab Samples Taken in January 2000", letter FH—0000454 dated January 28, 2000, Fluor Hanford Inc., Richland, Washington, 99352.

Markel, L. P., 1999, *Quality Assurance Plan for 222-S Laboratories*, HNF-SD-CP-QAPP-016, Rev. 3C, Waste Management of Hanford, Inc., Richland, Washington, 99352.

Sasaki, L. M., 1999, *Compatibility Grab Sampling and Analysis Plan for Fiscal Year 1999*, HNF-3528, Rev. 0, Lockheed Martin Hanford Corporation, Richland, WA 99352.

Sasaki, L. M., 2000, *Compatibility Grab Sampling and Analysis Plan for Fiscal Year 1999*, HNF-3528, Rev. 0-B, Lockheed Martin Hanford Corporation, Richland, WA 99352.

Table 6. Tank 241-SY-102 Waste Compatibility Corrosion Rules for DSTs with Temperatures Below 212° F.

Sample ID, Description	Analyte	Mean Result (ug/mL)	Mean Result (M)	Is $[NO_3^-]$...	Is $[OH^-]$...	Is $[NO_2^-]$...
2SY-99-5 Supernate	NO_3^-	1.09E+05	1.76	$1.0M < [NO_3^-] \leq 3.0M$? YES	$(0.10)[NO_3^-] \leq [OH^-] \leq 10.0$ M? YES	$([OH^-]+[NO_2^-]) \geq 0.4[NO_3^-]$? YES
	OH^-	1.02E+04	0.600			
	NO_2^-	4.69E+04	1.02			
2SY-99-6 Supernate	NO_3^-	1.27E+05	2.05	$1.0M < [NO_3^-] \leq 3.0M$? YES	$(0.10)[NO_3^-] \leq [OH^-] \leq 10.0$ M? YES	$([OH^-]+[NO_2^-]) \geq 0.4[NO_3^-]$? YES
	OH^-	1.79E+04	1.053			
	NO_2^-	6.11E+04	1.33			
2SY-99-7 Supernate	NO_3^-	1.24E+05	2.00	$1.0M < [NO_3^-] \leq 3.0M$? YES	$(0.10)[NO_3^-] \leq [OH^-] \leq 10.0$ M? YES	$([OH^-]+[NO_2^-]) \geq 0.4[NO_3^-]$? YES
	OH^-	1.78E+04	1.047			
	NO_2^-	5.99E+04	1.30			
2SY-99-8 Supernate	NO_3^-	1.25E+05	2.02	$1.0M < [NO_3^-] \leq 3.0M$? YES	$(0.10)[NO_3^-] \leq [OH^-] \leq 10.0$ M? YES	$([OH^-]+[NO_2^-]) \geq 0.4[NO_3^-]$? YES
	OH^-	1.78E+04	1.047			
	NO_2^-	6.17E+04	1.34			
2SY-99-9 Supernate	NO_3^-	1.22E+05	1.97	$1.0M < [NO_3^-] \leq 3.0M$? YES	$(0.10)[NO_3^-] \leq [OH^-] \leq 10.0$ M? YES	$([OH^-]+[NO_2^-]) \geq 0.4[NO_3^-]$? YES
	OH^-	1.82E+04	1.071			
	NO_2^-	6.04E+04	1.31			

SAMPLE BREAKDOWN DIAGRAMS

ATTACHMENT 1

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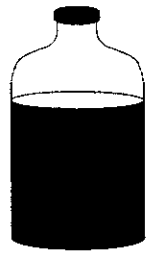
SY-102 Grab Sample Breakdown

Project SY-102 GRAB5
Sample 2SY-99-5, Supernate for Inorganic/Radchem
LABCORE group 20000008
Parent Sample S00T000043



S00T000048

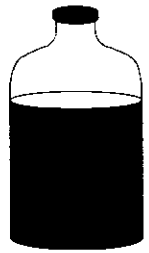
DSC
DSC (dry)
Ammonia
TGA
OH
SpG
U-235 (by ICP/MS)
U-238 (by ICP/MS)
pH
Total U

S00T000049

TIC
TOC
ICP
IC
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244

SY-102 Grab Sample Breakdown

Project SY-102 GRAB5
Sample 2SY-99-6, Supernate for Inorganic/Radchem
LABCORE group 20000008
Parent Sample S00T000044



S00T000050

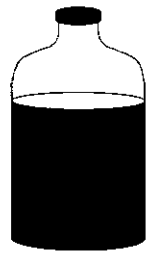
DSC
DSC (dry)
Ammonia
TGA
OH
SpG
U-235 (by ICP/MS)
U-238 (by ICP/MS)
pH
Total U

S00T000054

TIC
TOC
ICP
IC
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244

SY-102 Grab Sample Breakdown

Project SY-102 GRAB5
Sample 2SY-99-7, Supernate for Inorganic/Radchem
LABCORE group 20000008
Parent Sample S00T000045



S00T000051

DSC
DSC (dry)
Ammonia
TGA
OH
SpG
U-235 (by ICP/MS)
U-238 (by ICP/MS)
pH
Total U

S00T000055

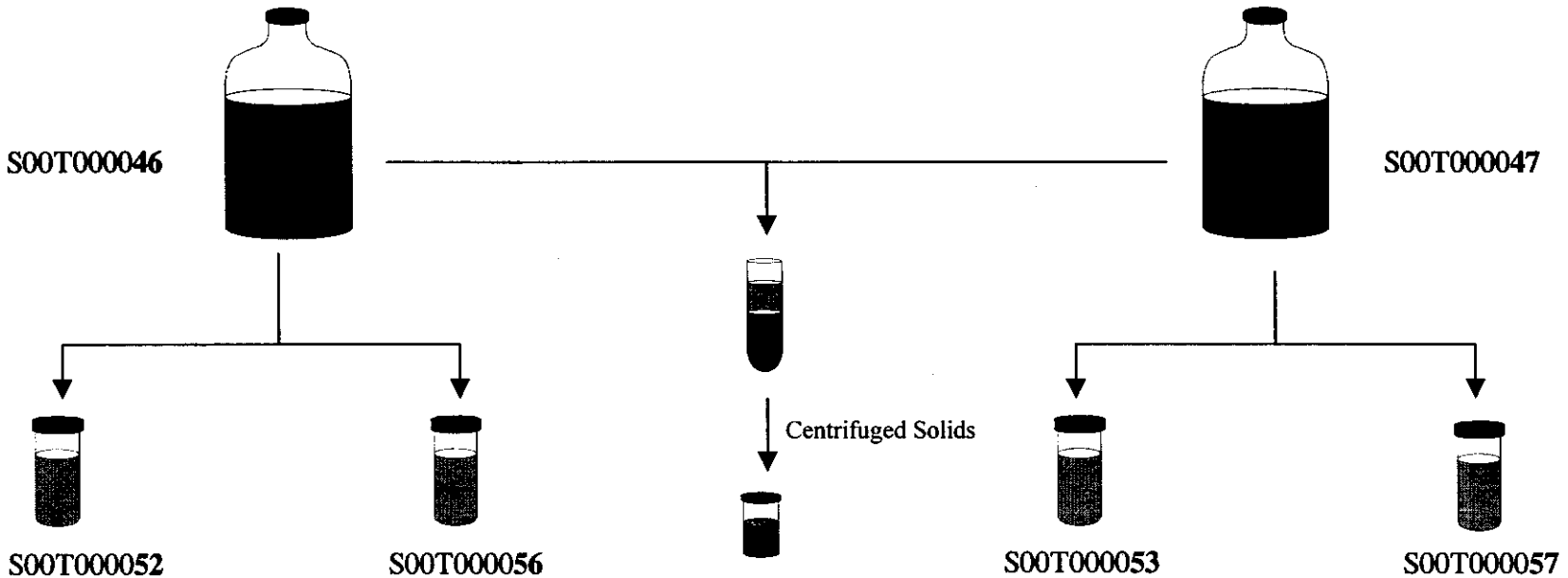
TIC
TOC
ICP
IC
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244

SY-102 Grab Sample Breakdown

Project SY-102 GRAB5

Sample 2SY-99-8 and 2SY-99-9, Supernate for Inorganic/Radchem & Solids for Inorganic

LABCORE group 20000008



S00T000052

DSC
DSC (dry)
Ammonia
TGA
OH
SpG
U-235 (by ICP/MS)
U-238 (by ICP/MS)
pH
Total U

S00T000056

TIC
TOC
ICP
IC
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244

S00T000154

Polarized Light Microscopy

Water Digest
OH
IC
ICP

S00T000053

DSC
DSC (dry)
Ammonia
TGA
OH
SpG
U-235 (by ICP/MS)
U-238 (by ICP/MS)
pH
Total U

S00T000057

TIC
TOC
ICP
IC
Sr-90
GEA
Pu-238
Pu-239/240
Am-241
Cm-243/244

CHAIN OF CUSTODY FORMS

ATTACHMENT 2

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CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 254-99-5	(2) Supervisor/Sampler: R.J. Praznik	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: SY-102	(4) Riser: 3	(5) Cask/Pig Serial No.: #2
		(10) Seal Intact Upon Receipt? ☒ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No
A. Work Package Number: WS99-00716/0	- Lithium Bromide ☐ ☐	(12) Laboratory Comments:
B. Cask/Pig Seal Number: 12615	Amount:	
C. Date Sample Collected: 1-10-00	Concentration:	
D. Time Sample Collected: 1321 hrs	- X-Ray ☐ ☐ 1-11-00	
	- Partial Sample ☐ ☐	
	- Retrieved Partial Sample Stroke Length:	

(8) Field Comments:

DOSE RATE: 220 mRh

22

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Robert J Praznik	M Dunnington	1-12-00/0910	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
M Dunnington	R.J. Steele	1020 1-12-00	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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BC-6001-326 (02/98)

HNF-1698 REV. 0

CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 254-99-6

(2) Supervisor/Sampler: R.J. Praznik

(3) Tank: 54102

(4) Riser: 3

(5) Cask/Pig Serial No.: # 4

(6) Shipment Description:

A. Work Package Number: WS99-00716/0

B. Cask/Pig Seal Number: 12616

C. Date Sample Collected: 1-10-00

D. Time Sample Collected: 1325hr

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☐
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

1-11-00

(8) Field Comments:

220 mRhr Dose rate

23

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

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

(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)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Robert J Praznik	V. Matthews	940 1-12-00	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
V. Matthews	R.T. Stede	1020 1-12-00	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

BC-6001-326 (02/98)

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CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 254-99-7	(2) Supervisor/Sampler: R.J. Praznik	(9) Seal Intact Upon Release? ☒ Yes ☐ No
(3) Tank: SY-102	(4) Riser: 3	(5) Cask/Pig Serial No.: #18
		(10) Seal Intact Upon Receipt? ☒ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☒ Yes ☐ No
A. Work Package Number: WS-99-00716/0	- Lithium Bromide ☐ ☐	(12) Laboratory Comments:
B. Cask/Pig Seal Number: 12617	Amount:	
C. Date Sample Collected: 1-10-00	Concentration:	
D. Time Sample Collected: 1329h	- X-Ray ☐ ☐	
	- Partial Sample 1-11-00 ☐ ☐	
	Retrieved Partial Sample Stroke Length:	

(8) Field Comments:

Dose rate: 350 mRh

24

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Robert J. Praznik	V. Matthews	9:40 1-12-00	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
V. Matthews	R.T. Steele	1020 1-12-00	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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HNF-1698 REV. 0

CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 254-99-8	(2) Supervisor/Sampler: R.J. Prazniik	(9) Seal Intact Upon Release? ☑ Yes ☐ No
(3) Tank: ST-102 / (4) Riser: 3	(5) Cask/Pig Serial No.: # 3	(10) Seal Intact Upon Receipt? ☑ Yes ☐ No
(6) Shipment Description:	(7) Sampling Data (Y / N)	(11) Seal Number AND Cask/Pig SERIAL Number consistent with this record? (Block 5 & 6b) ☑ Yes ☐ No
A. Work Package Number: WS-99-00716/0	- Lithium Bromide: ☐ ☑	(12) Laboratory Comments:
B. Cask/Pig Seal Number: 12618	Amount:	
C. Date Sample Collected: 1-10-00	Concentration:	
D. Time Sample Collected: 1133hrs	- X-Ray: ☐ ☐ 1-11-00	
	- Partial Sample: ☐ ☐	
	- Retrieved Partial Sample Stroke Length:	

(8) Field Comments:

Dose Rate: 350 mRh

25

(13) Relinquished By (Sign and PRINT)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Robert J Prazniik	E M Dunnington	1-12-00 / 0610	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
E M Dunnington	V. Matthews	1035 1-12-00	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
V. Matthews	R.J. Steele	1160 1-12-00	
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

HNF-1698 REV. 0

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BC-6001-326 (02/98)

CHAIN-OF-CUSTODY RECORD FOR CPO

(1) Sample Number: 2SY-99-9

(2) Supervisor/Sampler: R.J. Praznik

(3) Tank: SY-102

(4) Riser: 3

(5) Cask/Pig Serial No.: # 17

(6) Shipment Description:

A. Work Package Number: WS-99-00716/0

B. Cask/Pig Seal Number: 12619

C. Date Sample Collected: 1-10-00

D. Time Sample Collected: 1337 hrs

(7) Sampling Data

	Y	N
- Lithium Bromide	☐	☑
Amount		
Concentration		
- X-Ray	☐	☐
- Partial Sample	☐	☐
- Retrieved Partial Sample Stroke Length		

1-11-00

(8) Field Comments:

Dose Rate: 270 mRhr

(9) Seal Intact Upon Release? ☑ Yes ☐ No

(10) Seal Intact Upon Receipt? ☑ Yes ☐ No

(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)	(14) Received By (Sign and PRINT)	(15) Date/Time	(16) Receiver Comments
Roberto Praznik	V. Matthews	1035 1-12-00	
(17) Relinquished By (Sign and PRINT)	(18) Received By (Sign and PRINT)	(19) Date/Time	(20) Receiver Comments
V. Matthews	R.F. Steele	1100 1-12-00	
(21) Relinquished By (Sign and PRINT)	(22) Received By (Sign and PRINT)	(23) Date/Time	(24) Receiver Comments
(25) Relinquished By (Sign and PRINT)	(26) Received By (Sign and PRINT)	(27) Date/Time	(28) Receiver Comments

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BC-6001-326 (02/98)

26

HNF-1698 REV. 0

PLM/EDS DATA REPORT

ATTACHMENT 3

In this section:
QA signed for completion of the work.
Scientist signed for quality & technical content
QA [illegible] Date 5/4/00

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FLUOR DANIEL HANFORD, INC.

INTEROFFICE CORRESPONDENCE

8D500-DLH-JRS-00-015

To:	K. E. Bell	T6-12	Date:	March 28, 2000
From:	D. L. Herting, Senior Scientist J. R. Smith, Engineering Technician 222-S Laboratory Technology, Operations and Process Science	T6-07 T6-07	Telephone:	373-2532
cc:	J. R. Jewett	R3-73		
	L. L. Lockrem_____	T6-07		
	S. G. McKinney	R2-12		
	D. A. Reynolds	R2-11		
	L. M. Sasaki	R2-12		
	C. M. Seidel	G1-32		
	DLH File/LB	T6-07		

Subject: MICROSCOPY OF SOLIDS FROM TANK 241-SY-102 GRAB SAMPLE

Microscopic analysis of the solids from Tank 241-SY-102 sample S00T000154 has been completed. Polarized light microscopy (PLM) and scanning electron microscopy with energy dispersive x-ray spectroscopy (SEM/EDS) were used in the analysis. The solids were found to be made up of:

- one dominant phase, $Na_3PO_4 \cdot 12H_2O$ (sodium phosphate), which accounted for an estimated 50-80% by weight of the total solids (needle or rod crystals in photographs, Figures 1 and 2);
- a second phase, $Na_7F(PO_4)_2 \cdot 19H_2O$ (sodium fluoride diphosphate), represented by relatively large but few crystals accounting for an estimated 10-20% by weight of the total solids;
- a third phase of undetermined composition, rich in calcium, represented by very small anisotropic crystals accounting for an estimated 10-20% by weight of the total solids.
- a very minor fourth phase, not visible in the photographs (Figures 1 and 2), composed of isotropic amber-colored solids that accounted for an estimated 1% by weight of the total solids.

Crystal identification by PLM in radioactive samples is based on recognition of the "fingerprint" characteristics of the crystals. The "fingerprint" is based on the physical appearance (crystal habit) and optical properties (mainly birefringence) of the crystals. The SEM/EDS provides semi-quantitative elemental analysis to confirm (or reject) the identifications.

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|–600 µm–|

Figure 1. SY-102 Solids, Polarized Light with Red I Compensator

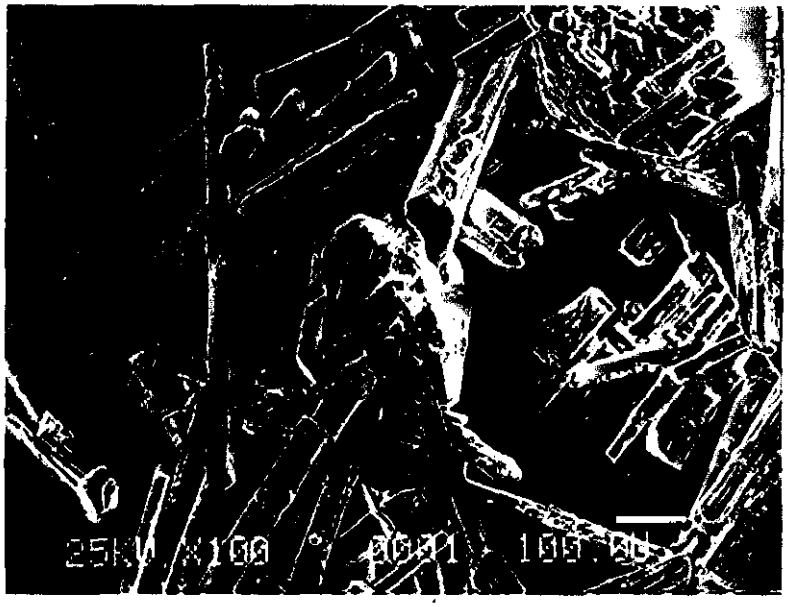

Figure 2. SY-102 Solids, SEM photograph

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The three major phases are visible in the PLM photograph, Figure 1, which was taken with polarized light and a Red I compensator. The compensator makes the background color look pink. The large yellow and blue needles are $Na_3PO_4 \cdot 12H_2O$. Note that the needles that have a positive slope are blue, and those with negative slope are yellow. This is also an effect of the Red I compensator. The needles are also obvious in Figure 2.

The large clear crystal near the bottom of Figure 1 is $Na_7F(PO_4)_2 \cdot 19H_2O$. Crystals of this double salt are isotropic, so they appear the same color as the background. Figure 2 includes two of these large crystals, whose habit may be described as cuboctahedral.

The third phase – the speckles in the background of Figure 1 – is difficult to characterize because of the small size of the crystals. Under higher PLM magnification (not shown), it is apparent that the crystals can roughly be described as needles that appear yellow with positive slope and blue with negative slope, the opposite of the much larger $Na_3PO_4 \cdot 12H_2O$ needles. These optical properties are consistent with – but not unique to – sodium oxalate, but this tentative identification is more-or-less ruled out by the EDS analysis (see below). Examples of the third phase are much less obvious in Figure 2, where the background is not well-illuminated.

The EDS spectra of the particles in each of the three major phases are shown in Figures 3-5. (No examples of the minor fourth phase were located in the SEM/EDS sample.) The EDS spectra all show a peak for gold (Au) because the samples were gold-coated to make them electrically conductive, though in Figures 3 and 4 the gold peak is largely hidden by the phosphorus peak.

The EDS spectra of a needle crystal and a cuboctahedral crystal (Figures 3 and 4, respectively) are very similar, though the x-axis scale is different in the two figures. The fluoride, which represents a fairly small percentage by weight in the compound $Na_7F(PO_4)_2 \cdot 19H_2O$, barely shows up in Figure 4, and is clearly absent in Figure 3. The presence of the fluoride contributes very little to the EDS spectrum, and could easily be overlooked, but it makes a huge difference in the crystal habit.

Figure 5 shows the EDS spectrum of the very small crystals that form the speckled background in the PLM photo (Figure 1) but are very difficult to see in the SEM photo (Figure 2). These crystals appear to contain calcium, oxygen, and carbon. The relative amounts of the three elements are not directly related to the peak heights, however, because the detector is much more efficient for Ca than O or C x-rays. In other words, the crystals probably contain significantly more carbon and oxygen than calcium. In addition, the crystals are smaller than the electron beam interaction volume (roughly described as a teardrop about 5 μm in diameter), so it is inevitable that some of the x-ray signal comes from the substrate on which the sample is mounted. This substrate includes carbon and oxygen, so it is not possible to determine the Ca:C:O mole ratios from the EDS analysis. Thus, the phase represented by the very small crystals is probably calcium hydroxide, carbonate, or oxalate.

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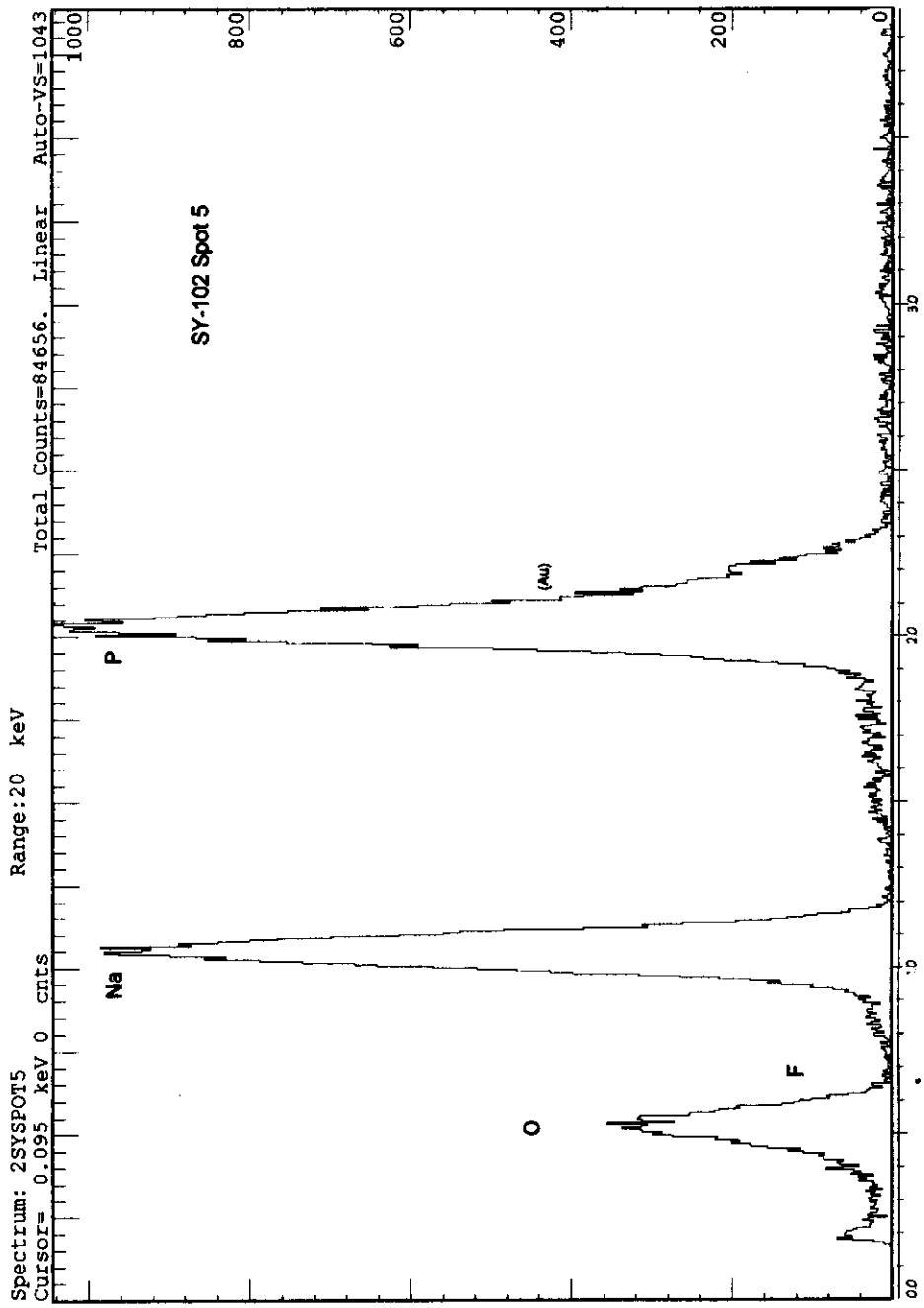

Figure 3. EDS Spectrum of Needle Crystal

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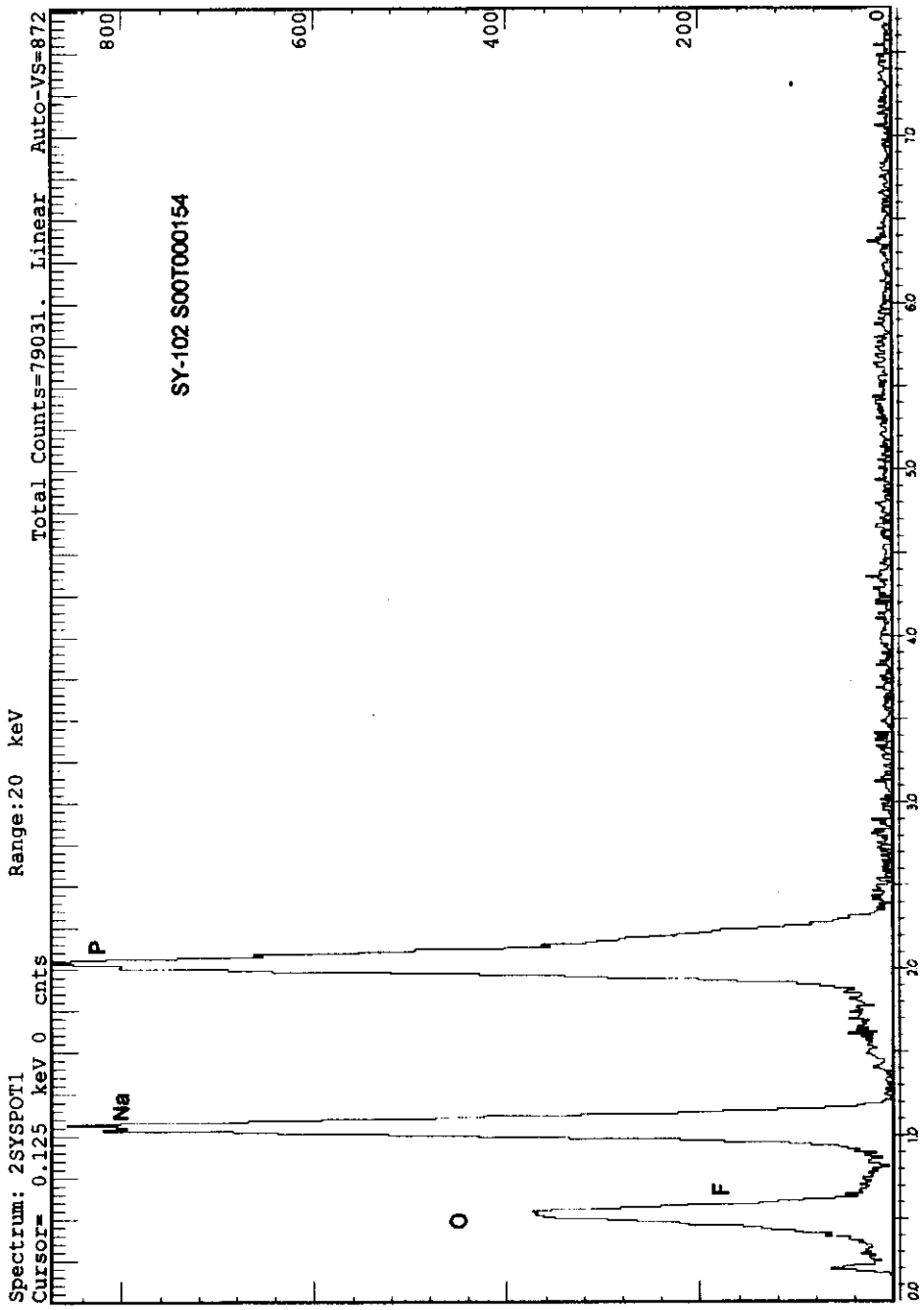

Figure 4. EDS Spectrum of Cuboctahedral Crystal

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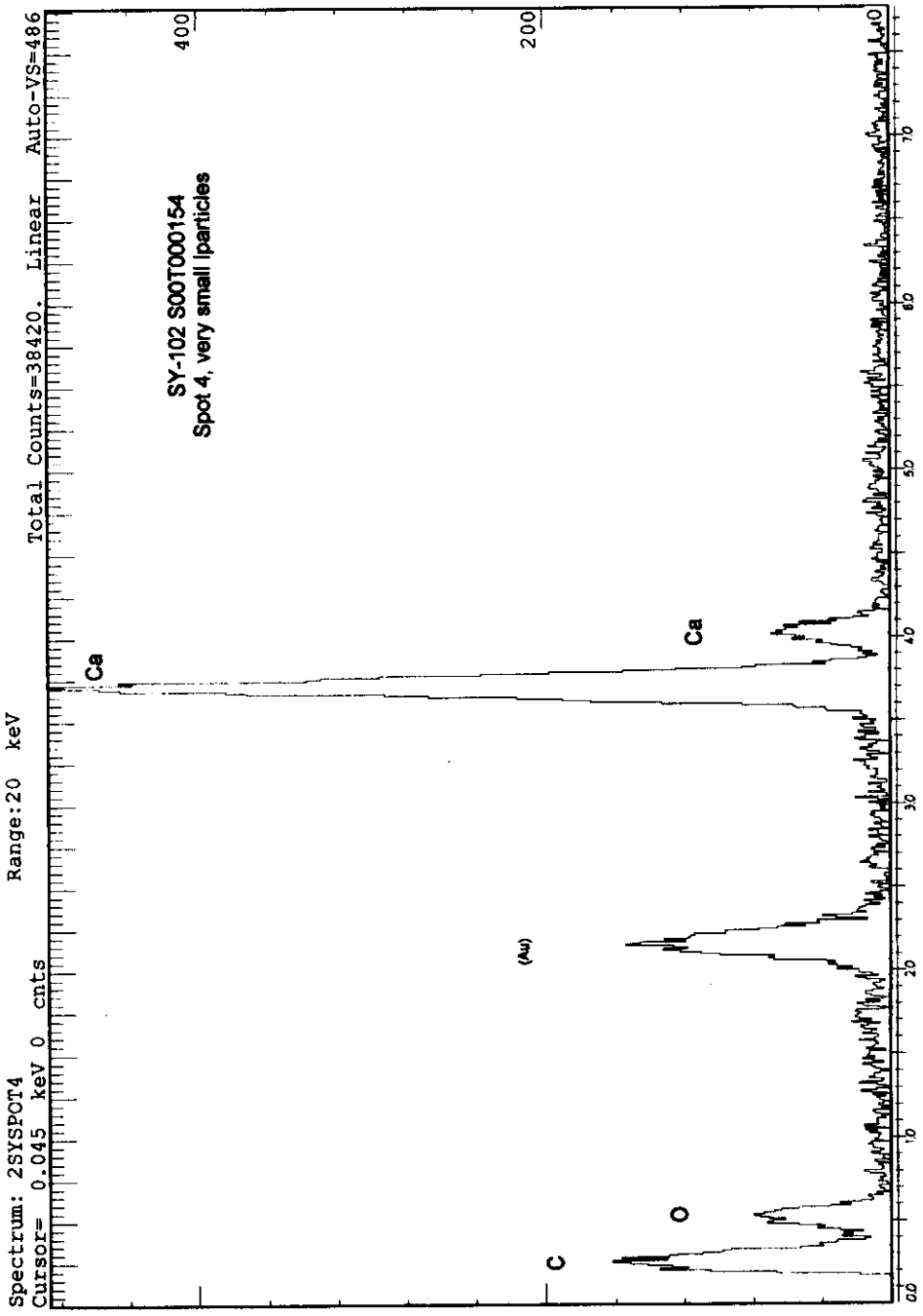

Figure 5. EDS Spectrum of Very Small Crystals

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The EDS software provides standardless semi-quantitative elemental analysis of the EDS spectra. The results of this analysis are summarized in Table 1 for the needle and cuboctahedral crystals. Crystal dehydration is expected under the high-vacuum conditions of the SEM. The number of waters of hydration was adjusted for the "theoretical" columns in Table 1 so that the weight percent oxygen matched as closely as possible to the weight percent found for each crystal, using whole numbers of water molecules.

Table 1. Semi-Quantitative Elemental Analysis by EDS (in weight percent).

Element	Needle	Theoretical[1] $Na_3PO_4 \cdot H_2O$	Cuboctahedron	Theoretical[1] $Na_7F(PO_4)_2 \cdot 4H_2O$
O	43.1	44.4	44.1	44.2
F	not detected	0.0	3.9	4.4
Na	35.3	38.3	34.9	37.1
P	21.5	17.2	17.1	14.3

[1] Number of waters of hydration is lower than in original crystals due to dehydration caused by high-vacuum conditions of SEM.

Please call us on 373-2532 or 373-5612 if you have any questions or comments about these results.

fjh

[original signed by DL Herting and JR Smith, 3/28/00]

DATA SUMMARY REPORT

ATTACHMENT 4

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Tank 241-SY-102 - Data Summary Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-5

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000043			Volume % Settled Solids	%	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	1.00e-01	n/a
S00T000043			Organic Vol Present / hotcell	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S00T000048			DSC Exotherm on Perkin Elmer	Joules/g	107.4	n/a	0.00e+00	14.04	7.020	200	n/a	n/a	n/a
S00T000048			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	49.76	24.88	200	n/a	n/a	n/a
S00T000048			Ammonia by ISE-Std Additions	ug/mL	92.49	<2.50E+2	8.04e+02	694.0	749.0	14.7	n/a	250.0	n/a
S00T000048			OH- by Pot. Titration	ug/mL	102.6	n/a	1.02e+04	1.02e+04	1.02e+04	0.00	n/a	1.25e+03	n/a
S00T000048			pH Direct	pH	n/a	n/a	13.29	13.31	13.30	0.15	n/a	1.00e-02	n/a
S00T000048			Specific Gravity	Sp.G.	99.14	n/a	1.226	1.237	1.232	0.89	n/a	1.00e-03	n/a
S00T000048			% Water by TGA on Perkin Elmer	%	98.84	n/a	71.84	71.73	71.78	0.15	n/a	n/a	n/a
S00T000048			Uranium by Phosphorescence	ug/mL	94.60	1.55e-4	9.94e-01	9.44e-01	9.69e-01	5.16	n/a	1.88e-03	n/a
S00T000048		D	Uranium-235 by ICP/MS Acid Add	ug/mL	90.42	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000048		D	Uranium-238 by ICP/MS Acid Add	ug/mL	101.9	<1.20e-5	1.307	1.340	1.324	2.26	n/a	2.44e-01	n/a
S00T000049			TIC by Acid/Coulometry	ug/mL	94.88	3.00E+0	3.56e+03	3.38e+03	3.47e+03	5.19	n/a	5.000	n/a
S00T000049			TOC by Persulfate/Coulometry	ug/mL	95.35	2.50E+0	5.93e+03	5.60e+03	5.76e+03	5.72	n/a	40.00	n/a
S00T000049			Strontium-89/90 High Level	uCi/mL	97.33	2.13E-2	6.130	5.950	6.040	2.98	n/a	3.61e-02	2.64E+00
S00T000049			Pu-239/240 by TRU-SPEC Resin	uCi/mL	99.21	<3.34E-4	5.44e-04	5.38e-04	5.41e-04	1.11	n/a	3.55e-04	5.52E+00
S00T000049			Pu-238 by TRU-SPEC Resin IonEx	uCi/mL	n/a	<3.34E-4	<3.55e-04	<3.51E-4	n/a	n/a	n/a	3.55e-04	9.45E+00
S00T000049		D	Aluminium-ICP-Acid Dil.	ug/mL	98.40	<5.00e-2	1.11e+04	1.11e+04	1.11e+04	0.00	n/a	30.10	n/a
S00T000049		D	Chromium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	1.30e+02	129.0	129.5	0.77	n/a	6.010	n/a
S00T000049		D	Iron-ICP-Acid Dil.	ug/mL	102.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000049		D	Manganese-ICP-Acid Dil.	ug/mL	94.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000049		D	Nickel-ICP-Acid Dil.	ug/mL	100.4	<2.00e-2	79.30	83.30	81.30	4.92	n/a	12.00	n/a
S00T000049			Fluoride-IC-Dionex 4000/4500	ug/mL	99.69	<1.20e-2	5.48e+02	521.0	534.6	5.05	n/a	49.69	n/a
S00T000049			Chloride-IC-Dionex 4000/4500	ug/mL	98.78	<1.70e-2	3.80e+03	3.85e+03	3.82e+03	1.31	n/a	70.40	n/a
S00T000049			Nitrite-IC - Dionex 4000/4500	ug/mL	86.58	<1.08e-1	4.66e+04	4.72e+04	4.69e+04	1.28	n/a	447.2	n/a
S00T000049			Nitrate by IC-Dionex 4000/4500	ug/mL	115.5	<1.39e-1	1.08e+05	1.09e+05	1.09e+05	0.92	n/a	575.6	n/a
S00T000049			Phosphate-IC-Dionex 4000/4500	ug/mL	94.96	<1.20e-1	3.02e+03	3.09e+03	3.06e+03	2.29	n/a	496.9	n/a
S00T000049			Sulfate by IC-Dionex 4000/4500	ug/mL	98.26	<1.38e-1	3.74e+03	3.61e+03	3.67e+03	3.54	n/a	571.5	n/a
S00T000049			Oxalate-IC-Dionex 4000/450	ug/mL	104.9	<1.05e-1	1.78e+03	1.46e+03	1.62e+03	19.8	n/a	434.8	n/a
S00T000049			Cobalt-60 by GEA	uCi/mL	106.9	<7.20e-4	1.29e-02	1.29e-02	1.29e-02	0.00	n/a	n/a	19.0
S00T000049			Cesium-137 by GEA	uCi/mL	100.5	<1.71e-3	1.39e+02	140.0	139.5	0.72	n/a	n/a	0.160
S00T000049			Europium-154 by GEA	uCi/mL	n/a	<2.28e-3	2.12e-02	2.37e-02	2.24e-02	11.1	n/a	n/a	49.3
S00T000049			Europium-155 by GEA	uCi/mL	n/a	<1.71e-3	<1.17e-01	<1.18e-1	n/a	n/a	n/a	1.17e-01	n/a
S00T000049			Am-241 by TRU-SPEC Resin IonEx	uCi/mL	100.9	<3.41E-4	1.11e-02	1.12e-02	1.12e-02	0.90	n/a	8.68e-04	2.14E+00
S00T000049			Cm-243/244 by TRU SPEC Resin	uCi/mL	n/a	<3.41E-4	<8.68e-04	<9.26E-4	n/a	n/a	n/a	8.68e-04	7.05E+00

Tank 241-SY-102 - Data Summary Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-6

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000044			Volume % Settled Solids	%	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	1.00e-01	n/a
S00T000044			Organic Vol Present / hotcell	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S00T000050			DSC Exotherm on Perkin Elmer	Joules/g	107.4	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S00T000050			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S00T000050			Ammonia by ISE-Std Additions	ug/mL	92.49	<2.50E+2	1.12e+03	569.0	844.5	65.2	n/a	250.0	n/a
S00T000050			OH- by Pot. Titration	ug/mL	102.6	n/a	1.79e+04	1.79e+04	1.79e+04	0.00	n/a	1.25e+03	n/a
S00T000050			pH Direct	pH	n/a	n/a	13.47	13.49	13.48	0.15	n/a	1.00e-02	n/a
S00T000050			Specific Gravity	Sp.G.	99.14	n/a	1.271	1.281	1.276	0.78	n/a	1.00e-03	n/a
S00T000050			% Water by TGA on Perkin Elmer	%	98.84	n/a	67.34	67.38	67.36	0.06	n/a	n/a	n/a
S00T000050			Uranium by Phosphorescence	ug/mL	94.60	1.55e-4	3.520	4.180	3.850	17.1	n/a	1.88e-03	n/a
S00T000050	D		Uranium-235 by ICP/MS Acid Add	ug/mL	90.42	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000050	D		Uranium-238 by ICP/MS Acid Add	ug/mL	101.9	<1.20e-5	4.107	4.130	4.119	0.49	n/a	2.44e-01	n/a
S00T000054			TIC by Acid/Coulometry	ug/mL	94.88	3.00E+0	2.84e+03	2.68e+03	2.76e+03	5.80	n/a	5.000	n/a
S00T000054			TOC by Persulfate/Coulometry	ug/mL	95.35	2.50E+0	3.47e+03	3.11e+03	3.29e+03	10.9	n/a	40.00	n/a
S00T000054			Strontium-89/90 High Level	uCi/mL	97.33	2.13E-2	2.670	2.630	2.650	1.51	n/a	3.54e-02	4.02E+00
S00T000054			Pu-239/240 by TRU-SPEC Resin	uCi/mL	99.21	<3.34E-4	<3.39e-04	<3.50E-4	n/a	n/a	n/a	3.39e-04	8.62E+00
S00T000054			Pu-238 by TRU-SPEC Resin IonEx	uCi/mL	n/a	<3.34E-4	<3.39e-04	<3.50E-4	n/a	n/a	n/a	3.39e-04	1.16E+01
S00T000054	D		Aluminium-ICP-Acid Dil.	ug/mL	98.40	<5.00e-2	1.76e+04	1.79e+04	1.78e+04	1.69	n/a	30.10	n/a
S00T000054	D		Chromium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	6.75e+02	680.0	677.5	0.74	n/a	6.010	n/a
S00T000054	D		Iron-ICP-Acid Dil.	ug/mL	102.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000054	D		Manganese-ICP-Acid Dil.	ug/mL	94.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000054	D		Nickel-ICP-Acid Dil.	ug/mL	100.4	<2.00e-2	42.70	39.50	41.10	7.79	n/a	12.00	n/a
S00T000054			Fluoride-IC-Dionex 4000/4500	ug/mL	99.69	<1.20e-2	4.25e+02	447.0	435.9	5.05	n/a	49.69	n/a
S00T000054			Chloride-IC-Dionex 4000/4500	ug/mL	98.78	<1.70e-2	5.02e+03	5.03e+03	5.02e+03	0.20	n/a	70.40	n/a
S00T000054			Nitrite-IC - Dionex 4000/4500	ug/mL	86.58	<1.08e-1	6.11e+04	6.11e+04	6.11e+04	0.00	n/a	447.2	n/a
S00T000054			Nitrate by IC-Dionex 4000/4500	ug/mL	115.5	<1.39e-1	1.28e+05	1.26e+05	1.27e+05	1.57	n/a	575.6	n/a
S00T000054			Phosphate-IC-Dionex 4000/4500	ug/mL	94.96	<1.20e-1	3.54e+03	4.18e+03	3.86e+03	16.6	n/a	496.9	n/a
S00T000054			Sulfate by IC-Dionex 4000/4500	ug/mL	98.26	<1.38e-1	3.71e+03	3.52e+03	3.62e+03	5.26	n/a	571.5	n/a
S00T000054			Oxalate-IC-Dionex 4000/450	ug/mL	104.9	<1.05e-1	9.90e+02	<4.35e2	n/a	n/a	n/a	434.8	n/a
S00T000054			Cobalt-60 by GEA	uCi/mL	106.9	<7.20e-4	<6.54e-03	6.19e-03	n/a	n/a	n/a	6.54e-03	n/a
S00T000054			Cesium-137 by GEA	uCi/mL	100.5	<1.71e-3	1.80e+02	181.0	180.5	0.55	n/a	n/a	0.140
S00T000054			Europium-154 by GEA	uCi/mL	n/a	<2.28e-3	<1.25e-02	<1.25e-2	n/a	n/a	n/a	1.25e-02	n/a
S00T000054			Europium-155 by GEA	uCi/mL	n/a	<1.71e-3	<1.34e-01	<1.34e-1	n/a	n/a	n/a	1.34e-01	n/a
S00T000054			Am-241 by TRU-SPEC Resin IonEx	uCi/mL	100.9	<3.41E-4	4.17e-03	4.23e-03	4.20e-03	1.43	n/a	4.89e-04	2.72E+00
S00T000054			Cm-243/244 by TRU SPEC Resin	uCi/mL	n/a	<3.41E-4	<4.89e-04	<5.51E-4	n/a	n/a	n/a	4.89e-04	1.10E+01

241-SY-102 - Data Sumamry Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-7

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000045			Volume % Settled Solids	%	n/a	n/a	< 2.000	n/a	n/a	n/a	n/a	1.00e-01	n/a
S00T000045			Organic Vol Present / hotcell	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S00T000051			DSC Exotherm on Perkin Elmer	Joules/g	107.4	n/a	5.980	0.00e+00	2.990	200	n/a	n/a	n/a
S00T000051			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	18.19	0.00e+00	9.095	200	n/a	n/a	n/a
S00T000051			Ammonia by ISE-Std Additions	ug/mL	92.28	<1.25E+2	3.64e+02	328.0	346.0	10.4	106.0	125.0	n/a
S00T000051			OH- by Pot. Titration	ug/mL	102.6	n/a	1.82e+04	1.74e+04	1.78e+04	4.49	n/a	1.25e+03	n/a
S00T000051			pH Direct	pH	n/a	n/a	13.38	13.42	13.40	0.30	n/a	1.00e-02	n/a
S00T000051			Specific Gravity	Sp.G.	99.14	n/a	1.264	1.276	1.270	0.94	n/a	1.00e-03	n/a
S00T000051			% Water by TGA on Perkin Elmer	%	98.84	n/a	67.32	66.94	67.13	0.57	n/a	n/a	n/a
S00T000051			Uranium by Phosphorescence	ug/mL	94.60	1.55e-4	4.350	4.180	4.265	3.99	89.20	1.88e-03	n/a
S00T000051		D	Uranium-235 by ICP/MS Acid Add	ug/mL	90.42	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	94.37	2.44e-01	n/a
S00T000051		D	Uranium-238 by ICP/MS Acid Add	ug/mL	101.9	<1.20e-5	4.442	4.500	4.471	1.34	96.00	2.44e-01	n/a
S00T000055			TIC by Acid/Coulometry	ug/mL	94.88	3.00E+0	3.42e+03	3.31e+03	3.36e+03	3.27	96.60	5.000	n/a
S00T000055			TOC by Persulfate/Coulometry	ug/mL	95.35	2.50E+0	3.97e+03	3.85e+03	3.91e+03	3.07	90.30	40.00	n/a
S00T000055			Strontium-89/90 High Level	uCi/mL	97.33	2.13E-2	2.250	2.330	2.290	3.49	n/a	3.48e-02	4.36E+00
S00T000055			Pu-239/240 by TRU-SPEC Resin	uCi/mL	99.21	<3.34E-4	<3.70e-04	<3.43E-4	n/a	n/a	n/a	3.70e-04	9.12E+00
S00T000055			Pu-238 by TRU-SPEC Resin IonEx	uCi/mL	n/a	<3.34E-4	<3.70e-04	<3.43E-4	n/a	n/a	n/a	3.70e-04	1.00E+02
S00T000055		D	Aluminium-ICP-Acid Dil.	ug/mL	98.40	<5.00e-2	1.82e+04	1.81e+04	1.82e+04	0.55	77.50	30.10	n/a
S00T000055		D	Chromium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	6.95e+02	691.0	693.0	0.58	99.20	6.010	n/a
S00T000055		D	Iron-ICP-Acid Dil.	ug/mL	102.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	102.0	30.10	n/a
S00T000055		D	Manganese-ICP-Acid Dil.	ug/mL	94.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	90.90	6.010	n/a
S00T000055		D	Nickel-ICP-Acid Dil.	ug/mL	100.4	<2.00e-2	42.70	40.50	41.60	5.29	99.10	12.00	n/a
S00T000055			Fluoride-IC-Dionex 4000/4500	ug/mL	97.34	<1.20e-2	3.97e+02	408.0	402.3	2.73	95.94	61.81	n/a
S00T000055			Chloride-IC-Dionex 4000/4500	ug/mL	99.44	<1.70e-2	4.91e+03	4.99e+03	4.95e+03	1.62	99.78	87.57	n/a
S00T000055			Nitrite-IC - Dionex 4000/4500	ug/mL	88.28	<1.08e-1	5.95e+04	6.03e+04	5.99e+04	1.34	92.82	556.3	n/a
S00T000055			Nitrate by IC-Dionex 4000/4500	ug/mL	113.0	<1.39e-1	1.22e+05	1.25e+05	1.24e+05	2.43	121.3	716.0	n/a
S00T000055			Phosphate-IC-Dionex 4000/4500	ug/mL	94.02	<1.20e-1	3.33e+03	2.99e+03	3.16e+03	10.8	100.2	618.1	n/a
S00T000055			Sulfate by IC-Dionex 4000/4500	ug/mL	98.12	<1.38e-1	3.37e+03	3.52e+03	3.45e+03	4.35	98.84	710.8	n/a
S00T000055			Oxalate-IC-Dionex 4000/450	ug/mL	101.3	<1.05e-1	9.90e+02	1.17e+03	1.08e+03	16.7	102.1	540.9	n/a
S00T000055			Cobalt-60 by GEA	uCi/mL	106.9	<7.20e-4	<5.34e-03	6.19e-03	n/a	n/a	n/a	5.34e-03	n/a
S00T000055			Cesium-137 by GEA	uCi/mL	100.5	<1.71e-3	1.85e+02	181.0	183.0	2.19	n/a	n/a	0.130
S00T000055			Europium-154 by GEA	uCi/mL	n/a	<2.28e-3	<1.27e-02	<1.20e-2	n/a	n/a	n/a	1.27e-02	n/a
S00T000055			Europium-155 by GEA	uCi/mL	n/a	<1.71e-3	<1.36e-01	<1.34e-1	n/a	n/a	n/a	1.36e-01	n/a
S00T000055			Am-241 by TRU-SPEC Resin IonEx	uCi/mL	100.9	<3.41E-4	3.78e-03	3.75e-03	3.77e-03	0.80	n/a	5.14e-04	2.94E+00
S00T000055			Cm-243/244 by TRU SPEC Resin	uCi/mL	n/a	<3.41E-4	<5.14e-04	<5.27E-4	n/a	n/a	n/a	5.14e-04	1.23E+01

Tank 241-SY-102 - Data Summary Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-8

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000046			Volume % Settled Solids	%	n/a	n/a	8.600	n/a	n/a	n/a	n/a	1.00e-01	n/a
S00T000046			Organic Vol Present / hotcell	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S00T000052			DSC Exotherm on Perkin Elmer	Joules/g	107.7	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S00T000052			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S00T000052			Ammonia by ISE-Std Additions	ug/mL	92.28	<1.25E+2	6.79e+02	748.0	713.5	9.67	n/a	125.0	n/a
S00T000052			OH- by Pot. Titration	ug/mL	102.6	n/a	1.80e+04	1.77e+04	1.78e+04	1.68	n/a	2.50e+03	n/a
S00T000052			pH Direct	pH	n/a	n/a	13.38	13.41	13.39	0.22	n/a	1.00e-02	n/a
S00T000052			Specific Gravity	Sp.G.	99.14	n/a	1.269	1.273	1.271	0.31	n/a	1.00e-03	n/a
S00T000052			% Water by TGA on Perkin Elmer	%	99.50	n/a	66.82	67.15	66.98	0.49	n/a	n/a	n/a
S00T000052			Uranium by Phosphorescence	ug/mL	94.60	1.55e-4	1.640	1.800	1.720	9.30	n/a	1.88e-03	n/a
S00T000052		D	Uranium-235 by ICP/MS Acid Add	ug/mL	90.42	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000052		D	Uranium-238 by ICP/MS Acid Add	ug/mL	101.9	<1.20e-5	4.097	3.990	4.043	2.72	n/a	2.44e-01	n/a
S00T000056			TIC by Acid/Coulometry	ug/mL	94.88	3.00E+0	3.36e+03	3.22e+03	3.29e+03	4.26	n/a	5.000	n/a
S00T000056			TOC by Persulfate/Coulometry	ug/mL	95.35	2.50E+0	3.97e+03	3.77e+03	3.87e+03	5.17	n/a	40.00	n/a
S00T000056			Strontium-89/90 High Level	uCi/mL	97.33	2.13E-2	2.420	2.310	2.365	4.65	n/a	3.52e-02	4.23E+00
S00T000056			Pu-239/240 by TRU-SPEC Resin	uCi/mL	99.21	<3.34E-4	<3.50e-04	<3.40E-4	n/a	n/a	n/a	3.50e-04	8.29E+00
S00T000056			Pu-238 by TRU-SPEC Resin IonEx	uCi/mL	n/a	<3.34E-4	<3.50e-04	<3.40E-4	n/a	n/a	n/a	3.50e-04	1.00E+02
S00T000056		D	Aluminium-ICP-Acid Dil.	ug/mL	98.40	<5.00e-2	1.78e+04	1.79e+04	1.78e+04	0.56	n/a	30.10	n/a
S00T000056		D	Chromium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	6.80e+02	681.0	680.5	0.15	n/a	6.010	n/a
S00T000056		D	Iron-ICP-Acid Dil.	ug/mL	102.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000056		D	Manganese-ICP-Acid Dil.	ug/mL	94.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000056		D	Nickel-ICP-Acid Dil.	ug/mL	100.4	<2.00e-2	42.40	39.00	40.70	8.35	n/a	12.00	n/a
S00T000056			Fluoride-IC-Dionex 4000/4500	ug/mL	97.34	<1.20e-2	4.28e+02	462.0	445.1	7.64	n/a	61.81	n/a
S00T000056			Chloride-IC-Dionex 4000/4500	ug/mL	99.44	<1.70e-2	5.23e+03	5.02e+03	5.13e+03	4.10	n/a	87.57	n/a
S00T000056			Nitrite-IC - Dionex 4000/4500	ug/mL	88.28	<1.08e-1	6.26e+04	6.07e+04	6.17e+04	3.08	n/a	556.3	n/a
S00T000056			Nitrate by IC-Dionex 4000/4500	ug/mL	113.0	<1.39e-1	1.26e+05	1.24e+05	1.25e+05	1.60	n/a	716.0	n/a
S00T000056			Phosphate-IC-Dionex 4000/4500	ug/mL	94.02	<1.20e-1	2.30e+03	2.04e+03	2.17e+03	12.0	n/a	618.1	n/a
S00T000056			Sulfate by IC-Dionex 4000/4500	ug/mL	98.12	<1.38e-1	3.94e+03	3.91e+03	3.92e+03	0.76	n/a	710.8	n/a
S00T000056			Oxalate-IC-Dionex 4000/450	ug/mL	101.3	<1.05e-1	1.06e+03	1.11e+03	1.09e+03	4.61	n/a	540.9	n/a
S00T000056			Cobalt-60 by GEA	uCi/mL	106.9	<7.20e-4	<5.56e-03	8.96e-03	n/a	n/a	n/a	5.56e-03	n/a
S00T000056			Cesium-137 by GEA	uCi/mL	100.5	<1.71e-3	1.84e+02	182.0	183.0	1.09	n/a	n/a	0.130
S00T000056			Europium-154 by GEA	uCi/mL	n/a	<2.28e-3	<1.27e-02	<1.16e-2	n/a	n/a	n/a	1.27e-02	n/a
S00T000056			Europium-155 by GEA	uCi/mL	n/a	<1.71e-3	<1.36e-01	<1.34e-1	n/a	n/a	n/a	1.36e-01	n/a
S00T000056			Am-241 by TRU-SPEC Resin IonEx	uCi/mL	100.9	<3.41E-4	4.01e-03	4.10e-03	4.05e-03	2.22	n/a	5.80e-04	2.89E+00
S00T000056			Cm-243/244 by TRU SPEC Resin	uCi/mL	n/a	<3.41E-4	<5.80e-04	<5.50E-4	n/a	n/a	n/a	5.80e-04	1.00E+02

Tank 241-SY-102 - Data Summary Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-9

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000047			Volume % Settled Solids	%	n/a	n/a	15.10	n/a	n/a	n/a	n/a	1.00e-01	n/a
S00T000047			Organic Vol Present / hotcell	mL	n/a	n/a	0.00e+00	n/a	n/a	n/a	n/a	n/a	n/a
S00T000053			DSC Exotherm on Perkin Elmer	Joules/g	107.7	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S00T000053			DSC Exotherm Dry Calculated	Joules/g Dry	n/a	n/a	0.00e+00	0.00e+00	0.00e+00	n/a	n/a	n/a	n/a
S00T000053			Ammonia by ISE-Std Additions	ug/mL	92.28	<1.25E+2	4.73e+02	496.0	484.5	4.75	n/a	125.0	n/a
S00T000053			OH- by Pot. Titration	ug/mL	102.6	n/a	1.82e+04	1.81e+04	1.82e+04	0.55	n/a	2.50e+03	n/a
S00T000053			pH Direct	pH	n/a	n/a	13.45	13.46	13.46	0.07	n/a	1.00e-02	n/a
S00T000053			Specific Gravity	Sp.G.	99.14	n/a	1.273	1.283	1.278	0.78	n/a	1.00e-03	n/a
S00T000053			% Water by TGA on Perkin Elmer	%	99.50	n/a	66.46	66.49	66.47	0.05	n/a	n/a	n/a
S00T000053			Uranium by Phosphorescence	ug/mL	94.60	1.55e-4	4.070	4.740	4.405	15.2	n/a	1.88e-03	n/a
S00T000053	D		Uranium-235 by ICP/MS Acid Add	ug/mL	90.42	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000053	D		Uranium-238 by ICP/MS Acid Add	ug/mL	101.9	<1.20e-5	4.298	4.620	4.459	7.17	n/a	2.44e-01	n/a
S00T000057			TIC by Acid/Coulometry	ug/mL	94.88	3.00E+0	3.26e+03	3.29e+03	3.28e+03	0.92	n/a	5.000	n/a
S00T000057			TOC by Persulfate/Coulometry	ug/mL	95.35	2.50E+0	3.70e+03	3.74e+03	3.72e+03	1.08	n/a	40.00	n/a
S00T000057			Strontium-89/90 High Level	uCi/mL	97.33	2.13E-2	2.110	2.280	2.195	7.74	n/a	3.48e-02	4.52E+00
S00T000057			Pu-239/240 by TRU-SPEC Resin	uCi/mL	99.21	<3.34E-4	<3.67e-04	<3.81E-4	n/a	n/a	n/a	3.67e-04	9.12E+00
S00T000057			Pu-238 by TRU-SPEC Resin IonEx	uCi/mL	n/a	<3.34E-4	<3.67e-04	<3.81E-4	n/a	n/a	n/a	3.67e-04	1.00E+02
S00T000057	D		Aluminium-ICP-Acid Dil.	ug/mL	98.40	<5.00e-2	1.88e+04	1.86e+04	1.87e+04	1.07	n/a	30.10	n/a
S00T000057	D		Chromium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	7.29e+02	722.0	725.5	0.96	n/a	6.010	n/a
S00T000057	D		Iron-ICP-Acid Dil.	ug/mL	102.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000057	D		Manganese-ICP-Acid Dil.	ug/mL	94.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000057	D		Nickel-ICP-Acid Dil.	ug/mL	100.4	<2.00e-2	38.50	36.30	37.40	5.88	n/a	12.00	n/a
S00T000057			Fluoride-IC-Dionex 4000/4500	ug/mL	99.69	<1.20e-2	4.28e+02	469.0	448.4	9.14	n/a	49.69	n/a
S00T000057			Chloride-IC-Dionex 4000/4500	ug/mL	98.78	<1.70e-2	5.07e+03	4.90e+03	4.98e+03	3.41	n/a	70.40	n/a
S00T000057			Nitrite-IC - Dionex 4000/4500	ug/mL	86.58	<1.08e-1	6.13e+04	5.94e+04	6.04e+04	3.15	n/a	447.2	n/a
S00T000057			Nitrate by IC-Dionex 4000/4500	ug/mL	115.5	<1.39e-1	1.23e+05	1.21e+05	1.22e+05	1.64	n/a	575.6	n/a
S00T000057			Phosphate-IC-Dionex 4000/4500	ug/mL	94.96	<1.20e-1	1.30e+03	1.87e+03	1.59e+03	36.0	n/a	496.9	n/a
S00T000057			Sulfate by IC-Dionex 4000/4500	ug/mL	98.26	<1.38e-1	3.20e+03	3.09e+03	3.14e+03	3.50	n/a	571.5	n/a
S00T000057			Oxalate-IC-Dionex 4000/450	ug/mL	104.9	<1.05e-1	<4.35e+02	1.06e+03	n/a	n/a	n/a	434.8	n/a
S00T000057			Cobalt-60 by GEA	uCi/mL	106.9	<7.20e-4	8.25e-03	<8.63e-3	n/a	n/a	n/a	n/a	26.3
S00T000057			Cesium-137 by GEA	uCi/mL	100.5	<1.71e-3	1.83e+02	183.0	183.0	0.00	n/a	n/a	0.140
S00T000057			Europium-154 by GEA	uCi/mL	n/a	<2.28e-3	<1.22e-02	<1.21e-2	n/a	n/a	n/a	1.22e-02	n/a
S00T000057			Europium-155 by GEA	uCi/mL	n/a	<1.71e-3	<1.35e-01	<1.34e-1	n/a	n/a	n/a	1.35e-01	n/a
S00T000057			Am-241 by TRU-SPEC Resin IonEx	uCi/mL	100.9	<3.41E-4	3.28e-03	3.21e-03	3.25e-03	2.16	n/a	5.72e-04	3.10E+00
S00T000057			Cm-243/244 by TRU SPEC Resin	uCi/mL	n/a	<3.41E-4	<5.72e-04	<5.93E-4	n/a	n/a	n/a	5.72e-04	1.00E+02

Tank 241-SY-102 - Data Summary Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-8,-9

SEGMENT PORTION: Centrifuged Solids (Grab Sample)

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000154		W	OH- by Pot. Titration	ug/g	103.0	<17347	<16993	<17347	n/a	n/a	n/a	1.70e+04	n/a
S00T000154		I	Aluminium -ICP-H2O Dig/Acid	ug/g	101.2	<5.00e-2	9.65e+03	1.00e+04	9.82e+03	3.56	101.0	612.0	n/a
S00T000154		I	Chromium -ICP-H2O Dig/Acid	ug/g	101.6	<1.00e-2	6.66e+02	633.0	649.5	5.08	99.20	12.20	n/a
S00T000154		I	Iron -ICP-H2O Dig/Acid	ug/g	101.6	<5.00e-2	< 61.20	<6.24e1	n/a	n/a	101.0	61.20	n/a
S00T000154		I	Manganese -ICP-H2O Dig/Acid	ug/g	98.20	<1.00e-2	< 12.20	<1.25e1	n/a	n/a	92.50	12.20	n/a
S00T000154		I	Nickel -ICP-H2O Dig/Acid	ug/g	100.6	<2.00e-2	40.10	33.50	36.80	17.9	98.40	24.50	n/a
S00T000154		W	Fluoride-IC-Dionex 4000/4500	ug/g	100.5	<1.20e-2	3.44e+02	465.0	404.6	29.9	76.41	102.8	n/a
S00T000154		W	Chloride-IC-Dionex 4000/4500	ug/g	96.71	<1.70e-2	4.15e+03	4.05e+03	4.10e+03	2.44	110.8	76.26	n/a
S00T000154		W	Nitrite-IC - Dionex 4000/4500	ug/g	90.32	<1.08e-1	4.92e+04	4.74e+04	4.83e+04	3.73	97.97	484.5	n/a
S00T000154		W	Nitrate by IC-Dionex 4000/4500	ug/g	102.9	<1.39e-1	1.04e+05	9.52e+04	9.98e+04	8.84	112.5	623.6	n/a
S00T000154		W	Phosphate-IC-Dionex 4000/4500	ug/g	105.2	<1.20e-1	1.21e+04	3.00e+04	2.11e+04	85.0	104.3	1.03e+03	n/a
S00T000154		W	Sulfate by IC-Dionex 4000/4500	ug/g	96.77	<1.38e-1	2.97e+03	2.43e+03	2.70e+03	20.0	105.1	619.1	n/a
S00T000154		W	Oxalate-IC-Dionex 4000/4500	ug/g	99.81	<1.05e-1	3.53e+03	3.67e+03	3.60e+03	3.89	100.8	471.0	n/a

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SAMPLE HANDLING

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LABCORE Data Entry Template for Worklist# 32129

Analyst: RH **Instrument:** BA000 _____ **Book #** NA

Method: LO-160-103 Rev/Mod D-1

Worklist Comment: SY-102 Grab 99-5

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20 ~~5000~~	CC 1/17/00 ~~1.17.00~~	19.96 N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500 ~~2000~~	CC 1/17/00 ~~1.17.00~~	499.82 N/A	
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN DOSE-01	LIQUID	N/A	80		mrad/hour
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN SEALNUM	LIQUID	N/A	12615		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN ETCHNUM	LIQUID	N/A	25-99-5		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN APPEAR01	LIQUID	N/A	Complete		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN SAMPAMT1	LIQUID	N/A	125		mL RH 1/13/00
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN STLSLD01	LIQUID	N/A	<2.0		%
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN COLOR-01	LIQUID	N/A	yellowish		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN ORGVOL01	LIQUID	N/A	RH 1/13/00 ~~125~~ 0		mL
20000008	SY-102 GRAB5	3	SAMPLE	S00T000043	0		@HCBRKDN PHOTO-01	LIQUID	N/A	Complete		

Final page for worklist # 32129

RH 1/17/00
Analyst Signature **Date**

1/17/00
Analyst Signature **Date**

validated by: RDH 1/17/00

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# 32130

Analyst: RH **Instrument:** BA000 _____ **Book #** _____

Method: LO-160-103 Rev/Mod D-1

Worklist Comment: SY-102 Grab 99-6

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	INSTCHK01				EXTRUD01	SOLID	20 ~~500.00~~	CC 1/17/00 ~~499.82~~	19.96 N/A	
		2	INSTCHK02				EXTRUD01	SOLID	500 ~~2000~~	C/17/00 ~~499.96~~	499.82 N/A	
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN DOSE-01	LIQUID	N/A	1/14/00 90	90	mrad/hour
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN SEALNUM	LIQUID	N/A	12616		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN ETCHNUM	LIQUID	N/A	254-99-6		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN APPEAR01	LIQUID	N/A	Complete		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN SAMPAMT1	LIQUID	N/A	125		~~µL~~ RH 1/13/00
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN STLSLD01	LIQUID	N/A	<2.0		%
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN COLOR-01	LIQUID	N/A	yellowish		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN ORGVOL01	LIQUID	N/A	0		mL
20000008	SY-102 GRAB5	3	SAMPLE	S00T000044	0		@HCBRKDN PHOTO-01	LIQUID	N/A	Complete		

Final page for worklist # 32130

RH 1/17/00
Analyst Signature **Date**

CC 1/17/00
Analyst Signature **Date**

validated by: RH 1/17/00

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.

HNF-1698 REV. 0

worklistrpt Version 2.1 05/15/95
01/13/00 10:34

LABCORE Data Entry Template for Worklist# 32131

Analyst: RH **Instrument:** BA000 _____ **Book #** NA

Method: LO-160-103 Rev/Mod D-1

Worklist Comment: SY-102 Grab 99-7

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
								20	CC 1/17/00		19.96	
		1	INSTCHK01				EXTRUD01	SOLID	~~500.00~~	~~499.82~~	N/A	
								500	CC 1/17/00	499.82		
		2	INSTCHK02				EXTRUD01	SOLID	~~2000~~	~~19.96~~	N/A	
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN DOSE-01	LIQUID	N/A	90		mrad/hour
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN SEALNUM	LIQUID	N/A	12617		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN ETCHNUM	LIQUID	N/A	254-99-7		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN APPEAR01	LIQUID	N/A	Complete		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN SAMPAMT1	LIQUID	N/A	125		~~mL~~ RA 4/13/00
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN STLSLD01	LIQUID	N/A	<2.0		%
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN COLOR-01	LIQUID	N/A	yellowish		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN ORGVOL01	LIQUID	N/A	0		mL
20000008	SY-102 GRAB5	3	SAMPLE	S00T000045	0		@HCBRKDN PHOTO-01	LIQUID	N/A	Complete		

Final page for worklist # 32131

RH 1/17/00
Analyst Signature **Date**

1/17/00
Analyst Signature **Date**

validated by: RDA 4/17/00

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# 32132

Analyst: RH **Instrument:** BA000 _____ **Book #** NA

Method: LO-160-103 Rev/Mod 01

Worklist Comment: SY-102 Grab 99-8

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
								20	cc 1/17/00		19.96	
		1	INSTCHK01				EXTRUD01	SOLID	~~500.00~~	~~499.82~~	N/A	
									500 cc 1/17/00	499.82		
		2	INSTCHK02				EXTRUD01	SOLID	~~20000~~	~~19.96~~	N/A	
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN DOSE-01	LIQUID	N/A	100		mrad/hour
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN SEALNUM	LIQUID	N/A	12618		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN ETCHNUM	LIQUID	N/A	25499.8		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN APPEAR01	LIQUID	N/A	Complete		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN SAMPAMT1	LIQUID	N/A	125		~~g~~ mL RH 1/13/00
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN STLSLD01	LIQUID	N/A	8.6		%
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN COLOR-01	LIQUID	N/A	yellowish		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN ORGVOL01	LIQUID	N/A	0		mL
20000008	SY-102 GRAB5	3	SAMPLE	S00T000046	0		@HCBRKDN PHOTO-01	LIQUID	N/A	Complete		

Final page for worklist # 32132

RH 1/17/00
Analyst Signature **Date**

1/17/00
Analyst Signature **Date**
validated by: RDH 1/17/00

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.

HNF-1698 REV. 0

worklistrpt Version 2.1 05/15/95
01/13/00 10:36

LABCORE Data Entry Template for Worklist# 32133

Analyst: RH **Instrument:** BA000 _____ **Book #** NA

Method: LO-160-103 Rev/Mod D-1

Worklist Comment: SY-102 Grab 99-9

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
									20 cc 1/17/00		19.96	
		1	INSTCHK01				EXTRUD01	SOLID	~~500.00~~	~~499.82~~	N/A	
									500 cc 1/17/00		499.82	
		2	INSTCHK02				EXTRUD01	SOLID	~~20.00~~	~~19.96~~	N/A	
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN DOSE-01	LIQUID	N/A	100		mrad/hour
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN SEALNUM	LIQUID	N/A	12619		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN ETCHNUM	LIQUID	N/A	254-99-9		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN APPEAR01	LIQUID	N/A	Complete		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN SAMPAMT1	LIQUID	N/A	125		RH 1/17/00 mL
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN STLSLD01	LIQUID	N/A	16.1		%
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN COLOR-01	LIQUID	N/A	yellowish		
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN ORGVOL01	LIQUID	N/A	0		mL
20000008	SY-102 GRAB5	3	SAMPLE	S00T000047	0		@HCBRKDN PHOTO-01	LIQUID	N/A	Complete		

Final page for worklist # 32133

RH 1/17/00
Analyst Signature **Date**

1/17/00
Analyst Signature **Date**

validated By: RDH 1/17/00

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 PREPARATION

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LABCORE Data Entry Template for Worklist# 33015

Analyst: NK **Instrument:** H2O01 **Book #** NA

Method: LA-504-101 Rev/Mod G-3

Worklist Comment: SY-102 FOR H2ODIG01 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				H2ODIG01	SOLID	1	.1001	N/A	g/L
20000008	SY-102 GRAB5	2	SAMPLE	S00T000154	0	W	H2ODIG01	SOLID	N/A	2.452		g/L
		.2452 → .1001										
20000008	SY-102 GRAB5	3	SAMPLE	S00T000154	0		DOSE-02	SOLID	N/A	3.75		mrad/hour
20000008	SY-102 GRAB5	4	DUP	S00T000154	0	W	H2ODIG01	SOLID	2.452	2.402	N/A	g/L
		.2402 → .1001										
20000008	SY-102 GRAB5	5	DUP	S00T000154	0		DOSE-02	SOLID	3.75	3.75	N/A	mrad/hour

Final page for worklist # 33015

NK King 3/23/00
Analyst Signature **Date**

Analyst Signature **Date**

NOTE: There is only ~1g of sample available. Adjust sample size as necessary.

Data Entry Comments:
DATA ENTRY 3-27-00
John Worrell

Validated by:
Saul R. Perez
3/27/00

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.

worklistrpt Version 2.1 05/15/95
05/08/00 15:21

LABCORE Data Entry Template for Worklist# 33467

Analyst: RWK **Instrument:** H2O01 **Book #** N/A

Method: LA-504-101 Rev/Mod G-3

Worklist Comment: SY102 GRAB5 H2ODIG lad

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				H2OICP01	SOLID	1	0.100L	N/A	g/L
20000008	SY-102 GRAB5	2	SAMPLE	S00T000154	0	I	H2OICP01	SOLID	N/A	2.452		g/L
20000008	SY-102 GRAB5	3	DUP	S00T000154	0	I	H2OICP01	SOLID	2.452	2.402	N/A	g/L

Final page for worklist # 33467

for Saul M. Pang
RWK 5/8/2000
Analyst Signature **Date**

Analyst Signature **Date**

Validated by
RK Fuller
5/8/00

Data Entry Comments:
DATA ENTRY 5-8-00
JL Wardell

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.

INORGANIC ANALYSIS

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LABCORE Completed Worklist Report for Worklist# 32093

Analyst: slh **Instrument:** DSC03 **Book#:** 12N14B

Method: LA-514-114 Rev/Mod D-4

Worklist Comment: SY-102 GRAB 5 FOR DSC-03 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	DSC-03	LIQUID	28.45	30.56	107.417	% Recovery
2	SAMPLE	S00T000048		0	DSC-03	LIQUID	N/A	0.000		Joules/g
3	DUP	S00T000048		0	DSC-03	LIQUID	0.000	14.04	200.000	RPD
4	SAMPLE	S00T000050		0	DSC-03	LIQUID	N/A	0.000		Joules/g
5	DUP	S00T000050		0	DSC-03	LIQUID	0.000	0.00	0.000	RPD
6	SAMPLE	S00T000051		0	DSC-03	LIQUID	N/A	5.98		Joules/g
7	DUP	S00T000051		0	DSC-03	LIQUID	5.98	0.00	200.000	RPD

Final page for worklist# 32093

Analyst Signature Date

Analyst Signature Date

Brian Davis 1-26-2000
Re - Reviewer Signature Date

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

worklistrpt Version 2.1 05/15/95
01/11/00 14:39

LABCORE Data Entry Template for Worklist# 32093

Analyst: SLH **Instrument:** DSC0 **Book #** 12 N14-B

Method: LA-514-114 Rev/Mod D-4

Worklist Comment: SY-102 GRAB 5 FOR DSC-03 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	LIQUID	28.45	30.56	N/A	Joules/g
20000008	SY-102 GRAB5	2	SAMPLE	S00T000048	0		DSC-03	LIQUID	N/A	14.75		Joules/g
20000008	SY-102 GRAB5	3	DUP	S00T000048	0		DSC-03	LIQUID		-14.04	N/A	Joules/g
20000008	SY-102 GRAB5	4	SAMPLE	S00T000050	0		DSC-03	LIQUID	N/A	16.33		Joules/g
20000008	SY-102 GRAB5	5	DUP	S00T000050	0		DSC-03	LIQUID		9.34	N/A	Joules/g
20000008	SY-102 GRAB5	6	SAMPLE	S00T000051	0		DSC-03	LIQUID	N/A	-5.98		Joules/g
20000008	SY-102 GRAB5	7	DUP	S00T000051	0		DSC-03	LIQUID		9.14	N/A	Joules/g

* ~~TRIPK~~ NA
BD 1-17-2000

Final page for worklist # 32093

Sandra Allred Bootright
Analyst Signature Date 1-16-2000

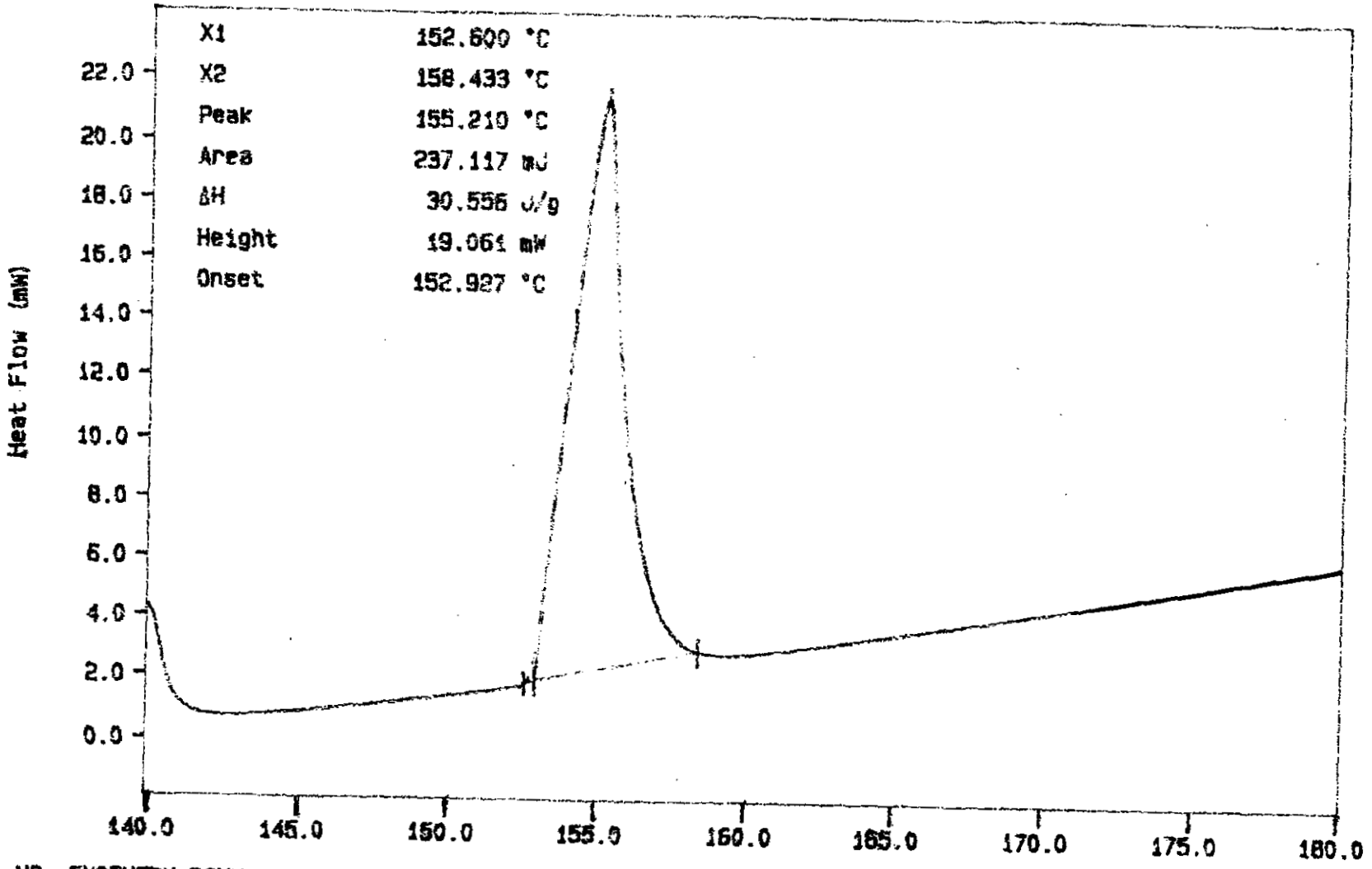
Mary Jones 1/17/00
Analyst Signature Date

Data Entry Comments: Ran Trip on S00T000051

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: 1ND011601 Sun Jan 16 08:06:44 2000
Sample Weight: 7.760 mg
STD 12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 52 TO 63.



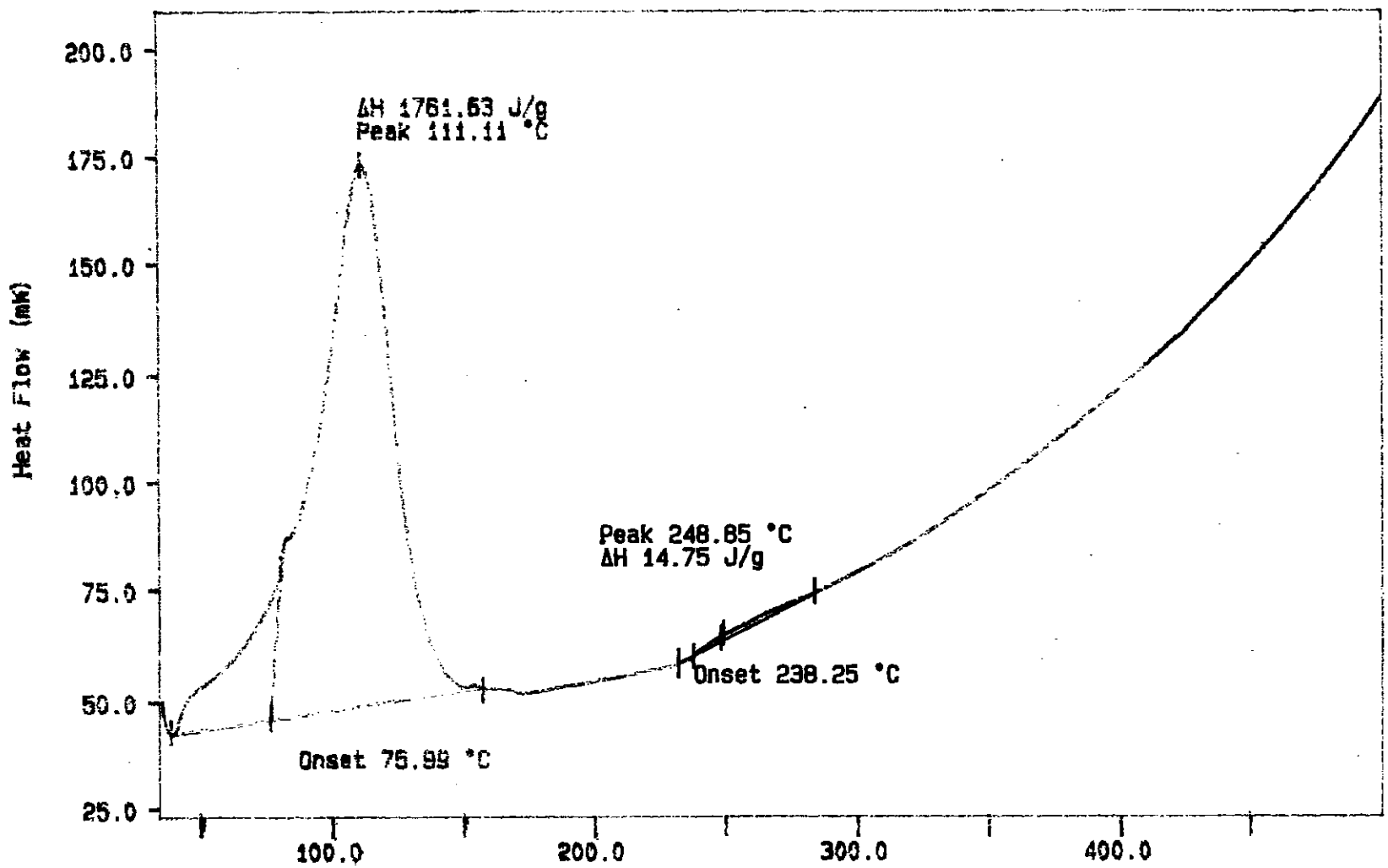
N2, EXOTHERM DOWN
TEMP1: 140.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 180.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System

Sandra L Hood Boatright

01/17/00 01:07 FAX 002

Curve 1: DSC
File info: SAM011601 Sun Jan 16 09:15:57 2000
Sample Weight: 15.950 mg
S00T00004B

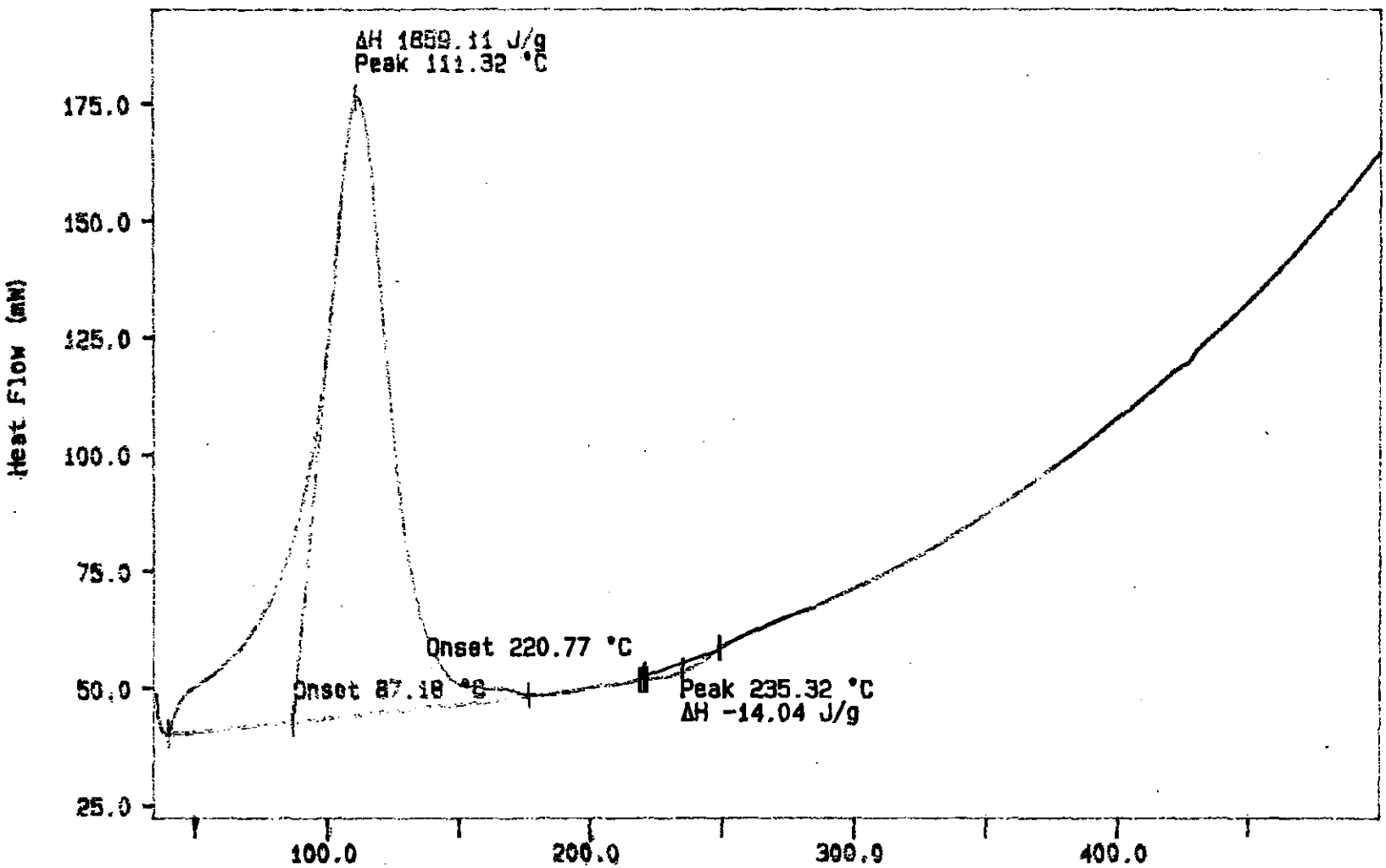


N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System

01/17/00 01:08 FAX 003

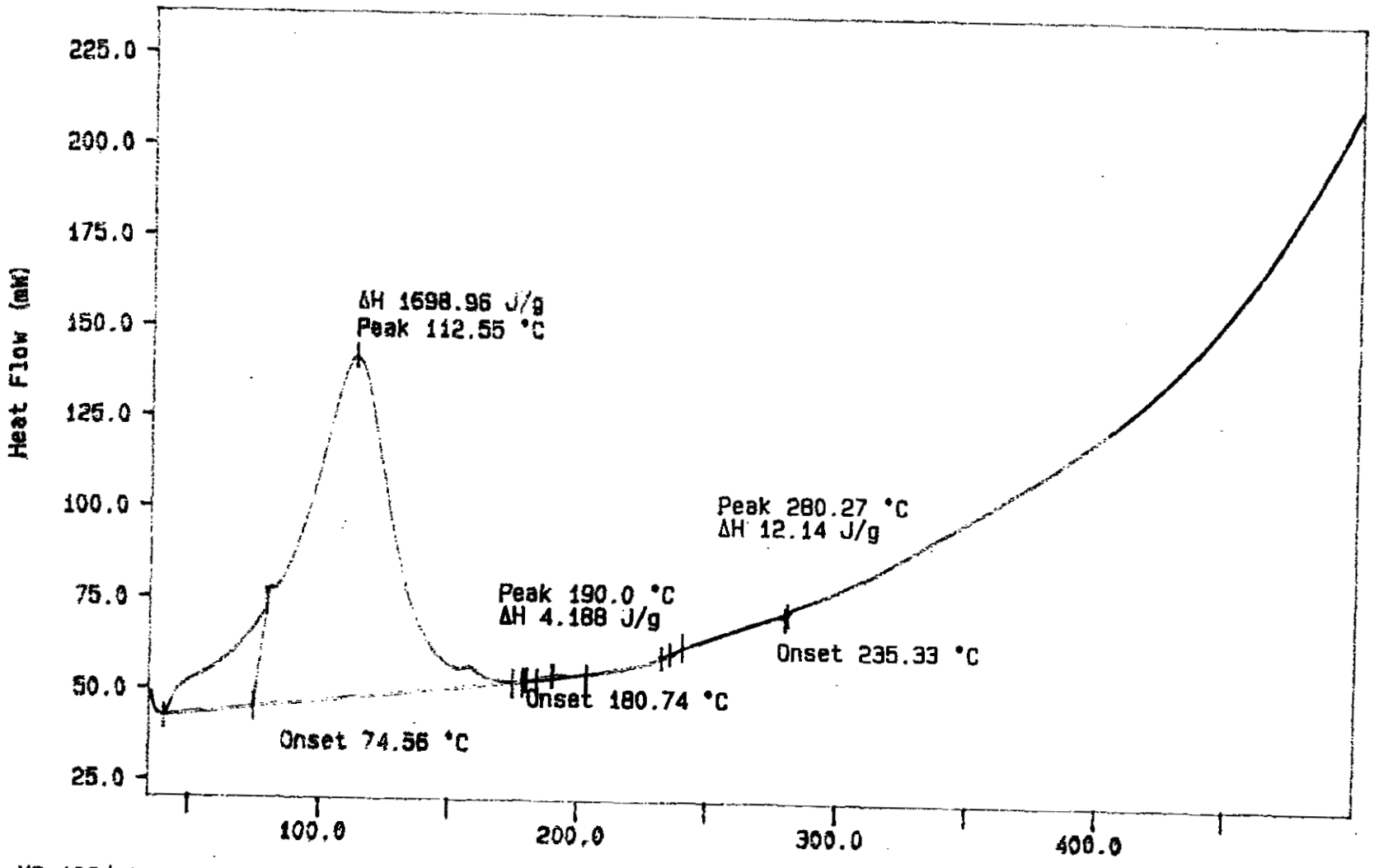
Curve 1: DSC
File info: SAM011602 Sun Jan 16 10:22:52 2000
Sample Weight: 15.410 mg
S00T000048 DUP



N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System

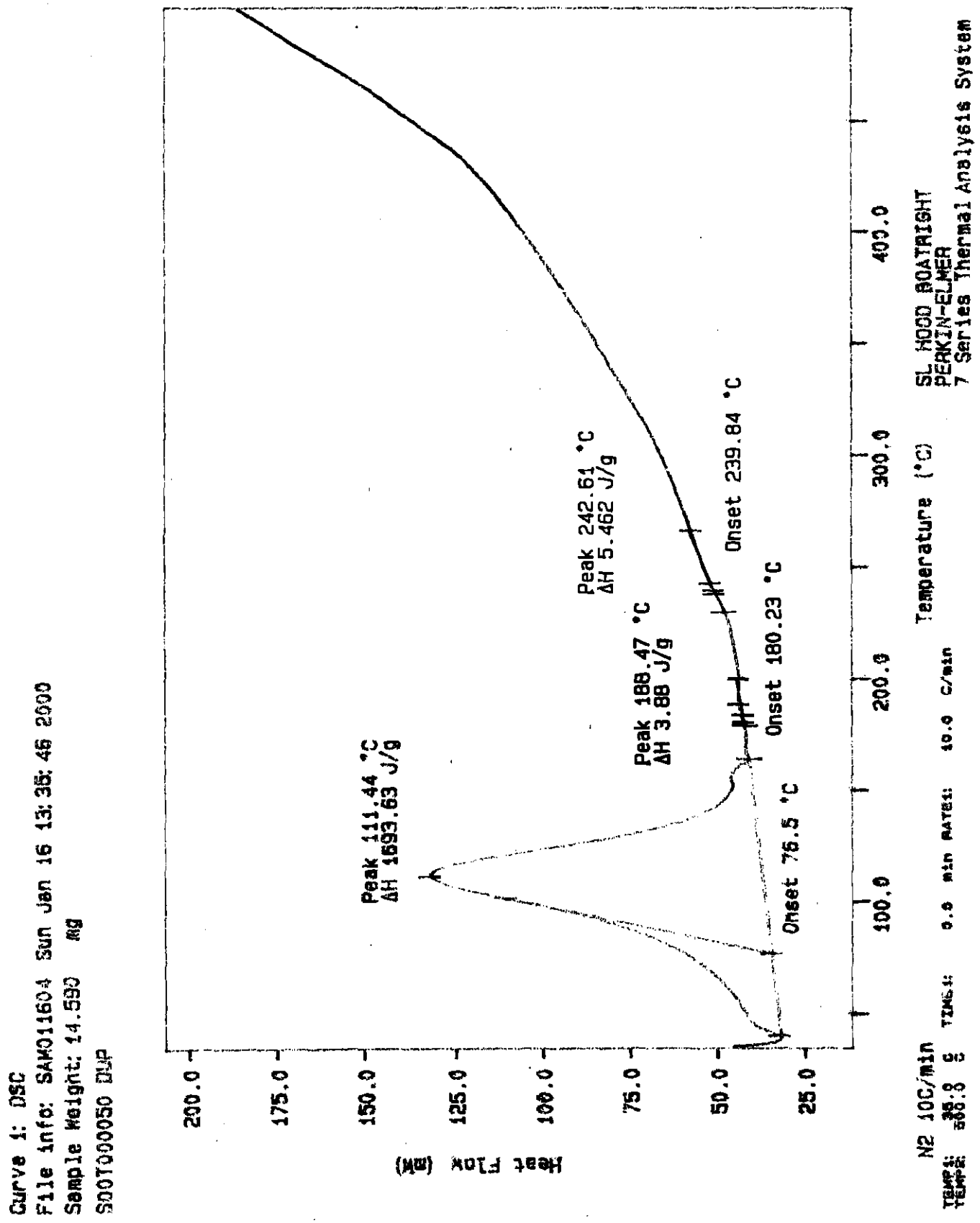
Curve 1: DSC
File info: SAM011603 Sun Jan 16 11:26:52 2000
Sample Weight: 14.480 mg
S00T000050 SAM



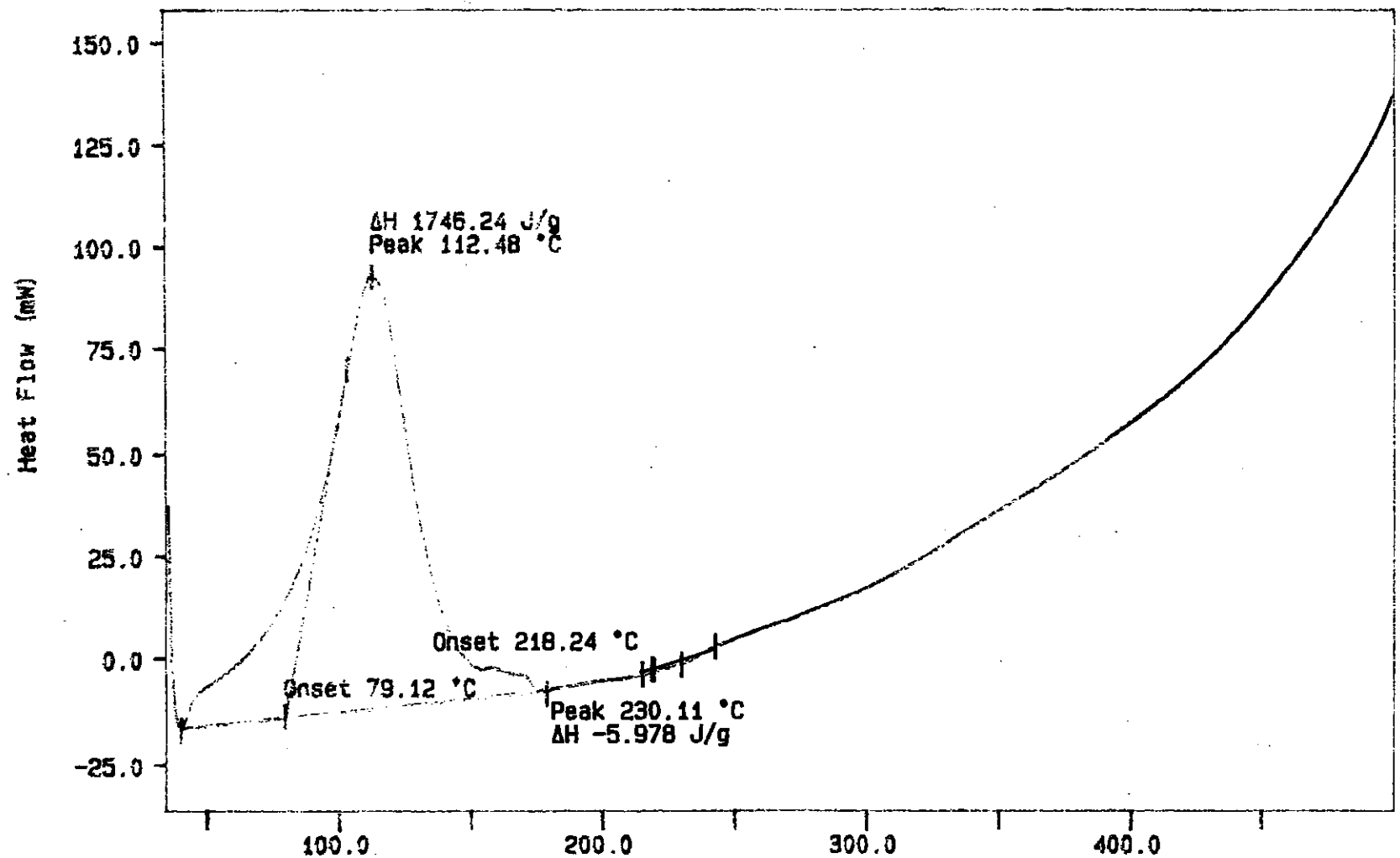
N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System

01/17/00 01:08 FAX 005


Curve 1: DSC
File info: SAMO11604 Sun Jan 16 13:35:46 2000
Sample Weight: 14.590 mg
S00T000050 DUP
Peak 111.44 °C
ΔH 1693.63 J/g
Peak 188.47 °C
ΔH 3.88 J/g
Peak 242.61 °C
ΔH 5.462 J/g
Onset 76.5 °C
Onset 180.23 °C
Onset 239.84 °C
Heat Flow (mW)
200.0
175.0
150.0
125.0
100.0
75.0
50.0
25.0
100.0
200.0
300.0
400.0
Temperature (°C)
N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C
SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System

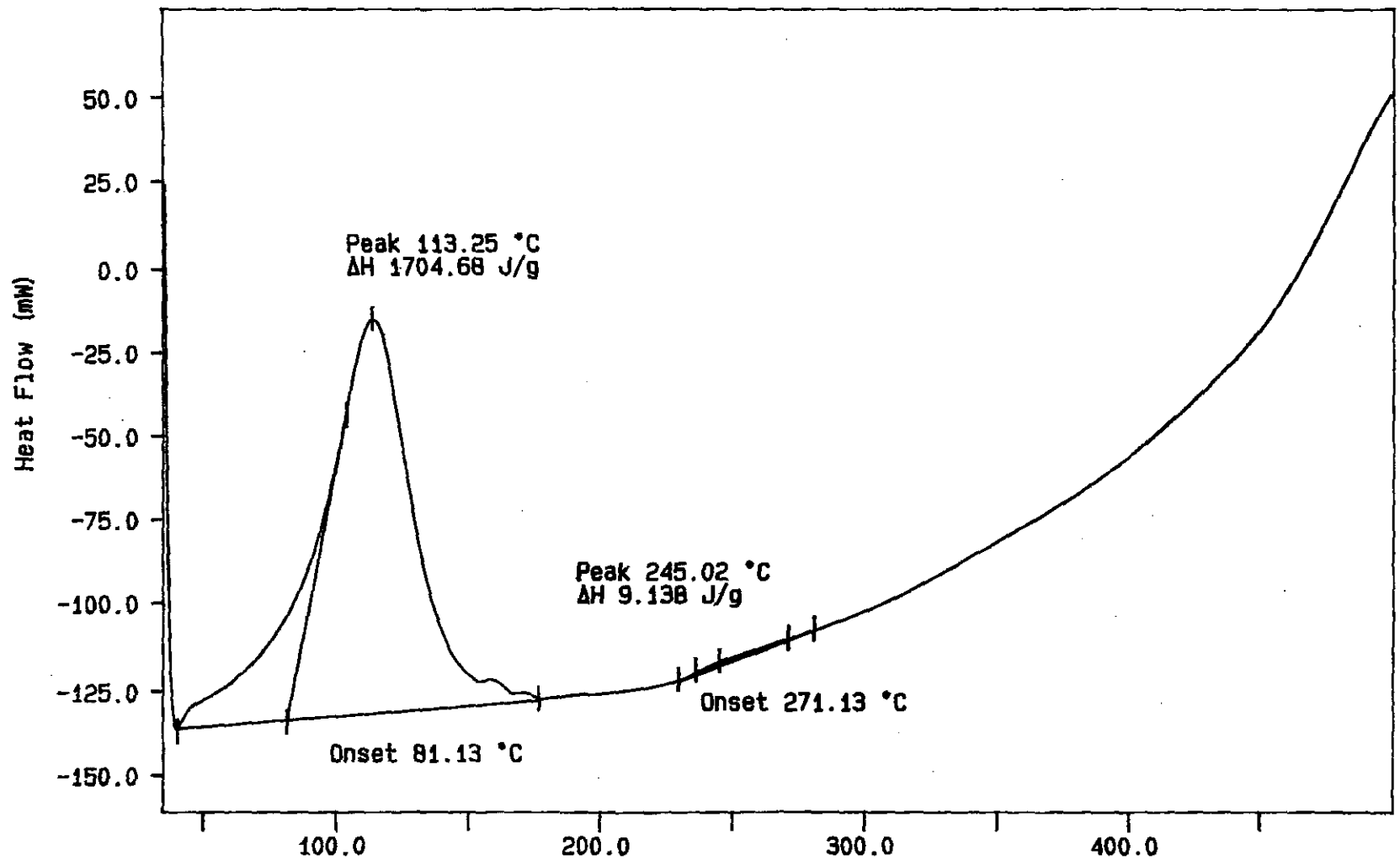
Curve 1: DSC
File info: SAM011605 Sun Jan 16 14:51:17 2000
Sample Weight: 16.010 mg
S00T000051



N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 16 15:17:41 2000

Curve 1: DSC
File info: SAM011606 Sun Jan 16 16:12:54 2000
Sample Weight: 17.460 mg
S00T000051 DUP



N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 16 16:23:32 2000

01/17/00 01:09 FAX 008

LABCORE Completed Worklist Report for Worklist# 32095

Analyst: rwk **Instrument:** DSC03 **Book#:** 12N14B

Method: LA-514-114 Rev/Mod D-4

Worklist Comment: SY-102 GRAB 5 FOR DSC-03 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	DSC-03	LIQUID	28.45	30.65	107.733	% Recovery
2	SAMPLE	S00T000052		0	DSC-03	LIQUID	N/A	0		Joules/g
3	DUP	S00T000052		0	DSC-03	LIQUID	0	0	0.000	RPD
4	SAMPLE	S00T000053		0	DSC-03	LIQUID	N/A	0		Joules/g
5	DUP	S00T000053		0	DSC-03	LIQUID	0	0	0.000	RPD

Final page for worklist# 32095

Analyst Signature Date

Mary Franz 1/17/00
Analyst Signature Date

Brian Dunk 1-18-2000
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 32095

Analyst: NK **Instrument:** DSC0 **Book #** 12114-13

Method: LA-514-114 Rev/Mod D-4

Worklist Comment: SY-102 GRAB 5 FOR DSC-03 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	LIQUID	28.45	30.65	N/A	Joules/g
20000008	SY-102 GRAB5	2	SAMPLE	S00T000052	0		DSC-03	LIQUID	N/A	0		Joules/g
20000008	SY-102 GRAB5	3	DUP	S00T000052	0		DSC-03	LIQUID		0	N/A	Joules/g
20000008	SY-102 GRAB5	4	SAMPLE	S00T000053	0		DSC-03	LIQUID	N/A	0		Joules/g
20000008	SY-102 GRAB5	5	DUP	S00T000053	0		DSC-03	LIQUID		0	N/A	Joules/g

Final page for worklist # 32095

Nat King 1/15/00
Analyst Signature **Date**

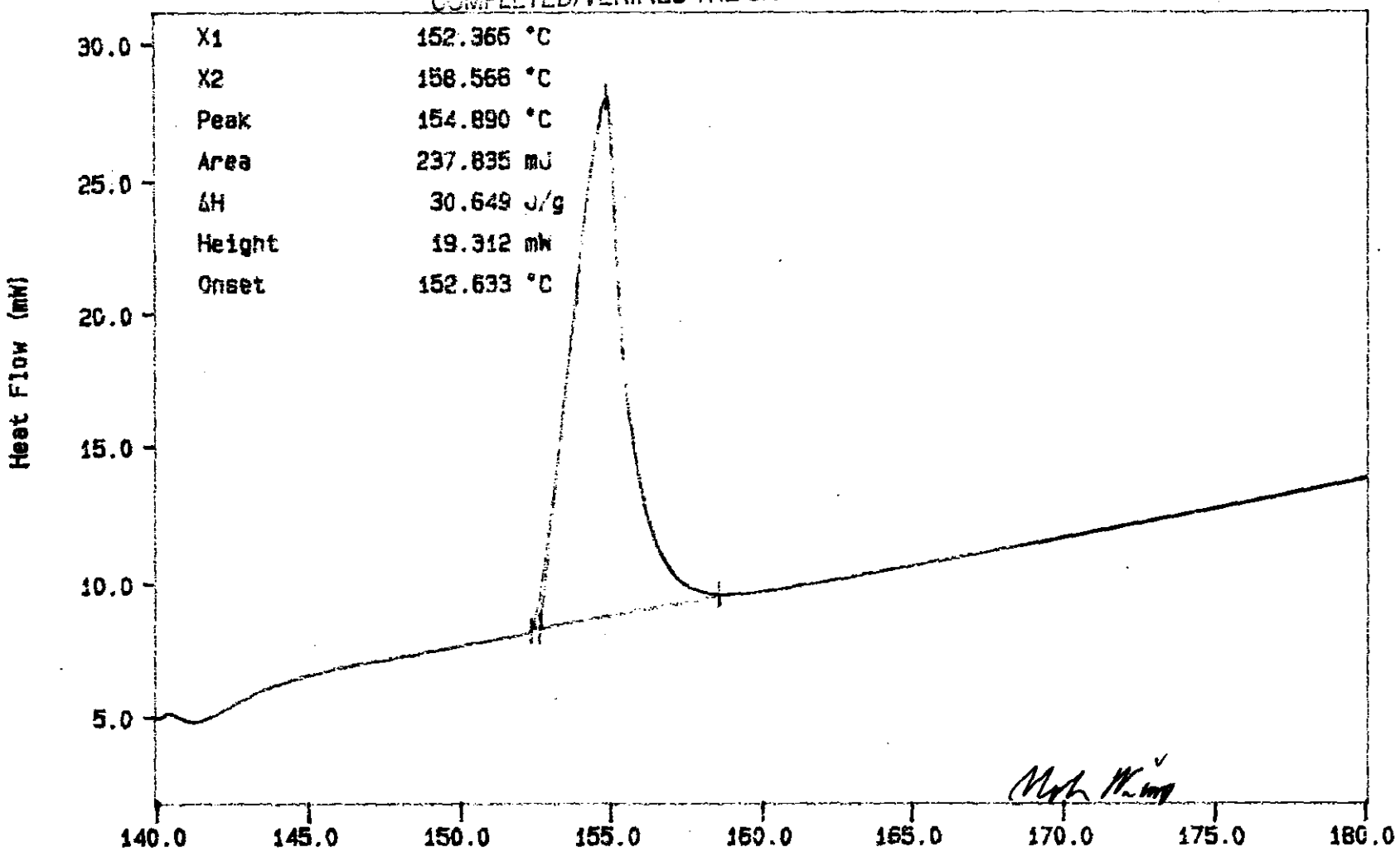
Mary Frame 1/17/00
Analyst Signature **Date**

Data Entry Comments:

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

Curve 1: DSC
File info: IND011404 Fri Jan 14 20:18:00 2000
Sample Weight: 7.760 mg
STD 12N14-B

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 66 TO 70.

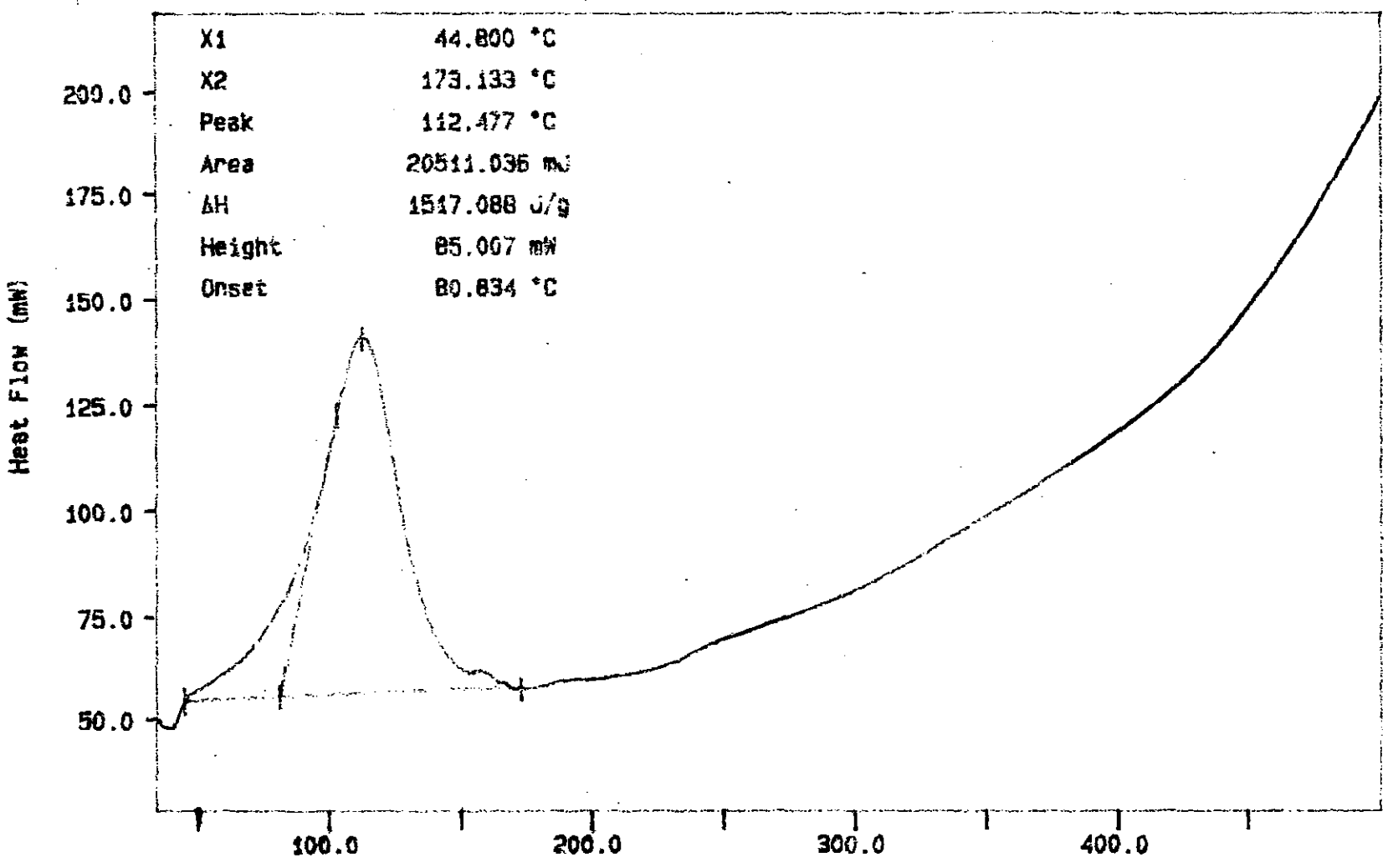


N2, EXOTHERM DOWN
TEMP1: 140.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 180.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

01/15/00 02:16 FAX 002

Curve 1: DSC
File info: SAM011403 Fri Jan 14 23:28:13 2000
Sample Weight: 13.520 mg
S00T000052

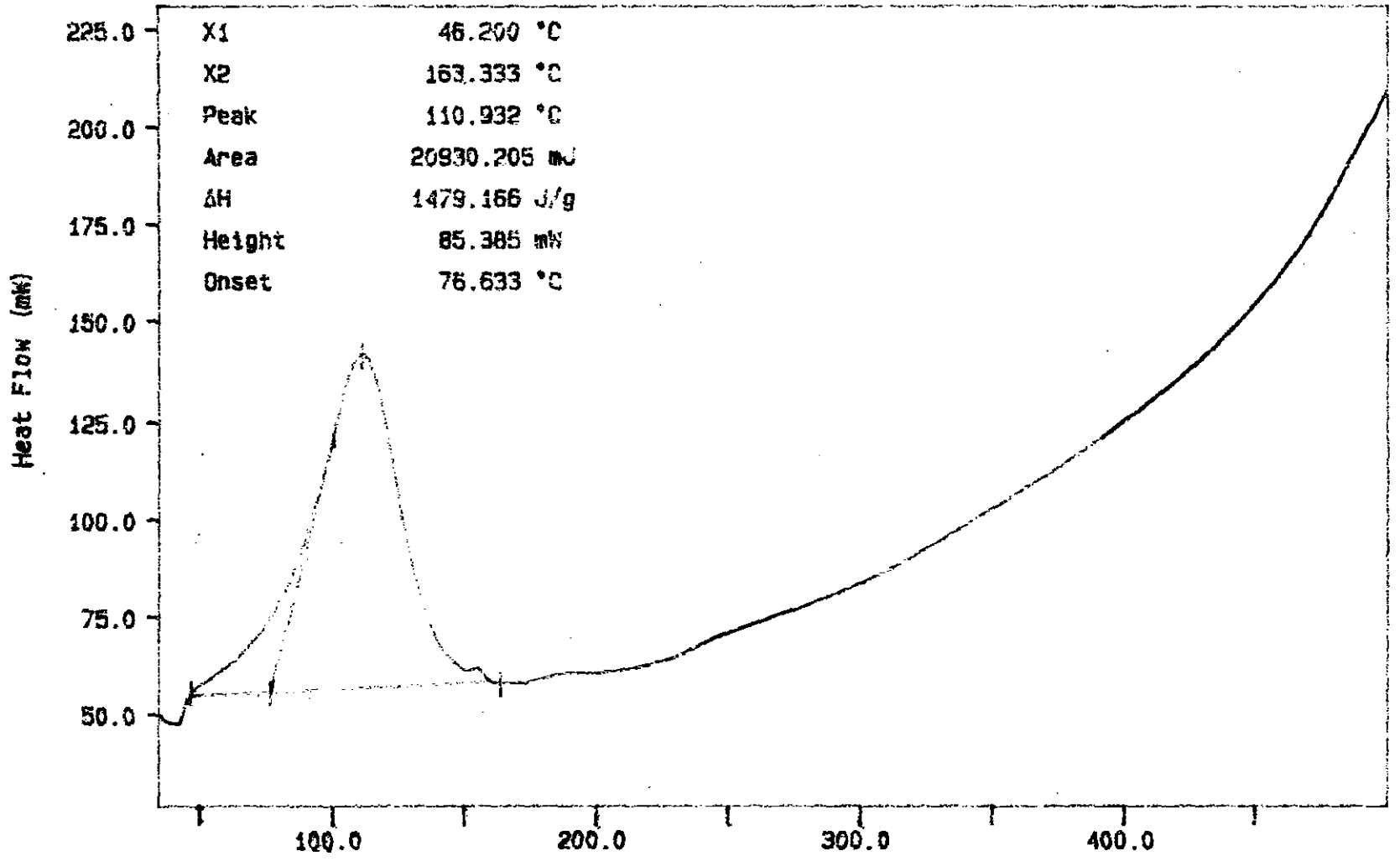


N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

67

Curve 1: DSC
File info: SAM011404 Sat Jan 15 00:25:22 2000
Sample Weight: 14.150 mg
S00T000052 DUP

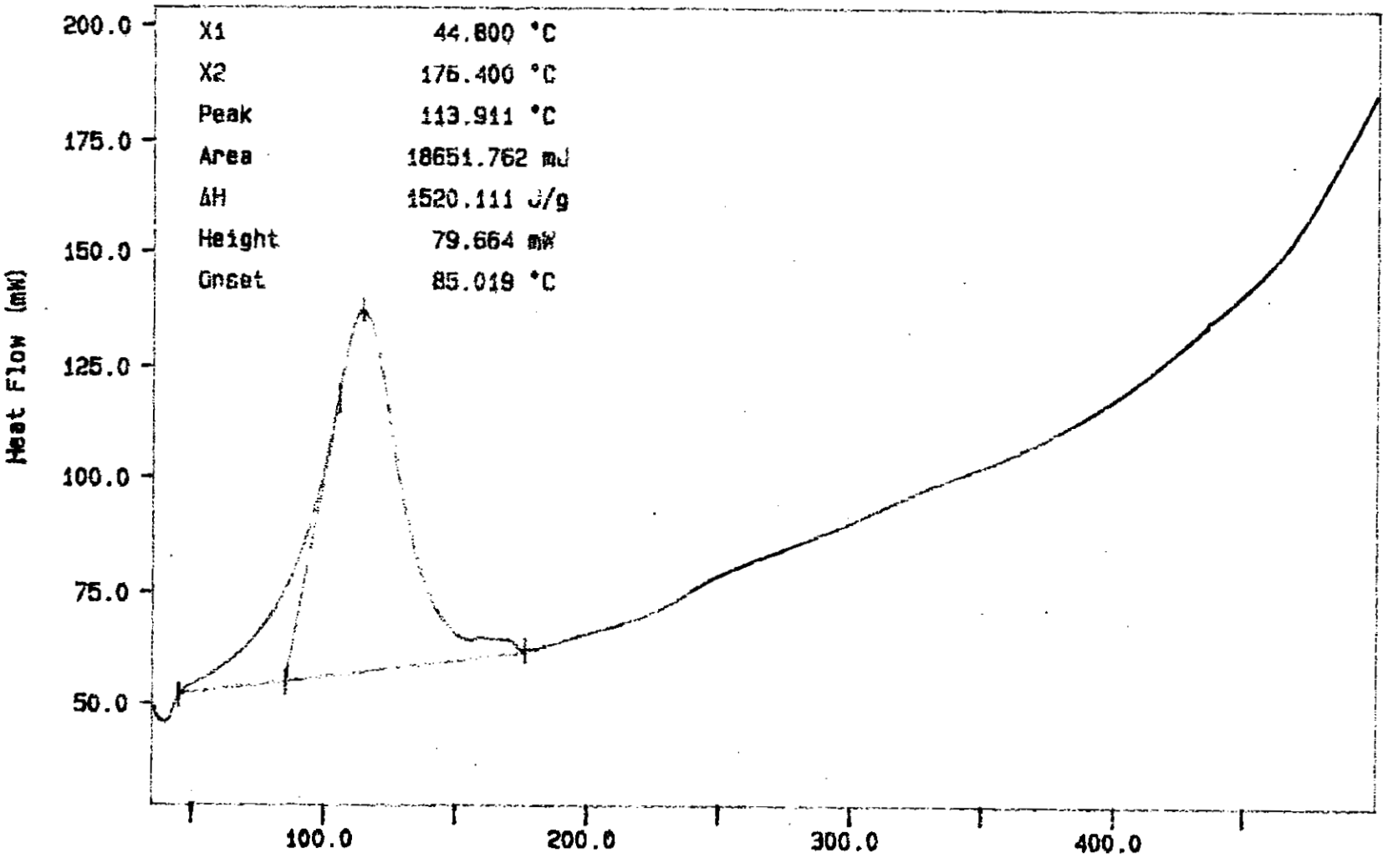


N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

01/15/00 02:16 FAX 004

Curve 1: DSC
File info: SAM011401 Fri Jan 14 21:30:40 2000
Sample Weight: 12.270 mg
S00T000053

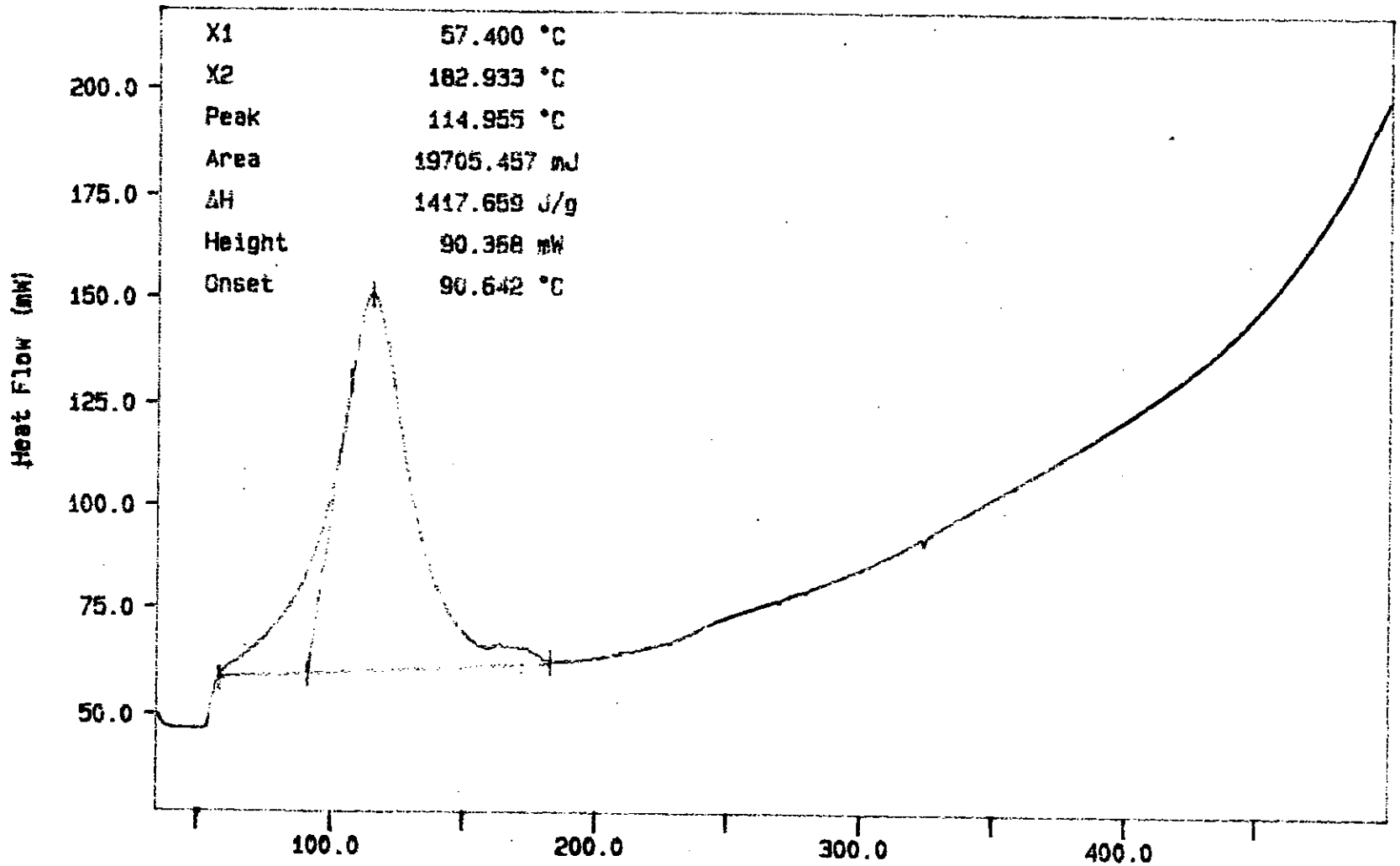


N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

01/15/00 02:16 FAX 005

Curve 1: DSC
File info: SAM011402 Fri Jan 14 22:21:16 2000
Sample Weight: 13.900 mg
S00T000053 DUIP



N2 10C/min
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

LABCORE Completed Worklist Report for Worklist# 32163

Analyst: mf **Instrument:** DSC0 **Book#:** _____

Method: LA-514-114 Rev/Mod D-4

Worklist Comment: SY-102 GRAB 5 FOR DSC-04 MF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	SAMPLE	S00T000048	0		DSC-04	LIQUID	N/A	0.000		Joules/g Dry
2	DUP	S00T000048	0		DSC-04	LIQUID	0.000	49.76	200.000	RPD
3	SAMPLE	S00T000050	0		DSC-04	LIQUID	N/A	0.000		Joules/g Dry
4	DUP	S00T000050	0		DSC-04	LIQUID	0.000	0.000	0.000	RPD
5	SAMPLE	S00T000051	0		DSC-04	LIQUID	N/A	18.19		Joules/g Dry
6	DUP	S00T000051	0		DSC-04	LIQUID	18.19	0.000	200.000	RPD
7	SAMPLE	S00T000052	0		DSC-04	LIQUID	N/A	0		Joules/g Dry
8	DUP	S00T000052	0		DSC-04	LIQUID	0	0	0.000	RPD
9	SAMPLE	S00T000053	0		DSC-04	LIQUID	N/A	0		Joules/g Dry
10	DUP	S00T000053	0		DSC-04	LIQUID	0	0	0.000	RPD

Final page for worklist# 32163

Analyst Signature Date

Analyst Signature Date

Brian Dark 1-28-00
Reviewer Signature Date

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

LABCORE Completed Worklist Report for Worklist# 32094

Analyst: slh **Instrument:** TGA03 **Book#:** 126N8A

Method: LA-514-114 Rev/Mod D-4

Worklist Comment: SY-102 GRAB 5 FOR TGA-03 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	TGA-03	LIQUID	5.95e1	58.81	98.840	% Recovery
2	SAMPLE	S00T000048		0	TGA-03	LIQUID	N/A	71.84		%
3	DUP	S00T000048		0	TGA-03	LIQUID	71.84	71.73	0.153	RPD
4	SAMPLE	S00T000050		0	TGA-03	LIQUID	N/A	67.34		%
5	DUP	S00T000050		0	TGA-03	LIQUID	67.34	67.38	0.059	RPD
6	SAMPLE	S00T000051		0	TGA-03	LIQUID	N/A	67.32		%
7	DUP	S00T000051		0	TGA-03	LIQUID	67.32	66.94	0.566	RPD

Final page for worklist# 32094

Analyst Signature Date

Mary Freny 1/17/00
Analyst Signature Date

Brian Shultz 1-18-00
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 32094

Analyst: SLH **Instrument:** TGA0 **Book #** 126N8-A

Method: LA-514-114 Rev/Mod D-4

Worklist Comment: SY-102 GRAB 5 FOR TGA-03 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	LIQUID	59.5	58.81	N/A	%
20000008	SY-102 GRAB5	2	SAMPLE	S00T000048	0		TGA-03	LIQUID	N/A	71.84		%
20000008	SY-102 GRAB5	3	DUP ~~TRIPL~~ NA	S00T000048	0		TGA-03	LIQUID		71.73	N/A	%
20000008	SY-102 GRAB5	4	SAMPLE	S00T000050	0		TGA-03	LIQUID	N/A	67.34		%
20000008	SY-102 GRAB5	5	DUP	S00T000050	0		TGA-03	LIQUID		67.38	N/A	%
20000008	SY-102 GRAB5	6	SAMPLE	S00T000051	0		TGA-03	LIQUID	N/A	67.32		%
20000008	SY-102 GRAB5	7	DUP	S00T000051	0		TGA-03	LIQUID		66.94	N/A	%

Final page for worklist # 32094

Sandra L Hood Bostright
Analyst Signature Date 1-16-2000

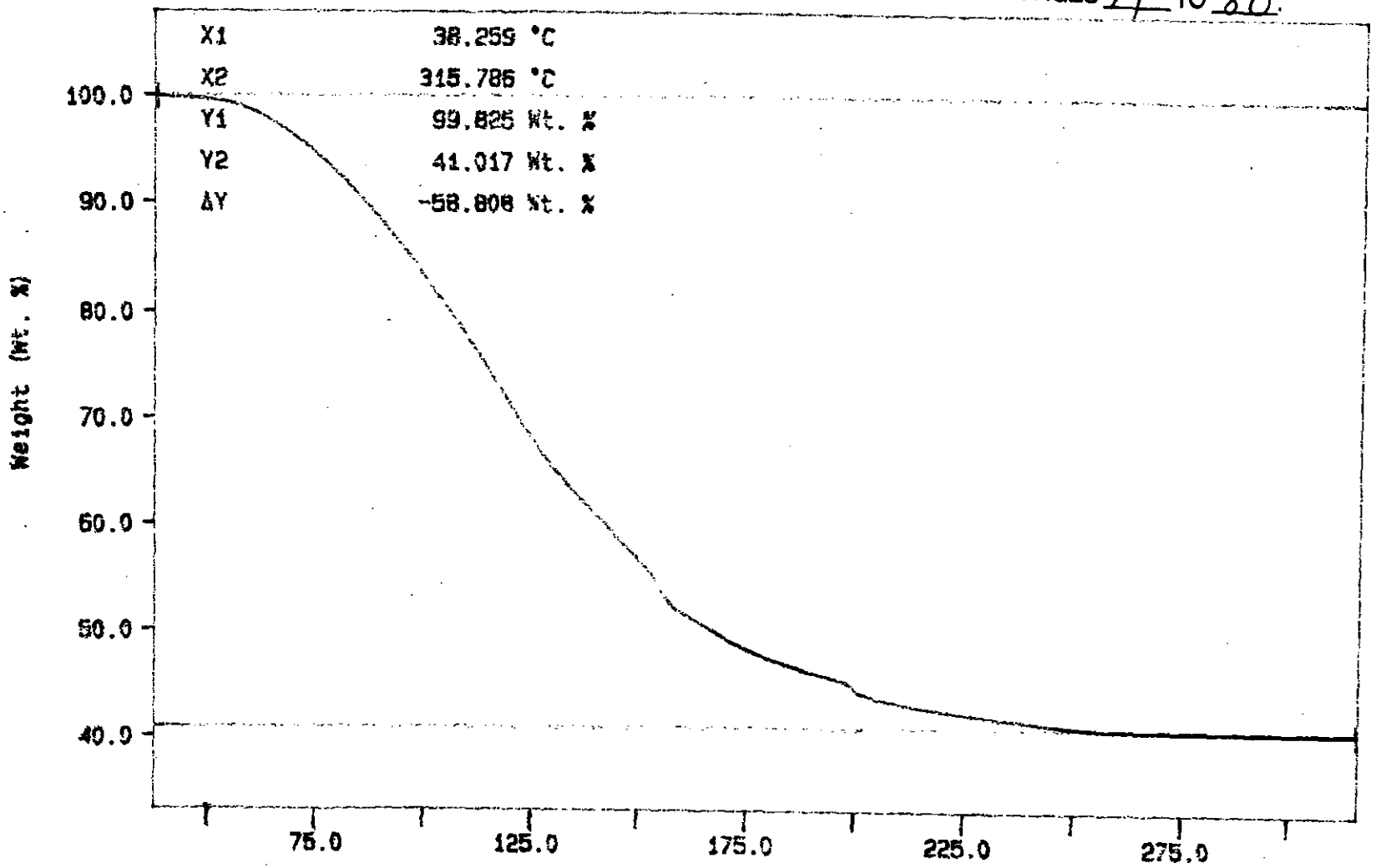
Mary Franz 1/19/00
Analyst Signature Date

Data Entry Comments:

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

Curve 1: TGA
File info: TER011601 Sun Jan 16 08:26:12 2000
Sample Weight: 17.825 mg
125NB-A

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 24 TO 80.



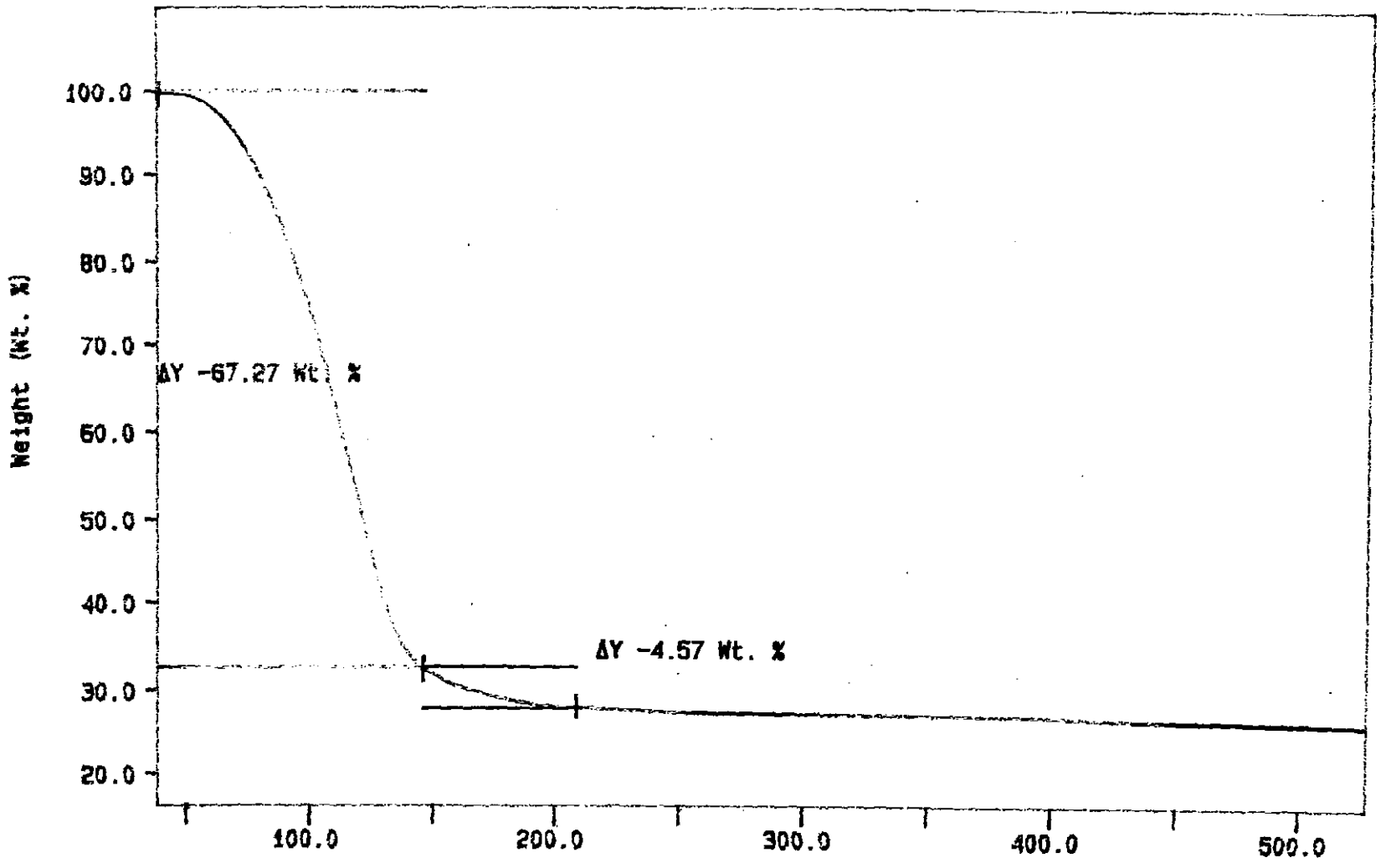
10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 300.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System

Sandra L Hood Boatright

01/17/00 01:10 FAX 002

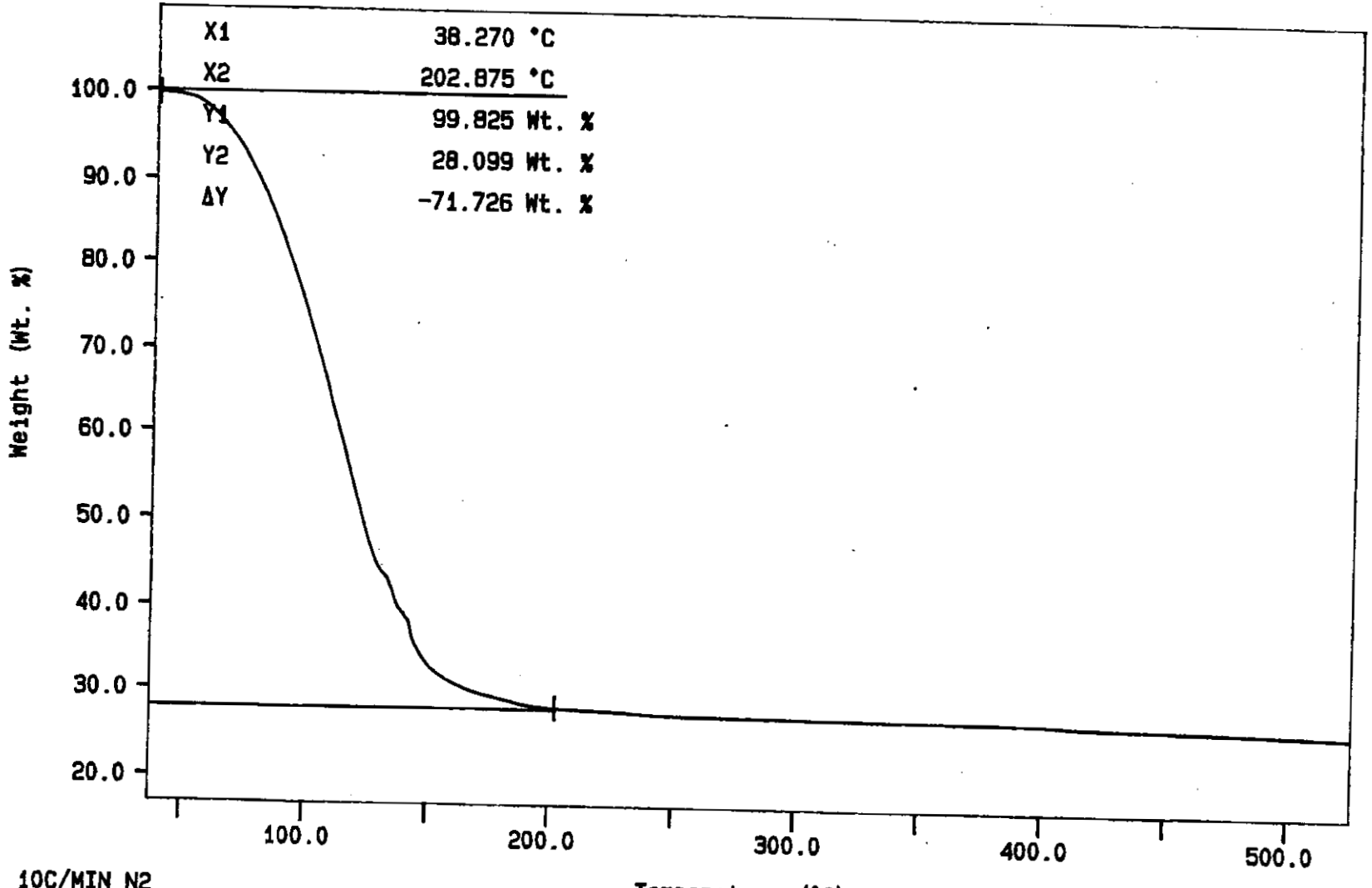
Curve 1: TGA
File info: SAM011603 Sun Jan 16 11:47:25 2000
Sample Weight: 11.162 mg
S00T000~~051~~ SAM
48 SLHB 1-16-2000



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System

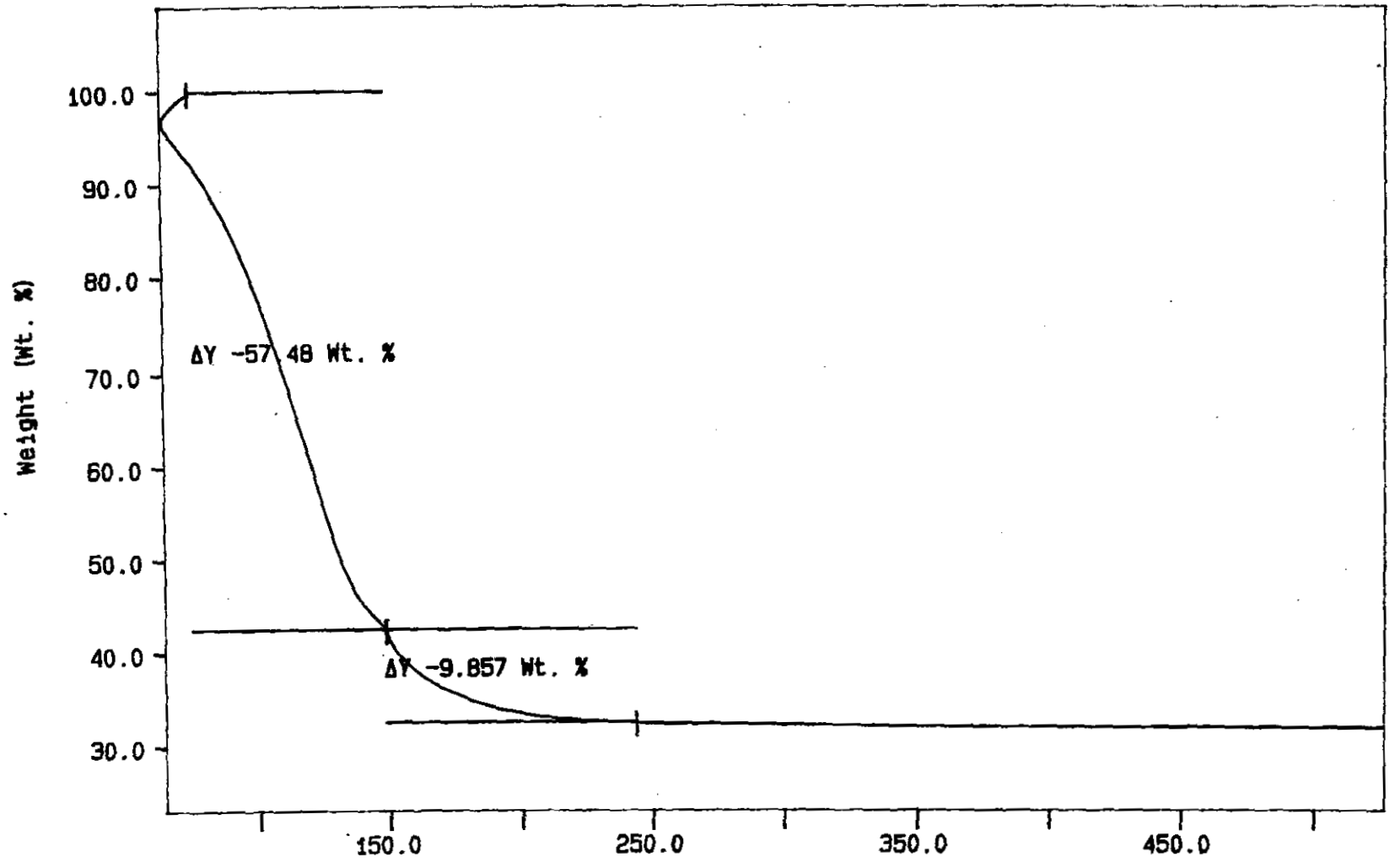
Curve 1: TGA
File info: SAM011607 Sun Jan 16 17:35:04 2000
Sample Weight: 13.022 mg
S00T000048 ~~TRP~~ DUP BS 01-17-2000



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Jan 17 00:06:11 2000

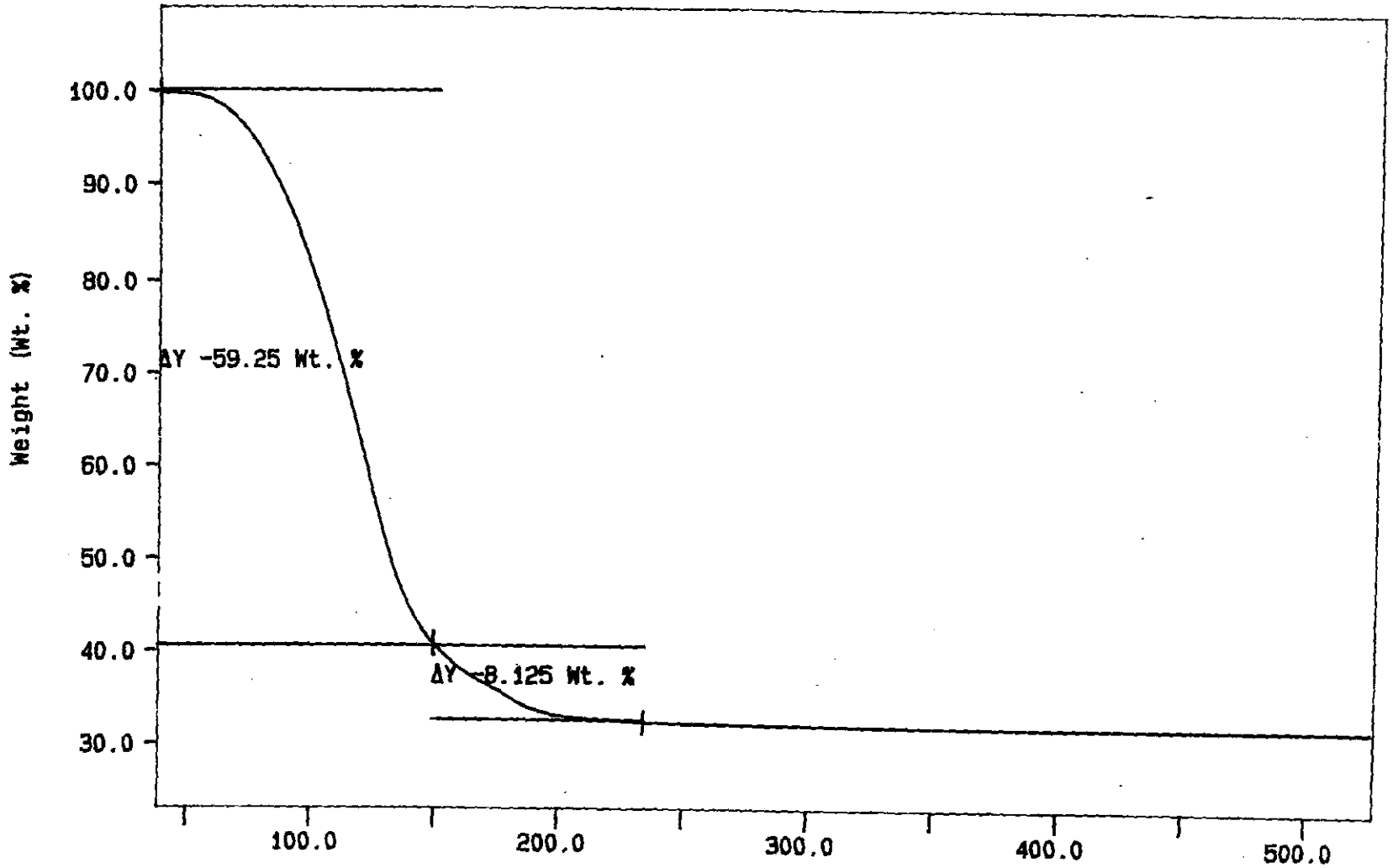
Curve 1: TGA
File info: SAM011601 Sun Jan 16 09:21:04 2000
Sample Weight: 12.687 mg
S00T000050



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 16 16:36:26 2000

Curve 1: TGA
File info: SAM011602 Sun Jan 16 10:36:08 2000
Sample Weight: 12.104 mg
S00T000050 DUP

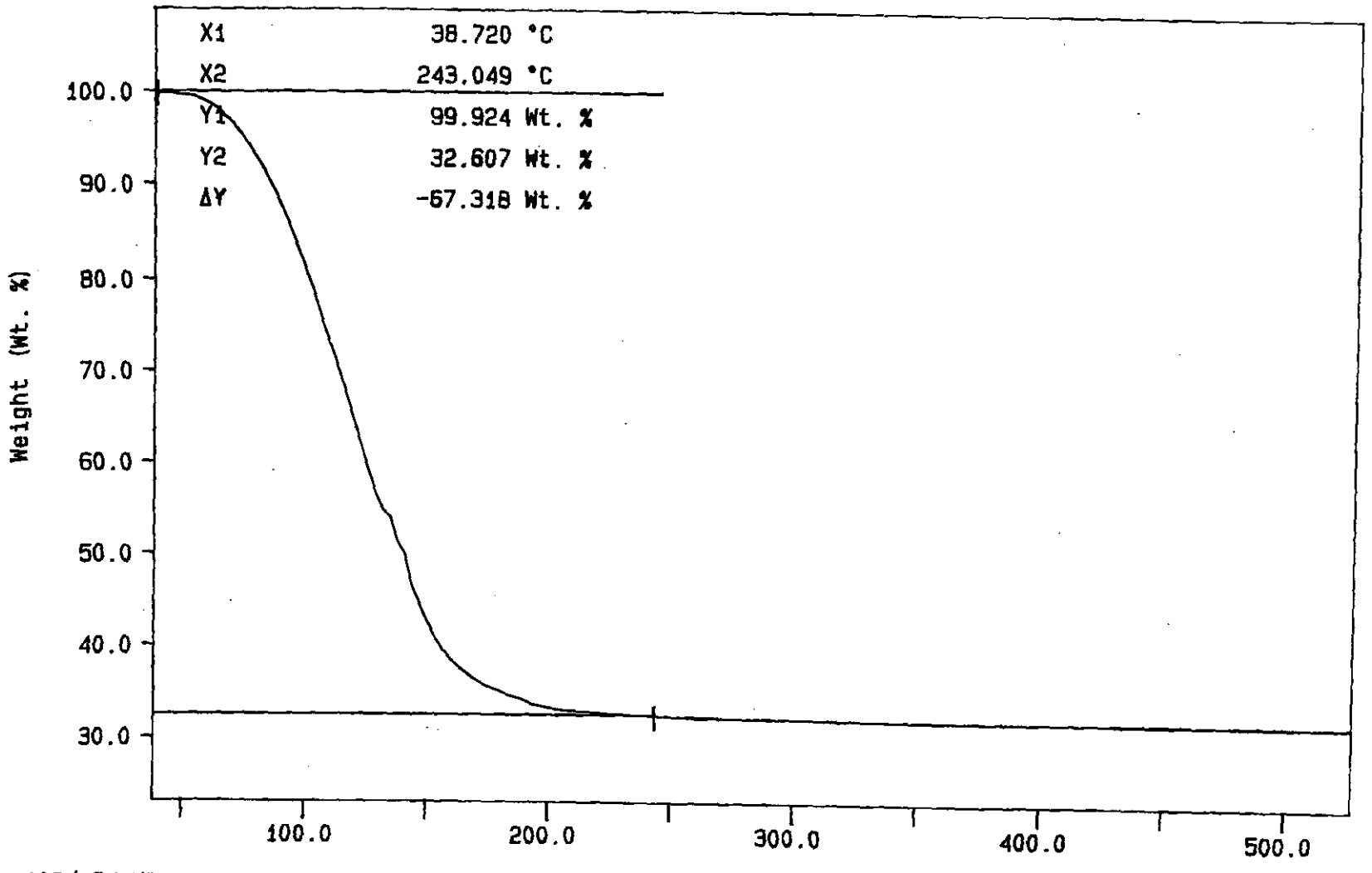


10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 16 16:39:11 2000

78

Curve 1: TGA
File info: SAM011605 Sun Jan 16 14:49:06 2000
Sample Weight: 14.547 mg
S00T000051

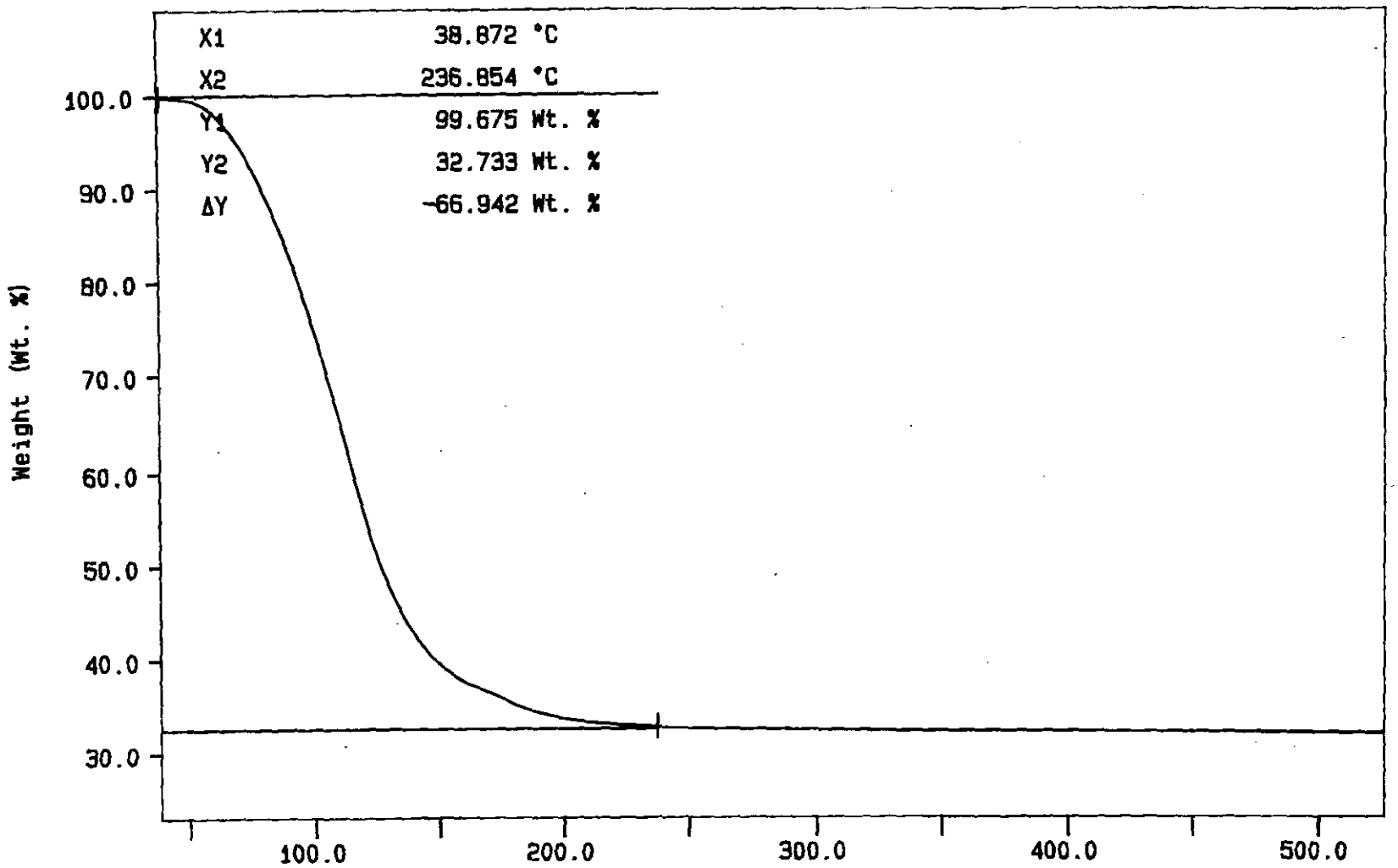


10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 16 15:28:17 2000

01/17/00 01:11 FAX 007

Curve 1: TGA
File info: SAM011606 Sun Jan 16 16:22:23 2000
Sample Weight: 12.316 mg
S00T000051 DUP



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

SL HOOD BOATRIGHT
PERKIN-ELMER
7 Series Thermal Analysis System
Sun Jan 16 16:31:47 2000

LABCORE Completed Worklist Report for Worklist# 32096

Analyst: rwk **Instrument:** TGA03 **Book#:** 126N8A

Method: LA-514-114 Rev/Mod DU

Worklist Comment: SY-102 GRAB 5 FOR TGA-03 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	TGA-03	LIQUID	5.95e1	59.2	99.496	% Recovery
2	SAMPLE	S00T000052		0	TGA-03	LIQUID	N/A	66.82		%
3	DUP	S00T000052		0	TGA-03	LIQUID	66.82	67.15	0.493	RPD
4	SAMPLE	S00T000053		0	TGA-03	LIQUID	N/A	66.46		%
5	DUP	S00T000053		0	TGA-03	LIQUID	66.46	66.49	0.045	RPD

Final page for worklist# 32096

Analyst Signature Date

Mary Franz 1/19/00
Analyst Signature Date

Brian Stark 1-18-00
Reviewer Signature Date

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

HNF-1698 REV. 0

worklistrpt Version 2.1 05/15/95
01/11/00 14:39

LABCORE Data Entry Template for Worklist# 32096

Analyst: NK **Instrument:** TGA0 _____ **Book #** 12678-A

Method: LA-514-114 Rev/Mod D-4

Worklist Comment: SY-102 GRAB 5 FOR TGA-03 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-03	LIQUID	59.5	59.2	N/A	%
20000008	SY-102 GRAB5	2	SAMPLE	S00T000052	0		TGA-03	LIQUID	N/A	66.82		%
20000008	SY-102 GRAB5	3	DUP	S00T000052	0		TGA-03	LIQUID		67.15	N/A	%
20000008	SY-102 GRAB5	4	SAMPLE	S00T000053	0		TGA-03	LIQUID	N/A	66.46		%
20000008	SY-102 GRAB5	5	DUP	S00T000053	0		TGA-03	LIQUID		66.49	N/A	%

Final page for worklist # 32096

Nk Nim 1/15/00
Analyst Signature **Date**

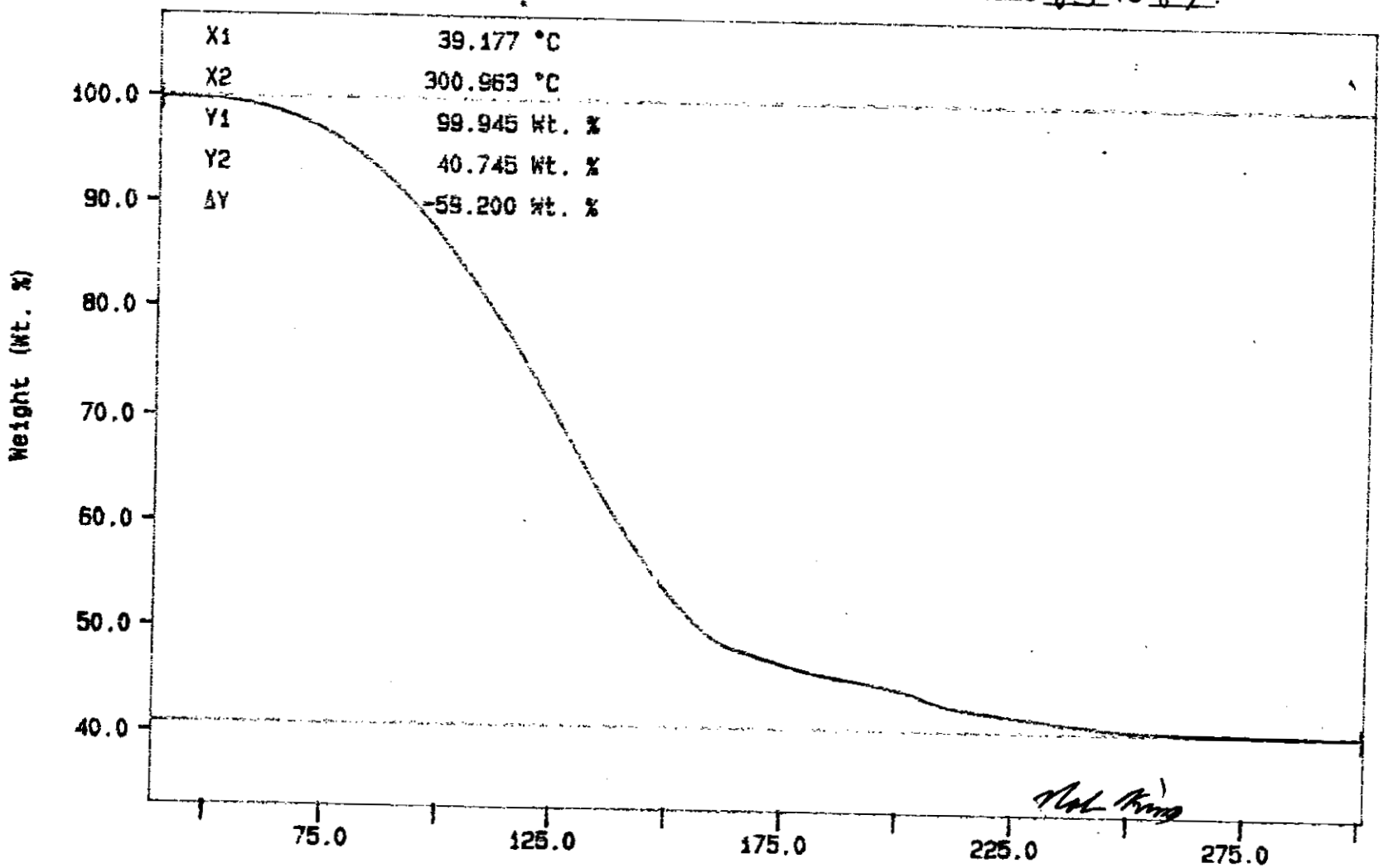
Mary Jones 1/17/00
Analyst Signature **Date**

Data Entry Comments:

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

Curve 1: TGA
File info: TER011401 Fri Jan 14 20:02:42 2000
Sample Weight: 15.351 mg
126NB-A

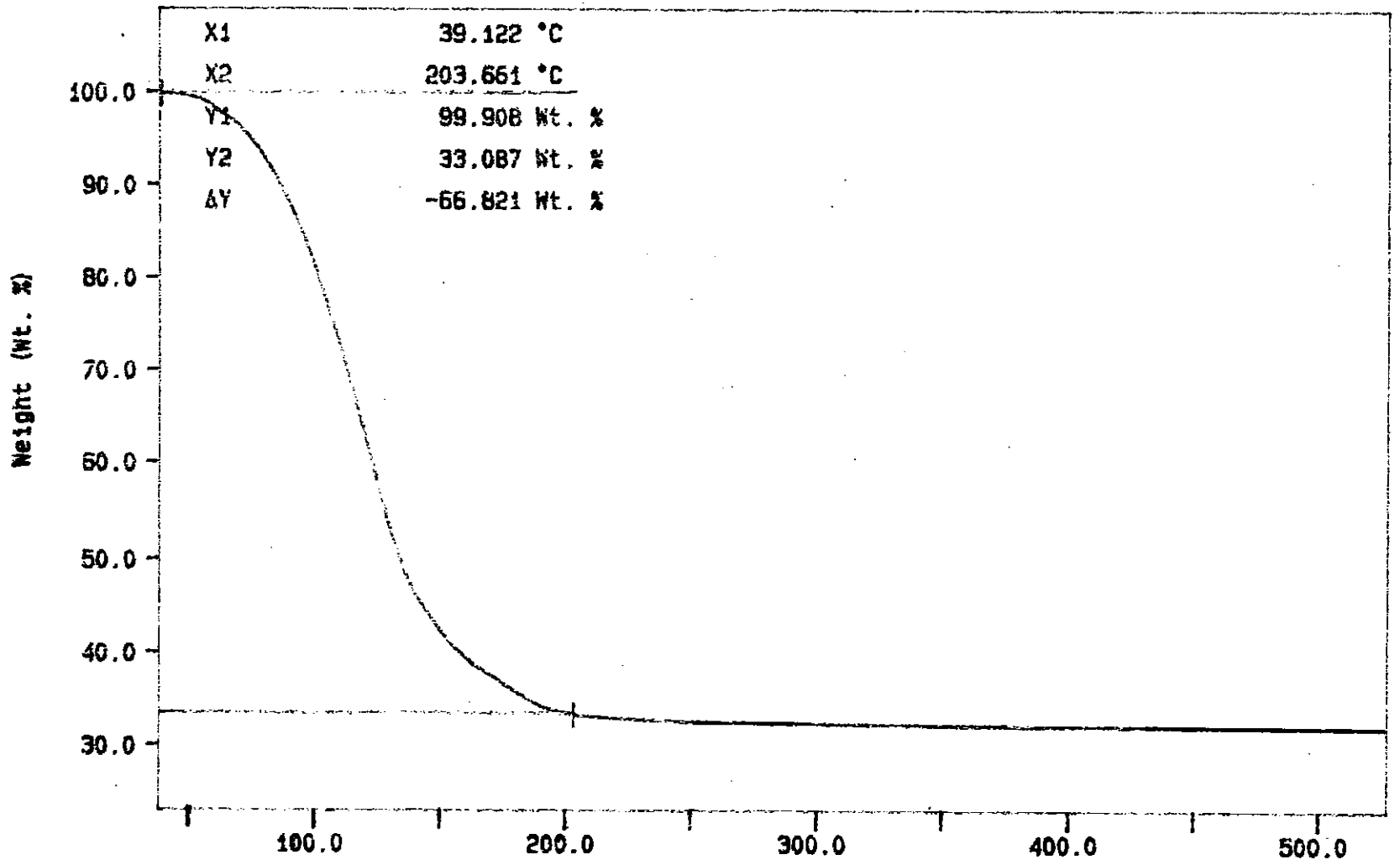
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 83 TO 87.



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

rw king
PERKIN-ELMER
7 Series Thermal Analysis System

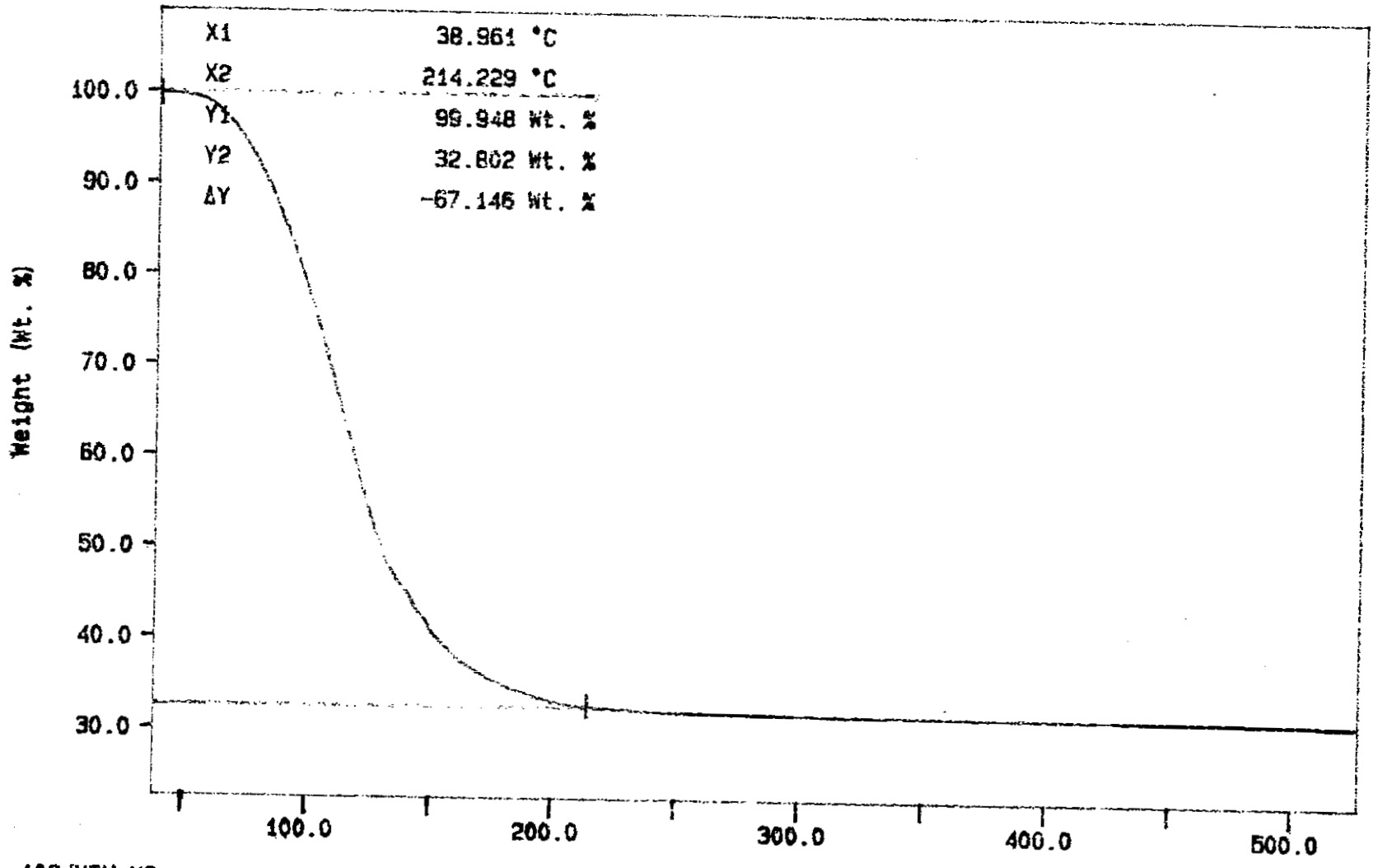
Curve 1: TGA
File info: SAM011401 Fri Jan 14 21:26:09 2000
Sample Weight: 12.966 mg
S00T000052



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

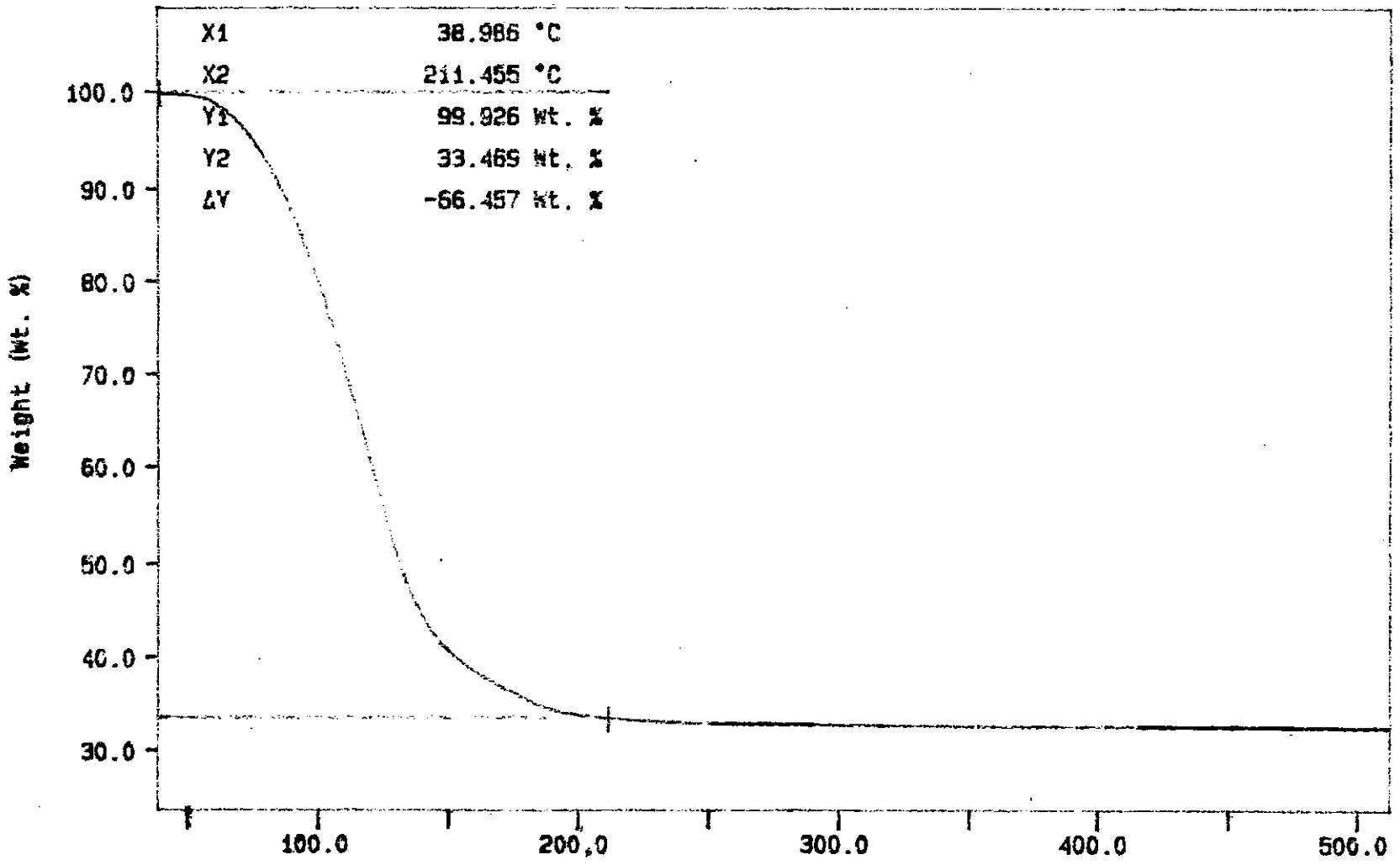
Curve 1: TGA
File info: SAM011402 Fri Jan 14 22:30:09 2000
Sample Weight: 11.734 mg
S00T000052 DUP



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

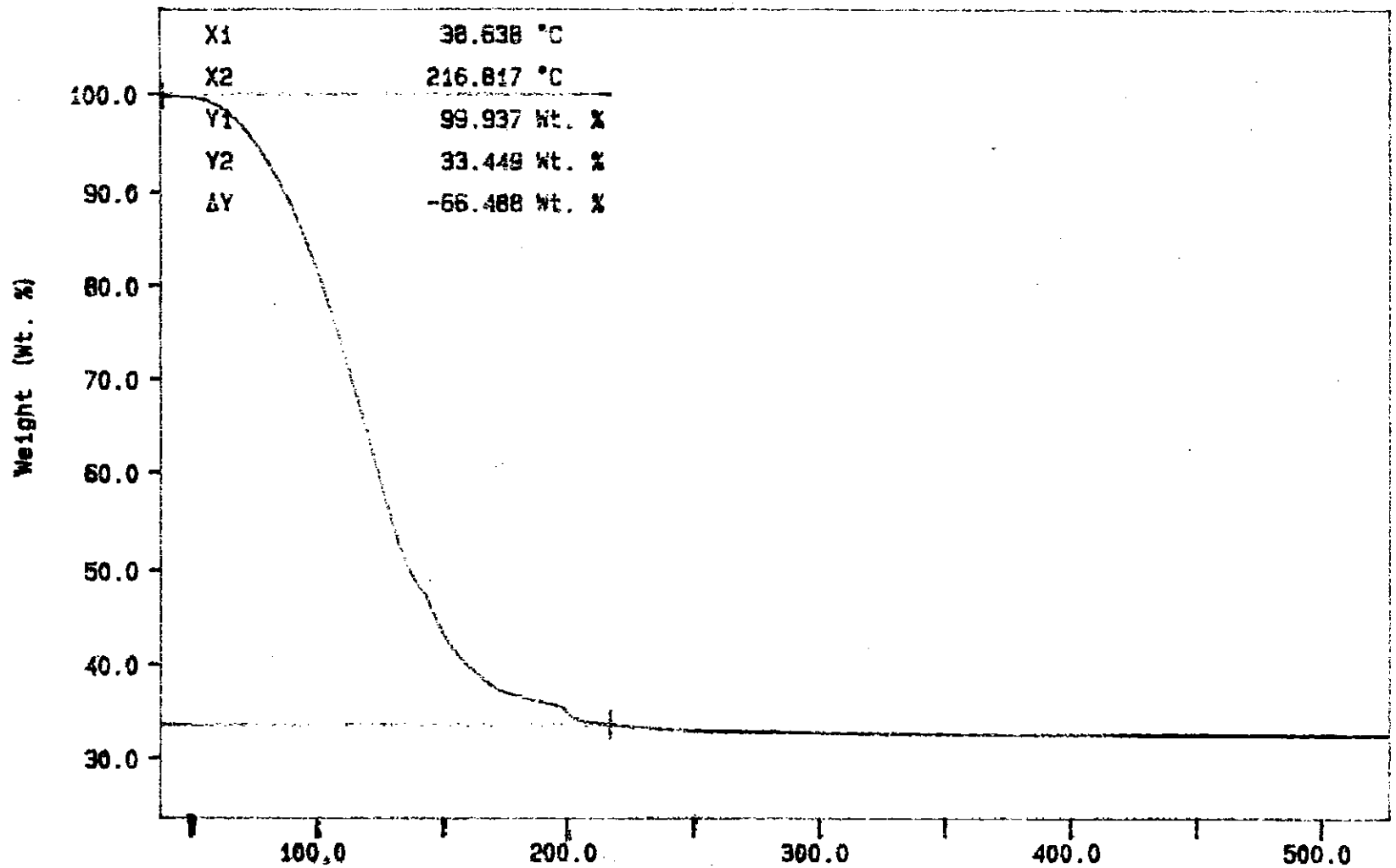
Curve 1: TGA
File info: SAM011403 Fri Jan 14 23:33:19 2000
Sample Weight: 11.782 mg
900T000053



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

Curve 1: TGA
File info: SAM011404 Sat Jan 15 00:40:00 2000
Sample Weight: 13.962 mg
S00T000053 DUP



10C/MIN N2
TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 500.0 C

RW KING
PERKIN-ELMER
7 Series Thermal Analysis System

LABCORE Completed Worklist Report for Worklist# 32100

Analyst: rwk **Instrument:** BA001 **Book#:** 134N16C

Method: LA-510-112 Rev/Mod EZ

Worklist Comment: SY-102 GRAB 5 FOR SPG-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	SPG-01	LIQUID	1.3779	1.366	99.136	% Recovery
2	SAMPLE	S00T000048		0	SPG-01	LIQUID	N/A	1.226	1.00e-003	Sp.G.
3	DUP	S00T000048		0	SPG-01	LIQUID	1.226	1.237	0.893	RPD
4	SAMPLE	S00T000050		0	SPG-01	LIQUID	N/A	1.271	1.00e-003	Sp.G.
5	DUP	S00T000050		0	SPG-01	LIQUID	1.271	1.281	0.784	RPD
6	SAMPLE	S00T000051		0	SPG-01	LIQUID	N/A	1.264	1.00e-003	Sp.G.
7	DUP	S00T000051		0	SPG-01	LIQUID	1.264	1.276	0.945	RPD
8	SAMPLE	S00T000052		0	SPG-01	LIQUID	N/A	1.269	1.00e-003	Sp.G.
9	DUP	S00T000052		0	SPG-01	LIQUID	1.269	1.273	0.315	RPD
10	SAMPLE	S00T000053		0	SPG-01	LIQUID	N/A	1.273	1.00e-003	Sp.G.
11	DUP	S00T000053		0	SPG-01	LIQUID	1.273	1.283	0.782	RPD

Final page for worklist# 32100

Analyst Signature Date

Mary Franz 1/18/00
Analyst Signature Date

Brian Shultz 1-18-00
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 32100

Analyst: RK **Instrument:** BA001 **Book #** 134/116-2

Method: LA-510-112 Rev/Mod E-2

Worklist Comment: SY-102 GRAB 5 FOR SPG-01 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				SPG-01	LIQUID	1.3779	1.366	N/A	Sp.G.
20000008	SY-102 GRAB5	2	SAMPLE	S00T000048	0		SPG-01	LIQUID	N/A	1.226		Sp.G.
20000008	SY-102 GRAB5	3	DUP	S00T000048	0		SPG-01	LIQUID		1.237	N/A	Sp.G.
20000008	SY-102 GRAB5	4	SAMPLE	S00T000050	0		SPG-01	LIQUID	N/A	1.271		Sp.G.
20000008	SY-102 GRAB5	5	DUP	S00T000050	0		SPG-01	LIQUID		1.281	N/A	Sp.G.
20000008	SY-102 GRAB5	6	SAMPLE	S00T000051	0		SPG-01	LIQUID	N/A	1.264		Sp.G.
20000008	SY-102 GRAB5	7	DUP	S00T000051	0		SPG-01	LIQUID		1.276	N/A	Sp.G.
20000008	SY-102 GRAB5	8	SAMPLE	S00T000052	0		SPG-01	LIQUID	N/A	1.269		Sp.G.
20000008	SY-102 GRAB5	9	DUP	S00T000052	0		SPG-01	LIQUID		1.273	N/A	Sp.G.
20000008	SY-102 GRAB5	10	SAMPLE	S00T000053	0		SPG-01	LIQUID	N/A	1.273		Sp.G.
20000008	SY-102 GRAB5	11	DUP	S00T000053	0		SPG-01	LIQUID		1.283	N/A	Sp.G.

Final page for worklist # 32100

Analyst Signature 1/15/00 Date

Analyst Signature 1/18/00 Date

Data Entry Comments:

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

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

Type		STD	REPLICATE
STD	Gross Weight (W2)	1.4970	1.4974
Work List	Tare Weight (W1)	1.3605	1.3608
32100	Weight of Solution (W2-W1)	0.1365	0.1366
Test Code	Volume of Solution µL	100.0000	100.0000
SPG-01	Specific Gravity	1.3650	1.3660
Matrix	Specific Gravity (Average)	1.3655	
LIQUID			
Sample #			
STD			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity Average =	1.366	
02:14 AM			

Data Entry by:		Date:	01/17/2000
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.4801	
Worklist	Tare Weight (W1)	1.3575	
32100	Weight of Solution (W2-W1)	0.1226	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2260	NA
Matrix			
LIQUID			
Sample #			
S00T000048			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.226	
02:14 AM			

Data Entry by:		Date:	01/17/2000
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

		DUP	REPLICATE
Type			
DUP	Gross Weight (W2)	1.4518	
Work List	Tare Weight (W1)	1.3281	
32100	Weight of Solution (W2-W1)	0.1237	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2370	NA
Matrix			
LIQUID			
Sample #			
S00T000048			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.237	
02:14 AM			

Data Entry by:	NA	Date:	01/17/2000
Approved by:		Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.5116	
	Tare Weight (W1)	1.3845	
32100	Weight of Solution (W2-W1)	0.1271	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2710	NA
Matrix			
LIQUID			
Sample #			
S00T000050			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) • 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.271	
02:14 AM			

Data Entry by:		Date:	01/17/2000
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

		DUP	REPLICATE
Type			
DUP	Gross Weight (W2)	1.4404	
Work List	Tare Weight (W1)	1.3123	
32100	Weight of Solution (W2-W1)	0.1281	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2810	NA
Matrix			
LIQUID			
Sample #			
S00T000050			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.281	
02:14 AM			

Data Entry by:		Date:	01/17/2000
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.4589	
Work List	Tare Weight (W1)	1.3325	
32100	Weight of Solution (W2-W1)	0.1264	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2640	NA
Matrix			
LIQUID			
Sample #			
S00T000051			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.264	
02:14 AM			

Data Entry by:		Date:	01/17/2000
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

Type		DUP	REPLICATE
DUP	Gross Weight (W2)	1.5099	
Work List	Tare Weight (W1)	1.3823	
32100	Weight of Solution (W2-W1)	0.1276	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2760	NA
Matrix			
LIQUID			
Sample #			
S00T000051			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) • 1000 µL/mL] / [Vol. of Solution µL • 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.276	
02:14 AM			

Data Entry by:		Date:	01/17/2000
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	1.5692	
Work List	Tare Weight (W1)	1.4423	
32100	Weight of Solution (W2-W1)	0.1269	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2690	NA
Matrix			
LIQUID			
Sample #			
S00T000052			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.269	
02:14 AM			

Data Entry by:		Date:	01/17/2000
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

		DUP	REPLICATE
Sample Type			
DUP	Gross Weight (W2)	1.4919	
Work List	Tare Weight (W1)	1.3646	
32100	Weight of Solution (W2-W1)	0.1273	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2730	NA
Matrix			
LIQUID			
Lab Sample #			
S00T000052			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.273	
02:14 AM			

Data Entry by:		Date:	01/17/2000
Approved by:	NA	Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

		SAMPLE	REPLICATE
Type			
SAMPLE	Gross Weight (W2)	1.4932	
Work List	Tare Weight (W1)	1.3659	
32100	Weight of Solution (W2-W1)	0.1273	0
Test Code	Volume of Solution µL	100.0000	
SPG-01	Specific Gravity	1.2730	NA
Matrix			
LIQUID			
Sample #			
S00T000053			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
BA001	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
RWK	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
01/15/2000	v RESULT v		
Time	Specific Gravity =	1.273	
02:14 AM			

Data Entry by:	NA	Date:	01/17/2000
Approved by:		Date:	

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

SPECIFIC GRAVITY : LA-510-112 (E-2)

		DUP	REPLICATE
Gross Weight (W2)		1.4690	
Tare Weight (W1)		1.3407	
Weight of Solution (W2-W1)		0.1283	0
Volume of Solution µL		100.0000	
Specific Gravity		1.2830	NA

Sample Type	DUP
Work List	32100
Test Code	SPG-01
Matrix	LIQUID
Sample #	S00T000053
Instrument Code	BA001
Analyst	RWK
Date	01/15/2000
Time	02:14 AM

Gross Weight (W2) = Wt. of vial + cap + cotton + solution
Tare Weight (W1) = Wt. of vial + cap + cotton

Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]

v RESULT v

Specific Gravity = 1.283

Data Entry by:	NA	Date:	01/17/2000
Approved by:		Date:	

Form 510112L1 Rev. 1.1

worklistrpt Version 2.1 05/15/95
01/11/00 14:42

LABCORE Data Entry Template for Worklist# 32101

Analyst: NK **Instrument:** PH01 **Book #** 18719-I

Method: LA-212-106 Rev/Mod C-6

Worklist Comment: SY-102 GRAB 5 FOR PH-01 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STDPH				PH-01	LIQUID	8.00	7.99	N/A	pH
20000008	SY-102 GRAB5	2	SAMPLE	S00T000048	0		PH-01	LIQUID	N/A	13.29		pH
20000008	SY-102 GRAB5	3	DUP	S00T000048	0		PH-01	LIQUID		13.31	N/A	pH
20000008	SY-102 GRAB5	4	SAMPLE	S00T000050	0		PH-01	LIQUID	N/A	13.47		pH
20000008	SY-102 GRAB5	5	DUP	S00T000050	0		PH-01	LIQUID		13.49	N/A	pH
20000008	SY-102 GRAB5	6	SAMPLE	S00T000051	0		PH-01	LIQUID	N/A	13.38		pH
20000008	SY-102 GRAB5	7	DUP	S00T000051	0		PH-01	LIQUID		13.42	N/A	pH
20000008	SY-102 GRAB5	8	SAMPLE	S00T000052	0		PH-01	LIQUID	N/A	13.38		pH
20000008	SY-102 GRAB5	9	DUP	S00T000052	0		PH-01	LIQUID		13.41	N/A	pH
20000008	SY-102 GRAB5	10	SAMPLE	S00T000053	0		PH-01	LIQUID	N/A	13.45		pH
20000008	SY-102 GRAB5	11	DUP	S00T000053	0		PH-01	LIQUID		13.46	N/A	pH

Final page for worklist # 32101

Nat Kim 1/15/00
Analyst Signature **Date**

Mary Franz 1/19/00
Analyst Signature **Date**

Data Entry Comments:

Validated 1/17/00 Jamie Shulo

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 Completed Worklist Report for Worklist# 32099

Analyst: jis **Instrument:** PH01 **Book#:** 33N15A

Method: LA-211-102 Rev/Mod D-3

Worklist Comment: SY-102 GRAB 5 FOR OH-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	OH-01	LIQUID	1.56e4	1.60e4	102.564	% Recovery
2	SAMPLE	S00T000048		0	OH-01	LIQUID	N/A	1.02e4	1250.000	ug/mL
3	DUP	S00T000048		0	OH-01	LIQUID	1.02e4	1.02e4	0.000	RPD
4	SAMPLE	S00T000050		0	OH-01	LIQUID	N/A	1.79e4	1250.000	ug/mL
5	DUP	S00T000050		0	OH-01	LIQUID	1.79e4	1.79e4	0.000	RPD
6	SAMPLE	S00T000051		0	OH-01	LIQUID	N/A	1.82e4	1250.000	ug/mL
7	DUP	S00T000051		0	OH-01	LIQUID	1.82e4	1.74e4	4.494	RPD
8	SAMPLE	S00T000052		0	OH-01	LIQUID	N/A	1.80e4	2500.000	ug/mL
9	DUP	S00T000052		0	OH-01	LIQUID	1.80e4	1.77e4	1.681	RPD
10	SAMPLE	S00T000053		0	OH-01	LIQUID	N/A	1.82e4	2500.000	ug/mL
11	DUP	S00T000053		0	OH-01	LIQUID	1.82e4	1.81e4	0.551	RPD

Final page for worklist# 32099

Analyst Signature Date

Mary Franz 1/19/00
Analyst Signature Date

James Ahrens 1/19/00
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 32099

Analyst: JIS **Instrument:** PH01 **Book #** 33N15-A

Method: LA-211-102 Rev/Mod D-3

Worklist Comment: SY-102 GRAB 5 FOR OH-01 RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				OH-01	LIQUID			N/A	ug/mL
20000008	SY-102 GRAB5	2	SAMPLE	S00T000048	0		OH-01	LIQUID	N/A			ug/mL
20000008	SY-102 GRAB5	3	DUP	S00T000048	0		OH-01	LIQUID			N/A	ug/mL
20000008	SY-102 GRAB5	4	SAMPLE	S00T000050	0		OH-01	LIQUID	N/A			ug/mL
20000008	SY-102 GRAB5	5	DUP	S00T000050	0		OH-01	LIQUID			N/A	ug/mL
20000008	SY-102 GRAB5	6	SAMPLE	S00T000051	0		OH-01	LIQUID	N/A			ug/mL
20000008	SY-102 GRAB5	7	DUP	S00T000051	0		OH-01	LIQUID			N/A	ug/mL
20000008	SY-102 GRAB5	8	SAMPLE	S00T000052	0		OH-01	LIQUID	N/A			ug/mL
20000008	SY-102 GRAB5	9	DUP	S00T000052	0		OH-01	LIQUID			N/A	ug/mL
20000008	SY-102 GRAB5	10	SAMPLE	S00T000053	0		OH-01	LIQUID	N/A			ug/mL
20000008	SY-102 GRAB5	11	DUP	S00T000053	0		OH-01	LIQUID			N/A	ug/mL

Final page for worklist # 32099

Jeff Sollbach 011800
Analyst Signature **Date**

Mary Franz 1/19/00
Analyst Signature **Date**

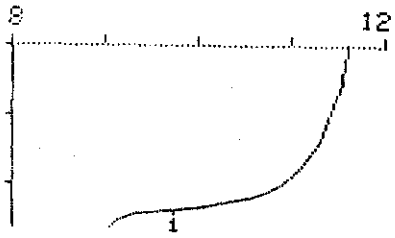
Data Entry Comments:

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

HNF-1698 REV. 0

```
date 00-01-18 time 15:07
GET pH          12  #   28
Id.#1 STD     0000
Id.#2        .1985
pH(init)     11.58
             V/ml          pH
EP1          .237        9.76
manual stop
========
```

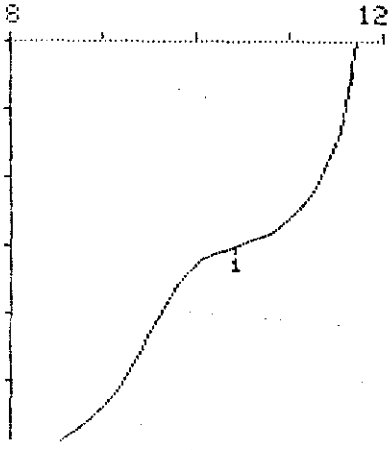
```
date 00-01-18 time 15:07
GET pH          12  #   28
.10ml/div       ΔpH=1/div
start V    .000 ml
```




```
date 00-01-18 time 15:08
GET pH B/K      12  #   29
Id.#1         0000
Id.#2        .1985
pH(init)      7.70
             V/ml          pH
EP1          .007        6.33
manual stop
```

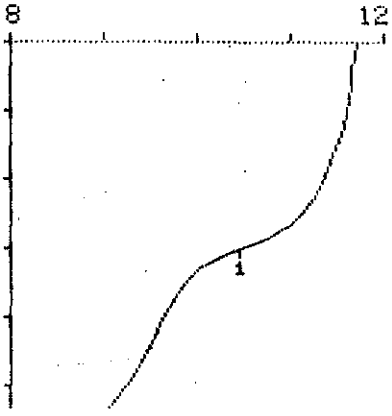
```
date 00-01-18 time 15:17
GET pH          12  #   30
Id.#1         0000 48
Id.#2        .1985
pH(init)     11.69
             V/ml          pH
EP1          .303       10.42
stop volt.reached
```

```
date 00-01-18 time 15:18
GET pH          12  #   30
.10ml/div       ΔpH=1/div
start V    .000 ml
```



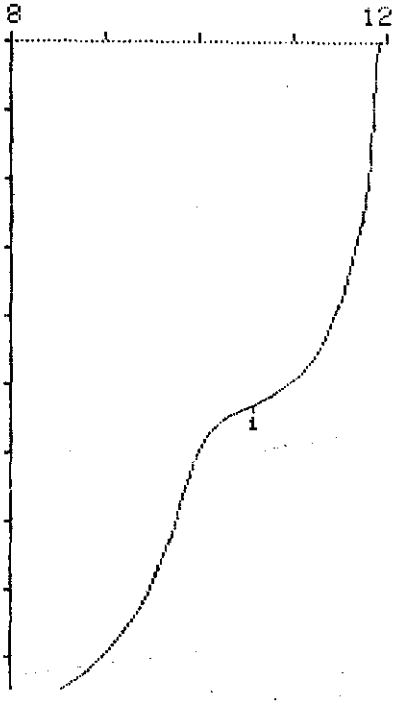

```
date 00-01-18 time 15:22
GET pH          12  #   31
Id.#1         0000 48
Id.#2        .1985
pH(init)     11.67 DUP
             V/ml          pH
EP1          .303       10.45
manual stop
========
```

```
date 00-01-18 time 15:23
GET pH          12  #   31
.10ml/div       ΔpH=1/div
start V    .000 ml
```




```
date 00-01-18 time 15:30
GET pH          12  #   32
Id.#1         0000 50
Id.#2        .1985
pH(init)     11.89
             V/ml          pH
EP1          .529       10.58
stop volt.reached
========
```

```
date 00-01-18 time 15:33
GET pH          12  #   32
.10ml/div       ΔpH=1/div
start V    .000 ml
```

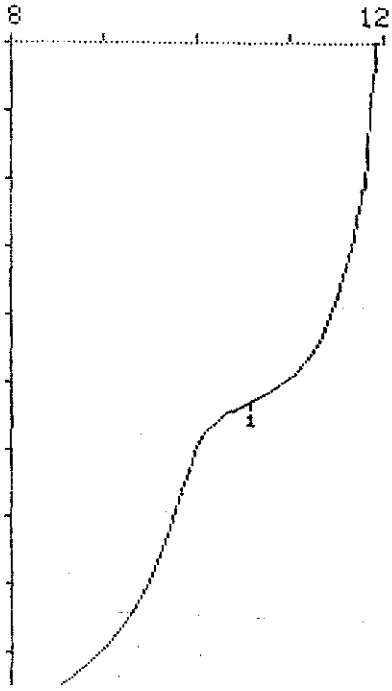


date 00-01-18 time 15:42
GET pH 12 # 33
Id.#1 0000 50
Id.#2 .1985 Dup
pH(init) 11.88
V/ml pH
EP1 .529 10.56
stop volt.reached
========

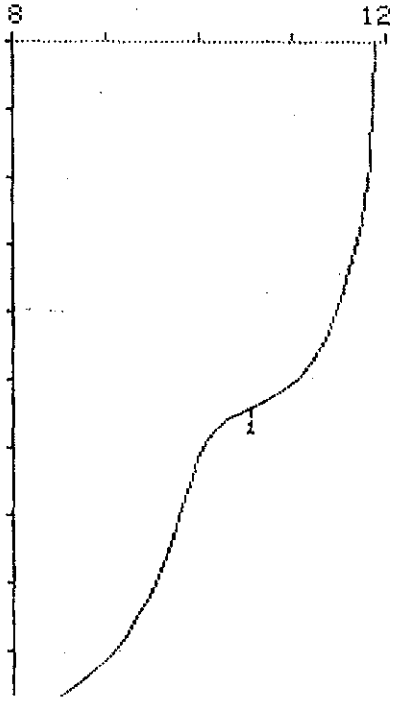
date 00-01-18 time 15:51
GET pH 12 # 34
Id.#1 0000 51
Id.#2 .1985
pH(init) 11.85
V/ml pH
EP1 .539 10.55
stop volt.reached
========

date 00-01-18 time 15:59
GET pH 12 # 35
Id.#1 0000 51
Id.#2 .1985 Dup
pH(init) 11.91
V/ml pH
EP1 .515 10.56
stop volt.reached
========

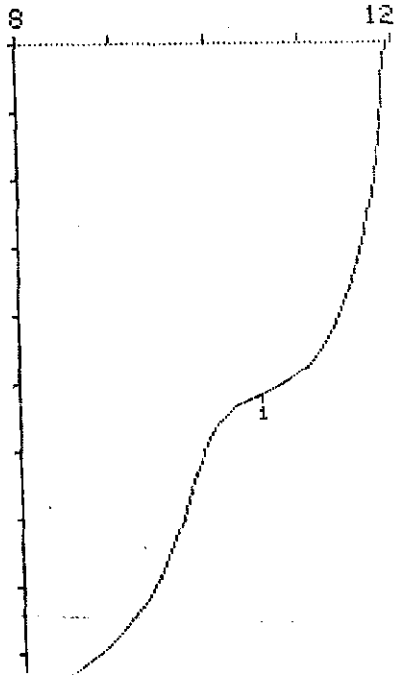
date 00-01-18 time 15:43
GET pH 12 # 33
.10ml/div ΔpH=1/div
start V .000 ml



date 00-01-18 time 15:51
GET pH 12 # 34
.10ml/div ΔpH=1/div
start V .000 ml

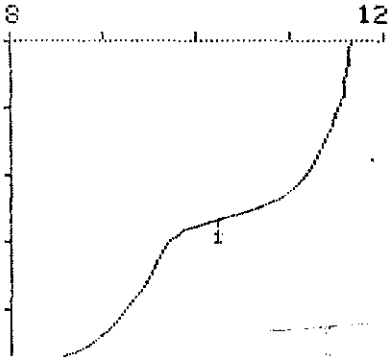


date 00-01-18 time 15:59
GET pH 12 # 35
.10ml/div ΔpH=1/div
start V .000 ml



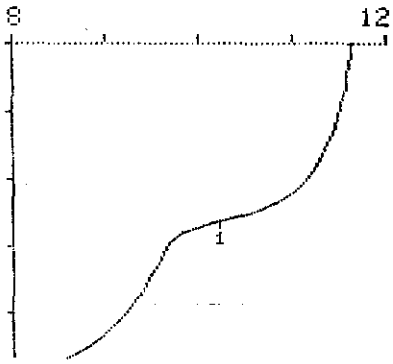
date 00-01-18 time 16:08
GET pH 12 # 36
Id.#1 0000 52
Id.#2 .1985
pH(init) 11.62
V/ml pH
EP1 .267 10.24
stop volt.reached
========

date 00-01-18 time 16:08
GET pH 12 # 36
.10ml/div ΔpH=1/div
start V .000 ml



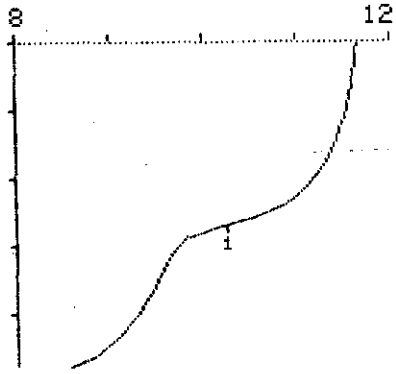
date 00-01-18 time 16:13
GET pH 12 # 37
Id.#1 0000 52
Id.#2 .1985 Dup
pH(init) 11.61
V/ml pH
EP1 .263 10.22
stop volt.reached
========

date 00-01-18 time 16:14
GET pH 12 # 37
.10ml/div ΔpH=1/div
start V .000 ml



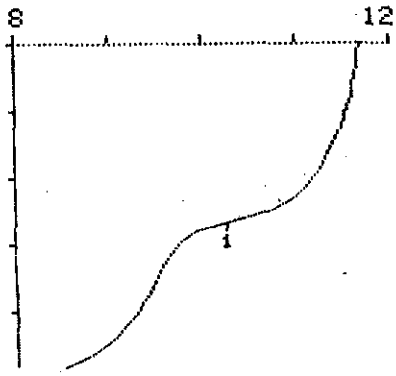
date 00-01-18 time 16:21
GET pH 12 # 38
Id.#1 0000 53
Id.#2 .1985
pH(init) 11.63
V/ml pH
EP1 .269 10.26
stop volt.reached
========

date 00-01-18 time 16:22
GET pH 12 # 38
.10ml/div ΔpH=1/div
start V .000 ml



date 00-01-18 time 16:27
GET pH 12 # 39
Id.#1 0000 53
Id.#2 .1985 Dup
pH(init) 11.67
V/ml pH
EP1 .268 10.25
stop volt.reached
========

date 00-01-18 time 16:41
GET pH 12 # 39
.10ml/div ΔpH=1/div
start V .000 ml



OH (AUTO) : LA-211-102 (D-2) 3 XB 4/30/00

		STD
Type	Sample Size (mL) SS	0.050
STD	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.237
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	9.41E-01
Matrix	Concentration of Sample in PPM	1.60E+04
LIQUID		
Sample #		
STD		
Instrument Code		
PH01	Detection Limit (PPM)	
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		STD
	Concentration of Sample (MOLARITY)	9.41E-01
	Concentration of Sample in PPM	1.60E+04

OH (AUTO) : LA-211-102 (D-~~2~~) 3 NB 4/30/00

		BLNK
Type	Sample Size (mL) SS	0.100
BLNK	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.007
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	1.39E-02
Matrix	Concentration of Sample in PPM	2.36E+02
LIQUID		
Sample #		
BLNK	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		BLNK
	Concentration of Sample (MOLARITY)	1.39E-02
	Concentration of Sample in PPM	<1250

The Result is < Detection Limit

OH (AUTO) : LA-211-102 (D-2) 3 XB 4/30/00

Type	Sample Size (mL) SS	0.100
SAMPLE	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.303
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	6.01E-01
Matrix	Concentration of Sample in PPM	1.02E+04
LIQUID		
Sample #		
S00T000048	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		

	SAMPLE
Concentration of Sample (MOLARITY)	6.01E-01
Concentration of Sample in PPM	1.02E+04

OH (AUTO) : LA-211-102 (D-~~2~~) 3 XB 4/30/00

Type		DUP
DUP	Sample Size (mL) SS	0.100
Work List	Concentration of Titrant (Molarity)	0.1985
32099	Titrant volume at end-point in mL	0.303
Test Code	*** Enter Dilution Factor (DF) or 1 ***	1
SPG-01		
Matrix	Concentration of Sample (MOLARITY)	6.01E-01
LIQUID	Concentration of Sample in PPM	1.02E+04
Sample #		
S00T000048	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		DUP
	Concentration of Sample (MOLARITY)	6.01E-01
	Concentration of Sample in PPM	1.02E+04

OH (AUTO) : LA-211-102 (D-~~2~~) 3 MB 4/30/00

		SAMPLE
Type	Sample Size (mL) SS	0.100
SAMPLE	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.529
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	1.05E+00
Matrix	Concentration of Sample in PPM	1.79E+04
LIQUID		
Sample #		
S00T000050	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		SAMPLE
	Concentration of Sample (MOLARITY)	1.05E+00
	Concentration of Sample in PPM	1.79E+04

OH (AUTO) : LA-211-102 (D-~~2~~ 3) HB 4/30/00

Type		DUP
DUP	Sample Size (mL) SS	0.100
Work List	Concentration of Titrant (Molarity)	0.1985
32099	Titrant volume at end-point in mL	0.529
Test Code	*** Enter Dilution Factor (DF) or 1 ***	1
SPG-01	Concentration of Sample (MOLARITY)	1.05E+00
Matrix	Concentration of Sample in PPM	1.79E+04
LIQUID		
Sample #		
S00T000050	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		DUP
	Concentration of Sample (MOLARITY)	1.05E+00
	Concentration of Sample in PPM	1.79E+04

OH (AUTO) : LA-211-102 (D-~~2~~ 3) XB 4/30/00

		SAMPLE
Type	Sample Size (mL) SS	0.100
SAMPLE	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.539
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	1.07E+00
Matrix	Concentration of Sample in PPM	1.82E+04
LIQUID		
Sample #		
S00T000051	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		SAMPLE
	Concentration of Sample (MOLARITY)	1.07E+00
	Concentration of Sample in PPM	1.82E+04

OH (AUTO) : LA-211-102 (D-~~2~~ 3) JB 4/30/00

Type	Sample Size (mL) SS	0.100
DUP	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.515
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	1.02E+00
Matrix	Concentration of Sample in PPM	1.74E+04
LIQUID		
Sample #		
S00T000051	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	1.25E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		DUP
	Concentration of Sample (MOLARITY)	1.02E+00
	Concentration of Sample in PPM	1.74E+04

OH (AUTO) : LA-211-102 (D-~~2~~ 3) HB 4/30/00

		SAMPLE
Type	Sample Size (mL) SS	0.050
SAMPLE	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.267
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Sample Code		
SPG-01	Concentration of Sample (MOLARITY)	1.06E+00
Matrix	Concentration of Sample in PPM	1.80E+04
LIQUID		
Sample #		
S00T000052	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	2.50E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Analysis Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		SAMPLE
	Concentration of Sample (MOLARITY)	1.06E+00
	Concentration of Sample in PPM	1.80E+04

OH (AUTO) : LA-211-102 (D-~~2~~ 3) XB 4/30/00

Type	Sample Size (mL) SS	0.050
DUP	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.263
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	1.04E+00
Matrix	Concentration of Sample in PPM	1.77E+04
LIQUID		
Sample #		
S00T000052	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	2.50E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		

	DUP
Concentration of Sample (MOLARITY)	1.04E+00
Concentration of Sample in PPM	1.77E+04

OH (AUTO) : LA-211-102 (D-~~2~~ 3) KB 4/30/00

		SAMPLE
Type	Sample Size (mL) SS	0.050
SAMPLE	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.269
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	1.07E+00
Matrix	Concentration of Sample in PPM	1.82E+04
LIQUID		
Sample #		
S00T000053	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	2.50E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		

	SAMPLE
Concentration of Sample (MOLARITY)	1.07E+00
Concentration of Sample in PPM	1.82E+04

OH (AUTO) : LA-211-102 (D-~~2~~ 3) XB 4/30/00

		DUP
Type	Sample Size (mL) SS	0.050
DUP	Concentration of Titrant (Molarity)	0.1985
Work List	Titrant volume at end-point in mL	0.268
32099	*** Enter Dilution Factor (DF) or 1 ***	1
Test Code		
SPG-01	Concentration of Sample (MOLARITY)	1.06E+00
Matrix	Concentration of Sample in PPM	1.81E+04
LIQUID		
Sample #		
S00T000053	Detection Limit =(125µg/SS)*DF	
Instrument Code		
PH01	Detection Limit (PPM)	2.50E+03
Analyst		
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
Date		
01/18/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
Time		
08:54 AM		DUP
	Concentration of Sample (MOLARITY)	1.06E+00
	Concentration of Sample in PPM	1.81E+04

LABCORE Completed Worklist Report for Worklist# 33047

Analyst: jis **Instrument:** PH01 **Book#:** 35N15A

Method: LA-211-102 Rev/Mod D-3

Worklist Comment: SY-102 GRAB SOLID COMP (FOR OH-01) RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD			0	OH-01	SOLID	1.621e4	1.67e4	103.023	% Recovery
2	BLNK-PREP			0	OH-01	SOLID	1	<17347		ug/g
3	SAMPLE	S00T000154	0	W	OH-01	SOLID	N/A	<16993	16990.000	ug/g
4	DUP	S00T000154	0	W	OH-01	SOLID	<16993	<17347		RPD

Final page for worklist# 33047

Analyst Signature Date

Mary Frazier 3/30/00
Analyst Signature Date

James Grohs 4/3/00
Reviewer Signature Date

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

worklistrpt Version 2.1 05/15/95
03/27/00 09:43

LABCORE Data Entry Template for Worklist# 33047

Analyst: JIS **Instrument:** PH01 **Book #** 35NIS-A ~~1500~~ 91 8-15-00

Method: LA-211-102 Rev/Mod D-3

Worklist Comment: SY-102 GRAB SOLID COMP (FOR OH-01) RTS

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK-PREP				OH-01	SOLID			N/A	ug/g
20000008	SY-102 GRAB5	2	SAMPLE	S00T000154	0	W	OH-01	SOLID	N/A			ug/g
20000008	SY-102 GRAB5	3	DUP	S00T000154	0	W	OH-01	SOLID			N/A	ug/g

Final page for worklist # 33047

Jeff Goldwood 03-29-00
Analyst Signature **Date**

Mary Tracy 3/30/00
Analyst Signature **Date**

Data Entry Comments:

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

BLK Prep

date 00-03-30 time 15:32
GET pH 12 # 191
Id.#1 1787
Id.#2 .1985
pH(init) 7.10

	V/ml	pH
EP1	.007	5.61

manual stop
========

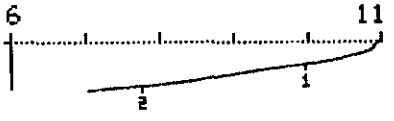
S00T000154

date 00-03-30 time 15:36
GET pH 12 # 192
Id.#1 1787
Id.#2 .1985
pH(init) 10.92

	V/ml	pH
EP1	.032	9.95
EP2	.064	7.75

stop volt.reached
========

date 00-03-30 time 15:36
GET pH 12 # 192
.10ml/div ΔpH=1/div
start V .000 ml



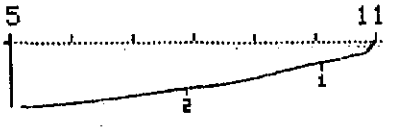
DUP

date 00-03-30 time 15:40
GET pH 12 # 193
Id.#1 1787
Id.#2 .1985
pH(init) 10.94

	V/ml	pH
EP1	.030	10.07
EP2	.067	7.88

manual stop
========

date 00-03-30 time 15:40
GET pH 12 # 193
.10ml/div ΔpH=1/div
start V .000 ml



---

calibration data
date 00-03-30
pH(S) 1 7.00
pH(S) 2 10.00
t.cal. 24.0 °C
slope(rel) .986
U(as) -3.2 mV
electr. input 1
========

date 00-03-30 time 10:14
GET pH 12 # 182
Id.#1 BLK 1787
Id.#2 .1985
pH(init) 5.87

	V/ml	pH
EP1	.008	4.64

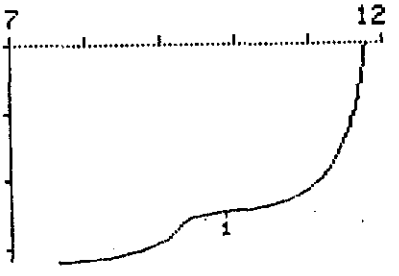
stop volt.reached
========

date 00-03-30 time 10:22
GET pH 12 # 183
Id.#1 STD 1787
Id.#2 .1985
pH(init) 11.75

	V/ml	pH
EP1	.247	9.87

stop volt.reached
========

date 00-03-30 time 10:23
GET pH 12 # 183
.10ml/div ΔpH=1/div
start V .000 ml



OH (AUTO) : LA-211-102 (D-3)

		STD
	Sample Size (mL) SS	0.050
STD	Concentration of Titrant (Molarity)	0.1985
	Titrant volume at end-point in mL	0.247
33047	*** Enter Dilution Factor (DF) or 1 ***	1
OH-01	Concentration of Sample Prep (MOLARITY)	9.81E-01
	Concentration of Sample in PPM	1.67E+04
Solid		
STD		
PH01	Detection Limit (PPM)	
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
03/29/2000	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*(1000000µg/g)/(1000mL/L)	
03:00 PM		STD
	Concentration of Sample in PPM	1.67E+04

OH (AUTO) : LA-211-102 (D-3)

		BLNK-PREP
	Sample Size (mL) SS	3.000
BLNK-PREP	Concentration of Titrant (Molarity)	0.1985
	Titrant volume at end-point in mL	0.007
33047	*** Enter Dilution Factor (DF) or 1 ***	1
	Enter Digest Factor (DDF) in g/L	2.402
OH-01	Concentration of Sample Prep (MOLARITY)	4.63E-04
	Concentration of Sample in PPM	3.28E+03
Solid		
BLNK-PREP	Detection Limit=((125µg /SS)*DF)*1000/DDF	
PH01	Detection Limit (PPM)	1.735E+04
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
03/29/2000	OH in µg/g =(OH MOLARITY)*(17g/mole) *(1000000 µg/g)/DDF	
03:00 PM		BLNK-PREP
	Concentration of Sample in PPM	<17347

The Result is < Detection Limit

OH (AUTO) : LA-211-102 (D-3)

		SAMPLE
	Sample Size (mL) SS	3.000
SAMPLE	Concentration of Titrant (Molarity)	0.1985
	Titrant volume at end-point in mL	0.032
33047	*** Enter Dilution Factor (DF) or 1 ***	1
	Enter Digest Factor (DDF) in g/L	2.452
OH-01	Concentration of Sample Prep (MOLARITY)	2.12E-03
	Concentration of Sample in PPM	1.47E+04
Solid		
S00T000154	Detection Limit=((125µg /SS)*DF)*1000/DDF	
PH01	Detection Limit (PPM)	1.699E+04
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
03/29/2000	OH in µg/g =(OH MOLARITY)*(17g/mole) *(1000000 µg/g)/DDF	
03:00 PM		SAMPLE
	Concentration of Sample in PPM	<16993

The Result is < Detection Limit

OH (AUTO) : LA-211-102 (D-3)

		DUP
	Sample Size (mL) SS	3.000
DUP	Concentration of Titrant (Molarity)	0.1985
	Titrant volume at end-point in mL	0.030
33047	*** Enter Dilution Factor (DF) or 1 ***	1
	Enter Digest Factor (DDF) in g/L	2.402
OH-01	Concentration of Sample Prep (MOLARITY)	1.99E-03
	Concentration of Sample in PPM	1.40E+04
Solid		
S00T000154	Detection Limit=((125µg /SS)*DF)*1000/DDF	
PH01	Detection Limit (PPM)	1.735E+04
JIS	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL)*Dilution Factor	
03/29/2000	OH in µg/g =(OH MOLARITY)*(17g/mole) *(1000000 µg/g)/DDF	
03:00 PM		DUP
	Concentration of Sample in PPM	<17347

The Result is < Detection Limit

LABCORE Completed Worklist Report for Worklist# 32097

Analyst: slh **Instrument:** NH301 **Book#:** _____

Method: LA-631-001 Rev/Mod D-2

Worklist Comment: SY-102 GRAG 5 FOR NH3-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	NH3-01	LIQUID	1	<2.50E+2		ug/mL
2	STD			0	NH3-01	LIQUID	4.66E+02	4.31E+2	92.489	% Recovery
3	SAMPLE	S00T000048		0	NH3-01	LIQUID	N/A	8.04E+02	250.000	ug/mL
4	DUP	S00T000048		0	NH3-01	LIQUID	8.04E+2	6.94E+2	14.686	RPD
5	SAMPLE	S00T000050		0	NH3-01	LIQUID	N/A	1.12E+03	250.000	ug/mL
6	DUP	S00T000050		0	NH3-01	LIQUID	1.12E+3	5.69E+2	65.246	RPD
7	TRIPL	S00T000050		0	NH3-01	LIQUID	1.12E+3	8.19E+2	31.047	RPD
8	STD			0	NH3-01	LIQUID	4.66E+02	4.55E+2	97.639	% Recovery

Final page for worklist# 32097

Analyst Signature Date

Mary Jones 1/24/00
Analyst Signature Date

1/26/00
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 32097

Analyst: SLH **Instrument:** NH301 _____ **Book#** 59N19-H

Method: LA-631-001 Rev/Mod D-2

Worklist Comment: SY-102 GRAG 5 FOR NH3-01 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				NH3-01	LIQUID		
2	STD				NH3-01	LIQUID		
3	SAMPLE	S00T000048	0		NH3-01	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: NH3-01						
4	DUP	S00T000048	0		NH3-01	LIQUID		
5	SAMPLE	S00T000050	0		NH3-01	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: NH3-01						
6	DUP TRIPL	S00T000050	0		NH3-01	LIQUID		
7	STD				NH3-01	LIQUID		

Final page for worklist # 32097

Signature Date 1-21-00

Signature Date 1/24/00

M. King 1-21-00

Data Entry Comments: Ran Trip on S00T000050

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

DOUBLE KNOWN ADDITION SELECTED
AT 19:57, 01-20-00

SAMPLE VOL= 25.000 AT 20:00, 01-20-00
ENTERED

EMF=-10.6 mV AT 20:01, 01-20-00

EMF=-10.7 mV AT 20:01, 01-20-00

EMF=-10.8 mV AT 20:02, 01-20-00

EMF=-10.9 mV AT 20:03, 01-20-00
ENTERED

STD CONCN= 997 AT 20:14, 01-20-00
ENTERED

STD VOL= .25000 AT 20:14, 01-20-00
ENTERED

EMF=-30.3 mV AT 20:15, 01-20-00

EMF=-30.4 mV AT 20:15, 01-20-00

EMF=-30.5 mV AT 20:15, 01-20-00

EMF=-30.6 mV AT 20:16, 01-20-00

EMF=-30.7 mV AT 20:16, 01-20-00

EMF=-30.9 mV AT 20:17, 01-20-00
ENTERED

STD VOL= 2.5000 AT 20:27, 01-20-00
ENTERED

EMF=-77.2 mV AT 20:27, 01-20-00

EMF=-77.4 mV AT 20:27, 01-20-00

EMF=-77.7 mV AT 20:28, 01-20-00

EMF=-77.8 mV AT 20:29, 01-20-00
ENTERED

1:NH3 SLOPE=-61.9 mV/DEC
AT 20:29, 01-20-00

1:NH3 CONCN= 8.85

STD SS = .500 ml
59N19-H

DOUBLE KNOWN ADDITION SELECTED
AT 23:04, 01-20-00

SAMPLE VOL= 25.000 AT 23:04, 01-20-00
ENTERED

EMF= 62.6 mV AT 23:08, 01-20-00

EMF= 62.2 mV AT 23:08, 01-20-00

EMF= 61.7 mV AT 23:09, 01-20-00

EMF= 61.7 mV AT 23:09, 01-20-00
ENTERED

STD CONCN= 997 AT 23:13, 01-20-00
ENTERED

STD VOL= .25000 AT 23:16, 01-20-00
ENTERED

EMF=-33.0 mV AT 23:16, 01-20-00

EMF=-33.2 mV AT 23:17, 01-20-00

EMF=-33.3 mV AT 23:17, 01-20-00

EMF=-33.6 mV AT 23:18, 01-20-00

EMF=-33.7 mV AT 23:18, 01-20-00
ENTERED

STD VOL= 2.5000 AT 23:29, 01-20-00
ENTERED

EMF=-91.4 mV AT 23:29, 01-20-00

EMF=-91.5 mV AT 23:30, 01-20-00

EMF=-91.6 mV AT 23:30, 01-20-00

EMF=-91.7 mV AT 23:31, 01-20-00

EMF=-91.6 mV AT 23:31, 01-20-00
ENTERED

1:NH3 SLOPE=-58.4 mV/DEC
AT 23:31, 01-20-00

1:NH3 CONCN= .235

BIK WL 32097

DOUBLE KNOWN ADDITION SELECTED
AT 23:48, 01-20-00

SAMPLE VOL= 25.000 AT 23:48, 01-20-00
ENTERED

EMF= 23.9 mV AT 23:49, 01-20-00

EMF= 24.3 mV AT 23:49, 01-20-00

EMF= 24.5 mV AT 23:50, 01-20-00

EMF= 24.5 mV AT 23:50, 01-20-00
ENTERED

STD CONCN= 997 AT 23:55, 01-20-00
ENTERED

STD VOL= .25000 AT 23:55, 01-20-00
ENTERED

EMF=-11.7 mV AT 23:55, 01-20-00

EMF=-11.8 mV AT 23:55, 01-20-00

EMF=-12.1 mV AT 23:56, 01-20-00

EMF=-12.2 mV AT 23:57, 01-20-00

EMF=-12.3 mV AT 23:57, 01-20-00
ENTERED

STD VOL= 2.5000 AT 00:01, 01-21-00
ENTERED

EMF=-66.8 mV AT 00:01, 01-21-00

EMF=-67.5 mV AT 00:02, 01-21-00

EMF=-67.8 mV AT 00:03, 01-21-00

EMF=-67.9 mV AT 00:03, 01-21-00
ENTERED

1:NH3 SLOPE=-62.8 mV/DEC
AT 00:03, 01-21-00

1:NH3 CONCN= 3.45

SS= .100 ml
S00T0000048 sam

DOUBLE KNOWN ADDITION SELECTED
AT 01:03, 01-21-00

SAMPLE VOL= 25.000 AT 01:03, 01-21-00
ENTERED

EMF= 31.3 mV AT 01:04, 01-21-00

EMF= 31.5 mV AT 01:04, 01-21-00

EMF= 31.6 mV AT 01:05, 01-21-00
ENTERED

STD CONCN= 997 AT 01:11, 01-21-00
ENTERED

STD VOL= .25000 AT 01:11, 01-21-00
ENTERED

EMF=-7.6 mV AT 01:11, 01-21-00

EMF=-7.8 mV AT 01:12, 01-21-00

EMF=-7.9 mV AT 01:12, 01-21-00

EMF=-8.1 mV AT 01:12, 01-21-00
ENTERED

STD VOL= 2.5000 AT 01:18, 01-21-00
ENTERED

EMF=-63.8 mV AT 01:18, [illegible]

EMF=-[illegible] mV AT 01:19, 01-21-00

EMF -64.6 mV AT 01:20, 01-21-00

EMF=-64.6 mV AT 01:20, 01-21-00
ENTERED

1:NH3 SLOPE=-62.9 mV/DEC
AT 01:20, 01-21-00

1:NH3 CONCN= 3.01

SS = .100ml

S00T000048 Dup

DOUBLE KNOWN ADDITION SELECTED
AT 02:41, 01-21-00

SAMPLE VOL= 25.000 AT 02:41, 01-21-00
ENTERED

EMF= 25.5 mV AT 02:41, 01-21-00

EMF= 26.1 mV AT 02:42, 01-21-00

EMF= 26.2 mV AT 02:42, 01-21-00

EMF= 26.3 mV AT 02:42, 01-21-00
ENTERED

STD CONCN= 997 AT 02:45, 01-21-00
ENTERED

STD VOL= .25000 AT 02:45, 01-21-00
ENTERED

EMF=-3.1 mV AT 02:47, 01-21-00

EMF=-3.5 mV AT 02:47, 01-21-00

EMF=-5.3 mV AT 02:48, 01-21-00

EMF=-3.9 mV AT 02:48, 01-21-00
ENTERED

STD VOL= 2.5000 AT 02:51, 01-21-00
ENTERED

EMF=-56.0 mV AT 02:52, 01-21-00

EMF=-56.3 mV AT 02:52, 01-21-00

EMF=-56.7 mV AT 02:53, 01-21-00

EMF=-56.5 mV AT 02:53, 01-21-00
ENTERED

1:NH3 SLOPE=-61.9 mV/DEC
AT 02:53, 01-21-00

1:NH3 CONCN= 4.73

.100 ml
SS= ~~.050~~
S00T000050

DOUBLE KNOWN ADDITION SELECTED
AT 03:17, 01-21-00

SAMPLE VOL= 25.000 AT 03:17, 01-21-00
ENTERED

EMF= 45.5 mV AT 03:17, 01-21-00

EMF= 45.6 mV AT 03:18, 01-21-00

EMF= 45.7 mV AT 03:18, 01-21-00

EMF= 45.8 mV AT 03:18, 01-21-00

EMF= 45.8 mV AT 03:19, 01-21-00
ENTERED

STD CONCN= 997 AT 03:22, 01-21-00
ENTERED

STD VOL= .25000 AT 03:22, 01-21-00
ENTERED

EMF= 5.7 mV AT 03:22, 01-21-00

EMF= 5.4 mV AT 03:23, 01-21-00

EMF= 5.1 mV AT 03:23, 01-21-00

EMF= 5.1 mV AT 03:23, 01-21-00
ENTERED

STD VOL= 2.5000 AT 03:26, 01-21-00
ENTERED

EMF=-47.5 mV AT 03:27, 01-21-00

EMF=-48.2 mV AT 03:27, 01-21-00

EMF=-48.5 mV AT 03:28, 01-21-00

EMF=-48.6 mV AT 03:28, 01-21-00
ENTERED

1:NH3 SLOPE=-58.8 mV/DEC
AT 03:28, 01-21-00

1:NH3 CONCN= 2.51

SS = ~~.050~~ .100ml

S00T000050 Dup

DOUBLE KNOWN ADDITION SELECTED
AT 04:02, 01-21-00

SAMPLE VOL= 25.000 AT 04:03, 01-21-00
ENTERED

EMF= 34.8 mV AT 04:03, 01-21-00

EMF= 35.0 mV AT 04:04, 01-21-00

EMF= 35.4 mV AT 04:05, 01-21-00

EMF= 35.3 mV AT 04:05, 01-21-00
ENTERED

STD CONCN= 997 AT 04:09, 01-21-00
ENTERED

STD VOL= .25000 AT 04:09, 01-21-00
ENTERED

EMF=-0.7 mV AT 04:09, 01-21-00

EMF=-0.9 mV AT 04:10, 01-21-00

EMF=-1.1 mV AT 04:10, 01-21-00

EMF=-1.1 mV AT 04:10, 01-21-00
ENTERED

STD VOL= 2.5000 AT 04:11, 01-21-00
ENTERED

EMF=-55.4 mV AT 04:14, 01-21-00

EMF=-55.9 mV AT 04:14, 01-21-00

EMF=-56.3 mV AT 04:15, 01-21-00

EMF=-56.5 mV AT 04:15, 01-21-00
ENTERED

1:NH3 SLOPE=-62.7 mV/DEC
AT 04:15, 01-21-00

1:NH3 CONCN= 3.51

SS = ~~.050 ml~~ .100 ml

500T000050 TRP

DOUBLE KNOWN ADDITION SELECTED
AT 07:22, 01-21-00

SAMPLE VOL= 25.000 AT 07:34, 01-21-00
ENTERED

EMF=-20.5 mV AT 07:36, 01-21-00

EMF=-20.6 mV AT 07:36, 01-21-00
ENTERED

STD CONCN= 997 AT 07:36, 01-21-00
ENTERED

STD VOL= .25000 AT 07:36, 01-21-00
ENTERED

EMF=-38.6 mV AT 07:37, 01-21-00

EMF=-38.6 mV AT 07:37, 01-21-00
ENTERED

STD VOL= 2.5000 AT 07:38, 01-21-00
ENTERED

EMF=-81.0 mV AT 07:40, 01-21-00

EMF=-81.2 mV AT 07:40, 01-21-00

EMF=-81.4 mV AT 07:41, 01-21-00

EMF=-81.8 mV AT 07:42, 01-21-00

EMF=-81.9 mV AT 07:42, 01-21-00
ENTERED

1:NH3 SLOPE=-57.8 mV/DEC
AT 07:42, 01-21-00

1:NH3 CONCN= 9.33

RK

WORKBOOK PAGE: BLANK1

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) XB 4/30/00 LIQUIDS/SOLIDS

			BLNK
Type	Instrument Data (µg/mL)	ID	0.000
BLNK	Blank Result from the Instrument (µg/mL)	BR	0.235
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.100
32097	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000077			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	< 2.50E+02
Sample #			
	Detection Limit (µg/mL)	**2.50E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM)**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (BR) * (FVOL / VSAM) * DDF**		
Chemist			
JFG			
Analyst			
SLH			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:38 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**< 2.50E+02**
SY-102 GRAB 5			

Analyst:		SLH	Date: 01/24/2000
Signature of Chemist:	NA	JFG	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: STD2

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) NB 1/30/00 LIQUIDS/SOLIDS

			STD
Type	Instrument Data (µg/mL)	ID	8.850
STD	Blank Result from the Instrument (µg/mL)	BR	0.235
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
32097	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19H
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.66E+02
Matrix			
LIQUID			
Batch Number			
20000077			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.31E+02
Sample #			
STD	*Detection Limit (µg/mL)*	*5.00E+01*	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM)**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)**		
Chemist			
JFG	**QC ACTUAL = STD VAL**		
Analyst	**QC FOUND = (ID-BR) * (FVOL/VSAM)**		
SLH			
Date Complete			
01/24/2000			
Analysis Date	**QC ACTUAL (µg)**		4.66E+02
01/21/2000	**QC FOUND (µg)**		4.31E+02
Analysis Time			
04:38 PM			
Sample Point			
SY-102 GRAB 5			

Analyst:		SLH	Date: 01/24/2000
Signature of Chemist:	NA	JFG	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM3

AMMONIA (NH3) : LA-631-001 (D-θ) 2 XB 4/30/00 LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	3.450
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.235
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.100
32097	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000077			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	8.04E+02
Sample #			
S00T000048	**Detection Limit (µg/mL)**	**2.50E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
JFG			
Analyst			
SLH			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:38 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**8.04E+02**
SY-102 GRAB 5			

Analyst:		SLH	Date: 01/24/2000
Signature of Chemist:	NA	JFG	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP4

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) XB 4/30/00 LIQUIDS/SOLIDS

			DUP
Type	Instrument Data (µg/mL)	ID	3.010
DUP	Blank Result from the Instrument (µg/mL)	BR	0.235
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.100
32097	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000077			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	6.94E+02
Sample #			
S00T000048	**Detection Limit (µg/mL)**	**2.50E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Analytical Method			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
JFG			
Analyst			
SLH			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:38 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**6.94E+02**
SY-102 GRAB 5			

Analyst:		SLH	Date: 01/24/2000
Signature of Chemist:	NA	JFG	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM5

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) XB 4/30/00 LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	4.730
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.235
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.100
32097	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000077			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	1.12E+03
Sample			
S00T000050	**Detection Limit (µg/mL)**	**2.50E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Preparatory			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
JFG			
Analyst			
SLH			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:38 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**1.12E+03**
SY-102 GRAB 5			

Analyst:	SLH	Date:	01/24/2000
Signature of Chemist:	JFG	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP6

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) 4/30/00 LIQUIDS/SOLIDS

			DUP
Type	Instrument Data (µg/mL)	ID	2.510
DUP	Blank Result from the Instrument (µg/mL)	BR	0.235
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.100
32097	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000077			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	5.69E+02
Sample #			
S00T000050	**Detection Limit (µg/mL)**	**2.50E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Checked By			
JFG			
Analyst			
SLH			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:38 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**5.69E+02**
SY-102 GRAB 5			

Analyst:		SLH	Date: 01/24/2000
Signature of Chemist:		JFG	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: TRIPL7

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) XB 4/30/00 LIQUIDS/SOLIDS

			TRIPL
Type	Instrument Data (µg/mL)	ID	3.510
TRIPL	Blank Result from the Instrument (µg/mL)	BR	0.235
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.100
32097	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000077			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	8.19E+02
Subsample			
S00T000050	**Detection Limit (µg/mL)**	**2.50E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
JFG			
Analyst			
SLH			
Date Complete			
01/24/2000			
Sample Received			
01/21/2000			
Analysis Time			
04:38 PM			
Sample Point	**NH3 Concentration (µg/mL)**	**8.19E+02**	
SY-102 GRAB 5			

Analyst:		SLH	Date: 01/24/2000
Signature of Chemist:		JFG	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: ST_END8

AMMONIA (NH3) : LA-631-001 (D-θ) 2 XB 4/30/00 LIQUIDS/SOLIDS

			STD
Sample Type	Instrument Data (µg/mL)	ID	9.330
STD	Blank Result from the Instrument (µg/mL)	BR	0.235
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
32097	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19H
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.66E+02
Matrix			
Analysis Number			
20000077			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.55E+02
Sample #			
	Detection Limit (µg/mL)	**5.00E+01**	
Instrument Code #			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM)**		
Chromatogr. By			
MF	**NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)**		
Chemist			
JFG	**QC ACTUAL = STD VAL**		
Analyst	**QC FOUND = (ID-BR) * (FVOL/VSAM)**		
SLH			
Date Complete			
01/24/2000			
Analysis Date	**QC ACTUAL (µg)**		4.66E+02
01/21/2000	**QC FOUND (µg)**		4.55E+02
Analysis Time			
04:38 PM			
Sample Point			
SY-102 GRAB 5			

Analyst:		SLH	Date: 01/24/2000
Signature of Chemist:		JFG	Date:

SAMPLE.WB1 REV 1.0 631001ML

LABCORE Completed Worklist Report for Worklist# 32098

Analyst: rwk **Instrument:** NH301 **Book#:** _____

Method: LA-631-001 Rev/Mod D-2

Worklist Comment: SY-102 GRAG 5 FOR NH3-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	NH3-01	LIQUID	1	<1.25E+2		ug/mL
2	STD			0	NH3-01	LIQUID	4.66E+02	4.30E+2	92.275	% Recovery
3	SAMPLE	S00T000051		0	NH3-01	LIQUID	N/A	3.64E+02	125.000	ug/mL
4	DUP	S00T000051		0	NH3-01	LIQUID	3.64E+2	3.28E+2	10.405	RPD
5	SPK	S00T000051		0	NH3-01	LIQUID	1.17E+02	1.24E+02	105.983	% Recovery
6	SAMPLE	S00T000052		0	NH3-01	LIQUID	N/A	6.79E+02	125.000	ug/mL
7	DUP	S00T000052		0	NH3-01	LIQUID	6.79E+2	7.48E+2	9.671	RPD
8	SAMPLE	S00T000053		0	NH3-01	LIQUID	N/A	4.73E+02	125.000	ug/mL
9	DUP	S00T000053		0	NH3-01	LIQUID	4.73E+2	4.96E+2	4.747	RPD
10	STD			0	NH3-01	LIQUID	4.66E+02	4.60E+2	98.712	% Recovery

Final page for worklist# 32098

Analyst Signature Date

Mary Franz 1/24/00
Analyst Signature Date

1/25/00
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 32098

Analyst: NK **Instrument:** NH301 _____ **Book#** 59719-H

Method: LA-631-001 Rev/Mod 0-2

Worklist Comment: SY-102 GRAG 5 FOR NH3-01 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				NH3-01	LIQUID		
2	STD				NH3-01	LIQUID		
3	SAMPLE	S00T000051	0		NH3-01	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: NH3-01						
4	DUP	S00T000051	0		NH3-01	LIQUID		
5	SPK	S00T000051	0		NH3-01	LIQUID		
6	SAMPLE	S00T000052	0		NH3-01	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: NH3-01						
7	DUP	S00T000052	0		NH3-01	LIQUID		
8	SAMPLE	S00T000053	0		NH3-01	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: NH3-01						
9	DUP	S00T000053	0		NH3-01	LIQUID		
10	STD				NH3-01	LIQUID		

Final page for worklist # 32098

Signature Date 1/21/00

Signature Date 1/24/00

Data Entry Comments:

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

DOUBLE KNOWN ADDITION SELECTED
AT 07:22, 01-21-00

SAMPLE VOL= 25.000 AT 07:34, 01-21-00
ENTERED

EMF=-20.5 mV AT 07:36, 01-21-00

EMF=-20.6 mV AT 07:36, 01-21-00
ENTERED

STD CONCN= 997 AT 07:36, 01-21-00
ENTERED

STD VOL= .25000 AT 07:36, 01-21-00
ENTERED

EMF=-38.6 mV AT 07:37, 01-21-00

EMF=-38.6 mV AT 07:37, 01-21-00
ENTERED

STD VOL= 2.5000 AT 07:38, 01-21-00
ENTERED

EMF=-81.0 mV AT 07:40, 01-21-00

EMF=-81.2 mV AT 07:40, 01-21-00

EMF=-81.4 mV AT 07:41, 01-21-00

EMF=-81.8 mV AT 07:42, 01-21-00

EMF=-81.9 mV AT 07:42, 01-21-00
ENTERED

1:NH3 SLOPE=-57.8 mV/DEC
AT 07:42, 01-21-00

1:NH3 CONCN= 9.33

std

DOUBLE KNOWN ADDITION SELECTED
AT 07:06, 01-21-00

SAMPLE VOL= 25.000 AT 07:12, 01-21-00
ENTERED

EMF= 25.8 mV AT 07:13, 01-21-00

EMF= 25.9 mV AT 07:13, 01-21-00
ENTERED

STD CONCN= 997 AT 07:14, 01-21-00
ENTERED

STD VOL= .25000 AT 07:14, 01-21-00
ENTERED

EMF=-42.2 mV AT 07:15, 01-21-00

EMF=-42.4 mV AT 07:15, 01-21-00

EMF=-42.4 mV AT 07:15, 01-21-00
ENTERED

STD VOL= 2.5000 AT 07:16, 01-21-00
ENTERED

EMF=-99.3 mV AT 07:18, 01-21-00

EMF=-99.5 mV AT 07:19, 01-21-00

EMF=-99.6 mV AT 07:19, 01-21-00

EMF=-99.7 mV AT 07:19, 01-21-00
ENTERED

1:NH3 SLOPE=-58.9 mV/DEC
AT 07:19, 01-21-00

1:NH3 CONCN= .735

Blh

DOUBLE KNOWN ADDITION SELECTED
AT 08:17, 01-21-00

SAMPLE VOL= 25.000 AT 08:17, 01-21-00
ENTERED

EMF= 22.1 mV AT 08:18, 01-21-00

EMF= 21.9 mV AT 08:19, 01-21-00

EMF= 22.0 mV AT 08:19, 01-21-00
ENTERED

STD CONCN= 997 AT 08:19, 01-21-00
ENTERED

STD VOL= .25000 AT 08:19, 01-21-00
ENTERED

EMF=-11.9 mV AT 08:21, 01-21-00

EMF=-12.1 mV AT 08:21, 01-21-00

EMF=-12.2 mV AT 08:21, 01-21-00

EMF=-12.3 mV AT 08:21, 01-21-00
ENTERED

STD VOL= 2.5000 AT 08:22, 01-21-00
ENTERED

EMF=-65.1 mV AT 08:23, 01-21-00

EMF=-65.4 mV AT 08:24, 01-21-00

EMF=-65.4 mV AT 08:24, 01-21-00
ENTERED

1:NH3 SLOPE=-60.4 mV/DEC
AT 08:24, 01-21-00

1:NH3 CONCN= 3.65

MK 1/21/00
~~50 sample~~
51 sample

DOUBLE KNOWN ADDITION SELECTED
AT 08:24, 01-21-00

SAMPLE VOL= 25.000 AT 08:32, 01-21-00
ENTERED

EMF= 22.4 mV AT 08:33, 01-21-00

EMF= 22.5 mV AT 08:33, 01-21-00

EMF= 22.5 mV AT 08:33, 01-21-00
ENTERED

STD CONCN= 997 AT 08:34, 01-21-00
ENTERED

STD VOL= .25000 AT 08:34, 01-21-00
ENTERED

EMF=-11.6 mV AT 08:35, 01-21-00

EMF=-11.8 mV AT 08:35, 01-21-00

EMF=-11.8 mV AT 08:35, 01-21-00
ENTERED

STD VOL= 2.5000 AT 08:36, 01-21-00
ENTERED

EMF=-62.7 mV AT 08:38, 01-21-00

EMF=-63.0 mV AT 08:38, 01-21-00

EMF=-63.0 mV AT 08:38, 01-21-00
ENTERED

1:NH3 SLOPE=-57.7 mV/DEC
AT 08:38, 01-21-00

1:NH3 CONCN= 3.36

NMK 1/21/00
~~50 ppm~~
51 ppm

DOUBLE KNOWN ADDITION SELECTED
AT 10:36, 01-21-00

SAMPLE VOL= 25.000 AT 10:46, 01-21-00
ENTERED

EMF=-14.4 mV AT 10:48, 01-21-00

EMF=-14.6 mV AT 10:48, 01-21-00

EMF=-14.7 mV AT 10:48, 01-21-00
ENTERED

STD CONCN= 997 AT 10:49, 01-21-00
ENTERED

STD VOL= .25000 AT 10:49, 01-21-00
ENTERED

EMF=-35.1 mV AT 10:49, 01-21-00

EMF=-35.1 mV AT 10:49, 01-21-00
ENTERED

STD VOL= 2.5000 AT 10:50, 01-21-00
ENTERED

EMF=-81.9 mV AT 10:52, 01-21-00

EMF=-82.2 mV AT 10:52, 01-21-00

EMF=-82.3 mV AT 10:52, 01-21-00
ENTERED

1:NH3 SLOPE=-61.9 mV/DEC
AT 10:52, 01-21-00

1:NH3 CONCN= 8.61

~~50 SPK~~ RK 1/21/00
51 SPK

DOUBLE KNOWN ADDITION SELECTED
AT 10:56, 01-21-00

SAMPLE VOL= 25.000 AT 11:01, 01-21-00
ENTERED

EMF=-6.9 mV AT 11:03, 01-21-00

EMF=-7.2 mV AT 11:03, 01-21-00

EMF=-7.2 mV AT 11:04, 01-21-00
ENTERED

STD CONCN= 997 AT 11:04, 01-21-00
ENTERED

STD VOL= .25000 AT 11:04, 01-21-00
ENTERED

EMF=-31.7 mV AT 11:06, 01-21-00

EMF=-32.0 mV AT 11:06, 01-21-00

EMF=-32.1 mV AT 11:06, 01-21-00
ENTERED

STD VOL= 2.5000 AT 11:07, 01-21-00
ENTERED

EMF=-80.9 mV AT 11:09, 01-21-00

EMF=-81.2 mV AT 11:09, 01-21-00

EMF=-81.2 mV AT 11:09, 01-21-00
ENTERED

1:NH3 SLOPE=-60.2 mV/DEC
AT 11:09, 01-21-00

1:NH3 CONCN= 6.17

5 L sample

DOUBLE KNOWN ADDITION SELECTED
AT 11:45, 01-21-00

SAMPLE VOL= 25.000 AT 11:51, 01-21-00
ENTERED

EMF= 4.4 mV AT 11:53, 01-21-00

EMF= 4.3 mV AT 11:53, 01-21-00

EMF= 4.3 mV AT 11:53, 01-21-00
ENTERED

STD CONCN= 997 AT 11:53, 01-21-00
ENTERED

STD VOL= .25000 AT 11:53, 01-21-00
ENTERED

EMF=-19.7 mV AT 11:55, 01-21-00

EMF=-19.9 mV AT 11:55, 01-21-00

EMF=-19.9 mV AT 11:55, 01-21-00
ENTERED

STD VOL= 2.5000 AT 11:56, 01-21-00
ENTERED

EMF=-68.7 mV AT 11:58, 01-21-00

EMF=-69.0 mV AT 11:59, 01-21-00

EMF=-69.6 mV AT 12:00, 01-21-00

EMF=-69.6 mV AT 12:00, 01-21-00
ENTERED

1:NH3 SLOPE=-61.9 mV/DEC
AT 12:00, 01-21-00

1:NH3 CONCN= 6.72

52 Dup

```
DOUBLE KNOWN ADDITION SELECTED
 AT 13:33, 01-21-00

SAMPLE VOL= 25.000 AT 13:39, 01-21-00
ENTERED

EMF=-24.4 mV AT 13:42, 01-21-00

EMF=-24.7 mV AT 13:42, 01-21-00

EMF=-24.8 mV AT 13:42, 01-21-00
ENTERED

STD CONCN= 997 AT 13:42, 01-21-00
ENTERED

STD VOL= .25000 AT 13:42, 01-21-00
ENTERED

EMF=-54.2 mV AT 13:44, 01-21-00

EMF=-54.4 mV AT 13:45, 01-21-00

EMF=-54.4 mV AT 13:45, 01-21-00
ENTERED

STD VOL= 2.5000 AT 13:45, 01-21-00
ENTERED

EMF=-104.6 mV AT 13:47, 01-21-00

EMF=-104.8 mV AT 13:48, 01-21-00

EMF=-104.9 mV AT 13:48, 01-21-00
ENTERED

1:NH3 SLOPE=-59.0 mV/DEC
 AT 13:48, 01-21-00

1:NH3 CONCN= 4.52
```

53

DOUBLE KNOWN ADDITION SELECTED
AT 13:50, 01-21-00

SAMPLE VOL= 25.000 AT 13:57, 01-21-00
ENTERED

EMF=-10.0 mV AT 13:59, 01-21-00

EMF=-10.1 mV AT 14:00, 01-21-00

EMF=-10.1 mV AT 14:00, 01-21-00
ENTERED

STD CONCN= 997 AT 14:00, 01-21-00
ENTERED

STD VOL= .25000 AT 14:00, 01-21-00
ENTERED

EMF=-40.1 mV AT 14:01, 01-21-00

EMF=-40.0 mV AT 14:01, 01-21-00
ENTERED

STD VOL= 2.5000 AT 14:01, 01-21-00
ENTERED

EMF=-91.7 mV AT 14:03, 01-21-00

EMF=-91.9 mV AT 14:03, 01-21-00

53 Duk

EMF=-91.9 mV AT 14:03, 01-21-00
ENTERED

1:NH3 SLOPE=-61.0 mV/DEC
AT 14:03, 01-21-00

1:NH3 CONCN= 4.70

DOUBLE KNOWN ADDITION SELECTED
AT 14:21, 01-21-00

SAMPLE VOL= 25.000 AT 14:32, 01-21-00
ENTERED

EMF=-13.6 mV AT 14:34, 01-21-00

EMF=-13.8 mV AT 14:34, 01-21-00

EMF=-13.8 mV AT 14:34, 01-21-00
ENTERED

STD CONCN= 997 AT 14:34, 01-21-00
ENTERED

STD VOL= .25000 AT 14:34, 01-21-00
ENTERED

EMF=-31.2 mV AT 14:35, 01-21-00

EMF=-31.5 mV AT 14:36, 01-21-00
ENTERED

STD VOL= 2.5000 AT 14:36, 01-21-00
ENTERED

EMF=-75.1 mV AT 14:39, 01-21-00

EMF=-75.4 mV AT 14:39, 01-21-00

EMF=-75.4 mV AT 14:39, 01-21-00
ENTERED

1:NH3 SLOPE=-59.5 mV/DEC
AT 14:39, 01-21-00

1:NH3 CONCN= 9.94

Ending Std

WORKBOOK PAGE: BLANK1

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) NB 4/20/00 LIQUIDS/SOLIDS

				BLNK
Type	Instrument Data (µg/mL)	ID		0.000
BLNK	Blank Result from the Instrument (µg/mL)	BR		0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM		0.200
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL		25.0
Test Code				
NH3-01				
Matrix				
LIQUID	Dilution Factor	DF		1.000
Batch Number				
20000078				
Rerun				
0				
Sample Prep				
N/A	NH3 Concentration (µg/mL)	NH3 CONC	<	1.25E+02
Sample #				
BLNK	**Detection Limit (µg/mL)**	**1.25E+02**		
Calculation Code				
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM)**			
Prepared By				
MF	**NH3 Concentration (µg/mL) = (BR) * (FVOL / VSAM) * DDF**			
Chemist				
MJL				
Analyst				
RWK				
Date Complete				
01/24/2000				
Analysis Date				
01/21/2000				
Analysis Time				
04:41 PM				
Sample Point	**NH3 Concentration (µg/mL)**		<	1.25E+02
SY102 GRAB 5				

Analyst:	RWK	Date:	01/24/2000
Signature of Chemist:	NA MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: STD2

AMMONIA (NH3) : LA-631-001 (D-~~0~~) 2 KB 4/30/00 LIQUIDS/SOLIDS

			STD
Type	Instrument Data (µg/mL)	ID	9.330
STD	Blank Result from the Instrument (µg/mL)	BR	0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19H
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.66E+02
Matrix			
LIQUID			
Batch Number			
20000078			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.30E+02
Sampler			
STD	Detection Limit (µg/mL)	5.00E+01	
Instrument Code			
NH301	Detection Limit = 1.000µg * (FVOL/VSAM)		
Originator By			
MF	NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)		
Chemist			
MJL	QC ACTUAL = STD VAL		
Analyst	QC FOUND = (ID-BR) * (FVOL/VSAM)		
RWK			
Date Complete			
01/24/2000			
Analysis Date	QC ACTUAL (µg)		4.66E+02
01/21/2000	QC FOUND (µg)		4.30E+02
Analysis Time			
04:41 PM			
Sample Point			
SY102 GRAB 5			

Analyst:	RWK	Date:	01/24/2000
Signature of Chemist:	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM3

AMMONIA (NH3) : LA-631-001 (D-θ) 2 NB 4/30/00 LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	3.650
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.200
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000078			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	3.64E+02
Sample Date			
S00T000051	**Detection Limit (µg/mL)**	**1.25E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Method Code			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
RWK			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:41 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**3.64E+02**
SY102 GRAB 5			

Analyst:		RWK	Date: 01/24/2000
Signature of Chemist:	NA	MJL	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP4

AMMONIA (NH3) : LA-631-001 (D-0) 2 NB 4/30/00 LIQUIDS/SOLIDS

			DUP
Sample Type	Instrument Data (µg/mL)	ID	3.360
DUP	Blank Result from the Instrument (µg/mL)	BR	0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.200
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000078			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	3.28E+02
Sample #			
S00T000051	**Detection Limit (µg/mL)**	**1.25E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Reviewed			
MJL			
Analyst			
RWK			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:41 PM			
Sample Point	*NH3 Concentration (µg/mL)*		3.28E+02
SY102 GRAB 5			

Analyst:		RWK	Date: 01/24/2000
Signature of Chemist:	NA	MJL	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SPIKE5

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) 4/30/00 LIQUIDS/SOLIDS

			SPK
Type	Instrument Data (µg/mL)	ID	8.610
SPK	Blank Result from the Instrument (µg/mL)	BR	0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.200
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	Spike Book Number	SPK	59N19H
NH3-01	Spike Value (µg/mL)	SPK VAL	4.66E+02
Matrix	Vol of Spike Standard Used (mL)	VOL SPK	0.250
LIQUID			
Batch Number			
20000078			
Rerun	Sample Instrument Data (µg/mL)	SAM ID	3.65
0	Sample Volume of Sample (mL)	SAM VSAM	0.200
Sample Prep	Sample Final Volume (mL)	SAM FVOL	25.0
N/A			
Sample #			
S00T000051			
Instrument Code			
NH301			
Prepared By			
MF			
Chemist			
MJL	QC ACTUAL = SPK VAL * VOL SPK		
Analyzed By	QC FOUND = (((ID-BR) * FVOL) - (SAM ID - BR) * SAM FVOL * (VSAM / SAM VSAM))		
RWK			
Date Complete			
01/24/2000			
Analysis Date	QC ACTUAL (µg)		1.17E+02
01/21/2000	QC FOUND (µg)		1.24E+02
Analysis Time			
04:41 PM			
Sample Point			
SY102 GRAB 5			

Analyst:	RWK	Date:	01/24/2000
Signature of Chemist:	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM6

AMMONIA (NH3) : LA-631-001 (D-~~0~~) 2 KB 4/30/00 LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	6.170
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.200
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000078			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	6.79E+02
Sample #			
S00T000052	**Detection Limit (µg/mL)**	**1.25E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
RWK			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:41 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**6.79E+02**
SY102 GRAB 5			

Analyst:	RWK	Date:	01/24/2000
Signature of Chemist: NA	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP7

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) HB 4/30/00 LIQUIDS/SOLIDS

			DUP
Type	Instrument Data (µg/mL)	ID	6.720
DUP	Blank Result from the Instrument (µg/mL)	BR	0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.200
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000078			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	7.48E+02
Sample #			
S00T000052	**Detection Limit (µg/mL)**	**1.25E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
RWK			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:41 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**7.48E+02**
SY102 GRAB 5			

Analyst:		RWK	Date: 01/24/2000
Signature of Chemist:		MJL	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: SAM8

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) NB 4/30/00 LIQUIDS/SOLIDS

			SAMPLE
Type	Instrument Data (µg/mL)	ID	4.520
SAMPLE	Blank Result from the Instrument (µg/mL)	BR	0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.200
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Instr Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000078			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.73E+02
Sample #			
S00T000053	**Detection Limit (µg/mL)**	**1.25E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
RWK			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:41 PM			
Sample Point	**NH3 Concentration (µg/mL)**		4.73E+02
SY102 GRAB 5			

Analyst:	NA	RWK Date:	01/24/2000
Signature of Chemist:		MJL Date:	

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: DUP9

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) XB 4/30/00 LIQUIDS/SOLIDS

			DUP
Type	Instrument Data (µg/mL)	ID	4.700
DUP	Blank Result from the Instrument (µg/mL)	BR	0.735
Worklist	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.200
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code			
NH3-01			
Matrix			
LIQUID	Dilution Factor	DF	1.000
Batch Number			
20000078			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.96E+02
Sample #			
S00T000053	**Detection Limit (µg/mL)**	**1.25E+02**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM) * DF**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR) * (FVOL / VSAM)*DF**		
Chemist			
MJL			
Analyst			
RWK			
Date Complete			
01/24/2000			
Analysis Date			
01/21/2000			
Analysis Time			
04:41 PM			
Sample Point	**NH3 Concentration (µg/mL)**		**4.96E+02**
SY102 GRAB 5			

Analyst:		RWK	Date: 01/24/2000
Signature of Chemist:		MJL	Date:

SAMPLE.WB1 REV 1.0 631001ML

WORKBOOK PAGE: ST_END10

AMMONIA (NH3) : LA-631-001 (D-~~0~~ 2) 4/30/01 LIQUIDS/SOLIDS

			STD
Type	Instrument Data (µg/mL)	ID	9.940
STD	Blank Result from the Instrument (µg/mL)	BR	0.735
Work List	Vol of Sample for Dilution (mL) or Vol of Sample Direct (mL)	VSAM	0.500
32098	Final Vol of Dilution (mL) or Vol of Sample Direct (mL)	FVOL	25.0
Test Code	LCS Standard Book Number	LCS	59N19H
NH3-01	LCS Standard Concentration (µg/mL)	STD VAL	4.66E+02
Matrix			
LIQUID			
Batch Number			
20000078			
Rerun			
0			
Sample Prep			
N/A	NH3 Concentration (µg/mL)	NH3 CONC	4.60E+02
Spiking Lot			
	Detection Limit (µg/mL)	**5.00E+01**	
Instrument Code			
NH301	**Detection Limit = 1.000µg * (FVOL/VSAM)**		
Prepared By			
MF	**NH3 Concentration (µg/mL) = (ID-BR)*(FVOL /VSAM)**		
Validated By			
MJL	**QC ACTUAL = STD VAL**		
Analyst	**QC FOUND = (ID-BR) * (FVOL/VSAM)**		
RWK			
Date Complete			
01/24/2000			
Analysis Date	**QC ACTUAL (µg)**		4.66E+02
01/21/2000	**QC FOUND (µg)**		4.60E+02
Analysis Time			
04:41 PM			
Sample Point			
SY102 GRAB 5			

Analyst:	RWK	Date:	01/24/2000
Signature of Chemist:	MJL	Date:	

SAMPLE.WB1 REV 1.0 631001ML

LABCORE Completed Worklist Report for Worklist# 32104

Analyst: adp **Instrument:** IC45S1 **Book#:** 101N21E

Method: LA-533-105 Rev/Mod F-2

Worklist Comment: SY-102 GRAB 5 FOR @IC-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB		0	@IC-QC	F	QC	1	<1.20e-2		ug/mL
1	CCB		0	@IC-QC	CL	QC	1	<1.70e-2		ug/mL
1	CCB		0	@IC-QC	NO2	QC	1	<1.08e-1		ug/mL
1	CCB		0	@IC-QC	BR	QC	1	<1.25e-1		ug/mL
1	CCB		0	@IC-QC	NO3	QC	1	<1.39e-1		ug/mL
1	CCB		0	@IC-QC	PO4	QC	1	<1.20e-1		ug/mL
1	CCB		0	@IC-QC	SO4	QC	1	<1.38e-1		ug/mL
1	CCB		0	@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2	LCS-INST		0	@IC-QC	F	QC	64.0	6.38e+01	99.688	% Recovery
2	LCS-INST		0	@IC-QC	CL	QC	90.0	8.89e+01	98.778	% Recovery
2	LCS-INST		0	@IC-QC	NO2	QC	529	4.58e+02	86.578	% Recovery
2	LCS-INST		0	@IC-QC	BR	QC	625	6.23e+02	99.680	% Recovery
2	LCS-INST		0	@IC-QC	NO3	QC	690	7.97e+02	115.507	% Recovery
2	LCS-INST		0	@IC-QC	PO4	QC	635	6.03e+02	94.961	% Recovery
2	LCS-INST		0	@IC-QC	SO4	QC	690	6.78e+02	98.261	% Recovery
2	LCS-INST		0	@IC-QC	OXALATE2	QC	531	5.57e+02	104.896	% Recovery
3	CCV		0	@IC-QC	F	QC	63.5	6.27e+01	98.740	% Recovery
3	CCV		0	@IC-QC	CL	QC	87.5	8.21e+01	93.829	% Recovery
3	CCV		0	@IC-QC	NO2	QC	534	5.05e+02	94.569	% Recovery
3	CCV		0	@IC-QC	BR	QC	630	6.10e+02	96.825	% Recovery
3	CCV		0	@IC-QC	NO3	QC	700	6.79e+02	97.000	% Recovery
3	CCV		0	@IC-QC	PO4	QC	635	5.81e+02	91.496	% Recovery
3	CCV		0	@IC-QC	SO4	QC	690	6.67e+02	96.667	% Recovery
3	CCV		0	@IC-QC	OXALATE2	QC	539	5.21e+02	96.660	% Recovery
4	SAMPLE	S00T000049	0	@IC-01	F-02	LIQUID	N/A	5.483e+02	49.690	ug/mL
4	SAMPLE	S00T000049	0	@IC-01	CL-02	LIQUID	N/A	3.796e+03	70.400	ug/mL
4	SAMPLE	S00T000049	0	@IC-01	NO2-02	LIQUID	N/A	4.661e+04	447.200	ug/mL
4	SAMPLE	S00T000049	0	@IC-01	BR-02	LIQUID	N/A <	5.176e+02	517.600	ug/mL
4	SAMPLE	S00T000049	0	@IC-01	NO3-02	LIQUID	N/A	1.083e+05	575.600	ug/mL
4	SAMPLE	S00T000049	0	@IC-01	PO4-02	LIQUID	N/A	3.025e+03	496.900	ug/mL
4	SAMPLE	S00T000049	0	@IC-01	SO4-02	LIQUID	N/A	3.736e+03	571.500	ug/mL
4	SAMPLE	S00T000049	0	@IC-01	OXALATE2	LIQUID	N/A	1.782e+03	434.800	ug/mL
5	DUP	S00T000049	0	@IC-01	F-02	LIQUID	5.48e+02	5.21e+02	5.051	RPD
5	DUP	S00T000049	0	@IC-01	CL-02	LIQUID	3.80e+03	3.85e+03	1.307	RPD
5	DUP	S00T000049	0	@IC-01	NO2-02	LIQUID	4.66e+04	4.72e+04	1.279	RPD
5	DUP	S00T000049	0	@IC-01	BR-02	LIQUID	<5.18e2	<5.18e2		RPD
5	DUP	S00T000049	0	@IC-01	NO3-02	LIQUID	1.08e+05	1.09e+05	0.922	RPD
5	DUP	S00T000049	0	@IC-01	PO4-02	LIQUID	3.02e+03	3.09e+03	2.291	RPD
5	DUP	S00T000049	0	@IC-01	SO4-02	LIQUID	3.74e+03	3.61e+03	3.537	RPD
5	DUP	S00T000049	0	@IC-01	OXALATE2	LIQUID	1.78e+03	1.46e+03	19.753	RPD
6	SAMPLE	S00T000054	0	@IC-01	F-02	LIQUID	N/A	4.248e+02	49.690	ug/mL

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

LABCORE Completed Worklist Report for Worklist# 32104

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
6	SAMPLE	S00T000054	0	@IC-01	CL-02	LIQUID	N/A		5.018e+03	70.400	ug/mL
6	SAMPLE	S00T000054	0	@IC-01	NO2-02	LIQUID	N/A		6.106e+04	447.200	ug/mL
6	SAMPLE	S00T000054	0	@IC-01	BR-02	LIQUID	N/A	<	5.176e+02	517.600	ug/mL
6	SAMPLE	S00T000054	0	@IC-01	NO3-02	LIQUID	N/A		1.284e+05	575.600	ug/mL
6	SAMPLE	S00T000054	0	@IC-01	PO4-02	LIQUID	N/A		3.538e+03	496.900	ug/mL
6	SAMPLE	S00T000054	0	@IC-01	SO4-02	LIQUID	N/A		3.713e+03	571.500	ug/mL
6	SAMPLE	S00T000054	0	@IC-01	OXALATE2	LIQUID	N/A		9.900e+02	434.800	ug/mL
7	DUP	S00T000054	0	@IC-01	F-02	LIQUID	4.25e+02		4.47e+02	5.046	RPD
7	DUP	S00T000054	0	@IC-01	CL-02	LIQUID	5.02e+03		5.03e+03	0.199	RPD
7	DUP	S00T000054	0	@IC-01	NO2-02	LIQUID	6.11e+04		6.11e+04	0.000	RPD
7	DUP	S00T000054	0	@IC-01	BR-02	LIQUID	<5.18e2		<5.18e2		RPD
7	DUP	S00T000054	0	@IC-01	NO3-02	LIQUID	1.28e+05		1.26e+05	1.575	RPD
7	DUP	S00T000054	0	@IC-01	PO4-02	LIQUID	3.54e+03		4.18e+03	16.580	RPD
7	DUP	S00T000054	0	@IC-01	SO4-02	LIQUID	3.71e+03		3.52e+03	5.256	RPD
7	DUP	S00T000054	0	@IC-01	OXALATE2	LIQUID	9.90e+02		<4.35e2		RPD
8	SAMPLE	S00T000057	0	@IC-01	F-02	LIQUID	N/A		4.278e+02	49.690	ug/mL
8	SAMPLE	S00T000057	0	@IC-01	CL-02	LIQUID	N/A		5.067e+03	70.400	ug/mL
8	SAMPLE	S00T000057	0	@IC-01	NO2-02	LIQUID	N/A		6.133e+04	447.200	ug/mL
8	SAMPLE	S00T000057	0	@IC-01	BR-02	LIQUID	N/A	<	5.176e+02	517.600	ug/mL
8	SAMPLE	S00T000057	0	@IC-01	NO3-02	LIQUID	N/A		1.230e+05	575.600	ug/mL
8	SAMPLE	S00T000057	0	@IC-01	PO4-02	LIQUID	N/A		1.301e+03	496.900	ug/mL
8	SAMPLE	S00T000057	0	@IC-01	SO4-02	LIQUID	N/A		3.197e+03	571.500	ug/mL
8	SAMPLE	S00T000057	0	@IC-01	OXALATE2	LIQUID	N/A	<	4.348e+02	434.800	ug/mL
9	DUP	S00T000057	0	@IC-01	F-02	LIQUID	4.28e+02		4.69e+02	9.142	RPD
9	DUP	S00T000057	0	@IC-01	CL-02	LIQUID	5.07e+03		4.90e+03	3.410	RPD
9	DUP	S00T000057	0	@IC-01	NO2-02	LIQUID	6.13e+04		5.94e+04	3.148	RPD
9	DUP	S00T000057	0	@IC-01	BR-02	LIQUID	<5.18e2		<5.18e2		RPD
9	DUP	S00T000057	0	@IC-01	NO3-02	LIQUID	1.23e+05		1.21e+05	1.639	RPD
9	DUP	S00T000057	0	@IC-01	PO4-02	LIQUID	1.30e+03		1.87e+03	35.962	RPD
9	DUP	S00T000057	0	@IC-01	SO4-02	LIQUID	3.20e+03		3.09e+03	3.498	RPD
9	DUP	S00T000057	0	@IC-01	OXALATE2	LIQUID	<4.35e2		1.06e+03		RPD

Final page for worklist# 32104

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

Jann M. Fuge 1/18/00
Reviewer Signature **Date**

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

HNF-1698 REV. 0

01/11/00 14:44
ws2

LABCORE Data Entry Template for Worklist# 32104

Analyst: ADP **Instrument:** IC _____ **Book#** 100N21-E LCS
Method: LA-533-105 **Rev/Mod** F-2 101N21-E CCV

Worklist Comment: SY-102 GRAB 5 FOR @IC-01 RTS

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	S00T000049	0		@IC-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:				BR-02, CL-02, F-02, NO2-02, NO3-02, OXALATE2, PO4-02, SO4-02			
5	DUP	S00T000049	0		@IC-01	LIQUID		
6	SAMPLE	S00T000054	0		@IC-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:				BR-02, CL-02, F-02, NO2-02, NO3-02, OXALATE2, PO4-02, SO4-02			
7	DUP	S00T000054	0		@IC-01	LIQUID		
8	SAMPLE	S00T000057	0		@IC-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:				BR-02, CL-02, F-02, NO2-02, NO3-02, OXALATE2, PO4-02, SO4-02			
9	DUP	S00T000057	0		@IC-01	LIQUID		

Final page for worklist # 32104

01-16-2000

Signature **Date** **Signature** **Date**

Data Entry Comments:
uploaded 1-18-00 validated 1/18/00 JMT
J. Wanell revalidated 3/22/00 JMT
S2104-JAN.CSV

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

HNF-1698 REV. 0

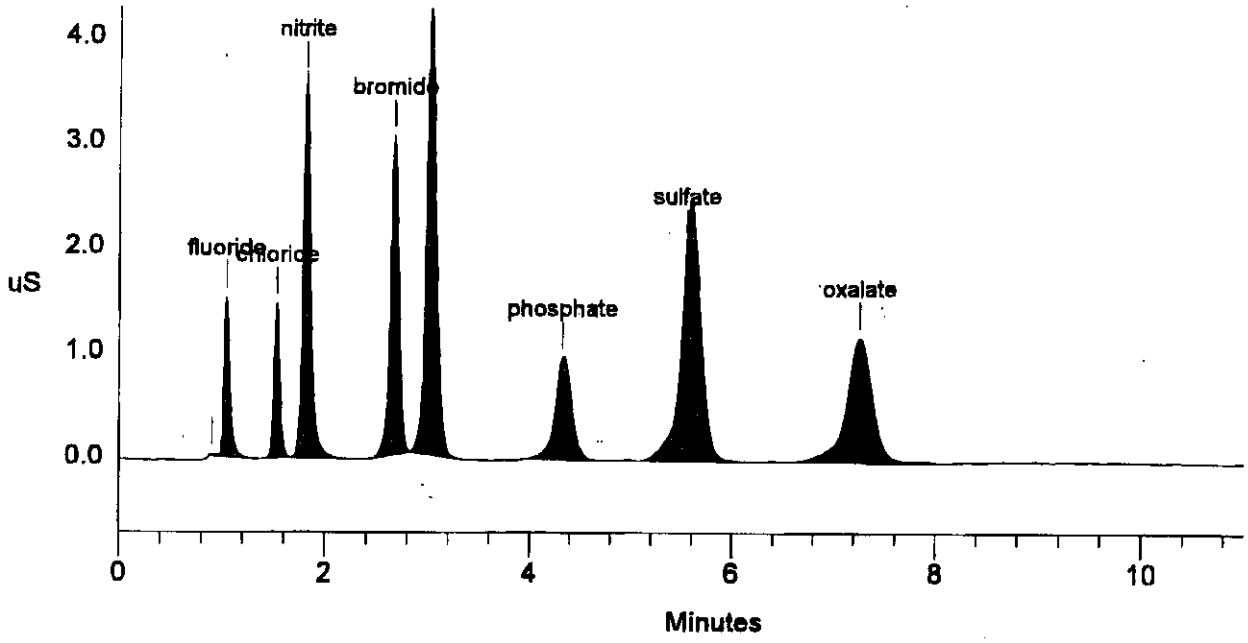
Sample Name: 101N21-E LCS Date: 01/16/2000 08:03:13
Data File : C:\DX\DATA\00011601.D02
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 2 Detector:CDM-1
Analyst : Anthony Jurnts Column: AG4A/AS4A anion column
01-16-2000

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	16	73	2	
2	1.04	fluoride	63.766	1505	5843	2	-0.95
3	1.53	chloride	88.884	1458	5668	1	-1.51
4	1.81	nitrite	458.129 86.60	3606	18460	1	-1.28
5	2.67	bromide	623.033	3023	17086	1	-2.32
6	3.02	nitrate	796.502 115.44	4235	28243	1	-2.27
7	4.32	phosphate	603.427	956	11003	1	-1.14
8	5.55	sulfate	677.619	2036	32136	1	-1.83
9	7.25	oxalate	556.719	1173	20824	1	-1.45
		Totals	3868.080	18009	139335		

File: 00011601.D02 Sample: 101N21-E LCS



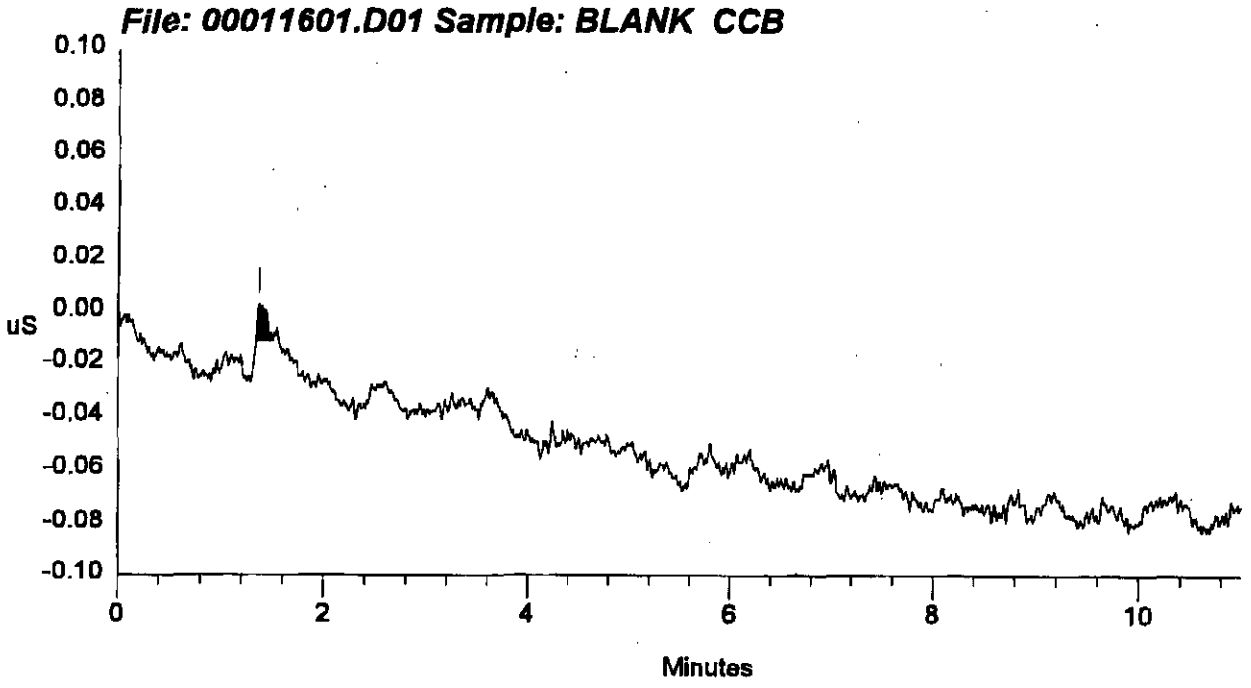
SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 169 TO 177.

```
==================================================================================
| Sample Name: BLANK  CCB                          Date: 01/16/2000 07:49:32      |
| Data File  : C:\DX\DATA\00011601.D01                                            |
| Method     : C:\DX\METHOD\ANIONSa.met                                           |
| ACI Address: 1  System: 1  Inject#: 1                        Detector:CDM-1     |
| Analyst    :                  Column: AG4A/AS4A anion column                   |
==================================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.37		0.000	14	84	1	
		Totals	0.000	14	84		



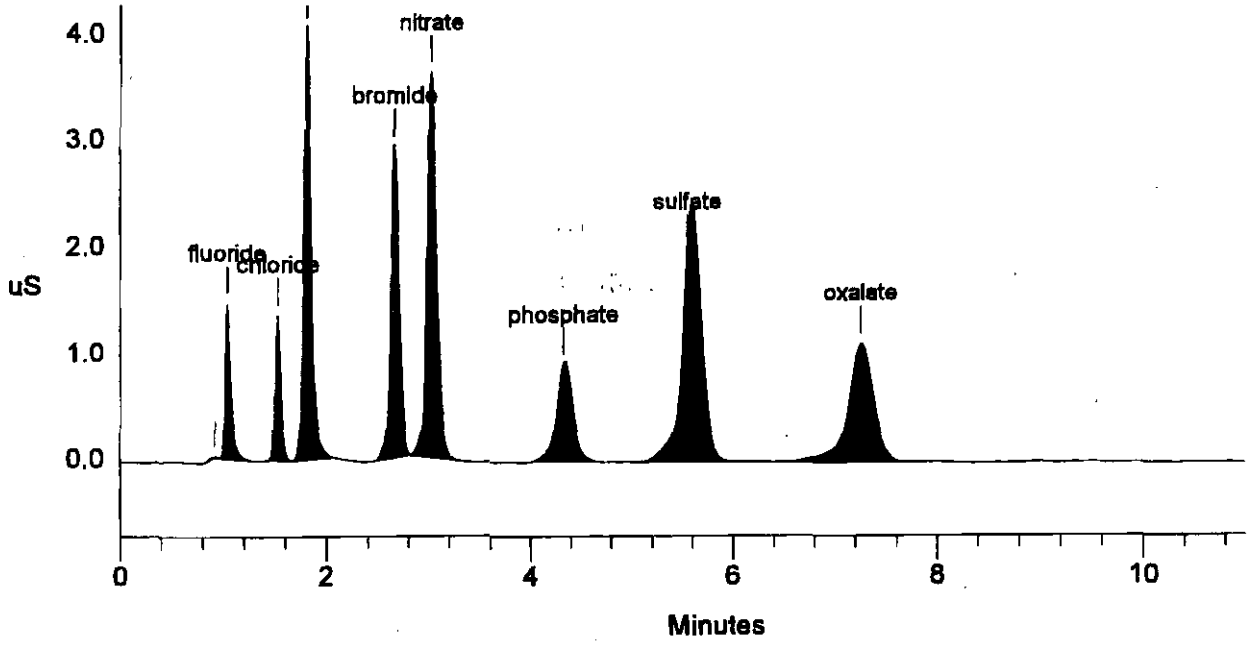
```
==================================================================================
| Sample Name: 100N21-E CCV                      Date: 01/16/2000 08:16:51        |
| Data File  : C:\DX\DATA\00011601.D03                                            |
| Method     : C:\DX\METHOD\ANIONSa.met                                           |
| ACI Address: 1  System: 1  Inject#: 3                        Detector:CDM-1     |
| Analyst    :                  Column: AG4A/AS4A anion column                   |
==================================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	15	69	2	
2	1.04	fluoride	62.743	1474	5747	2	-0.95
3	1.53	chloride	82.089	1378	5233	1	-1.51
4	1.81	nitrite	504.550	4059	20394	1	-1.28
5	2.66	bromide	609.868	2931	16711	1	-2.56
6	3.02	nitrate	678.503	3622	23948	1	-2.27
7	4.32	phosphate	580.569	922	10582	1	-1.14
8	5.55	sulfate	666.795	1982	31609	1	-1.83
9	7.25	oxalate	520.927	1125	19462	1	-1.45
		Totals	3706.043	17508	133755		

File: 00011601.D03 Sample: 100N21-E CCV



HNF-1698 REV. 0

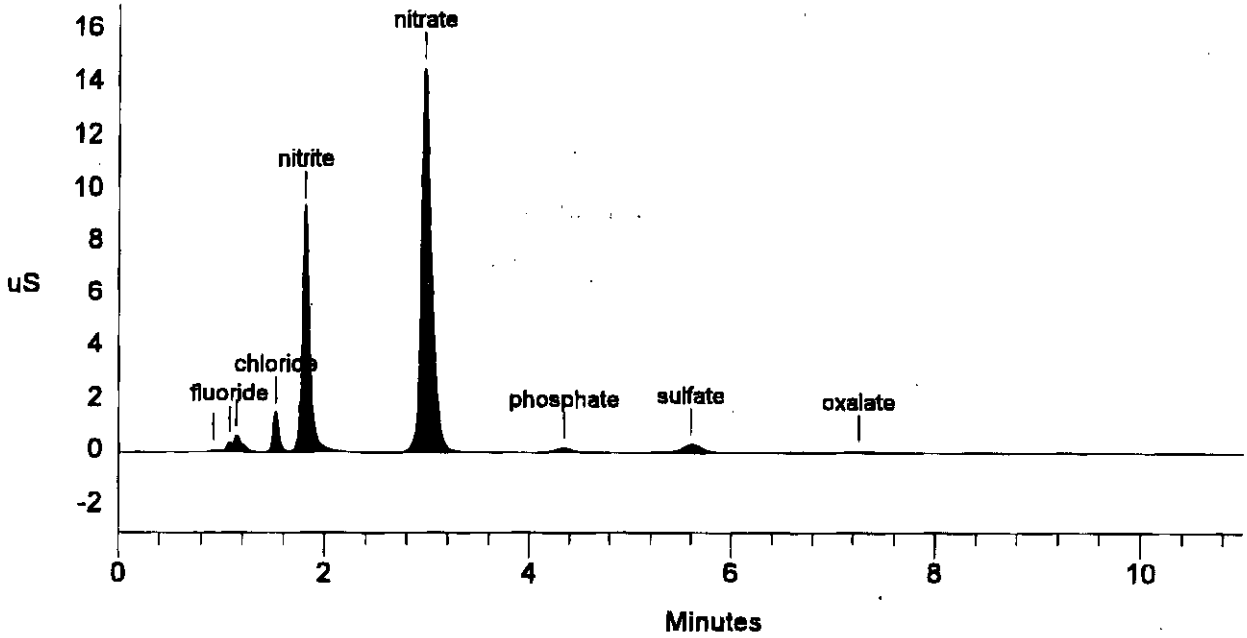
Sample Name: S00T000049 SAM Date: 01/16/2000 08:32:32
Data File : C:\DX\DATA\00011611.D01
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 1 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	4141	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.92		0.000	40	192	2	
2	1.08	fluoride	548.303	350	1167	2	2.86
3	1.15		0.000	597	3341	2	
4	1.52	chloride	3795.883	1503	5905	1	-1.94
5	1.81	nitrite	46607.840	9292	47169	1	-1.28
6	2.97	nitrate	108332.985	14516	99515	1	-3.78
7	4.35	phosphate	3024.913	143	1381	1	-0.53
8	5.60	sulfate	3735.878	296	3954	1	-0.88
9	7.25	oxalate	1781.640	57	1325	1	-1.45
		Totals	167827.442	26794	163949		

File: 00011611.D01 Sample: S00T000049 SAM



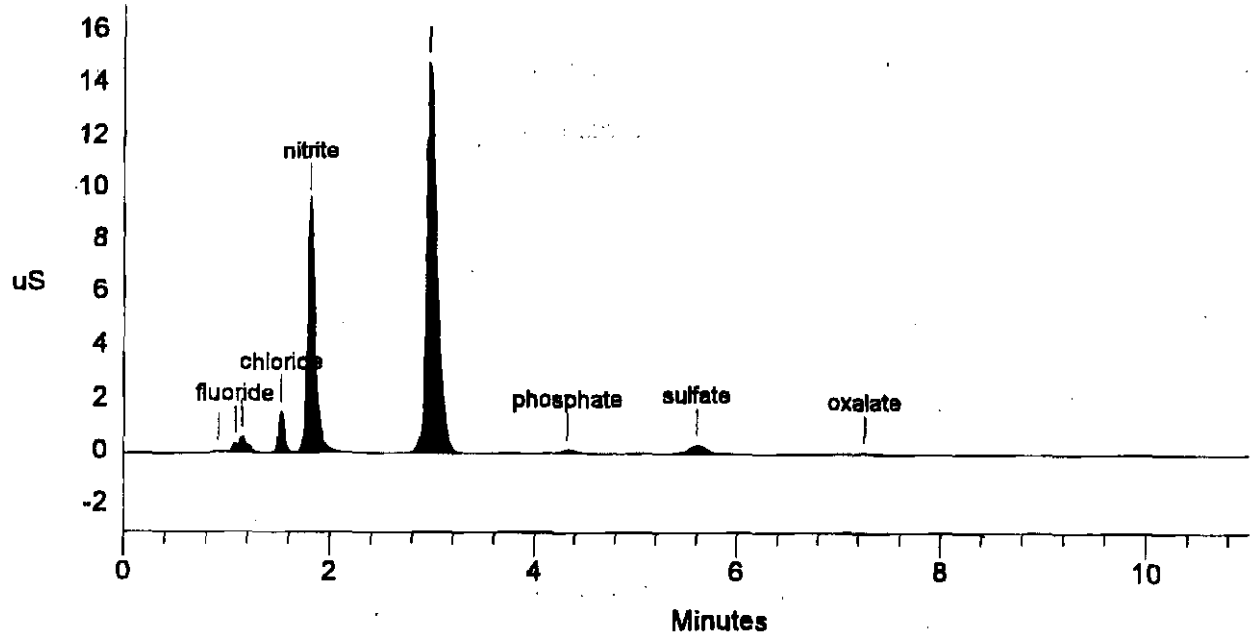
Sample Name: S00T000049 DUP Date: 01/16/2000 08:58:41
Data File : C:\DX\DATA\00011621.D01
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 1 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	4141	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	51	252	2	
2	1.08	fluoride	520.793	342	1106	2	2.86
3	1.15		0.000	597	3285	2	
4	1.52	chloride	3850.287	1557	5990	1	-1.94
5	1.81	nitrite	47214.736	9554	47806	1	-1.28
6	2.97	nitrate	108884.456	14764	100066	1	-3.99
7	4.32	phosphate	3085.258	127	1407	1	-1.14
8	5.60	sulfate	3609.775	298	3808	1	-0.88
9	7.25	oxalate	1460.454	60	1028	1	-1.45
		Totals	168625.758	27351	164748		

File: 00011621.D01 Sample: S00T000049 DUP



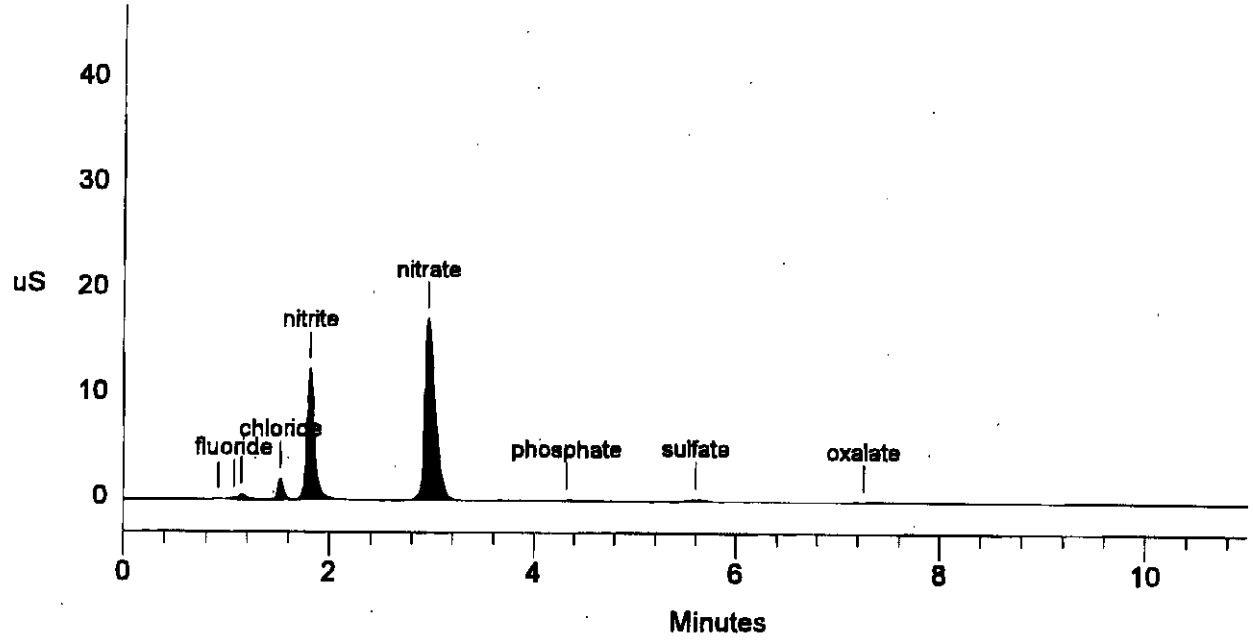
Sample Name: S00T000054 SAM Date: 01/16/2000 09:12:19
Data File : C:\DX\DATA\00011611.D02
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 2 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	4141	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.92		0.000	56	280	2	
2	1.07	fluoride	424.810	234	891	2	2.22
3	1.15		0.000	540	2969	2	
4	1.52	chloride	5018.213	2048	7821	1	-1.94
5	1.81	nitrite	61062.387	12437	62458	1	-1.28
6	2.96	nitrate	128433.497	17237	119952	1	-4.21
7	4.32	phosphate	3538.167	152	1606	1	-1.14
8	5.60	sulfate	3712.975	270	3927	1	-0.88
9	7.25	oxalate	989.994	41	593	1	-1.45
		Totals	203180.043	33014	200497		

File: 00011611.D02 Sample: S00T000054 SAM



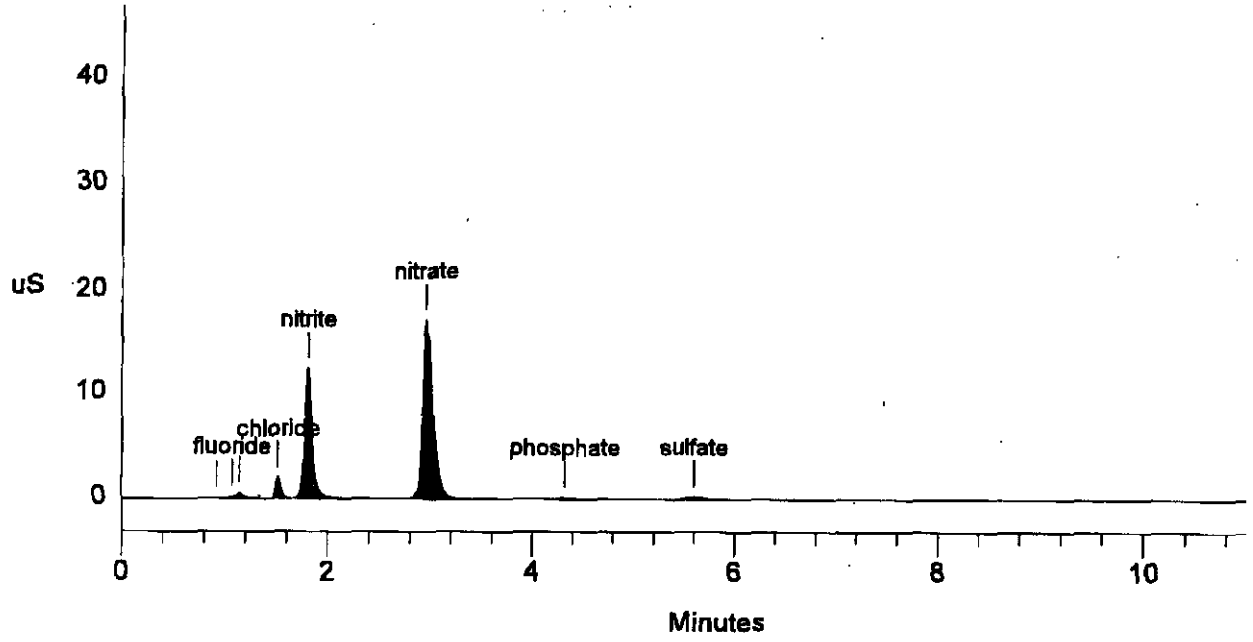
Sample Name: S00T000054 DUP Date: 01/16/2000 09:25:57
Data File : C:\DX\DATA\00011611.D03
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 3 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	4141	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.92		0.000	51	248	2	
2	1.07	fluoride	446.549	242	940	2	2.22
3	1.15		0.000	549	2913	2	
4	1.51	chloride	5031.771	1995	7843	1	-2.37
5	1.81	nitrite	61081.693	12457	62479	1	-1.28
6	2.95	nitrate	125677.535	17175	117107	1	-4.42
7	4.32	phosphate	4178.965	169	1886	1	-1.14
8	5.60	sulfate	3519.012	266	3703	1	-0.88
		Totals	199935.524	32905	197118		

File: 00011611.D03 Sample: S00T000054 DUP



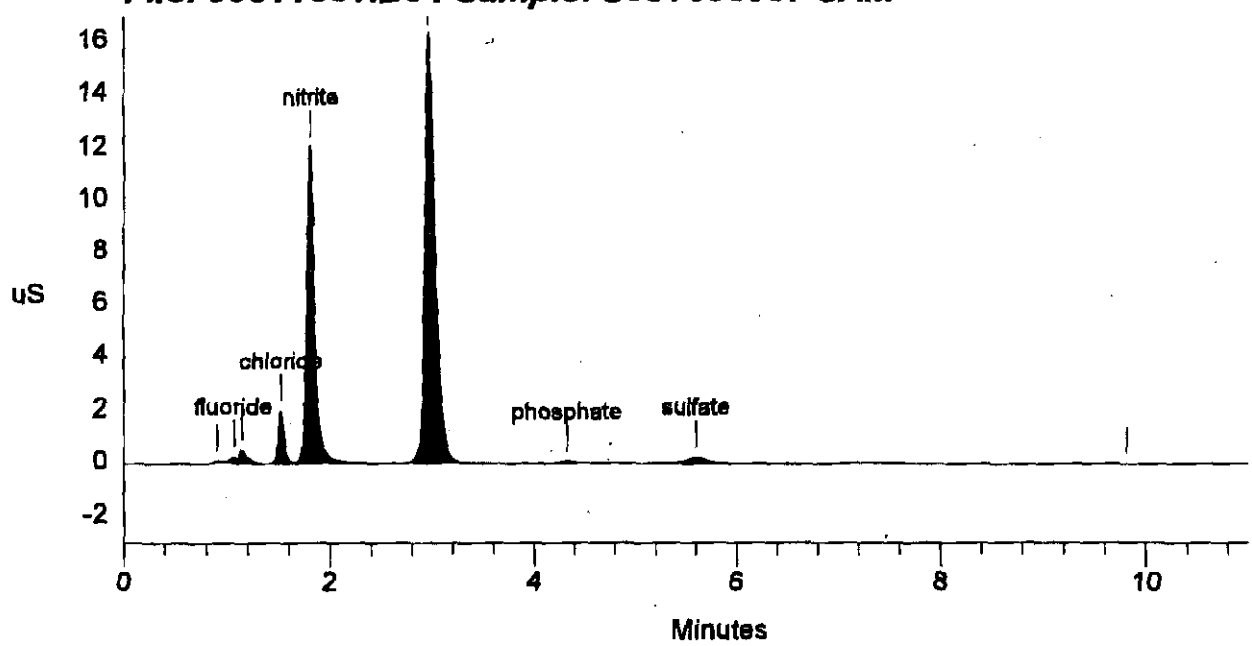
Sample Name: S00T000057 SAM	Date: 01/16/2000 09:39:36
Data File : C:\DX\DATA\00011601.D04	
Method : C:\DX\METHOD\ANIONSa.met	
ACI Address: 1 System: 1 Inject#: 4	Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column	

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	4141	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	53	281	2	
2	1.07	fluoride	427.809	222	898	2	1.59
3	1.15		0.000	520	2779	2	
4	1.52	chloride	5067.092	1975	7898	1	-1.94
5	1.81	nitrite	61334.410	12002	62748	1	-1.28
6	2.95	nitrate	123001.514	16258	114357	1	-4.42
7	4.32	phosphate	1300.579	73	627	1	-1.14
8	5.60	sulfate	3196.517	243	3330	1	-0.88
9	9.81		0.000	14	332	1	
		Totals	194327.921	31362	193250		

File: 00011601.D04 Sample: S00T000057 SAM



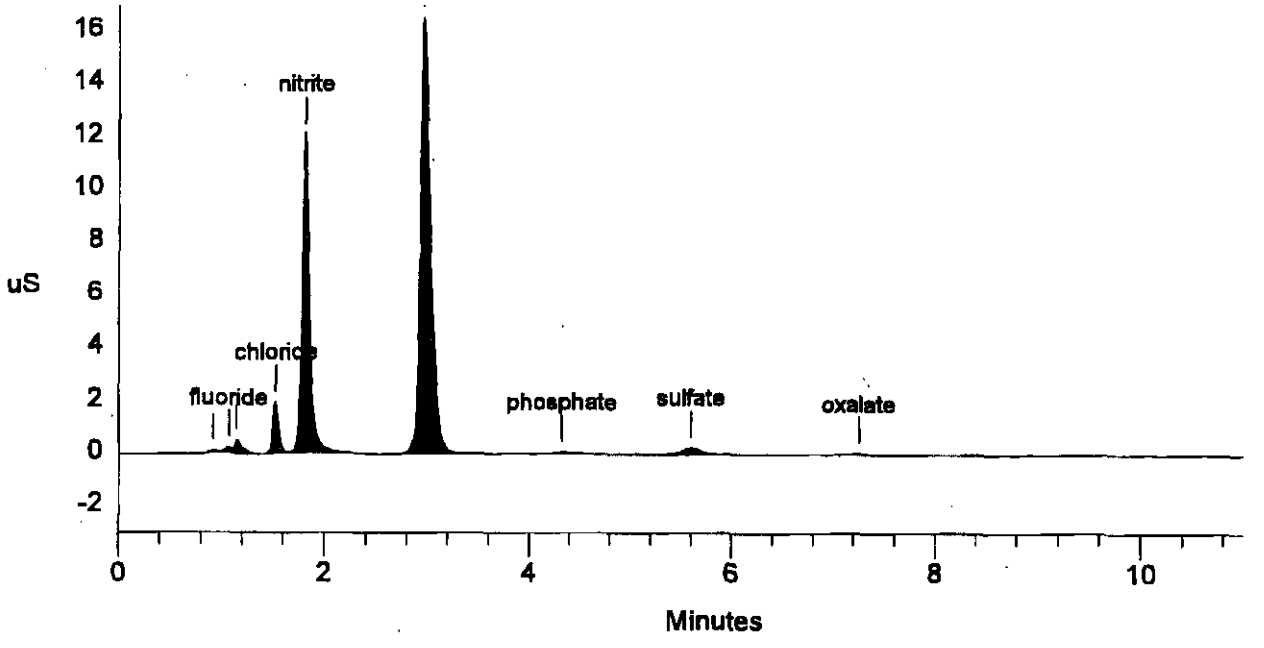
Sample Name: S00T000057 DUP Date: 01/16/2000 09:53:14
Data File : C:\DX\DATA\00011601.D05
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 5 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	4141	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	57	305	2	
2	1.07	fluoride	469.462	233	991	2	2.22
3	1.15		0.000	515	2630	2	
4	1.52	chloride	4902.218	1978	7639	1	-1.94
5	1.81	nitrite	59374.532	12071	60659	1	-1.28
6	2.96	nitrate	121273.945	16548	112589	1	-4.21
7	4.32	phosphate	1869.785	82	876	1	-1.14
8	5.60	sulfate	3091.877	247	3209	1	-0.88
9	7.25	oxalate	1061.485	35	660	1	-1.45
		Totals	192043.303	31766	189558		

File: 00011601.D05 Sample: S00T000057 DUP



HNF-1698 REV. 0

LABCORE Completed Worklist Report for Worklist# 32105

Analyst: adp **Instrument:** IC45S1 **Book#:** 101N21E

Method: LA-533-105 Rev/Mod F-2

Worklist Comment: SY-102 GRAB 5 FOR @IC-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB		0	@IC-QC	F	QC	1	<1.20e-2		ug/mL
1	CCB		0	@IC-QC	CL	QC	1	<1.70e-2		ug/mL
1	CCB		0	@IC-QC	NO2	QC	1	<1.08e-1		ug/mL
1	CCB		0	@IC-QC	BR	QC	1	<1.25e-1		ug/mL
1	CCB		0	@IC-QC	NO3	QC	1	<1.39e-1		ug/mL
1	CCB		0	@IC-QC	PO4	QC	1	<1.20e-1		ug/mL
1	CCB		0	@IC-QC	SO4	QC	1	<1.38e-1		ug/mL
1	CCB		0	@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2	LCS-INST		0	@IC-QC	F	QC	64.0	6.23e+01	97.344	% Recovery
2	LCS-INST		0	@IC-QC	CL	QC	90.0	8.95e+01	99.444	% Recovery
2	LCS-INST		0	@IC-QC	NO2	QC	529	4.67e+02	88.280	% Recovery
2	LCS-INST		0	@IC-QC	BR	QC	625	6.23e+02	99.680	% Recovery
2	LCS-INST		0	@IC-QC	NO3	QC	690	7.80e+02	113.043	% Recovery
2	LCS-INST		0	@IC-QC	PO4	QC	635	5.97e+02	94.016	% Recovery
2	LCS-INST		0	@IC-QC	SO4	QC	690	6.77e+02	98.116	% Recovery
2	LCS-INST		0	@IC-QC	OXALATE2	QC	531	5.38e+02	101.318	% Recovery
3	CCV		0	@IC-QC	F	QC	63.5	6.19e+01	97.480	% Recovery
3	CCV		0	@IC-QC	CL	QC	87.5	8.98e+01	102.629	% Recovery
3	CCV		0	@IC-QC	NO2	QC	534	5.36e+02	100.375	% Recovery
3	CCV		0	@IC-QC	BR	QC	630	6.34e+02	100.635	% Recovery
3	CCV		0	@IC-QC	NO3	QC	700	7.01e+02	100.143	% Recovery
3	CCV		0	@IC-QC	PO4	QC	635	6.09e+02	95.906	% Recovery
3	CCV		0	@IC-QC	SO4	QC	690	7.00e+02	101.449	% Recovery
3	CCV		0	@IC-QC	OXALATE2	QC	539	5.49e+02	101.855	% Recovery
4	SAMPLE	S00T000055	0	@IC-01	F-02	LIQUID	N/A	3.966e+02	61.810	ug/mL
4	SAMPLE	S00T000055	0	@IC-01	CL-02	LIQUID	N/A	4.910e+03	87.570	ug/mL
4	SAMPLE	S00T000055	0	@IC-01	NO2-02	LIQUID	N/A	5.947e+04	556.300	ug/mL
4	SAMPLE	S00T000055	0	@IC-01	BR-02	LIQUID	N/A <	6.439e+02	643.900	ug/mL
4	SAMPLE	S00T000055	0	@IC-01	NO3-02	LIQUID	N/A	1.222e+05	716.000	ug/mL
4	SAMPLE	S00T000055	0	@IC-01	PO4-02	LIQUID	N/A	3.332e+03	618.100	ug/mL
4	SAMPLE	S00T000055	0	@IC-01	SO4-02	LIQUID	N/A	3.373e+03	710.800	ug/mL
4	SAMPLE	S00T000055	0	@IC-01	OXALATE2	LIQUID	N/A	9.896e+02	540.900	ug/mL
5	DUP	S00T000055	0	@IC-01	F-02	LIQUID	3.97e+02	4.08e+02	2.733	RPD
5	DUP	S00T000055	0	@IC-01	CL-02	LIQUID	4.91e+03	4.99e+03	1.616	RPD
5	DUP	S00T000055	0	@IC-01	NO2-02	LIQUID	5.95e+04	6.03e+04	1.336	RPD
5	DUP	S00T000055	0	@IC-01	BR-02	LIQUID	<6.44e2	<6.44e2		RPD
5	DUP	S00T000055	0	@IC-01	NO3-02	LIQUID	1.22e+05	1.25e+05	2.429	RPD
5	DUP	S00T000055	0	@IC-01	PO4-02	LIQUID	3.33e+03	2.99e+03	10.759	RPD
5	DUP	S00T000055	0	@IC-01	SO4-02	LIQUID	3.37e+03	3.52e+03	4.354	RPD
5	DUP	S00T000055	0	@IC-01	OXALATE2	LIQUID	9.90e+02	1.17e+03	16.667	RPD
6	SPK	S00T000055	0	@IC-01	F-02	LIQUID	64.0	6.14e+01	95.938	% Recovery

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

LABCORE Completed Worklist Report for Worklist# 32105

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
6	SPK	S00T000055	0	@IC-01	CL-02	LIQUID	90.0	8.98e+01	99.778	% Recovery
6	SPK	S00T000055	0	@IC-01	NO2-02	LIQUID	529	4.91e+02	92.817	% Recovery
6	SPK	S00T000055	0	@IC-01	BR-02	LIQUID	625	6.17e+02	98.720	% Recovery
6	SPK	S00T000055	0	@IC-01	NO3-02	LIQUID	690	8.37e+02	121.304	% Recovery
6	SPK	S00T000055	0	@IC-01	PO4-02	LIQUID	635	6.36e+02	100.157	% Recovery
6	SPK	S00T000055	0	@IC-01	SO4-02	LIQUID	690	6.82e+02	98.841	% Recovery
6	SPK	S00T000055	0	@IC-01	OXALATE2	LIQUID	531	5.42e+02	102.072	% Recovery
7	SAMPLE	S00T000056	0	@IC-01	F-02	LIQUID	N/A	4.282e+02	61.810	ug/mL
7	SAMPLE	S00T000056	0	@IC-01	CL-02	LIQUID	N/A	5.232e+03	87.570	ug/mL
7	SAMPLE	S00T000056	0	@IC-01	NO2-02	LIQUID	N/A	6.262e+04	556.300	ug/mL
7	SAMPLE	S00T000056	0	@IC-01	BR-02	LIQUID	N/A <	6.439e+02	643.900	ug/mL
7	SAMPLE	S00T000056	0	@IC-01	NO3-02	LIQUID	N/A	1.259e+05	716.000	ug/mL
7	SAMPLE	S00T000056	0	@IC-01	PO4-02	LIQUID	N/A	2.299e+03	618.100	ug/mL
7	SAMPLE	S00T000056	0	@IC-01	SO4-02	LIQUID	N/A	3.940e+03	710.800	ug/mL
7	SAMPLE	S00T000056	0	@IC-01	OXALATE2	LIQUID	N/A	1.063e+03	540.900	ug/mL
8	DUP	S00T000056	0	@IC-01	F-02	LIQUID	4.28e+02	4.62e+02	7.640	RPD
8	DUP	S00T000056	0	@IC-01	CL-02	LIQUID	5.23e+03	5.02e+03	4.098	RPD
8	DUP	S00T000056	0	@IC-01	NO2-02	LIQUID	6.26e+04	6.07e+04	3.082	RPD
8	DUP	S00T000056	0	@IC-01	BR-02	LIQUID	<6.44e2	<6.44e2		RPD
8	DUP	S00T000056	0	@IC-01	NO3-02	LIQUID	1.26e+05	1.24e+05	1.600	RPD
8	DUP	S00T000056	0	@IC-01	PO4-02	LIQUID	2.30e+03	2.04e+03	11.982	RPD
8	DUP	S00T000056	0	@IC-01	SO4-02	LIQUID	3.94e+03	3.91e+03	0.764	RPD
8	DUP	S00T000056	0	@IC-01	OXALATE2	LIQUID	1.06e+03	1.11e+03	4.608	RPD

Final page for worklist# 32105

Analyst Signature Date

Analyst Signature Date

Reviewer Signature Date 1/20/00

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

LABCORE Data Entry Template for Worklist# 32105

Analyst: ADP **Instrument:** IC 4551 **Book#** 100N21-E LCS
101N21-E CCV

Method: LA-533-105 Rev/Mod F-2

Worklist Comment: SY-102 GRAB 5 FOR @IC-01 RTS

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	S00T000055	0		@IC-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
5	DUP	S00T000055	0		@IC-01	LIQUID		
6	SPK	S00T000055	0		@IC-01	LIQUID		
7	SAMPLE	S00T000056	0		@IC-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
8	DUP	S00T000056	0		@IC-01	LIQUID		

Final page for worklist # 32105

Anthony Punto 01-15-00
Signature **Date**

Signature **Date**

Data Entry Comments:
uploaded 1-18-00 1/19/00 validated JMLuge
Jeb Worrell
32105JAN.CSV

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

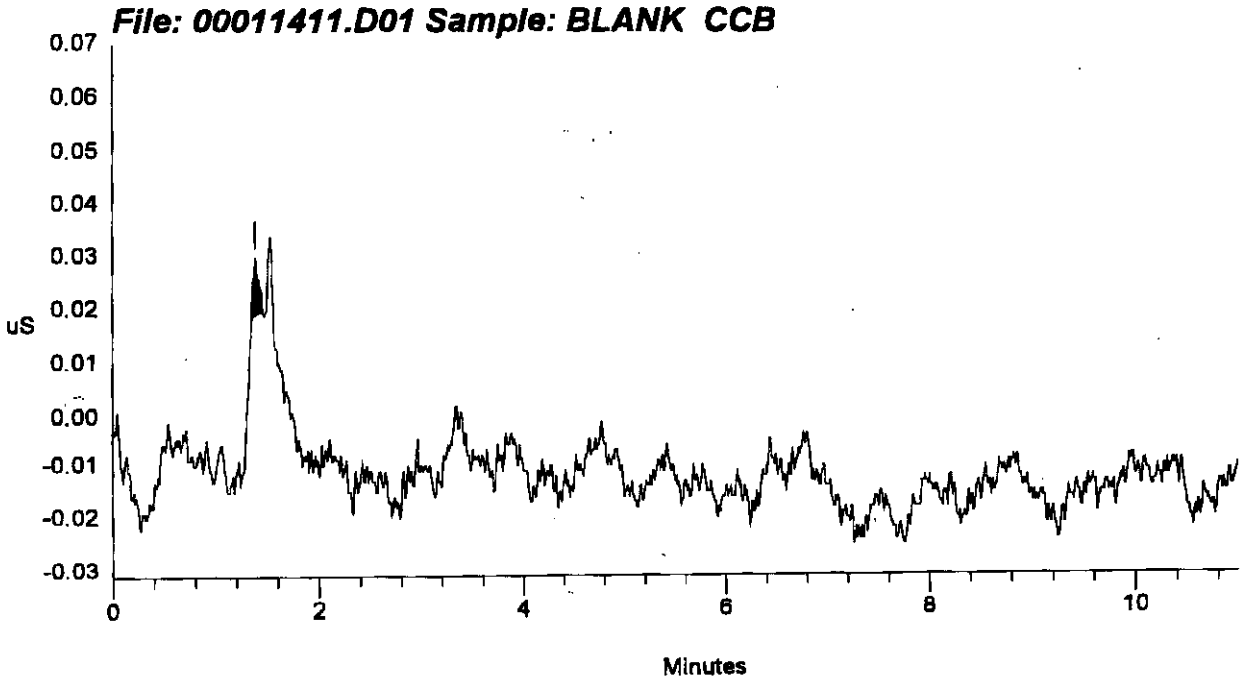
```
==========================================================================
| Sample Name: BLANK  CCB                      Date: 01/15/2000 09:18:55  |
| Data File  : C:\DX\DATA\00011411.D01                                   |
| Method     : C:\DX\METHOD\ANIONSa.met                                  |
| ACI Address: 1  System: 1  Inject#: 1                Detector:CDM-1    |
| Analyst                    4/27/00 Column: AG4A/AS4A anion column      |
==========================================================================
```

Tony Purington

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
		Totals	0.000	0	0		



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 181 TO 188.

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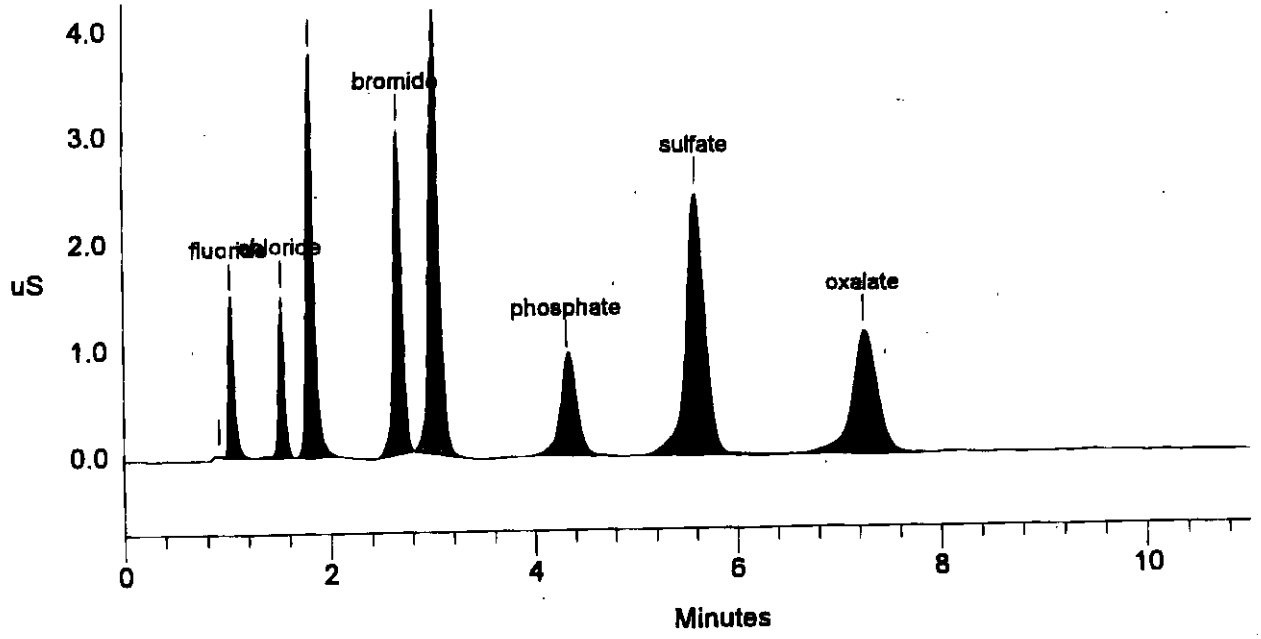
==================================================================================
| Sample Name: 101N21-E  LCS                    Date: 01/15/2000 09:32:35          |
| Data File  : C:\DX\DATA\00011411.D02                                             |
| Method     : C:\DX\METHOD\ANIONSa.met                                            |
| ACI Address: 1  System: 1  Inject#: 2                        Detector:CDM-1      |
| Analyst    :                  Column: AG4A/AS4A anion column                    |
==================================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.92		0.000	18	71	2	
2	1.03	fluoride	62.330	1481	5708	2	-1.59
3	1.53	chloride	89.539	1516	5710	1	-1.51
4	1.81	nitrite	467.025 88.28	3783	18830	1	-1.28
5	2.66	bromide	623.469	3049	17098	1	-2.56
6	3.01	nitrate	779.673 112.996	4189	27629	1	-2.48
7	4.32	phosphate	596.884	930	10882	1	-1.14
8	5.60	sulfate	677.089	2474	32110	1	-0.88
9	7.25	oxalate	537.971	1159	20111	1	-1.45
		Totals	3833.981	18600	138149		

File: 00011411.D02 Sample: 101N21-E LCS



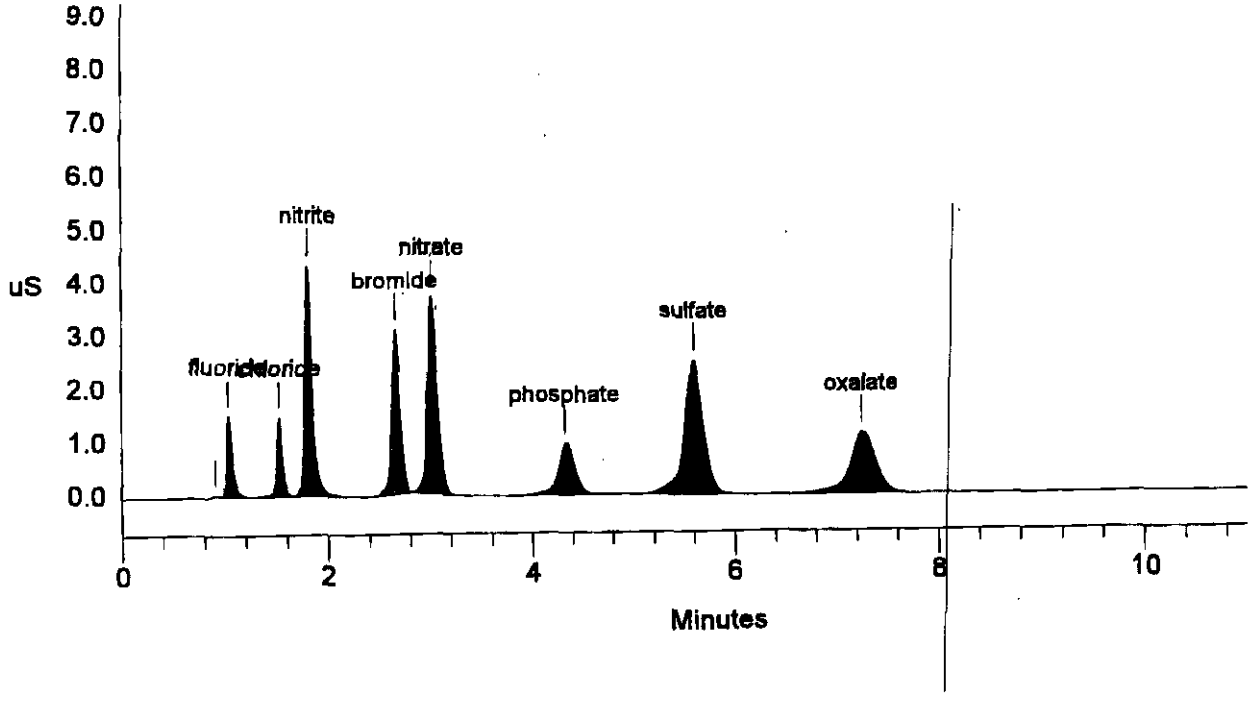
Sample Name: 100N21-E CCV Date: 01/15/2000 09:46:14
Data File : C:\DX\DATA\00011411.D03
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 3 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	1.03	fluoride	61.944	1492	5672	2	-1.59
3	1.53	chloride	89.836	1477	5729	1	-1.51
4	1.81	nitrite	536.038	4347	21709	1	-1.28
5	2.66	bromide	633.699	3103	17389	1	-2.56
6	3.01	nitrate	701.455	3731	24781	1	-2.48
7	4.32	phosphate	609.274	953	11110	1	-1.14
8	5.60	sulfate	700.374	2543	33245	1	-0.88
9	7.25	oxalate	549.268	1161	20541	1	-1.45
		Totals	3881.889	18809	140176		

File: 00011411.D03 Sample: 100N21-E CCV



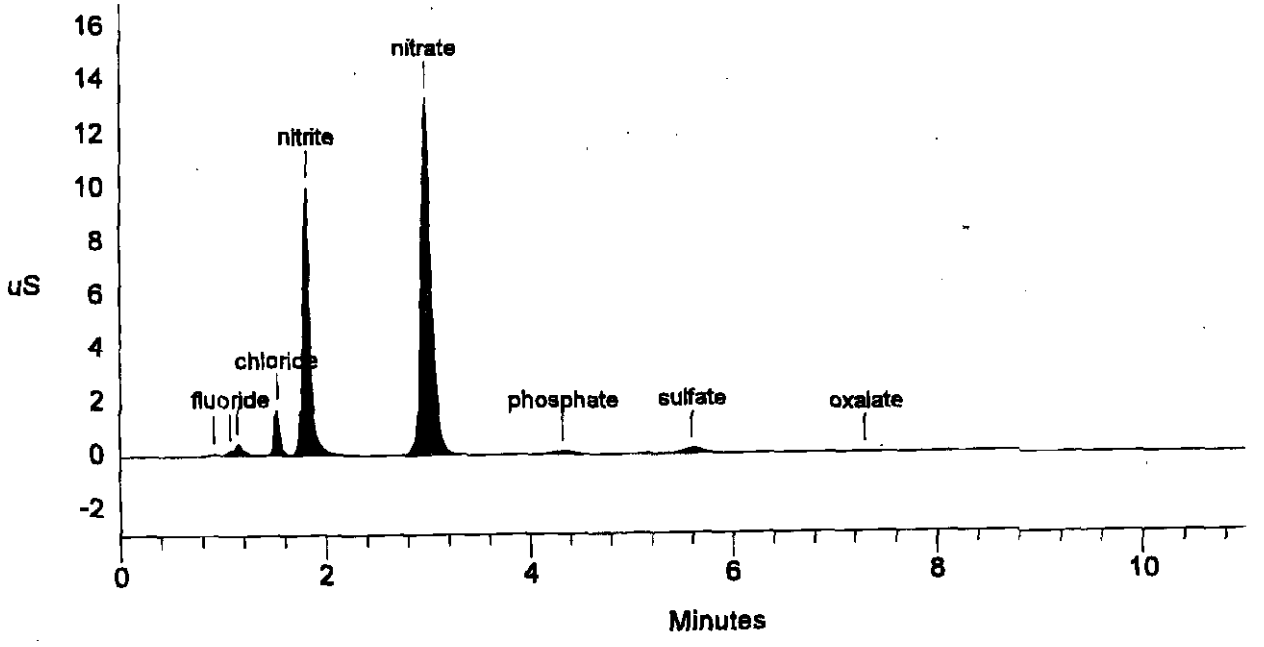
```
==================================================================================
| Sample Name: S00T000055  SAM                    Date: 01/15/2000 15:25:14      |
| Data File  : C:\DX\DATA\00011531.D01                                           |
| Method     : C:\DX\METHOD\ANIONSa.met                                          |
| ACI Address: 1  System: 1  Inject#: 1                        Detector:CDM-1    |
| Analyst    :                  Column: AG4A/AS4A anion column                  |
==================================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	5151	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	43	217	2	
2	1.07	fluoride	396.609	176	655	2	2.22
3	1.15		0.000	417	2032	2	
4	1.52	chloride	4910.060	1671	6142	1	-1.94
5	1.81	nitrite	59467.370	10050	48428	1	-1.28
6	2.97	nitrate	122193.937	13405	89511	1	-3.99
7	4.32	phosphate	3332.121	115	1230	1	-1.14
8	5.60	sulfate	3372.559	203	2769	1	-0.88
9	7.31	oxalate	989.555	25	414	1	-0.72
		Totals	194662.211	26104	151396		

File: 00011531.D01 Sample: S00T000055 SAM



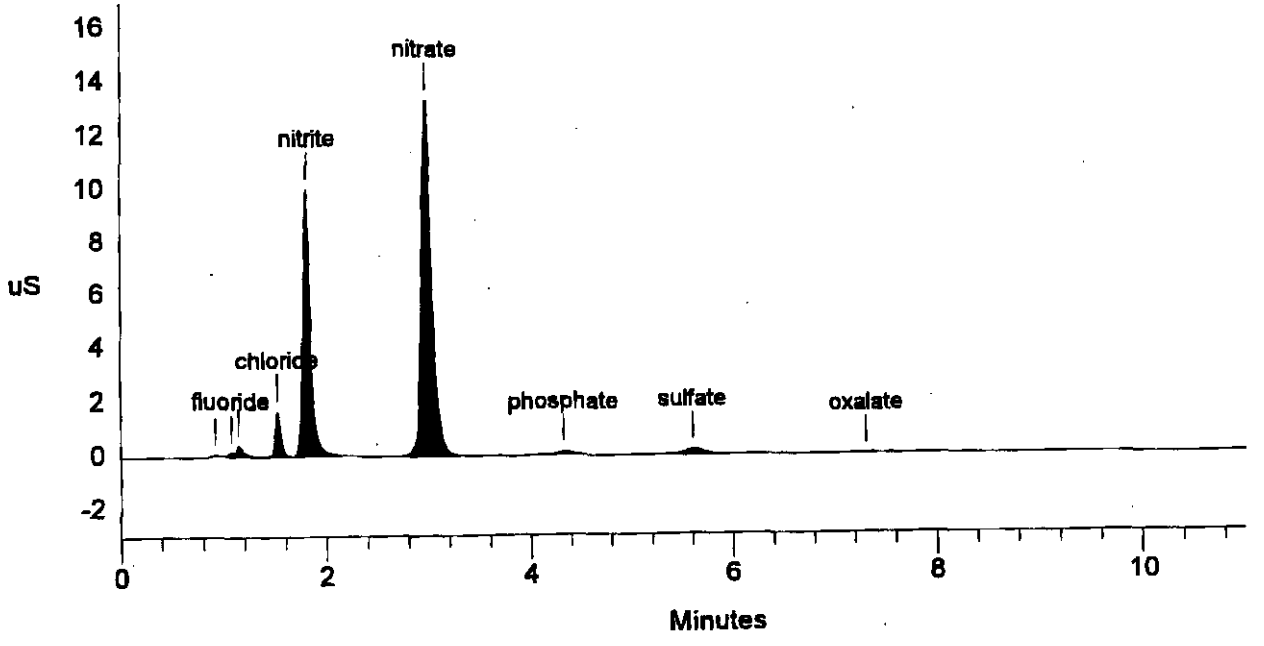
Sample Name: S00T000055 DUP Date: 01/15/2000 15:38:53
Data File : C:\DX\DATA\00011521.D02
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 2 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	5151	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	52	276	2	
2	1.07	fluoride	408.108	180	675	2	2.22
3	1.15		0.000	412	2064	2	
4	1.52	chloride	4987.311	1676	6239	1	-1.94
5	1.81	nitrite	60252.347	10046	49091	1	-1.28
6	2.97	nitrate	124633.013	13396	91440	1	-3.99
7	4.32	phosphate	2989.017	114	1109	1	-1.14
8	5.60	sulfate	3516.761	210	2903	1	-0.88
9	7.31	oxalate	1169.838	26	548	1	-0.72
		Totals	197956.395	26112	154345		

File: 00011521.D02 Sample: S00T000055 DUP



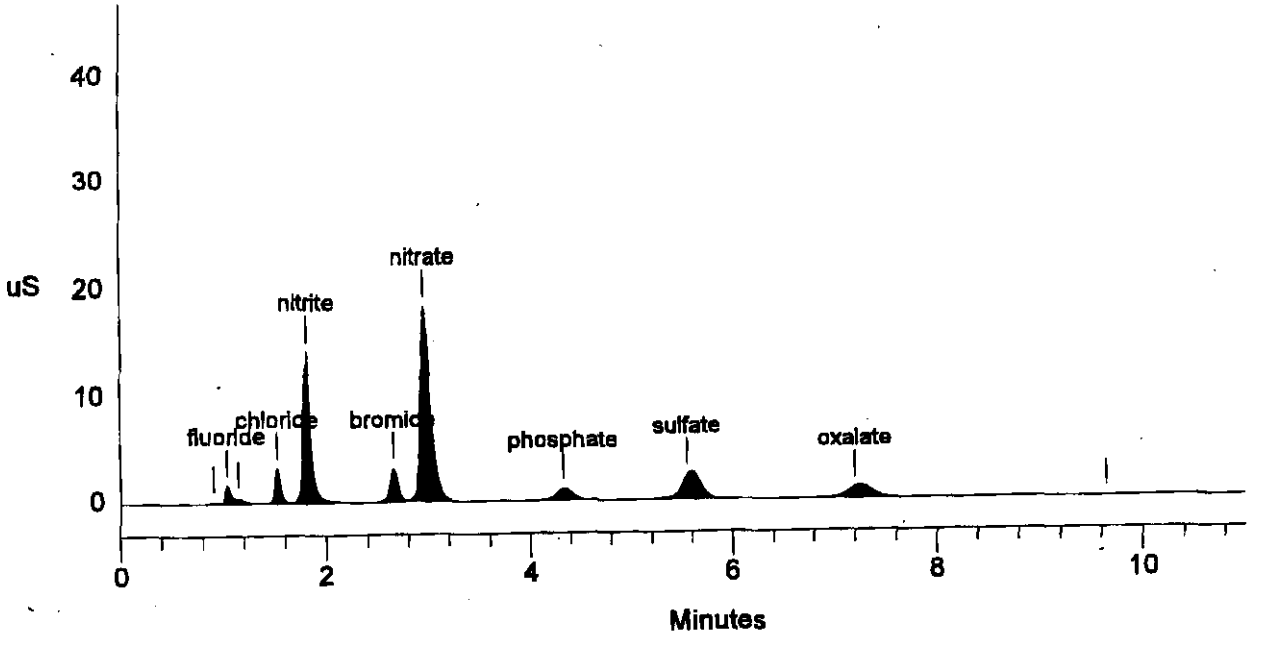
Sample Name: S00T000055 SPK Date: 01/15/2000 15:52:31
Data File : C:\DX\DATA\00011521.D03
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 3 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	5151	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	50	212	2	
2	1.03	fluoride	3496.741	1603	6294	2	-1.59
3	1.15		0.000	473	2170	2	
4	1.52	chloride	9447.247	3231	11889	1	-1.94
5	1.81	nitrite	84280.866	14109	69629	1	-1.28
6	2.65	bromide	31138.562	3125	16731	1	-2.81
7	2.95	nitrate	164447.946	18235	123868	1	-4.42
8	4.32	phosphate	35434.438	1114	12688	1	-1.14
9	5.55	sulfate	37821.657	2361	35255	1	-1.83
10	7.20	oxalate	28364.251	1072	20803	1	-2.17
11	9.65		0.000	13	448	1	
		Totals	394431.709	45387	299986		

File: 00011521.D03 Sample: S00T000055 SPK



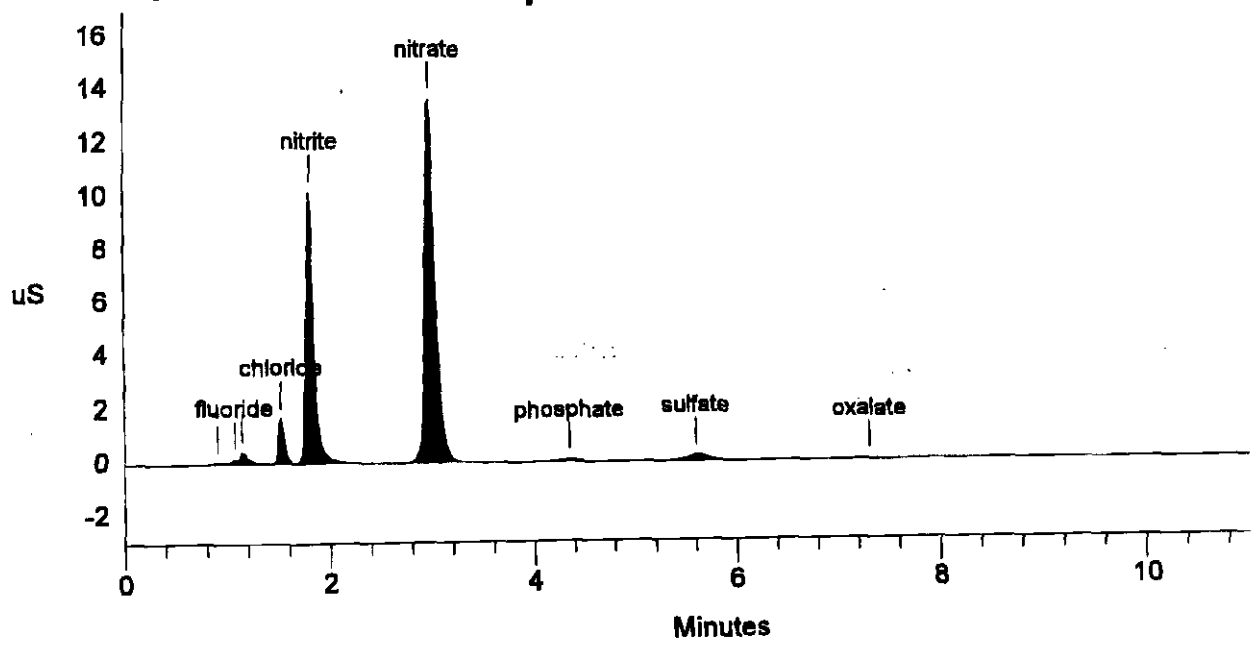
Sample Name: S00T000056 SAM	Date: 01/15/2000 16:06:10
Data File : C:\DX\DATA\00011521.D04	
Method : C:\DX\METHOD\ANIONSa.met	
ACI Address: 1 System: 1 Inject#: 4	Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column	

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	5151	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	52	263	2	
2	1.07	fluoride	428.173	187	711	2	2.22
3	1.15		0.000	432	2109	2	
4	1.52	chloride	5231.982	1694	6547	1	-1.94
5	1.81	nitrite	62620.276	10202	51093	1	-1.28
6	2.97	nitrate	125928.976	13667	92468	1	-3.99
7	4.35	phosphate	2298.497	80	866	1	-0.53
8	5.60	sulfate	3940.442	225	3297	1	-0.88
9	7.31	oxalate	1063.015	35	468	1	-0.72
		Totals	201511.361	26574	157824		

File: 00011521.D04 Sample: S00T000056 SAM



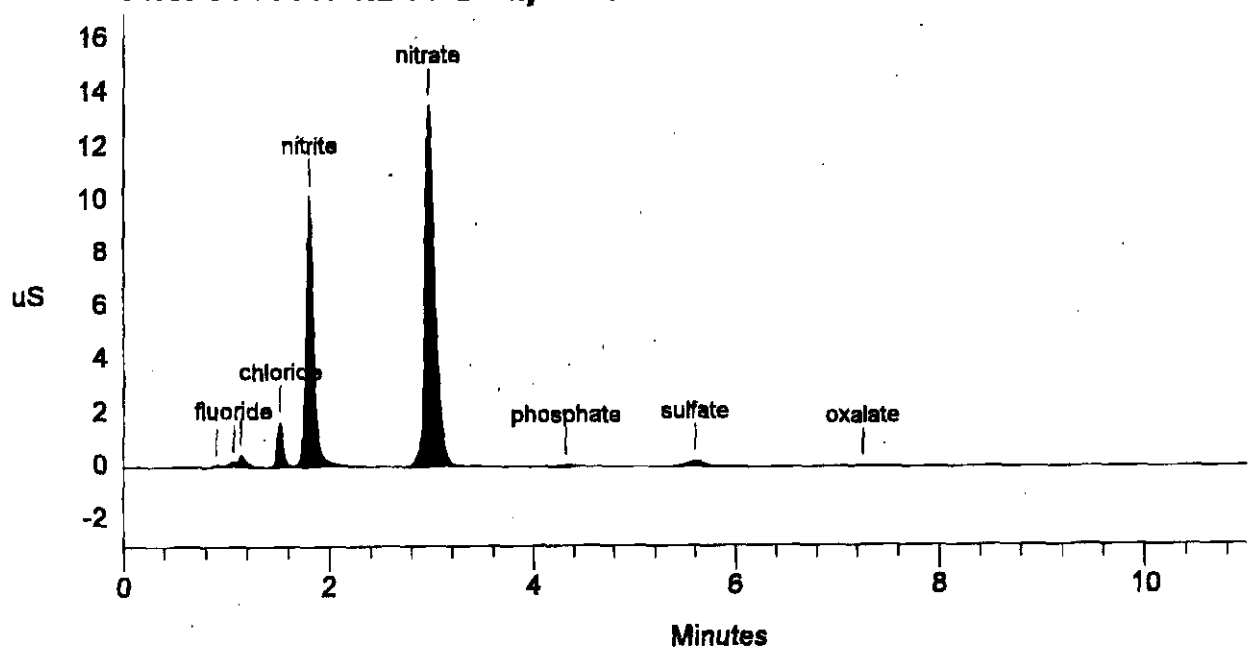
Sample Name: S00T000056 DUP Date: 01/15/2000 16:19:48
Data File : C:\DX\DATA\00011521.D05
Method : C:\DX\METHOD\ANIONSa.met
ACI Address: 1 System: 1 Inject#: 5 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	5151	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	44	233	2	
2	1.07	fluoride	461.520	194	771	2	2.22
3	1.15		0.000	429	2076	2	
4	1.52	chloride	5016.474	1685	6276	1	-1.94
5	1.81	nitrite	60697.564	10221	49467	1	-1.28
6	2.97	nitrate	124239.342	13556	91129	1	-3.99
7	4.32	phosphate	2043.924	74	777	1	-1.14
8	5.60	sulfate	3908.817	216	3267	1	-0.88
9	7.25	oxalate	1105.260	30	500	1	-1.45
		Totals	197472.901	26451	154495		

File: 00011521.D05 Sample: S00T000056 DUP



LABCORE Completed Worklist Report for Worklist# 33046

Analyst: vlm **Instrument:** IC45S1 **Book#:** 111N20C

Method: LA-533-105 Rev/Mod F-2

Worklist Comment: SY-102 GRAB SOLID COMP (FOR @IC-01) RTS

Seq	Type	Sample#	R	A		Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB		0		@IC-QC	F	QC	1	<1.20e-2		ug/mL
1	CCB		0		@IC-QC	CL	QC	1	<1.70e-2		ug/mL
1	CCB		0		@IC-QC	NO2	QC	1	<1.08e-1		ug/mL
1	CCB		0		@IC-QC	BR	QC	1	<1.25e-1		ug/mL
1	CCB		0		@IC-QC	NO3	QC	1	<1.39e-1		ug/mL
1	CCB		0		@IC-QC	PO4	QC	1	<1.20e-1		ug/mL
1	CCB		0		@IC-QC	SO4	QC	1	<1.38e-1		ug/mL
1	CCB		0		@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2	LCS-INST		0		@IC-QC	F	QC	64.0	6.08e+01	95.000	% Recovery
2	LCS-INST		0		@IC-QC	CL	QC	85.0	8.22e+01	96.706	% Recovery
2	LCS-INST		0		@IC-QC	NO2	QC	537	4.85e+02	90.317	% Recovery
2	LCS-INST		0		@IC-QC	BR	QC	620	6.06e+02	97.742	% Recovery
2	LCS-INST		0		@IC-QC	NO3	QC	655	6.74e+02	102.901	% Recovery
2	LCS-INST		0		@IC-QC	PO4	QC	630	6.16e+02	97.778	% Recovery
2	LCS-INST		0		@IC-QC	SO4	QC	680	6.58e+02	96.765	% Recovery
2	LCS-INST		0		@IC-QC	OXALATE2	QC	522	5.21e+02	99.808	% Recovery
3	CCV		0		@IC-QC	F	QC	64.5	6.54e+01	101.395	% Recovery
3	CCV		0		@IC-QC	CL	QC	86.5	8.25e+01	95.376	% Recovery
3	CCV		0		@IC-QC	NO2	QC	532	4.98e+02	93.609	% Recovery
3	CCV		0		@IC-QC	BR	QC	625	6.13e+02	98.080	% Recovery
3	CCV		0		@IC-QC	NO3	QC	695	7.07e+02	101.727	% Recovery
3	CCV		0		@IC-QC	PO4	QC	640	6.40e+02	100.000	% Recovery
3	CCV		0		@IC-QC	SO4	QC	680	6.83e+02	100.441	% Recovery
3	CCV		0		@IC-QC	OXALATE2	QC	529	5.11e+02	96.597	% Recovery
4	BLNK-PREP		0		@IC-01	F-02	SOLID	1	<1.20e-2		ug/g
4	BLNK-PREP		0		@IC-01	CL-02	SOLID	1	<1.70e-2		ug/g
4	BLNK-PREP		0		@IC-01	NO2-02	SOLID	1	<1.08e-1		ug/g
4	BLNK-PREP		0		@IC-01	BR-02	SOLID	1	<1.25e-1		ug/g
4	BLNK-PREP		0		@IC-01	NO3-02	SOLID	1	<1.39e-1		ug/g
4	BLNK-PREP		0		@IC-01	PO4-02	SOLID	1	<1.20e-1		ug/g
4	BLNK-PREP		0		@IC-01	SO4-02	SOLID	1	<1.38e-1		ug/g
4	BLNK-PREP		0		@IC-01	OXALATE2	SOLID	1	<1.05e-1		ug/g
5	SAMPLE	S00T000154	0	W	@IC-01	CL-02	SOLID	N/A	4.153e+03	76.260	ug/g
5	SAMPLE	S00T000154	0	W	@IC-01	NO2-02	SOLID	N/A	4.915e+04	484.500	ug/g
5	SAMPLE	S00T000154	0	W	@IC-01	BR-02	SOLID	N/A <	5.608e+02	560.800	ug/g
5	SAMPLE	S00T000154	0	W	@IC-01	NO3-02	SOLID	N/A	1.044e+05	623.600	ug/g
5	SAMPLE	S00T000154	0	W	@IC-01	SO4-02	SOLID	N/A	2.974e+03	619.100	ug/g
5	SAMPLE	S00T000154	0	W	@IC-01	OXALATE2	SOLID	N/A	3.530e+03	471.000	ug/g
6	DUP	S00T000154	0	W	@IC-01	F-02	SOLID	3.75e+02	4.77e+02	23.944	RPD
6	DUP	S00T000154	0	W	@IC-01	CL-02	SOLID	4.15e+03	4.05e+03	2.439	RPD
6	DUP	S00T000154	0	W	@IC-01	NO2-02	SOLID	4.92e+04	4.74e+04	3.727	RPD

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

LABCORE Completed Worklist Report for Worklist# 33046

Seq	Type	Sample#	R	A		Test	Matrix	Actual		Found	DL or Yield	Unit
6	DUP	S00T000154	0	W	@IC-01	BR-02	SOLID	<5.61e2		<5.72e2		RPD
6	DUP	S00T000154	0	W	@IC-01	NO3-02	SOLID	1.04e+05		9.52e+04	8.835	RPD
6	DUP	S00T000154	0	W	@IC-01	PO4-02	SOLID	1.16e+04		2.82e+04	83.417	RPD
6	DUP	S00T000154	0	W	@IC-01	SO4-02	SOLID	2.97e+03		2.43e+03	20.000	RPD
6	DUP	S00T000154	0	W	@IC-01	OXALATE2	SOLID	3.53e+03		3.67e+03	3.889	RPD
7	SPK	S00T000154	0	W	@IC-01	F-02	SOLID	5.900e01		6.10e+01	103.390	% Recovery
7	SPK	S00T000154	0	W	@IC-01	CL-02	SOLID	8.000e01		8.86e+01	110.750	% Recovery
7	SPK	S00T000154	0	W	@IC-01	NO2-02	SOLID	5.420e02		5.31e+02	97.970	% Recovery
7	SPK	S00T000154	0	W	@IC-01	BR-02	SOLID	5.890e02		6.04e+02	102.547	% Recovery
7	SPK	S00T000154	0	W	@IC-01	NO3-02	SOLID	5.940e02		6.68e+02	112.458	% Recovery
7	SPK	S00T000154	0	W	@IC-01	PO4-02	SOLID	5.450e02		6.19e+02	113.578	% Recovery
7	SPK	S00T000154	0	W	@IC-01	SO4-02	SOLID	6.320e02		6.64e+02	105.063	% Recovery
7	SPK	S00T000154	0	W	@IC-01	OXALATE2	SOLID	5.310e02		5.35e+02	100.753	% Recovery
8	SAMPLE	S00M000224	0		@IC-01	F-02	LIQUID	N/A	<	1.200e-02	1.20e-002	ug/mL
8	SAMPLE	S00M000224	0		@IC-01	CL-02	LIQUID	N/A	<	1.700e-02	1.70e-002	ug/mL
8	SAMPLE	S00M000224	0		@IC-01	NO2-02	LIQUID	N/A		1.160e-01	0.108	ug/mL
8	SAMPLE	S00M000224	0		@IC-01	BR-02	LIQUID	N/A	<	1.250e-01	0.125	ug/mL
8	SAMPLE	S00M000224	0		@IC-01	NO3-02	LIQUID	N/A	<	1.390e-01	0.139	ug/mL
8	SAMPLE	S00M000224	0		@IC-01	PO4-02	LIQUID	N/A	<	1.200e-01	0.120	ug/mL
8	SAMPLE	S00M000224	0		@IC-01	SO4-02	LIQUID	N/A	<	1.380e-01	0.138	ug/mL
8	SAMPLE	S00M000224	0		@IC-01	OXALATE2	LIQUID	N/A	<	1.050e-01	0.105	ug/mL

Final page for worklist# 33046

Analyst Signature Date

Analyst Signature Date

Janis M. Fraye 4/3/00
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 33046

Analyst: VLM **Instrument:** IC 4551 **Book#** LCS/MN2IC CCV/IONAIC

Method: LA-533-105 Rev/Mod F-2

Worklist Comment: SY-102 GRAB SOLID COMP (FOR @IC-01) RTS & Q Water 4TUV, Mar.

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	BLNK-PREP				@IC-01	SOLID		
5	SAMPLE	S00T000154	0	W	@IC-01	SOLID	20000008	SY-102 GRAB5
	Analytes Requested:	BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						
6	DUP	S00T000154	0	W	@IC-01	SOLID		
7	SPK	S00T000154	0	W	@IC-01	SOLID		
8	SAMPLE	S00M000224	0		@IC-01	LIQUID	20000116	222S Q-H2O
	Analytes Requested:	BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02						

Final page for worklist # 33046

See attached
Signature **Date**

Signature **Date**

Data Entry Comments:

PO_4 & F rejected of S00T000154 because of poor RPD. Rest validated 4/3/00 JMFuge

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

HNF-1698 REV. 0

03/27/00 09:41
ws2

LABCORE Data Entry Template for Worklist# 33046

Analyst: VLM **Instrument:** IC 01 **Book#** LCS 111N21-C CCV 110N21-C

Method: LA-533-105 **Rev/Mod** F-2 4551

Worklist Comment: SY-102 GRAB SOLID COMP (FOR @IC-01) RTS

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	BLNK-PREP				@IC-01	SOLID		
5	SAMPLE	S00T000154	0	W	@IC-01	SOLID	20000008	SY-102 GRAB5
	Analytes Requested:				BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02			
6	DUP	S00T000154	0	W	@IC-01	SOLID		
7	SPK	S00T000154	0	W	@IC-01	SOLID		

Final page for worklist # 33046

Valerie L Mason 03-27-00
Signature **Date**

Signature **Date**

Data Entry Comments:
uploaded 3-29-00
John Worrell
33046MAR.CSV

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

03/24/00 13:58
ws2

LABCORE Data Entry Template for Worklist# 33042

Analyst: _____ **Instrument:** IC _____ **Book#** _____

Method: LA-533-105 **Rev/Mod** _____

Worklist Comment: 4TUV Q water.

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	S00M000224	0		@IC-01	LIQUID	20000116	222S Q-H2O

Analytes Requested: BR-02 , CL-02 , F-02 , NO2-02 , NO3-02 , OXALATE2, PO4-02 , SO4-02

Final page for worklist # 33042

Signature **Date** **Signature** **Date**

added Q H2O sample to worklist #33046

Data Entry Comments:

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

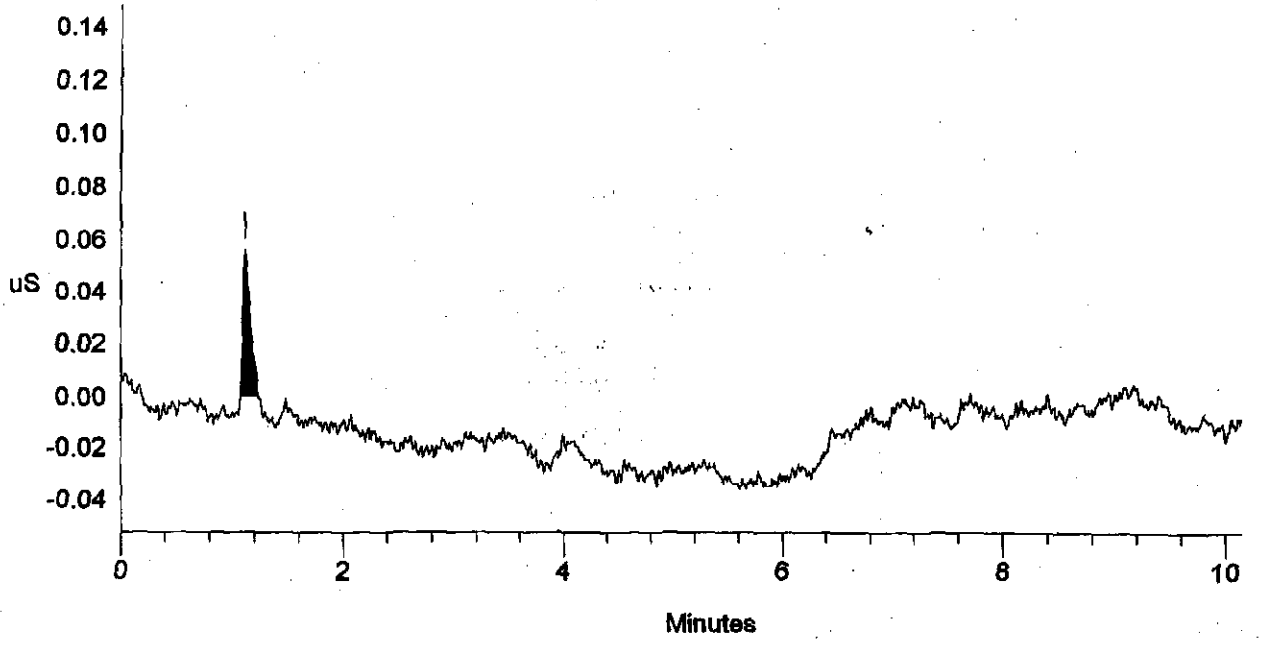
Sample Name: CCB Date: 03/27/2000 10:56:32
Data File : C:\DX\DATA\00032701.D01
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 1 Detector:CDM-1
Analyst [illegible] 5/2/00 Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3046	5Hz	0.00	10.15		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.11		0.000	56	244	1	
		Totals	0.000	56	244		

File: 00032701.D01 Sample: CCB



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 194 TO 201.

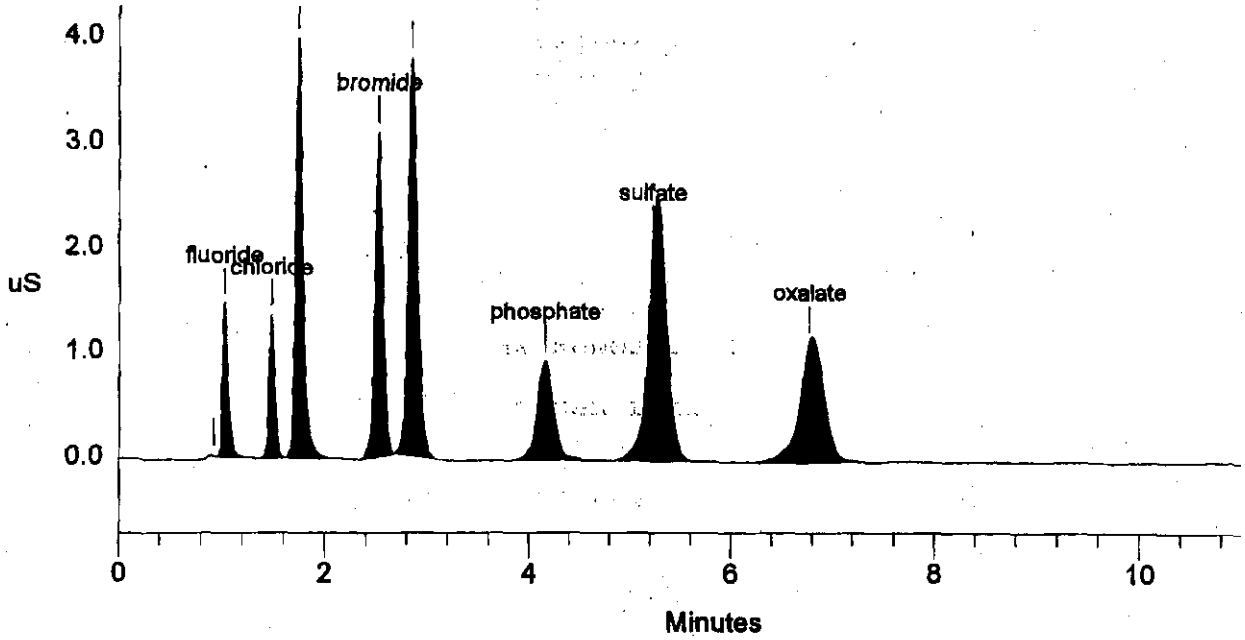
Sample Name: 111N21-C LCS Date: 03/27/2000 11:09:58
Data File : C:\DX\DATA\00032701.D02
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 2 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml		Height	Area	Bl. Code	%Delta
1	0.91			0.000	15	52	2	
2	1.03	fluoride	95.04	60.823	1451	5528	2	-0.32
3	1.48	chloride	96.71	82.204	1351	5095	1	-1.33
4	1.74	nitrite	98.28	484.823	3987	19616	1	-2.79
5	2.52	bromide	97.67	605.542	3082	16186	1	-1.95
6	2.85	nitrate	102.95	674.318	3772	23277	1	-0.81
7	4.16	phosphate	97.80	616.153	930	10226	1	-2.58
8	5.23	sulfate	96.76	657.967	2084	30713	1	-3.92
9	6.77	oxalate	99.83	521.113	1134	19411	1	-3.10
		Totals		3702.943	17805	130103		

File: 00032701.D02 Sample: 111N21-C LCS



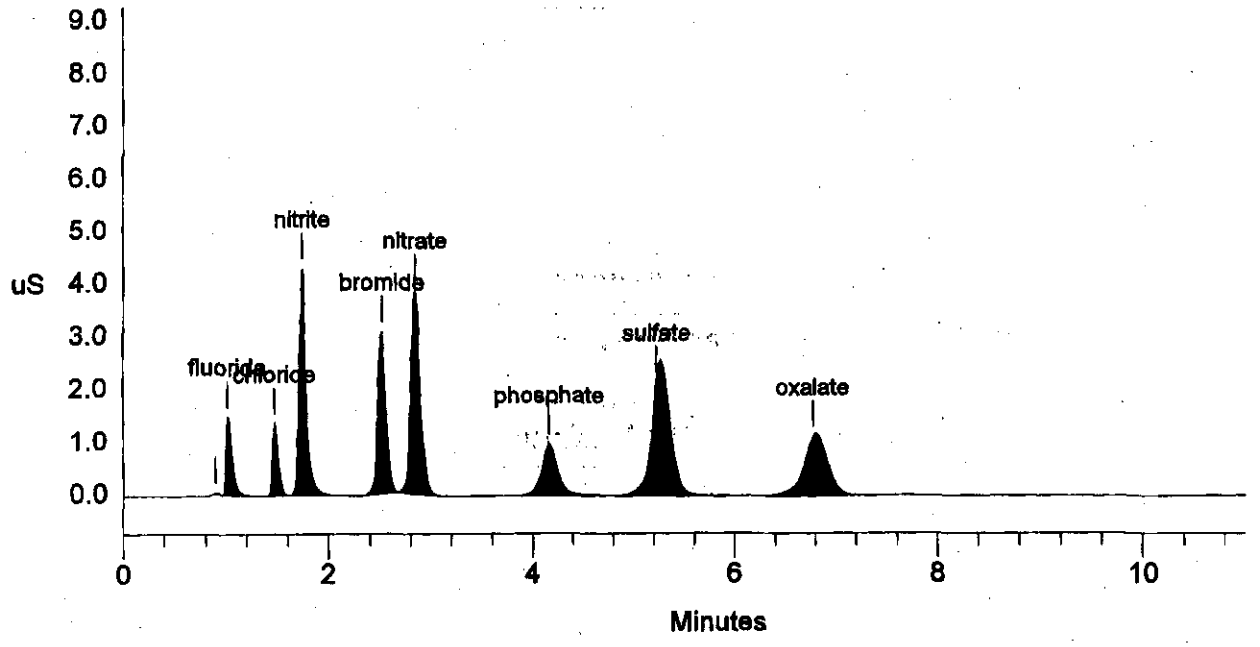
Sample Name: 110N21-C CCV Date: 03/27/2000 11:26:19
Data File : C:\DX\DATA\00032701.D03
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 3 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name		Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90			0.000	16	61	2	
2	1.02	fluoride	101.40	65.403	1478	5947	2	-0.97
3	1.47	chloride	95.41	82.530	1363	5115	1	-1.78
4	1.74	nitrite	93.58	497.819	4295	20159	1	-2.79
5	2.51	bromide	98.13	613.296	3075	16399	1	-2.20
6	2.84	nitrate	101.69	706.757	3867	24434	1	-1.05
7	4.16	phosphate	100.01	640.038	967	10638	1	-2.58
8	5.23	sulfate	100.49	683.238	2159	31913	1	-3.92
9	6.77	oxalate	96.54	510.714	1128	19023	1	-3.10
		Totals		3799.795	18347	133688		

File: 00032701.D03 Sample: 110N21-C CCV



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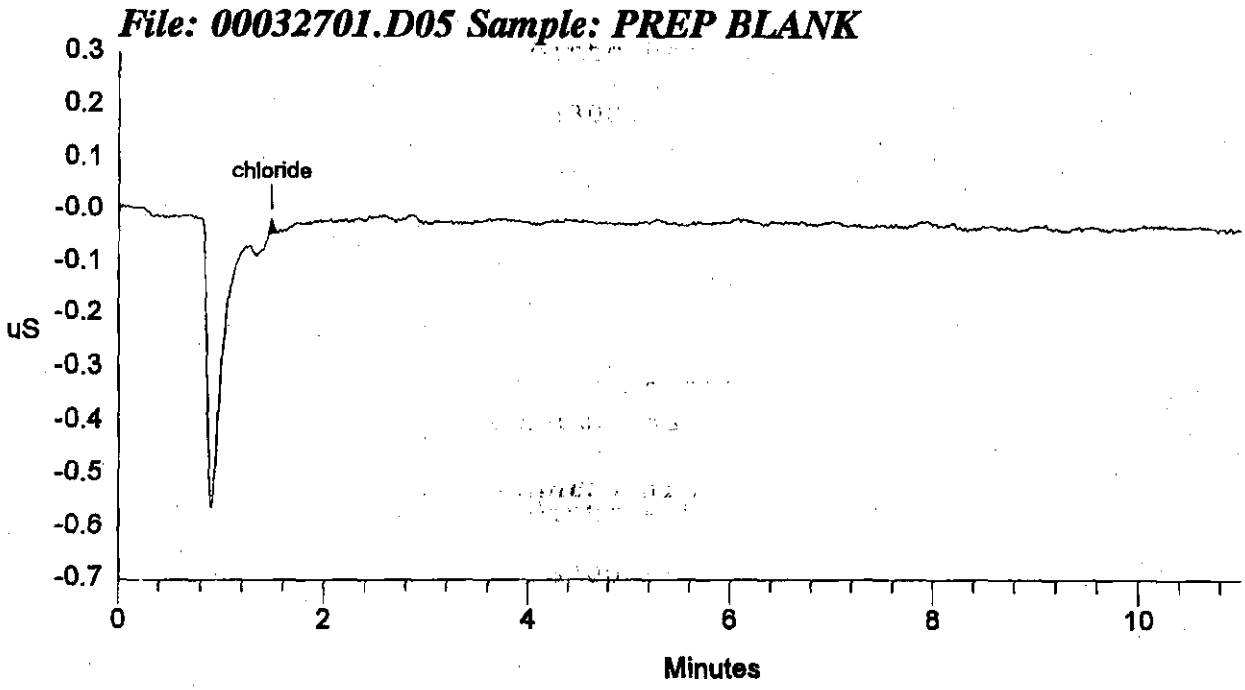
==================================================================================
| Sample Name: PREP BLANK                          Date: 03/27/2000 14:57:28      |
| Data File  : C:\DX\DATA\00032701.D05                                            |
| Method     : C:\DX\METHOD\ANIONS.MET                                            |
| ACI Address: 1  System: 1  Inject#: 5                        Detector:CDM-1     |
| Analyst    :                  Column: AG4A/AS4A anion column                   |
==================================================================================
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.49	chloride	0.000	26	66	1	-0.89
		Totals	0.000	26	66		



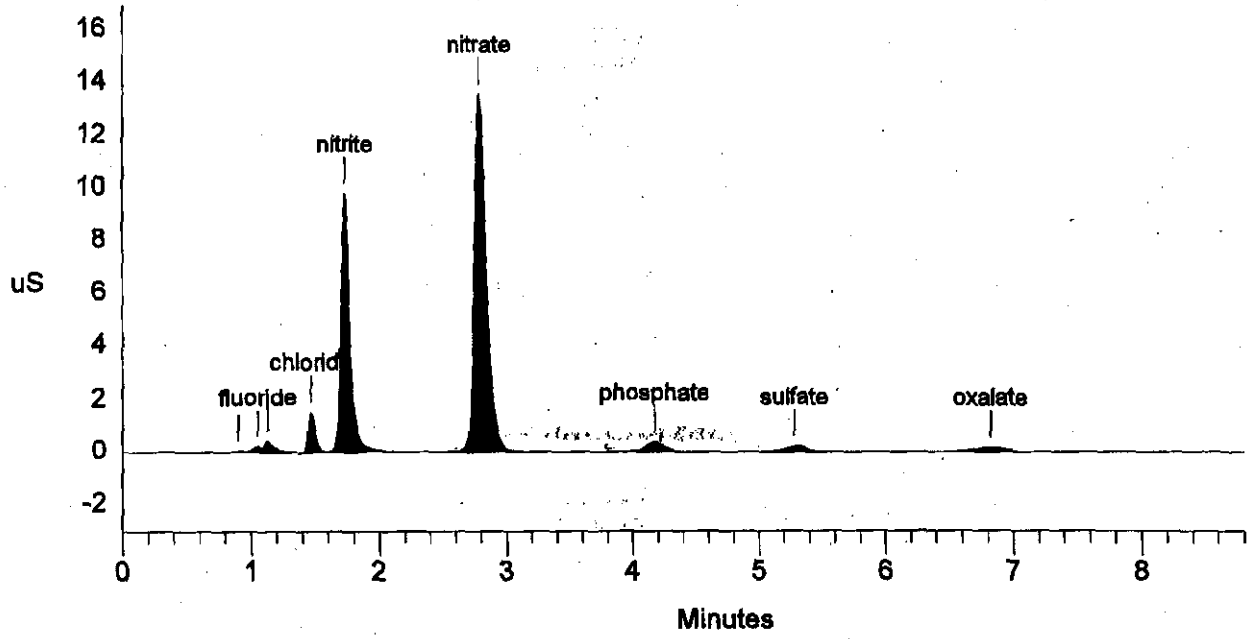
Sample Name: S00T000154 Date: 03/27/2000 15:26:10
Data File : C:\DX\DATA\00032701.D07
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 7 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	11	2643	5Hz	0.00	8.81	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	30	148	2	
2	1.05	fluoride	0.920	200	796	2	2.27
3	1.13		0.000	440	2352	2	
4	1.47	chloride	10.184	1538	5797	1	-2.22
5	1.73	nitrite	120.521	9789	45967	1	-3.17
6	2.78	nitrate	256.016	13589	86671	1	-3.14
7	4.17	phosphate	28.407	374	4170	1	-2.26
8	5.28	sulfate	7.293	220	3153	1	-2.94
9	6.83	oxalate	8.655	199	3021	1	-2.34
		Totals	431.996	26380	152074		

File: 00032701.D07 Sample: S00T000154



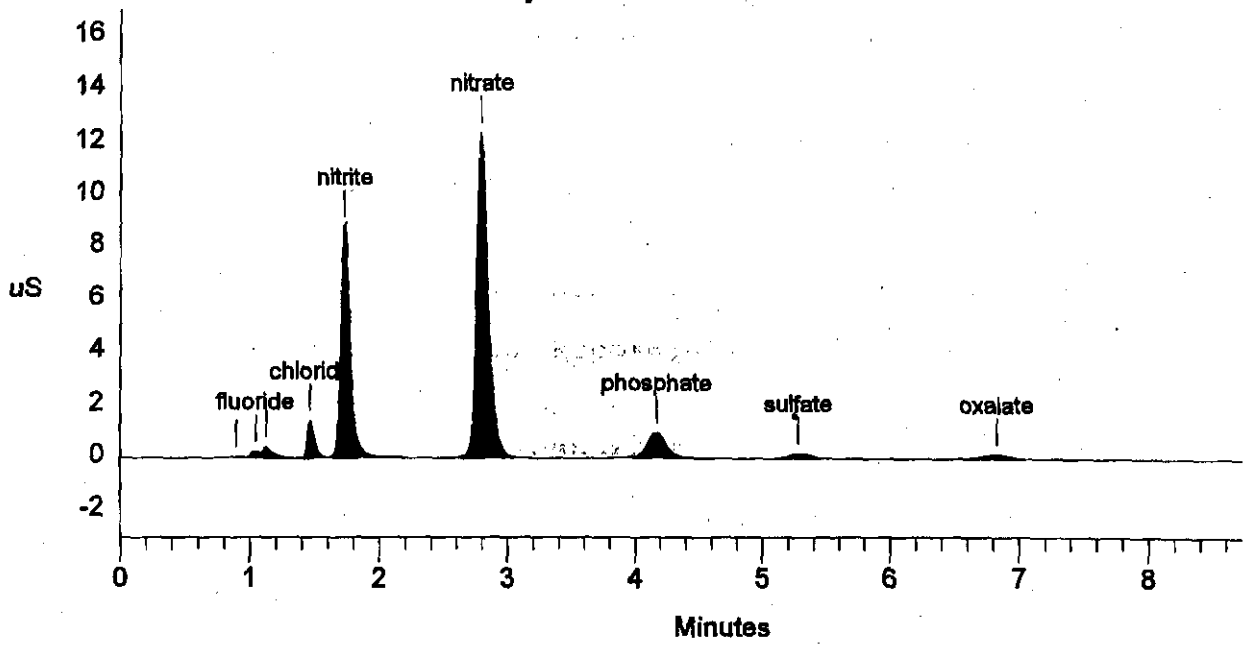
Sample Name: S00T000154 DUP Date: 03/27/2000 15:36:44
Data File : C:\DX\DATA\00032701.D08
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 8 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	11	2619	5Hz	0.00	8.73	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	27	130	2	
2	1.05	fluoride	1.146	227	981	2	1.62
3	1.13		0.000	410	2216	2	
4	1.47	chloride	9.726	1417	5536	1	-2.22
5	1.73	nitrite	113.948	8789	43376	1	-3.54
6	2.79	nitrate	228.763	12365	76697	1	-2.90
7	4.17	phosphate	67.790	964	10334	1	-2.42
8	5.28	sulfate	5.839	203	2541	1	-2.94
9	6.83	oxalate	8.807	191	3072	1	-2.34
		Totals	436.018	24594	144882		

File: 00032701.D08 Sample: S00T000154 DUP



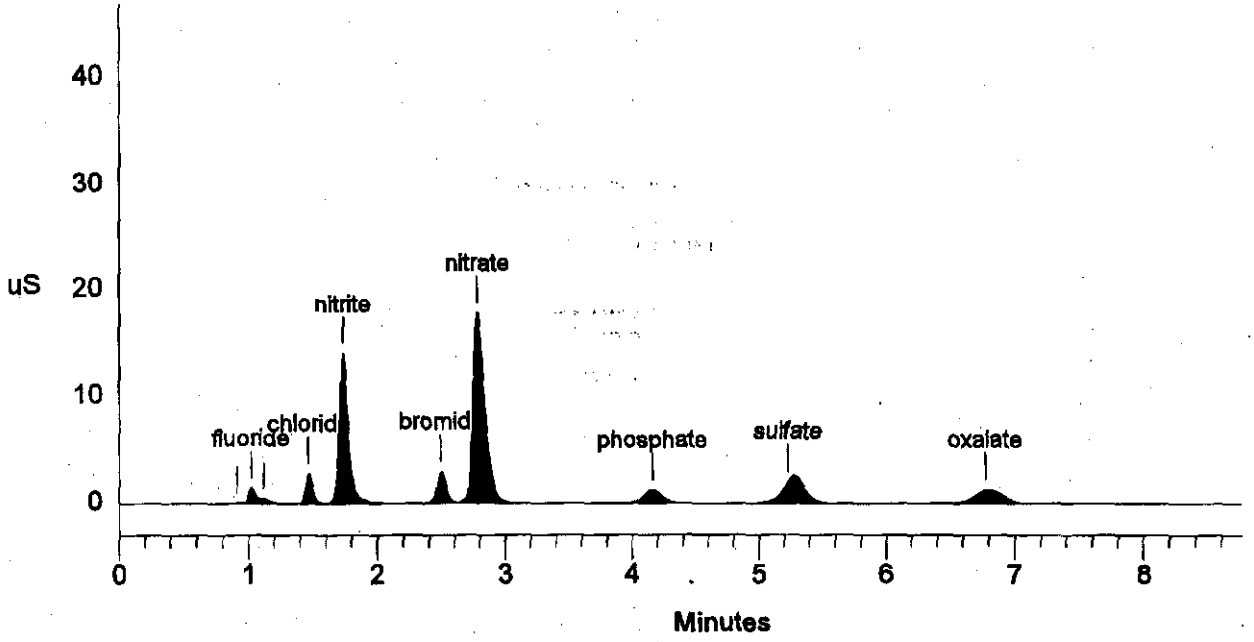
Sample Name: S00T000154 SPK Date: 03/27/2000 15:47:22
Data File : C:\DX\DATA\00032701.D09
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 9 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	11	2630	5Hz	0.00	8.76	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	37	149	2	
2	1.02	fluoride	7.016	1479	5856	2	-0.97
3	1.12		0.000	502	2545	2	
4	1.47	chloride	19.041	2841	10934	1	-2.22
5	1.73	nitrite	173.588	13961	67161	1	-3.17
6	2.49	bromide	60.416	2940	14792	1	-2.98
7	2.78	nitrate	322.820	17733	112026	1	-3.14
8	4.16	phosphate	90.326	1284	13925	1	-2.58
9	5.23	sulfate	73.710	2061	31607	1	-3.92
10	6.77	oxalate	62.110	1271	21250	1	-3.10
		Totals	809.026	44108	280246		

File: 00032701.D09 Sample: S00T000154 SPK



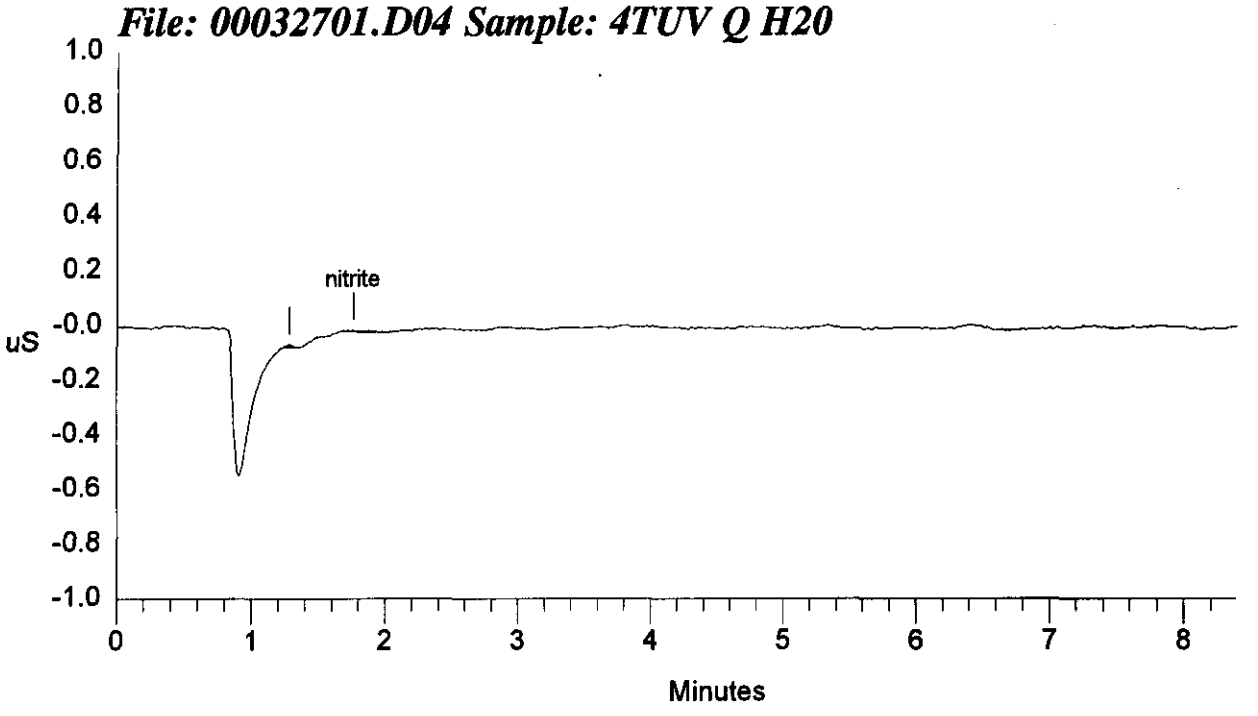
Data Reprocessed On 04/03/2000 12:52:20

```
Sample Name: 4TUV Q H20                    Date: 03/27/2000 11:40:22
Data File  : E:\DATA\00032701.D04
Method     : C:\DX\METHOD\ANIONS.MET
ACI Address: 1  System: 1  Inject#: 4                  Detector:CDM-1
Analyst    :                Column: AG4A/AS4A anion column
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	2518	5Hz	0.00	8.39		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	1.75	nitrite	0.116	6	50	1	-2.05
		Totals	0.116	6	50		



LABCORE Completed Worklist Report for Worklist# 33128

Analyst: rwk **Instrument:** IC45S1 **Book#:** 115N21A

Method: LA-533-105 Rev/Mod F-2

Worklist Comment: Rerun SY-102 Solid Comp for @IC-01

Seq	Type	Sample#	R	A		Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB			0	@IC-QC	F	QC	1	<1.20e-2		ug/mL
1	CCB			0	@IC-QC	CL	QC	1	<1.70e-2		ug/mL
1	CCB			0	@IC-QC	NO2	QC	1	<1.08e-1		ug/mL
1	CCB			0	@IC-QC	BR	QC	1	<1.25e-1		ug/mL
1	CCB			0	@IC-QC	NO3	QC	1	<1.39e-1		ug/mL
1	CCB			0	@IC-QC	PO4	QC	1	<1.20e-1		ug/mL
1	CCB			0	@IC-QC	SO4	QC	1	<1.38e-1		ug/mL
1	CCB			0	@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2	LCS-INST			0	@IC-QC	F	QC	64.0	6.43e+01	100.469	% Recovery
2	LCS-INST			0	@IC-QC	CL	QC	85.0	8.50e+01	100.000	% Recovery
2	LCS-INST			0	@IC-QC	NO2	QC	547	4.93e+02	90.128	% Recovery
2	LCS-INST			0	@IC-QC	BR	QC	620	6.45e+02	104.032	% Recovery
2	LCS-INST			0	@IC-QC	NO3	QC	655	7.36e+02	112.366	% Recovery
2	LCS-INST			0	@IC-QC	PO4	QC	630	6.63e+02	105.238	% Recovery
2	LCS-INST			0	@IC-QC	SO4	QC	680	7.03e+02	103.382	% Recovery
2	LCS-INST			0	@IC-QC	OXALATE2	QC	523	5.57e+02	106.501	% Recovery
3	CCV			0	@IC-QC	F	QC	64.5	6.62e+01	102.636	% Recovery
3	CCV			0	@IC-QC	CL	QC	86.5	8.45e+01	97.688	% Recovery
3	CCV			0	@IC-QC	NO2	QC	531	5.07e+02	95.480	% Recovery
3	CCV			0	@IC-QC	BR	QC	625	6.34e+02	101.440	% Recovery
3	CCV			0	@IC-QC	NO3	QC	695	7.10e+02	102.158	% Recovery
3	CCV			0	@IC-QC	PO4	QC	640	6.64e+02	103.750	% Recovery
3	CCV			0	@IC-QC	SO4	QC	680	7.06e+02	103.824	% Recovery
3	CCV			0	@IC-QC	OXALATE2	QC	515	5.21e+02	101.165	% Recovery
4	BLNK-PREP			0	@IC-01	F-02	SOLID	1	<1.20e-2		ug/g
4	BLNK-PREP			0	@IC-01	CL-02	SOLID	1	<1.70e-2		ug/g
4	BLNK-PREP			0	@IC-01	NO2-02	SOLID	1	<1.08e-1		ug/g
4	BLNK-PREP			0	@IC-01	BR-02	SOLID	1	<1.25e-1		ug/g
4	BLNK-PREP			0	@IC-01	NO3-02	SOLID	1	<1.39e-1		ug/g
4	BLNK-PREP			0	@IC-01	PO4-02	SOLID	1	<1.20e-1		ug/g
4	BLNK-PREP			0	@IC-01	SO4-02	SOLID	1	<1.38e-1		ug/g
4	BLNK-PREP			0	@IC-01	OXALATE2	SOLID	1	<1.05e-1		ug/g
5	SAMPLE	S00T000154	W	0	@IC-01	F-02	SOLID	N/A	3.442e+02	102.800	ug/g
5	SAMPLE	S00T000154	W	0	@IC-01	PO4-02	SOLID	N/A	1.213e+04	1028.000	ug/g
6	DUP	S00T000154	W	0	@IC-01	F-02	SOLID	3.44e+02	4.65e+02	29.913	RPD
6	DUP	S00T000154	W	0	@IC-01	CL-02	SOLID	?	4.21e+03		RPD
6	DUP	S00T000154	W	0	@IC-01	NO2-02	SOLID	?	4.76e+04		RPD
6	DUP	S00T000154	W	0	@IC-01	BR-02	SOLID	?	<1.09e3		RPD
6	DUP	S00T000154	W	0	@IC-01	NO3-02	SOLID	?	9.67e+04		RPD
6	DUP	S00T000154	W	0	@IC-01	PO4-02	SOLID	1.21e+04	3.00e+04	85.036	RPD
6	DUP	S00T000154	W	0	@IC-01	SO4-02	SOLID	?	2.49e+03		RPD

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

LABCORE Completed Worklist Report for Worklist# 33128

Seq	Type	Sample#	R	A		Test	Matrix	Actual	Found	DL or Yield	Unit
6	DUP	S00T000154	0	W	@IC-01	OXALATE2	SOLID	?	3.35e+03		RPD
7	SPK	S00T000154	0	W	@IC-01	F-02	SOLID	64.0	4.89e+01	76.406	% Recovery
7	SPK	S00T000154	0	W	@IC-01	CL-02	SOLID	85.0	0.00e+00	0.000	% Recovery
7	SPK	S00T000154	0	W	@IC-01	NO2-02	SOLID	547	0.00e+00	0.000	% Recovery
7	SPK	S00T000154	0	W	@IC-01	BR-02	SOLID	620	0.00e+00	0.000	% Recovery
7	SPK	S00T000154	0	W	@IC-01	NO3-02	SOLID	655	0.00e+00	0.000	% Recovery
7	SPK	S00T000154	0	W	@IC-01	PO4-02	SOLID	630	6.57e+02	104.286	% Recovery
7	SPK	S00T000154	0	W	@IC-01	SO4-02	SOLID	680	0.00e+00	0.000	% Recovery
7	SPK	S00T000154	0	W	@IC-01	OXALATE2	SOLID	523	0.00e+00	0.000	% Recovery

Final page for worklist# 33128

Analyst Signature **Date**

Analyst Signature **Date**

Ann Frye 4/10/00

Reviewer Signature **Date**

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

04/07/00 08:28
ws2

LABCORE Data Entry Template for Worklist# 33128

Analyst: AK **Instrument:** IC 4551 **Book#** LCS 115h21-A CCV 114m21-A

Method: LA-533-105 Rev/Mod F-2

Worklist Comment: Rerun SY-102 Solid Comp for @IC-01 2B Shelf 3

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	BLNK-PREP				@IC-01	SOLID		
5	SAMPLE	S00T000154	0	W	@IC-01	SOLID	20000008	SY-102 GRAB5
		Analytes Requested:			F-02	, PO4-02		
6	DUP	S00T000154	0	W	@IC-01	SOLID		
7	SPK	S00T000154	0	W	@IC-01	SOLID		

Final page for worklist # 33128

Signature Date 4/8/00

Signature Date

Data Entry Comments:
uploaded 4-10-00 JL Wanell

Validated 4/10/00 MFuge

33128APR.CSV

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

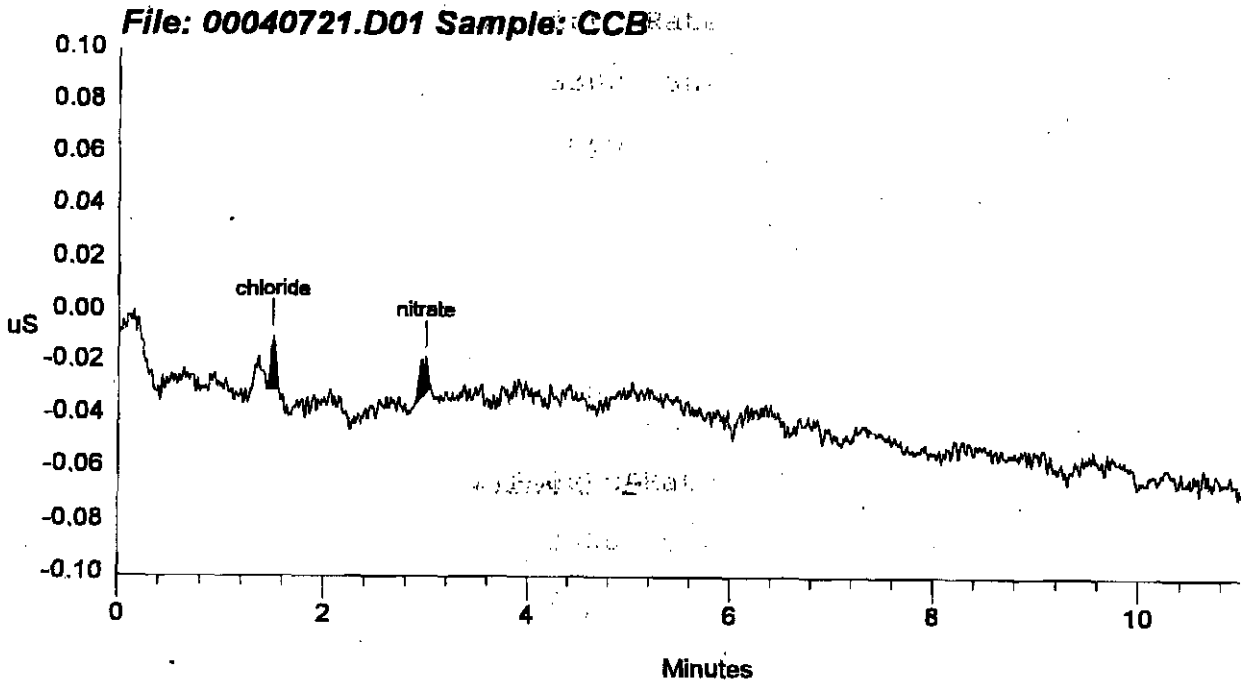
HNF-1698 REV. 0

Sample Name: CCB Date: 04/08/2000 18:54:15
Data File : C:\DX\DATA\00040721.D01
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 1 Detector:CDM-1
Analyst : [illegible] Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.50	chloride	0.000	20	64	1	0.00
2	2.99	nitrate	0.095	13	68	1	4.07
		Totals	0.095	33	132		



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 205 TO 211.

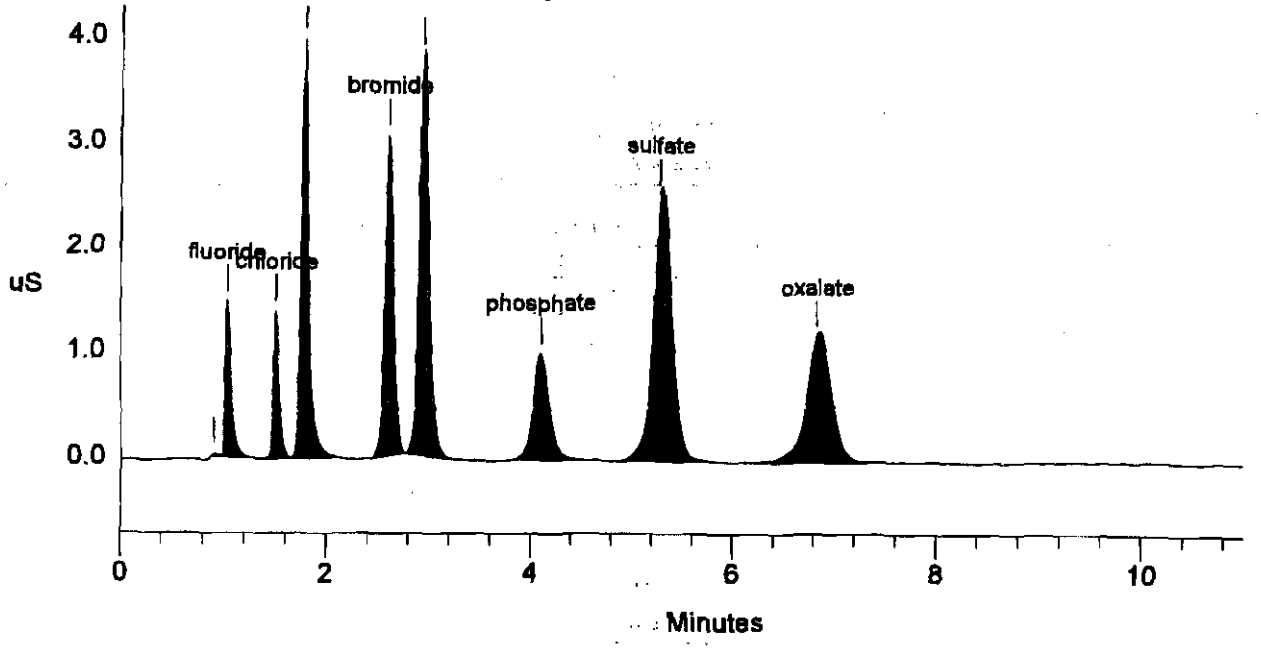
Sample Name: LCS 115N21A Date: 04/08/2000 19:07:42
Data File : C:\DX\DATA\00040721.D02
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 2 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	22	97	2	
2	1.03	fluoride	64.269	1458	5843	2	0.32
3	1.51	chloride	84.956	1385	5266	1	0.44
4	1.78	nitrite	492.896	3972	19953	1	-0.56
5	2.60	bromide	644.928	3045	17269	1	1.17
6	2.93	nitrate	736.022	3798	25481	1	2.21
7	4.10	phosphate	663.326	1003	11040	1	-3.98
8	5.28	sulfate	703.283	2532	32866	1	-2.94
9	6.83	oxalate	556.552	1182	20737	1	-2.34
		Totals	3946.232	18399	138552		

File: 00040721.D02 Sample: LCS 115N21A



HNF-1698 REV. 0

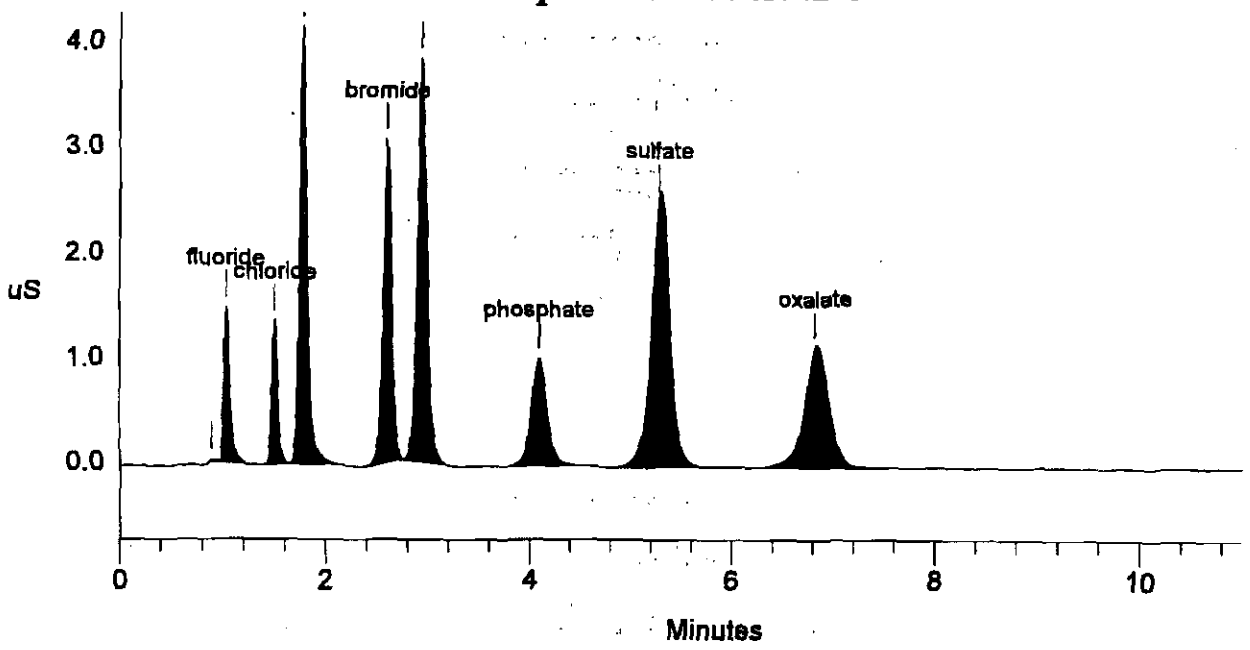
Sample Name: CCV 114N21A Date: 04/08/2000 19:31:13
Data File : C:\DX\DATA\00040721.D03
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 3 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	101	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	17	67	2	
2	1.03	fluoride	66.223	1476	6022	2	0.32
3	1.50	chloride	84.534	1365	5239	1	0.00
4	1.77	nitrite	506.521	4149	20523	1	-0.93
5	2.60	bromide	634.368	3064	16978	1	1.17
6	2.93	nitrate	709.962	3829	24549	1	2.21
7	4.09	phosphate	664.194	1017	11055	1	-4.14
8	5.28	sulfate	706.275	2539	33009	1	-2.94
9	6.83	oxalate	520.722	1137	19397	1	-2.34
		Totals	3892.800	18594	136838		

File: 00040721.D03 Sample: CCV 114N21A



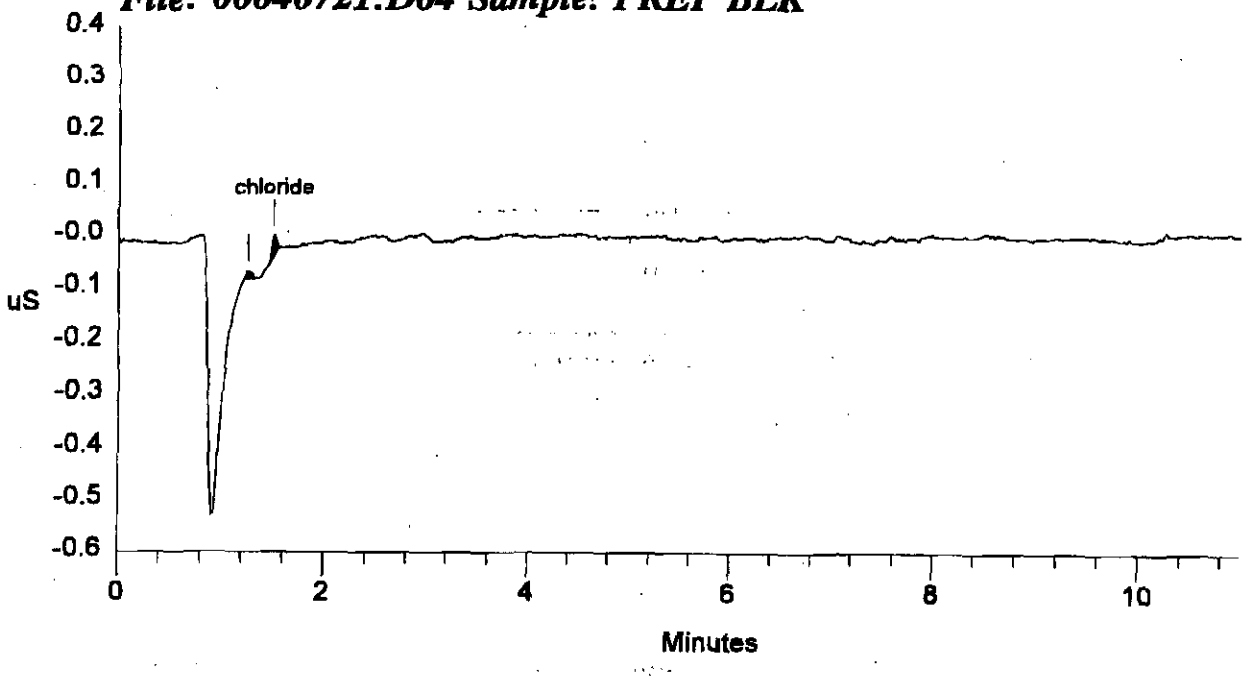
Sample Name: PREP BLK Date: 04/08/2000 19:46:18
Data File : C:\DX\DATA\00040721.D04
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 4 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	1	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.26		0.000	14	57	1	
2	1.51	chloride	0.010	38	127	1	0.44
		Totals	0.010	52	184		

File: 00040721.D04 Sample: PREP BLK



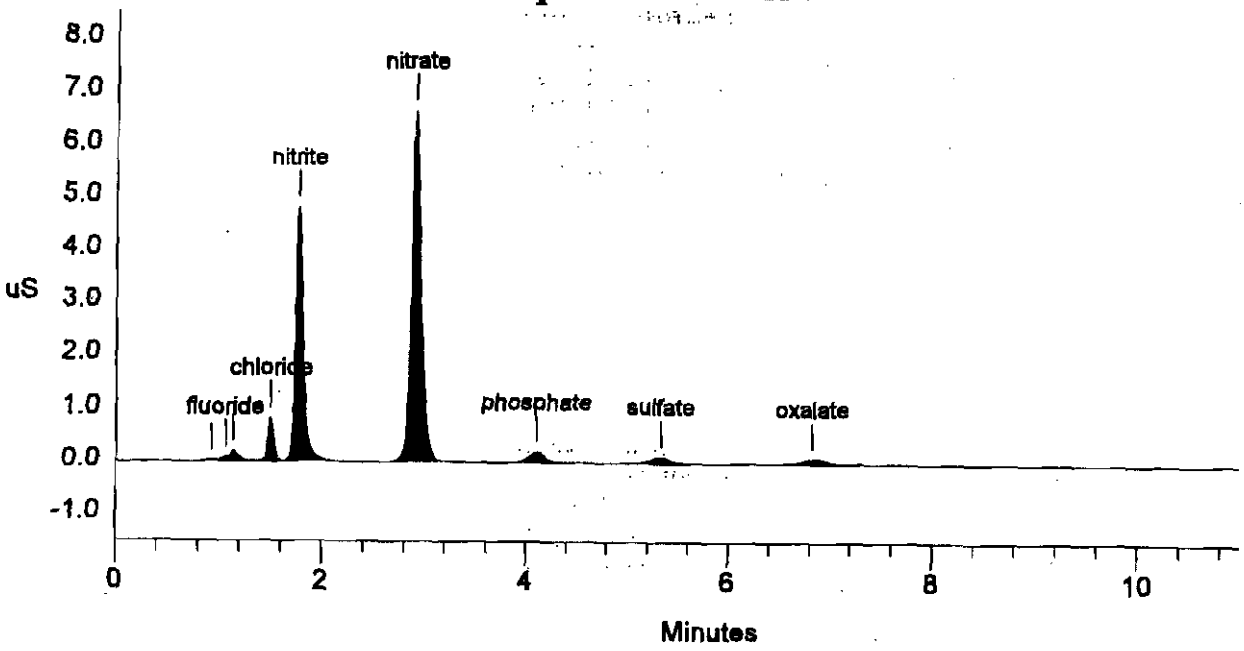
Sample Name: S00T000154 Date: 04/08/2000 19:59:39
Data File : C:\DX\DATA\00040721.D05
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 5 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	21	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	1.07	fluoride	0.844	98	404	2	3.56
3	1.14		0.000	214	1064	2	
4	1.50	chloride	11.042	827	3298	1	0.00
5	1.77	nitrite	124.395	4816	24369	1	-1.30
6	2.90	nitrate	255.235	6648	43364	1	1.05
7	4.10	phosphate	29.735	202	2190	1	-3.98
8	5.33	sulfate	7.140	126	1658	1	-1.96
9	6.83	oxalate	9.550	99	1785	1	-2.34
		Totals	437.940	13030	78133		

File: 00040721.D05 Sample: S00T000154



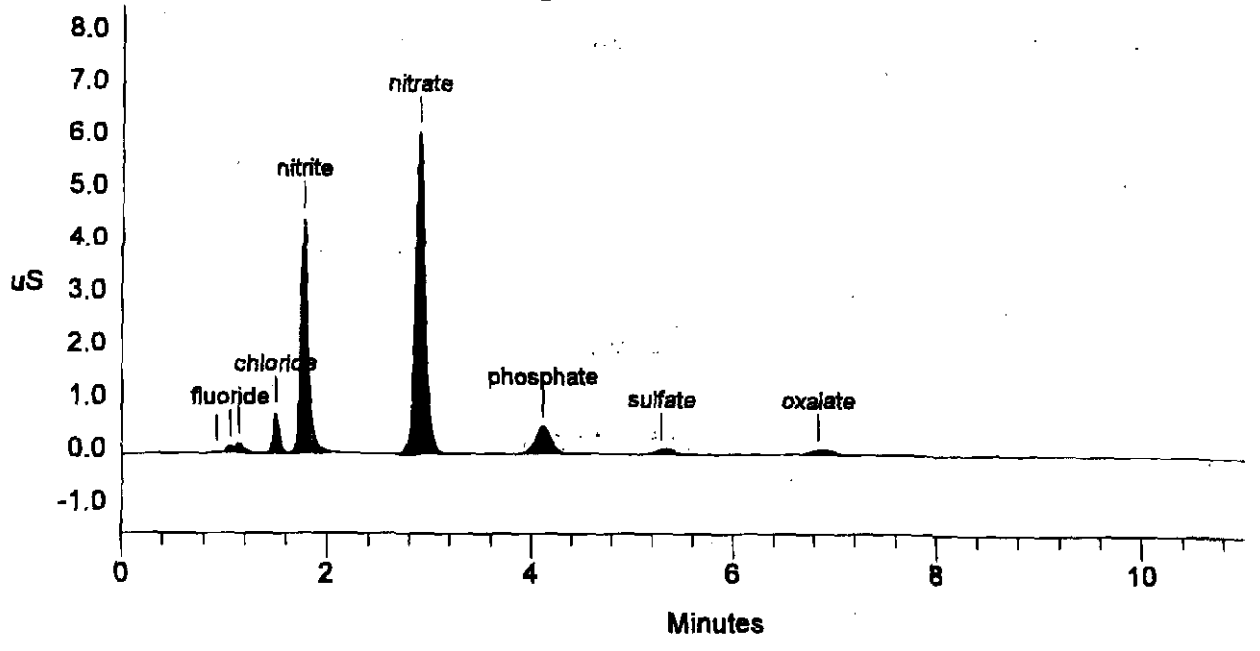
Sample Name: S00T000154 DUP Date: 04/08/2000 20:15:25
Data File : C:\DX\DATA\00040721.D06
Method : C:\DX\METHOD\ANIONS.MET
ACI Address: 1 System: 1 Inject#: 6 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	21	3300	5Hz	0.00	11.00	50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.92		0.000	16	76	2	
2	1.05	fluoride	1.118	122	522	2	2.27
3	1.14		0.000	194	1021	2	
4	1.49	chloride	10.124	762	3027	1	-0.44
5	1.76	nitrite	114.393	4438	22351	1	-1.68
6	2.88	nitrate	232.179	6097	39277	1	0.35
7	4.11	phosphate	72.012	524	5615	1	-3.83
8	5.28	sulfate	5.971	95	1401	1	-2.94
9	6.83	oxalate	8.036	89	1517	1	-2.34
		Totals	443.833	12335	74807		

File: 00040721.D06 Sample: S00T000154 DUP



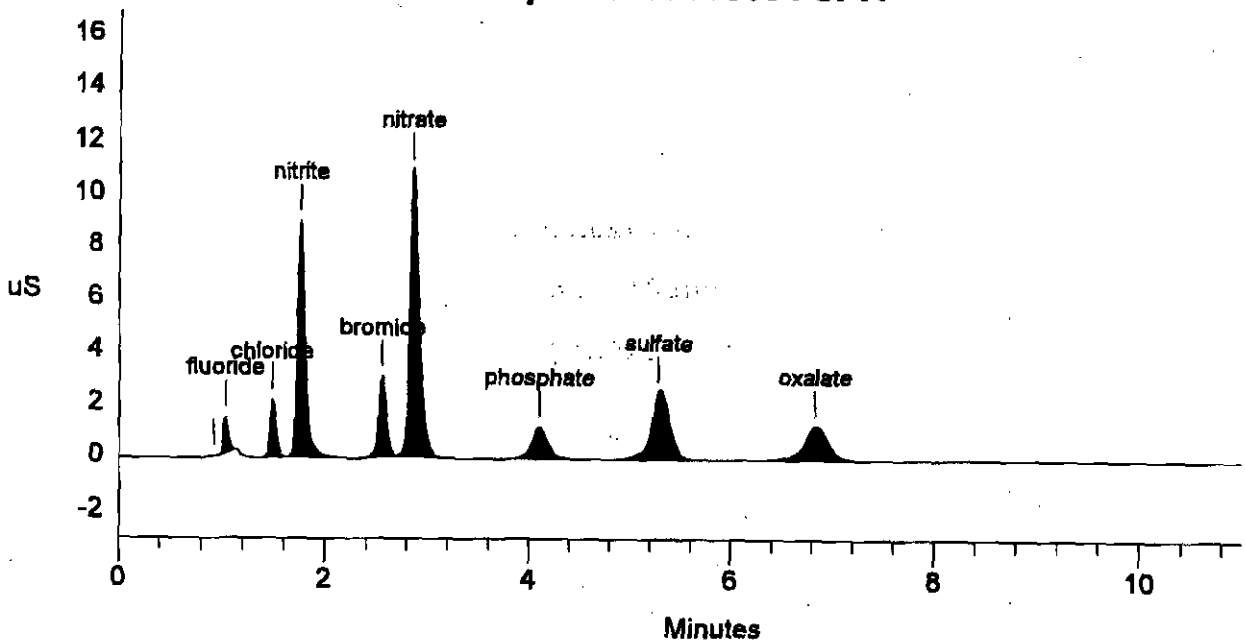
Sample Name: S00T000154 SPK	Date: 04/08/2000 20:29:14
Data File : C:\DX\DATA\00040721.D07	
Method : C:\DX\METHOD\ANIONS.MET	
ACI Address: 1 System: 1 Inject#: 7	Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column	

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area	Reject
External	1	21	3300	5Hz	0.00	11.00		50

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.92		0.000	21	74	1	
2	1.03	fluoride	10.629	1371	4644	1	0.32
3	1.49	chloride	28.829	2163	8631	1	-0.89
4	1.76	nitrite	228.179	9013	45573	1	-1.68
5	2.55	bromide	123.564	3040	15876	1	-0.65
6	2.85	nitrate	401.646	10922	70082	1	-0.58
7	4.10	phosphate	161.204	1190	12982	1	-3.98
8	5.28	sulfate	144.899	2543	32562	1	-2.94
9	6.83	oxalate	118.299	1279	21201	1	-2.34
		Totals	1217.248	31542	211626		

File: 00040721.D07 Sample: S00T000154 SPK



File #: 11700C

LABCORE Data Entry Template for Worklist# 32125

Analyst: DK Sato **Instrument:** ICP01 [illegible] 1-12-00 **Book#** 80B488

Method: LA-505-~~151~~/161 Rev/Mod C-5
[illegible] 1-12-00

Worklist Comment: ICP SY-102 (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	S00T000049	0	D	@ICP-D01	LIQUID	20000008	SY-102 GRAB5
		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	S00T000049	0	D	@ICP-D01	LIQUID		
8	SAMPLE	S00T000054	0	D	@ICP-D01	LIQUID	20000008	SY-102 GRAB5
		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			
9	DUP	S00T000054	0	D	@ICP-D01	LIQUID		
10	SAMPLE	S00T000056	0	D	@ICP-D01	LIQUID	20000008	SY-102 GRAB5
		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 ,			

Data Entry Comments:

Uploaded + Validated by: Saul M. Pang 01/17/2000

Reviewed by Brian [illegible] 01-17-2000

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

LABCORE Data Entry Template for Worklist# 32125

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
					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			
11	DUP	S00T000056	0	D	@ICP-D01	LIQUID		
12	CCV				@ICP-QC	QC		
13	CCB				@ICP-QC	QC		
14	SERDIL	S00T000055	0	D	@ICP-D01	LIQUID		
15	SAMPLE	S00T000055	0	D	@ICP-D01	LIQUID	20000008	SY-102 GRAB5
		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			
16	DUP	S00T000055	0	D	@ICP-D01	LIQUID		
17	SPK-~~POST~~ (1ppm) Sample X Dup X Spike QX (10 ppm) JW 1-12-00	S00T000055	0	D	@ICP-D01	LIQUID		
18	SAMPLE	S00T000057	0	D	@ICP-D01	LIQUID	20000008	SY-102 GRAB5
		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			
19	DUP	S00T000057	0	D	@ICP-D01	LIQUID		
20	ICSA				@ICP-QC	QC		
21	ICSAB				@ICP-QC	QC		
22	CCV				@ICP-QC	QC		
23	CCB				@ICP-QC	QC		

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 32125

S Type	Sample#	R	A	Test	Matrix	Group#	Project

Final page for worklist # 32125

JK [illegible] 01-17-00

Signature	Date			Signature	Date
S00T000049	.025-15	DF	601		
S00T000049_D	.025-15		601		
S00T000054	.025-15	DF	601		
S00T000054_D	.025-15		601		
S00T000056	.025-15	DF	601		
S00T000056_D	.025-15		601		
S00T000055_L	.025-15-1-8	DF	3005		
S00T000055	.025-15		601		
S00T000055_D	.025-15		601		
S00T000055_a	.025-15		601		
S00T000055_X	.025-15-1-9		6010		
S00T000055_XD	.025-15-1-9		6010		
S00T000055_aX	.025-15-1-9		6010		
S00T000057	.025-15	DF	601		
S00T000057_D	.025-15		601		

Data Entry Comments:

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

Analysis Report Summary 01/17/00 01:41:58 PM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	11700C	ICP2	01/17/00	12:03	DKS	Q	CONC
2	ICB	11700C	ICP2	01/17/00	12:06	DKS	Q	CONC
3	LLS	11700C	ICP2	01/17/00	12:10	DKS	Q	CONC
4	ICSA	11700C	ICP2	01/17/00	12:14	DKS	Q	CONC
5	ICSAB	11700C	ICP2	01/17/00	12:16	DKS	Q	CONC
6	S00T000049	11700C	ICP2	01/17/00	12:22	DKS	S	CONC
7	S00T000049_D	11700C	ICP2	01/17/00	12:25	DKS	S	CONC
8	S00T000054	11700C	ICP2	01/17/00	12:29	DKS	S	CONC
9	S00T000054_D	11700C	ICP2	01/17/00	12:32	DKS	S	CONC
10	S00T000056	11700C	ICP2	01/17/00	12:35	DKS	S	CONC
11	S00T000056_D	11700C	ICP2	01/17/00	12:39	DKS	S	CONC
12	CCV	11700C	ICP2	01/17/00	12:44	DKS	Q	CONC
13	CCB	11700C	ICP2	01/17/00	12:47	DKS	Q	CONC
14	S00T000055_L	11700C	ICP2	01/17/00	12:51	DKS	S	CONC
15	S00T000055	11700C	ICP2	01/17/00	12:54	DKS	S	CONC
16	S00T000055_D	11700C	ICP2	01/17/00	12:57	DKS	S	CONC
17	S00T000055_A	11700C	ICP2	01/17/00	13:00	DKS	S	CONC
18	S00T000055_X	11700C	ICP2	01/17/00	13:06	DKS	S	CONC
19	S00T000055_DX	11700C	ICP2	01/17/00	13:09	DKS	S	CONC
20	S00T000055_AX	11700C	ICP2	01/17/00	13:12	DKS	S	CONC
21	S00T000057	11700C	ICP2	01/17/00	13:20	DKS	S	CONC
22	S00T000057_D	11700C	ICP2	01/17/00	13:24	DKS	S	CONC
23	ICSA	11700C	ICP2	01/17/00	13:27	DKS	Q	CONC
24	ICSAB	11700C	ICP2	01/17/00	13:31	DKS	Q	CONC
25	CCV	11700C	ICP2	01/17/00	13:35	DKS	Q	CONC
26	CCB	11700C	ICP2	01/17/00	13:39	DKS	Q	CONC

JK [signature]
01-17-00
Work list # 32125

54-102
S00T000049
S00T000054
S00T000056
S00T000055
S00T000057

S00T000055

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 215 TO 219.

Al = 1.82e+4 $\frac{\mu g}{ml}$

$$Spk: Al = \frac{\left(\frac{18645}{601}\right) - \left(\frac{18179}{601}\right)}{1} \times 100 = 77.5\%$$

Na = 1.30e+5 $\frac{\mu g}{ml}$

$$Spk: Na = \frac{\left(\frac{131100}{601}\right) - \left(\frac{130470}{601}\right)}{1} \times 100 = 104.8\%$$

Analysis Report Averages 01/17/00 01:41:58 PM page 2

#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	4.8115	4.9205	5.0424	5.1114	4.8978	4.8888
2	ICB	.00011	.00047	-.01244	.00428	.00000	-.00009
3	LLS	.01956	.10171	.18841	.10384	.09591	.00982
4	ICSA	-.00468	252.10	-.03211	.00214	.00020	.00001
5	ICSAB	.96254	253.50	-.04569	.00335	.46726	.46953
6	S00T000049	6.1720	11146.	-18.111	29.191	-.06701	.06428
7	S00T000049_D	6.2617	11081.	-12.051	28.873	-.08166	.03167
8	S00T000054	8.4271	17597.	-18.004	39.136	-.01902	.08523
9	S00T000054_D	6.9956	17855.	-28.179	36.886	-.17494	.04347
10	S00T000056	8.8349	17835.	-11.515	42.018	-.03627	.08488
11	S00T000056_D	7.0593	17873.	-23.908	40.741	-.12181	.08525
12	CCV	4.7918	4.8674	5.0238	5.0740	4.8316	4.9041
13	CCB	-.00182	-.00822	-.00789	.00321	-.00014	-.00003
14	S00T000055_L	2.2031	18388.	-73.552	46.518	-.78657	-.15573
15	S00T000055	8.0536	18179.	-20.404	41.699	-.09612	.06524
16	S00T000055_D	8.3542	18129.	-20.398	41.534	-.07339	.09648
17	S00T000055_A	559.27	18645.	596.87	651.76	567.95	581.98
18	S00T000055_X	.59143	18198.	-15.378	48.125	-1.1244	-.31548
19	S00T000055_DX	1.6374	18195.	-55.453	49.756	-.63504	-.42601
20	S00T000055_AX	58804.	77404.	59967.	60294.	59747.	59844.
21	S00T000057	8.9338	18771.	-20.890	42.659	-.13295	.08648
22	S00T000057_D	8.3584	18642.	-24.944	40.573	-.14885	.07522
23	ICSA	-.00402	249.08	-.02946	.00647	.00026	.00003
24	ICSAB	.94452	249.42	-.01937	.00058	.45802	.45932
25	CCV	4.8443	4.9383	5.0737	5.1453	4.9334	4.9422
26	CCB	-.00245	-.00802	-.01184	.00480	-.00013	-.00007

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	5.0398	5.1941	5.0306	5.0373	5.0466	5.0116
2	ICB	-.00362	.00124	.00000	.00035	-.00059	-.00023
3	LLS	.18483	.20955	.00990	.20223	.03906	.01924
4	ICSA	.02296	263.37	-.00913	.00198	-.00154	-.00289
5	ICSAB	.01921	266.09	.95006	-.00364	.47378	.48013
6	S00T000049	12.888	102.12	4.6461	-7.3338	-.73607	130.15
7	S00T000049_D	-8.4703	91.992	4.5492	-9.9813	-.17042	128.77
8	S00T000054	-2.3920	49.056	.88676	-8.0089	.14920	675.45
9	S00T000054_D	-9.0613	46.370	.57590	-14.183	-.27159	679.84
10	S00T000056	-3.8012	48.450	1.3201	-1.1737	1.7619	679.62
11	S00T000056_D	-3.5797	51.452	.73831	-11.372	-.71125	680.57
12	CCV	4.9729	5.2367	5.0615	4.9893	5.0719	5.0331
13	CCB	.00343	-.00090	-.00127	-.01009	-.00108	-.00053
14	S00T000055_L	-25.094	53.678	-4.5617	-59.935	-4.6795	697.04
15	S00T000055	2.5281	94.337	.70020	-9.8455	-.30696	695.01
16	S00T000055_D	-.20847	68.844	1.1537	-6.5235	.62653	691.15
17	S00T000055_A	598.18	674.34	607.48	590.00	606.54	1291.0
18	S00T000055_X	164.14	54.032	-5.6119	-90.459	1.9278	696.98
19	S00T000055_DX	-150.92	63.929	-7.6101	-73.588	-4.0323	695.65
20	S00T000055_AX	60177.	59942.	59987.	59562.	59975.	60675.
21	S00T000057	-1.6326	45.062	.37871	-13.919	-.27369	728.62
22	S00T000057_D	-13.354	47.048	.07663	-11.818	.51442	721.94
23	ICSA	.02009	263.50	-.00910	.00155	.00002	-.00314

Analysis Report Averages 01/17/00 01:41:58 PM page 3

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
24	ICSAB	.00788	261.08	.92722	.00366	.46347	.46956
25	CCV	5.0513	5.2239	5.0577	5.0630	5.0731	5.0461
26	CCB	-.00320	-.00105	-.00160	-.01159	-.00061	-.00114

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	5.0418	.03567	5.0990	5.2403	5.0755	4.9346
2	ICB	.00029	.00190	-.00003	.14020	-.00069	.00123
3	LLS	.01723	.00137	.10053	0.28062	.09920	.02046
4	ICSA	-.00374	.32153	100.25	-.16576	-.00861	.00255
5	ICSAB	.49186	.32523	100.93	-.12918	-.00953	.99047
6	S00T000049	5.3531	.80456	2.6451	1572.8	-.78609	.39761
7	S00T000049_D	4.9621	.83286	2.9635	1500.3	-.73364	.33957
8	S00T000054	2.8373	.93044	3.1100	2048.0	-.80345	.56737
9	S00T000054_D	2.4004	.03023	1.8285	1960.5	-2.3610	-.22935
10	S00T000056	3.3863	.61354	3.0131	2005.7	-.65583	.56780
11	S00T000056_D	1.9988	.98552	1.7067	1763.6	-2.0709	.68132
12	CCV	4.9750	.03730	5.0944	5.2177	5.0336	4.8518
13	CCB	-.00057	.00222	-.00082	.11153	-.00216	.00160
14	S00T000055_L	1.0285	.87898	3.0067	1488.5	-8.8080	-.00166
15	S00T000055	2.6395	.79562	3.6344	1863.8	-1.5194	.51148
16	S00T000055_D	2.9528	.19367	2.9690	1858.2	-1.1068	-.17202
17	S00T000055_A	599.48	4.5916	613.16	2502.4	605.87	576.11
18	S00T000055_X	.86776	4.7381	-.86022	2061.6	-17.626	3.4142
19	S00T000055_DX	-.25114	6.8393	-2.0802	1584.8	-11.311	3.4092
20	S00T000055_AX	59446.	425.14	59806.	60155.	59517.	59377.
21	S00T000057	2.8315	-.01436	2.2148	1963.8	-2.0384	-.11521
22	S00T000057_D	2.6353	-.11469	2.9213	1805.5	-1.6336	-.34303
23	ICSA	-.00313	.31530	99.664	.15895	-.00907	.00388
24	ICSAB	.48092	.32271	99.092	-.29079	-.00878	.97737
25	CCV	5.0683	.03635	5.1101	4.8145	5.1211	4.9586
26	CCB	.00000	.00057	-.00074	-.21029	-.00263	.00047

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	5.0213	4.7296	4.9913	5.1452	5.0399	5.0152
2	ICB	-.00718	.00033	.00675	.01819	.00191	.00165
3	LLS	.18860	.01894	.10503	.19135	.19987	.03826
4	ICSA	260.71	-.00977	-.00666	195.60	.01110	-.00648
5	ICSAB	261.95	.43143	-.00639	195.97	.01437	.93947
6	S00T000049	-15.046	.26746	38.298	104020.	2.0356	79.279
7	S00T000049_D	-10.710	.30586	37.571	103190.	.41109	83.311
8	S00T000054	-6.1022	.18301	54.208	127590.	1.6040	42.693
9	S00T000054_D	-16.955	.08347	54.195	129890.	.02567	39.499
10	S00T000056	-2.0450	.11730	55.397	128090.	3.0229	42.394
11	S00T000056_D	-14.578	.21267	54.786	128410.	-2.2065	39.046
12	CCV	4.9897	4.7231	4.9925	5.0060	4.9748	5.0175
13	CCB	-.01614	.00043	.00459	-.00290	.00006	-.00495
14	S00T000055_L	-82.125	.00764	58.724	135090.	-12.343	35.355
15	S00T000055	-10.420	.15141	56.249	130470.	.43962	42.730
16	S00T000055_D	-9.1073	.04186	54.648	130360.	-.18727	40.502
17	S00T000055_A	585.19	546.46	655.57	131100.	598.48	638.37

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#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
18	S00T000055_X	-129.93	.78443	61.625	134430.	-12.228	53.132
19	S00T000055_DX	-94.878	.65197	54.272	133700.	-12.112	50.410
20	S00T000055_AX	59718.	59748.	60056.	192760.	59630.	60061.
21	S00T000057	-16.486	.09701	57.441	132680.	.24411	38.498
22	S00T000057_D	-17.679	.02242	56.241	132020.	.98749	36.258
23	ICSA	258.69	-.00946	-.00949	192.18	.01306	-.00491
24	ICSAB	257.26	.42189	-.00969	191.92	.00797	.91526
25	CCV	5.0226	4.7447	5.0186	5.1091	5.0717	5.0176
26	CCB	-.02056	.00017	.00351	.00521	-.00280	.00178

#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	5.1107	4.9386	4.8919	5.0037	4.9338	5.1249
2	ICB	.01198	-.00275	-.00172	.00807	.01734	.00836
3	LLS	.41134	.20438	.16965	.10261	.21315	.14737
4	ICSA	-.01054	.05628	-.03755	.00184	-.06566	-.00952
5	ICSAB	-.01141	1.0434	-.03504	.00528	-.06295	-.00756
6	S00T000049	1352.9	12.334	1517.1	-.39671	21.739	9.9564
7	S00T000049_D	1349.0	11.442	1498.8	-.35313	25.437	9.4483
8	S00T000054	1483.9	12.816	1216.0	7.4377	25.867	20.469
9	S00T000054_D	1503.3	7.1968	1222.5	5.9516	18.677	17.310
10	S00T000056	977.03	13.909	1221.6	6.9682	25.461	19.094
11	S00T000056_D	980.00	7.4550	1243.5	6.7175	30.818	22.565
12	CCV	5.1184	4.9623	4.8602	5.0130	4.9115	5.1194
13	CCB	.02314	-.00930	-.00789	.00681	.01438	.00802
14	S00T000055_L	1519.1	-11.539	1158.4	-6.3295	30.468	30.448
15	S00T000055	1515.3	11.559	1224.9	3.2710	29.756	22.419
16	S00T000055_D	1491.2	16.696	1211.2	8.4476	23.993	19.848
17	S00T000055_A	2119.8	606.76	1800.5	613.29	626.23	642.19
18	S00T000055_X	1591.7	-13.209	991.71	1.8752	135.98	49.103
19	S00T000055_DX	1540.6	-4.5783	1014.3	15.967	76.086	54.697
20	S00T000055_AX	61461.	60227.	61220.	59984.	60059.	59857.
21	S00T000057	898.50	7.8189	1230.9	4.9993	24.400	19.947
22	S00T000057_D	879.67	12.541	1216.5	9.4566	19.698	21.582
23	ICSA	-.00642	.06984	-.03836	.00584	-.04653	-.00588
24	ICSAB	-.01099	1.0224	-.05811	.02162	-.05515	-.00845
25	CCV	5.1382	4.9505	4.9046	5.0429	4.9485	5.1452
26	CCB	.00419	-.00505	-.02292	.00911	.01774	.00270

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	5.0531	4.8770	.37731	5.0797	4.9565	9.8916
2	ICB	.01738	.00011	-.01606	-.00061	-.00834	.05571
3	LLS	.20474	.01968	.01289	.01877	.41384	.49934
4	ICSA	-.01446	.00143	.09846	.00069	-.06907	.14300
5	ICSAB	-.01265	.00154	.10973	.00128	-.08720	.14372
6	S00T000049	4.9891	.34181	-11.819	-.38203	-3.0790	27.996
7	S00T000049_D	5.1419	.35881	-13.974	-.48221	-2.6931	46.903
8	S00T000054	7.2751	.23170	-16.388	-.07820	8.9153	52.111
9	S00T000054_D	2.4077	.14275	-25.830	-.68441	-2.9187	23.679
10	S00T000056	5.6658	.19581	-11.783	.02355	-4.6518	44.098
11	S00T000056_D	8.1837	.21316	-21.668	-.75806	-6.5412	53.711

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#	Sample Name	Sm	Sr	Th	Ti	Tl	U
12	CCV	5.0061	4.8372	.38352	5.0683	4.9611	9.7905
13	CCB	.02031	.00020	-.01574	-.00075	.00081	.07529
14	S00T000055_L	21.394	.17849	-77.833	-3.5814	.79349	30.759
15	S00T000055	5.4241	.19533	-18.183	-.24211	12.511	31.224
16	S00T000055_D	.42961	.14247	-16.793	-.48500	-2.8267	17.954
17	S00T000055_A	607.58	578.88	31.146	609.23	573.65	1202.4
18	S00T000055_X	44.756	.35291	-129.95	-2.9698	-46.063	128.99
19	S00T000055_DX	73.739	.52757	-104.70	-7.0055	-132.79	220.74
20	S00T000055_AX	59601.	59581.	4679.2	59858.	59873.	119060.
21	S00T000057	.62296	.10635	-19.020	-.41255	.14920	21.721
22	S00T000057_D	-.07110	.10669	-23.320	-.17989	-2.4101	17.083
23	ICSA	-.00337	.00148	.11778	.00158	-.06343	.17306
24	ICSAB	-.01516	.00148	.10650	.00099	-.05404	.15063
25	CCV	5.0967	4.9238	.38711	5.1312	4.9714	9.9599
26	CCB	.00643	.00000	-.01568	-.00101	-.01592	.00931

#	Sample Name	V	Y	Zn	Zr
1	ICV	5.0530	.01363	5.0082	5.0571
2	ICB	.00218	.00099	-.00029	.00292
3	LLS	.09967	.00041	.02019	.01878
4	ICSA	-.00736	.01039	-.00749	-.00429
5	ICSAB	.47591	.01062	1.0148	-.00506
6	S00T000049	.69354	.31878	.48940	1.5443
7	S00T000049_D	.78368	.40522	.00354	1.9321
8	S00T000054	1.4664	.49748	-1.0966	2.2132
9	S00T000054_D	.42253	-.05730	-1.0710	1.8624
10	S00T000056	1.0549	.35917	-1.3611	1.5157
11	S00T000056_D	1.5365	.54404	-1.2895	2.7278
12	CCV	5.0505	.01478	5.0220	5.0300
13	CCB	.00303	.00106	-.00028	.00288
14	S00T000055_L	1.2472	.45933	-2.7566	6.9199
15	S00T000055	1.2104	.27016	-1.0153	2.2455
16	S00T000055_D	.29008	-.05486	-1.2466	1.4377
17	S00T000055_A	606.71	1.6620	603.70	610.11
18	S00T000055_X	7.6888	2.3072	-1.0992	14.290
19	S00T000055_DX	8.0578	2.7406	.53565	13.517
20	S00T000055_AX	59824.	167.65	59987.	59454.
21	S00T000057	-.00806	-.10371	-1.7156	1.4786
22	S00T000057_D	-.04709	-.19621	-.78045	1.5608
23	ICSA	-.00536	.01132	-.00683	-.00394
24	ICSAB	.46636	.01038	.99541	-.00500
25	CCV	5.0937	.01368	5.0360	5.0925
26	CCB	.00080	.00023	-.00017	.00155

JK Lab
01-17-00

File #: 40700 B

04/06/00 08:22
ws2

LABCORE Data Entry Template for Worklist# 33155

Analyst: KRM DKS **Instrument:** ICP01 2 **Book#** 81B48B 82B48B

Method: LA-505-~~157~~/161 Rev/Mod C-5

Worklist Comment: ICP SY-102 (SOLID WATER DIGEST)

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	LLS				@ICP-QC	QC		
4	ICSA				@ICP-QC	QC		
5	ICSAB				@ICP-QC	QC		
6	PREPBLKTJA				@ICP-I01	SOLID		
7	SERDIL	S00T000154	0	I	@ICP-I01	SOLID		
8	SAMPLE	S00T000154	0	I	@ICP-I01	SOLID	20000008	SY-102 GRAB5
		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	S00T000154	0	I	@ICP-I01	SOLID		
10	SPK-POST (1 ppm)	S00T000154	0	I	@ICP-I01	SOLID		
	Sch X, dup X, Spike QX (10 ppm) 4-4-00							
11	ICSA				@ICP-QC	QC		
12	ICSAB				@ICP-QC	QC		
13	CCV				@ICP-QC	QC		
14	CCB				@ICP-QC	QC		

Data Entry Comments: uploaded 4-7-00

John Worrell

Validated by: Sal M. Pang

04/10/00

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

04/07/00 12:38 ☎509 372 2929 WESTINGHOUSE →→→ MO-924 200W 001

LABCORE Data Entry Template for Worklist# 33155

S Type	Sample#	R	A	Test	Matrix	Group#	Project

Final page for worklist # 33155

04-07-00

Signature	Date		Signature	Date
PrepblkTJQ	Direct, DF 1			
500T000154_L	3-6-2-9	DF 15		
500T000154	3-6	DF 3		
500T000154_D	3-6	DF 3		
500T000154_Q	3-6	DF 3		
500T000154_X	3-6-1-9	DF 30		
500T000154_DX	3-6-1-9	DF 30		
500T000154_QX	3-6-1-9	DF 30		

500T000154

$$Al = 23.657 \frac{ug}{ml} \times \frac{1}{2.452 \frac{g}{L} \times \frac{1L}{1000 ml}} = 9.65e+3 \frac{ug}{g}$$

Post Spike:

$$Al = \frac{\left(\frac{326.83 \frac{ug}{ml}}{30}\right) - \left(\frac{23.657 ug/ml}{30}\right)}{10} \times 100 = 101.1\%$$

Data Entry Comments:

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

Analysis Report Summary 04/07/00 12:09:38 PM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
~~1~~	~~ICV~~	~~40700B~~	~~ICP2~~	~~04/07/00~~	~~08:36~~	~~KRM~~	~~Q~~	~~CONC~~
2	ICV	40700B	ICP2	04/07/00	08:41	KRM	Q	CONC
3	ICV1	40700B	ICP2	04/07/00	08:48	KRM	Q	CONC
4	ICB	40700B	ICP2	04/07/00	08:52	KRM	Q	CONC
5	LLS	40700B	ICP2	04/07/00	08:57	KRM	Q	CONC
6	LLS1	40700B	ICP2	04/07/00	09:03	KRM	Q	CONC
7	ICSA	40700B	ICP2	04/07/00	09:08	KRM	Q	CONC
8	ICSAB	40700B	ICP2	04/07/00	09:16	KRM	Q	CONC
9	PREPBLKTJA	40700B	ICP2	04/07/00	09:54	KRM	S	CONC
10	S00T000154_L	40700B	ICP2	04/07/00	10:00	KRM	S	CONC
11	S00T000154	40700B	ICP2	04/07/00	10:03	KRM	S	CONC
12	S00T000154_D	40700B	ICP2	04/07/00	10:09	KRM	S	CONC
13	S00T000154_A	40700B	ICP2	04/07/00	10:13	KRM	S	CONC
14	S00T000154_X	40700B	ICP2	04/07/00	10:19	KRM	S	CONC
15	S00T000154_DX	40700B	ICP2	04/07/00	10:23	KRM	S	CONC
16	S00T000154_AX	40700B	ICP2	04/07/00	10:27	KRM	S	CONC
17	ICSA	40700B	ICP2	04/07/00	11:47	KRM	Q	CONC
18	ICSAB	40700B	ICP2	04/07/00	11:50	KRM	Q	CONC
19	CCV	40700B	ICP2	04/07/00	11:56	KRM	Q	CONC
20	CCV1	40700B	ICP2	04/07/00	12:00	KRM	Q	CONC
21	CCB	40700B	ICP2	04/07/00	12:04	KRM	Q	CONC

4-7-00

SY-102
S00T000154

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 222 TO 226.

04/07/00 12:39 ☎509 372 2929 WESTINGHOUSE →→→ MO-924 200W 003

Analysis Report Averages 04/07/00 12:09:38 PM page 2

#	Sample Name	Ag	Al	As	B	Ba	Be
~~1~~	~~ICV~~	~~5.0345~~	~~5.0860~~	~~5.1392~~	~~5.0895~~	~~4.9258~~	~~4.9555~~
2	ICV	5.0163	5.0564	5.1452	5.0642	4.9085	4.9635
3	ICV1	.01966	.16339	-.02481	.00686	.00017	-.00050
4	ICB	-.00031	.00551	.00714	.00404	-.00010	.00004
5	LLS	.02094	.11747	.20948	.10807	.09924	.01016
6	LLS1	.00049	.01254	.00905	.00622	.00005	.00005
7	ICSA	-.00289	252.40	.07043	.01350	.00031	.00015
8	ICSAB	.96227	255.67	.05112	.00305	.46470	.46691
9	PREPBLKTJA	.00031	.00113	.00460	.00280	.00020	.00003
10	S00T000154_L	.03412	24.061	-.03637	.20537	.00141	.00180
11	S00T000154	.01573	24.350	-.04008	.16435	-.00038	.00019
12	S00T000154_D	.01900	22.411	.00989	.16342	.00126	.00037
13	S00T000154_A	2.8872	26.378	3.0507	3.2155	2.8380	2.8855
14	S00T000154_X	.06073	23.657	.16687	.29897	.00357	.00118
15	S00T000154_DX	.06171	24.018	.09214	.21485	.00317	.00119
16	S00T000154_AX	299.95	326.83	299.52	306.19	305.85	298.94
17	ICSA	-.00349	247.51	.04873	.00417	.00012	.00011
18	ICSAB	.93248	246.98	.07538	.00839	.44481	.45115
19	CCV	4.9403	4.9736	5.0479	4.9707	4.8073	4.8793
20	CCV1	.01768	.15020	-.00357	.00748	.00009	-.00055
21	CCB	.00060	.00412	.00702	.00498	.00011	.00003

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
~~1~~	~~ICV~~	~~5.0394~~	~~4.8938~~	~~5.0506~~	~~5.0359~~	~~5.0248~~	~~5.0570~~
2	ICV	5.0324	4.9238	5.0827	5.0077	5.0482	5.0826
3	ICV1	-.25348	.39414	.00029	.01156	-.00042	.00071
4	ICB	-.02033	-.00791	-.00157	.00277	-.00133	-.00184
5	LLS	.17714	.20296	.01006	.21167	.04157	.02065
6	LLS1	-.01934	.01248	.00003	.00632	-.00037	.00018
7	ICSA	-.04458	257.79	-.00813	.02817	.00070	-.00136
8	ICSAB	-.03962	256.36	.92323	.00198	.46405	.46657
9	PREPBLKTJA	.00100	-.00426	-.00045	.00136	.00096	.00037
10	S00T000154_L	-.39423	.11702	.00136	.05362	-.00908	1.6209
11	S00T000154	-.10490	.12223	-.00188	-.03138	-.00075	1.6332
12	S00T000154_D	-.09293	.07169	-.00206	-.01528	-.01085	1.5202
13	S00T000154_A	2.9329	3.1325	3.0185	2.9538	3.0605	4.6092
14	S00T000154_X	.27193	-.05959	-.00959	.11128	-.01297	1.6312
15	S00T000154_DX	-.37087	-.03355	-.00265	.34233	-.06389	1.5636
16	S00T000154_AX	299.13	291.18	297.43	302.34	298.46	300.34
17	ICSA	.00638	250.48	-.00825	.02201	-.00001	-.00140
18	ICSAB	.01968	248.81	.89714	.01613	.44770	.45220
19	CCV	4.9342	4.8233	4.9553	4.9404	4.9335	4.9852
20	CCV1	-.19427	.37501	-.00146	.00029	-.00027	-.00036
21	CCB	-.01011	-.00516	-.00076	.00782	-.00189	-.00136

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#	Sample Name	Cu	Eu	Fe	K	La	Li
~~1~~	~~ICV~~	~~5.0480~~	~~.01115~~	~~5.0655~~	~~Q5.5640~~	~~5.0248~~	~~5.3301~~
2	ICV	5.0190	.01109	5.0758	5.0643	5.0019	5.1456
3	ICV1	.01165	4.9838	.00042	.11388	-.01181	.00030
4	ICB	-.00198	-.00039	.00062	-.18871	-.00066	-.00103
5	LLS	.01871	.00057	.10292	Q.33338	.10246	.02224
6	LLS1	.00039	.09671	.00052	.01722	.00044	-.00062
7	ICSA	-.00314	.06216	99.782	-.03195	-.00256	.00268
8	ICSAB	.49341	.06744	100.03	.15677	-.00671	1.0198
9	PREPBLKTJA	.00042	.00015	.00046	.09600	.00072	.00020
10	S00T000154_L	-.01049	-.01765	.02818	5.7290	.01138	-.01089
11	S00T000154	.00377	-.00356	.01298	4.6034	-.00643	-.00155
12	S00T000154_D	-.00644	-.00538	.01396	2.7733	-.00173	-.00311
13	S00T000154_A	2.9840	.00599	3.0292	7.6585	2.9905	2.9355
14	S00T000154_X	.02358	-.00121	.02111	8.7481	.02912	-.00002
15	S00T000154_DX	-.02584	-.01163	.02111	9.5321	.05339	-.00934
16	S00T000154_AX	303.46	.56905	298.30	322.83	302.47	318.25
17	ICSA	-.00349	.06503	97.179	.27714	-.00362	.00341
18	ICSAB	.47313	.07045	96.542	-.05065	-.00573	1.0081
19	CCV	4.9433	.01025	4.9563	5.1342	4.9453	5.1312
20	CCV1	.00932	4.8317	-.00045	.04056	-.01084	.00124
21	CCB	-.00128	.00066	-.00019	.21241	.00083	.00072

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
~~1~~	~~ICV~~	~~5.1209~~	~~4.8946~~	~~5.0263~~	~~5.3268~~	~~5.0812~~	~~4.9958~~
2	ICV	5.1085	4.9143	5.0440	5.1483	5.0537	5.0250
3	ICV1	-.02491	.00057	.00250	.04363	-.06289	.00169
4	ICB	-.00152	-.00007	-.00234	.02186	-.00382	.00337
5	LLS	.21302	.01987	.10313	.22156	.20677	.04605
6	LLS1	.01404	.00001	.00165	.02819	-.00188	.00126
7	ICSA	261.44	-.00924	-.01003	192.93	.00519	-.00678
8	ICSAB	262.55	.43300	-.01065	198.43	.00256	.90999
9	PREPBLKTJA	.00225	.00020	-.00055	.04550	.00434	-.00257
10	S00T000154_L	.23764	.00097	.09793	314.90	-.01555	.11517
11	S00T000154	-.03523	.00374	.11581	315.55	.00330	.09824
12	S00T000154_D	.02892	.00354	.10085	314.86	-.03021	.08041
13	S00T000154_A	3.0081	2.7764	3.1212	294.63	2.9761	3.0496
14	S00T000154_X	.31474	.01040	.10314	302.76	.19239	.06341
15	S00T000154_DX	.72630	.00323	.13985	317.81	-.09857	.23598
16	S00T000154_AX	299.41	298.53	299.67	629.29	303.17	297.77
17	ICSA	254.77	-.00891	-.00913	194.40	.00667	-.00900
18	ICSAB	253.38	.42066	-.01071	195.44	.00161	.89208
19	CCV	4.9859	4.8061	4.9342	5.1140	4.9952	4.9182
20	CCV1	-.03406	.00082	.00395	.03484	-.06580	-.00023
21	CCB	.00923	.00025	-.00165	.01022	-.00010	.00376

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#	Sample Name	P	Pb	S	Sb	Se	Si
~~1~~	~~ICV~~	~~5.0689~~	~~5.0160~~	~~4.6797~~	~~5.0110~~	~~5.0599~~	~~5.1139~~
2	ICV	5.1038	5.0640	4.7102	5.0202	5.1193	5.1091
3	ICV1	.01947	.01599	.01961	-.00551	.00126	.01384
4	ICB	.01586	-.01354	.00532	.00019	.01103	-.00273
5	LLS	.40629	.20505	.19245	.09491	.22206	0.23991
6	LLS1	.01199	-.00928	-.00772	.00315	.00419	.00361
7	ICSA	-.01358	.05999	-.03157	-.00846	-.02368	-.00952
8	ICSAB	-.00837	1.0080	-.01402	-.00040	-.04186	.03789
9	PREPBLKTJA	.01125	.00582	.02137	-.00166	.01843	.00655
10	S00T000154_L	9.1629	.03311	2.4716	-.07676	.16166	.18353
11	S00T000154	9.3020	.00461	2.5494	-.00898	.07886	.17591
12	S00T000154_D	23.429	-.04435	2.4256	-.02146	.06927	.17825
13	S00T000154_A	12.114	2.9703	5.2385	3.0328	3.0616	3.3234
14	S00T000154_X	9.4363	.06776	2.2704	-.15135	.55486	.56867
15	S00T000154_DX	9.3224	-.30734	2.5105	-.24626	.35874	.49583
16	S00T000154_AX	306.86	298.39	302.34	300.92	299.80	296.79
17	ICSA	-.00682	.06242	-.02696	-.00740	-.01840	-.00904
18	ICSAB	.00177	.97049	-.02121	.00670	.00183	.03584
19	CCV	4.9581	4.9406	4.5923	4.9372	5.0036	5.0264
20	CCV1	.01973	-.00840	.02503	-.01353	.04132	.00408
21	CCB	.02677	-.00223	.00223	-.00815	.03191	.00132

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
~~1~~	~~ICV~~	~~5.0172~~	~~4.9840~~	~~.07986~~	~~5.0281~~	~~5.0187~~	~~10.180~~
2	ICV	4.9828	4.9576	-.08758	5.0262	5.0258	10.135
3	ICV1	.00677	.00008	5.0160	.00126	.00958	.07865
4	ICB	-.01111	-.00020	.00311	-.00107	.00824	-.04128
5	LLS	.20624	.02052	-.00170	.01995	.42323	.51149
6	LLS1	-.00192	-.00010	.10631	-.00020	.00878	-.02420
7	ICSA	-.01234	.00192	-.00857	.00134	-.04946	.31018
8	ICSAB	-.02171	.00197	-.02157	.00051	-.05858	.28400
9	PREPBLKTJA	.00857	.00016	.00294	.00063	-.01069	.02134
10	S00T000154_L	-.17389	-.00252	.07769	-.01132	.07524	-.59915
11	S00T000154	-.03497	.00021	-.01573	-.00052	-.00193	-.11046
12	S00T000154_D	-.04903	.00011	.00240	-.00417	-.01538	-.18041
13	S00T000154_A	3.0002	2.9050	-.05275	3.0407	3.0047	6.0011
14	S00T000154_X	.15823	.00098	.05183	.01882	-.09739	.54485
15	S00T000154_DX	-.11893	-.00202	.28722	-.01757	.28275	-.36563
16	S00T000154_AX	303.58	302.76	-5.4961	301.27	297.65	607.81
17	ICSA	-.00851	.00207	-.01137	.00132	-.04040	.34303
18	ICSAB	-.01036	.00209	-.00760	.00055	-.07487	.35026
19	CCV	4.9419	4.9051	-.08269	4.9512	4.9133	10.006
20	CCV1	.00787	.00018	4.8849	.00061	.01418	.08548
21	CCB	.00212	-.00003	.00309	-.00092	.00668	.01878

04/07/00 12:40 ☎509 372 2929 WESTINGHOUSE →→→ MO-924 200W ☑008

Analysis Report Averages 04/07/00 12:09:38 PM page 5

#	Sample Name	V	Y	Zn	Zr
~~1~~	~~ICV~~	~~5.0436~~	~~.00554~~	~~5.0797~~	~~5.0854~~
2	ICV	5.0524	.00596	5.0950	5.0847
3	ICV1	.00349	5.0099	.00647	-.01135
4	ICB	-.00227	-.00063	.00036	-.00154
5	LLS	.10174	.00013	.02085	.02061
6	LLS1	-.00111	.01996	.00081	-.00136
7	ICSA	-.00686	.00593	-.00552	.00528
8	ICSAB	.46797	.00539	.98934	.00455
9	PREPBLKTJA	.00062	.00019	.00110	.00020
10	S00T000154_L	-.03275	-.00801	.00909	-.02904
11	S00T000154	-.00527	-.00160	-.00168	-.00287
12	S00T000154_D	-.00617	-.00263	-.00262	-.00546
13	S00T000154_A	3.0521	.00391	3.0610	3.0513
14	S00T000154_X	.02215	.00127	.01473	.00894
15	S00T000154_DX	-.01704	-.00586	-.00757	-.03455
16	S00T000154_AX	300.11	.33425	298.58	301.00
17	ICSA	-.00573	.00592	-.00569	.00568
18	ICSAB	.45571	.00581	.96158	.00551
19	CCV	4.9725	.00552	4.9926	5.0064
20	CCV1	.00447	4.8915	.00109	-.01112
21	CCB	.00107	.00004	.00031	.00020

4-7-00

BY-102
S00T000154

04/07/00 12:41 ☎509 372 2929 WESTINGHOUSE →→→ MO-824 200W ☑007

LABCORE Completed Worklist Report for Worklist# 32127

Analyst: kjt **Instrument:** ICPMS1 **Book#:** 49B55

Method: LA-506-101 Rev/Mod A-3

Worklist Comment: ICP/MS SY-102 (DIRECT) Iso-U

	Seq Type	Sample#	R	A		Test	Matrix	Actual		Found	DL or Yield	Unit
1	ICV		0		@MSU-QC	U235	QC	0.0001670		1.51e-04	90.419	% Recovery
1	ICV		0		@MSU-QC	U238	QC	0.020700		2.11e-02	101.932	% Recovery
2	ICB		0		@MSU-QC	U233	QC	1		<1.20e-5		ug/mL
2	ICB		0		@MSU-QC	U234	QC	1		<1.20e-5		ug/mL
2	ICB		0		@MSU-QC	U235	QC	1		<1.20e-5		ug/mL
2	ICB		0		@MSU-QC	U236	QC	1		<1.60e-5		ug/mL
2	ICB		0		@MSU-QC	U238	QC	1		<1.20e-5		ug/mL
3	SAMPLE	S00T000048	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
3	SAMPLE	S00T000048	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
3	SAMPLE	S00T000048	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
3	SAMPLE	S00T000048	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
3	SAMPLE	S00T000048	0	D	@MSU-D1	U238-D1	LIQUID	N/A		1.307e+00	0.244	ug/mL
4	DUP	S00T000048	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
4	DUP	S00T000048	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
4	DUP	S00T000048	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
4	DUP	S00T000048	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
4	DUP	S00T000048	0	D	@MSU-D1	U238-D1	LIQUID	1.31e+00		1.34e+00	2.264	RPD
5	SAMPLE	S00T000050	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
5	SAMPLE	S00T000050	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
5	SAMPLE	S00T000050	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
5	SAMPLE	S00T000050	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
5	SAMPLE	S00T000050	0	D	@MSU-D1	U238-D1	LIQUID	N/A		4.107e+00	0.244	ug/mL
6	DUP	S00T000050	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
6	DUP	S00T000050	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
6	DUP	S00T000050	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
6	DUP	S00T000050	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
6	DUP	S00T000050	0	D	@MSU-D1	U238-D1	LIQUID	4.11e+00		4.13e+00	0.485	RPD
7	SAMPLE	S00T000051	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
7	SAMPLE	S00T000051	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
7	SAMPLE	S00T000051	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
7	SAMPLE	S00T000051	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
7	SAMPLE	S00T000051	0	D	@MSU-D1	U238-D1	LIQUID	N/A		4.442e+00	0.244	ug/mL
8	DUP	S00T000051	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
8	DUP	S00T000051	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
8	DUP	S00T000051	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
8	DUP	S00T000051	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
8	DUP	S00T000051	0	D	@MSU-D1	U238-D1	LIQUID	4.44e+00		4.50e+00	1.342	RPD
9	SPK-POST	S00T000051	0	D	@MSU-D1	U235-D1	LIQUID	0.000142		1.34e-04	94.366	% Recovery
9	SPK-POST	S00T000051	0	D	@MSU-D1	U238-D1	LIQUID	0.020		1.92e-02	96.000	% Recovery
10	SAMPLE	S00T000052	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
10	SAMPLE	S00T000052	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL

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

LABCORE Completed Worklist Report for Worklist# 32127

Seq	Type	Sample#	R	A		Test	Matrix	Actual		Found	DL or Yield	Unit
10	SAMPLE	S00T000052	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
10	SAMPLE	S00T000052	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
10	SAMPLE	S00T000052	0	D	@MSU-D1	U238-D1	LIQUID	N/A		4.097e+00	0.244	ug/mL
11	DUP	S00T000052	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
11	DUP	S00T000052	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
11	DUP	S00T000052	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
11	DUP	S00T000052	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
11	DUP	S00T000052	0	D	@MSU-D1	U238-D1	LIQUID	4.10e+00		3.99e+00	2.719	RPD
12	SAMPLE	S00T000053	0	D	@MSU-D1	U233-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
12	SAMPLE	S00T000053	0	D	@MSU-D1	U234-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
12	SAMPLE	S00T000053	0	D	@MSU-D1	U235-D1	LIQUID	N/A	<	2.436e-01	0.244	ug/mL
12	SAMPLE	S00T000053	0	D	@MSU-D1	U236-D1	LIQUID	N/A	<	3.248e-01	0.325	ug/mL
12	SAMPLE	S00T000053	0	D	@MSU-D1	U238-D1	LIQUID	N/A		4.298e+00	0.244	ug/mL
13	DUP	S00T000053	0	D	@MSU-D1	U233-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
13	DUP	S00T000053	0	D	@MSU-D1	U234-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
13	DUP	S00T000053	0	D	@MSU-D1	U235-D1	LIQUID	<2.44e-1		<2.44e-1		RPD
13	DUP	S00T000053	0	D	@MSU-D1	U236-D1	LIQUID	<3.25e-1		<3.25e-1		RPD
13	DUP	S00T000053	0	D	@MSU-D1	U238-D1	LIQUID	4.30e+00		4.62e+00	7.175	RPD
14	CCV		0		@MSU-QC	U235	QC	0.000142		1.45e-04	102.113	% Recovery
14	CCV		0		@MSU-QC	U238	QC	0.020		2.14e-02	107.000	% Recovery
15	CCB		0		@MSU-QC	U233	QC	1		<1.20e-5		ug/mL
15	CCB		0		@MSU-QC	U234	QC	1		<1.20e-5		ug/mL
15	CCB		0		@MSU-QC	U235	QC	1		<1.20e-5		ug/mL
15	CCB		0		@MSU-QC	U236	QC	1		<1.60e-5		ug/mL
15	CCB		0		@MSU-QC	U238	QC	1		<1.20e-5		ug/mL

Final page for worklist# 32127

Analyst Signature Date

Analyst Signature Date

Reviewer Signature Date 1/27/00

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

file u012b6a.txt

01/24/00 15:18
ws2

LABCORE Data Entry Template for Worklist# 32127

Analyst: KST **Instrument:** ICPMS1 **Book#** 49B55

Method: LA-506-101 **Rev/Mod** A-3

Worklist Comment: ICP/MS SY-102 (DIRECT) Iso-U

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@MSU-QC	QC		
2	ICB				@MSU-QC	QC		
3	SAMPLE	S00T000048	0	D	@MSU-D1	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
4	DUP	S00T000048	0	D	@MSU-D1	LIQUID		
5	SAMPLE	S00T000050	0	D	@MSU-D1	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
6	DUP	S00T000050	0	D	@MSU-D1	LIQUID		
7	SAMPLE	S00T000051	0	D	@MSU-D1	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
8	DUP	S00T000051	0	D	@MSU-D1	LIQUID		
9	SPK-POST	S00T000051	0	D	@MSU-D1	LIQUID		
10	SAMPLE	S00T000052	0	D	@MSU-D1	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
11	DUP	S00T000052	0	D	@MSU-D1	LIQUID		
12	SAMPLE	S00T000053	0	D	@MSU-D1	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: U233-D1 , U234-D1 , U235-D1 , U236-D1 , U238-D1							
13	DUP	S00T000053	0	D	@MSU-D1	LIQUID		
14	CCV				@MSU-QC	QC		
15	CCB				@MSU-QC	QC		

Data Entry Comments:

Uploaded + Validated by:
Saul R. Pang
01/26/2000

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

file u0126a.txt

HNF-1698 REV. 0

01/24/00 15:18
ws2

LABCORE Data Entry Template for Worklist# 32127

S Type	Sample#	R	A	Test	Matrix	Group#	Project

Final page for worklist # 32127

KJ Thomblake 1-26-00

Signature	Date		Signature	Date
	S00T000048	20301 df		.05-10-.1-10
	S00T000048_d	"		"
	S00T000050	"		"
	S00T000050_d	"		"
	S00T000051	"		"
	S00T000051_d	"		"
	S00T000052	"		"
S00T000051_a	S00T000052_d	"		"
	~~S00T000052_a~~	"		"
KST 01-26-00	S00T000053	"		"
	S00T000053_d	"		"
	S00T000048 rd	"		

^ recheck for dilution error - all new dilutions

Scans U00T0048 KST 1-26-00, U00T0050 KST 1-26-00, U00T0051
U00T0052, U00T0053

Data Entry Comments: Spiked with .62 ml of 10 ppm Uranium

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

Analysis Report 01/26/00 14:33:05 page 1

Method: MS_TUNE Sample Name: ms-tune Operator: kjt
Comment:
Run Time: 01/26/00 14:31 Type: Unk Mode: INT Corr.Fact: 1.000000

Elem	In[115]	Ir[193]
Line	115/pulse	193/pulse
Units	Cts/S	Cts/S
Avg	183600.	50430.
Stddev	2483.	745.
%RSD	1.352	1.476
#1	186900.	49330.
#2	182800.	50010.
#3	184100.	51230.
#4	184900.	50240.
#5	182700.	50470.
#6	179100.	49770.
#7	184300.	51860.
#8	186400.	49940.
#9	180100.	50630.
#10	184600.	50850.

KJ Thomlibe 1-26-2000
file u0126a.txt

S00T000048 20301 .05-10-1-10
S00T000048_d
S00T000050
S00T000050_d
S00T000051
S00T000051_d
S00T000051_a
S00T000052
S00T000052_d
S00T000053
S00T000053_d
S00T000048
↖ recheck for dilution error

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 231 TO 252

Scans U00T0048, U00T0050, U00T0051
U00T0052, U00T0053

Analysis Report 01/26/00 14:34:58 page 1

Method: ISOU Sample Name: BLANK Operator:
Comment:
Run Time: 01/26/00 14:33 Type: Std Mode: IR Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	10.30	10.82	10.31	10.52	12.41
Stddev	1.65	.92	.96	1.40	2.30
%RSD	16.03	8.532	9.274	13.27	18.56
#1	10.54	11.60	9.284	9.187	12.38
#2	9.416	11.51	11.79	12.84	12.93
#3	12.40	10.82	10.63	9.742	15.75
#4	11.07	10.88	9.977	10.38	11.57
#5	8.051	9.298	9.873	10.45	9.393

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	5.1472
Stddev	.1003
%RSD	1.9488
#1	5.1703
#2	5.2572
#3	5.0809
#4	5.0114
#5	5.2164

Method : ISOU Standardzn Report 01/26/00 14:35:05 page 1

U_[233]	413.7772	10.2965	1.0000000	01/26/00 14:34:57
U_[234]	413.0379	10.8221	1.0000000	01/26/00 14:34:57
U_[235]	413.7567	10.3111	1.0000000	01/26/00 14:34:57
U_[236]	413.4647	10.5187	1.0000000	01/26/00 14:34:57
U_[238]	386.6933	12.4051	1.0000000	01/26/00 14:34:57

Analysis Report 01/26/00 14:36:57 page 1

Method: ISOU Sample Name: 100ppb U Operator:
Comment:
Run Time: 01/26/00 14:35 Type: Std Mode: IR Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	305.0	305.0	305.0	305.0	38030.
Stddev	9.8	9.8	9.8	9.8	263.
%RSD	3.210	3.210	3.210	3.210	.6905
#1	316.7	316.7	316.7	316.7	38240.
#2	305.0	305.0	305.0	305.0	37750.
#3	308.4	308.4	308.4	308.4	37800.
#4	289.7	289.7	289.7	289.7	38030.
#5	305.1	305.1	305.1	305.1	38350.

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	5.1737
Stddev	.0514
%RSD	.99378
#1	5.1544
#2	5.1469
#3	5.2126
#4	5.2240
#5	5.2297

Method : ISOU Standardzn Report 01/26/00 14:37:04 page 1

U_[233]	414.4690	10.2965	1.0000000	01/26/00 14:36:57
U_[234]	413.7297	10.8221	1.0000000	01/26/00 14:36:57
U_[235]	414.4485	10.3111	1.0000000	01/26/00 14:36:57
U_[236]	414.1565	10.5187	1.0000000	01/26/00 14:36:57
U_[238]	382.9051	12.4051	1.0000000	01/26/00 14:36:57

Analysis Report 01/26/00 14:40:27 page 1

Method: ISOU Sample Name: blank Operator: kjt
Comment: background
Run Time: 01/26/00 14:39 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U [233]	U [234]	U [235]	U [236]	U [238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	-.0009	-.0033	-.0007	-.0005	-.0052
Stddev	.0017	.0040	.0037	.0007	.0047
%RSD	199.7	123.9	547.4	141.0	89.21
#1	-.0003	-.0045	-.0059	-.0002	-.0095
#2	-.0033	.0033	-.0024	.0001	-.0066
#3	-.0004	-.0038	.0006	-.0009	-.0018
#4	-.0016	-.0078	.0040	-.0014	-.0093
#5	.0013	-.0035	.0003	.0001	.0010

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	5.2105
Stddev	.1642
%RSD	3.1507
#1	5.4656
#2	5.2563
#3	5.0283
#4	5.1372
#5	5.1651

Analysis Report 01/26/00 14:42:27 page 1

Method: ISOU Sample Name: ICV Operator: kjt
Comment: iso-u lcs
Run Time: 01/26/00 14:41 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	-.0009	.0013	.1514	.0043	21.08
Stddev	.0034	.0017	.0076	.0015	.73
%RSD	366.5	132.2	4.991	34.50	3.468
#1	-.0029	.0009	.1630	.0057	21.72
#2	.0043	.0010	.1472	.0033	20.31
#3	-.0025	.0028	.1465	.0051	20.97
#4	.0007	.0031	.1452	.0022	20.46
#5	-.0042	-.0012	.1552	.0052	21.94

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	5.2241
Stddev	.1508
%RSD	2.8859
#1	5.0[illegible]
#2	5.3[illegible]
#3	5.2997
#4	5.2926
#5	5.1[illegible]

Analysis Report 01/26/00 14:47:15 page 1

Method: ISOU Sample Name: ICB Operator: kjt
Comment: 2% NITRIC
Run Time: 01/26/00 14:46 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0000	-.0015	-.0006	.0003	-.0035
Stddev	.0018	.0014	.0043	.0036	.0049
%RSD	7738.	90.01	712.5	1165.	138.2
#1	-.0023	-.0020	-.0001	-.0024	-.0087
#2	.0003	-.0035	-.0002	.0064	.0045
#3	.0025	.0001	.0057	.0001	-.0055
#4	-.0009	-.0007	-.0059	-.0002	-.0039
#5	.0004	-.0016	-.0026	-.0024	-.0041

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	[illegible]
Stddev	.1555
%RSD	2.9652
#1	5.4515
#2	5.1317
#3	5.1994
#4	5.0737
#5	5.3536

Analysis Report 01/26/00 14:50:24 page 1

Method: ISOU Sample Name: s00t000048 Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 14:49 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0010	-.0006	.0015	.0009	.0644
Stddev	.0036	.0041	.0025	.0031	.0045
%RSD	364.9	700.0	172.6	354.2	6.970
#1	.0022	-.0013	-.0003	.0022	.0681
#2	.0020	-.0043	.0012	-.0041	.0648
#3	-.0030	-.0004	.0055	.0044	.0621
#4	.0059	.0062	.0018	.0005	.0691
#5	-.0022	-.0032	-.0009	.0013	.0581

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.4539
Stddev	.0943
%RSD	2.1162
#1	4.3261
#2	4.5817
#3	4.4103
#4	4.4730
#5	4.4723

Analysis Report 01/26/00 14:52:03 page 1

Method: ISOU Sample Name: s00t000048_d Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 14:50 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0030	-.0020	.0025	.0011	.0661
Stddev	.0031	.0023	.0037	.0023	.0040
%RSD	103.4	117.2	147.7	217.2	6.086
#1	-.0022	-.0023	-.0017	.0020	.0604
#2	.0037	-.0040	.0073	.0003	.0680
#3	.0028	.0010	-.0009	.0045	.0704
#4	.0051	-.0043	.0037	.0004	.0682
#5	.0054	-.0002	.0042	-.0018	.0637

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.2914
Stddev	.0848
%RSD	1.9761
#1	4.3641
#2	4.3762
#3	4.3210
#4	4.3713
#5	4.2404

Analysis Report 01/26/00 14:55:08 page 1

Method: ISOU Sample Name: s00t000050 Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 14:53 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	-.0005	.0007	.0032	.0030	.2023
Stddev	.0014	.0046	.0013	.0026	.0117
%RSD	295.8	639.5	40.53	85.96	5.771
#1	-.0016	-.0031	.0039	.0029	.2092
#2	.0013	.0065	.0018	.0073	.1912
#3	-.0023	-.0030	.0044	.0028	.2188
#4	.0000	-.0016	.0042	.0003	.1927
#5	.0001	.0048	.0018	.0019	.1995

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.3572
Stddev	.0824
%RSD	1.9003
#1	4.3567
#2	4.4732
#3	4.2827
#4	4.2763
#5	4.2971

Analysis Report 01/26/00 14:56:50 page 1

Method: ISOU Sample Name: s00t000050_d Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 14:55 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0034	.0010	.0041	.0014	.2032
Stddev	.0030	.0028	.0013	.0037	.0097
%RSD	89.69	290.0	32.67	267.8	4.792
#1	.0009	.0025	.0061	.0004	.1887
#2	.0048	.0015	.0025	.0006	.2058
#3	.0013	.0039	.0046	-.0026	.2019
#4	.0081	.0002	.0039	.0075	.2036
#5	.0018	-.0034	.0034	.0010	.2159

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.3140
Stddev	.0683
%RSD	1.5821
#1	4.2109
#2	4.3205
#3	4.3366
#4	4.3995
#5	4.3024

Analysis Report 01/26/00 15:00:47 page 1

Method: ISOU Sample Name: s00t000051 Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 14:59 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0020	.0013	.0024	.0000	.2188
Stddev	.0031	.0042	.0009	.0029	.0183
%RSD	157.1	330.2	39.13	432600.	8.386
#1	-.0002	-.0031	.0016	.0006	.1954
#2	.0063	-.0015	.0032	.0047	.2182
#3	.0044	.0028	.0035	-.0014	.2407
#4	-.0003	.0006	.0021	-.0008	.2072
#5	-.0002	.0076	.0015	-.0030	.2324

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.4073
Stddev	.0967
%RSD	2.1945
#1	4.4599
#2	4.4112
#3	4.3725
#4	[illegible]
#5	4.3507

Analysis Report 01/26/00 15:02:42 page 1

Method: ISOU Sample Name: s00t000051_d Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 15:01 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0008	-.0006	.0040	.0025	.2217
Stddev	.0035	.0033	.0044	.0039	.0180
%RSD	422.4	552.9	111.5	156.3	8.117
#1	.0047	-.0018	.0063	.0011	.2262
#2	-.0018	.0024	.0049	.0005	.2219
#3	.0039	.0021	.0033	.0012	.2016
#4	-.0032	.0001	.0085	.0095	.2488
#5	.0005	-.0057	-.0032	.0002	.2101

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.4718
Stddev	.2475
%RSD	5.6103
#1	4.3676
#2	4.6124
#3	4.4530
#4	4.0116
#5	4.6153

Analysis Report 01/26/00 15:04:52 page 1

Method: ISOU Sample Name: s00t000051_a Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 15:03 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0011	.0006	.1344	.0054	19.37
Stddev	.0026	.0048	.0036	.0021	.57
%RSD	239.3	793.2	2.676	38.37	2.957
#1	.0034	-.0048	.1378	.0072	19.49
#2	-.0022	-.0012	.1361	.0079	19.27
#3	.0037	.0078	.1317	.0040	20.28
#4	.0012	-.0012	.1370	.0042	18.83
#5	-.0008	.0024	.1296	.0034	18.96

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.3040
Stddev	.0723
%RSD	1.6806
#1	4.1826
#2	4.3102
#3	4.3081
#4	4.3603
#5	4.3585

Analysis Report 01/26/00 15:10:23 page 1

Method: ISOU Sample Name: s00t000052 Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 15:09 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0012	-.0002	.0025	.0000	.2018
Stddev	.0020	.0035	.0030	.0020	.0157
%RSD	169.7	1727.	117.4	9372.	7.802
#1	.0028	.0002	.0022	-.0023	.1903
#2	-.0013	.0056	.0052	-.0016	.2206
#3	.0024	-.0036	-.0003	.0021	.1940
#4	-.0006	-.0017	-.0004	.0001	.1871
#5	.0026	-.0016	.0060	.0018	.2170

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.6555
Stddev	.1588
%RSD	3.4026
#1	4.9071
#2	[illegible]
#3	4.6545
#4	4.8555
#5	4.5716

HNF-1698 REV. 0

Analysis Report 01/26/00 15:15:08 page 1

Method: ISOU Sample Name: s00t000052_d Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 15:11 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	.0001	-.0009	.0033	.0004	.1964
Stddev	.0024	.0036	.0051	.0041	.0119
%RSD	2419.	403.5	155.2	983.4	6.065
#1	-.0023	-.0002	-.0040	-.0017	.2002
#2	.0002	-.0058	.0018	-.0039	.1946
#3	-.0020	.0035	.0061	.0056	.1844
#4	.0011	-.0031	.0028	-.0017	.2148
#5	.0035	.0011	.0097	.0038	.1881

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.2792
Stddev	.0814
%RSD	1.9033
#1	4.3203
#2	4.3841
#3	4.2619
#4	4.1940
#5	4.2166

Analysis Report 01/26/00 15:15:40 page 1

Method: ISOU Sample Name: s00t000053 Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 15:14 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	-.0027	-.0005	.0011	.0011	.2117
Stddev	.0018	.0026	.0022	.0040	.0114
%RSD	66.62	550.4	211.3	370.5	5.375
#1	-.0039	.0018	.0036	-.0025	.2195
#2	-.0031	-.0038	-.0023	-.0015	.2041
#3	-.0047	.0006	.0023	.0002	.2277
#4	-.0005	.0018	.0012	.0015	.2057
#5	-.0011	-.0027	.0005	.0077	.2013

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.4899
Stddev	.1373
%RSD	3.0581
#1	4.3699
#2	4.6042
#3	4.4332
#4	4.6674
#5	4.3746

Analysis Report 01/26/00 15:18:37 page 1

Method: ISOU Sample Name: s00t000053_d Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 15:17 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	-.0003	-.0023	.0009	-.0026	.2276
Stddev	.0027	.0034	.0023	.0052	.0232
%RSD	845.8	148.2	245.8	198.6	10.19
#1	-.0010	-.0064	.0020	.0018	.2328
#2	-.0033	.0007	-.0004	.0003	.2498
#3	.0004	.0013	.0004	-.0058	.2188
#4	.0039	-.0050	-.0016	-.0103	.1920
#5	-.0017	-.0022	.0043	.0009	.2445

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.3441
Stddev	.1821
%RSD	4.1922
#1	4.3079
#2	4.1757
#3	4.4199
#4	4.5679
#5	4.1783

Analysis Report 01/26/00 15:31:18 page 1

Method: ISOU Sample Name: s00t000048 rr Operator: kjt
Comment: 20301 df
Run Time: 01/26/00 15:30 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	-.0009	-.0037	-.0036	-.0038	.0621
Stddev	.0016	.0017	.0030	.0018	.0064
%RSD	180.4	47.03	83.21	47.92	10.30
#1	-.0035	-.0061	-.0054	-.0024	.0654
#2	.0007	-.0037	-.0020	-.0046	.0588
#3	-.0014	-.0045	-.0077	-.0019	.0524
#4	-.0003	-.0016	-.0001	-.0065	.0669
#5	.0000	-.0026	-.0027	-.0038	.0670

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.6214
Stddev	.1529
%RSD	3.3076
#1	4.5241
#2	4.6372
#3	4.6221
#4	4.8665
#5	4.4672

Analysis Report 01/26/00 15:36:26 page 1

Method: ISOU Sample Name: CCV Operator: kjt
Comment: iso-u lcs
Run Time: 01/26/00 15:35 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	-.0027	-.0051	.1450	-.0008	21.42
Stddev	.0010	.0011	.0150	.0018	1.26
%RSD	35.41	21.20	10.35	214.5	5.901
#1	-.0026	-.0067	.1541	-.0039	22.42
#2	-.0022	-.0049	.1638	.0000	21.06
#3	-.0024	-.0055	.1277	.0006	19.99
#4	-.0044	-.0042	.1323	-.0010	20.60
#5	-.0020	-.0041	.1471	.0001	23.01

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.8443
Stddev	.2263
%RSD	4.6715
#1	4.7255
#2	4.6975
#3	5.1547
#4	4.8573
#5	4.9464

Analysis Report 01/26/00 15:40:24 page 1

Method: ISOU Sample Name: CCB Operator: kjt
Comment: 2% nitric
Run Time: 01/26/00 15:39 Type: Unk Mode: CONC Corr.Fact: 1.000000

Elem	U_[233]	U_[234]	U_[235]	U_[236]	U_[238]
Line	233/pulse	234/pulse	235/pulse	236/pulse	238/pulse
Units	ppb	ppb	ppb	ppb	ppb
Avg	-.0037	-.0039	-.0025	-.0029	-.0063
Stddev	.0018	.0027	.0027	.0026	.0039
%RSD	47.51	68.72	106.0	90.16	62.73
#1	-.0038	-.0034	-.0022	.0008	-.0081
#2	-.0049	-.0081	-.0023	-.0028	.0001
#3	-.0010	-.0020	-.0007	-.0062	-.0096
#4	-.0033	-.0013	-.0004	-.0021	-.0050
#5	-.0055	-.0048	-.0070	-.0043	-.0087

Int. Std.	Ir[193]
Line	193/pulse
Units	Cts/S
Avg	4.6617
Stddev	.1839
%RSD	3.9701
#1	4.4032
#2	4.4257
#3	4.6489
#4	4.8218
#5	4.7990

LABCORE Completed Worklist Report for Worklist# 32102

Analyst: slh **Instrument:** CARB2 **Book#:** _____

Method: LA-342-100 Rev/Mod F-4

Worklist Comment: SY-102 GRAB 5 FOR @TICTOC1 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@TICTOC1 TIC-02	LIQUID	1	3.00E+0	3.000	ug/mL
1	BLNK			0	@TICTOC1 TOC-02	LIQUID	1	2.50E+0	2.500	ug/mL
2	STD			0	@TICTOC1 TIC-02	LIQUID	6.05E+02	5.74E+2	94.876	% Recovery
2	STD			0	@TICTOC1 TOC-02	LIQUID	3.01E+03	2.87E+3	95.349	% Recovery
3	SAMPLE	S00T000049		0	@TICTOC1 TIC-02	LIQUID	N/A	3.56E+03	5.000	ug/mL
3	SAMPLE	S00T000049		0	@TICTOC1 TOC-02	LIQUID	N/A	5.93E+03	40.000	ug/mL
4	DUP	S00T000049		0	@TICTOC1 TIC-02	LIQUID	3.56E+3	3.38E+3	5.187	RPD
4	DUP	S00T000049		0	@TICTOC1 TOC-02	LIQUID	5.93E+3	5.60E+3	5.724	RPD
5	SAMPLE	S00T000054		0	@TICTOC1 TIC-02	LIQUID	N/A	2.84E+03	5.000	ug/mL
5	SAMPLE	S00T000054		0	@TICTOC1 TOC-02	LIQUID	N/A	3.47E+03	40.000	ug/mL
6	DUP	S00T000054		0	@TICTOC1 TIC-02	LIQUID	2.84E+3	2.68E+3	5.797	RPD
6	DUP	S00T000054		0	@TICTOC1 TOC-02	LIQUID	3.47E+3	3.11E+3	10.942	RPD
7	SAMPLE	S00T000056		0	@TICTOC1 TIC-02	LIQUID	N/A	3.36E+03	5.000	ug/mL
7	SAMPLE	S00T000056		0	@TICTOC1 TOC-02	LIQUID	N/A	3.97E+03	40.000	ug/mL
8	DUP	S00T000056		0	@TICTOC1 TIC-02	LIQUID	3.36E+3	3.22E+3	4.255	RPD
8	DUP	S00T000056		0	@TICTOC1 TOC-02	LIQUID	3.97E+3	3.77E+3	5.168	RPD

Final page for worklist# 32102

Analyst Signature Date

Mary Franz 1/17/00
Analyst Signature Date

James Grubs 01/17/00
Reviewer Signature Date

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

01/11/00 14:43
ws2

LABCORE Data Entry Template for Worklist# 32102

Analyst: SLH **Instrument:** CARB2 _____ **Book#** TIC 25N12-F
TOC 34N12-e

Method: LA-342-100 Rev/Mod F-4

Worklist Comment: SY-102 GRAB 5 FOR @TICTOC1 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	LIQUID		
2	STD				@TICTOC1	LIQUID		
3	SAMPLE	S00T000049	0		@TICTOC1	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:				TIC-02 , TOC-02			
4	DUP	S00T000049	0		@TICTOC1	LIQUID		
5	SAMPLE	S00T000054	0		@TICTOC1	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:				TIC-02 , TOC-02			
6	DUP	S00T000054	0		@TICTOC1	LIQUID		
7	SAMPLE	S00T000056	0		@TICTOC1	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:				TIC-02 , TOC-02			
8	DUP	S00T000056	0		@TICTOC1	LIQUID		

Final page for worklist # 32102

Sandra L Hood Bootright
Signature **Date** 1-15-00

Mary Fiem 1/19/00
Signature **Date**

Data Entry Comments:

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

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASE 2 Date: 01/15/00 Time: 08:27:27

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	0.40	50.00
3	1.51	0.60	33.33
4	2.01	0.90	33.33
5	2.51	1.30	30.77
6	3.00	1.60	18.75
7	3.50	1.90	15.79
8	4.00	2.10	9.52
9	4.50	2.30	8.70
10	5.00	2.50	8.00
11	5.50	2.70	7.41
12	6.00	2.90	6.90
13	6.50	3.10	6.45
14	7.00	3.30	6.06
15	7.50	3.50	5.71
16	8.00	3.70	5.41
17	8.50	3.90	5.13
18	9.00	4.10	4.88
19	9.50	4.30	4.65
20	10.00	4.50	4.44
21	10.50	4.70	4.26
22	11.00	4.90	4.08

BLANK VALUE = 4.9 micrograms carbon
BLANK FACTOR = 4.9 / 10.99802 = +4.5E-01 ug/min Carbon

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 255 TO 280.

Sample Run By: SL Hood Boatright
SL HOOD 00002

P

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASE 2 Date: 01/15/00 Time: 08:40:18

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	0.10	0.00
2	1.01	0.30	66.67
3	1.50	0.90	66.67
4	2.00	2.30	60.87
5	2.50	4.10	43.90
6	3.00	5.90	30.51
7	3.50	7.40	20.27
8	4.00	8.30	10.84
9	4.50	9.00	7.78
10	5.00	9.60	6.25
11	5.50	10.10	4.95
12	6.00	10.50	3.81
13	6.50	10.90	3.67
14	7.00	11.30	3.54
15	7.50	11.60	2.59
16	8.00	11.90	2.52
17	8.50	12.20	2.46
18	9.00	12.50	2.40
19	9.50	12.80	2.34
20	10.00	13.00	1.54
21	10.50	13.30	2.26
22	11.00	13.50	1.48

BLANK VALUE = 13.5 micrograms carbon
BLANK FACTOR = 13.5 / 10.99985 = +1.23E+00 ug/min Carbon

Sample Run By: SL Hood Boatright
SL HOOD 00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2 Date: 01/15/00 Time: 08:55:08

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 ug/minute C

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	0.70	71.43
3	1.50	32.00	97.81
4	2.00	142.20	77.50
5	2.50	284.50	50.02
6	3.00	408.30	30.32
7	3.50	488.90	16.49
8	4.00	534.00	8.45
9	4.50	557.30	4.18
10	5.00	567.20	1.75
11	5.50	571.60	0.77
12	6.00	573.40	0.31
13	6.50	574.50	0.19
14	7.00	575.20	0.12
15	7.50	575.80	0.10
16	8.00	576.30	0.09
17	8.50	576.70	0.07
18	9.00	577.10	0.07
19	9.50	577.50	0.07
20	10.00	577.80	0.05
21	10.50	578.20	0.07
22	11.00	578.50	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(578.5 - 4.948654)(1)/(1000) = +5.736E-01 g/L Carbon
(578.5 - 4.948654)(1)/(1000)(12) = +4.780E-02 Molar Carbon

Sample Run By: SL HOOD 00002

SS- 1ml = 25N12-F

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2 Date: 01/15/00 Time: 09:08:00

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.60	50.00
3	1.51	2.10	71.43
4	2.00	15.10	86.09
5	2.50	63.60	76.26
6	3.00	160.40	60.35
7	3.50	292.60	45.18
8	4.00	416.10	29.68
9	4.50	497.40	16.34
10	5.00	542.30	8.28
11	5.50	565.20	4.05
12	6.00	575.20	1.74
13	6.50	579.80	0.79
14	7.00	581.80	0.34
15	7.50	583.00	0.21
16	8.00	583.70	0.12
17	8.50	584.40	0.12
18	9.00	585.00	0.10
19	9.50	585.50	0.09
20	10.00	586.00	0.09
21	10.50	586.40	0.07
22	11.00	586.80	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(586.8 - 13.52985)(1)/(200) = +2.866E+00 g/L Carbon
(586.8 - 13..52985)(1)/(200)(12) = +2.389E-01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .200ml 34N12-C

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2 Date: 01/15/00 Time: 09:22:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.50	40.00
3	1.51	1.30	61.54
4	2.01	2.70	51.85
5	2.51	3.50	22.86
6	3.01	4.10	14.63
7	3.51	4.50	8.89
8	4.00	4.80	6.25
9	4.50	5.10	5.88
10	5.00	5.30	3.77
11	5.50	5.60	5.36
12	6.00	5.80	3.45
13	6.50	6.10	4.92
14	7.00	6.20	1.61
15	7.50	6.50	4.62
16	8.00	6.70	2.99
17	8.50	6.90	2.90
18	9.00	7.10	2.82
19	9.50	7.30	2.74
20	10.00	7.50	2.67
21	10.50	7.70	2.60
22	11.00	7.90	2.53

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(7.9 - 4.950302)(1)/(1) = +2.9E+00 g/L Carbon
(7.9 - 4.950302)(1)/(1)(12) = +2.5E-01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2 Date: 01/15/00 Time: 10:37:05

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 ug/minute C

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	0.40	50.00
3	1.51	0.90	55.56
4	2.00	2.00	55.00
5	2.50	3.50	42.86
6	3.00	5.10	31.37
7	3.50	6.20	17.74
8	4.01	7.00	11.43
9	4.50	7.60	7.89
10	5.00	8.10	6.17
11	5.50	8.40	3.57
12	6.00	8.80	4.55
13	6.50	9.00	2.22
14	7.00	9.30	3.23
15	7.50	9.50	2.11
16	8.00	9.80	3.06
17	8.50	10.00	2.00
18	9.00	10.20	1.96
19	9.50	10.40	1.92
20	10.00	10.60	1.89
21	10.50	10.80	1.85
22	11.00	11.00	1.82

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(11 - 13.52962)(1)/(1) = < 5.00 E-3 g/L Carbon
(11 - 13.52962)(1)/(1)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
SL HOOD 00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000049 Date: 01/15/00 Time: 10:55:01

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 ug/minute C

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	0.30	33.33
3	1.50	3.40	91.18
4	2.00	52.80	93.56
5	2.50	149.00	64.56
6	3.00	238.10	37.42
7	3.50	295.90	19.53
8	4.00	328.40	9.90
9	4.50	344.30	4.62
10	5.00	351.10	1.94
11	5.50	354.40	0.93
12	6.00	355.80	0.39
13	6.50	356.90	0.31
14	7.00	357.60	0.20
15	7.50	358.20	0.17
16	8.00	358.80	0.17
17	8.50	359.20	0.11
18	9.00	359.70	0.14
19	9.50	360.10	0.11
20	10.00	360.50	0.11
21	10.50	360.80	0.08
22	11.00	361.20	0.11

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(361.2 - 4.949011)(1)/(1) = +3.563E+02 g/L Carbon
(361.2 - 4.949011)(1)/(1)(12) = +2.969E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1247 g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000049 Date: 01/15/00 Time: 11:07:38

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.70	42.86
3	1.50	3.50	80.00
4	2.00	45.00	92.22
5	2.50	146.40	69.26
6	3.00	290.60	49.62
7	3.50	413.70	29.76
8	4.00	485.80	14.84
9	4.50	528.60	8.10
10	5.00	556.90	5.08
11	5.50	574.10	3.00
12	6.00	584.80	1.83
13	6.50	591.40	1.12
14	7.00	595.90	0.76
15	7.50	599.10	0.53
16	8.00	601.30	0.37
17	8.50	602.80	0.25
18	9.00	604.00	0.20
19	9.50	605.00	0.17
20	10.00	605.70	0.12
21	10.50	606.40	0.12
22	11.00	606.90	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(606.9 - 13.52512)(1)/(1) = +5.934E+02 g/L Carbon
(606.9 - 13.52512)(1)/(1)(12) = +4.945E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1247g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00049 DUP Date: 01/15/00 Time: 11:21:00

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.70	42.86
3	1.51	3.10	77.42
4	2.00	45.70	93.22
5	2.50	132.30	65.46
6	3.00	218.90	39.56
7	3.50	278.80	21.48
8	4.00	311.10	10.38
9	4.50	326.40	4.69
10	5.00	332.80	1.92
11	5.50	335.50	0.80
12	6.00	337.10	0.47
13	6.50	338.20	0.33
14	7.00	338.90	0.21
15	7.50	339.60	0.21
16	8.00	340.10	0.15
17	8.50	340.70	0.18
18	9.00	341.20	0.15
19	9.50	341.60	0.12
20	10.00	342.10	0.15
21	10.50	342.50	0.12
22	11.00	342.80	0.09

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(342.8 - 4.949093)(1)/(1) = +3.379E+02 g/L Carbon
(342.8 - 4.949093)(1)/(1)(12) = +2.815E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1173g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00049 DUP Date: 01/15/00 Time: 11:34:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.80	50.00
3	1.51	6.80	88.24
4	2.00	55.80	87.81
5	2.50	149.20	62.60
6	3.00	273.00	45.35
7	3.50	385.90	29.26
8	4.00	455.10	15.21
9	4.50	497.60	8.54
10	5.00	525.10	5.24
11	5.50	541.40	3.01
12	6.00	551.30	1.80
13	6.50	557.60	1.13
14	7.00	562.00	0.78
15	7.50	565.00	0.53
16	8.00	567.20	0.39
17	8.50	568.80	0.28
18	9.00	570.10	0.23
19	9.50	571.10	0.18
20	10.00	571.90	0.14
21	10.50	572.60	0.12
22	11.00	573.30	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(573.3 - 13.52632)(1)/(1) = +5.598E+02 g/L Carbon
(573.3 - 13.52632)(1)/(1)(12) = +4.665E+01 Molar Carbon

Sample Run By: SL HOOD 00002

SS- .100 ml = .1173g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000054 Date: 01/15/00 Time: 11:47:15

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.70	42.86
3	1.51	3.20	78.13
4	2.00	40.30	92.06
5	2.50	112.50	64.18
6	3.00	180.80	37.78
7	3.50	228.80	20.98
8	4.00	257.80	11.25
9	4.50	272.60	5.43
10	5.00	279.10	2.33
11	5.50	282.00	1.03
12	6.00	283.60	0.56
13	6.50	284.70	0.39
14	7.00	285.40	0.25
15	7.50	286.20	0.28
16	8.00	286.70	0.17
17	8.50	287.20	0.17
18	9.00	287.70	0.17
19	9.50	288.10	0.14
20	10.00	288.50	0.14
21	10.50	288.90	0.14
22	11.00	289.30	0.14

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(289.3 - 4.94945)(1)/(1) = +2.844E+02 g/L Carbon
(289.3 - 4.94945)(1)/(1)(12) = +2.370E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000054 Date: 01/15/00 Time: 12:00:19

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	1.51	5.90	83.05
4	2.01	33.70	82.49
5	2.51	95.30	64.64
6	3.00	181.50	47.49
7	3.50	254.50	28.68
8	4.00	299.70	15.08
9	4.50	324.20	7.56
10	5.00	337.90	4.05
11	5.50	344.90	2.03
12	6.00	349.50	1.32
13	6.50	352.30	0.79
14	7.00	354.40	0.59
15	7.50	355.80	0.39
16	8.00	356.90	0.31
17	8.50	357.80	0.25
18	9.00	358.40	0.17
19	9.50	359.00	0.17
20	10.00	359.50	0.14
21	10.50	359.90	0.11
22	11.00	360.30	0.11

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(360.3 - 13.52985)(1)/(1) = +3.468E+02 g/L Carbon
(360.3 - 13.52985)(1)/(1)(12) = +2.890E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00054 DUP Date: 01/15/00 Time: 12:12:33

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.70	57.14
3	1.51	4.60	84.78
4	2.00	50.30	90.85
5	2.50	125.20	59.82
6	3.00	189.80	34.04
7	3.50	231.00	17.84
8	4.00	252.50	8.51
9	4.50	261.40	3.40
10	5.00	265.20	1.43
11	5.50	267.10	0.71
12	6.00	268.30	0.45
13	6.50	269.00	0.26
14	7.00	269.70	0.26
15	7.50	270.20	0.19
16	8.00	270.80	0.22
17	8.50	271.20	0.15
18	9.00	271.70	0.18
19	9.50	272.10	0.15
20	10.00	272.50	0.15
21	10.50	272.90	0.15
22	11.00	273.30	0.15

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(273.3 - 4.948269)(1)/(1) = +2.684E+02 g/L Carbon
(273.3 - 4.948269)(1)/(1)(12) = +2.236E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100ml = .1032g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00054 DUP Date: 01/15/00 Time: 12:25:31

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.70	42.86
3	1.51	5.00	86.00
4	2.00	34.10	85.34
5	2.50	88.80	61.60
6	3.00	162.30	45.29
7	3.50	225.20	27.93
8	4.00	265.70	15.24
9	4.50	288.90	8.03
10	5.00	301.70	4.24
11	5.50	309.10	2.39
12	6.00	313.50	1.40
13	6.50	316.40	0.92
14	7.00	318.40	0.63
15	7.50	319.80	0.44
16	8.00	321.00	0.37
17	8.50	321.90	0.28
18	9.00	322.60	0.22
19	9.50	323.20	0.19
20	10.00	323.70	0.15
21	10.50	324.20	0.15
22	11.00	324.60	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(324.6 - 13.52857)(1)/(1) = +3.111E+02 g/L Carbon
(324.6 - 13.52857)(1)/(1)(12) = +2.592E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1032g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000056 Date: 01/15/00 Time: 12:37:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.70	42.86
3	1.50	5.80	87.93
4	2.00	62.70	90.75
5	2.50	158.10	60.34
6	3.00	237.60	33.46
7	3.50	287.80	17.44
8	4.00	315.20	8.69
9	4.50	327.30	3.70
10	5.00	332.10	1.45
11	5.50	334.20	0.63
12	6.00	335.60	0.42
13	6.50	336.40	0.24
14	7.00	337.10	0.21
15	7.50	337.80	0.21
16	8.00	338.30	0.15
17	8.50	338.80	0.15
18	9.00	339.30	0.15
19	9.50	339.70	0.12
20	10.00	340.20	0.15
21	10.50	340.50	0.09
22	11.00	340.90	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(340.9 - 4.949917)(1)/(1) = +3.360E+02 g/L Carbon
(340.9 - 4.949917)(1)/(1)(12) = +2.800E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1300g

HNF-1698 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000056 Date: 01/15/00 Time: 13:57:56

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.80	50.00
3	1.51	6.90	88.41
4	2.00	44.30	84.42
5	2.51	120.90	63.36
6	3.00	220.30	45.12
7	3.50	298.50	26.20
8	4.00	343.60	13.13
9	4.50	370.20	7.19
10	5.00	385.00	3.84
11	5.50	393.20	2.09
12	6.00	398.20	1.26
13	6.50	401.30	0.77
14	7.00	403.80	0.62
15	7.50	405.40	0.39
16	8.00	406.70	0.32
17	8.50	407.70	0.25
18	9.00	408.50	0.20
19	9.50	409.10	0.15
20	10.00	409.70	0.15
21	10.50	410.20	0.12
22	11.00	410.60	0.10

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(410.6 - 13.52985)(1)/(1) = +3.971E+02 g/L Carbon
(410.6 - 13.52985)(1)/(1)(12) = +3.309E+01 Molar Carbon

Sample Run By: SL HOOD 00002

SS = .100 ml = .1300g

HNF-1698 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00056 DUP Date: 01/15/00 Time: 15:03:12

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.60	33.33
3	1.50	6.00	90.00
4	2.00	56.80	89.44
5	2.50	143.30	60.36
6	3.00	218.60	34.45
7	3.50	267.70	18.34
8	4.00	295.50	9.41
9	4.50	309.50	4.52
10	5.00	315.10	1.78
11	5.50	318.00	0.91
12	6.00	319.70	0.53
13	6.50	321.10	0.44
14	7.00	322.10	0.31
15	7.50	322.90	0.25
16	8.00	323.60	0.22
17	8.50	324.30	0.22
18	9.00	324.90	0.18
19	9.50	325.40	0.15
20	10.00	325.90	0.15
21	10.50	326.40	0.15
22	11.00	326.80	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(326.8 - 4.948654)(1)/(1) = +3.219E+02 g/L Carbon
(326.8 - 4.948654)(1)/(1)(12) = +2.682E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1229g

HNF-1698 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV. 2.0

Sample: S00T00056 DUP Date: 01/15/00 Time: 15:16:43

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	1.00	1.00	50.00
3	1.50	17.20	94.19
4	2.00	68.40	74.85
5	2.50	155.90	56.13
6	3.00	247.70	37.06
7	3.50	305.20	18.84
8	4.00	340.10	10.26
9	4.50	359.50	5.40
10	5.00	370.10	2.86
11	5.50	376.20	1.62
12	6.00	379.80	0.95
13	6.50	382.40	0.68
14	7.00	384.20	0.47
15	7.50	385.60	0.36
16	8.00	386.60	0.26
17	8.50	387.40	0.21
18	9.00	388.00	0.15
19	9.50	388.60	0.15
20	10.00	389.10	0.13
21	10.50	389.60	0.13
22	10.99	390.00	0.10

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(390 - 13.52294)(1)/(1) = +3.765E+02 g/L Carbon
(390 - 13.52294)(1)/(1)(12) = +3.137E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

.100 ml =
SS = .1229 g

WORKBOOK PAGE: BLANK1 4 KB 4/30/00

TIC/TOC : LA-342-100 (F-3) LIQUIDS

			TIC	TOC
Type: BLNK	Sample Size in mL	(SS)	0.0000	0.0000
	Dilution Factor	(DF)	1	1
Work List: 32102	µg of Carbon in Sample	(C1)	7.9	11
	µg of Carbon from Baseline	(C2)	4.9	13.5

Test Code: @TICTOC1
Matrix: LIQUID
Batch Number: 20000085
Rerun: 0
Sample Prep: N/A
Sample #: BLNK
Instrument Code: CARB2
Prepared By: MF
Chemist: JFG
Analyst: SLH
Date Complete: 01/17/2000
Analysis Date: 01/15/2000
Analysis Time: 04:28 PM
Sample Point: SY-102

µg of Carbon = |C1-C2|

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon	3.00E+00	2.50E+00

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist: James Strahn		Date:	01/17/00

BLANK.WB1 REV 1.0 342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (F-3) LIQUIDS

			TIC	TOC
Type: STD	Sample Size in mL	(SS)	1.0000	0.2000
	Dilution Factor	(DF)	1	1
Work List: 32102	Final Coulometer Reading in µg	(C1)	578.5	586.8
	µg of Carbon from Baseline	(C2)	4.9	13.5
Test Code: @TICTOC1	Standard Book Number		25N12F	34N12C
	Standard Value (µg/ml)		605	3009

Matrix: LIQUID

Batch Number: 20000085

Rerun: 0

Sample Prep: N/A

Sample: STD

Instrument Code: CARB2

Prepared By: MF

Chemist: JFG

Analyst: SLH

Date Complete: 01/17/2000

Analysis Date: 01/15/2000

Analysis Time: 04:28 PM

Sample Path: SY-102

QC Actual in µg/mL = Standard Value (µg/mL)

QC Found in µg/mL = (C1 - C2) * DF / SS

QC Found in µg/mL for TIC = 5 if C1 < C2

QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in µg/mL	5	40
QC Actual in µg/mL	6.05E+02	3.01E+03
QC Found in µg/mL	5.74E+02	2.87E+03
Percent Standard Recovery	94.8	95.3

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

STANDARD.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (F-~~3~~ 4) x10 4150 100 LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	361.2	606.9
32102	µg of Carbon from Baseline	(C2)	4.9	13.5
Test Code				
@TICTOC1				

Matrix: LIQUID

Batch Number: 20000085

Rerun: 0

Sample Prep: N/A

Sample #: S00T000049

Instrument Code: CARB2

Prepared By: MF

Chemist: JFG

Analyst: SLH

Date Completed: 01/17/2000

Analysis Date: 01/15/2000

Analysis Time: 04:28 PM

Sample Point: SY-102

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	3.56E+03	5.93E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:		Date:	

SAMPLE.WB1 REV 1.0 342100ML

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WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (F-3) 4 JB 4/30/00 LIQUIDS

			TIC	TOC
Sample Size in mL	(SS)		0.1000	0.1000
Dilution Factor	(DF)		1	1
µg of Carbon in Sample	(C1)		342.8	573.3
µg of Carbon from Baseline	(C2)		4.9	13.5
Known µg of C from Original Sample			3.56E+3	5.93E+3

Type	DUP
Work List	32102
Test Code	@TICTOC1
Matrix	LIQUID
Batch Number	20000085
Rerun	0
Sample Prep	N/A
Sample #	S00T000049
Instrument Code	CARB2
Prepared By	MF
Chemist	JFG
Analyst	SLH
Date Complete	01/17/2000
Analysis Date	01/15/2000
Analysis Time	04:28 PM
Sample Point	SY-102

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	3.38E+03	5.60E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

I:\342100\OUT\32102.WB1 01/17/2000 13:43:12

WORKBOOK PAGE: SAM5

TIC/TOC : LA-342-100 (F-3) 4 x8 4/20/00 . LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	289.3	360.3
32102	µg of Carbon from Baseline	(C2)	4.9	13.5
Test Code				
@TICTOC1				

Matrix
LIQUID

Batch Number
20000085

Rerun
0

Sample Prep
N/A

Sample #
S00T000054

Instrument Code
CARB2

Prepared By
MF

Submitted
JFG

Analyzed
SLH

Date Completed
01/17/2000

Analysis Date
01/15/2000

Analysis Time
04:28 PM

Sample Point
SY-102

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	2.84E+03	3.47E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

I:\342100\OUT\32102.WB1 01/17/2000 13:43:43

WORKBOOK PAGE: DUP6

TIC/TOC : LA-342-100 (F-3) 4 1/30/00 LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	273.3	324.6
32102	µg of Carbon from Baseline	(C2)	4.9	13.5
Test Code	Known µg of C from Original Sample		2.84E+3	3.47E+3
@TICTOC1				

Matrix	LIQUID
Batch Number	20000085
Rerun	0
Sample Prep	N/A
Sample #	S00T000054
Instrument Name	CARB2
Prepared By	MF
Chemist	JFG
Analyst	SLH
Date Complete	01/17/2000
Analysis Date	01/15/2000
Analysis Time	04:28 PM
Sample Point	SY-102

µg of Carbon/mL = (C1-C2) • DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	2.68E+03	3.11E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

I:\342100\OUT\32102.WB1 01/17/2000 13:44:16

WORKBOOK PAGE: SAM7

TIC/TOC : LA-342-100 (F-3) 4 NB 4/30/00 LIQUIDS

			TIC	TOC
Sample Size in mL	(SS)		0.1000	0.1000
Dilution Factor	(DF)		1	1
µg of Carbon in Sample	(C1)		340.9	410.6
µg of Carbon from Baseline	(C2)		4.9	13.5

Type	SAMPLE
Work List	32102
Test Code	@TICTOC1
Matrix	LIQUID
Batch Number	20000085
Rerun	0
Sample Step	N/A
Sample #	S00T000056
Instrument Code	CARB2
Prepared By	MF
Chemist	JFG
Analyst	SLH
Date Sampled	01/17/2000
Analysis Date	01/15/2000
Analysis Time	04:28 PM
Sample Point	SY-102

µg of Carbon/mL = (C1-C2) * DF / SS

µg of Carbon/mL for TIC = 5 if C1 < C2

µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	3.36E+03	3.97E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

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WORKBOOK PAGE: DUP8

TIC/TOC : LA-342-100 (F-3) 4 KB 4/3/00 LIQUIDS

			TIC	TOC
Sample Size in mL	(SS)		0.1000	0.1000
Dilution Factor	(DF)		1	1
µg of Carbon in Sample	(C1)		326.8	390
µg of Carbon from Baseline	(C2)		4.9	13.5
Known µg of C from Original Sample			3.36E+3	3.97E+3

Type	DUP
Worklist	32102
Test Code	@TICTOC1
Matrix	LIQUID
Batch Number	20000085
Rerun	0
Sample Prep	N/A
Sample #	S00T000056
Instrument Code	CARB2
Prepared By	MF
Chemist	JFG
Analyst	SLH
Date Sample	01/17/2000
Analysis Date	01/15/2000
Analysis Time	04:28 PM
Sample Point	SY-102

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	3.22E+03	3.77E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

LABCORE Completed Worklist Report for Worklist# 32103

Analyst: slh **Instrument:** CARB2 **Book#:** _____

Method: LA-342-100 Rev/Mod F-4

Worklist Comment: SY-102 GRAB 5 FOR @TICTOC1 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@TICTOC1 TIC-02	LIQUID	1	3.00E+0	3.000	ug/mL
1	BLNK			0	@TICTOC1 TOC-02	LIQUID	1	2.50E+0	2.500	ug/mL
2	STD			0	@TICTOC1 TIC-02	LIQUID	6.05E+02	5.74E+2	94.876	% Recovery
2	STD			0	@TICTOC1 TOC-02	LIQUID	3.01E+03	2.87E+3	95.349	% Recovery
3	SAMPLE	S00T000055		0	@TICTOC1 TIC-02	LIQUID	N/A	3.42E+03	5.000	ug/mL
3	SAMPLE	S00T000055		0	@TICTOC1 TOC-02	LIQUID	N/A	3.97E+03	40.000	ug/mL
4	DUP	S00T000055		0	@TICTOC1 TIC-02	LIQUID	3.42E+3	3.31E+3	3.269	RPD
4	DUP	S00T000055		0	@TICTOC1 TOC-02	LIQUID	3.97E+3	3.85E+3	3.069	RPD
5	SPK	S00T000055		0	@TICTOC1 TIC-02	LIQUID	1.00E+02	9.66E+01	96.600	% Recovery
5	SPK	S00T000055		0	@TICTOC1 TOC-02	LIQUID	1.00E+02	9.03E+01	90.300	% Recovery
6	SAMPLE	S00T000057		0	@TICTOC1 TIC-02	LIQUID	N/A	3.26E+03	5.000	ug/mL
6	SAMPLE	S00T000057		0	@TICTOC1 TOC-02	LIQUID	N/A	3.70E+03	40.000	ug/mL
7	DUP	S00T000057		0	@TICTOC1 TIC-02	LIQUID	3.26E+3	3.29E+3	0.916	RPD
7	DUP	S00T000057		0	@TICTOC1 TOC-02	LIQUID	3.70E+3	3.74E+3	1.075	RPD

Final page for worklist# 32103

Analyst Signature Date

Mary Strang 1/17/00
Analyst Signature Date

James Shales 01/17/00
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 32103

Analyst: SUH **Instrument:** CARB2 _____ **Book#** TIC 25N12-F
TOC 34N12-C

Method: LA-342-100 Rev/Mod _____

Worklist Comment: SY-102 GRAB 5 FOR @TICTOC1 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	LIQUID		
2	STD				@TICTOC1	LIQUID		
3	SAMPLE	S00T000055	0		@TICTOC1	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: TIC-02 , TOC-02						
4	DUP	S00T000055	0		@TICTOC1	LIQUID		
5	SPK	S00T000055	0		@TICTOC1	LIQUID		
6	SAMPLE	S00T000057	0		@TICTOC1	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: TIC-02 , TOC-02						
7	DUP	S00T000057	0		@TICTOC1	LIQUID		

Final page for worklist # 32103

Sandra L Hood Breitnight
Signature **Date** 1-15-00

Mary Frame 1/17/00
Signature **Date**

Data Entry Comments:

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

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASE 2 Date: 01/15/00 Time: 08:27:27

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	0.40	50.00
3	1.51	0.60	33.33
4	2.01	0.90	33.33
5	2.51	1.30	30.77
6	3.00	1.60	18.75
7	3.50	1.90	15.79
8	4.00	2.10	9.52
9	4.50	2.30	8.70
10	5.00	2.50	8.00
11	5.50	2.70	7.41
12	6.00	2.90	6.90
13	6.50	3.10	6.45
14	7.00	3.30	6.06
15	7.50	3.50	5.71
16	8.00	3.70	5.41
17	8.50	3.90	5.13
18	9.00	4.10	4.88
19	9.50	4.30	4.65
20	10.00	4.50	4.44
21	10.50	4.70	4.26
22	11.00	4.90	4.08

BLANK VALUE = 4.9 micrograms carbon
BLANK FACTOR = 4.9 / 10.99802 = +4.5E-01 ug/min Carbon

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 283 TO 305.

Sample Run By: [signature] for S Hood 5/2/00
SL HOOD 00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASE 2 Date: 01/15/00 Time: 08:40:42

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	0.10	0.00
2	1.01	0.30	66.67
3	1.50	0.90	66.67
4	2.00	2.30	60.87
5	2.50	4.10	43.90
6	3.00	5.90	30.51
7	3.50	7.40	20.27
8	4.00	8.30	10.84
9	4.50	9.00	7.78
10	5.00	9.60	6.25
11	5.50	10.10	4.95
12	6.00	10.50	3.81
13	6.50	10.90	3.67
14	7.00	11.30	3.54
15	7.50	11.60	2.59
16	8.00	11.90	2.52
17	8.50	12.20	2.46
18	9.00	12.50	2.40
19	9.50	12.80	2.34
20	10.00	13.00	1.54
21	10.50	13.30	2.26
22	11.00	13.50	1.48

BLANK VALUE = 13.5 micrograms carbon
BLANK FACTOR = 13.5 / 10.99985 = +1.23E+00 ug/min Carbon

Sample Run By: _____
SL HOOD 00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2 Date: 01/15/00 Time: 08:54:56

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 ug/minute C

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	0.70	71.43
3	1.50	32.00	97.81
4	2.00	142.20	77.50
5	2.50	284.50	50.02
6	3.00	408.30	30.32
7	3.50	488.90	16.49
8	4.00	534.00	8.45
9	4.50	557.30	4.18
10	5.00	567.20	1.75
11	5.50	571.60	0.77
12	6.00	573.40	0.31
13	6.50	574.50	0.19
14	7.00	575.20	0.12
15	7.50	575.80	0.10
16	8.00	576.30	0.09
17	8.50	576.70	0.07
18	9.00	577.10	0.07
19	9.50	577.50	0.07
20	10.00	577.80	0.05
21	10.50	578.20	0.07
22	11.00	578.50	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(578.5 - 4.948654)(1)/(1000) = +5.736E-01 g/L Carbon
(578.5 - 4.948654)(1)/(1000)(12) = +4.780E-02 Molar Carbon

Sample Run By: _____
SL HOOD 00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD 2 Date: 01/15/00 Time: 09:08:41

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.60	50.00
3	1.51	2.10	71.43
4	2.00	15.10	86.09
5	2.50	63.60	76.26
6	3.00	160.40	60.35
7	3.50	292.60	45.18
8	4.00	416.10	29.68
9	4.50	497.40	16.34
10	5.00	542.30	8.28
11	5.50	565.20	4.05
12	6.00	575.20	1.74
13	6.50	579.80	0.79
14	7.00	581.80	0.34
15	7.50	583.00	0.21
16	8.00	583.70	0.12
17	8.50	584.40	0.12
18	9.00	585.00	0.10
19	9.50	585.50	0.09
20	10.00	586.00	0.09
21	10.50	586.40	0.07
22	11.00	586.80	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(586.8 - 13.52985)(1)/(200) = +2.866E+00 g/L Carbon
(586.8 - 13.52985)(1)/(200)(12) = +2.389E-01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2 Date: 01/15/00 Time: 09:22:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.50	40.00
3	1.51	1.30	61.54
4	2.01	2.70	51.85
5	2.51	3.50	22.86
6	3.01	4.10	14.63
7	3.51	4.50	8.89
8	4.00	4.80	6.25
9	4.50	5.10	5.88
10	5.00	5.30	3.77
11	5.50	5.60	5.36
12	6.00	5.80	3.45
13	6.50	6.10	4.92
14	7.00	6.20	1.61
15	7.50	6.50	4.62
16	8.00	6.70	2.99
17	8.50	6.90	2.90
18	9.00	7.10	2.82
19	9.50	7.30	2.74
20	10.00	7.50	2.67
21	10.50	7.70	2.60
22	11.00	7.90	2.53

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(7.9 - 4.950302)(1)/(1) = +2.9E+00 g/L Carbon
(7.9 - 4.950302)(1)/(1)(12) = +2.5E-01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK 2 Date: 01/15/00 Time: 10:37:05

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 ug/minute C

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	0.40	50.00
3	1.51	0.90	55.56
4	2.00	2.00	55.00
5	2.50	3.50	42.86
6	3.00	5.10	31.37
7	3.50	6.20	17.74
8	4.01	7.00	11.43
9	4.50	7.60	7.89
10	5.00	8.10	6.17
11	5.50	8.40	3.57
12	6.00	8.80	4.55
13	6.50	9.00	2.22
14	7.00	9.30	3.23
15	7.50	9.50	2.11
16	8.00	9.80	3.06
17	8.50	10.00	2.00
18	9.00	10.20	1.96
19	9.50	10.40	1.92
20	10.00	10.60	1.89
21	10.50	10.80	1.85
22	11.00	11.00	1.82

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(11 - 13.52962)(1)/(1) = < 5.00 E-3 g/L Carbon
(11 - 13.52962)(1)/(1)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
SL HOOD 00002

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000055 Date: 01/15/00 Time: 14:37:09

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.60	50.00
3	1.51	6.20	90.32
4	2.00	73.30	91.54
5	2.50	176.10	58.38
6	3.00	254.00	30.67
7	3.50	299.40	15.16
8	4.00	323.30	7.39
9	4.50	333.50	3.06
10	5.00	337.70	1.24
11	5.50	339.80	0.62
12	6.00	341.00	0.35
13	6.50	341.80	0.23
14	7.00	342.60	0.23
15	7.50	343.20	0.17
16	8.00	343.80	0.17
17	8.50	344.30	0.15
18	9.00	344.80	0.15
19	9.50	345.30	0.14
20	10.00	345.70	0.12
21	10.50	346.20	0.14
22	11.00	346.60	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(346.6 - 4.948654)(1)/(1) = +3.417E+02 g/L Carbon
(346.6 - 4.948654)(1)/(1)(12) = +2.847E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100ml = .1339g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000055 Date: 01/15/00 Time: 14:49:27

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.90	44.44
3	1.51	10.50	91.43
4	2.00	53.10	80.23
5	2.50	128.10	58.55
6	3.00	224.30	42.89
7	3.51	297.50	24.61
8	4.01	340.50	12.63
9	4.50	367.60	7.37
10	5.00	382.90	4.00
11	5.50	391.40	2.17
12	6.00	396.80	1.36
13	6.50	400.40	0.90
14	7.00	402.80	0.60
15	7.50	404.90	0.52
16	8.00	406.30	0.34
17	8.50	407.60	0.32
18	9.00	408.50	0.22
19	9.50	409.20	0.17
20	10.00	409.80	0.15
21	10.50	410.30	0.12
22	11.00	410.80	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(410.8 - 13.5285)(1)/(1) = +3.973E+02 g/L Carbon
(410.8 - 13.5285)(1)/(1)(12) = +3.311E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1339g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00055 DUP Date: 01/15/00 Time: 15:28:53

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.70	42.86
3	1.50	20.30	96.55
4	2.00	104.60	80.59
5	2.50	200.60	47.86
6	3.00	265.30	24.39
7	3.50	302.00	12.15
8	4.00	319.40	5.45
9	4.50	325.80	1.96
10	5.00	328.40	0.79
11	5.50	329.80	0.42
12	6.00	330.80	0.30
13	6.50	331.60	0.24
14	7.00	332.20	0.18
15	7.50	332.90	0.21
16	8.00	333.40	0.15
17	8.50	334.00	0.18
18	9.00	334.40	0.12
19	9.50	334.90	0.15
20	10.00	335.30	0.12
21	10.50	335.70	0.12
22	11.00	336.10	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(336.1 - 4.949478)(1)/(1) = +3.312E+02 g/L Carbon
(336.1 - 4.949478)(1)/(1)(12) = +2.760E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 mL = .1292g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00055 DUP Date: 01/15/00 Time: 15:41:43

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.90	55.56
3	1.51	11.60	92.24
4	2.00	54.20	78.60
5	2.50	129.00	57.98
6	3.00	222.70	42.07
7	3.50	292.00	23.73
8	4.00	332.10	12.07
9	4.50	358.00	7.23
10	5.00	372.80	3.97
11	5.50	380.50	2.02
12	6.00	385.40	1.27
13	6.50	388.70	0.85
14	7.00	391.10	0.61
15	7.50	392.70	0.41
16	8.00	394.00	0.33
17	8.50	394.90	0.23
18	9.00	395.70	0.20
19	9.50	396.40	0.18
20	10.00	396.90	0.13
21	10.50	397.40	0.13
22	11.00	398.00	0.15

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(398 - 13.52527)(1)/(1) = +3.845E+02 g/L Carbon
(398 - 13.52527)(1)/(1)(12) = +3.204E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1292g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00055 SPK Date: 01/15/00 Time: 15:55:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.70	42.86
3	1.50	25.20	97.22
4	2.00	184.00	86.30
5	2.50	395.30	53.45
6	3.00	521.90	24.26
7	3.50	580.50	10.09
8	4.00	610.80	4.96
9	4.50	624.40	2.18
10	5.00	629.10	0.75
11	5.50	631.30	0.35
12	6.00	632.60	0.21
13	6.50	633.60	0.16
14	7.00	634.40	0.13
15	7.50	635.00	0.09
16	8.00	635.70	0.11
17	8.50	636.30	0.09
18	9.00	636.80	0.08
19	9.50	637.30	0.08
20	10.00	637.80	0.08
21	10.50	638.20	0.06
22	11.00	638.70	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(638.7 - 4.949039)(1)/(1) = +6.338E+02 g/L Carbon
(638.7 - 4.949039)(1)/(1)(12) = +5.281E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100ml = .1305g + .500ml spk 25N12-F

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00055 SPK Date: 01/15/00 Time: 16:07:30

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	1.20	58.33
3	1.51	21.50	94.42
4	2.00	83.30	74.19
5	2.50	198.50	58.04
6	3.00	370.60	46.44
7	3.50	503.30	26.37
8	4.00	578.10	12.94
9	4.50	619.90	6.74
10	5.00	646.80	4.16
11	5.50	660.50	2.07
12	6.00	667.30	1.02
13	6.50	671.10	0.57
14	7.00	674.00	0.43
15	7.50	675.90	0.28
16	8.00	677.40	0.22
17	8.50	678.70	0.19
18	9.00	679.70	0.15
19	9.50	680.50	0.12
20	10.00	681.20	0.10
21	10.50	681.90	0.10
22	11.00	682.40	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(682.4 - 13.52857)(1)/(1) = +6.689E+02 g/L Carbon
(682.4 - 13.52857)(1)/(1)(12) = +5.574E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1305g + .100 ml spk 34N12-C

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000057 Date: 01/15/00 Time: 16:19:33

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	22.40	95.54
4	2.00	108.70	79.39
5	2.50	202.70	46.37
6	3.00	263.30	23.02
7	3.50	298.20	11.70
8	4.00	315.00	5.33
9	4.50	321.10	1.90
10	5.00	323.60	0.77
11	5.50	324.90	0.40
12	6.00	325.90	0.31
13	6.50	326.60	0.21
14	7.00	327.30	0.21
15	7.50	328.00	0.21
16	8.00	328.50	0.15
17	8.50	329.00	0.15
18	9.00	329.60	0.18
19	9.50	330.00	0.12
20	10.00	330.40	0.12
21	10.50	330.80	0.12
22	11.00	331.20	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(331.2 - 4.949011)(1)/(1) = +3.263E+02 g/L Carbon
(331.2 - 4.949011)(1)/(1)(12) = +2.719E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1275g

HNF-1698 REV. 0

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T000057 Date: 01/15/00 Time: 16:31:36

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	0.90	44.44
3	1.50	14.00	93.57
4	2.00	63.10	77.81
5	2.50	143.50	56.03
6	3.00	233.50	38.54
7	3.50	292.20	20.09
8	4.00	327.50	10.78
9	4.50	349.60	6.32
10	5.00	361.80	3.37
11	5.50	368.20	1.74
12	6.00	372.40	1.13
13	6.50	375.20	0.75
14	7.00	377.20	0.53
15	7.50	378.70	0.40
16	8.00	379.90	0.32
17	8.50	380.80	0.24
18	9.00	381.50	0.18
19	9.50	382.10	0.16
20	10.00	382.70	0.16
21	10.50	383.20	0.13
22	11.00	383.60	0.10

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(383.6 - 13.52737)(1)/(1) = +3.701E+02 g/L Carbon
(383.6 - 13.52737)(1)/(1)(12) = +3.084E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1275g

HNF-1698 REV. 0

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00057 DUP Date: 01/15/00 Time: 16:43:47

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .45 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	0.80	50.00
3	1.51	14.30	94.41
4	2.00	87.00	83.56
5	2.50	180.00	51.67
6	3.00	249.20	27.77
7	3.50	291.20	14.42
8	4.00	313.30	7.05
9	4.50	322.20	2.76
10	5.00	325.50	1.01
11	5.50	327.20	0.52
12	6.00	328.20	0.30
13	6.50	329.00	0.24
14	7.00	329.60	0.18
15	7.50	330.30	0.21
16	8.00	330.80	0.15
17	8.50	331.30	0.15
18	9.00	331.90	0.18
19	9.50	332.30	0.12
20	10.00	332.80	0.15
21	10.50	333.20	0.12
22	11.00	333.70	0.15

USER INPUT BLANK VALUE
BLANK VALUE = 4.949931 micrograms carbon
BLANK FACTOR = 4.949931 / 10.99985 = +4.5E-01 ug/min Carbon

SAMPLE RESULTS:
(333.7 - 4.949478)(1)/(1) = +3.288E+02 g/L Carbon
(333.7 - 4.949478)(1)/(1)(12) = +2.740E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100ml = .1285g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S00T00057 DUP Date: 01/15/00 Time: 16:55:44

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.23 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	1.00	0.90	44.44
3	1.50	11.70	92.31
4	2.00	57.00	79.47
5	2.50	136.70	58.30
6	3.00	225.90	39.49
7	3.50	289.70	22.02
8	4.00	327.30	11.49
9	4.50	351.00	6.75
10	5.00	363.80	3.52
11	5.50	370.80	1.89
12	6.00	375.20	1.17
13	6.50	378.20	0.79
14	7.00	380.40	0.58
15	7.50	382.10	0.44
16	8.00	383.30	0.31
17	8.50	384.30	0.26
18	9.00	385.00	0.18
19	9.50	385.70	0.18
20	10.00	386.20	0.13
21	10.50	386.70	0.13
22	11.00	387.20	0.13

USER INPUT BLANK VALUE
BLANK VALUE = 13.52981 micrograms carbon
BLANK FACTOR = 13.52981 / 10.99985 = +1.2E+00 ug/min Carbon

SAMPLE RESULTS:
(387.2 - 13.52632)(1)/(1) = +3.737E+02 g/L Carbon
(387.2 - 13.52632)(1)/(1)(12) = +3.114E+01 Molar Carbon

Sample Run By: _____
SL HOOD 00002

SS = .100 ml = .1285g

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (F-3) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.0000	0.0000
BLNK	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	7.9	11
32103	µg of Carbon from Baseline	(C2)	4.9	13.5

Test Code	@TICTOC1
Matrix	LIQUID
Batch Number	20000086
Rerun	0
Sample Prep	
Sample #	BLNK
Instrument Code	CARB2
Prepared By	MF
Chemist	JFG
Analyst	SLH
Date Complete	01/17/2000
Analysis Date	01/15/2000
Analysis Time	05:38 PM
Sample Room	SY-102

µg of Carbon = |C1-C2|

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon	3.00E+00	2.50E+00

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:		Date:	01/17/00

BLANK.WB1 REV 1.0 342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (F-3) 4 XB 4/30/00 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)	578.5	586.8
32103	µg of Carbon from Baseline	(C2)	4.9	13.5
Test Code	Standard Book Number		25N12F	34N12C
@TICTOC1	Standard Value (µg/ml)		605	3009

Matrix: LIQUID

Batch Number: 20000086

Rerun: 0

Sample Prep: N/A

Sample #: STD

Instrument Code: CARB2

Prepared By: MF

Chemist: JFG

Analyst: SLH

Date Sample: 01/17/2000

Analysis Date: 01/15/2000

Analysis Time: 05:38 PM

Sample Point: SY-102

QC Actual in µg/mL = Standard Value (µg/mL)

QC Found in µg/mL = (C1 - C2) * DF / SS

QC Found in µg/mL for TIC = 5 if C1 < C2

QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in µg/mL	5	40
QC Actual in µg/mL	6.05E+02	3.01E+03
QC Found in µg/mL	5.74E+02	2.87E+03
Percent Standard Recovery	94.8	95.3

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	N/A	Date:	

STANDARD.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (F-3) 4 NB 4/30/00 LIQUIDS

			TIC	TOC
Sample Size in mL	(SS)		0.1000	0.1000
Dilution Factor	(DF)		1	1
µg of Carbon in Sample	(C1)		346.6	410.8
µg of Carbon from Baseline	(C2)		4.9	13.5

Type	SAMPLE
Work List	32103
Test Code	@TICTOC1
Matrix	LIQUID
Batch Number	20000086
Rerun #	0
Sample Prep	N/A
Sample #	S00T000055
Instrument Name	CARB2
Prepared By	MF
Weighed By	JFG
Analyst	SLH
Date Complete	01/17/2000
Analysis Date	01/15/2000
Analysis Time	05:38 PM
Sample Point	SY-102

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	3.42E+03	3.97E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

HNF-1698 REV. 0

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (F-3) 4 2/18 4/26/00 LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	336.1	398
32103	µg of Carbon from Baseline	(C2)	4.9	13.5
Test Code	Known µg of C from Original Sample		3.42E+3	3.97E+3
@TICTOC1				

Matrix: LIQUID

Batch Number: 20000086

Rerun: 0

Sample Prep: N/A

Sample #: S00T000055

Instrument Code: CARB2

Prepared By: MF

Chemist: JFG

Analyst: SLH

Date Complete: 01/17/2000

Analysis Date: 01/15/2000

Analysis Time: 05:38 PM

Sample Point: SY-102

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	3.31E+03	3.85E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

I:\342100\OUT\32103.WB1 01/17/2000 13:11:35

WORKBOOK PAGE: SPIKE5

TIC/TOC : LA-342-100 (F-3) LIQUIDS

			TIC	TOC
Type	**Sample Vial Data**			
SPK	Sample Volume in mL	(SS)	0.1000	0.1000
Work List	Final Coulometer Reading in µg	(C1)	346.6	410.8
32103	**Spiked Vial Data**			
Test Code	Sample Volume in mL	(SPK SS)	0.1000	0.1000
@TICTOC1	Amount of Spike Std. in mL	(SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in µg	(C2)	638.7	682.4
LIQUID	Spike Book Number		25N12F	34N12C
Batch Number	Spike Standard Value in µg/ml	(SPK CONC)	605	3009
20000086	µg C in baseline	(BL)	4.9	13.5

Return
0
Sample Prep
N/A
Sample#
S00T000055
Instrument Code
CARB2
Prepared By
MF
Chemist
JFG
Analyst
SLH
Data Complete
01/17/2000
Analysis Date
01/15/2000
Analysis Time
05:38 PM
Sample Point
SY-102

Percent Spike Recovery = ((C2-BL) - (C1-BL) * (SPK SS) / SS) / ((SPK CONC) * (SPK VOL)) * 100

QC Actual in µg/mL = Spike Value (µg/mL)
QC Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100

	TIC	TOC
QC Actual in µg/mL	6.05E+02	3.01E+03
QC Found in µg/mL	5.84E+02	2.72E+03
Percent Spike Recovery	96.6	90.3

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:		Date:	

SPIKE.WB1 REV 1.3 342100ML

HNF-1698 REV. 0

WORKBOOK PAGE: SAM6

TIC/TOC : LA-342-100 (F-3) 4 XB 1/30/00 LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	331.2	383.6
32103	µg of Carbon from Baseline	(C2)	4.9	13.5
Test Code				
@TICTOC1				

Matrix	LIQUID
Batch Number	20000086
Rerun	0
Sample Prep	N/A
Sample #	S00T000057
Instrument Code	CARB2
Prepared By	MF
Chemist	JFG
Analyst	SLH
Date Complete	01/17/2000
Analysis Date	01/15/2000
Analysis Time	05:38 PM
Sample Point	SY-102

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	3.26E+03	3.70E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

I:\342100\OUT\32103.WB1 01/17/2000 13:13:26

WORKBOOK PAGE: DUP7

TIC/TOC : LA-342-100 (F-~~3~~ 4) NB 4/30/00 LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	0.1000	0.1000
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	333.7	387.2
32103	µg of Carbon from Baseline	(C2)	4.9	13.5
Test Code	Known µg of C from Original Sample		3.26E+3	3.70E+3
@TICTOC1				

Matrix: LIQUID

Batch Number: 20000086

Rerun: 0

Sample Prep: N/A

Sample #: S00T000057

Instrument Code: CARB2

Prepared By: MF

Chemist: JFG

Analyst: SLH

Date Complete: 01/17/2000

Analysis Date: 01/15/2000

Analysis Time: 05:38 PM

Sample Point: SY-102

µg of Carbon/mL = (C1-C2) * DF / SS
µg of Carbon/mL for TIC = 5 if C1 < C2
µg of Carbon/mL for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in µg/mL	5	40
µg of Carbon/mL	3.29E+03	3.74E+03

Data Entered By:	MF	Date:	01/17/2000
Signature of Chemist:	NA	Date:	

SAMPLE.WB1 REV 1.0 342100ML

LABCORE Completed Worklist Report for Worklist# 32220

Analyst: pjm **Instrument:** U01 **Book#:** _____

Method: LA-925-009 Rev/Mod _____

Worklist Comment: SY-102 GRAB 5 FOR U-02 RERUN JMV

	Seq Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	ICB			0	U-02	LIQUID	1	1.55e-4	0.000	ug/mL
2	ICV			0	U-02	LIQUID	5.0e-2	4.77e-2	95.400	% Recovery
3	CCB			0	U-02	LIQUID	1	1.10e-4	0.000	ug/mL
4	CCV			0	U-02	LIQUID	5.0e-2	4.86e-2	97.200	% Recovery
5	STD			0	U-02	LIQUID	5.0e-2	4.73e-2	94.600	% Recovery
6	SAMPLE	S00T000048		0	U-02	LIQUID	N/A	9.94e-1	1.88e-003	ug/mL
7	DUP	S00T000048		0	U-02	LIQUID	9.94e-1	9.44e-1	5.160	RPD
8	SAMPLE	S00T000050		0	U-02	LIQUID	N/A	3.52	1.88e-003	ug/mL
9	DUP	S00T000050		0	U-02	LIQUID	3.52	4.18	17.143	RPD
10	SAMPLE	S00T000051		0	U-02	LIQUID	N/A	4.35	1.88e-003	ug/mL
11	DUP	S00T000051		0	U-02	LIQUID	4.35	4.18	3.986	RPD
12	SPK	S00T000051		0	U-02	LIQUID	50.0	44.6	89.200	% Recovery
13	SAMPLE	S00T000052		0	U-02	LIQUID	N/A	1.64	1.88e-003	ug/mL
14	DUP	S00T000052		0	U-02	LIQUID	1.64	1.80	9.302	RPD
15	SAMPLE	S00T000053		0	U-02	LIQUID	N/A	4.07	1.88e-003	ug/mL
16	DUP	S00T000053		0	U-02	LIQUID	4.07	4.74	15.210	RPD

Final page for worklist# 32220

See attached for Signature

Analyst Signature Date Analyst Signature Date

5/8/00

Reviewer Signature Date

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

LABCORE Completed Worklist Report for Worklist# 32220

Analyst: ~~rwk~~ pjm WL 1/27/00 **Instrument:** U01 **Book#:** _____

Method: LA-925-009 Rev/Mod D-1

Worklist Comment: SY-102 GRAB 5 FOR U-02 RERUN JMV

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	ICB			0	U-02	LIQUID	1	1.55e-4	0.000	ug/mL
2	ICV			0	U-02	LIQUID	5.0e-2	4.77e-2	95.400	% Recovery
3	CCB			0	U-02	LIQUID	1	1.10e-4	0.000	ug/mL
4	CCV			0	U-02	LIQUID	5.0e-2	4.86e-2	97.200	% Recovery
5	STD			0	U-02	LIQUID	5.0e-2	4.73e-2	94.600	% Recovery
6	SAMPLE	S00T000048		0	U-02	LIQUID	N/A	9.94e-1	1.88e-003	ug/mL
7	DUP	S00T000048		0	U-02	LIQUID	9.94e-1	9.44e-1	5.160	RPD
8	SAMPLE	S00T000050		0	U-02	LIQUID	N/A	3.52	1.88e-003	ug/mL
9	DUP	S00T000050		0	U-02	LIQUID	3.52	4.18	17.143	RPD
10	SAMPLE	S00T000051		0	U-02	LIQUID	N/A	4.35	1.88e-003	ug/mL
11	DUP	S00T000051		0	U-02	LIQUID	4.35	4.18	3.986	RPD
12	SPK	S00T000051		0	U-02	LIQUID	~~100~~	~~44.6~~	~~44.600~~	% Recovery
13	SAMPLE	S00T000052		0	U-02	LIQUID	N/A	1.64	1.88e-003	ug/mL
14	DUP	S00T000052		0	U-02	LIQUID	1.64	1.80	9.302	RPD
15	SAMPLE	S00T000053		0	U-02	LIQUID	N/A	4.07	1.88e-003	ug/mL
16	DUP	S00T000053		0	U-02	LIQUID	4.07	4.74	15.210	RPD

cor 5/9/00

Final page for worklist# 32220

Analyst Signature Date

Analyst Signature Date 01-27-00

Reviewer Signature Date 01/27/00

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

01/26/00 09:02
ws2

LABCORE Data Entry Template for Worklist# 32220

Analyst: RJM **Instrument:** U01 _____ **Book#** ICV & LCS & CCV 50B55
SPIKE 48B55

Method: LA-925-009 **Rev/Mod** D-1

Worklist Comment: SY-102 GRAB 5 FOR U-02 RERUN JMV

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICB				U-02	LIQUID		
2	ICV				U-02	LIQUID		
3	STD				U-02	LIQUID		
4	BLNK				U-02	LIQUID		
5	SAMPLE	S00T000048	0		U-02	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: U-02						
6	DUP	S00T000048	0		U-02	LIQUID		
7	SAMPLE	S00T000050	0		U-02	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: U-02						
8	DUP	S00T000050	0		U-02	LIQUID		
9	SAMPLE	S00T000051	0		U-02	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: U-02						
10	DUP	S00T000051	0		U-02	LIQUID		
11	SPK	S00T000051	0		U-02	LIQUID		
12	SAMPLE	S00T000052	0		U-02	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: U-02						
13	DUP	S00T000052	0		U-02	LIQUID		
14	SAMPLE	S00T000053	0		U-02	LIQUID	20000008	SY-102 GRAB5
		Analytes Requested: U-02						
15	DUP	S00T000053	0		U-02	LIQUID		
16	CCB				U-02	LIQUID		

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 32220

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
17	CCV				U-02	LIQUID		

Final page for worklist # 32220

RJ McCown 1/26/00
Signature Date

Signature Date

Data Entry Comments:

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

KPAWin© Single Sample Report - IChkBlk

Customer ID:	None	Date Analyzed:	01/26/2000 03:52 PM
Sample ID:	ICB	Analyte:	Uranium
Description:	0.5 M HNO3	Analyst:	pjm
		Date Printed:	01/26/2000 03:54 PM

Configuration

Sample Unit:	µg/l	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1000 Release

Sample Preparation & Analysis

Procedure ID:	None
Range:	Low
Calibration ID:	Default
Equation:	Y= +7416.204X -653.104
Specific Gravity:	1
Specific Activity (Bq/g):	25000

Range	(Low)
Sample Results	**ICB**
Reference Lifetime:	319
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	468
Sample R^2 Intensity:	.876
Reference Ratio:	1.002
Sample Intercept:	498
Analytical Result:	1.55E-01
Uncertainty:	7.58E-03

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Maximum Multiple of IDL:	3

Flags

IDL Flags:	
MDL Flags:	
Calibration:	
Sample:	A8, A10

KPAWin© Single Sample Report - IChkStd

Customer ID:	None	Date Analyzed:	01/26/2000 03:49 PM
Sample ID:	ICV	Analyte:	Uranium
Description:	ENV-STD	Analyst: RJMcCown	pjm
		Date Printed:	01/26/2000 03:52 PM

Configuration

Sample Unit:	µg/l	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1000 Release

Sample Preparation & Analysis

Procedure ID:	None	Standard ID:	50B55
Range:	High	Standard Conc (µg/l):	5.000E+01
Calibration ID:	Default		
Equation:	Y= +88.172X +330.407		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range	(High)
Sample Results	**ICV**
Reference Lifetime:	321
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	302
Sample R^2 Intensity:	1.000
Reference Ratio:	1.005
Sample Intercept:	4537
Analytical Result:	4.77E+01
Uncertainty:	1.49E+00

Interpreted Results

			Flags
Detection Limit(IDL):	N/A	IDL Flags:	
Detection Limit(MDL):	N/A	MDL Flags:	
Recovery (%):	95.41	Sample:	

KPAWin© Single Sample Report - IChkStd

Customer ID:	None	Date Analyzed:	01/26/2000 03:54 PM
Sample ID:	LCS	Analyte:	Uranium
Description:	Standard	Analyst:	pjm
		Date Printed:	01/26/2000 03:56 PM

Configuration

Sample Unit:	µg/l	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1000 Release

Sample Preparation & Analysis

Procedure ID:	None	Standard ID:	50B55
Range:	High	Standard Conc (µg/l):	5.000E-02
Calibration ID:	Default		
Equation:	Y= +88.172X +330.407		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range	(High)
Sample Results	**LCS**
Reference Lifetime:	320
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	194
Sample R^2 Intensity:	.999
Reference Ratio:	1.021
Sample Intercept:	4500
Analytical Result:	4.73E+01
Uncertainty:	1.54E+00

Interpreted Results

Detection Limit(IDL):	N/A	IDL Flags:	
Detection Limit(MDL):	N/A	MDL Flags:	
Recovery (%):	94573.11	Sample:	

Flags

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:33 PM
Sample ID:	CCB	Analyte:	Uranium
Description:	Blank	Analyst:	pjm
		Date Printed:	01/26/2000 04:59 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None		
Range:	Low		
Calibration ID:	Default		
Equation:	Y= +7416.204X -653.104		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range Sample Results	(Low) CCB
Reference Lifetime:	314
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	475
Sample R^2 Intensity:	.657
Reference Ratio:	1.016
Sample Intercept:	166
Analytical Result:	1.10E-04
Dilution Factor:	1.00
Aliquot Factor:	1.00
Final Result:	1.10E-04
Uncertainty:	1.00E-05

Interpreted Results

Detection Limit(IDL):	N/A	IDL Flags:	
Detection Limit(MDL):	N/A	MDL Flags:	
		Calibration:	
Min Significant Sample Limit:	3.00E+02	Sample:	W8, A73

Flags

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:31 PM
Sample ID:	CCV	Analyte:	Uranium
Description:	Standard	Analyst:	pjm
		Date Printed:	01/26/2000 04:33 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None		
Range:	High		
Calibration ID:	Default		
Equation:	Y= +88.172X +330.407		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range Sample Results	(High) CCV
Reference Lifetime:	314
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	301
Sample R^2 Intensity:	1.000
Reference Ratio:	1.039
Sample Intercept:	4614
Analytical Result:	4.86E-02
Dilution Factor:	~~100.00~~ 1.0 ppm 1/26/00
Aliquot Factor:	1.00
Final Result:	4.86E+00
Uncertainty:	1.52E-01

Interpreted Results

Detection Limit(IDL):	N/A	IDL Flags:	
Detection Limit(MDL):	N/A	MDL Flags:	
		Calibration:	
Min Significant Sample Limit:	3.00E+02	Sample:	

Flags

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 03:56 PM
Sample ID:	S00T000048	Analyte:	Uranium
Description:	Sample	Analyst:	pjm
		Date Printed:	01/26/2000 03:58 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None		
Range:	Low		
Calibration ID:	Default		
Equation:	Y= +7416.204X -653.104		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000048
Reference Lifetime:	320
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	159
Sample R^2 Intensity:	.997
Reference Ratio:	1.005
Sample Intercept:	73081
Analytical Result:	9.94E-03
Dilution Factor:	100.00
Aliquot Factor:	1.00
Final Result:	9.94E-01
Uncertainty:	2.35E-02

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Min Significant Sample Limit:	3.00E+02

Flags

IDL Flags:	
MDL Flags:	
Calibration:	
Sample:	

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 03:58 PM
Sample ID:	S00T000048	Analyte:	Uranium
Description:	Duplicate	Analyst:	pjm
		Date Printed:	01/26/2000 04:00 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None
Range:	Low
Calibration ID:	Default
Equation:	Y= +7416.204X -653.104
Specific Gravity:	1
Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000048
Reference Lifetime:	315
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	170
Sample R^2 Intensity:	.993
Reference Ratio:	1.020
Sample Intercept:	69366
Analytical Result:	9.44E-03
Dilution Factor:	100.00
Aliquot Factor:	1.00
Final Result:	9.44E-01
Uncertainty:	2.89E-02

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Min Significant Sample Limit:	3.00E+02

Flags

IDL Flags:	
MDL Flags:	
Calibration:	
Sample:	

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:12 PM
Sample ID:	S00T000050	Analyte:	Uranium
Description:	Sample	Analyst:	pjm
		Date Printed:	01/26/2000 04:53 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None
Range:	Low
Calibration ID:	Default
Equation:	Y= +7416.204X -653.104
Specific Gravity:	1
Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000050
Reference Lifetime:	315
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	201
Sample R^2 Intensity:	.998
Reference Ratio:	1.007
Sample Intercept:	23106
Analytical Result:	3.20E-03
Dilution Factor:	100.00
Aliquot Factor:	11.00
Final Result:	3.52E+00
Uncertainty:	5.56E-02

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Min Significant Sample Limit:	3.00E+02

Flags

IDL Flags:
MDL Flags:
Calibration:
Sample:

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:14 PM
Sample ID:	S00T000050	Analyte:	Uranium
Description:	Duplicate	Analyst:	pjm
		Date Printed:	01/26/2000 04:55 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None
Range:	Low
Calibration ID:	Default
Equation:	Y= +7416.204X -653.104
Specific Gravity:	1
Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000050
Reference Lifetime:	316
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	193
Sample R^2 Intensity:	.999
Reference Ratio:	1.008
Sample Intercept:	27536
Analytical Result:	3.80E-03
Dilution Factor:	100.00
Aliquot Factor:	11.00
Final Result:	4.18E+00
Uncertainty:	5.20E-02

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Min Significant Sample Limit:	3.00E+02

Flags

IDL Flags:	
MDL Flags:	
Calibration:	
Sample:	

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:16 PM
Sample ID:	S00T000051	Analyte:	Uranium
Description:	Sample	Analyst:	pjm
		Date Printed:	01/26/2000 04:55 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None
Range:	Low
Calibration ID:	Default
Equation:	Y= +7416.204X -653.104
Specific Gravity:	1
Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000051
Reference Lifetime:	316
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	174
Sample R^2 Intensity:	1.000
Reference Ratio:	1.010
Sample Intercept:	28659
Analytical Result:	3.95E-03
Dilution Factor:	100.00
Aliquot Factor:	11.00
Final Result:	4.35E+00
Uncertainty:	5.13E-02

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Min Significant Sample Limit:	3.00E+02

Flags

IDL Flags:	
MDL Flags:	
Calibration:	
Sample:	

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:19 PM
Sample ID:	S00T000051	Analyte:	Uranium
Description:	Duplicate	Analyst:	pjm
		Date Printed:	01/26/2000 04:56 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None
Range:	Low
Calibration ID:	Default
Equation:	Y= +7416.204X -653.104
Specific Gravity:	1
Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000051
Reference Lifetime:	316
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	196
Sample R^2 Intensity:	.999
Reference Ratio:	1.014
Sample Intercept:	27557
Analytical Result:	3.80E-03
Dilution Factor:	100.00
Aliquot Factor:	11.00
Final Result:	4.18E+00
Uncertainty:	5.66E-02

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Min Significant Sample Limit:	3.00E+02

Flags

IDL Flags:	
MDL Flags:	
Calibration:	
Sample:	

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:20 PM
Sample ID:	S00T000051	Analyte:	Uranium
Description:	Spike	Analyst:	pjm
		Date Printed:	01/26/2000 04:58 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None		
Range:	High		
Calibration ID:	Default		
Equation:	Y= +88.172X +330.408		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range Sample Results	(High) S00T000051
Reference Lifetime:	316
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	181
Sample R^2 Intensity:	.999
Reference Ratio:	1.023
Sample Intercept:	4262
Analytical Result:	4.46E-02
Dilution Factor:	100.00
Aliquot Factor:	11.00
Final Result:	4.90E+01
Uncertainty:	1.57E+00

Interpreted Results

Detection Limit(IDL):	N/A	IDL Flags:	
Detection Limit(MDL):	N/A	MDL Flags:	
		Calibration:	
Min Significant Sample Limit:	3.00E+02	Sample:	

Flags

spk conc = 49.0 - 4.35 = 44.6

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:24 PM
Sample ID:	S00T000052	Analyte:	Uranium
Description:	Sample	Analyst:	pjm
		Date Printed:	01/26/2000 04:25 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None		
Range:	Low		
Calibration ID:	Default		
Equation:	Y= +7416.204X -653.104		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000052
Reference Lifetime:	314
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	155
Sample R^2 Intensity:	.986
Reference Ratio:	1.019
Sample Intercept:	121289
Analytical Result:	1.64E-02
Dilution Factor:	100.00
Aliquot Factor:	1.00
Final Result:	1.64E+00
Uncertainty:	7.63E-02

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Min Significant Sample Limit:	3.00E+02

Flags

IDL Flags:
MDL Flags:
Calibration:
Sample:

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:29 PM
Sample ID:	S00T000052	Analyte:	Uranium
Description:	Duplicate	Analyst:	pjm
		Date Printed:	01/26/2000 04:31 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None		
Range:	Low		
Calibration ID:	Default		
Equation:	Y= +7416.204X -653.104		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000052
Reference Lifetime:	314
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	136
Sample R^2 Intensity:	.994
Reference Ratio:	1.030
Sample Intercept:	133082
Analytical Result:	1.80E-02
Dilution Factor:	100.00
Aliquot Factor:	1.00
Final Result:	1.80E+00
Uncertainty:	6.34E-02

Interpreted Results

Detection Limit(IDL):	N/A	IDL Flags:	
Detection Limit(MDL):	N/A	MDL Flags:	
		Calibration:	
Min Significant Sample Limit:	3.00E+02	Sample:	W9

Flags

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:43 PM
Sample ID:	S00T000053	Analyte:	Uranium
Description:	Sample	Analyst:	pjm
		Date Printed:	01/26/2000 04:45 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None
Range:	Low
Calibration ID:	Default
Equation:	Y= +7416.204X -653.104
Specific Gravity:	1
Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000053
Reference Lifetime:	313
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	223
Sample R^2 Intensity:	.994
Reference Ratio:	1.022
Sample Intercept:	26765
Analytical Result:	3.70E-03
Dilution Factor:	100.00
Aliquot Factor:	11.00
Final Result:	4.07E+00
Uncertainty:	9.08E-02

Interpreted Results

Detection Limit(IDL):	N/A
Detection Limit(MDL):	N/A
Min Significant Sample Limit:	3.00E+02

Flags

IDL Flags:
MDL Flags:
Calibration:
Sample:

KPAWin© Single Sample Report - Sample

Customer ID:	None	Date Analyzed:	01/26/2000 04:45 PM
Sample ID:	S00T000053	Analyte:	Uranium
Description:	Duplicate	Analyst:	pjm
		Date Printed:	01/26/2000 04:47 PM

Configuration

Sample Unit:	µg/ml	KPA Unit	999 EProm3-Man
Performance:	1001 120799	Calibration:	1004 012400
QC Limits:	1000 Release	Alarms:	1001 120799

Sample Preparation & Analysis

Procedure ID:	None		
Range:	Low		
Calibration ID:	Default		
Equation:	Y= +7416.204X -653.104		
Specific Gravity:	1	Specific Activity (Bq/g):	25000

Range Sample Results	(Low) S00T000053
Reference Lifetime:	313
LSR Time Gates:	5 - 49
Sample Lifetime (µsec):	186
Sample R^2 Intensity:	.999
Reference Ratio:	1.045
Sample Intercept:	31280
Analytical Result:	4.31E-03
Dilution Factor:	100.00
Aliquot Factor:	11.00
Final Result:	4.74E+00
Uncertainty:	7.51E-02

Interpreted Results

Detection Limit(IDL):	N/A	IDL Flags:	
Detection Limit(MDL):	N/A	MDL Flags:	
		Calibration:	
Min Significant Sample Limit:	3.00E+02	Sample:	

Flags

This document was too large to scan as a single document. It has been divided into smaller sections.

Section 2 of 2

Document Information			
Document #	**HNF-1698**	**Revision**	**0**
Title	TANK 241SY102 01/2000 COMPATIBILITY GRAB SAMPLERS ANALYTICAL RESULTS FOR THE FINAL REPORT		
Date	**05/11/2000**		
Originator	**KE BELL**	**Originator Co.**	**FH**
Recipient		**Recipient Co.**	
References	**EDT-628066**		
Keywords			
Projects	**TANK FARM**		
Other Information			

RADIOCHEMICAL ANALYSIS

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LABCORE Completed Worklist Report for Worklist# 32107

Analyst: scl **Instrument:** GEA02 **Book#:** 46B57

Method: LA-548-121 Rev/Mod F-2

Worklist Comment: SY-102 GRAB 5 FOR @GEA-03 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
1	STD		0	@GEA-03	CO60-02	LIQUID	4.825e-03		5.16e-03	106.943	% Recovery
1	STD		0	@GEA-03	CO60-02E	LIQUID	1		3.02	3.020	% Ct Error
1	STD		0	@GEA-03	CS13702	LIQUID	7.964e-03		8.00e-03	100.452	% Recovery
1	STD		0	@GEA-03	CS13702E	LIQUID	1		3.01	3.010	% Ct Error
2	BLNK		0	@GEA-03	CO60-02	LIQUID	1		<7.20e-4		uCi/mL
2	BLNK		0	@GEA-03	NB94-02	LIQUID	1		<8.19e-4		uCi/mL
2	BLNK		0	@GEA-03	RU10602	LIQUID	1		<1.49e-2		uCi/mL
2	BLNK		0	@GEA-03	CS13402	LIQUID	1		<7.32e-4		uCi/mL
2	BLNK		0	@GEA-03	CS13702	LIQUID	1		<1.71e-3		uCi/mL
2	BLNK		0	@GEA-03	CE14402	LIQUID	1		<7.02e-3		uCi/mL
2	BLNK		0	@GEA-03	EU15402	LIQUID	1		<2.28e-3		uCi/mL
2	BLNK		0	@GEA-03	EU15502	LIQUID	1		<1.71e-3		uCi/mL
2	BLNK		0	@GEA-03	RA22602	LIQUID	1		<1.23e-2		uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	CO60-02	LIQUID	N/A		1.290e-02		uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	CO60-02E	LIQUID	N/A		19.0		% Ct. Error
3	SAMPLE	S00T000049	0	@GEA-03	NB94-02	LIQUID	N/A	<	4.075e-03	4.07e-003	uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	NB94-02E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S00T000049	0	@GEA-03	RU10602	LIQUID	N/A	<	6.623e-01	0.662	uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	RU10602E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S00T000049	0	@GEA-03	CS13402	LIQUID	N/A	<	3.326e-02	3.33e-002	uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	CS13402E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S00T000049	0	@GEA-03	CS13702	LIQUID	N/A		1.390e+02		uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	CS13702E	LIQUID	N/A		0.160		% Ct. Error
3	SAMPLE	S00T000049	0	@GEA-03	CE14402	LIQUID	N/A	<	4.984e-01	0.498	uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	CE14402E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S00T000049	0	@GEA-03	EU15402	LIQUID	N/A		2.120e-02		uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	EU15402E	LIQUID	N/A		49.3		% Ct. Error
3	SAMPLE	S00T000049	0	@GEA-03	EU15502	LIQUID	N/A	<	1.172e-01	0.117	uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	EU15502E	LIQUID	N/A		n/a		% Ct. Error
3	SAMPLE	S00T000049	0	@GEA-03	RA22602	LIQUID	N/A	<	9.014e-01	0.901	uCi/mL
3	SAMPLE	S00T000049	0	@GEA-03	RA22602E	LIQUID	N/A		n/a		% Ct. Error
4	DUP	S00T000049	0	@GEA-03	CO60-02	LIQUID	1.29e-02		1.29e-02	0.000	RPD
4	DUP	S00T000049	0	@GEA-03	CO60-02E	LIQUID	1		18.8	18.800	% Ct Error
4	DUP	S00T000049	0	@GEA-03	NB94-02	LIQUID	<4.07e-3		<4.27e-3		RPD
4	DUP	S00T000049	0	@GEA-03	NB94-02E	LIQUID	1		n/a		% Ct Error
4	DUP	S00T000049	0	@GEA-03	RU10602	LIQUID	<6.62e-1		<6.64e-1		RPD
4	DUP	S00T000049	0	@GEA-03	RU10602E	LIQUID	1		n/a		% Ct Error
4	DUP	S00T000049	0	@GEA-03	CS13402	LIQUID	<3.33e-2		<3.34e-2		RPD
4	DUP	S00T000049	0	@GEA-03	CS13402E	LIQUID	1		n/a		% Ct Error
4	DUP	S00T000049	0	@GEA-03	CS13702	LIQUID	1.39e+02		1.40e+02	0.717	RPD
4	DUP	S00T000049	0	@GEA-03	CS13702E	LIQUID	1		0.150	0.150	% Ct Error

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

LABCORE Completed Worklist Report for Worklist# 32107

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
4	DUP	S00T000049	0	@GEA-03	CE14402	LIQUID	<4.98e-1		<5.00e-1		RPD
4	DUP	S00T000049	0	@GEA-03	CE14402E	LIQUID	1		n/a		% Ct Error
4	DUP	S00T000049	0	@GEA-03	EU15402	LIQUID	2.12e-02		2.37e-02	11.136	RPD
4	DUP	S00T000049	0	@GEA-03	EU15402E	LIQUID	1		36.9	36.900	% Ct Error
4	DUP	S00T000049	0	@GEA-03	EU15502	LIQUID	<1.17e-1		<1.18e-1		RPD
4	DUP	S00T000049	0	@GEA-03	EU15502E	LIQUID	1		n/a		% Ct Error
4	DUP	S00T000049	0	@GEA-03	RA22602	LIQUID	<9.01e-1		<9.04e-1		RPD
4	DUP	S00T000049	0	@GEA-03	RA22602E	LIQUID	1		n/a		% Ct Error
5	SAMPLE	S00T000054	0	@GEA-03	CO60-02	LIQUID	N/A	<	6.545e-03	6.54e-003	uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	CO60-02E	LIQUID	N/A		n/a		% Ct. Error
5	SAMPLE	S00T000054	0	@GEA-03	NB94-02	LIQUID	N/A	<	4.460e-03	4.46e-003	uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	NB94-02E	LIQUID	N/A		n/a		% Ct. Error
5	SAMPLE	S00T000054	0	@GEA-03	RU10602	LIQUID	N/A	<	7.626e-01	0.763	uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	RU10602E	LIQUID	N/A		n/a		% Ct. Error
5	SAMPLE	S00T000054	0	@GEA-03	CS13402	LIQUID	N/A	<	3.777e-02	3.78e-002	uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	CS13402E	LIQUID	N/A		n/a		% Ct. Error
5	SAMPLE	S00T000054	0	@GEA-03	CS13702	LIQUID	N/A		1.800e+02		uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	CS13702E	LIQUID	N/A		0.140		% Ct. Error
5	SAMPLE	S00T000054	0	@GEA-03	CE14402	LIQUID	N/A	<	5.658e-01	0.566	uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	CE14402E	LIQUID	N/A		n/a		% Ct. Error
5	SAMPLE	S00T000054	0	@GEA-03	EU15402	LIQUID	N/A	<	1.247e-02	1.25e-002	uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	EU15402E	LIQUID	N/A		n/a		% Ct. Error
5	SAMPLE	S00T000054	0	@GEA-03	EU15502	LIQUID	N/A	<	1.337e-01	0.134	uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	EU15502E	LIQUID	N/A		n/a		% Ct. Error
5	SAMPLE	S00T000054	0	@GEA-03	RA22602	LIQUID	N/A	<	1.026e+00	1.026	uCi/mL
5	SAMPLE	S00T000054	0	@GEA-03	RA22602E	LIQUID	N/A		n/a		% Ct. Error
6	DUP	S00T000054	0	@GEA-03	CO60-02	LIQUID	<6.54e-3		6.19e-03		RPD
6	DUP	S00T000054	0	@GEA-03	CO60-02E	LIQUID	1		41.6	41.600	% Ct Error
6	DUP	S00T000054	0	@GEA-03	NB94-02	LIQUID	<4.46e-3		<4.57e-3		RPD
6	DUP	S00T000054	0	@GEA-03	NB94-02E	LIQUID	1		n/a		% Ct Error
6	DUP	S00T000054	0	@GEA-03	RU10602	LIQUID	<7.63e-1		<7.62e-1		RPD
6	DUP	S00T000054	0	@GEA-03	RU10602E	LIQUID	1		n/a		% Ct Error
6	DUP	S00T000054	0	@GEA-03	CS13402	LIQUID	<3.78e-2		<3.81e-2		RPD
6	DUP	S00T000054	0	@GEA-03	CS13402E	LIQUID	1		n/a		% Ct Error
6	DUP	S00T000054	0	@GEA-03	CS13702	LIQUID	1.80e+02		1.81e+02	0.554	RPD
6	DUP	S00T000054	0	@GEA-03	CS13702E	LIQUID	1		0.140	0.140	% Ct Error
6	DUP	S00T000054	0	@GEA-03	CE14402	LIQUID	<5.66e-1		<5.67e-1		RPD
6	DUP	S00T000054	0	@GEA-03	CE14402E	LIQUID	1		n/a		% Ct Error
6	DUP	S00T000054	0	@GEA-03	EU15402	LIQUID	<1.25e-2		<1.25e-2		RPD
6	DUP	S00T000054	0	@GEA-03	EU15402E	LIQUID	1		n/a		% Ct Error
6	DUP	S00T000054	0	@GEA-03	EU15502	LIQUID	<1.34e-1		<1.34e-1		RPD
6	DUP	S00T000054	0	@GEA-03	EU15502E	LIQUID	1		n/a		% Ct Error
6	DUP	S00T000054	0	@GEA-03	RA22602	LIQUID	<1.03e0		<1.03e0		RPD
6	DUP	S00T000054	0	@GEA-03	RA22602E	LIQUID	1		n/a		% Ct Error
7	SAMPLE	S00T000055	0	@GEA-03	CO60-02	LIQUID	N/A	<	5.336e-03	5.34e-003	uCi/mL
7	SAMPLE	S00T000055	0	@GEA-03	CO60-02E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S00T000055	0	@GEA-03	NB94-02	LIQUID	N/A	<	4.334e-03	4.33e-003	uCi/mL
7	SAMPLE	S00T000055	0	@GEA-03	NB94-02E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S00T000055	0	@GEA-03	RU10602	LIQUID	N/A	<	7.715e-01	0.771	uCi/mL

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

LABCORE Completed Worklist Report for Worklist# 32107

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
7	SAMPLE	S00T000055	0	@GEA-03	RU10602E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S00T000055	0	@GEA-03	CS13402	LIQUID	N/A	<	3.846e-02	3.85e-002	uCi/mL
7	SAMPLE	S00T000055	0	@GEA-03	CS13402E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S00T000055	0	@GEA-03	CS13702	LIQUID	N/A		1.850e+02		uCi/mL
7	SAMPLE	S00T000055	0	@GEA-03	CS13702E	LIQUID	N/A		0.130		% Ct. Error
7	SAMPLE	S00T000055	0	@GEA-03	CE14402	LIQUID	N/A	<	5.751e-01	0.575	uCi/mL
7	SAMPLE	S00T000055	0	@GEA-03	CE14402E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S00T000055	0	@GEA-03	EU15402	LIQUID	N/A	<	1.269e-02	1.27e-002	uCi/mL
7	SAMPLE	S00T000055	0	@GEA-03	EU15402E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S00T000055	0	@GEA-03	EU15502	LIQUID	N/A	<	1.357e-01	0.136	uCi/mL
7	SAMPLE	S00T000055	0	@GEA-03	EU15502E	LIQUID	N/A		n/a		% Ct. Error
7	SAMPLE	S00T000055	0	@GEA-03	RA22602	LIQUID	N/A	<	1.042e+00	1.042	uCi/mL
7	SAMPLE	S00T000055	0	@GEA-03	RA22602E	LIQUID	N/A		n/a		% Ct. Error
8	DUP	S00T000055	0	@GEA-03	CO60-02	LIQUID	<5.34e-3		6.19e-03		RPD
8	DUP	S00T000055	0	@GEA-03	CO60-02E	LIQUID	1		44.9	44.900	% Ct Error
8	DUP	S00T000055	0	@GEA-03	NB94-02	LIQUID	<4.33e-3		<4.36e-3		RPD
8	DUP	S00T000055	0	@GEA-03	NB94-02E	LIQUID	1		n/a		% Ct Error
8	DUP	S00T000055	0	@GEA-03	RU10602	LIQUID	<7.71e-1		<7.63e-1		RPD
8	DUP	S00T000055	0	@GEA-03	RU10602E	LIQUID	1		n/a		% Ct Error
8	DUP	S00T000055	0	@GEA-03	CS13402	LIQUID	<3.85e-2		<3.83e-2		RPD
8	DUP	S00T000055	0	@GEA-03	CS13402E	LIQUID	1		n/a		% Ct Error
8	DUP	S00T000055	0	@GEA-03	CS13702	LIQUID	1.85e+02		1.81e+02	2.186	RPD
8	DUP	S00T000055	0	@GEA-03	CS13702E	LIQUID	1		0.140	0.140	% Ct Error
8	DUP	S00T000055	0	@GEA-03	CE14402	LIQUID	<5.75e-1		<5.68e-1		RPD
8	DUP	S00T000055	0	@GEA-03	CE14402E	LIQUID	1		n/a		% Ct Error
8	DUP	S00T000055	0	@GEA-03	EU15402	LIQUID	<1.27e-2		<1.20e-2		RPD
8	DUP	S00T000055	0	@GEA-03	EU15402E	LIQUID	1		n/a		% Ct Error
8	DUP	S00T000055	0	@GEA-03	EU15502	LIQUID	<1.36e-1		<1.34e-1		RPD
8	DUP	S00T000055	0	@GEA-03	EU15502E	LIQUID	1		n/a		% Ct Error
8	DUP	S00T000055	0	@GEA-03	RA22602	LIQUID	<1.04e0		<1.03e0		RPD
8	DUP	S00T000055	0	@GEA-03	RA22602E	LIQUID	1		n/a		% Ct Error
9	SAMPLE	S00T000056	0	@GEA-03	CO60-02	LIQUID	N/A	<	5.560e-03	5.56e-003	uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	CO60-02E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S00T000056	0	@GEA-03	NB94-02	LIQUID	N/A	<	4.755e-03	4.75e-003	uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	NB94-02E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S00T000056	0	@GEA-03	RU10602	LIQUID	N/A	<	7.718e-01	0.772	uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	RU10602E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S00T000056	0	@GEA-03	CS13402	LIQUID	N/A	<	3.842e-02	3.84e-002	uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	CS13402E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S00T000056	0	@GEA-03	CS13702	LIQUID	N/A		1.840e+02		uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	CS13702E	LIQUID	N/A		0.130		% Ct. Error
9	SAMPLE	S00T000056	0	@GEA-03	CE14402	LIQUID	N/A	<	5.733e-01	0.573	uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	CE14402E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S00T000056	0	@GEA-03	EU15402	LIQUID	N/A	<	1.266e-02	1.27e-002	uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	EU15402E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S00T000056	0	@GEA-03	EU15502	LIQUID	N/A	<	1.359e-01	0.136	uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	EU15502E	LIQUID	N/A		n/a		% Ct. Error
9	SAMPLE	S00T000056	0	@GEA-03	RA22602	LIQUID	N/A	<	1.038e+00	1.038	uCi/mL
9	SAMPLE	S00T000056	0	@GEA-03	RA22602E	LIQUID	N/A		n/a		% Ct. Error

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

LABCORE Completed Worklist Report for Worklist# 32107

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
10	DUP	S00T000056	0	@GEA-03	CO60-02	LIQUID	<5.56e-3	8.96e-03		RPD
10	DUP	S00T000056	0	@GEA-03	CO60-02E	LIQUID	1	22.3	22.300	% Ct Error
10	DUP	S00T000056	0	@GEA-03	NB94-02	LIQUID	<4.75e-3	<4.49e-3		RPD
10	DUP	S00T000056	0	@GEA-03	NB94-02E	LIQUID	1	n/a		% Ct Error
10	DUP	S00T000056	0	@GEA-03	RU10602	LIQUID	<7.72e-1	<7.64e-1		RPD
10	DUP	S00T000056	0	@GEA-03	RU10602E	LIQUID	1	n/a		% Ct Error
10	DUP	S00T000056	0	@GEA-03	CS13402	LIQUID	<3.84e-2	<3.81e-2		RPD
10	DUP	S00T000056	0	@GEA-03	CS13402E	LIQUID	1	n/a		% Ct Error
10	DUP	S00T000056	0	@GEA-03	CS13702	LIQUID	1.84e+02	1.82e+02	1.093	RPD
10	DUP	S00T000056	0	@GEA-03	CS13702E	LIQUID	1	0.140	0.140	% Ct Error
10	DUP	S00T000056	0	@GEA-03	CE14402	LIQUID	<5.73e-1	<5.69e-1		RPD
10	DUP	S00T000056	0	@GEA-03	CE14402E	LIQUID	1	n/a		% Ct Error
10	DUP	S00T000056	0	@GEA-03	EU15402	LIQUID	<1.27e-2	<1.16e-2		RPD
10	DUP	S00T000056	0	@GEA-03	EU15402E	LIQUID	1	n/a		% Ct Error
10	DUP	S00T000056	0	@GEA-03	EU15502	LIQUID	<1.36e-1	<1.34e-1		RPD
10	DUP	S00T000056	0	@GEA-03	EU15502E	LIQUID	1	n/a		% Ct Error
10	DUP	S00T000056	0	@GEA-03	RA22602	LIQUID	<1.04e0	<1.03e0		RPD
10	DUP	S00T000056	0	@GEA-03	RA22602E	LIQUID	1	n/a		% Ct Error
11	SAMPLE	S00T000057	0	@GEA-03	CO60-02	LIQUID	N/A	8.250e-03		uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	CO60-02E	LIQUID	N/A	26.3		% Ct. Error
11	SAMPLE	S00T000057	0	@GEA-03	NB94-02	LIQUID	N/A <	4.548e-03	4.55e-003	uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	NB94-02E	LIQUID	N/A	n/a		% Ct. Error
11	SAMPLE	S00T000057	0	@GEA-03	RU10602	LIQUID	N/A <	7.586e-01	0.759	uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	RU10602E	LIQUID	N/A	n/a		% Ct. Error
11	SAMPLE	S00T000057	0	@GEA-03	CS13402	LIQUID	N/A <	3.844e-02	3.84e-002	uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	CS13402E	LIQUID	N/A	n/a		% Ct. Error
11	SAMPLE	S00T000057	0	@GEA-03	CS13702	LIQUID	N/A	1.830e+02		uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	CS13702E	LIQUID	N/A	0.140		% Ct. Error
11	SAMPLE	S00T000057	0	@GEA-03	CE14402	LIQUID	N/A <	5.716e-01	0.572	uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	CE14402E	LIQUID	N/A	n/a		% Ct. Error
11	SAMPLE	S00T000057	0	@GEA-03	EU15402	LIQUID	N/A <	1.219e-02	1.22e-002	uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	EU15402E	LIQUID	N/A	n/a		% Ct. Error
11	SAMPLE	S00T000057	0	@GEA-03	EU15502	LIQUID	N/A <	1.345e-01	0.135	uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	EU15502E	LIQUID	N/A	n/a		% Ct. Error
11	SAMPLE	S00T000057	0	@GEA-03	RA22602	LIQUID	N/A <	1.033e+00	1.033	uCi/mL
11	SAMPLE	S00T000057	0	@GEA-03	RA22602E	LIQUID	N/A	n/a		% Ct. Error
12	DUP	S00T000057	0	@GEA-03	CO60-02	LIQUID	8.25e-03	<8.63e-3		RPD
12	DUP	S00T000057	0	@GEA-03	CO60-02E	LIQUID	1	n/a		% Ct Error
12	DUP	S00T000057	0	@GEA-03	NB94-02	LIQUID	<4.55e-3	<4.49e-3		RPD
12	DUP	S00T000057	0	@GEA-03	NB94-02E	LIQUID	1	n/a		% Ct Error
12	DUP	S00T000057	0	@GEA-03	RU10602	LIQUID	<7.59e-1	<7.68e-1		RPD
12	DUP	S00T000057	0	@GEA-03	RU10602E	LIQUID	1	n/a		% Ct Error
12	DUP	S00T000057	0	@GEA-03	CS13402	LIQUID	<3.84e-2	<3.85e-2		RPD
12	DUP	S00T000057	0	@GEA-03	CS13402E	LIQUID	1	n/a		% Ct Error
12	DUP	S00T000057	0	@GEA-03	CS13702	LIQUID	1.83e+02	1.83e+02	0.000	RPD
12	DUP	S00T000057	0	@GEA-03	CS13702E	LIQUID	1	0.140	0.140	% Ct Error
12	DUP	S00T000057	0	@GEA-03	CE14402	LIQUID	<5.72e-1	<5.71e-1		RPD
12	DUP	S00T000057	0	@GEA-03	CE14402E	LIQUID	1	n/a		% Ct Error
12	DUP	S00T000057	0	@GEA-03	EU15402	LIQUID	<1.22e-2	<1.21e-2		RPD

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

LABCORE Completed Worklist Report for Worklist# 32107

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
12	DUP	S00T000057	0		@GEA-03	EU15402E	LIQUID	1	n/a	% Ct Error
12	DUP	S00T000057	0		@GEA-03	EU15502	LIQUID	<1.35e-1	<1.34e-1	RPD
12	DUP	S00T000057	0		@GEA-03	EU15502E	LIQUID	1	n/a	% Ct Error
12	DUP	S00T000057	0		@GEA-03	RA22602	LIQUID	<1.03e0	<1.03e0	RPD
12	DUP	S00T000057	0		@GEA-03	RA22602E	LIQUID	1	n/a	% Ct Error

Comments Section:

Comments for sample# S00T000049 **and test** @GEA-03 .
DL=0 => n/a.

Comments for sample# S00T000054 **and test** @GEA-03 .
DL=0 => n/a.

Comments for sample# S00T000055 **and test** @GEA-03 .
DL=0 => n/a.

Comments for sample# S00T000056 **and test** @GEA-03 .
DL=0 => n/a.

Comments for sample# S00T000057 **and test** @GEA-03 .
DL=0 => n/a.

Final page for worklist# 32107

Analyst Signature **Date**

Analyst Signature **Date**

RAJ 1-19-00
Reviewer Signature **Date**

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

LABCORE Data Entry Template for Worklist# 32107

Analyst: S.L **Instrument:** GEA00 #2 **Book#** 46B57

Method: LA-548-121 Rev/Mod F-2

Worklist Comment: SY-102 GRAB 5 FOR @GEA-03 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@GEA-03	LIQUID		
2	BLNK				@GEA-03	LIQUID		
3	SAMPLE	S00T000049	0		@GEA-03	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E						
4	DUP	S00T000049	0		@GEA-03	LIQUID		
5	SAMPLE	S00T000054	0		@GEA-03	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E						
6	DUP	S00T000054	0		@GEA-03	LIQUID		
7	SAMPLE	S00T000055	0		@GEA-03	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E						
8	DUP	S00T000055	0		@GEA-03	LIQUID		
9	SAMPLE	S00T000056	0		@GEA-03	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E						
10	DUP	S00T000056	0		@GEA-03	LIQUID		
11	SAMPLE	S00T000057	0		@GEA-03	LIQUID	20000008	SY-102 GRAB5

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 32107

S	Type	Sample#	R	A	Test	Matrix	Group#	Project

Analytes Requested: CE14402 , CE14402E, CO60-02 , CO60-02E, CS13402 , CS13402E, CS13702 , CS13702E, EU15402 , EU15402E, EU15502 , EU15502E, NB94-02 , NB94-02E, RA22602 , RA22602E, RU10602 , RU10602E

12	DUP	S00T000057	0		@GEA-03	LIQUID		

Final page for worklist # 32107

Sue Lai 1-17-00
Signature Date

1-19-00
Signature Date

Data Entry Comments:

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

```
*****************************************************************************
* 222-S Laboratory Counting Room   17-JAN-2000 11:48:43.36                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               WL32107-STD                    Removed by:
Sample Size:             1.00000E-03 L
Dilution Factor:         1.00000E+00                    SL Uhl

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2                           Verified by:
File Number:             dka300:[spec.GEA2]2g2366.cnf   John Relyea 19 Jan 00
Geometry:                42
Count Time:              0 00:50:00.00 sec
Real Time:               0 00:50:24.15 sec
Dead Time:               0.8%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-JAN-2000 10:57:43.49
Decayed to:              17-JAN-2000 10:57:43.49
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*****************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.70*	5475	1.40	1323.28	1315	15	3.0		CS-137	8.00
0	1173.18	2693	1.80	2346.36	2337	18	4.2		CO-60	5.32
0	1332.39	2297	1.97	2664.87	2654	19	4.3		CO-60	5.01

Summary of Nuclide Activity
Page : 2
Sample ID : WL32107-STD
Acquisition date : 17-JAN-2000 10:57:43

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 Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	5.157E+00	5.157E+00	0.156E+00	3.02	
CS-137	30.00Y	1.00	7.997E+00	7.998E+00	0.240E+00	3.01	
			---	---			
Total Activity :			1.315E+01	1.315E+01			
Grand Total Activity :			1.315E+01	1.315E+01			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : WL32107-STD

Acquisition date : 17-JAN-2000 10:57:43

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	301.	477.59	7.4812E-01
NA-24	10.	1368.55	3.9890E-02
K-40	114.	1460.75	1.1542E+00
AR-41	12.	1293.60	4.7337E-02
SC-46	109.	1120.55	9.7358E-02
CR-51	316.	320.08	5.4104E-01
MN-54	142.	834.83	8.7714E-02
CO-56	152.	846.76	9.1744E-02
CO-58	133.	810.78	8.3609E-02
FE-59	158.	1099.25	2.0288E-01
ZN-65	133.	1115.55	2.1061E-01
SE-75	363.	264.66	8.4603E-02
KR-85	195.	514.00	1.5481E+01
SR-85	195.	514.01	6.9986E-02
Y-88	3.	1836.06	3.1402E-02
Y-91	45.	1204.67	2.2664E+01
NB-94	148.	871.09	9.2551E-02
ZRNB-95	131.	724.20	3.3980E-01
RU-103	211.	497.08	7.4362E-02
RURH-106	140.	621.93	1.3744E+00
AG-108m	119.	722.94	7.8919E-02
CD-109	285.	88.03	1.3591E+00
AG-110M	216.	657.76	9.2944E-02
SN-113	293.	391.69	9.9033E-02
TE-123m	367.	159.00	4.4994E-02
SB-124	136.	602.73	6.6788E-02
SB-125	299.	427.89	2.3689E-01
TE-125m	290.	109.27	1.3404E+01
I-129	271.	39.60	1.4512E+01
I-131	276.	364.48	7.1009E-02
XE-131m	344.	163.93	1.8808E+00
BA-133	291.	356.02	9.3094E-02
CS-134	127.	604.70	6.4868E-02
CS-136	120.	818.51	7.9892E-02
CS-138	8.	1435.86	7.7899E-02
CE-139	359.	165.85	4.7170E-02
BA-140	157.	537.31	2.5920E-01
LA-140	4.	1596.21	3.2182E-02
CE-141	338.	145.44	7.4961E-02
CE-144	366.	133.51	3.4274E-01
CEPR-144	366.	133.51	6.8497E-01
EU-152	329.	121.78	1.3159E-01
EU-154	28.	1274.51	1.6619E-01
EU-155	298.	86.54	1.5710E-01
HF-181	240.	482.18	8.7020E-02
TA-182	296.	67.75	2.2067E-01
HG-203	322.	279.20	5.9914E-02
BI-207	151.	569.70	6.6720E-02
TL-208	326.	277.36	7.7372E-01
PB-210	212.	46.50	9.0271E+00
BI-212	125.	727.18	1.1069E+00

Minimum Detectable Activity Report (continued)
Sample ID : WL32107-STD Acquisition date : 17-JAN-2000 10:57:43

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	394.	238.63	1.0897E-01
BI-214	142.	609.31	1.5010E-01
PB-214	320.	351.92	2.9927E-01
RA-224	356.	240.99	1.1520E+00
RA-226	390.	186.10	1.1652E+00
AC-228	175.	911.21	3.9033E-01
TH-228	282.	84.37	4.1535E+00
TH-229	262.	88.47	1.8891E-01
U-232	266.	57.78	7.4310E+01
PA-233	288.	312.17	1.3208E-01
UTH-233	339.	245.34	4.0964E+01
PA-234M	147.	1001.03	1.5840E+01
TH-234	272.	63.29	2.8427E+00
U-235	389.	185.71	7.0819E-02
NP-237	298.	86.48	4.1672E-01
U-237	295.	101.07	1.6239E-01
NP-238	138.	984.45	3.5622E-01
NP-239	310.	106.12	1.7596E-01
PU-239	356.	129.30	5.9085E+02
AM-241	297.	59.54	3.8994E-01
AM-243	295.	74.67	1.1626E-01

```
*************************************************************************
* 222-S Laboratory Counting Room   17-JAN-2000 15:46:32.67             *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               WL32107-BLNK
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2368.cnf
Geometry:                42
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:30:29.86 sec
Dead Time:               0.3%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-JAN-2000 13:15:32.14
Decayed to:              17-JAN-2000 13:15:32.14
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:49:59.73
*************************************************************************
```

Removed by: SLHall

Verified by: John Relyea 19 Jan 00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	583.58*	47	1.42	1167.03	1161	14	94.0			
0	1460.64*	26	2.11	2921.43	2911	18	161.4		K-40	8.43

Summary of Nuclide Activity
Sample ID : WL32107-BLNK

Acquisition date : 17-JAN-2000 13:15:32

Total number of lines in spectrum	2	
Number of unidentified lines	0	
Number of lines tentatively identified by NID	2	100.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
~~K-40~~	~~1.28E+09Y~~	~~1.00~~	~~8.430E+00~~	~~8.430E+00~~	~~13.60E+00~~	~~161.37~~	JJR 17Jan00
		Total Activity :	8.430E+00	8.430E+00			
		Grand Total Activity :	8.430E+00	8.430E+00			

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : WL32107-BLNK Acquisition date : 17-JAN-2000 13:15:32

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	91.	477.59	6.1983E+00
NA-24	18.	1368.55	7.7716E-01
AR-41	30.	1293.60	1.3681E+00
SC-46	57.	1120.55	1.0570E+00
CR-51	132.	320.08	5.2301E+00
MN-54	47.	834.83	7.6652E-01
CO-56	42.	846.76	7.3562E-01
CO-58	51.	810.78	7.8328E-01
FE-59	29.	1099.25	1.3454E+00
CO-60	18.	1332.50	7.2009E-01
ZN-65	25.	1115.55	1.4253E+00
SE-75	173.	264.66	8.6828E-01
KR-85	123.	514.00	1.8208E+02
SR-85	122.	514.01	8.2250E-01
Y-88	10.	1836.06	7.3359E-01
Y-91	37.	1204.67	3.0581E+02
NB-94	50.	871.09	8.1948E-01
ZRNB-95	51.	724.20	3.1903E+00
RU-103	101.	497.08	7.7010E-01
RURH-106	74.	621.93	1.4909E+01
AG-108m	52.	722.94	7.8484E-01
CD-109	146.	88.03	1.4461E+01
AG-110M	68.	657.76	7.9024E-01
SN-113	120.	391.69	9.4781E-01
TE-123m	202.	159.00	4.9439E-01
SB-124	67.	602.73	7.0337E-01
SB-125	93.	427.89	1.9895E+00
TE-125m	184.	109.27	1.5796E+02
I-129	118.	39.60	1.4305E+02
I-131	114.	364.48	6.8522E-01
XE-131m	221.	163.93	2.2346E+01
BA-133	119.	356.02	8.8925E-01
CS-134	73.	604.70	7.3184E-01
CS-136	46.	818.51	7.5064E-01
CS-137	275.	661.66	1.7097E+00
CS-138	22.	1435.86	3.6648E+00
CE-139	215.	165.85	5.3990E-01
BA-140	63.	537.31	2.4724E+00
LA-140	16.	1596.21	8.6092E-01
CE-141	182.	145.44	8.1568E-01
CE-144	174.	133.51	3.5112E+00
CEPR-144	174.	133.51	7.0176E+00
EU-152	193.	121.78	1.4900E+00
EU-154	24.	1274.51	2.2803E+00
EU-155	160.	86.54	1.7096E+00
HF-181	85.	482.18	7.7879E-01
TA-182	131.	67.75	2.1838E+00
HG-203	140.	279.20	5.8889E-01
BI-207	75.	569.70	7.0228E-01
TL-208	151.	277.36	7.8436E+00
PB-210	127.	46.50	1.0378E+02

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : WL32107-BLNK Acquisition date : 17-JAN-2000 13:15:32

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	65.	727.18	1.1954E+01
PB-212	233.	238.63	1.2398E+00
BI-214	122.	609.31	2.0491E+00
PB-214	168.	351.92	7.1502E+00
RA-224	197.	240.99	1.2766E+01
RA-226	198.	186.10	1.2318E+01
AC-228	80.	911.21	3.9566E+00
TH-228	171.	84.37	4.7858E+01
TH-229	142.	88.47	2.0691E+00
U-232	117.	57.78	7.3691E+02
PA-233	152.	312.17	1.4280E+00
UTH-233	157.	245.34	4.1452E+02
PA-234M	42.	1001.03	1.2908E+02
TH-234	141.	63.29	3.0413E+01
U-235	197.	185.71	7.4819E-01
NP-237	160.	86.48	4.5278E+00
U-237	162.	101.07	1.7902E+00
NP-238	33.	984.45	2.7333E+00
NP-239	176.	106.12	1.9833E+00
PU-239	152.	129.30	5.7424E+03
AM-241	148.	59.54	4.0873E+00
AM-243	186.	74.67	1.3662E+00

```
*****************************************************************************
* 222-S Laboratory Counting Room   17-JAN-2000 19:19:11.00                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T049-SAM
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2369.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:38:41.03 sec
Dead Time:               5.5%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-JAN-2000 16:40:00.96
Decayed to:              17-JAN-2000 16:40:00.96
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:52:33.45
*****************************************************************************
```

Removed by: LRaymond

Verified by: John Relyea 19Jan00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.69*	1748077	1.49	1323.27	1315	16	0.2		CS-137	1.389E+05
0	1173.13	113	1.78	2346.27	2338	17	31.3		CO-60	12.0
0	1274.08	65	1.11	2548.21	2542	14	49.3		EU-154	21.2
0	1322.95	137	2.30	2645.98	2638	16	23.4			
0	1332.78	117	1.06	2665.65	2658	14	23.9		CO-60	13.7
0	1764.87*	21	0.94	3530.11	3523	14	73.9		BI-214	20.2

Summary of Nuclide Activity
Sample ID : S00T049-SAM

Acquisition date : 17-JAN-2000 16:40:00

Total number of lines in spectrum	6	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	5	83.33%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	1.294E+01	1.294E+01	0.246E+01	19.03	
CS-137	30.00Y	1.00	1.389E+05	1.389E+05	0.002E+05	0.16	
EU-154	8.59Y	1.00	2.120E+01	2.120E+01	1.045E+01	49.29	
~~BI-214~~	~~28700.00D~~	~~1.00~~	~~2.019E+01~~	~~2.019E+01~~	~~1.491E+01~~	~~73.87~~	
			---	---			
Total Activity :			1.390E+05	1.390E+05			
Grand Total Activity :			1.390E+05	1.390E+05			

JAR 19Jan00

Flags: "K" = Keyline not found
"E" = Manually edited
"M" = Manually accepted
"A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T049-SAM

Acquisition date : 17-JAN-2000 16:40:00

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	53503.	477.59	5.3580E+02
NA-24	31.	1368.55	3.6198E+00
K-40	321.	1460.75	1.0135E+02
AR-41	36.	1293.60	5.5332E+00
SC-46	63.	1120.55	4.0447E+00
CR-51	48702.	320.08	3.7137E+02
MN-54	115.	834.83	4.2747E+00
CO-56	92.	846.76	3.9028E+00
CO-58	117.	810.78	4.2390E+00
FE-59	55.	1099.25	6.6239E+00
ZN-65	54.	1115.55	7.3894E+00
SE-75	54332.	264.66	5.8133E+01
KR-85	27685.	514.00	9.7989E+03
SR-85	27684.	514.01	4.4325E+01
Y-88	9.	1836.06	2.5499E+00
Y-91	36.	1204.67	1.1032E+03
NB-94	97.	871.09	4.0749E+00
ZRNB-95	433.	724.20	3.2788E+01
RU-103	33393.	497.08	4.9894E+01
RURH-106	11919.	621.93	6.6231E+02
AG-108m	429.	722.94	7.9295E+00
CD-109	42920.	88.03	1.0359E+03
AG-110M	36336.	657.76	6.3349E+01
SN-113	50028.	391.69	7.0407E+01
TE-123m	54151.	159.00	3.2135E+01
SB-124	12143.	602.73	3.3048E+01
SB-125	57216.	427.89	1.7703E+02
TE-125m	47632.	109.27	1.0443E+04
I-129	37647.	39.60	1.1595E+04
I-131	48007.	364.48	5.1287E+01
XE-131m	54559.	163.93	1.3901E+03
BA-133	47574.	356.02	6.5162E+01
CS-134	12195.	604.70	3.3256E+01
CS-136	102.	818.51	3.9989E+00
CS-138	17.	1435.86	1.2438E+01
CE-139	54801.	165.85	3.4132E+01
BA-140	20215.	537.31	1.5534E+02
LA-140	16.	1596.21	3.1104E+00
CE-141	54084.	145.44	5.6204E+01
CE-144	54233.	133.51	2.4944E+02
CEPR-144	54234.	133.51	4.9844E+02
EU-152	52637.	121.78	1.0023E+02
EU-155	42659.	86.54	1.1723E+02
HF-181	43447.	482.18	6.2627E+01
TA-182	38692.	67.75	1.6132E+02
HG-203	52628.	279.20	4.2789E+01
BI-207	13477.	569.70	3.3177E+01
TL-208	52749.	277.36	5.4982E+02
PB-210	37567.	46.50	7.9943E+03
BI-212	370.	727.18	1.0127E+02
PB-212	58373.	238.63	7.5247E+01

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T049-SAM Acquisition date : 17-JAN-2000 16:40:00

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-214	48027.	351.92	4.6886E+02
RA-224	57691.	240.99	8.3553E+02
RA-226	69448.	186.10	9.0140E+02
AC-228	120.	911.21	1.7524E+01
TH-228	42955.	84.37	3.1990E+03
TH-229	43014.	88.47	1.5023E+02
U-232	37710.	57.78	5.7509E+04
PA-233	49054.	312.17	9.5337E+01
UTH-233	57081.	245.34	3.0036E+04
PA-234M	66.	1001.03	5.8357E+02
TH-234	38142.	63.29	2.1671E+03
U-235	68613.	185.71	5.4500E+01
NP-237	42647.	86.48	3.1048E+02
U-237	45275.	101.07	1.2371E+02
NP-238	65.	984.45	1.3613E+01
NP-239	46380.	106.12	1.3278E+02
PU-239	53455.	129.30	4.3382E+05
AM-241	38234.	59.54	2.8686E+02
AM-243	40680.	74.67	8.6460E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   17-JAN-2000 22:26:53.97                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T000049-DUP
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2370.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:38:44.09 sec
Dead Time:               5.5%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-JAN-2000 19:47:38.53
Decayed to:              17-JAN-2000 19:47:38.53
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 VR
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:52:33.45
*****************************************************************************
```

Removed by: URaymond

Verified by: John Relyea 19 Jan 00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.70*	1757559	1.49	1323.27	1315	16	0.2		CS-137	1.397E+05
0	1173.03	115	1.58	2346.06	2339	12	30.5		CO-60	12.1
0	1274.60	72	1.97	2549.25	2544	12	36.9		EU-154	23.7
0	1323.03	173	1.76	2646.15	2640	16	17.7			
0	1332.49	115	1.48	2665.06	2658	15	23.7		CO-60	13.4

Summary of Nuclide Activity
Sample ID : S00T000049-DUP

Acquisition date : 17-JAN-2000 19:47:38

Total number of lines in spectrum	5	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	4	80.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	1.285E+01	1.285E+01	0.241E+01	18.77	
CS-137	30.00Y	1.00	1.397E+05	1.397E+05	0.002E+05	0.15	
EU-154	8.59Y	1.00	2.370E+01	2.370E+01	0.875E+01	36.93	
			---	---			
Total Activity :			1.397E+05	1.397E+05			

Grand Total Activity :	1.397E+05	1.397E+05

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Page : 3
Sample ID : S00T000049-DUP
Acquisition date : 17-JAN-2000 19:47:38

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	53508.	477.59	5.3583E+02
NA-24	21.	1368.55	3.0392E+00
K-40	334.	1460.75	1.0338E+02
AR-41	23.	1293.60	4.5206E+00
SC-46	87.	1120.55	4.6878E+00
CR-51	48818.	320.08	3.7181E+02
MN-54	102.	834.83	4.0423E+00
CO-56	110.	846.76	4.2402E+00
CO-58	126.	810.78	4.3942E+00
FE-59	54.	1099.25	6.5738E+00
ZN-65	63.	1115.55	7.9510E+00
SE-75	54678.	264.66	5.8317E+01
KR-85	28045.	514.00	9.8622E+03
SR-85	28041.	514.01	4.4609E+01
Y-88	5.	1836.06	2.0770E+00
Y-91	42.	1204.67	1.1757E+03
NB-94	107.	871.09	4.2694E+00
ZRNB-95	445.	724.20	3.3244E+01
RU-103	33738.	497.08	5.0150E+01
RURH-106	11981.	621.93	6.6401E+02
AG-108m	432.	722.94	7.9613E+00
CD-109	43431.	88.03	1.0420E+03
AG-110M	36274.	657.76	6.3294E+01
SN-113	50443.	391.69	7.0697E+01
TE-123m	54774.	159.00	3.2319E+01
SB-124	12248.	602.73	3.3189E+01
SB-125	57218.	427.89	1.7704E+02
TE-125m	47517.	109.27	1.0430E+04
I-129	38168.	39.60	1.1675E+04
I-131	48253.	364.48	5.1418E+01
XE-131m	54807.	163.93	1.3932E+03
BA-133	48428.	356.02	6.5744E+01
CS-134	12315.	604.70	3.3419E+01
CS-136	116.	818.51	4.2534E+00
CS-138	24.	1435.86	1.4612E+01
CE-139	54761.	165.85	3.4120E+01
BA-140	20354.	537.31	1.5587E+02
LA-140	18.	1596.21	3.2881E+00
CE-141	54653.	145.44	5.6499E+01
CE-144	54492.	133.51	2.5003E+02
CEPR-144	54493.	133.51	4.9963E+02
EU-152	52178.	121.78	9.9790E+01
EU-155	43049.	86.54	1.1776E+02
HF-181	43507.	482.18	6.2670E+01
TA-182	39152.	67.75	1.6227E+02
HG-203	52592.	279.20	4.2774E+01
BI-207	13517.	569.70	3.3225E+01
TL-208	52759.	277.36	5.4987E+02
PB-210	37686.	46.50	8.0069E+03
BI-212	414.	727.18	1.0689E+02
PB-212	58183.	238.63	7.5125E+01

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T000049-DUP Acquisition date : 17-JAN-2000 19:47:38

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-214	12434.	609.31	7.3614E+01
PB-214	48385.	351.92	4.7073E+02
RA-224	57815.	240.99	8.3643E+02
RA-226	69848.	186.10	9.0399E+02
AC-228	108.	911.21	1.6680E+01
TH-228	42757.	84.37	3.1916E+03
TH-229	43472.	88.47	1.5103E+02
U-232	37988.	57.78	5.7719E+04
PA-233	49260.	312.17	9.5536E+01
UTH-233	57441.	245.34	3.0130E+04
PA-234M	62.	1001.03	5.6516E+02
TH-234	38404.	63.29	2.1745E+03
U-235	68945.	185.71	5.4631E+01
NP-237	43058.	86.48	3.1197E+02
U-237	45575.	101.07	1.2412E+02
NP-238	58.	984.45	1.2908E+01
NP-239	46709.	106.12	1.3325E+02
PU-239	53851.	129.30	4.3541E+05
AM-241	38030.	59.54	2.8609E+02
AM-243	40999.	74.67	8.6798E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   18-JAN-2000 01:17:34.44                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T000054-SAM
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2371.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:41:03.37 sec
Dead Time:               6.9%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       17-JAN-2000 22:35:58.47
Decayed to:              17-JAN-2000 22:35:58.47
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 VR
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:52:33.45
*****************************************************************************
```

Removed by: Raymond

Verified by: John Relyea 19 Jan 00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.70*	2265284	1.50	1323.29	1315	16	0.1		CS-137	1.800E+05
0	1174.17	62	2.20	2348.34	2340	22	86.5		CO-60	6.54
0	1323.00	270	1.87	2646.07	2636	16	14.3			

Summary of Nuclide Activity
Sample ID : S00T000054-SAM

Acquisition date : 17-JAN-2000 22:35:58

Total number of lines in spectrum	3	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	2	66.67%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
~~CO-60~~	~~5.27Y~~	~~1.00~~	~~6.545E+00~~	~~6.545E+00~~	~~5.662E+00~~	~~86.52~~	JR 19Jan00
CS-137	30.00Y	1.00	1.800E+05	1.800E+05	0.002E+05	0.14	
			---	---			
Total Activity :			1.800E+05	1.800E+05			
Grand Total Activity :			1.800E+05	1.800E+05			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T000054-SAM

Acquisition date : 17-JAN-2000 22:35:58

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	69551.	477.59	6.1071E+02
NA-24	19.	1368.55	2.8847E+00
K-40	323.	1460.75	1.0176E+02
AR-41	27.	1293.60	4.9341E+00
SC-46	98.	1120.55	4.9712E+00
CR-51	62764.	320.08	4.2146E+02
MN-54	134.	834.83	4.5957E+00
CO-56	134.	846.76	4.6538E+00
CO-58	141.	810.78	4.6440E+00
FE-59	51.	1099.25	6.4002E+00
ZN-65	66.	1115.55	8.1001E+00
SE-75	71032.	264.66	6.6449E+01
KR-85	35747.	514.00	1.1130E+04
SR-85	35744.	514.01	5.0345E+01
Y-88	13.	1836.06	3.0004E+00
Y-91	43.	1204.67	1.1877E+03
NB-94	117.	871.09	4.4599E+00
ZRNB-95	621.	724.20	3.9112E+01
RU-103	44086.	497.08	5.7306E+01
RURH-106	15824.	621.93	7.6261E+02
AG-108m	618.	722.94	9.4770E+00
CD-109	55585.	88.03	1.1784E+03
AG-110M	46326.	657.76	7.1504E+01
SN-113	64994.	391.69	8.0225E+01
TE-123m	70680.	159.00	3.6702E+01
SB-124	15903.	602.73	3.7795E+01
SB-125	74534.	427.89	2.0200E+02
TE-125m	61224.	109.27	1.1835E+04
I-129	49034.	39.60	1.3228E+04
I-131	62449.	364.48	5.8480E+01
XE-131m	70441.	163.93	1.5791E+03
BA-133	62245.	356.02	7.4511E+01
CS-134	15752.	604.70	3.7774E+01
CS-136	137.	818.51	4.6109E+00
CS-138	19.	1435.86	1.3282E+01
CE-139	70610.	165.85	3.8733E+01
BA-140	26628.	537.31	1.7820E+02
LA-140	14.	1596.21	2.8988E+00
CE-141	70612.	145.44	6.4202E+01
CE-144	69920.	133.51	2.8314E+02
CEPR-144	69921.	133.51	5.6578E+02
EU-152	67856.	121.78	1.1376E+02
EU-154	58.	1274.51	1.2473E+01
EU-155	55539.	86.54	1.3371E+02
HF-181	56899.	482.18	7.1645E+01
TA-182	50219.	67.75	1.8372E+02
HG-203	68000.	279.20	4.8624E+01
BI-207	17487.	569.70	3.7769E+01
TL-208	68180.	277.36	6.2490E+02
PB-210	48676.	46.50	9.0972E+03
BI-212	560.	727.18	1.2384E+02

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T000054-SAM Acquisition date : 17-JAN-2000 22:35:58

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	75100.	238.63	8.5327E+01
BI-214	15844.	609.31	8.3049E+01
PB-214	61805.	351.92	5.3911E+02
RA-224	74602.	240.99	9.5001E+02
RA-226	89992.	186.10	1.0258E+03
AC-228	127.	911.21	1.8052E+01
TH-228	55088.	84.37	3.6215E+03
TH-229	55759.	88.47	1.7099E+02
U-232	49021.	57.78	6.5544E+04
PA-233	63965.	312.17	1.0883E+02
UTH-233	73879.	245.34	3.4161E+04
PA-234M	75.	1001.03	6.1700E+02
TH-234	49741.	63.29	2.4739E+03
U-235	88564.	185.71	6.1902E+01
NP-237	55537.	86.48	3.5418E+02
U-237	58874.	101.07	1.4103E+02
NP-238	73.	984.45	1.4359E+01
NP-239	60574.	106.12	1.5173E+02
PU-239	69778.	129.30	4.9549E+05
AM-241	49536.	59.54	3.2640E+02
AM-243	52288.	74.67	9.7990E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   18-JAN-2000 07:10:40.70                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T000054-DUP
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2374.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:41:07.54 sec
Dead Time:               6.9%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       18-JAN-2000 04:29:01.11
Decayed to:              18-JAN-2000 04:29:01.11
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 VR
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:52:33.45
*****************************************************************************
```

Removed by:

Verified by: John Relyea 17Jan00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.70*	2276055	1.50	1323.28	1315	17	0.1		CS-137	1.809E+05
0	1173.29	71	0.85	2346.59	2338	15	56.1		CO-60	7.45
0	1323.22	234	1.90	2646.51	2640	14	17.2			
0	1333.38	46	1.70	2666.84	2659	13	60.5		CO-60	5.42

Summary of Nuclide Activity
Page : 2
Sample ID : S00T000054-DUP
Acquisition date : 18-JAN-2000 04:29:01

Total number of lines in spectrum	4	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	3	75.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	6.190E+00	6.191E+00	2.578E+00	41.64	
CS-137	30.00Y	1.00	1.809E+05	1.809E+05	0.002E+05	0.14	
			---	---			
Total Activity :			1.809E+05	1.809E+05			
Grand Total Activity :			1.809E+05	1.809E+05			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T000054-DUP

Acquisition date : 18-JAN-2000 04:29:01

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	70161.	477.59	6.1338E+02
NA-24	16.	1368.55	2.6696E+00
K-40	297.	1460.75	9.7607E+01
AR-41	27.	1293.60	4.8933E+00
SC-46	77.	1120.55	4.4214E+00
CR-51	63904.	320.08	4.2526E+02
MN-54	121.	834.83	4.3868E+00
CO-56	123.	846.76	4.4807E+00
CO-58	130.	810.78	4.4581E+00
FE-59	65.	1099.25	7.1473E+00
ZN-65	60.	1115.55	7.7496E+00
SE-75	71430.	264.66	6.6635E+01
KR-85	36235.	514.00	1.1205E+04
SR-85	36233.	514.01	5.0687E+01
Y-88	9.	1836.06	2.6069E+00
Y-91	41.	1204.67	1.1621E+03
NB-94	123.	871.09	4.5689E+00
ZRNB-95	595.	724.20	3.8291E+01
RU-103	44324.	497.08	5.7459E+01
RURH-106	15783.	621.93	7.6163E+02
AG-108m	592.	722.94	9.2786E+00
CD-109	55790.	88.03	1.1806E+03
AG-110M	46756.	657.76	7.1834E+01
SN-113	65430.	391.69	8.0493E+01
TE-123m	70614.	159.00	3.6685E+01
SB-124	16166.	602.73	3.8105E+01
SB-125	74686.	427.89	2.0220E+02
TE-125m	61651.	109.27	1.1877E+04
I-129	48912.	39.60	1.3212E+04
I-131	62978.	364.48	5.8727E+01
XE-131m	70916.	163.93	1.5844E+03
BA-133	62241.	356.02	7.4509E+01
CS-134	16059.	604.70	3.8137E+01
CS-136	132.	818.51	4.5288E+00
CS-138	19.	1435.86	1.3258E+01
CE-139	71041.	165.85	3.8851E+01
BA-140	26359.	537.31	1.7730E+02
LA-140	13.	1596.21	2.8691E+00
CE-141	70675.	145.44	6.4230E+01
CE-144	70225.	133.51	2.8376E+02
CEPR-144	70224.	133.51	5.6701E+02
EU-152	67581.	121.78	1.1353E+02
EU-154	59.	1274.51	1.2522E+01
EU-155	55548.	86.54	1.3373E+02
HF-181	56928.	482.18	7.1663E+01
TA-182	50576.	67.75	1.8437E+02
HG-203	68310.	279.20	4.8734E+01
BI-207	17991.	569.70	3.8306E+01
TL-208	68242.	277.36	6.2518E+02
PB-210	48274.	46.50	9.0597E+03
BI-212	573.	727.18	1.2529E+02

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T000054-DUP Acquisition date : 18-JAN-2000 04:29:01

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	75397.	238.63	8.5495E+01
BI-214	15891.	609.31	8.3173E+01
PB-214	62594.	351.92	5.4276E+02
RA-224	75320.	240.99	9.5456E+02
RA-226	89884.	186.10	1.0252E+03
AC-228	133.	911.21	1.8452E+01
TH-228	55663.	84.37	3.6403E+03
TH-229	55943.	88.47	1.7127E+02
U-232	49321.	57.78	6.5744E+04
PA-233	64221.	312.17	1.0905E+02
UTH-233	74273.	245.34	3.4252E+04
PA-234M	70.	1001.03	5.9966E+02
TH-234	50063.	63.29	2.4818E+03
U-235	88720.	185.71	6.1956E+01
NP-237	55568.	86.48	3.5428E+02
U-237	58457.	101.07	1.4053E+02
NP-238	78.	984.45	1.4837E+01
NP-239	60502.	106.12	1.5164E+02
PU-239	70150.	129.30	4.9680E+05
AM-241	48966.	59.54	3.2452E+02
AM-243	52633.	74.67	9.8312E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   18-JAN-2000 10:20:39.88                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T055-SAM
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2375.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:41:22.16 sec
Dead Time:               7.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       18-JAN-2000 07:38:44.56
Decayed to:              18-JAN-2000 07:38:44.56
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:52:33.45
*****************************************************************************
```

Removed by: SLHale

Verified by: John Relyea 17Jan00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.69*	2332051	1.50	1323.26	1315	16	0.1		CS-137	1.853E+05
0	1323.01	251	1.80	2646.11	2639	15	14.7			

Summary of Nuclide Activity
Sample ID : S00T055-SAM

Acquisition date : 18-JAN-2000 07:38:44

Total number of lines in spectrum	2	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	1	50.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CS-137	30.00Y	1.00	1.853E+05	1.853E+05	0.002E+05	0.13	
			---	---			
Total Activity :			1.853E+05	1.853E+05			
Grand Total Activity :			1.853E+05	1.853E+05			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T055-SAM

Acquisition date : 18-JAN-2000 07:38:44

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	71621.	477.59	6.1972E+02
NA-24	20.	1368.55	2.9661E+00
K-40	312.	1460.75	9.9930E+01
AR-41	35.	1293.60	5.5515E+00
SC-46	111.	1120.55	5.2617E+00
CR-51	65151.	320.08	4.2938E+02
MN-54	121.	834.83	4.3926E+00
CO-56	121.	846.76	4.4425E+00
CO-58	163.	810.78	4.9708E+00
FE-59	67.	1099.25	7.2512E+00
CO-60	86.	1332.50	5.3357E+00
ZN-65	72.	1115.55	8.4456E+00
SE-75	72448.	264.66	6.7106E+01
KR-85	37269.	514.00	1.1364E+04
SR-85	37267.	514.01	5.1403E+01
Y-88	6.	1836.06	2.2301E+00
Y-91	49.	1204.67	1.2620E+03
NB-94	110.	871.09	4.3343E+00
ZRNB-95	633.	724.20	3.9477E+01
RU-103	45372.	497.08	5.8133E+01
RURH-106	16198.	621.93	7.7153E+02
AG-108m	660.	722.94	9.7861E+00
CD-109	57407.	88.03	1.1975E+03
AG-110M	48572.	657.76	7.3212E+01
SN-113	66634.	391.69	8.1228E+01
TE-123m	72789.	159.00	3.7244E+01
SB-124	16636.	602.73	3.8653E+01
SB-125	76173.	427.89	2.0420E+02
TE-125m	63233.	109.27	1.2028E+04
I-129	50498.	39.60	1.3424E+04
I-131	64355.	364.48	5.9364E+01
XE-131m	72550.	163.93	1.6025E+03
BA-133	63874.	356.02	7.5478E+01
CS-134	16334.	604.70	3.8462E+01
CS-136	157.	818.51	4.9219E+00
CS-138	19.	1435.86	1.3269E+01
CE-139	72468.	165.85	3.9238E+01
BA-140	27068.	537.31	1.7966E+02
LA-140	15.	1596.21	3.0248E+00
CE-141	72404.	145.44	6.5010E+01
CE-144	72262.	133.51	2.8784E+02
CEPR-144	72260.	133.51	5.7515E+02
EU-152	69659.	121.78	1.1526E+02
EU-154	60.	1274.51	1.2692E+01
EU-155	57195.	86.54	1.3569E+02
HF-181	58692.	482.18	7.2762E+01
TA-182	51665.	67.75	1.8634E+02
HG-203	70191.	279.20	4.9399E+01
BI-207	18351.	569.70	3.8686E+01
TL-208	70372.	277.36	6.3484E+02
PB-210	49937.	46.50	9.2141E+03

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T055-SAM Acquisition date : 18-JAN-2000 07:38:44

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BI-212	567.	727.18	1.2465E+02
PB-212	77008.	238.63	8.6401E+01
BI-214	16385.	609.31	8.4450E+01
PB-214	63950.	351.92	5.4936E+02
RA-224	76687.	240.99	9.6319E+02
RA-226	92890.	186.10	1.0422E+03
AC-228	148.	911.21	1.9413E+01
TH-228	56763.	84.37	3.6760E+03
TH-229	57606.	88.47	1.7379E+02
U-232	50295.	57.78	6.6388E+04
PA-233	65732.	312.17	1.1032E+02
UTH-233	76284.	245.34	3.4711E+04
PA-234M	64.	1001.03	5.7252E+02
TH-234	50967.	63.29	2.5041E+03
U-235	91591.	185.71	6.2949E+01
NP-237	57201.	86.48	3.5944E+02
U-237	60794.	101.07	1.4331E+02
NP-238	81.	984.45	1.5042E+01
NP-239	61929.	106.12	1.5342E+02
PU-239	70908.	129.30	4.9947E+05
AM-241	50960.	59.54	3.3104E+02
AM-243	53643.	74.67	9.9248E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   18-JAN-2000 13:18:13.25                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T055-DUP                    Removed by:
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2                           Verified by:
File Number:             dka300:[spec.GEA2]2g2376.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:41:07.32 sec
Dead Time:               6.9%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       18-JAN-2000 10:36:37.05
Decayed to:              18-JAN-2000 10:36:37.05
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:      3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:  3-MAY-1999 14:52:33.45
*****************************************************************************
```

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	188.43	6852	5.39	376.75	371	15	29.1			
0	661.68*	2278851	1.50	1323.23	1315	17	0.1		CS-137	1.811E+05
0	1322.77	260	1.86	2645.62	2636	18	14.6			
0	1332.77	53	1.06	2665.63	2657	15	44.9		CO-60	6.19

Summary of Nuclide Activity
Sample ID : S00T055-DUP Acquisition date : 18-JAN-2000 10:36:37

Total number of lines in spectrum	4	
Number of unidentified lines	2	
Number of lines tentatively identified by NID	2	50.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	6.193E+00	6.193E+00	2.783E+00	44.93	
CS-137	30.00Y	1.00	1.811E+05	1.811E+05	0.002E+05	0.14	
			---	---			
Total Activity :			1.811E+05	1.811E+05			
Grand Total Activity :			1.811E+05	1.811E+05			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T055-DUP

Acquisition date : 18-JAN-2000 10:36:37

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	69887.	477.59	6.1218E+02
NA-24	17.	1368.55	2.7724E+00
K-40	321.	1460.75	1.0137E+02
AR-41	32.	1293.60	5.3251E+00
SC-46	116.	1120.55	5.3836E+00
CR-51	63284.	320.08	4.2320E+02
MN-54	112.	834.83	4.2311E+00
CO-56	126.	846.76	4.5198E+00
CO-58	139.	810.78	4.6135E+00
FE-59	63.	1099.25	7.0678E+00
ZN-65	71.	1115.55	8.3963E+00
SE-75	70235.	264.66	6.6076E+01
KR-85	36336.	514.00	1.1221E+04
SR-85	36332.	514.01	5.0756E+01
Y-88	14.	1836.06	3.1538E+00
Y-91	37.	1204.67	1.1155E+03
NB-94	112.	871.09	4.3627E+00
ZRNB-95	585.	724.20	3.7991E+01
RU-103	43880.	497.08	5.7172E+01
RURH-106	15846.	621.93	7.6314E+02
AG-108m	614.	722.94	9.4468E+00
CD-109	55733.	88.03	1.1800E+03
AG-110M	48752.	657.76	7.3347E+01
SN-113	65296.	391.69	8.0410E+01
TE-123m	70437.	159.00	3.6639E+01
SB-124	16128.	602.73	3.8060E+01
SB-125	74652.	427.89	2.0216E+02
TE-125m	61668.	109.27	1.1878E+04
I-129	49102.	39.60	1.3238E+04
I-131	63239.	364.48	5.8848E+01
XE-131m	70902.	163.93	1.5843E+03
BA-133	62211.	356.02	7.4491E+01
CS-134	16157.	604.70	3.8253E+01
CS-136	127.	818.51	4.4421E+00
CS-138	25.	1435.86	1.5106E+01
CE-139	71300.	165.85	3.8921E+01
BA-140	26535.	537.31	1.7789E+02
LA-140	14.	1596.21	2.9735E+00
CE-141	70915.	145.44	6.4339E+01
CE-144	70585.	133.51	2.8448E+02
CEPR-144	70585.	133.51	5.6846E+02
EU-152	67363.	121.78	1.1335E+02
EU-154	53.	1274.51	1.1998E+01
EU-155	55878.	86.54	1.3412E+02
HF-181	56905.	482.18	7.1649E+01
TA-182	50491.	67.75	1.8422E+02
HG-203	68495.	279.20	4.8800E+01
BI-207	17708.	569.70	3.8005E+01
TL-208	68948.	277.36	6.2840E+02
PB-210	48584.	46.50	9.0886E+03
BI-212	567.	727.18	1.2459E+02

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T055-DUP Acquisition date : 18-JAN-2000 10:36:37

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	75673.	238.63	8.5650E+01
BI-214	16210.	609.31	8.4000E+01
PB-214	62300.	351.92	5.4147E+02
RA-224	75318.	240.99	9.5455E+02
RA-226	90704.	186.10	1.0299E+03
AC-228	139.	911.21	1.8849E+01
TH-228	55394.	84.37	3.6315E+03
TH-229	55780.	88.47	1.7102E+02
U-232	49343.	57.78	6.5759E+04
PA-233	64440.	312.17	1.0924E+02
UTH-233	74458.	245.34	3.4294E+04
PA-234M	74.	1001.03	6.1267E+02
TH-234	50035.	63.29	2.4811E+03
U-235	89499.	185.71	6.2227E+01
NP-237	55902.	86.48	3.5534E+02
U-237	58616.	101.07	1.4073E+02
NP-238	62.	984.45	1.3326E+01
NP-239	60503.	106.12	1.5164E+02
PU-239	69812.	129.30	4.9561E+05
AM-241	49063.	59.54	3.2484E+02
AM-243	52874.	74.67	9.8536E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   18-JAN-2000 17:42:55.91                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T056-SAM
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2380.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:41:18.80 sec
Dead Time:               7.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       18-JAN-2000 15:01:06.84
Decayed to:              18-JAN-2000 15:01:06.84
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 SLH2
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:52:33.45
*****************************************************************************
```

Removed by:

Verified by: John Relyea 19Jan00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	27.52	6553	1.50	54.98	54	5	10.5			
4	36.90*	931	1.14	73.72	70	7	97.7	3.36E+00		
0	661.67*	2321741	1.50	1323.21	1315	16	0.1		CS-137	1.845E+05
0	1323.18	253	2.24	2646.45	2635	20	17.6			
0	1460.82*	27	2.48	2921.80	2914	18	150.4		K-40	32.1

Summary of Nuclide Activity
Sample ID : S00T056-SAM

Acquisition date : 18-JAN-2000 15:01:06

Total number of lines in spectrum	5	
Number of unidentified lines	3	
Number of lines tentatively identified by NID	2	40.00%

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
~~K-40~~	~~1.28E+09Y~~	~~1.00~~	~~3.205E+01~~	~~3.205E+01~~	~~4.821E+01~~	~~150.40~~	JTQ
CS-137	30.00Y	1.00	1.845E+05	1.845E+05	0.002E+05	0.13	17Jan00
		Total Activity :	1.845E+05	1.845E+05			
		Grand Total Activity :	1.845E+05	1.845E+05			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T056-SAM

Acquisition date : 18-JAN-2000 15:01:06

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	71255.	477.59	6.1813E+02
NA-24	20.	1368.55	2.9513E+00
AR-41	21.	1293.60	4.3608E+00
SC-46	93.	1120.55	4.8482E+00
CR-51	64593.	320.08	4.2755E+02
MN-54	127.	834.83	4.4824E+00
CO-56	133.	846.76	4.6378E+00
CO-58	157.	810.78	4.8846E+00
FE-59	68.	1099.25	7.2984E+00
CO-60	94.	1332.50	5.5602E+00
ZN-65	86.	1115.55	9.1557E+00
SE-75	71835.	264.66	6.6823E+01
KR-85	37219.	514.00	1.1356E+04
SR-85	37214.	514.01	5.1367E+01
Y-88	4.	1836.06	1.8789E+00
Y-91	53.	1204.67	1.3166E+03
NB-94	134.	871.09	4.7550E+00
ZRNB-95	601.	724.20	3.8492E+01
RU-103	45072.	497.08	5.7941E+01
RURH-106	16210.	621.93	7.7180E+02
AG-108m	654.	722.94	9.7401E+00
CD-109	57524.	88.03	1.1987E+03
AG-110M	50354.	657.76	7.4540E+01
SN-113	66756.	391.69	8.1302E+01
TE-123m	72413.	159.00	3.7148E+01
SB-124	16390.	602.73	3.8367E+01
SB-125	75842.	427.89	2.0376E+02
TE-125m	63260.	109.27	1.2030E+04
I-129	49499.	39.60	1.3291E+04
I-131	63838.	364.48	5.9126E+01
XE-131m	72299.	163.93	1.5998E+03
BA-133	63328.	356.02	7.5155E+01
CS-134	16297.	604.70	3.8418E+01
CS-136	120.	818.51	4.3264E+00
CS-138	15.	1435.86	1.2066E+01
CE-139	72448.	165.85	3.9233E+01
BA-140	27293.	537.31	1.8040E+02
LA-140	12.	1596.21	2.7569E+00
CE-141	72605.	145.44	6.5100E+01
CE-144	71797.	133.51	2.8691E+02
CEPR-144	71799.	133.51	5.7332E+02
EU-152	69585.	121.78	1.1520E+02
EU-154	60.	1274.51	1.2659E+01
EU-155	57328.	86.54	1.3585E+02
HF-181	58224.	482.18	7.2472E+01
TA-182	51771.	67.75	1.8653E+02
HG-203	69662.	279.20	4.9213E+01
BI-207	18195.	569.70	3.8522E+01
TL-208	69900.	277.36	6.3271E+02
PB-210	49863.	46.50	9.2072E+03
BI-212	599.	727.18	1.2804E+02

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T056-SAM Acquisition date : 18-JAN-2000 15:01:06

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	76897.	238.63	8.6339E+01
BI-214	16241.	609.31	8.4078E+01
PB-214	63832.	351.92	5.4868E+02
RA-224	76786.	240.99	9.6381E+02
RA-226	92082.	186.10	1.0376E+03
AC-228	138.	911.21	1.8731E+01
TH-228	57026.	84.37	3.6845E+03
TH-229	57332.	88.47	1.7338E+02
U-232	50319.	57.78	6.6404E+04
PA-233	65235.	312.17	1.0991E+02
UTH-233	75841.	245.34	3.4610E+04
PA-234M	57.	1001.03	5.4240E+02
TH-234	50823.	63.29	2.5005E+03
U-235	90882.	185.71	6.2705E+01
NP-237	57309.	86.48	3.5977E+02
U-237	60119.	101.07	1.4251E+02
NP-238	65.	984.45	1.3560E+01
NP-239	61898.	106.12	1.5338E+02
PU-239	71153.	129.30	5.0033E+05
AM-241	50136.	59.54	3.2836E+02
AM-243	53873.	74.67	9.9461E+01

```
*************************************************************************
* 222-S Laboratory Counting Room   18-JAN-2000 21:37:14.38              *
*************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T000056-DUP
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2382.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:41:08.82 sec
Dead Time:               6.9%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       18-JAN-2000 18:55:38.23
Decayed to:              18-JAN-2000 18:55:38.23
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 GL
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:52:33.45
*************************************************************************
```

Removed by:

Verified by: John Relyea 19 Jan 00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.67*	2287026	1.50	1323.21	1315	17	0.1		CS-137	1.818E+05
0	1173.63	78	1.91	2347.26	2338	17	52.3		CO-60	8.20
0	1323.00	252	1.94	2646.08	2638	19	17.1			
0	1332.13	79	1.44	2664.35	2657	14	24.7		CO-60	9.18

Summary of Nuclide Activity
Sample ID : S00T000056-DUP

Acquisition date : 18-JAN-2000 18:55:38

Total number of lines in spectrum	4	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	3	75.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	8.963E+00	8.963E+00	2.002E+00	22.34	
CS-137	30.00Y	1.00	1.818E+05	1.818E+05	0.002E+05	0.14	
			---	---			
	Total Activity :		1.818E+05	1.818E+05			
	Grand Total Activity :		1.818E+05	1.818E+05			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T000056-DUP

Acquisition date : 18-JAN-2000 18:55:38

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	70288.	477.59	6.1394E+02
NA-24	15.	1368.55	2.6419E+00
K-40	319.	1460.75	1.0112E+02
AR-41	35.	1293.60	5.5280E+00
SC-46	92.	1120.55	4.8215E+00
CR-51	64197.	320.08	4.2623E+02
MN-54	131.	834.83	4.5605E+00
CO-56	125.	846.76	4.5067E+00
CO-58	172.	810.78	5.0938E+00
FE-59	60.	1099.25	6.8902E+00
ZN-65	67.	1115.55	8.1530E+00
SE-75	71538.	264.66	6.6685E+01
KR-85	36399.	514.00	1.1231E+04
SR-85	36395.	514.01	5.0800E+01
Y-88	3.	1836.06	1.6839E+00
Y-91	46.	1204.67	1.2311E+03
NB-94	118.	871.09	4.4868E+00
ZRNB-95	608.	724.20	3.8699E+01
RU-103	44289.	497.08	5.7437E+01
RURH-106	15888.	621.93	7.6412E+02
AG-108m	606.	722.94	9.3831E+00
CD-109	56191.	88.03	1.1848E+03
AG-110M	49658.	657.76	7.4024E+01
SN-113	65487.	391.69	8.0527E+01
TE-123m	71384.	159.00	3.6884E+01
SB-124	15817.	602.73	3.7693E+01
SB-125	74646.	427.89	2.0215E+02
TE-125m	62130.	109.27	1.1922E+04
I-129	49272.	39.60	1.3261E+04
I-131	63014.	364.48	5.8744E+01
XE-131m	71614.	163.93	1.5922E+03
BA-133	62694.	356.02	7.4779E+01
CS-134	15989.	604.70	3.8055E+01
CS-136	145.	818.51	4.7396E+00
CS-138	17.	1435.86	1.2725E+01
CE-139	71184.	165.85	3.8890E+01
BA-140	26692.	537.31	1.7841E+02
LA-140	10.	1596.21	2.5550E+00
CE-141	70915.	145.44	6.4339E+01
CE-144	70716.	133.51	2.8475E+02
CEPR-144	70718.	133.51	5.6899E+02
EU-152	67976.	121.78	1.1386E+02
EU-154	49.	1274.51	1.1554E+01
EU-155	55955.	86.54	1.3421E+02
HF-181	56993.	482.18	7.1704E+01
TA-182	50837.	67.75	1.8485E+02
HG-203	68868.	279.20	4.8933E+01
BI-207	17814.	569.70	3.8118E+01
TL-208	69024.	277.36	6.2874E+02
PB-210	48403.	46.50	9.0717E+03
BI-212	610.	727.18	1.2919E+02

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T000056-DUP Acquisition date : 18-JAN-2000 18:55:38

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	75467.	238.63	8.5534E+01
BI-214	16105.	609.31	8.3727E+01
PB-214	62154.	351.92	5.4092E+02
RA-224	75339.	240.99	9.5468E+02
RA-226	90658.	186.10	1.0296E+03
AC-228	130.	911.21	1.8219E+01
TH-228	55403.	84.37	3.6318E+03
TH-229	56216.	88.47	1.7168E+02
U-232	49102.	57.78	6.5598E+04
PA-233	64138.	312.17	1.0898E+02
UTH-233	74546.	245.34	3.4314E+04
PA-234M	70.	1001.03	5.9937E+02
TH-234	50043.	63.29	2.4813E+03
U-235	89376.	185.71	6.2184E+01
NP-237	55962.	86.48	3.5553E+02
U-237	58974.	101.07	1.4115E+02
NP-238	66.	984.45	1.3687E+01
NP-239	60887.	106.12	1.5212E+02
PU-239	69825.	129.30	4.9565E+05
AM-241	49584.	59.54	3.2655E+02
AM-243	53116.	74.67	9.8761E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   19-JAN-2000 00:26:47.67                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:              32107
Sample ID:               S00T000057-SAM
Sample Size:             2.50000E-04 L
Dilution Factor:         1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:             GEA2
File Number:             dka300:[spec.GEA2]2g2383.cnf
Geometry:                43
Count Time:              0 02:30:00.00 sec
Real Time:               0 02:41:14.76 sec
Dead Time:               7.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:       18-JAN-2000 21:45:01.93
Decayed to:              18-JAN-2000 21:45:01.93
Standard Deviations:     2
Analysis Library:        ENVGEA
Analyst:                 GL
Background Subtract:     DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:       3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:   3-MAY-1999 14:52:33.45
*****************************************************************************
```

Removed by:

Verified by: John Relyea 19 Jan 00

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.67*	2301268	1.50	1323.22	1315	17	0.1		CS-137	1.829E+05
0	1173.32	78	1.80	2346.66	2341	12	38.0		CO-60	8.27
0	1322.88	255	2.03	2645.84	2639	16	14.4			
0	1332.23	71	1.26	2664.55	2658	14	36.4		CO-60	8.24

Summary of Nuclide Activity
Sample ID : S00T000057-SAM

Acquisition date : 18-JAN-2000 21:45:01

Total number of lines in spectrum	4	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	3	75.00%

Nuclide Type :

Nuclide	Hlife	Decay	Wtd Mean Uncorrected uCi/L	Wtd Mean Decay Corr uCi/L	Decay Corr 2-Sigma Error	2-Sigma %Error	Flags
CO-60	5.27Y	1.00	8.253E+00	8.253E+00	2.170E+00	26.29	
CS-137	30.00Y	1.00	1.829E+05	1.829E+05	0.002E+05	0.14	
			---	---			
Total Activity :			1.829E+05	1.829E+05			
Grand Total Activity :			1.829E+05	1.829E+05			

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T000057-SAM

Acquisition date : 18-JAN-2000 21:45:01

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	70324.	477.59	6.1409E+02
NA-24	23.	1368.55	3.1471E+00
K-40	289.	1460.75	9.6306E+01
AR-41	32.	1293.60	5.2835E+00
SC-46	101.	1120.55	5.0407E+00
CR-51	64585.	320.08	4.2752E+02
MN-54	150.	834.83	4.8508E+00
CO-56	121.	846.76	4.4316E+00
CO-58	114.	810.78	4.1950E+00
FE-59	68.	1099.25	7.2805E+00
ZN-65	67.	1115.55	8.1572E+00
SE-75	71822.	264.66	6.6817E+01
KR-85	36626.	514.00	1.1266E+04
SR-85	36622.	514.01	5.0958E+01
Y-88	8.	1836.06	2.4310E+00
Y-91	41.	1204.67	1.1718E+03
NB-94	122.	871.09	4.5482E+00
ZRNB-95	584.	724.20	3.7939E+01
RU-103	44300.	497.08	5.7444E+01
RURH-106	15659.	621.93	7.5863E+02
AG-108m	621.	722.94	9.5009E+00
CD-109	56834.	88.03	1.1916E+03
AG-110M	49738.	657.76	7.4083E+01
SN-113	65851.	391.69	8.0751E+01
TE-123m	71708.	159.00	3.6967E+01
SB-124	16446.	602.73	3.8431E+01
SB-125	75085.	427.89	2.0274E+02
TE-125m	62614.	109.27	1.1969E+04
I-129	49330.	39.60	1.3268E+04
I-131	63842.	364.48	5.9128E+01
XE-131m	71312.	163.93	1.5888E+03
BA-133	63050.	356.02	7.4990E+01
CS-134	16313.	604.70	3.8436E+01
CS-136	152.	818.51	4.8353E+00
CS-138	17.	1435.86	1.2853E+01
CE-139	71775.	165.85	3.9050E+01
BA-140	26811.	537.31	1.7881E+02
LA-140	13.	1596.21	2.8268E+00
CE-141	71925.	145.44	6.4795E+01
CE-144	71360.	133.51	2.8604E+02
CEPR-144	71360.	133.51	5.7157E+02
EU-152	68875.	121.78	1.1461E+02
EU-154	55.	1274.51	1.2194E+01
EU-155	56219.	86.54	1.3453E+02
HF-181	57996.	482.18	7.2330E+01
TA-182	51221.	67.75	1.8554E+02
HG-203	69055.	279.20	4.8999E+01
BI-207	17745.	569.70	3.8045E+01
TL-208	69320.	277.36	6.3009E+02
PB-210	49301.	46.50	9.1554E+03
BI-212	559.	727.18	1.2374E+02

Minimum Detectable Activity Report (continued)
Sample ID : S00T000057-SAM Acquisition date : 18-JAN-2000 21:45:01

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-212	76684.	238.63	8.6220E+01
BI-214	16171.	609.31	8.3899E+01
PB-214	62827.	351.92	5.4414E+02
RA-224	76213.	240.99	9.6020E+02
RA-226	91229.	186.10	1.0328E+03
AC-228	126.	911.21	1.7968E+01
TH-228	55943.	84.37	3.6494E+03
TH-229	56787.	88.47	1.7255E+02
U-232	49367.	57.78	6.5775E+04
PA-233	64713.	312.17	1.0947E+02
UTH-233	74983.	245.34	3.4414E+04
PA-234M	85.	1001.03	6.5705E+02
TH-234	50009.	63.29	2.4805E+03
U-235	90104.	185.71	6.2437E+01
NP-237	56226.	86.48	3.5637E+02
U-237	59845.	101.07	1.4219E+02
NP-238	90.	984.45	1.5847E+01
NP-239	61066.	106.12	1.5234E+02
PU-239	70793.	129.30	4.9907E+05
AM-241	49746.	59.54	3.2709E+02
AM-243	53599.	74.67	9.9208E+01

```
*****************************************************************************
* 222-S Laboratory Counting Room   19-JAN-2000 07:32:08.87                  *
*****************************************************************************
      >>>>>>>>>> SAMPLE INFORMATION <<<<<<<<<<
Worklist #:             32107
Sample ID:              S00T57-DUP
Sample Size:            2.50000E-04 L
Dilution Factor:        1.10000E+01

      >>>>>>>>>> COUNT INFORMATION <<<<<<<<<<
Detector ID:            GEA2
File Number:            dka300:[spec.GEA2]2g2388.cnf
Geometry:               43
Count Time:             0 02:30:00.00 sec
Real Time:              0 02:41:13.49 sec
Dead Time:              7.0%

      >>>>>>>>>> ANALYSIS INFORMATION <<<<<<<<<<
Sample Count Time:      19-JAN-2000 04:50:25.30
Decayed to:             19-JAN-2000 04:50:25.30
Standard Deviations:    2
Analysis Library:       ENVGEA
Analyst:                MB
Background Subtract:    DKA300:[SPEC.GEA2]2GBACK

      >>>>>>>>>> CALIBRATION INFORMATION <<<<<<<<<<
 Date of last energy calibration:      3-MAY-1999 14:49:30.70
 Date of last efficiency calibration:  3-MAY-1999 14:52:33.45
*****************************************************************************
```

Removed by:

Verified by: John Relyea 19 Jan 2000

Post-NID Peak Search Report

It	Energy	Area	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides	Activity uCi/L
0	661.67*	2300950	1.50	1323.22	1315	17	0.1		CS-137	1.829E+05
0	1172.95	82	2.02	2345.92	2337	20	53.3		CO-60	8.63
0	1322.92	269	2.09	2645.92	2636	19	16.4			
0	1460.97*	38	1.89	2922.10	2916	14	117.8		K-40	45.3
0	1763.84*	17	2.73	3528.05	3518	16	102.5		BI-214	16.3

Summary of Nuclide Activity
Sample ID : S00T57-DUP

Acquisition date : 19-JAN-2000 04:50:25

Total number of lines in spectrum	5	
Number of unidentified lines	1	
Number of lines tentatively identified by NID	4	80.00%

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
~~K-40~~	~~1.28E+09Y~~	~~1.00~~	~~4.526E+01~~	~~4.526E+01~~	~~5.333E+01~~	~~117.81~~	JAR
~~CO-60~~	~~5.27Y~~	~~1.00~~	~~8.625E+00~~	~~8.625E+00~~	~~4.594E+00~~	~~53.26~~	JAR
CS-137	30.00Y	1.00	1.829E+05	1.829E+05	0.002E+05	0.14	
~~BI-214~~	~~28700.00D~~	~~1.00~~	~~1.629E+01~~	~~1.629E+01~~	~~1.670E+01~~	~~102.53~~	JAR 19 Jan 00
			---	---			
	Total Activity :		1.829E+05	1.829E+05			

Grand Total Activity : 1.829E+05 1.829E+05

Flags: "K" = Keyline not found "M" = Manually accepted
"E" = Manually edited "A" = Nuclide specific abn. limit

Minimum Detectable Activity Report
Sample ID : S00T57-DUP Acquisition date : 19-JAN-2000 04:50:25

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
BE-7	70941.	477.59	6.1677E+02
NA-24	14.	1368.55	2.5798E+00
AR-41	41.	1293.60	5.9606E+00
SC-46	84.	1120.55	4.6152E+00
CR-51	64494.	320.08	4.2722E+02
MN-54	124.	834.83	4.4365E+00
CO-56	128.	846.76	4.5509E+00
CO-58	137.	810.78	4.5722E+00
FE-59	54.	1099.25	6.5835E+00
ZN-65	66.	1115.55	8.1237E+00
SE-75	71830.	264.66	6.6820E+01
KR-85	36547.	514.00	1.1253E+04
SR-85	36542.	514.01	5.0903E+01
Y-88	7.	1836.06	2.4053E+00
Y-91	42.	1204.67	1.1845E+03
NB-94	119.	871.09	4.4945E+00
ZRNB-95	655.	724.20	4.0125E+01
RU-103	44867.	497.08	5.7809E+01
RURH-106	16047.	621.93	7.6793E+02
AG-108m	647.	722.94	9.6930E+00
CD-109	56515.	88.03	1.1882E+03
AG-110M	49780.	657.76	7.4114E+01
SN-113	65953.	391.69	8.0813E+01
TE-123m	71108.	159.00	3.6813E+01
SB-124	16176.	602.73	3.8117E+01
SB-125	75220.	427.89	2.0292E+02
TE-125m	62566.	109.27	1.1964E+04
I-129	49971.	39.60	1.3354E+04
I-131	63630.	364.48	5.9030E+01
XE-131m	71721.	163.93	1.5934E+03
BA-133	62736.	356.02	7.4804E+01
CS-134	16374.	604.70	3.8509E+01
CS-136	155.	818.51	4.8944E+00
CS-138	19.	1435.86	1.3295E+01
CE-139	71383.	165.85	3.8944E+01
BA-140	26965.	537.31	1.7932E+02
LA-140	9.	1596.21	2.3787E+00
CE-141	71756.	145.44	6.4719E+01
CE-144	71162.	133.51	2.8564E+02
CEPR-144	71162.	133.51	5.7078E+02
EU-152	68417.	121.78	1.1423E+02
EU-154	54.	1274.51	1.2070E+01
EU-155	56034.	86.54	1.3431E+02
HF-181	57420.	482.18	7.1971E+01
TA-182	51221.	67.75	1.8554E+02
HG-203	69103.	279.20	4.9016E+01
BI-207	17822.	569.70	3.8126E+01
TL-208	69176.	277.36	6.2944E+02
PB-210	49279.	46.50	9.1533E+03
BI-212	584.	727.18	1.2641E+02
PB-212	76837.	238.63	8.6305E+01

Minimum Detectable Activity Report (continued) Page : 4
Sample ID : S00T57-DUP Acquisition date : 19-JAN-2000 04:50:25

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/L)
PB-214	63087.	351.92	5.4520E+02
RA-224	76145.	240.99	9.5977E+02
RA-226	91477.	186.10	1.0342E+03
AC-228	137.	911.21	1.8700E+01
TH-228	56237.	84.37	3.6590E+03
TH-229	56782.	88.47	1.7254E+02
U-232	50058.	57.78	6.6232E+04
PA-233	65154.	312.17	1.0984E+02
UTH-233	75140.	245.34	3.4450E+04
PA-234M	85.	1001.03	6.5431E+02
TH-234	50234.	63.29	2.4861E+03
U-235	90274.	185.71	6.2496E+01
NP-237	56039.	86.48	3.5577E+02
U-237	59636.	101.07	1.4194E+02
NP-238	78.	984.45	1.4768E+01
NP-239	60906.	106.12	1.5214E+02
PU-239	71012.	129.30	4.9984E+05
AM-241	50032.	59.54	3.2802E+02
AM-243	53744.	74.67	9.9342E+01

worklistdata2 Version 3.0 01/04/99
01/18/00 08:26

LABCORE Completed Worklist Report for Worklist# 32106

Analyst: crj **Instrument:** AB10 **Book#:** _____

Method: LA-220-101 Rev/Mod E-5

Worklist Comment: SY-102 GRAB 5 FOR @SR90-01 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0	@SR90-01	SR90-01	LIQUID	8.24E-04	8.02E-4	97.330	% Recovery
1	STD		0	@SR90-01	SR90-01C	LIQUID	100	9.03E+01	90.300	% Recovery
1	STD		0	@SR90-01	SR90-01E	LIQUID	1.00	2.26E+00	2.260	% Ct. Erro
2	BLNK		0	@SR90-01	SR90-01	LIQUID	1	2.13E-2	0.021	uCi/mL
2	BLNK		0	@SR90-01	SR90-01C	LIQUID	100	9.01E+01	90.100	% Recovery
2	BLNK		0	@SR90-01	SR90-01E	LIQUID	1.00	1.26E+02	126.000	uCi/mL
3	BLNK/BKG		0	@SR90-01	SR90-01	LIQUID	1	1.28E+00	1.280	BLNK/BKG
4	SAMPLE	S00T000049	0	@SR90-01	SR90-01	LIQUID	N/A	6.13E+00	3.61e-002	uCi/mL
4	SAMPLE	S00T000049	0	@SR90-01	SR90-01C	LIQUID	N/A	8.83E+01		% Recovery
4	SAMPLE	S00T000049	0	@SR90-01	SR90-01E	LIQUID	N/A	2.64E+00		% Ct. Error
5	DUP	S00T000049	0	@SR90-01	SR90-01	LIQUID	6.13E+0	5.95E+0	2.980	RPD
5	DUP	S00T000049	0	@SR90-01	SR90-01C	LIQUID	100	9.01E+01	90.100	% Recovery
5	DUP	S00T000049	0	@SR90-01	SR90-01E	LIQUID	1.00	2.65E+00	2.650	% Cnt Err
6	SAMPLE	S00T000054	0	@SR90-01	SR90-01	LIQUID	N/A	2.67E+00	3.54e-002	uCi/mL
6	SAMPLE	S00T000054	0	@SR90-01	SR90-01C	LIQUID	N/A	8.98E+01		% Recovery
6	SAMPLE	S00T000054	0	@SR90-01	SR90-01E	LIQUID	N/A	4.02E+00		% Ct. Error
7	DUP	S00T000054	0	@SR90-01	SR90-01	LIQUID	2.67E+0	2.63E+0	1.509	RPD
7	DUP	S00T000054	0	@SR90-01	SR90-01C	LIQUID	100	8.97E+01	89.700	% Recovery
7	DUP	S00T000054	0	@SR90-01	SR90-01E	LIQUID	1.00	4.05E+00	4.050	% Cnt Err
8	SAMPLE	S00T000055	0	@SR90-01	SR90-01	LIQUID	N/A	2.25E+00	3.48e-002	uCi/mL
8	SAMPLE	S00T000055	0	@SR90-01	SR90-01C	LIQUID	N/A	9.08E+01		% Recovery
8	SAMPLE	S00T000055	0	@SR90-01	SR90-01E	LIQUID	N/A	4.36E+00		% Ct. Error
9	DUP	S00T000055	0	@SR90-01	SR90-01	LIQUID	2.25E+0	2.33E+0	3.493	RPD
9	DUP	S00T000055	0	@SR90-01	SR90-01C	LIQUID	100	9.04E+01	90.400	% Recovery
9	DUP	S00T000055	0	@SR90-01	SR90-01E	LIQUID	1.00	4.30E+00	4.300	% Cnt Err
10	SAMPLE	S00T000056	0	@SR90-01	SR90-01	LIQUID	N/A	2.42E+00	3.52e-002	uCi/mL
10	SAMPLE	S00T000056	0	@SR90-01	SR90-01C	LIQUID	N/A	8.95E+01		% Recovery
10	SAMPLE	S00T000056	0	@SR90-01	SR90-01E	LIQUID	N/A	4.23E+00		% Ct. Error
11	DUP	S00T000056	0	@SR90-01	SR90-01	LIQUID	2.42E+0	2.31E+0	4.651	RPD
11	DUP	S00T000056	0	@SR90-01	SR90-01C	LIQUID	100	8.97E+01	89.700	% Recovery
11	DUP	S00T000056	0	@SR90-01	SR90-01E	LIQUID	1.00	4.33E+00	4.330	% Cnt Err
12	SAMPLE	S00T000057	0	@SR90-01	SR90-01	LIQUID	N/A	2.11E+00	3.48e-002	uCi/mL
12	SAMPLE	S00T000057	0	@SR90-01	SR90-01C	LIQUID	N/A	9.03E+01		% Recovery
12	SAMPLE	S00T000057	0	@SR90-01	SR90-01E	LIQUID	N/A	4.52E+00		% Ct. Error
13	DUP	S00T000057	0	@SR90-01	SR90-01	LIQUID	2.11E+0	2.28E+0	7.745	RPD
13	DUP	S00T000057	0	@SR90-01	SR90-01C	LIQUID	100	8.95E+01	89.500	% Recovery
13	DUP	S00T000057	0	@SR90-01	SR90-01E	LIQUID	1.00	4.36E+00	4.360	% Cnt Err

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

LABCORE Completed Worklist Report for Worklist# 32106

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

Final page for worklist# 32106

Analyst Signature Date

Analyst Signature Date

Reviewer Signature Date 18 Jan 00

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

LABCORE Data Entry Template for Worklist# 32106

Analyst: CRJ **Instrument:** AB00 #10 **Book#** 46857

Method: LA-220-101 Rev/Mod E-5

Worklist Comment: SY-102 GRAB 5 FOR @SR90-01 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@SR90-01	LIQUID		
2	BLNK				@SR90-01	LIQUID		
3	BLNK/BKG				@SR90-01	LIQUID		
4	SAMPLE	S00T000049	0		@SR90-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
5	DUP	S00T000049	0		@SR90-01	LIQUID		
6	SAMPLE	S00T000054	0		@SR90-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
7	DUP	S00T000054	0		@SR90-01	LIQUID		
8	SAMPLE	S00T000055	0		@SR90-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
9	DUP	S00T000055	0		@SR90-01	LIQUID		
10	SAMPLE	S00T000056	0		@SR90-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
11	DUP	S00T000056	0		@SR90-01	LIQUID		
12	SAMPLE	S00T000057	0		@SR90-01	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: SR90-01 , SR90-01C, SR90-01E							
13	DUP	S00T000057	0		@SR90-01	LIQUID		

Final page for worklist # 32106

Signature Date 1/17/2000

Signature Date 1.18.00

1/18/00

Data Entry Comments:

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
	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
STD	TOTAL COUNTS	(TC)	7757	GROSS WEIGHT	(W2)		7.5476
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.4573
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0903
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		10.37
@SR90-01	DILUTION FACTOR	(DF)	1				
	DIGEST DILUTION FACTOR	DDF	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	768.50	SR-90 EFFICIENCY FACTO	(C1)		0.4279
	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:13	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	23:35	Sr-89/90 CONC. in µCi/L			8.0155E-01
	DATE OF COUNT	(DOC)	01/17/2000				
N/A	STANDARD BOOK #		46B57				
	STANDARD VALUE in µCi/mL		8.2364E-04				

WL32106-STD

WB26870

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/mL REPLACE RS WITH RMAX IF RS<=LcAND RS>=0 OR REPLACE RS WITH Lc IF RS<0

SLH2

RS*DF*DDF*1000/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

SAC

Relative Counting Error = The Square Root of ((TC + BKG * CT) / (TC - BKG * CT)*1.96)

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

CRJ

NOTE: Expected weight = CVA * 0.1

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

01/18/2000

*Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100*

01/17/2000	Sr-89/90 CONCENTRATION	8.02E-04	µCi/mL	DETECTION LEVEL
04:00 PM	RELATIVE COUNTING ERROR	2.3%		3.47E-06 µCi/L
SY-102 GRAB5	PERCENT CARRIER RECOVERY	90.3%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

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
	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
BLNK	TOTAL COUNTS	(TC)	92	GROSS WEIGHT	(W2)		7.5075
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.4774
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0901
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		10.53
@SR90-01	DILUTION FACTOR	DF	10201				
	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	2.00	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
	CRITICAL LEVEL	(Lc)	1.82	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:13	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	23:45	Sr-89/90 CONC in µCi/L			2.1293E+01
	DATE OF COUNT	(DOC)	01/17/2000				
N/A							

WL32106-BLNK

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

WB26870 Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

SLH2 NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

SAC Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

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

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

01/18/2000

				DETECTION LEVEL
01/17/2000	Sr-89/90 CONCENTRATION	2.13E-02	µCi/mL	
04:00 PM	RELATIVE COUNTING ERROR	125.5%		3.54E-02 µCi/mL
SY-102 GRAB5	PERCENT CARRIER RECOVERY	90.1%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

BLANK.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM4

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)	5723	GROSS WEIGHT	(W2)		7.7573
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.6790
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0883
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		10.70
@SR90-01	DILUTION FACTOR	DF	10201				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	565.10	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
Batch Number	CRITICAL LEVEL	(Lc)	1.82	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:13	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	23:55	Sr-89/90 CONC in µCi/L			6.1291E+03
Sample Prep	DATE OF COUNT	(DOC)	01/17/2000				
N/A							
Sample #							
S00T000049							

Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)
WB26870	Sr-89/90 CONC in µCi/L *Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0*
Prepared By	RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)
SLH2	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))
Observed	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
CRJ	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Date Complete	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100
01/18/2000	
Analysis Date	
01/17/2000	
Analysis Time	
04:00 PM	
Sample Point	
SY-102 GRAB5	

Sr-89/90 CONCENTRATION	6.13E+00	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	2.6%		3.61E-02 µCi/mL
PERCENT CARRIER RECOVERY	88.3%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP5

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

							DUP
	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
DUP	TOTAL COUNTS	(TC)	5675	GROSS WEIGHT	(W2)		7.7617
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.6816
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0901
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		10.87
@SR90-01	DILUTION FACTOR	DF	10201				
	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	560.30	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:13	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	00:05	Sr-89/90 CONC in µCi/L			5.9462E+03
	DATE OF COUNT	(DOC)	01/18/2000				
N/A							
S00T000049							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

WB26570 Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

SLH2 NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

SAC Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

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

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

01/18/2000

01/17/2000	Sr-89/90 CONCENTRATION	5.95E+00	µCi/mL	DETECTION LEVEL
04:00 PM	RELATIVE COUNTING ERROR	2.7%		3.53E-02 µCi/mL
SY-102 GRAB5	PERCENT CARRIER RECOVERY	90.1%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM6

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

							SAMPLE
	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
SAMPLE	TOTAL COUNTS	(TC)	2584	GROSS WEIGHT	(W2)		7.7336
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.6440
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0898
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		10.97
@SR90-01	DILUTION FACTOR	DF	10201				
	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	251.20	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:17	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	00:15	Sr-89/90 CONC in µCi/L			2.6722E+03
	DATE OF COUNT	(DOC)	01/18/2000				
N/A							
S00T000054							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

WB26870 Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

SLH2 NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

SAC Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

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

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

01/18/2000

				DETECTION LEVEL
01/17/2000	Sr-89/90 CONCENTRATION	2.67E+00	µCi/mL	
04:00 PM	RELATIVE COUNTING ERROR	4.0%		3.54E-02 µCi/mL
SY-102 GRAB5	PERCENT CARRIER RECOVERY	89.8%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP7

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)	2552	GROSS WEIGHT	(W2)		7.4903
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.4006
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0897
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		11.22
@SR90-01	DILUTION FACTOR	DF	10201				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	248.00	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
Batch Number	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:17	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	00:30	Sr-89/90 CONC in µCi/L			2.6349E+03
Sample Prep	DATE OF COUNT	(DOC)	01/18/2000				
N/A							
Sample #							
S00T000054							

Instrument Code	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)
WB26870	Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0
Prepared By	RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*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
CRJ	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Date Completed	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100
01/18/2000	

Analysis Date				DETECTION LEVEL
01/17/2000	Sr-89/90 CONCENTRATION	2.63E+00	µCi/mL	
Analysis Time				
04:00 PM	RELATIVE COUNTING ERROR	4.0%		3.53E-02 µCi/mL
Sample Point				
SY-102 GRAB5	PERCENT CARRIER RECOVERY	89.7%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM8

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

							SAMPLE
	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
SAMPLE	TOTAL COUNTS	(TC)	2225	GROSS WEIGHT	(W2)		7.7333
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.6425
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0908
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		11.47
@SR90-01	DILUTION FACTOR	DF	10201				
	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	215.30	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:17	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	00:45	Sr-89/90 CONC in µCi/L			2.2544E+03
	DATE OF COUNT	(DOC)	01/18/2000				
N/A							

S00T000055

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

WB26870 Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

SLH2 NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

SAC Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

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

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

01/18/2000

				DETECTION LEVEL
01/17/2000	Sr-89/90 CONCENTRATION	2.25E+00	µCi/mL	
04:00 PM	RELATIVE COUNTING ERROR	4.4%		3.48E-02 µCi/mL
SY-102 GRAB5	PERCENT CARRIER RECOVERY	90.8%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP9

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)	2289	GROSS WEIGHT	(W2)		7.5620
Work List	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.4716
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0904
Test Code	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		11.83
@SR90-01	DILUTION FACTOR	DF	10201				
Matrix	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	221.70	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
Batch Number	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:17	Rmax			N/A
Rerun	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	00:55	Sr-89/90 CONC in µCi/L			2.3281E+03
Sample Prep	DATE OF COUNT	(DOC)	01/18/2000				
N/A							
Sample #							
S00T000055							

Instrument Code: WB26870

Prepared By: SLH2

Chemist: SAC

Analyst: CRJ

Date Completed: 01/18/2000

Analysis Date: 01/17/2000

Analysis Time: 04:00 PM

Sample Point: SY-102 GRAB5

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

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

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

Sr-89/90 CONCENTRATION	2.33E+00	µCi/mL	DETECTION LEVEL
RELATIVE COUNTING ERROR	4.3%		3.49E-02 µCi/mL
PERCENT CARRIER RECOVERY	90.4%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM10

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

							SAMPLE
	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
SAMPLE	TOTAL COUNTS	(TC)	2356	GROSS WEIGHT	(W2)		7.7131
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.6236
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0895
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		11.73
GSR90-01	DILUTION FACTOR	DF	10201				
	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	228.40	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:21	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	01:05	Sr-89/90 CONC in µCi/L			2.4203E+03
	DATE OF COUNT	(DOC)	01/18/2000				
N/A							

S00T000056

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

WB26870 Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

SLH2 NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

SAC Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

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

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

01/18/2000

				DETECTION LEVEL
01/17/2000	Sr-89/90 CONCENTRATION	2.42E+00	µCi/mL	
04:00 PM	RELATIVE COUNTING ERROR	4.2%		3.52E-02 µCi/mL
SY-102 GRAB5	PERCENT CARRIER RECOVERY	89.5%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP11

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

							DUP
	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
DUP	TOTAL COUNTS	(TC)	2280	GROSS WEIGHT	(W2)		7.5351
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.4454
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0897
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		11.90
@SR90-01	DILUTION FACTOR	DF	10201				
	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	218.80	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:21	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	01:15	Sr-89/90 CONC in µCi/L			2.3098E+03
	DATE OF COUNT	(DOC)	01/18/2000				
N/A							
S00T000056							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

WB26570 Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

SLH2 NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

SAC Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

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

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

01/18/2000

				DETECTION LEVEL
01/17/2000	Sr-89/90 CONCENTRATION	2.31E+00	µCi/mL	
04:00 PM	RELATIVE COUNTING ERROR	4.3%		3.51E-02 µCi/mL
SY-102 GRAB5	PERCENT CARRIER RECOVERY	89.7%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: SAM12

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

							SAMPLE
	DETECTOR NUMBER		10	CARRIER ADDED in mL		(CVA)	1.000
SAMPLE	TOTAL COUNTS	(TC)	2063	GROSS WEIGHT		(W2)	7.8276
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT		(W1)	7.4373
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT		(W3)	0.0903
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)		(DT)	12.07
@SR90-01	DILUTION FACTOR	DF	10201				
	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	201.10	SR-90 EFFICIENCY FACTOR		(C1)	0.4279
	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR		(C2)	0.4757
20000089	TIME OF SEPARATION	(ST)	13:21	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT		(Ld)	3.32
0	TIME OF COUNT	(TOC)	01:25	Sr-89/90 CONC in µCi/L			2.1056E+03
	DATE OF COUNT	(DOC)	01/18/2000				
N/A							
S00T000057							

	Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)
WB26870	Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0
	RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)
SLH2	NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))
	Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96
SAC	Percent Carrier Recovery = (Net Weight / Expected weight) * 100
	NOTE: Expected weight = CVA * 0.1
CRJ	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
	Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100
01/18/2000	

				DETECTION LEVEL
01/17/2000	Sr-89/90 CONCENTRATION	2.11E+00	µCi/mL	
04:00 PM	RELATIVE COUNTING ERROR	4.5%		3.48E-02 µCi/mL
SY-102 GRAB5	PERCENT CARRIER RECOVERY	90.3%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	8 Jan 00

SAMPLE.WB1 REV 2.0 22010NML

WORKBOOK PAGE: DUP13

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

							DUP
	DETECTOR NUMBER		10	CARRIER ADDED in mL	(CVA)		1.000
DUP	TOTAL COUNTS	(TC)	2231	GROSS WEIGHT	(W2)		7.8515
	COUNT TIME in MINUTES	(CT)	10	TARE WEIGHT	(W1)		7.4720
32106	BACKGROUND in cpm	(BKG)	7.2	NET WEIGHT	(W3)		0.0695
	SAMPLE VOLUME in mL	(SS)	1.000	DELTA TIME (HOURS)	(DT)		12.32
@SR90-01	DILUTION FACTOR	DF	10201				
	DIGEST DILUTION FACTOR	(DDF)	1				
LIQUID	SAMPLE COUNT RATE	(Rs)	215.90	SR-90 EFFICIENCY FACTOR	(C1)		0.4279
	CRITICAL LEVEL	(Lc)	1.62	Y-90 EFFICIENCY FACTOR	(C2)		0.4757
20000089	TIME OF SEPARATION	(ST)	13:21	Rmax			N/A
	DATE OF SEPARATION	(SD)	01/17/2000	DETECTION LIMIT	(Ld)		3.32
0	TIME OF COUNT	(TOC)	01:40	Sr-89/90 CONC in µCi/L			2.2755E+03
	DATE OF COUNT	(DOC)	01/18/2000				
N/A							
S00T000057							

Sample Count Rate (Rs) = (Total Counts (TC) / Count Time (CT)) - Background in cpm (BKG)

WB26870 Sr-89/90 CONC in µCi/L Replace RS with RMAX if RS<=Lc and RS>=0 or Replace RS with Lc if RS<0

RS*DF*DDF/((C1+C2*(1-e to the power of ((-natural log 2)/64.2*DT)))*SS*REC*2220000)

SLH2 NOTE: 64.2 = Half Life for Y-90 and Rec. = Fractional Carrier Recovery ((W2-W1) / (CVA * 0.1000))

Relative Counting Error = (The Square Root of (TC + BKG * CT) / (TC - BKG * CT))*1.96

SAC Percent Carrier Recovery = (Net Weight / Expected weight) * 100

NOTE: Expected weight = CVA * 0.1

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

Delta Time (hours) = ((DOC - SD) * 24) + (TOC - ST) / 100

01/15/2000

				DETECTION LEVEL
01/17/2000	Sr-89/90 CONCENTRATION	2.28E+00	µCi/mL	
04:00 PM	RELATIVE COUNTING ERROR	4.4%		3.50E-02 µCi/mL
SY-102 GRAB5	PERCENT CARRIER RECOVERY	89.5%		

Analyst:	CRJ	Date:	18-Jan-2000
Signature of Chemist:	SAC	Date:	18 Jan 00

SAMPLE.WB1 REV 2.0 22010NML

LABCORE Completed Worklist Report for Worklist# 32109

Analyst: akl **Instrument:** AB16 **Book#:** _____

Method: LA-953-104 Rev/Mod B-3

Worklist Comment: SY-102 GRAB5 FOR @AM24102 RTS

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
1	STD		0	@AM24102	AM24101	LIQUID	1.07E-04		1.08E-4	100.935	% Recovery
1	STD		0	@AM24102	AM24101E	LIQUID	1.00		1.76E+00	1.760	% Ct Error
1	STD		0	@AM24102	AM24101T	LIQUID	100		1.03E+02	103.000	% Recovery
2	BLNK		0	@AM24102	AM24101	LIQUID	1		<3.41E-4		uCi/mL
2	BLNK		0	@AM24102	AM24101E	LIQUID	1.00		1.00E+02	100.000	% Ct Error
2	BLNK		0	@AM24102	AM24101T	LIQUID	100		8.72E+01	87.200	% Recovery
2	BLNK		0	@AM24102	CM24301	LIQUID	1		<3.41E-4		uCi/mL
2	BLNK		0	@AM24102	CM24301E	LIQUID	1.00		1.00E+02	100.000	uCi/mL
3	SAMPLE	S00T000049	0	@AM24102	AM24101	LIQUID	N/A		1.11E-02	8.68e-004	uCi/mL
3	SAMPLE	S00T000049	0	@AM24102	AM24101E	LIQUID	N/A		2.14E+00		% Ct. Error
3	SAMPLE	S00T000049	0	@AM24102	AM24101T	LIQUID	N/A		1.05E+02		% Recovery
3	SAMPLE	S00T000049	0	@AM24102	CM24301	LIQUID	N/A	<	8.68E-04	8.68e-004	uCi/mL
3	SAMPLE	S00T000049	0	@AM24102	CM24301E	LIQUID	N/A		7.05E+00		% Ct. Error
4	DUP	S00T000049	0	@AM24102	AM24101	LIQUID	1.11E-2		1.12E-2	0.897	RPD
4	DUP	S00T000049	0	@AM24102	AM24101E	LIQUID	1.00		2.20E+00	2.200	% Ct Error
4	DUP	S00T000049	0	@AM24102	AM24101T	LIQUID	100		9.64E+01	96.400	% Recovery
4	DUP	S00T000049	0	@AM24102	CM24301	LIQUID	<8.68E-4		<9.26E-4		RPD
4	DUP	S00T000049	0	@AM24102	CM24301E	LIQUID	1.00		7.18E+00	7.180	% Ct. Erro
5	SAMPLE	S00T000054	0	@AM24102	AM24101	LIQUID	N/A		4.17E-03	4.89e-004	uCi/mL
5	SAMPLE	S00T000054	0	@AM24102	AM24101E	LIQUID	N/A		2.72E+00		% Ct. Error
5	SAMPLE	S00T000054	0	@AM24102	AM24101T	LIQUID	N/A		9.88E+01		% Recovery
5	SAMPLE	S00T000054	0	@AM24102	CM24301	LIQUID	N/A	<	4.89E-04	4.89e-004	uCi/mL
5	SAMPLE	S00T000054	0	@AM24102	CM24301E	LIQUID	N/A		1.10E+01		% Ct. Error
6	DUP	S00T000054	0	@AM24102	AM24101	LIQUID	4.17E-3		4.23E-3	1.429	RPD
6	DUP	S00T000054	0	@AM24102	AM24101E	LIQUID	1.00		2.83E+00	2.830	% Ct Error
6	DUP	S00T000054	0	@AM24102	AM24101T	LIQUID	100		9.05E+01	90.500	% Recovery
6	DUP	S00T000054	0	@AM24102	CM24301	LIQUID	<4.89E-4		<5.51E-4		RPD
6	DUP	S00T000054	0	@AM24102	CM24301E	LIQUID	1.00		1.09E+01	10.900	% Ct. Erro
7	SAMPLE	S00T000055	0	@AM24102	AM24101	LIQUID	N/A		3.78E-03	5.14e-004	uCi/mL
7	SAMPLE	S00T000055	0	@AM24102	AM24101E	LIQUID	N/A		2.94E+00		% Ct. Error
7	SAMPLE	S00T000055	0	@AM24102	AM24101T	LIQUID	N/A		9.02E+01		% Recovery
7	SAMPLE	S00T000055	0	@AM24102	CM24301	LIQUID	N/A	<	5.14E-04	5.14e-004	uCi/mL
7	SAMPLE	S00T000055	0	@AM24102	CM24301E	LIQUID	N/A		1.23E+01		% Ct. Error
8	DUP	S00T000055	0	@AM24102	AM24101	LIQUID	3.78E-3		3.75E-3	0.797	RPD
8	DUP	S00T000055	0	@AM24102	AM24101E	LIQUID	1.00		2.91E+00	2.910	% Ct Error
8	DUP	S00T000055	0	@AM24102	AM24101T	LIQUID	100		9.27E+01	92.700	% Recovery
8	DUP	S00T000055	0	@AM24102	CM24301	LIQUID	<5.14E-4		<5.27E-4		RPD
8	DUP	S00T000055	0	@AM24102	CM24301E	LIQUID	1.00		1.31E+01	13.100	% Ct. Erro
9	SAMPLE	S00T000056	0	@AM24102	AM24101	LIQUID	N/A		4.01E-03	5.80e-004	uCi/mL
9	SAMPLE	S00T000056	0	@AM24102	AM24101E	LIQUID	N/A		2.89E+00		% Ct. Error
9	SAMPLE	S00T000056	0	@AM24102	AM24101T	LIQUID	N/A		8.85E+01		% Recovery

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

LABCORE Completed Worklist Report for Worklist# 32109

Seq	Type	Sample#	R	A	Test		Matrix	Actual		Found	DL or Yield	Unit
9	SAMPLE	S00T000056	0	@AM24102	CM24301		LIQUID	N/A	<	5.80E-04	5.80e-004	uCi/mL
9	SAMPLE	S00T000056	0	@AM24102	CM24301E		LIQUID	N/A		1.00E+02		% Ct. Error
10	DUP	S00T000056	0	@AM24102	AM24101		LIQUID	4.01E-3		4.10E-3	2.219	RPD
10	DUP	S00T000056	0	@AM24102	AM24101E		LIQUID	1.00		2.82E+00	2.820	% Ct Error
10	DUP	S00T000056	0	@AM24102	AM24101T		LIQUID	100		8.99E+01	89.900	% Recovery
10	DUP	S00T000056	0	@AM24102	CM24301		LIQUID	<5.80E-4		<5.50E-4		RPD
10	DUP	S00T000056	0	@AM24102	CM24301E		LIQUID	1.00		1.16E+01	11.600	% Ct. Erro
11	SAMPLE	S00T000057	0	@AM24102	AM24101		LIQUID	N/A		3.28E-03	5.72e-004	uCi/mL
11	SAMPLE	S00T000057	0	@AM24102	AM24101E		LIQUID	N/A		3.10E+00		% Ct. Error
11	SAMPLE	S00T000057	0	@AM24102	AM24101T		LIQUID	N/A		8.64E+01		% Recovery
11	SAMPLE	S00T000057	0	@AM24102	CM24301		LIQUID	N/A	<	5.72E-04	5.72e-004	uCi/mL
11	SAMPLE	S00T000057	0	@AM24102	CM24301E		LIQUID	N/A		1.00E+02		% Ct. Error
12	DUP	S00T000057	0	@AM24102	AM24101		LIQUID	3.28E-3		3.21E-3	2.157	RPD
12	DUP	S00T000057	0	@AM24102	AM24101E		LIQUID	1.00		3.09E+00	3.090	% Ct Error
12	DUP	S00T000057	0	@AM24102	AM24101T		LIQUID	100		8.64E+01	86.400	% Recovery
12	DUP	S00T000057	0	@AM24102	CM24301		LIQUID	<5.72E-4		<5.93E-4		RPD
12	DUP	S00T000057	0	@AM24102	CM24301E		LIQUID	1.00		1.35E+01	13.500	% Ct. Erro

Final page for worklist# 32109

Analyst Signature Date

Analyst Signature Date

John Relyea 19 Jan 00
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 32109

Analyst: AVL **Instrument:** AM01 _____ **Book#** 46B57

Method: LA-953-104 Rev/Mod B3

Worklist Comment: SY-102 GRAB5 FOR @AM24102 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@AM24102	LIQUID		
2	BLNK				@AM24102	LIQUID		
3	SAMPLE	S00T000049	0		@AM24102	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	AM24101 , AM24101E, AM24101T, CM24301 , CM24301E						
4	DUP	S00T000049	0		@AM24102	LIQUID		
5	SAMPLE	S00T000054	0		@AM24102	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	AM24101 , AM24101E, AM24101T, CM24301 , CM24301E						
6	DUP	S00T000054	0		@AM24102	LIQUID		
7	SAMPLE	S00T000055	0		@AM24102	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	AM24101 , AM24101E, AM24101T, CM24301 , CM24301E						
8	DUP	S00T000055	0		@AM24102	LIQUID		
9	SAMPLE	S00T000056	0		@AM24102	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	AM24101 , AM24101E, AM24101T, CM24301 , CM24301E						
10	DUP	S00T000056	0		@AM24102	LIQUID		
11	SAMPLE	S00T000057	0		@AM24102	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested:	AM24101 , AM24101E, AM24101T, CM24301 , CM24301E						
12	DUP	S00T000057	0		@AM24102	LIQUID		

Final page for worklist # 32109

Alita Hudson 1-14-00
Signature **Date**

Laura L Cochran 1/19/00
Signature **Date**

AVL 1-19-00

Data Entry Comments:

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

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. 2.11

DATA REDUCTION REPORT

SAMPLE
WL32109-STD-AM
File ID: 2a2045.CNF

Counted on: 1/18/ 0 @20:41
Detector: AEA2
Geometry number: 1
Count time: 28809. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	1430.8	1430.8	300.869	300.869	14.000	7.296	7.000	2.635
2	1395.5	1395.5	254.817	254.780	12.000	5.797	6.000	2.002

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am241	0.505	5.479	5.472	0.007	0.03	52.94	1.2	254.4	0.115E-03
	Pu238		5.487	5.472	0.015				332.1	0.150E-03
2	Am243	0.477	5.266	5.260	0.006	0.03	50.05	1.3	228.3	0.103E-03
Totals:		0.982	<--valid peaks only-->				102.99			

DETECTOR CALIBRATION
Energy(MEV) = 4.088 + (0.0046)*Channel
Energy range (MeV): 4.088 TO 6.443
Efficiency = 0.2214 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	50331.0	100.000
Smoothed	50331.0	100.000
Composite fit	49448.4	98.246
Residuals	882.6	1.754

Analyzed by: _____
GL

Spectrum 2a2045.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 10373.5

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2
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1.................................2
2.1.....
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1...
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Raw Data Dump for AEA Spectrum: 2a2045.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	1.	1.	0.	1.	0.	0.	1.	0.	0.
31	1.	0.	0.	2.	0.	0.	0.	1.	0.	0.
41	1.	1.	0.	1.	1.	2.	0.	1.	0.	3.
51	0.	0.	2.	1.	0.	0.	1.	0.	1.	3.
61	3.	0.	0.	1.	0.	1.	0.	0.	1.	0.
71	0.	0.	0.	0.	1.	1.	2.	0.	0.	1.
81	0.	1.	1.	0.	1.	0.	1.	0.	1.	1.
91	0.	1.	1.	0.	1.	1.	0.	3.	1.	0.
101	2.	0.	0.	2.	1.	2.	1.	1.	2.	3.
111	1.	0.	0.	2.	7.	0.	2.	1.	3.	0.
121	2.	1.	1.	1.	1.	2.	2.	2.	1.	1.
131	0.	3.	0.	1.	0.	0.	3.	1.	1.	1.
141	4.	1.	5.	2.	2.	4.	3.	0.	2.	3.
151	4.	1.	6.	2.	1.	3.	2.	2.	2.	1.
161	4.	2.	1.	3.	1.	6.	5.	3.	7.	1.
171	2.	3.	5.	4.	6.	5.	5.	7.	3.	4.
181	5.	2.	3.	7.	6.	8.	8.	5.	5.	10.
191	8.	2.	13.	11.	7.	8.	14.	14.	16.	11.
201	12.	12.	12.	14.	20.	13.	13.	28.	23.	23.
211	21.	26.	28.	31.	37.	32.	35.	48.	33.	44.
221	53.	66.	65.	66.	63.	95.	94.	105.	106.	115.
231	135.	155.	167.	188.	209.	253.	261.	294.	327.	364.
241	416.	491.	545.	631.	662.	779.	906.	978.	1091.	1103.
251	1299.	1347.	1350.	1508.	1568.	1472.	1407.	1073.	721.	444.
261	274.	186.	154.	144.	159.	141.	151.	114.	118.	116.
271	99.	112.	84.	94.	136.	121.	139.	141.	171.	172.
281	199.	254.	257.	289.	298.	387.	414.	480.	555.	662.
291	685.	781.	892.	926.	1029.	1128.	1252.	1312.	1420.	1530.
301	1601.	1501.	1384.	1144.	843.	550.	398.	302.	239.	225.
311	164.	161.	112.	62.	65.	30.	18.	5.	5.	1.
321	1.	2.	0.	1.	1.	0.	0.	1.	1.	2.
331	0.	0.	0.	1.	0.	1.	0.	1.	1.	0.
341	0.	2.	3.	0.	1.	0.	2.	0.	0.	0.
351	2.	0.	3.	2.	1.	3.	2.	2.	1.	0.
361	2.	0.	2.	2.	1.	2.	0.	1.	1.	0.
371	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
391	0.	1.	0.	0.	0.	0.	0.	0.	1.	0.
401	0.	0.	1.	0.	1.	0.	1.	0.	0.	1.
411	0.	0.	0.	0.	0.	2.	0.	1.	0.	0.
421	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
431	0.	0.	1.	1.	0.	0.	1.	0.	1.	1.
441	0.	1.	0.	0.	2.	2.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
WL32109-BLK-AM
File ID: 3a3089.CNF

Counted on: 1/18/ 0 @20:39
Detector: AEA3
Geometry number: 1
Count time: 28807. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	696.4	696.4	255.048	255.048	12.000	4.884	6.000	2.082

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am243	0.864	5.266	5.257	0.009	0.02	21.45	1.9	96.4	0.434E-04
Totals:		0.864	<--valid peaks only-->				21.45			

DETECTOR CALIBRATION
Energy(MEV) = 4.083 + (0.0046)*Channel
Energy range (MeV): 4.083 TO 6.439
Efficiency = 0.2248 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	11925.0	100.000
Smoothed	11925.0	100.000
Composite fit	10300.1	86.374
Residuals	1624.9	13.626

Analyzed by: _____
GL

Spectrum 3a3089.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4440.0

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1.....
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Raw Data Dump for AEA Spectrum: 3a3089.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	3.	0.	1.	0.
21	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
31	1.	1.	0.	0.	1.	0.	0.	0.	0.	0.
41	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.
51	1.	1.	0.	3.	0.	2.	0.	2.	1.	0.
61	2.	0.	1.	1.	1.	0.	1.	0.	0.	0.
71	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.
81	2.	1.	1.	1.	0.	3.	0.	1.	0.	0.
91	1.	3.	1.	2.	1.	1.	2.	0.	3.	3.
101	1.	1.	2.	2.	3.	0.	3.	2.	2.	2.
111	2.	2.	0.	1.	0.	1.	1.	0.	1.	2.
121	1.	2.	3.	1.	0.	0.	0.	4.	2.	4.
131	1.	1.	3.	1.	1.	2.	0.	5.	3.	2.
141	6.	3.	1.	4.	1.	4.	2.	3.	3.	2.
151	4.	5.	4.	4.	2.	6.	2.	5.	6.	6.
161	0.	2.	5.	5.	2.	6.	4.	2.	10.	8.
171	1.	7.	2.	7.	9.	4.	9.	14.	7.	12.
181	8.	4.	9.	5.	8.	7.	10.	5.	10.	11.
191	8.	10.	16.	17.	13.	10.	19.	15.	19.	17.
201	16.	23.	12.	18.	24.	16.	19.	28.	12.	22.
211	24.	19.	22.	32.	40.	24.	36.	51.	34.	46.
221	44.	42.	33.	55.	47.	46.	58.	71.	51.	75.
231	80.	76.	86.	90.	100.	119.	112.	116.	138.	127.
241	187.	173.	205.	234.	230.	264.	309.	340.	385.	455.
251	493.	582.	703.	746.	843.	718.	690.	539.	350.	165.
261	106.	66.	62.	54.	62.	50.	38.	51.	29.	33.
271	21.	12.	14.	2.	4.	1.	1.	0.	1.	2.
281	1.	0.	1.	1.	1.	2.	1.	1.	2.	1.
291	1.	1.	3.	3.	2.	1.	3.	3.	3.	2.
301	3.	8.	6.	1.	2.	1.	1.	0.	0.	0.
311	1.	1.	0.	1.	0.	0.	0.	0.	0.	0.
321	0.	2.	0.	0.	0.	1.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
341	0.	0.	0.	2.	0.	2.	0.	0.	0.	0.
351	0.	2.	1.	0.	0.	0.	1.	2.	1.	3.
361	1.	1.	1.	3.	1.	1.	0.	0.	1.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	1.	1.	1.	1.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0049-SAM-AM
File ID: 4a4182.CNF

Counted on: 1/18/ 0 @20:41
Detector: AEA4
Geometry number: 1
Count time: 28806. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	11.2	11.2	432.184	432.184	14.000	5.379	7.000	2.340
2	53.9	53.9	366.455	366.455	10.000	3.842	5.000	1.394
3	1637.4	1637.4	298.168	298.168	14.000	6.616	7.000	2.741
4	753.2	753.2	252.390	252.352	12.000	5.744	6.000	2.188

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		6.077			0.35	15.1		
2	Pu236	0.020	5.755	5.774	-.019	0.02	1.72	6.8	8.0	0.358E-05
	Cm243		5.779	5.774	0.005				10.7	0.481E-05
3	Pu238	0.640	5.487	5.460	0.027	0.03	55.31	1.2	347.6	0.157E-03
	Am241		5.479	5.460	0.019				266.2	0.120E-03
4	Am243	0.296	5.266	5.249	0.017	0.03	25.58	1.8	116.9	0.527E-04
		---					---			
Totals:		0.956	<--valid peaks only-->				82.61			

DETECTOR CALIBRATION
Energy(MEV) = 4.089 + (0.0046)*Channel
Energy range (MeV): 4.089 TO 6.444
Efficiency = 0.2210 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	41466.0	100.000
Smoothed	41466.0	100.000
Composite fit	39828.1	96.050
Residuals	1637.9	3.950

Analyzed by: _____
GL

Spectrum 4a4182.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 10299.9

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Raw Data Dump for AEA Spectrum: 4a4182.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
21	2.	0.	1.	1.	0.	1.	1.	0.	0.	2.
31	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
41	0.	4.	1.	2.	4.	2.	0.	1.	0.	0.
51	1.	0.	0.	1.	1.	1.	1.	2.	0.	1.
61	1.	1.	1.	3.	0.	1.	1.	0.	0.	0.
71	1.	0.	2.	1.	1.	2.	1.	0.	0.	0.
81	0.	0.	1.	1.	2.	1.	1.	0.	2.	3.
91	0.	1.	2.	2.	1.	0.	0.	3.	2.	2.
101	1.	1.	0.	3.	1.	0.	1.	1.	1.	3.
111	1.	1.	3.	3.	0.	1.	4.	2.	3.	0.
121	1.	2.	2.	1.	2.	4.	2.	4.	2.	3.
131	1.	4.	0.	2.	3.	5.	3.	3.	2.	3.
141	3.	6.	1.	4.	4.	4.	2.	3.	4.	5.
151	5.	2.	4.	1.	3.	1.	5.	2.	6.	1.
161	5.	0.	1.	1.	4.	3.	8.	9.	8.	4.
171	4.	5.	9.	8.	6.	11.	4.	8.	12.	9.
181	10.	12.	8.	8.	5.	10.	17.	4.	6.	17.
191	14.	10.	14.	10.	15.	12.	7.	9.	14.	10.
201	19.	15.	25.	24.	12.	16.	19.	30.	15.	27.
211	27.	16.	30.	29.	25.	39.	52.	50.	48.	28.
221	35.	59.	51.	68.	48.	69.	72.	81.	72.	111.
231	103.	97.	108.	116.	138.	140.	182.	178.	216.	225.
241	267.	282.	356.	405.	438.	492.	602.	615.	684.	750.
251	794.	839.	845.	784.	719.	499.	270.	159.	124.	106.
261	115.	112.	103.	95.	113.	106.	104.	99.	117.	100.
271	113.	105.	118.	150.	130.	178.	210.	209.	218.	215.
281	300.	332.	343.	368.	409.	499.	566.	608.	751.	861.
291	921.	1049.	1122.	1320.	1464.	1584.	1681.	1895.	1778.	1630.
301	1325.	935.	631.	476.	358.	316.	241.	220.	136.	117.
311	89.	61.	32.	20.	5.	3.	3.	0.	3.	1.
321	3.	1.	2.	1.	0.	4.	3.	1.	5.	0.
331	3.	1.	1.	4.	3.	5.	2.	2.	4.	2.
341	4.	5.	5.	2.	6.	7.	7.	11.	10.	9.
351	11.	17.	20.	7.	22.	25.	25.	29.	29.	30.
361	46.	41.	43.	49.	47.	62.	64.	57.	46.	21.
371	16.	7.	1.	2.	1.	0.	0.	1.	0.	1.
381	0.	0.	1.	0.	1.	0.	0.	0.	0.	0.
391	1.	0.	0.	0.	0.	0.	2.	2.	1.	0.
401	1.	1.	1.	1.	1.	2.	1.	0.	1.	2.
411	0.	0.	3.	2.	0.	1.	5.	5.	6.	2.
421	4.	3.	4.	9.	3.	3.	5.	4.	7.	9.
431	12.	18.	9.	8.	9.	10.	10.	1.	0.	1.
441	1.	0.	0.	0.	0.	0.	0.	0.	1.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0049-DUP-AM
File ID: 5a5605.CNF

Counted on: 1/18/ 0 @20:43
Detector: AEA5
Geometry number: 1
Count time: 28806. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	57.3	57.3	369.321	369.321	10.000	4.104	5.000	1.820
2	1834.9	1834.9	301.350	301.350	14.000	5.654	7.000	3.110
3	878.5	878.5	255.767	255.760	12.000	4.826	6.000	2.601
4	19.8	19.8	203.621	203.537	54.000	176.628	27.000	26.963

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Cm244	0.020	5.795	5.777	0.018	0.02	1.66	6.9	6.9	0.310E-05
	Cm243		5.779	5.777	0.002				9.4	0.425E-05
2	Am241	0.626	5.479	5.465	0.014	0.03	52.57	1.2	232.1	0.105E-03
	Pu238		5.487	5.465	0.022				303.1	0.137E-03
3	Am243	0.288	5.266	5.255	0.011	0.02	24.19	1.8	101.4	0.457E-04
4	Th229	0.033	4.842	5.015	-.173	0.81	2.80	17.1	20.0	0.902E-05
	Pu242		4.891	5.015	-.124				11.6	0.523E-05
		---					---			
Totals:		0.968	<--valid peaks only-->				81.22			

DETECTOR CALIBRATION
Energy(MEV) = 4.078 + (0.0046)*Channel
Energy range (MeV): 4.078 TO 6.434
Efficiency = 0.2409 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	40287.0	100.000
Smoothed	40287.0	100.000
Composite fit	38993.5	96.789
Residuals	1293.5	3.211

Analyzed by: _____
GL

Spectrum 5a5605.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 12417.8

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Raw Data Dump for AEA Spectrum: 5a5605.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
21	0.	0.	1.	1.	0.	1.	1.	0.	1.	0.
31	1.	0.	2.	1.	1.	2.	2.	1.	2.	1.
41	2.	0.	2.	0.	1.	2.	4.	2.	2.	1.
51	0.	4.	0.	0.	0.	0.	0.	1.	0.	0.
61	2.	0.	0.	2.	1.	1.	1.	1.	0.	0.
71	2.	2.	2.	1.	1.	3.	2.	2.	3.	1.
81	1.	2.	2.	1.	2.	4.	1.	1.	1.	3.
91	1.	3.	1.	1.	3.	0.	1.	4.	1.	1.
101	2.	5.	1.	1.	1.	2.	1.	2.	3.	2.
111	6.	0.	1.	2.	1.	2.	1.	2.	8.	4.
121	4.	1.	2.	2.	3.	2.	4.	4.	3.	5.
131	7.	3.	2.	3.	2.	2.	5.	1.	2.	9.
141	2.	5.	0.	7.	4.	2.	2.	2.	4.	4.
151	3.	1.	3.	4.	2.	4.	4.	1.	4.	4.
161	3.	3.	1.	4.	5.	11.	4.	11.	3.	5.
171	9.	4.	6.	5.	2.	8.	9.	7.	6.	7.
181	6.	7.	5.	6.	10.	10.	7.	13.	12.	8.
191	15.	8.	6.	10.	12.	11.	6.	21.	11.	11.
201	7.	21.	21.	13.	18.	17.	7.	16.	16.	13.
211	16.	20.	23.	30.	26.	21.	27.	34.	29.	28.
221	25.	31.	33.	33.	46.	42.	33.	54.	38.	51.
231	54.	61.	64.	60.	62.	79.	83.	92.	101.	111.
241	133.	145.	159.	204.	221.	252.	321.	347.	441.	457.
251	531.	668.	734.	925.	1001.	995.	1039.	764.	554.	314.
261	178.	126.	129.	98.	89.	94.	113.	103.	89.	94.
271	105.	76.	86.	77.	83.	89.	114.	93.	129.	132.
281	156.	167.	163.	204.	190.	227.	273.	323.	391.	486.
291	512.	574.	686.	814.	917.	1048.	1222.	1481.	1641.	1912.
301	2189.	2180.	1833.	1401.	938.	680.	483.	401.	320.	272.
311	231.	196.	134.	91.	61.	35.	14.	5.	2.	2.
321	1.	4.	2.	4.	2.	1.	2.	3.	0.	4.
331	0.	2.	3.	1.	3.	3.	1.	1.	0.	2.
341	3.	1.	3.	4.	4.	5.	7.	5.	1.	7.
351	4.	7.	7.	6.	8.	16.	12.	20.	23.	26.
361	24.	37.	40.	30.	29.	51.	62.	55.	64.	68.
371	60.	42.	37.	12.	5.	2.	0.	0.	0.	3.
381	1.	1.	0.	0.	0.	0.	0.	0.	1.	0.
391	1.	1.	0.	0.	0.	0.	1.	1.	0.	1.
401	0.	1.	1.	0.	0.	0.	1.	0.	1.	1.
411	1.	1.	3.	0.	2.	0.	1.	1.	1.	1.
421	0.	2.	2.	6.	3.	6.	5.	9.	8.	4.
431	5.	7.	13.	10.	11.	7.	14.	4.	6.	3.
441	2.	1.	0.	1.	0.	2.	1.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.
471	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0054-SAM-AM
File ID: 6a6597.CNF

Counted on: 1/18/ 0 @20:45
Detector: AEA6
Geometry number: 1
Count time: 28807. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	16.6	16.6	367.156	367.156	14.000	8.191	7.000	2.569
2	461.2	461.2	298.276	298.276	20.000	15.232	10.000	6.982
3	580.5	580.5	251.744	251.727	22.000	14.773	11.000	7.079

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.015	5.755	5.775	-.020	0.04	0.68	10.8	3.2	0.145E-05
	Cm243		5.779	5.775	0.004				4.3	0.194E-05
2	Pu238	0.432	5.487	5.458	0.029	0.07	19.66	2.0	126.3	0.569E-04
	Am241		5.479	5.458	0.021				96.7	0.436E-04
3	Am243	0.532	5.266	5.244	0.022	0.07	24.20	1.8	113.0	0.509E-04
	Po210		5.305	5.244	0.061				111.9	0.504E-04
		---					---			
Totals:		0.979	<--valid peaks only-->				44.55			

DETECTOR CALIBRATION
Energy(MEV) = 4.086 + (0.0046)*Channel
Energy range (MeV): 4.086 TO 6.441
Efficiency = 0.2163 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	21842.0	100.000
Smoothed	21842.0	100.000
Composite fit	21387.8	97.921
Residuals	454.2	2.079

Analyzed by: _____
GL

Spectrum 6a6597.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4387.8

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Raw Data Dump for AEA Spectrum: 6a6597.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
21	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
41	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
51	1.	2.	0.	0.	2.	1.	0.	0.	0.	1.
61	0.	0.	0.	0.	1.	0.	0.	0.	0.	1.
71	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	1.	2.	0.	2.	2.	0.
91	0.	0.	0.	1.	0.	1.	0.	2.	0.	1.
101	1.	0.	0.	1.	0.	1.	1.	1.	1.	0.
111	1.	0.	2.	1.	0.	1.	0.	0.	0.	3.
121	0.	0.	1.	1.	1.	0.	0.	3.	2.	0.
131	1.	1.	1.	0.	0.	0.	0.	0.	2.	0.
141	1.	1.	1.	3.	0.	1.	2.	1.	2.	1.
151	5.	2.	2.	0.	0.	3.	0.	1.	2.	3.
161	3.	3.	2.	3.	0.	2.	2.	1.	1.	1.
171	5.	0.	3.	3.	1.	1.	1.	1.	1.	2.
181	2.	4.	8.	3.	4.	7.	5.	1.	2.	8.
191	5.	2.	5.	8.	4.	3.	3.	4.	7.	8.
201	8.	11.	7.	9.	9.	6.	11.	11.	13.	11.
211	12.	7.	12.	8.	14.	15.	23.	27.	13.	20.
221	24.	27.	37.	24.	31.	31.	43.	45.	47.	66.
231	77.	80.	77.	98.	118.	108.	140.	139.	180.	197.
241	233.	284.	318.	368.	422.	459.	514.	545.	527.	614.
251	656.	618.	588.	536.	559.	459.	432.	403.	303.	247.
261	220.	163.	137.	89.	93.	80.	59.	53.	52.	50.
271	40.	46.	51.	51.	47.	42.	63.	67.	68.	69.
281	77.	81.	93.	138.	146.	155.	189.	200.	231.	269.
291	307.	353.	405.	441.	468.	479.	463.	488.	501.	437.
301	450.	369.	372.	318.	260.	233.	192.	135.	132.	101.
311	79.	62.	41.	37.	27.	11.	13.	12.	8.	4.
321	2.	1.	3.	2.	0.	0.	0.	0.	0.	2.
331	1.	1.	0.	2.	2.	1.	1.	2.	0.	0.
341	3.	2.	0.	6.	3.	3.	3.	3.	2.	3.
351	7.	4.	3.	7.	4.	6.	12.	13.	8.	14.
361	18.	16.	12.	11.	24.	7.	23.	12.	20.	14.
371	7.	8.	5.	4.	6.	6.	3.	1.	1.	1.
381	0.	0.	0.	0.	1.	0.	0.	2.	1.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	1.	0.	1.	0.	0.	0.	1.	0.	1.	0.
411	0.	0.	0.	0.	0.	0.	0.	1.	1.	0.
421	0.	0.	4.	0.	0.	1.	3.	2.	4.	1.
431	2.	1.	3.	1.	3.	1.	4.	2.	4.	3.
441	0.	3.	1.	0.	1.	0.	1.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	1.	0.	0.	0.	0.	1.	1.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	1.	1.	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0054-DUP-AM
File ID: 7a7647.CNF

Counted on: 1/18/ 0 @20:46
Detector: AEA7
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	18.2	18.2	367.760	367.760	14.000	4.809	7.000	1.391
2	532.1	532.1	299.787	299.787	14.000	6.992	7.000	2.889
3	704.6	704.6	253.266	253.255	14.000	5.729	7.000	2.550

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Cm244	0.016	5.795	5.788	0.007	0.02	0.70	10.7	2.9	0.132E-05
	Cm243		5.779	5.788	-.009				4.0	0.181E-05
2	Am241	0.425	5.479	5.476	0.003	0.03	18.27	2.1	81.7	0.368E-04
	Pu238		5.487	5.476	0.011				106.7	0.481E-04
3	Am243	0.516	5.266	5.262	0.004	0.03	22.15	1.9	94.1	0.424E-04
		---					---			
Totals:		0.958	<--valid peaks only-->				41.12			

DETECTOR CALIBRATION
Energy(MEV) = 4.097 + (0.0046)*Channel
Energy range (MeV): 4.097 TO 6.452
Efficiency = 0.2379 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20616.0	100.000
Smoothed	20615.9	100.000
Composite fit	19739.9	95.750
Residuals	876.1	4.250

Analyzed by: _____
GL

Spectrum 7a7647.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 5028.5

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Raw Data Dump for AEA Spectrum: 7a7647.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	2.	0.	1.
21	0.	1.	4.	0.	3.	0.	2.	0.	2.	0.
31	0.	1.	0.	0.	1.	0.	0.	0.	1.	1.
41	0.	0.	0.	2.	1.	3.	1.	0.	1.	0.
51	1.	0.	0.	0.	1.	0.	1.	0.	0.	1.
61	2.	1.	1.	1.	0.	1.	0.	0.	0.	0.
71	0.	1.	0.	1.	3.	0.	2.	1.	1.	0.
81	1.	1.	0.	0.	1.	2.	0.	1.	0.	1.
91	0.	2.	1.	1.	0.	2.	1.	3.	1.	0.
101	0.	1.	2.	1.	2.	3.	4.	0.	3.	2.
111	4.	0.	1.	0.	1.	0.	1.	2.	1.	2.
121	2.	4.	0.	3.	1.	1.	1.	3.	4.	1.
131	1.	1.	1.	1.	2.	4.	2.	4.	2.	3.
141	1.	1.	2.	0.	1.	2.	1.	1.	1.	3.
151	6.	4.	1.	4.	2.	4.	1.	2.	3.	2.
161	2.	1.	5.	1.	4.	1.	1.	6.	3.	1.
171	4.	4.	1.	2.	4.	3.	1.	2.	6.	3.
181	3.	5.	4.	1.	2.	3.	4.	1.	10.	5.
191	7.	4.	3.	7.	2.	8.	8.	7.	8.	7.
201	2.	11.	10.	10.	7.	6.	9.	11.	10.	7.
211	17.	9.	11.	16.	11.	9.	19.	25.	21.	21.
221	26.	26.	22.	29.	26.	32.	34.	48.	52.	50.
231	46.	73.	71.	100.	71.	109.	117.	122.	132.	159.
241	195.	243.	242.	274.	304.	392.	465.	488.	568.	603.
251	700.	732.	809.	792.	690.	615.	450.	288.	154.	87.
261	82.	78.	53.	48.	61.	60.	55.	46.	44.	30.
271	36.	40.	42.	41.	39.	40.	42.	45.	40.	59.
281	70.	88.	82.	100.	112.	146.	134.	157.	215.	215.
291	269.	315.	359.	372.	431.	444.	500.	527.	572.	590.
301	574.	520.	369.	271.	191.	139.	126.	87.	79.	73.
311	46.	24.	18.	15.	5.	5.	2.	1.	0.	0.
321	2.	2.	0.	0.	0.	1.	0.	0.	0.	0.
331	1.	0.	0.	1.	2.	0.	0.	1.	2.	2.
341	1.	0.	2.	1.	4.	2.	3.	1.	2.	4.
351	3.	2.	8.	10.	11.	7.	12.	10.	14.	14.
361	24.	8.	18.	11.	11.	17.	22.	22.	17.	17.
371	14.	10.	6.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	2.	0.	0.	0.	0.	0.	1.
391	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
401	1.	1.	1.	0.	0.	0.	0.	0.	0.	1.
411	1.	0.	0.	2.	2.	1.	0.	0.	1.	0.
421	0.	1.	2.	0.	3.	1.	2.	2.	2.	3.
431	3.	3.	4.	3.	1.	5.	3.	0.	4.	2.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0055-SAM-AM
File ID: 8a8636.CNF

Counted on: 1/18/ 0 @20:47
Detector: AEA8
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	17.3	17.3	369.287	369.287	10.000	3.440	5.000	1.261
2	496.1	496.1	300.142	300.142	14.000	6.397	7.000	2.871
3	694.8	694.8	254.140	254.133	12.000	5.133	6.000	2.162

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Cm244	0.014	5.795	5.788	0.007	0.02	0.54	12.2	2.5	0.111E-05
	Cm243		5.779	5.788	-.009				3.4	0.152E-05
2	Am241	0.407	5.479	5.470	0.009	0.03	16.02	2.2	77.8	0.351E-04
	Pu238		5.487	5.470	0.017				101.6	0.458E-04
3	Am243	0.554	5.266	5.258	0.008	0.02	21.80	1.9	100.6	0.453E-04
Totals:		0.974	<--valid peaks only-->				38.36			

DETECTOR CALIBRATION
Energy(MEV) = 4.089 + (0.0046)*Channel
Energy range (MeV): 4.089 TO 6.445
Efficiency = 0.2190 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	18904.0	100.000
Smoothed	18904.0	100.000
Composite fit	18414.4	97.410
Residuals	489.6	2.590

Analyzed by: _____
GL

Spectrum 8a8636.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4838.0

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Raw Data Dump for AEA Spectrum: 8a8636.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
21	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
31	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
61	0.	1.	2.	3.	0.	0.	0.	1.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
91	1.	1.	0.	1.	2.	0.	0.	0.	0.	0.
101	0.	0.	0.	0.	0.	0.	0.	2.	0.	1.
111	0.	0.	0.	1.	0.	1.	0.	1.	3.	1.
121	1.	0.	1.	0.	0.	1.	0.	0.	0.	2.
131	2.	0.	1.	1.	1.	0.	1.	0.	0.	0.
141	0.	1.	1.	2.	1.	0.	1.	0.	2.	0.
151	1.	0.	0.	0.	0.	1.	0.	1.	0.	2.
161	1.	0.	0.	1.	1.	0.	0.	0.	1.	2.
171	2.	0.	1.	0.	0.	1.	2.	1.	1.	4.
181	2.	1.	0.	2.	2.	4.	1.	4.	2.	1.
191	1.	1.	3.	2.	4.	3.	1.	6.	4.	3.
201	3.	2.	6.	3.	2.	2.	5.	9.	4.	5.
211	6.	10.	8.	6.	11.	10.	7.	11.	14.	15.
221	17.	12.	22.	26.	23.	34.	27.	30.	37.	44.
231	41.	45.	61.	65.	77.	82.	109.	114.	131.	137.
241	173.	210.	224.	268.	298.	408.	394.	474.	503.	556.
251	604.	679.	704.	786.	798.	690.	541.	352.	212.	102.
261	85.	69.	60.	57.	50.	51.	61.	48.	39.	27.
271	30.	25.	27.	23.	23.	21.	36.	35.	40.	43.
281	50.	57.	74.	84.	87.	110.	116.	119.	158.	203.
291	213.	251.	312.	279.	365.	411.	425.	507.	536.	539.
301	565.	509.	392.	286.	186.	119.	88.	73.	70.	62.
311	52.	32.	23.	13.	9.	5.	3.	1.	0.	0.
321	1.	0.	0.	1.	0.	0.	1.	1.	0.	0.
331	0.	0.	2.	0.	0.	0.	1.	2.	0.	0.
341	1.	1.	0.	1.	2.	0.	2.	1.	0.	1.
351	4.	3.	5.	3.	5.	5.	5.	5.	7.	8.
361	9.	15.	11.	8.	15.	15.	20.	14.	17.	20.
371	22.	9.	9.	0.	2.	0.	1.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	1.	1.	2.	0.	0.	1.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
421	0.	2.	1.	1.	1.	3.	1.	0.	0.	2.
431	3.	2.	2.	0.	5.	1.	2.	4.	6.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	1.	0.	0.	0.	0.	2.	0.	0.	0.
481	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
491	0.	0.	0.	1.	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0055-DUP-AM
File ID: 9a9407.CNF

Counted on: 1/18/ 0 @20:49
Detector: AEA9
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	13.2	13.2	368.844	368.844	10.000	4.772	5.000	1.507
2	512.6	512.6	299.840	299.840	12.000	6.349	6.000	2.927
3	753.9	753.9	253.505	253.499	12.000	4.734	6.000	2.146

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Cm244	0.011	5.795	5.793	0.002	0.02	0.48	12.9	2.1	0.936E-06
	Cm243		5.779	5.793	-.014				2.8	0.128E-05
2	Am241	0.384	5.479	5.475	0.004	0.03	16.33	2.2	75.2	0.339E-04
	Pu238		5.487	5.475	0.012				98.2	0.442E-04
3	Am243	0.526	5.266	5.262	0.004	0.02	22.35	1.9	97.8	0.440E-04
		---					---			
Totals:		0.922	<--valid peaks only-->				39.17			

DETECTOR CALIBRATION
Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.451
Efficiency = 0.2310 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20399.0	100.000
Smoothed	20399.0	100.000
Composite fit	18799.9	92.161
Residuals	1599.1	7.839

Analyzed by: _____
GL

Spectrum 9a9407.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 5206.5

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Raw Data Dump for AEA Spectrum: 9a9407.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	1.	0.	1.	0.	1.
21	0.	0.	1.	2.	0.	0.	0.	0.	0.	4.
31	3.	1.	0.	0.	0.	1.	1.	0.	1.	0.
41	0.	0.	1.	0.	1.	1.	0.	0.	2.	0.
51	1.	0.	0.	1.	1.	2.	1.	0.	1.	4.
61	1.	2.	1.	0.	1.	2.	3.	0.	1.	1.
71	3.	1.	0.	0.	1.	5.	0.	2.	3.	0.
81	3.	1.	0.	3.	0.	1.	0.	1.	0.	0.
91	3.	3.	2.	1.	1.	4.	3.	2.	0.	0.
101	0.	2.	3.	1.	1.	3.	1.	1.	1.	3.
111	1.	1.	1.	1.	1.	2.	1.	1.	1.	0.
121	2.	4.	3.	2.	4.	1.	3.	1.	2.	2.
131	4.	3.	2.	6.	3.	4.	2.	3.	2.	4.
141	5.	2.	4.	2.	3.	1.	4.	2.	5.	3.
151	4.	2.	4.	6.	4.	3.	9.	2.	5.	6.
161	5.	6.	4.	6.	5.	3.	5.	8.	2.	9.
171	7.	8.	11.	2.	6.	5.	2.	3.	6.	6.
181	6.	2.	8.	8.	9.	11.	10.	5.	9.	7.
191	7.	0.	11.	6.	16.	10.	7.	14.	14.	14.
201	17.	8.	13.	11.	16.	22.	17.	11.	17.	20.
211	29.	13.	21.	24.	15.	25.	23.	33.	27.	23.
221	26.	41.	39.	40.	31.	54.	59.	53.	59.	71.
231	52.	89.	88.	83.	99.	115.	101.	130.	161.	170.
241	177.	211.	255.	298.	325.	333.	392.	453.	507.	630.
251	706.	741.	901.	876.	763.	687.	431.	207.	139.	80.
261	72.	85.	75.	71.	66.	52.	60.	45.	57.	32.
271	38.	38.	39.	45.	43.	49.	44.	54.	45.	83.
281	61.	72.	73.	85.	104.	119.	124.	137.	172.	188.
291	225.	231.	244.	284.	369.	376.	454.	514.	580.	589.
301	568.	453.	391.	240.	157.	139.	109.	89.	71.	80.
311	65.	40.	24.	16.	12.	5.	0.	0.	0.	0.
321	2.	0.	0.	0.	0.	0.	1.	0.	0.	0.
331	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.
341	0.	0.	1.	1.	2.	0.	0.	2.	1.	3.
351	4.	2.	3.	8.	4.	3.	3.	3.	9.	7.
361	6.	12.	14.	11.	12.	15.	11.	16.	9.	16.
371	14.	9.	7.	3.	1.	1.	0.	0.	0.	0.
381	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
411	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
421	1.	0.	0.	2.	2.	1.	2.	3.	1.	0.
431	1.	2.	4.	1.	1.	4.	2.	2.	0.	1.
441	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
481	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0056-SAM-AM
File ID: 10a1050.CNF

Counted on: 1/18/ 0 @20:50
Detector: AEA10
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	408.3	408.3	300.853	300.853	14.000	7.234	7.000	2.083
2	556.6	556.6	254.828	254.785	12.000	5.542	6.000	1.618

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Am241	0.391	5.479	5.470	0.009	0.03	17.03	2.2	80.8	0.364E-04
	Pu238		5.487	5.470	0.017				105.5	0.475E-04
2	Am243	0.501	5.266	5.258	0.008	0.03	21.83	2.0	98.3	0.443E-04
Totals:		0.892	<--valid peaks only-->				38.86			

DETECTOR CALIBRATION
Energy(MEV) = 4.086 + (0.0046)*Channel
Energy range (MeV): 4.086 TO 6.441
Efficiency = 0.2242 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20916.0	100.000
Smoothed	20916.0	100.000
Composite fit	18654.7	89.189
Residuals	2261.3	10.811

Analyzed by: _____
GL

Spectrum 10a1050.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3938.0

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Raw Data Dump for AEA Spectrum: 10a1050.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	1.	0.	2.	1.	2.	0.
21	0.	0.	1.	0.	0.	2.	1.	0.	0.	1.
31	1.	0.	0.	1.	0.	0.	2.	2.	0.	2.
41	3.	0.	1.	2.	5.	2.	1.	2.	1.	0.
51	1.	1.	2.	3.	1.	2.	0.	2.	2.	0.
61	1.	3.	2.	4.	1.	3.	3.	0.	3.	0.
71	1.	1.	2.	1.	0.	4.	2.	2.	1.	2.
81	0.	2.	0.	3.	1.	4.	1.	1.	2.	3.
91	3.	2.	2.	1.	3.	4.	2.	2.	1.	0.
101	3.	3.	3.	5.	4.	2.	2.	4.	4.	2.
111	7.	3.	3.	5.	2.	2.	3.	4.	6.	4.
121	3.	1.	7.	3.	4.	2.	2.	2.	2.	5.
131	5.	7.	3.	6.	3.	7.	6.	6.	1.	9.
141	2.	6.	7.	7.	7.	5.	3.	4.	3.	3.
151	7.	9.	9.	4.	12.	10.	7.	2.	9.	8.
161	7.	10.	9.	11.	7.	8.	17.	12.	13.	4.
171	12.	15.	18.	6.	12.	10.	15.	11.	13.	13.
181	15.	14.	18.	16.	11.	15.	18.	19.	15.	18.
191	23.	20.	21.	22.	24.	27.	20.	25.	36.	22.
201	35.	30.	26.	25.	36.	38.	34.	34.	33.	31.
211	33.	39.	61.	44.	44.	70.	55.	49.	53.	56.
221	73.	74.	78.	75.	87.	97.	90.	103.	75.	108.
231	108.	118.	122.	120.	126.	148.	166.	159.	171.	196.
241	179.	207.	260.	248.	289.	289.	350.	377.	437.	426.
251	462.	515.	582.	608.	621.	622.	552.	443.	252.	158.
261	88.	98.	87.	87.	77.	82.	67.	100.	73.	71.
271	55.	58.	74.	61.	83.	74.	81.	75.	86.	101.
281	90.	99.	106.	102.	120.	131.	134.	175.	176.	180.
291	206.	249.	250.	276.	284.	304.	334.	373.	441.	467.
301	425.	444.	410.	347.	232.	139.	101.	95.	70.	63.
311	56.	56.	28.	25.	16.	9.	7.	2.	1.	0.
321	3.	1.	0.	2.	0.	0.	0.	1.	0.	2.
331	2.	0.	2.	1.	2.	0.	2.	1.	0.	2.
341	2.	2.	2.	2.	3.	1.	2.	4.	6.	2.
351	4.	6.	4.	4.	4.	7.	6.	10.	6.	3.
361	7.	13.	7.	12.	11.	14.	14.	10.	6.	12.
371	11.	11.	8.	5.	5.	3.	0.	0.	0.	1.
381	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
391	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
401	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	1.	0.	2.	0.	0.	3.
421	0.	0.	2.	0.	2.	1.	0.	3.	1.	2.
431	1.	2.	1.	3.	2.	2.	1.	1.	2.	5.
441	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0056-DUP-AM
File ID: 11a1112.CNF

Counted on: 1/18/ 0 @20:52
Detector: AEA11
Geometry number: 1
Count time: 28808. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	18.2	18.2	368.530	368.530	14.000	4.209	7.000	1.465
2	504.2	504.2	299.997	299.997	14.000	7.004	7.000	2.621
3	679.4	679.4	254.076	254.061	12.000	5.191	6.000	1.942

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Cm244	0.014	5.795	5.786	0.009	0.02	0.61	11.5	2.6	0.117E-05
	Cm243		5.779	5.786	-.007				3.6	0.160E-05
2	Am241	0.415	5.479	5.470	0.009	0.03	18.14	2.1	82.5	0.372E-04
	Pu238		5.487	5.470	0.017				107.7	0.485E-04
3	Am243	0.520	5.266	5.259	0.007	0.02	22.75	1.9	98.2	0.443E-04
		---					---			
Totals:		0.949	<--valid peaks only-->				41.50			

DETECTOR CALIBRATION
Energy(MEV) = 4.090 + (0.0046)*Channel
Energy range (MeV): 4.090 TO 6.446
Efficiency = 0.2339 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20995.0	100.000
Smoothed	20995.0	100.000
Composite fit	19923.8	94.898
Residuals	1071.2	5.102

Analyzed by: _____
GL

Spectrum 11a1112.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 4839.4

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Raw Data Dump for AEA Spectrum: 11a1112.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
21	0.	0.	0.	0.	1.	0.	0.	0.	0.	0.
31	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
41	1.	0.	1.	0.	1.	0.	1.	0.	0.	0.
51	1.	1.	2.	0.	0.	0.	0.	0.	0.	0.
61	1.	2.	0.	2.	0.	0.	1.	1.	0.	0.
71	0.	0.	0.	0.	1.	0.	0.	1.	0.	2.
81	0.	0.	0.	0.	0.	3.	1.	2.	1.	0.
91	0.	0.	0.	2.	3.	1.	2.	0.	0.	0.
101	0.	0.	1.	0.	0.	0.	2.	0.	0.	1.
111	1.	2.	1.	0.	2.	2.	1.	0.	0.	1.
121	0.	1.	1.	0.	3.	1.	1.	1.	2.	1.
131	1.	0.	1.	1.	1.	2.	2.	2.	1.	0.
141	5.	1.	1.	2.	3.	2.	0.	1.	2.	5.
151	1.	1.	5.	1.	2.	4.	0.	3.	2.	2.
161	2.	6.	5.	4.	3.	3.	4.	1.	3.	4.
171	4.	4.	8.	8.	3.	2.	5.	5.	4.	3.
181	9.	5.	5.	3.	8.	3.	4.	10.	6.	3.
191	3.	6.	13.	10.	5.	6.	12.	5.	14.	11.
201	15.	15.	15.	13.	10.	17.	17.	18.	18.	16.
211	21.	16.	22.	23.	30.	16.	22.	21.	25.	34.
221	36.	32.	35.	53.	44.	74.	47.	54.	67.	65.
231	73.	79.	87.	91.	103.	103.	136.	143.	159.	174.
241	163.	213.	275.	287.	351.	379.	426.	461.	512.	577.
251	620.	662.	721.	771.	728.	718.	533.	329.	179.	122.
261	85.	76.	53.	87.	67.	63.	65.	63.	49.	45.
271	56.	44.	50.	49.	52.	51.	59.	77.	59.	68.
281	81.	83.	89.	101.	126.	149.	147.	191.	186.	221.
291	241.	289.	329.	343.	379.	432.	461.	504.	569.	532.
301	568.	502.	412.	273.	189.	155.	103.	95.	70.	63.
311	43.	36.	33.	17.	18.	6.	1.	2.	1.	0.
321	0.	0.	1.	0.	0.	0.	1.	0.	1.	0.
331	1.	2.	0.	0.	1.	1.	1.	0.	1.	2.
341	0.	2.	2.	2.	4.	3.	2.	1.	2.	3.
351	4.	7.	2.	4.	5.	9.	8.	3.	10.	7.
361	9.	18.	12.	15.	14.	21.	15.	24.	14.	22.
371	17.	12.	8.	0.	0.	0.	0.	0.	0.	0.
381	0.	1.	0.	0.	0.	0.	0.	1.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
401	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
411	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
421	0.	2.	1.	3.	0.	2.	0.	0.	2.	1.
431	1.	3.	3.	3.	2.	3.	2.	1.	2.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0057-SAM-AM
File ID: 12a1279.CNF

Counted on: 1/18/ 0 @20:53
Detector: AEA12
Geometry number: 1
Count time: 28808. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1?	10.5	10.5	366.347	366.347	8.000	4.962	4.000	1.977
2	350.5	350.5	299.583	299.583	12.000	6.128	6.000	1.871
3	560.7	560.7	253.875	253.848	12.000	5.169	6.000	1.546

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1		????		5.770			0.34	15.4		
2	Am241	0.332	5.479	5.463	0.016	0.03	13.65	2.4	68.8	0.310E-04
	Pu238		5.487	5.463	0.024				89.8	0.404E-04
3	Am243	0.520	5.266	5.252	0.014	0.02	21.37	2.0	102.3	0.461E-04
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Totals:		0.852	<--valid peaks only-->				35.02			

DETECTOR CALIBRATION
Energy(MEV) = 4.084 + (0.0046)*Channel
Energy range (MeV): 4.084 TO 6.440
Efficiency = 0.2111 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	19729.0	100.000
Smoothed	19729.0	100.000
Composite fit	16977.4	86.053
Residuals	2751.6	13.947

Analyzed by: _____
GL

Spectrum 12a1279.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3947.2

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Raw Data Dump for AEA Spectrum: 12a1279.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	1.	5.	1.	2.	1.	2.
21	0.	1.	1.	2.	0.	3.	1.	1.	4.	1.
31	0.	1.	3.	0.	0.	4.	4.	1.	2.	2.
41	0.	0.	1.	1.	2.	1.	1.	2.	3.	1.
51	4.	2.	2.	1.	1.	2.	2.	3.	1.	1.
61	3.	3.	1.	4.	2.	3.	2.	6.	1.	3.
71	0.	2.	4.	2.	2.	1.	4.	1.	3.	3.
81	4.	5.	5.	2.	6.	3.	1.	4.	1.	2.
91	3.	6.	4.	2.	6.	3.	2.	7.	6.	3.
101	3.	3.	3.	6.	6.	5.	5.	1.	6.	2.
111	4.	5.	3.	2.	4.	6.	4.	9.	2.	9.
121	3.	6.	3.	7.	8.	10.	4.	7.	5.	4.
131	3.	8.	3.	8.	6.	6.	5.	9.	4.	8.
141	4.	9.	8.	8.	7.	8.	13.	5.	2.	12.
151	3.	3.	7.	8.	8.	10.	13.	12.	23.	17.
161	12.	12.	9.	20.	18.	9.	16.	17.	12.	18.
171	13.	14.	12.	17.	19.	17.	18.	20.	17.	24.
181	17.	18.	27.	28.	22.	21.	27.	20.	23.	22.
191	27.	25.	26.	30.	18.	43.	33.	38.	42.	31.
201	43.	39.	41.	39.	48.	52.	47.	39.	47.	48.
211	59.	60.	62.	62.	69.	55.	64.	71.	71.	84.
221	81.	89.	73.	89.	71.	85.	89.	102.	110.	123.
231	118.	132.	144.	134.	162.	156.	169.	165.	187.	205.
241	199.	238.	219.	268.	267.	324.	354.	355.	401.	452.
251	506.	542.	611.	653.	624.	546.	379.	251.	144.	108.
261	92.	68.	86.	72.	92.	77.	68.	69.	65.	64.
271	66.	51.	68.	55.	70.	58.	68.	71.	72.	91.
281	82.	86.	92.	106.	123.	129.	140.	159.	143.	175.
291	184.	227.	199.	225.	249.	312.	330.	357.	369.	388.
301	400.	299.	229.	132.	87.	75.	88.	59.	52.	28.
311	37.	13.	18.	15.	8.	1.	3.	5.	1.	0.
321	0.	1.	3.	0.	2.	0.	1.	0.	1.	1.
331	2.	1.	0.	0.	1.	1.	2.	5.	2.	1.
341	1.	1.	4.	3.	3.	3.	2.	3.	1.	3.
351	1.	4.	0.	1.	2.	8.	7.	5.	7.	3.
361	8.	4.	12.	11.	13.	11.	6.	15.	8.	9.
371	2.	1.	2.	1.	0.	1.	0.	0.	1.	0.
381	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	2.	0.	1.	0.	1.	0.
421	0.	1.	1.	0.	0.	3.	0.	1.	2.	0.
431	1.	1.	1.	1.	3.	4.	2.	2.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0057-DUP-AM
File ID: 13a1365.CNF

Counted on: 1/18/ 0 @20:55
Detector: AEA13
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	12.4	12.4	370.285	370.285	12.000	4.092	6.000	1.246
2	391.0	391.0	302.284	302.284	12.000	5.367	6.000	1.909
3	640.6	640.6	256.380	256.370	12.000	4.572	6.000	1.585
4	13.3	13.3	154.195	154.187	164.000	1.000	82.000	0.100

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Cm244	0.010	5.795	5.786	0.009	0.02	0.45	13.4	1.8	0.813E-06
	Cm243		5.779	5.786	-.007				2.5	0.111E-05
2	Am241	0.313	5.479	5.474	0.005	0.02	13.56	2.4	58.2	0.262E-04
	Pu238		5.487	5.474	0.013				75.9	0.342E-04
3	Am243	0.502	5.266	5.262	0.004	0.02	21.80	1.9	88.7	0.400E-04
4	Ra226	0.024	4.782	4.792	-.010	0.00	1.06	8.7	4.5	0.202E-05
	Np237		4.769	4.792	-.023				4.9	0.220E-05
		---					---			
Totals:		0.850	<--valid peaks only-->				36.87			

DETECTOR CALIBRATION
Energy(MEV) = 4.083 + (0.0046)*Channel
Energy range (MeV): 4.083 TO 6.438
Efficiency = 0.2481 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	20833.0	100.000
Smoothed	20833.0	100.000
Composite fit	17698.7	84.955
Residuals	3134.3	15.045

Analyzed by: _____
GL

Spectrum 13a1365.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 3647.0

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Raw Data Dump for AEA Spectrum: 13a1365.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	2.	1.	0.	0.	2.
21	1.	0.	2.	0.	4.	1.	2.	0.	1.	0.
31	1.	1.	2.	0.	0.	0.	2.	0.	2.	1.
41	1.	0.	2.	0.	0.	3.	1.	1.	2.	3.
51	0.	0.	0.	4.	2.	5.	2.	1.	4.	3.
61	1.	2.	2.	1.	3.	2.	0.	1.	4.	1.
71	2.	3.	1.	5.	2.	1.	1.	3.	1.	3.
81	2.	4.	1.	1.	3.	2.	0.	1.	4.	4.
91	2.	0.	1.	1.	0.	5.	3.	3.	3.	4.
101	1.	4.	2.	3.	2.	3.	1.	2.	5.	6.
111	6.	1.	5.	1.	5.	3.	3.	8.	1.	4.
121	11.	7.	4.	5.	4.	5.	9.	9.	6.	6.
131	7.	10.	3.	7.	1.	4.	1.	4.	11.	5.
141	9.	7.	12.	7.	8.	6.	7.	8.	6.	9.
151	13.	7.	12.	16.	16.	5.	12.	11.	7.	11.
161	17.	15.	13.	12.	12.	12.	11.	21.	12.	19.
171	16.	13.	19.	19.	20.	23.	18.	22.	22.	17.
181	16.	19.	21.	26.	24.	24.	30.	47.	16.	28.
191	32.	37.	34.	23.	31.	30.	39.	38.	44.	47.
201	43.	48.	54.	36.	61.	49.	71.	53.	44.	49.
211	70.	62.	60.	74.	65.	79.	72.	65.	56.	66.
221	75.	81.	85.	78.	99.	111.	92.	105.	107.	74.
231	110.	139.	129.	128.	124.	131.	142.	163.	160.	155.
241	162.	187.	222.	219.	210.	241.	268.	312.	341.	367.
251	379.	421.	451.	588.	645.	766.	764.	712.	447.	314.
261	144.	123.	102.	90.	100.	70.	91.	95.	75.	74.
271	83.	66.	57.	67.	77.	68.	55.	67.	77.	69.
281	79.	85.	93.	94.	84.	89.	106.	104.	96.	165.
291	154.	140.	173.	162.	202.	199.	236.	280.	326.	342.
301	399.	456.	470.	398.	279.	172.	125.	105.	76.	62.
311	64.	47.	46.	27.	22.	11.	12.	2.	1.	1.
321	0.	0.	1.	1.	0.	1.	0.	0.	2.	0.
331	1.	0.	0.	4.	2.	1.	1.	0.	1.	3.
341	2.	5.	2.	4.	3.	0.	4.	3.	1.	2.
351	6.	3.	3.	3.	4.	6.	3.	6.	7.	7.
361	1.	9.	5.	3.	9.	10.	11.	11.	14.	15.
371	11.	17.	8.	5.	2.	2.	2.	1.	0.	0.
381	0.	1.	0.	0.	0.	1.	0.	0.	0.	0.
391	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.
401	1.	0.	0.	0.	0.	0.	0.	1.	1.	0.
411	0.	0.	0.	0.	0.	1.	1.	0.	1.	0.
421	1.	1.	1.	0.	1.	0.	1.	1.	0.	1.
431	0.	0.	0.	1.	2.	3.	3.	3.	1.	3.
441	2.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

WORKBOOK PAGE: STD1

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~0~~) 3/19/00 LIQUID

						STD
	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	0.505
STD	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.477
	Sample D.F.	(DF)	1	Cm 243/244 AEA Frac.	(Cm)	0
32109	Tracer Volume in mL	(SPKV)	0.200	Total AT Counts		3983
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		52.94
LIQUID	Detector Number		16	Am 243 cpm		50.05
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm		0
20000092	Standard Book No		46B57	AEA Count Time	(min)	480
	Standard Value in µCi/mL		1.070E-04	Am 241 µCi/L =		1.0778E-01
0				Cm 243/244 µCi/L =	<	1.0671E-02

N/A

WL32109

WB27806

BZC

JFR

AKL

01/19/2000

01/18/2000

11:00 AM

SY-102 GRAB

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

			DETECTION LEVELS in µCi/mL
Am 241 µCi/mL	=	1.08E-04	
Relative Counting Error	=	1.8%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241 1.07E-05
Cm 243/244 µCi/mL		< 1.07E-05	
Relative Counting Error	=	100.0%	Cm 243/244 1.07E-05
Am 243 Tracer Recovery	=	103.0%	

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

STANDARD.WB1 REV 1.2 953103ML

WORKBOOK PAGE: BLANK2

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-3) LIQUID / SO

	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	0
BLNK	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.864
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0
32109	*Tracer Volume in mL*	(SPKV)	*0.100*	*Total AT Counts*		936
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		0
LIQUID	Detector Number		16	Am 243 cpm		21.45
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm		0
20000092				AEA Count Time	(min)	480
				Am 241 µCi/L =	<	3.4136E-01
0				Cm 243/244 µCi/L =	<	3.4136E-01

N/A

WL32109

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

NOTE: Am-241 Result is a LESS THAN Value.

Am 241 µCi/mL	=	< 3.41E-04
Relative Counting Error	=	100.0%

NOTE: Cm-243/244 Result is a LESS THAN Value.

Cm 243/244 µCi/mL		< 3.41E-04
Relative Counting Error	=	100.0%
Am 243 Tracer Recovery	=	87.2%

DETECTION LEVELS in µCi/mL
Am 241
3.41E-04
Cm 243/244
3.41E-04

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

BLANK.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM3

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~0~~3) LIQUID / SO

							SAMPLE
	Date Counted		JAN-01-2018	Am 241 AEA Frac.	(C241)		0.64
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.296
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)		0.02
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts			3286
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)		0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm			55.31
LIQUID	Detector Number		16	Am 243 cpm			25.58
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm			1.72
20000092				AEA Count Time	(min)		480
				Am 241 µCi/L =			1.1116E+01
0				Cm 243/244 µCi/L =		<	8.6841E-01

N/A

S00T000049

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	1.11E-02	DETECTION LEVELS In µCi/mL
Relative Counting Error	=	2.1%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 8.68E-04	8.68E-04
Relative Counting Error	=	7.0%	Cm 243/244
Am 243 Tracer Recovery	=	105.4%	8.68E-04

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103MI

WORKBOOK PAGE: DUP4

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-3) LIQUID / SO

						DUP
	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	0.626
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.288
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0.02
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		3091
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		52.57
LIQUID	Detector Number		16	Am 243 cpm		24.19
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm		1.66
20000092				AEA Count Time	(min)	480
				Am 241 µCi/L =		1.1175E+01
0				Cm 243/244 µCi/L =	<	9.2553E-01

N/A

S00T000049

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	1.12E-02	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.2%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 9.26E-04	9.26E-04
Relative Counting Error	=	7.2%	Cm 243/244
Am 243 Tracer Recovery	=	96.4%	9.26E-04

Analyst:	AKL	Date:	01/19/2000
Signature of Chemist: John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM5

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-3) LIQUID / SO

						SAMPLE
	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	0.432
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.532
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0.016
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1718
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		19.66
LIQUID	Detector Number		16	Am 243 cpm		24.2
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm		0.68
20000092				AEA Count Time	(min)	480
				Am 241 µCi/L =		4.1746E+00
0				Cm 243/244 µCi/L =	<	4.8889E-01

N/A

S00T000054

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	4.17E-03	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.7%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 4.89E-04	4.89E-04
Relative Counting Error	=	11.0%	Cm 243/244
Am 243 Tracer Recovery	=	98.8%	4.89E-04

Analyst:	AKL	Date:	01/19/2000
Signature of Chemist: John Relyea	JFR	Date:	19 Jan 99

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP6

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~0~~ 3) 5/3/00 LIQUID / SO

	Date Counted	JAN-18-2000	Am 241 AEA Frac.	(C241)	0.425
DUP	Sample Volume in mL	(SS) 1.000	Am 243 AEA Frac.	(C243)	0.516
	Sample D.F.	(DF) 101	Cm 243/244 AEA Frac.	(Cm)	0.016
32109	Tracer Volume in mL	(SPKV) 0.100	Total AT Counts		1622
	Digest D.F.	(DDF) 1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.	10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL) 1130	Am 241 cpm		18.27
LIQUID	Detector Number	16	Am 243 cpm		22.15
	Detector Efficiency	(DetEff) 0.2717	Cm 243/244 cpm		0.7
20000092			AEA Count Time	(min)	480
			Am 241 µCi/L =		4.2343E+00
0			Cm 243/244 µCi/L =	<	5.5056E-01
N/A					
S00T000054					

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))
Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100
Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL =	4.23E-03	DETECTION LEVELS In µCi/mL
Relative Counting Error =	2.8%	
NOTE: Cm-243/244 Result is a LESS THAN Value.		Am 241
Cm 243/244 µCi/mL	< 5.51E-04	5.51E-04
Relative Counting Error =	10.9%	Cm 243/244
Am 243 Tracer Recovery =	90.5%	5.51E-04

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM7

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~0~~ 3) LIQUID / SO

						SAMPLE
	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	0.407
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.554
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0.014
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1507
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		16.02
LIQUID	Detector Number		16	Am 243 cpm		21.9
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm		0.54
20000092				AEA Count Time	(min)	480
				Am 241 µCi/L =		3.7769E+00
0				Cm 243/244 µCi/L =	<	5.1424E-01

N/A

S00T000055

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))
Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100
Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	3.78E-03	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 5.14E-04	5.14E-04
Relative Counting Error	=	12.3%	Cm 243/244
Am 243 Tracer Recovery	=	90.2%	5.14E-04

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP8

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~9~~ 3) LIQUID / SO

						DUP
	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	0.384
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.526
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0.011
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1630
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		16.33
LIQUID	Detector Number		16	Am 243 cpm		22.35
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm		0.48
20000092				AEA Count Time	(min)	480
				Am 241 µCi/L =		3.7531E+00
0				Cm 243/244 µCi/L =	<	5.2722E-01

N/A

S00T000055

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	3.75E-03	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	2.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 5.27E-04	5.27E-04
Relative Counting Error	=	13.1%	Cm 243/244
Am 243 Tracer Recovery	=	92.7%	5.27E-04

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM9

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~9~~ 3)) 5/2/00 LIQUID / SO

						SAMPLE
	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	0.391
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.501
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1634
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		17.03
LIQUID	Detector Number		16	Am 243 cpm		21.83
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm		0
20000092				AEA Count Time	(min)	480
				Am 241 µCi/L =		4.0122E+00
0				Cm 243/244 µCi/L =	<	5.7972E-01

N/A

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

S00T000056

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

Am 241 µCi/mL	=	4.01E-03	DETECTION LEVELS In µCi/mL
Relative Counting Error	=	2.9%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 5.80E-04	5.80E-04
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	88.5%	5.80E-04

Analyst:	AKL	Date:	01/19/2000
Signature of Chemist: John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP10

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~0~~3)) LAD 5/2/00 LIQUID / SO

						DUP
	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	0.416
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)	0.52
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)	0.014
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts		1600
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)	30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)	0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm		18.14
LIQUID	Detector Number		16	Am 243 cpm		22.75
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm		0.61
20000092				AEA Count Time	(min)	480
				Am 241 µCi/L =		4.1029E+00
0				Cm 243/244 µCi/L =	<	5.4961E-01

N/A

S00T000056

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

			DETECTION LEVELS in µCi/mL
Am 241 µCi/mL	=	4.10E-03	
Relative Counting Error	=	2.8%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 5.50E-04	5.50E-04
Relative Counting Error	=	11.6%	Cm 243/244
Am 243 Tracer Recovery	=	89.9%	5.50E-04

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: SAM11

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B~~5~~7) 1/19/00 LIQUID / SO

	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)	SAMPLE	0.332
SAMPLE	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.52
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)		0
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts			1538
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)		0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm			13.65
LIQUID	Detector Number		16	Am 243 cpm			21.37
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm			0
20000092				AEA Count Time	(min)		480
				Am 241 µCi/L =			3.2823E+00
0				Cm 243/244 µCi/L =		<	5.7187E-01

N/A

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

S00T000057 Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

WB27800

Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

SZ

JFR

Am 241 µCi/mL	=	3.28E-03	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	3.1%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 5.72E-04	5.72E-04
Relative Counting Error	=	100.0%	Cm 243/244
Am 243 Tracer Recovery	=	86.4%	5.72E-04

AKL

01/19/2000

01/19/2000

11:00 AM

SYC102 GRAB

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103ML

WORKBOOK PAGE: DUP12

Am 241 and Cm 243/244: LA-953-103 (VOID) or LA-953-104(B-~~0~~ 3)

LIQUID / SO

							DUP
	Date Counted		JAN-18-2000	Am 241 AEA Frac.	(C241)		0.313
DUP	Sample Volume in mL	(SS)	1.000	Am 243 AEA Frac.	(C243)		0.502
	Sample D.F.	(DF)	101	Cm 243/244 AEA Frac.	(Cm)		0.01
32109	Tracer Volume in mL	(SPKV)	0.100	Total AT Counts			1592
	Digest D.F.	(DDF)	1.000	AT Count Time (min)	(TC)		30
@AM24102	Tracer Book No.		10B59	Background in cpm	(Bkg)		0.23
	Am-243 Tracer Value	(dpm/mL)	1130	Am 241 cpm			13.56
LIQUID	Detector Number		16	Am 243 cpm			21.8
	Detector Efficiency	(DetEff)	0.2717	Cm 243/244 cpm			0.45
20000092				AEA Count Time	(min)		480
				Am 241 µCi/L =			3.2054E+00
0				Cm 243/244 µCi/L =		<	5.9271E-01

N/A

Am-241 µCi/L = (C241 * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

S00T000057 Cm-243/244 µCi/L = (Cm * Am-243 Tracer Value * SPKV * DF * DDF * (1000mL/L)) / (C243 * SS * (2220000dpm/µCi))

WB27B01 Relative Counting Error = Square Root of [(1/(Am-243 cpm * min)) + (1 / (Am-241 or Cm-243/244 cpm * min))] * 1.96 * 100

Am 243 Tracer Recovery = (Total AT Counts / TC - Bkg) * (1/DetEff) * C243 * 100 / Am-243 Tracer Value * SPKV

SZG

JFR

Am 241 µCi/mL	=	3.21E-03	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	3.1%	
NOTE: Cm-243/244 Result is a LESS THAN Value.			Am 241
Cm 243/244 µCi/mL		< 5.93E-04	5.93E-04
Relative Counting Error	=	13.5%	Cm 243/244
Am 243 Tracer Recovery	=	86.4%	5.93E-04

AKL

01/19/2000

01/19/2000

1100 AM

SY-102 GRAB

Analyst:		AKL	Date:	01/19/2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.2 953103ML

LABCORE Completed Worklist Report for Worklist# 32108

Analyst: akl **Instrument:** AB15 **Book#:** _____

Method: LA-953-104 Rev/Mod B-3

Worklist Comment: SY-102 GRAB 5 FOR @PU23902 RTS

Seq	Type	Sample#	R	A	Test		Matrix	Actual		Found	DL or Yield	Unit
1	STD			0	@PU23902	PU23901	LIQUID	1.26E-04		1.25E-4	99.206	% Recovery
1	STD			0	@PU23902	PU23901T	LIQUID	100		1.00E+02	100.000	% Recovery
1	STD			0	@PU23902	PU23901E	LIQUID	1.0		1.60E+00	1.600	% Ct Error
2	BLNK			0	@PU23902	PU23901	LIQUID	1		<3.34E-4		uCi/mL
2	BLNK			0	@PU23902	PU23901T	LIQUID	100		1.08E+02	108.000	% Recovery
2	BLNK			0	@PU23902	PU23901E	LIQUID	1.00		1.00E+02	100.000	uCi/mL
2	BLNK			0	@PU23902	PU23801	LIQUID	1		<3.34E-4		uCi/mL
2	BLNK			0	@PU23902	PU23801E	LIQUID	1.00		1.00E+02	100.000	uCi/mL
3	SAMPLE	S00T000049		0	@PU23902	PU23901	LIQUID	N/A		5.44E-04	3.55e-004	uCi/mL
3	SAMPLE	S00T000049		0	@PU23902	PU23901T	LIQUID	N/A		1.02E+02		% Recovery
3	SAMPLE	S00T000049		0	@PU23902	PU23901E	LIQUID	N/A		5.52E+00		% Ct. Error
3	SAMPLE	S00T000049		0	@PU23902	PU23801	LIQUID	N/A	<	3.55E-04	3.55e-004	uCi/mL
3	SAMPLE	S00T000049		0	@PU23902	PU23801E	LIQUID	N/A		9.45E+00		% Ct. Error
4	DUP	S00T000049		0	@PU23902	PU23901	LIQUID	5.44E-4		5.38E-4	1.109	RPD
4	DUP	S00T000049		0	@PU23902	PU23901T	LIQUID	100		1.06E+02	106.000	% Recovery
4	DUP	S00T000049		0	@PU23902	PU23901E	LIQUID	1.00		5.63E+00	5.630	% Ct Error
4	DUP	S00T000049		0	@PU23902	PU23801	LIQUID	<3.55E-4		<3.51E-4		RPD
4	DUP	S00T000049		0	@PU23902	PU23801E	LIQUID	1.00		1.05E+01	10.500	% Ct. Erro
5	SAMPLE	S00T000054		0	@PU23902	PU23901	LIQUID	N/A	<	3.39E-04	3.39e-004	uCi/mL
5	SAMPLE	S00T000054		0	@PU23902	PU23901T	LIQUID	N/A		1.03E+02		% Recovery
5	SAMPLE	S00T000054		0	@PU23902	PU23901E	LIQUID	N/A		8.62E+00		% Ct. Error
5	SAMPLE	S00T000054		0	@PU23902	PU23801	LIQUID	N/A	<	3.39E-04	3.39e-004	uCi/mL
5	SAMPLE	S00T000054		0	@PU23902	PU23801E	LIQUID	N/A		1.16E+01		% Ct. Error
6	DUP	S00T000054		0	@PU23902	PU23901	LIQUID	<3.39E-4		<3.50E-4		RPD
6	DUP	S00T000054		0	@PU23902	PU23901T	LIQUID	100		9.80E+01	98.000	% Recovery
6	DUP	S00T000054		0	@PU23902	PU23901E	LIQUID	1.00		8.06E+00	8.060	% Ct Error
6	DUP	S00T000054		0	@PU23902	PU23801	LIQUID	<3.39E-4		<3.50E-4		RPD
6	DUP	S00T000054		0	@PU23902	PU23801E	LIQUID	1.00		1.00E+02	100.000	% Ct. Erro
7	SAMPLE	S00T000055		0	@PU23902	PU23901	LIQUID	N/A	<	3.70E-04	3.70e-004	uCi/mL
7	SAMPLE	S00T000055		0	@PU23902	PU23901T	LIQUID	N/A		9.28E+01		% Recovery
7	SAMPLE	S00T000055		0	@PU23902	PU23901E	LIQUID	N/A		9.12E+00		% Ct. Error
7	SAMPLE	S00T000055		0	@PU23902	PU23801	LIQUID	N/A	<	3.70E-04	3.70e-004	uCi/mL
7	SAMPLE	S00T000055		0	@PU23902	PU23801E	LIQUID	N/A		1.00E+02		% Ct. Error
8	DUP	S00T000055		0	@PU23902	PU23901	LIQUID	<3.70E-4		<3.43E-4		RPD
8	DUP	S00T000055		0	@PU23902	PU23901T	LIQUID	100		1.04E+02	104.000	% Recovery
8	DUP	S00T000055		0	@PU23902	PU23901E	LIQUID	1.00		8.50E+00	8.500	% Ct Error
8	DUP	S00T000055		0	@PU23902	PU23801	LIQUID	<3.70E-4		<3.43E-4		RPD
8	DUP	S00T000055		0	@PU23902	PU23801E	LIQUID	1.00		1.09E+01	10.900	% Ct. Erro
9	SAMPLE	S00T000056		0	@PU23902	PU23901	LIQUID	N/A	<	3.50E-04	3.50e-004	uCi/mL
9	SAMPLE	S00T000056		0	@PU23902	PU23901T	LIQUID	N/A		9.73E+01		% Recovery
9	SAMPLE	S00T000056		0	@PU23902	PU23901E	LIQUID	N/A		8.29E+00		% Ct. Error

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

LABCORE Completed Worklist Report for Worklist# 32108

Seq	Type	Sample#	R	A	Test	Matrix	Actual		Found	DL or Yield	Unit
9	SAMPLE	S00T000056	0		●PU23902 PU23801	LIQUID	N/A	<	3.50E-04	3.50e-004	uCi/mL
9	SAMPLE	S00T000056	0		●PU23902 PU23801E	LIQUID	N/A		1.00E+02		% Ct. Error
10	DUP	S00T000056	0		●PU23902 PU23901	LIQUID	<3.50E-4		<3.40E-4		RPD
10	DUP	S00T000056	0		●PU23902 PU23901T	LIQUID	100		1.04E+02	104.000	% Recovery
10	DUP	S00T000056	0		●PU23902 PU23901E	LIQUID	1.00		8.50E+00	8.500	% Ct Error
10	DUP	S00T000056	0		●PU23902 PU23801	LIQUID	<3.50E-4		<3.40E-4		RPD
10	DUP	S00T000056	0		●PU23902 PU23801E	LIQUID	1.00		1.00E+02	100.000	% Ct. Erro
11	SAMPLE	S00T000057	0		●PU23902 PU23901	LIQUID	N/A	<	3.67E-04	3.67e-004	uCi/mL
11	SAMPLE	S00T000057	0		●PU23902 PU23901T	LIQUID	N/A		9.73E+01		% Recovery
11	SAMPLE	S00T000057	0		●PU23902 PU23901E	LIQUID	N/A		9.12E+00		% Ct. Error
11	SAMPLE	S00T000057	0		●PU23902 PU23801	LIQUID	N/A	<	3.67E-04	3.67e-004	uCi/mL
11	SAMPLE	S00T000057	0		●PU23902 PU23801E	LIQUID	N/A		1.00E+02		% Ct. Error
12	DUP	S00T000057	0		●PU23902 PU23901	LIQUID	<3.67E-4		<3.81E-4		RPD
12	DUP	S00T000057	0		●PU23902 PU23901T	LIQUID	100		9.44E+01	94.400	% Recovery
12	DUP	S00T000057	0		●PU23902 PU23901E	LIQUID	1.00		8.94E+00	8.940	% Ct Error
12	DUP	S00T000057	0		●PU23902 PU23801	LIQUID	<3.67E-4		<3.81E-4		RPD
12	DUP	S00T000057	0		●PU23902 PU23801E	LIQUID	1.00		1.13E+01	11.300	% Ct. Erro

Final page for worklist# 32108

Analyst Signature **Date**

Analyst Signature **Date**

John Relyea 19Jan00

Reviewer Signature **Date**

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

LABCORE Data Entry Template for Worklist# 32108

Analyst: AKL **Instrument:** PU01 15 **Book#** 46B57

Method: LA-953-104 Rev/Mod B3

Worklist Comment: SY-102 GRAB 5 FOR @PU23902 RTS

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@PU23902	LIQUID		
2	BLNK				@PU23902	LIQUID		
3	SAMPLE	S00T000049	0		@PU23902	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
4	DUP	S00T000049	0		@PU23902	LIQUID		
5	SAMPLE	S00T000054	0		@PU23902	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
6	DUP	S00T000054	0		@PU23902	LIQUID		
7	SAMPLE	S00T000055	0		@PU23902	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
8	DUP	S00T000055	0		@PU23902	LIQUID		
9	SAMPLE	S00T000056	0		@PU23902	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
10	DUP	S00T000056	0		@PU23902	LIQUID		
11	SAMPLE	S00T000057	0		@PU23902	LIQUID	20000008	SY-102 GRAB5
	Analytes Requested: PU23801 , PU23801E, PU23901 , PU23901E, PU23901T							
12	DUP	S00T000057	0		@PU23902	LIQUID		

Final page for worklist # 32108

Alita Hurson 1-14-00
Signature **Date**

Sharon L Holt 1-19-00
Signature **Date**

MB Brown 1/19/00

Data Entry Comments:

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

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. 2.11

DATA REDUCTION REPORT

SAMPLE
WL32108-STD-PU
File ID: 14a1451.CNF

Counted on: 1/18/ 0 @21: 1
Detector: AEA14
Geometry number: 1
Count time: 28804. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2394.3	2394.3	361.645	361.645	10.000	2.760	5.000	1.413
2?	20.8	20.8	301.271	301.222	18.000	6.792	9.000	2.356
3?	22.7	22.7	254.897	254.865	8.000	2.173	4.000	1.884
4	3133.3	3133.3	228.292	228.292	10.000	2.975	5.000	2.126

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.456	5.755	5.757	-.0020	.01	58.53	1.2	249.4	0.112E-03
2		????		5.479			0.77	10.7		
3		????		5.266			0.41	14.3		
4	Pu240	0.519	5.144	5.144	0.000	0.01	66.66	1.1	278.3	0.125E-03
	Pu239		5.147	5.144	0.003				278.3	0.125E-03
		---					---			
Totals:		0.976	<--valid peaks only-->				125.18			

DETECTOR CALIBRATION
Energy(MEV) = 4.094 + (0.0046)*Channel
Energy range (MeV): 4.094 TO 6.449
Efficiency = 0.2395 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	61601.0	100.000
Smoothed	61601.0	100.000
Composite fit	60663.1	98.477
Residuals	937.9	1.523

Analyzed by: _____
GL

Spectrum 14a1451.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 19969.5

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4
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3


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2


1
. 1
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Raw Data Dump for AEA Spectrum: 14a1451.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	2.	2.	1.	1.	3.	2.
21	3.	1.	3.	1.	0.	0.	2.	0.	0.	1.
31	0.	2.	0.	3.	0.	0.	1.	1.	0.	1.
41	2.	3.	2.	1.	1.	1.	2.	1.	1.	1.
51	0.	3.	3.	0.	2.	3.	1.	0.	2.	0.
61	0.	1.	0.	2.	1.	1.	1.	1.	1.	2.
71	5.	2.	2.	5.	1.	3.	1.	3.	1.	0.
81	0.	2.	1.	1.	1.	1.	0.	0.	1.	0.
91	2.	2.	2.	1.	0.	4.	4.	0.	3.	3.
101	3.	2.	4.	0.	0.	2.	2.	2.	0.	1.
111	0.	1.	5.	1.	3.	0.	2.	2.	1.	1.
121	1.	2.	0.	0.	0.	2.	5.	0.	1.	0.
131	2.	2.	1.	1.	7.	1.	1.	0.	2.	2.
141	4.	0.	2.	1.	1.	2.	1.	4.	3.	6.
151	1.	4.	0.	5.	1.	4.	4.	4.	5.	2.
161	6.	3.	2.	4.	4.	0.	7.	6.	2.	1.
171	4.	2.	4.	5.	6.	5.	5.	3.	11.	8.
181	6.	8.	4.	5.	8.	10.	14.	8.	9.	6.
191	7.	13.	6.	16.	15.	19.	15.	15.	11.	30.
201	17.	29.	29.	39.	50.	58.	64.	67.	92.	112.
211	133.	169.	198.	281.	333.	419.	581.	659.	779.	873.
221	933.	1020.	1304.	1636.	2251.	2850.	3316.	3907.	3821.	3222.
231	2076.	962.	288.	55.	10.	3.	4.	3.	1.	2.
241	3.	2.	4.	5.	6.	7.	3.	7.	8.	5.
251	16.	8.	15.	17.	16.	17.	13.	14.	3.	4.
261	3.	2.	4.	3.	6.	5.	4.	2.	8.	8.
271	3.	3.	2.	4.	0.	3.	5.	7.	4.	4.
281	1.	8.	4.	2.	5.	7.	11.	9.	11.	11.
291	5.	5.	13.	7.	7.	12.	15.	14.	10.	34.
301	21.	25.	20.	16.	10.	13.	12.	6.	7.	6.
311	5.	6.	5.	5.	4.	3.	4.	0.	9.	6.
321	7.	4.	4.	6.	8.	16.	23.	18.	22.	16.
331	25.	18.	15.	25.	32.	40.	37.	38.	46.	51.
341	60.	81.	103.	145.	185.	222.	304.	402.	513.	741.
351	851.	1058.	1162.	1134.	1024.	1017.	1169.	1401.	1840.	2290.
361	2802.	3028.	2688.	1918.	883.	251.	35.	4.	1.	1.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.
431	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
461	0.	0.	1.	0.	1.	0.	0.	0.	0.	1.
471	0.	1.	1.	0.	1.	2.	0.	0.	0.	0.
481	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
WL32108-BLK-PU
File ID: 15a1510.CNF

Counted on: 1/18/ 0 @21: 4
Detector: AEA15
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2245.5	2245.5	361.599	361.599	10.000	3.055	5.000	1.593

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	1.001	5.755	5.759	-.004	0.01	55.67	1.2	239.0	0.108E-03
	Cm243		5.779	5.759	0.020				320.8	0.145E-03
		---					---			
Totals:		1.001	<--valid peaks only-->				55.67			

DETECTOR CALIBRATION
Energy(MEV) = 4.096 + (0.0046)*Channel
Energy range (MeV): 4.096 TO 6.451
Efficiency = 0.2377 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	26697.0	100.000
Smoothed	26697.0	100.000
Composite fit	26723.6	100.100
Residuals	-26.6	-0.100

Analyzed by: _____
GL

Spectrum 15a1510.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 11359.3

```
1
..   1
..................1..
..................................................... 1
.....................................................................1
.1...
```

Raw Data Dump for AEA Spectrum: 15a1510.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
21	1.	1.	0.	0.	0.	0.	0.	0.	0.	2.
31	0.	0.	0.	0.	0.	1.	2.	0.	2.	0.
41	0.	0.	0.	0.	0.	2.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
61	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
81	2.	1.	0.	0.	0.	1.	0.	0.	1.	2.
91	0.	1.	2.	0.	0.	0.	1.	0.	0.	1.
101	0.	1.	1.	1.	0.	0.	0.	2.	0.	0.
111	0.	1.	0.	1.	0.	1.	0.	1.	0.	0.
121	0.	0.	0.	1.	2.	2.	0.	1.	0.	0.
131	0.	1.	1.	0.	0.	0.	1.	2.	0.	0.
141	0.	0.	0.	2.	0.	1.	0.	1.	3.	0.
151	0.	0.	0.	1.	0.	2.	1.	0.	0.	2.
161	0.	0.	1.	0.	1.	0.	1.	1.	0.	0.
171	0.	2.	1.	0.	0.	0.	1.	0.	0.	1.
181	1.	0.	0.	1.	0.	0.	3.	0.	0.	0.
191	0.	1.	0.	0.	0.	0.	0.	0.	1.	2.
201	1.	1.	1.	1.	0.	0.	0.	0.	1.	0.
211	1.	1.	0.	1.	2.	0.	0.	0.	2.	0.
221	2.	0.	0.	1.	0.	3.	1.	3.	3.	4.
231	2.	2.	2.	1.	0.	1.	0.	3.	0.	2.
241	0.	3.	2.	3.	3.	0.	4.	2.	5.	6.
251	5.	6.	4.	9.	6.	2.	2.	3.	0.	0.
261	1.	0.	1.	4.	3.	4.	6.	3.	3.	4.
271	2.	2.	2.	0.	1.	1.	1.	1.	2.	2.
281	1.	4.	4.	9.	8.	10.	8.	8.	4.	1.
291	2.	5.	0.	2.	4.	5.	4.	2.	5.	6.
301	7.	7.	6.	1.	5.	3.	0.	2.	2.	1.
311	1.	2.	2.	0.	3.	2.	5.	2.	2.	2.
321	2.	7.	5.	3.	7.	8.	7.	11.	17.	14.
331	13.	11.	18.	15.	17.	22.	25.	17.	31.	45.
341	57.	57.	81.	123.	150.	194.	248.	350.	562.	695.
351	878.	995.	1051.	976.	919.	960.	1152.	1360.	1776.	2304.
361	2627.	2803.	2450.	1830.	926.	367.	100.	18.	3.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
441	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	2.	1.	1.	1.	0.	0.	2.	1.	2.	1.
481	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0049-SAM-PU
File ID: 16a1611.CNF

Counted on: 1/18/ 0 @21: 5
Detector: AEA16
Geometry number: 1
Count time: 28800. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2378.9	2378.9	363.050	363.050	10.000	2.711	5.000	1.450
2	26.4	26.4	303.726	303.653	12.000	4.623	6.000	1.587
3	112.9	112.9	229.844	229.844	12.000	4.037	6.000	2.580

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.941	5.755	5.751	0.004	0.01	56.57	1.2	243.0	0.109E-03
2	Am241	0.015	5.479	5.478	0.001	0.02	0.91	9.6	4.1	0.183E-05
	Pu238		5.487	5.478	0.009				5.3	0.238E-05
3	Pu240	0.046	5.144	5.139	0.005	0.02	2.75	5.4	11.6	0.522E-05
	Pu239		5.147	5.139	0.008				11.6	0.522E-05
		---					---			
Totals:		1.002	<--valid peaks only-->				60.23			

DETECTOR CALIBRATION
Energy(MEV) = 4.081 + (0.0046)*Channel
Energy range (MeV): 4.081 TO 6.437
Efficiency = 0.2376 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	28856.0	100.000
Smoothed	28856.0	100.000
Composite fit	28910.7	100.190
Residuals	-54.7	-0.190

Analyzed by: _____
GL

Spectrum 16a1611.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 13837.0

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1
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Raw Data Dump for AEA Spectrum: 16a1611.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
21	1.	0.	0.	0.	0.	0.	0.	1.	3.	0.
31	0.	0.	2.	1.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	1.	1.	0.	0.	0.	1.	1.
51	0.	0.	2.	0.	1.	0.	0.	0.	0.	0.
61	0.	0.	1.	0.	0.	0.	0.	0.	1.	1.
71	0.	1.	0.	1.	0.	1.	0.	0.	0.	1.
81	0.	1.	1.	1.	0.	0.	3.	1.	0.	1.
91	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
101	1.	0.	0.	0.	1.	0.	1.	2.	0.	0.
111	1.	3.	1.	2.	1.	0.	0.	1.	0.	1.
121	2.	0.	0.	3.	1.	0.	0.	0.	0.	0.
131	0.	0.	0.	0.	0.	1.	0.	0.	0.	1.
141	1.	0.	1.	0.	1.	2.	3.	2.	0.	1.
151	3.	0.	1.	0.	1.	2.	1.	0.	2.	1.
161	2.	0.	0.	1.	0.	1.	0.	1.	0.	2.
171	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.
181	2.	1.	1.	0.	0.	0.	1.	1.	1.	3.
191	1.	1.	0.	0.	2.	1.	2.	4.	1.	1.
201	1.	1.	1.	2.	3.	3.	4.	1.	4.	1.
211	5.	6.	3.	7.	6.	16.	13.	19.	33.	24.
221	31.	39.	56.	67.	53.	79.	82.	106.	146.	128.
231	140.	90.	71.	49.	23.	8.	2.	4.	0.	1.
241	0.	0.	1.	3.	2.	1.	0.	2.	3.	4.
251	3.	6.	8.	4.	9.	5.	9.	2.	5.	1.
261	6.	1.	0.	7.	4.	1.	2.	2.	1.	4.
271	3.	6.	3.	2.	6.	0.	3.	3.	1.	1.
281	4.	5.	5.	1.	8.	7.	3.	9.	15.	4.
291	7.	12.	10.	16.	14.	13.	18.	11.	19.	20.
301	26.	35.	22.	31.	27.	30.	17.	8.	8.	4.
311	1.	3.	4.	4.	3.	3.	3.	3.	2.	4.
321	2.	6.	1.	4.	8.	5.	7.	7.	6.	6.
331	10.	8.	19.	15.	15.	11.	21.	24.	27.	35.
341	29.	63.	67.	82.	110.	122.	170.	250.	323.	437.
351	630.	783.	917.	1074.	1073.	947.	939.	1076.	1321.	1655.
361	2079.	2618.	2933.	2957.	2203.	1214.	417.	108.	7.	2.
371	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	1.	0.	1.	1.	0.	0.	1.	0.	0.	2.
481	0.	1.	0.	0.	1.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0049-DUP-PU
File ID: 17a1751.CNF

Counted on: 1/18/ 0 @21: 6
Detector: AEA17
Geometry number: 1
Count time: 28805. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2290.0	2290.0	363.445	363.445	8.000	2.686	4.000	1.412
2	25.7	25.7	303.994	303.961	12.000	3.772	6.000	1.642
3	116.7	116.7	229.897	229.897	12.000	3.659	6.000	2.595

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.951	5.755	5.766	-.011	0.01	54.82	1.2	233.8	0.105E-03
	Cm243		5.779	5.766	0.013				313.8	0.141E-03
2	Am241	0.013	5.479	5.492	-.013	0.02	0.74	10.7	3.3	0.148E-05
	Pu238		5.487	5.492	-.005				4.3	0.193E-05
3	Pu240	0.046	5.144	5.151	-.007	0.02	2.65	5.5	11.1	0.500E-05
	Pu239		5.147	5.151	-.004				11.1	0.500E-05
		---					---			
Totals:		1.010	<--valid peaks only-->				58.21			

DETECTOR CALIBRATION
Energy(MEV) = 4.094 + (0.0046)*Channel
Energy range (MeV): 4.094 TO 6.449
Efficiency = 0.2393 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	27668.0	100.000
Smoothed	27668.3	100.001
Composite fit	27946.9	101.008
Residuals	-278.9	-1.008

Analyzed by: _____
GL

Spectrum 17a1751.CNF
1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 13759.0

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3
..3
3

2
2
2

1
. 1
...........1
....................................1
...................................................................1
...1....
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Raw Data Dump for AEA Spectrum: 17a1751.CNF

1	0.	0.	1.	0.	0.	0.	0.	0.	0.	1.
11	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
21	1.	0.	0.	0.	1.	0.	1.	0.	1.	0.
31	2.	1.	0.	0.	0.	1.	0.	0.	0.	0.
41	0.	1.	0.	0.	0.	0.	0.	0.	0.	1.
51	0.	0.	0.	0.	1.	2.	1.	1.	1.	0.
61	0.	0.	1.	0.	0.	0.	0.	1.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
81	0.	0.	1.	1.	0.	1.	0.	0.	1.	2.
91	0.	0.	0.	0.	0.	1.	0.	2.	0.	0.
101	0.	0.	0.	1.	3.	1.	2.	0.	0.	0.
111	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
121	1.	0.	0.	2.	0.	0.	0.	0.	0.	3.
131	0.	1.	0.	0.	0.	1.	1.	0.	0.	0.
141	0.	1.	2.	1.	0.	0.	1.	1.	1.	2.
151	4.	1.	0.	0.	1.	1.	1.	1.	1.	1.
161	1.	0.	1.	1.	0.	0.	0.	1.	0.	0.
171	2.	0.	0.	0.	0.	1.	0.	0.	0.	0.
181	0.	1.	1.	1.	1.	1.	1.	2.	1.	0.
191	0.	0.	2.	1.	0.	1.	0.	1.	1.	0.
201	4.	0.	0.	3.	3.	3.	3.	1.	2.	3.
211	2.	4.	4.	5.	10.	12.	8.	20.	22.	25.
221	31.	42.	34.	43.	66.	80.	98.	119.	129.	136.
231	142.	107.	57.	45.	18.	4.	5.	2.	1.	0.
241	1.	1.	1.	0.	2.	3.	2.	1.	0.	1.
251	1.	4.	5.	6.	2.	6.	7.	5.	3.	7.
261	0.	2.	1.	5.	3.	1.	0.	0.	2.	5.
271	3.	5.	3.	1.	3.	1.	3.	2.	0.	2.
281	2.	1.	2.	1.	7.	7.	12.	5.	8.	5.
291	12.	5.	10.	4.	14.	6.	8.	20.	7.	17.
301	15.	22.	30.	36.	28.	20.	19.	11.	5.	0.
311	9.	4.	5.	1.	1.	2.	2.	4.	3.	1.
321	3.	1.	2.	3.	3.	4.	5.	9.	7.	13.
331	8.	11.	11.	11.	14.	15.	16.	20.	26.	29.
341	25.	43.	50.	60.	79.	108.	159.	217.	294.	403.
351	523.	757.	943.	1023.	1018.	861.	804.	928.	1094.	1424.
361	1871.	2265.	2819.	2939.	2497.	1536.	640.	178.	25.	2.
371	0.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	2.	0.	0.	0.
471	0.	0.	0.	1.	0.	0.	1.	1.	1.	0.
481	2.	1.	0.	1.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	1.	0.	0.	0.	1.	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0054-SAM-PU
File ID: 19a1937.CNF

Counted on: 1/18/ 0 @21: 8
Detector: AEA19
Geometry number: 1
Count time: 28802. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2171.0	2171.0	362.444	362.444	8.000	2.671	4.000	1.403
2	12.4	12.4	303.645	303.518	10.000	3.960	5.000	0.788
3	49.5	49.5	230.388	230.385	10.000	3.426	5.000	2.439

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.984	5.755	5.750	0.005	0.01	51.94	1.2	222.4	0.100E-03
2	Am241	0.011	5.479	5.479	0.000	0.02	0.60	11.9	2.7	0.121E-05
	Pu238		5.487	5.479	0.008				3.5	0.159E-05
3	Pu240	0.021	5.144	5.143	0.001	0.02	1.10	8.6	4.6	0.208E-05
	Pu239		5.147	5.143	0.004				4.6	0.208E-05
		---					---			
Totals:		1.016	<--valid peaks only-->				53.65			

DETECTOR CALIBRATION
Energy(MEV) = 4.083 + (0.0046)*Channel
Energy range (MeV): 4.083 TO 6.438
Efficiency = 0.2383 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	25352.0	100.000
Smoothed	25352.2	100.001
Composite fit	25752.5	101.580
Residuals	-400.5	-1.580

Analyzed by: _____
GL

```
                    Spectrum 19a1937.CNF
1 Legend:  Raw = ....  Modeled Peaks = 1,2,.., etc    Display Max.:   11886.7

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3

2
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2

1
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.................................................................1
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Raw Data Dump for AEA Spectrum: 19a1937.CNF

1	0.	0.	2.	0.	0.	0.	1.	0.	1.	0.
11	1.	0.	0.	0.	0.	1.	0.	1.	0.	1.
21	0.	0.	0.	0.	1.	0.	1.	1.	1.	0.
31	1.	0.	0.	0.	0.	0.	0.	0.	0.	1.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
51	0.	0.	0.	0.	0.	0.	0.	3.	1.	0.
61	1.	0.	0.	1.	0.	0.	0.	0.	1.	0.
71	0.	0.	0.	1.	0.	0.	0.	0.	1.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	1.	0.	0.	0.	0.	2.	0.	0.	0.	0.
101	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.
111	0.	0.	0.	1.	0.	1.	1.	0.	2.	0.
121	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
131	0.	0.	0.	0.	0.	1.	2.	0.	0.	0.
141	0.	1.	1.	2.	0.	0.	1.	2.	2.	0.
151	1.	0.	0.	2.	0.	0.	1.	1.	1.	0.
161	0.	0.	0.	1.	0.	1.	0.	1.	0.	0.
171	2.	3.	2.	1.	0.	1.	1.	0.	0.	0.
181	0.	0.	0.	0.	2.	0.	1.	4.	1.	0.
191	0.	0.	1.	1.	0.	2.	0.	0.	0.	0.
201	1.	0.	1.	2.	1.	1.	0.	0.	1.	1.
211	1.	1.	2.	2.	8.	1.	5.	7.	7.	11.
221	16.	8.	14.	14.	27.	32.	42.	42.	50.	59.
231	63.	52.	33.	21.	9.	6.	0.	0.	1.	2.
241	1.	3.	1.	0.	3.	0.	3.	1.	4.	2.
251	1.	0.	2.	2.	5.	3.	2.	4.	4.	3.
261	0.	1.	1.	1.	2.	1.	2.	4.	0.	2.
271	4.	3.	3.	1.	1.	0.	0.	3.	2.	2.
281	6.	3.	3.	4.	7.	5.	12.	7.	8.	6.
291	6.	8.	5.	6.	4.	10.	6.	9.	9.	12.
301	11.	12.	11.	18.	11.	11.	9.	6.	1.	2.
311	2.	3.	1.	4.	2.	3.	1.	4.	1.	3.
321	5.	3.	2.	4.	3.	9.	10.	13.	13.	13.
331	12.	16.	1.	16.	9.	11.	24.	24.	16.	43.
341	30.	40.	56.	61.	112.	139.	193.	272.	333.	449.
351	648.	858.	1000.	1025.	904.	821.	866.	1081.	1322.	1760.
361	2183.	2586.	2800.	2383.	1432.	622.	152.	12.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
471	1.	0.	1.	1.	2.	1.	1.	0.	0.	0.
481	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0054-DUP-PU
File ID: 20a2003.CNF

Counted on: 1/18/ 0 @21: 9
Detector: AEA20
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2236.4	2236.4	362.888	362.888	10.000	2.663	5.000	1.352
2?	11.3	11.3	303.384	303.291	12.000	4.205	6.000	0.900
3	54.6	54.6	228.845	228.843	10.000	3.285	5.000	2.090

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.973	5.755	5.766	-.0110	1.01	54.48	1.2	240.0	0.108E-03
	Cm243		5.779	5.766	0.013				322.2	0.145E-03
2		????		5.492			0.52	13.0		
3	Pu240	0.022	5.144	5.150	-.006	0.02	1.26	8.0	5.4	0.244E-05
	Pu239		5.147	5.150	-.003				5.4	0.244E-05
		---					---			
Totals:		0.995	<--valid peaks only-->				55.73			

DETECTOR CALIBRATION
Energy(MEV) = 4.097 + (0.0046)*Channel
Energy range (MeV): 4.097 TO 6.452
Efficiency = 0.2316 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	26877.0	100.000
Smoothed	26876.8	99.999
Composite fit	27004.0	100.472
Residuals	-127.0	-0.472

Analyzed by: _____
GL

Spectrum 20a2003.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 12800.1

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3
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3

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2
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2

1
.. 1
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Raw Data Dump for AEA Spectrum: 20a2003.CNF

1	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
11	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
31	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
41	0.	1.	0.	0.	0.	1.	0.	0.	1.	0.
51	0.	0.	1.	0.	2.	0.	0.	0.	0.	0.
61	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	1.	0.	0.	0.	0.	0.	1.	0.	1.	1.
91	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.
101	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	0.	0.	0.	5.	0.	0.
121	1.	0.	0.	0.	1.	0.	1.	2.	0.	0.
131	0.	0.	0.	0.	1.	0.	1.	0.	0.	1.
141	2.	0.	2.	2.	0.	0.	0.	3.	0.	1.
151	0.	1.	1.	0.	0.	0.	0.	1.	1.	0.
161	0.	1.	0.	2.	0.	1.	0.	1.	0.	2.
171	0.	0.	0.	1.	1.	2.	0.	0.	0.	0.
181	0.	1.	0.	1.	0.	0.	1.	1.	2.	2.
191	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.
201	0.	1.	1.	1.	1.	0.	1.	1.	4.	0.
211	1.	3.	5.	9.	4.	7.	8.	11.	17.	20.
221	13.	22.	34.	26.	30.	36.	59.	67.	66.	59.
231	58.	23.	13.	8.	1.	1.	0.	0.	1.	1.
241	0.	2.	0.	3.	1.	2.	2.	5.	1.	3.
251	3.	6.	0.	11.	6.	7.	4.	3.	1.	2.
261	4.	2.	1.	0.	2.	3.	2.	5.	2.	3.
271	5.	1.	2.	1.	1.	3.	3.	0.	0.	5.
281	4.	4.	6.	5.	7.	3.	11.	7.	6.	10.
291	1.	4.	5.	5.	5.	5.	8.	5.	7.	9.
301	7.	14.	14.	16.	10.	9.	6.	6.	3.	2.
311	3.	2.	5.	1.	5.	3.	3.	3.	3.	2.
321	4.	6.	6.	6.	10.	8.	6.	8.	11.	12.
331	23.	20.	17.	30.	19.	24.	23.	27.	32.	34.
341	53.	63.	76.	100.	114.	147.	189.	291.	360.	538.
351	609.	884.	1005.	1087.	1007.	848.	906.	1053.	1270.	1561.
361	2045.	2565.	2728.	2749.	1986.	946.	289.	40.	3.	0.
371	0.	0.	1.	1.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	1.	0.	0.	0.	1.	0.	0.	0.	0.	0.
431	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
471	0.	0.	0.	0.	0.	0.	2.	3.	1.	4.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0055-SAM-PU
File ID: 21a2194.CNF

Counted on: 1/18/ 0 @21:11
Detector: AEA21
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2126.5	2126.5	361.465	361.465	10.000	2.968	5.000	1.636
2?	11.8	11.8	301.884	301.827	12.000	4.651	6.000	1.155
3	43.6	43.6	227.956	227.954	12.000	3.931	6.000	3.077

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.973	5.755	5.752	0.003	0.01	50.88	1.3	223.8	0.101E-03
2		????		5.478			0.50	13.0		
3	Pu240	0.019	5.144	5.138	0.006	0.02	0.98	9.0	4.2	0.191E-05
	Pu239		5.147	5.138	0.009				4.2	0.191E-05
		---					---			
Totals:		0.992	<--valid peaks only-->				51.86			

DETECTOR CALIBRATION
Energy(MEV) = 4.089 + (0.0046)*Channel
Energy range (MeV): 4.089 TO 6.445
Efficiency = 0.2320 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	25096.0	100.000
Smoothed	25096.0	100.000
Composite fit	25133.9	100.151
Residuals	-37.9	-0.151

Analyzed by: _____
GL

Spectrum 21a2194.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 10484.6

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Raw Data Dump for AEA Spectrum: 21a2194.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
21	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
41	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
51	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
71	0.	0.	0.	1.	0.	1.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
101	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
111	1.	1.	0.	0.	0.	0.	0.	2.	0.	0.
121	1.	0.	0.	0.	0.	1.	0.	0.	0.	0.
131	3.	0.	1.	0.	0.	0.	0.	0.	1.	1.
141	2.	0.	1.	1.	0.	0.	1.	1.	1.	0.
151	0.	1.	0.	1.	0.	0.	0.	0.	1.	0.
161	1.	0.	0.	0.	1.	1.	0.	1.	0.	0.
171	2.	0.	0.	0.	1.	0.	0.	0.	0.	1.
181	2.	1.	0.	2.	1.	2.	0.	1.	0.	0.
191	3.	0.	0.	0.	1.	1.	2.	0.	1.	0.
201	0.	0.	1.	1.	1.	2.	0.	2.	0.	1.
211	3.	2.	4.	4.	4.	11.	5.	4.	14.	10.
221	15.	19.	19.	23.	28.	43.	57.	56.	45.	40.
231	30.	20.	13.	4.	0.	0.	1.	2.	0.	1.
241	1.	0.	1.	0.	2.	0.	2.	2.	0.	4.
251	6.	3.	5.	7.	8.	5.	4.	0.	2.	0.
261	1.	1.	3.	1.	2.	3.	1.	3.	5.	1.
271	0.	2.	2.	1.	1.	1.	3.	4.	2.	2.
281	1.	4.	4.	7.	8.	8.	7.	10.	8.	7.
291	1.	3.	4.	3.	4.	8.	6.	5.	13.	10.
301	12.	15.	16.	7.	8.	5.	3.	5.	4.	1.
311	4.	0.	1.	2.	2.	2.	1.	0.	3.	3.
321	3.	5.	1.	4.	7.	5.	7.	8.	14.	11.
331	11.	11.	6.	7.	14.	14.	21.	25.	29.	47.
341	42.	51.	66.	104.	138.	174.	260.	330.	462.	648.
351	799.	909.	904.	885.	798.	849.	1015.	1405.	1751.	2177.
361	2629.	2656.	2311.	1526.	770.	251.	70.	7.	3.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	1.	1.	1.	0.	1.	0.	0.	0.	1.	0.
481	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0055-DUP-PU
File ID: 22a2276.CNF

Counted on: 1/18/ 0 @21:12
Detector: AEA22
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2492.2	2492.2	360.615	360.615	10.000	2.649	5.000	1.455
2	10.5	10.5	301.823	301.684	8.000	3.962	4.000	0.551
3	51.1	51.1	227.253	227.248	10.000	3.267	5.000	2.268

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.974	5.755	5.754	0.001	0.01	58.12	1.2	244.6	0.110E-03
2	Am241	0.011	5.479	5.483	-.004	0.02	0.68	11.1	3.0	0.134E-05
	Pu238		5.487	5.483	0.004				3.9	0.175E-05
3	Pu240	0.019	5.144	5.140	0.004	0.02	1.13	8.6	4.7	0.210E-05
	Pu239		5.147	5.140	0.007				4.7	0.210E-05
		---					---			
Totals:		1.004	<--valid peaks only-->				59.93			

DETECTOR CALIBRATION
Energy(MEV) = 4.095 + (0.0046)*Channel
Energy range (MeV): 4.095 TO 6.450
Efficiency = 0.2425 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	28651.0	100.000
Smoothed	28651.0	100.000
Composite fit	28770.6	100.417
Residuals	-119.6	-0.417

Analyzed by: _____
GL

Spectrum 22a2276.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 11925.3

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3
3

2
2
2
2
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2

1
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.......................................................................  1
.......................................................1.
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Raw Data Dump for AEA Spectrum: 22a2276.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	1.	0.	0.	0.	0.	0.	0.	2.	0.	1.
21	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
31	0.	0.	0.	0.	2.	0.	0.	0.	0.	0.
41	0.	0.	1.	0.	0.	1.	0.	1.	0.	0.
51	1.	0.	1.	0.	0.	2.	1.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
71	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	1.	0.	0.	1.	1.
91	1.	0.	0.	0.	0.	0.	0.	2.	0.	0.
101	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
111	0.	0.	0.	2.	1.	1.	0.	1.	2.	2.
121	0.	2.	0.	0.	1.	1.	0.	0.	0.	0.
131	0.	0.	0.	0.	0.	2.	0.	0.	1.	0.
141	0.	0.	0.	0.	2.	1.	1.	1.	1.	1.
151	1.	0.	0.	2.	0.	1.	0.	0.	1.	0.
161	1.	0.	1.	0.	1.	0.	3.	2.	0.	0.
171	1.	2.	0.	0.	0.	0.	1.	0.	1.	1.
181	2.	2.	0.	1.	0.	2.	0.	2.	2.	0.
191	0.	0.	0.	1.	2.	0.	1.	0.	3.	0.
201	1.	0.	1.	2.	1.	1.	1.	0.	2.	1.
211	4.	3.	6.	9.	9.	11.	10.	14.	15.	10.
221	21.	24.	30.	47.	45.	47.	69.	56.	55.	31.
231	13.	10.	8.	4.	3.	0.	0.	0.	0.	2.
241	2.	1.	1.	1.	1.	3.	1.	0.	3.	4.
251	8.	10.	6.	2.	4.	4.	3.	2.	2.	0.
261	4.	0.	2.	3.	7.	2.	1.	2.	4.	3.
271	3.	5.	1.	2.	2.	0.	1.	1.	1.	7.
281	2.	7.	4.	8.	10.	9.	9.	8.	8.	2.
291	8.	3.	6.	10.	10.	7.	1.	8.	9.	15.
301	11.	8.	14.	11.	9.	1.	2.	1.	4.	1.
311	4.	1.	0.	4.	3.	3.	3.	3.	3.	3.
321	1.	4.	2.	4.	8.	7.	9.	7.	10.	15.
331	16.	8.	9.	16.	14.	14.	27.	30.	40.	60.
341	62.	84.	120.	162.	210.	275.	407.	506.	690.	892.
351	1043.	1075.	1072.	924.	999.	1159.	1513.	1846.	2402.	2947.
361	3178.	2845.	1858.	841.	208.	24.	1.	0.	1.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
421	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	1.	1.	0.	1.	0.	0.	0.	0.	1.
471	0.	1.	1.	0.	0.	1.	1.	0.	1.	0.
481	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0056-SAM-PU
File ID: 23a2395.CNF

Counted on: 1/18/ 0 @21:14
Detector: AEA23
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2019.3	2019.3	363.292	363.292	12.000	3.301	6.000	1.660
2?	10.6	10.6	304.120	304.001	10.000	3.159	5.000	0.624
3	49.1	49.1	229.643	229.640	10.000	3.604	5.000	2.176

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.979	5.755	5.768	-.013	0.02	51.97	1.2	211.4	0.952E-04
	Cm243		5.779	5.768	0.011				283.8	0.128E-03
2		????		5.495			0.51	13.1		
3	Pu240	0.022	5.144	5.153	-.009	0.02	1.19	8.3	4.7	0.213E-05
	Pu239		5.147	5.153	-.006				4.7	0.213E-05
		---					---			
Totals:		1.001	<--valid peaks only-->				53.16			

DETECTOR CALIBRATION
Energy(MEV) = 4.097 + (0.0046)*Channel
Energy range (MeV): 4.097 TO 6.452
Efficiency = 0.2509 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	25494.0	100.000
Smoothed	25494.0	100.000
Composite fit	25759.7	101.042
Residuals	-265.7	-1.042

Analyzed by: _____
GL

Spectrum 23a2395.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 12532.9

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Raw Data Dump for AEA Spectrum: 23a2395.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
21	1.	0.	0.	1.	0.	0.	0.	0.	0.	0.
31	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
41	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
51	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
61	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
71	0.	2.	0.	0.	0.	0.	0.	0.	0.	0.
81	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
91	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
101	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
111	1.	0.	1.	2.	0.	0.	0.	0.	1.	1.
121	0.	0.	1.	1.	1.	0.	0.	0.	0.	0.
131	0.	0.	0.	0.	0.	0.	0.	0.	2.	0.
141	1.	0.	0.	0.	0.	1.	1.	0.	0.	0.
151	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
161	0.	0.	0.	0.	0.	0.	1.	0.	0.	0.
171	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.
181	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
191	0.	0.	1.	0.	0.	0.	1.	1.	0.	0.
201	1.	1.	0.	0.	1.	0.	1.	1.	3.	1.
211	1.	3.	2.	7.	8.	6.	10.	6.	16.	10.
221	16.	17.	25.	28.	25.	35.	37.	43.	59.	68.
231	44.	45.	16.	17.	12.	3.	1.	1.	1.	1.
241	0.	3.	1.	0.	0.	0.	1.	0.	2.	1.
251	3.	3.	6.	4.	5.	6.	5.	6.	2.	3.
261	1.	0.	1.	2.	4.	0.	1.	1.	1.	2.
271	1.	0.	0.	2.	0.	2.	1.	1.	0.	1.
281	2.	2.	6.	5.	8.	9.	6.	6.	8.	8.
291	3.	2.	6.	2.	4.	6.	6.	6.	9.	11.
301	5.	10.	8.	15.	14.	8.	8.	4.	2.	3.
311	3.	2.	2.	2.	1.	2.	2.	1.	2.	3.
321	4.	5.	4.	5.	9.	8.	8.	9.	10.	5.
331	18.	11.	10.	12.	15.	16.	15.	17.	23.	31.
341	38.	55.	55.	69.	96.	135.	136.	200.	321.	386.
351	577.	682.	885.	886.	908.	925.	887.	990.	1247.	1487.
361	1783.	2081.	2418.	2499.	2039.	1411.	729.	301.	111.	20.
371	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	1.	1.	0.	0.	1.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
471	1.	0.	0.	1.	1.	1.	0.	0.	0.	2.
481	0.	2.	0.	0.	0.	1.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0056-DUP-PU
File ID: 24a2436.CNF

Counted on: 1/18/ 0 @21:15
Detector: AEA24
Geometry number: 1
Count time: 28803. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	2118.0	2118.0	361.916	361.916	10.000	3.444	5.000	1.833
2	46.4	46.4	227.233	227.233	14.000	5.012	7.000	4.040

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.982	5.755	5.766	-.011	0.02	53.53	1.2	245.2	0.110E-03
	Cm243		5.779	5.766	0.013				329.1	0.148E-03
2	Pu240	0.021	5.144	5.147	-.003	0.02	1.13	8.4	5.1	0.229E-05
	Pu239		5.147	5.147	0.000				5.1	0.229E-05
		---					---			
Totals:		1.003	<--valid peaks only-->				54.66			

DETECTOR CALIBRATION
Energy(MEV) = 4.101 + (0.0046)*Channel
Energy range (MeV): 4.101 TO 6.457
Efficiency = 0.2228 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	26171.0	100.000
Smoothed	26170.5	99.998
Composite fit	26241.6	100.270
Residuals	-70.6	-0.270

Analyzed by: _____
GL

Spectrum 24a2436.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 11538.1

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2
2
2

1
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Raw Data Dump for AEA Spectrum: 24a2436.CNF

1	0.	0.	0.	0.	0.	1.	0.	1.	1.	0.
11	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
21	0.	1.	0.	0.	1.	1.	0.	0.	1.	0.
31	0.	0.	1.	0.	1.	0.	0.	0.	1.	1.
41	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
51	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
61	0.	0.	0.	0.	0.	1.	0.	0.	0.	0.
71	0.	0.	0.	0.	0.	0.	0.	1.	0.	2.
81	0.	1.	0.	1.	0.	0.	1.	0.	0.	0.
91	0.	0.	0.	2.	2.	0.	0.	0.	1.	0.
101	0.	0.	0.	2.	1.	0.	0.	0.	0.	0.
111	0.	0.	0.	0.	0.	0.	1.	1.	0.	0.
121	0.	0.	0.	2.	0.	0.	0.	0.	0.	0.
131	0.	1.	2.	0.	1.	0.	0.	0.	0.	2.
141	1.	1.	0.	0.	0.	2.	1.	2.	0.	0.
151	0.	0.	1.	0.	0.	1.	0.	0.	1.	0.
161	1.	0.	0.	1.	1.	0.	1.	0.	0.	2.
171	0.	0.	0.	1.	1.	0.	0.	0.	2.	1.
181	2.	1.	0.	0.	0.	0.	1.	1.	0.	1.
191	2.	1.	0.	1.	0.	0.	0.	0.	1.	2.
201	4.	0.	2.	0.	0.	1.	0.	0.	0.	1.
211	2.	2.	7.	2.	8.	5.	9.	9.	11.	16.
221	26.	21.	27.	37.	45.	62.	56.	47.	43.	53.
231	18.	16.	12.	5.	2.	3.	0.	2.	0.	2.
241	1.	0.	2.	1.	2.	2.	2.	2.	2.	6.
251	3.	3.	1.	2.	5.	4.	1.	4.	2.	1.
261	2.	3.	1.	2.	0.	2.	2.	3.	6.	2.
271	2.	6.	0.	2.	1.	1.	4.	1.	5.	1.
281	0.	3.	9.	2.	6.	7.	9.	6.	3.	1.
291	4.	5.	2.	4.	3.	9.	4.	8.	14.	12.
301	9.	10.	6.	14.	6.	2.	5.	5.	8.	2.
311	4.	0.	2.	3.	4.	2.	3.	0.	3.	2.
321	4.	5.	4.	1.	6.	6.	4.	9.	10.	7.
331	12.	14.	11.	13.	13.	21.	18.	27.	36.	38.
341	26.	42.	60.	76.	112.	156.	225.	317.	445.	624.
351	756.	837.	942.	905.	872.	995.	1040.	1297.	1611.	2033.
361	2342.	2658.	2360.	1868.	1307.	672.	280.	92.	23.	4.
371	1.	0.	1.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
471	0.	1.	0.	0.	2.	1.	0.	2.	0.	1.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0057-SAM-PU
File ID: 25a2503.CNF

Counted on: 1/18/ 0 @21:16
Detector: AEA25
Geometry number: 1
Count time: 28801. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	4156.1	4156.1	157.866	157.866	8.000	1.339	4.000	2.079
2?	20.5	20.5	135.853	135.728	8.000	2.005	4.000	0.896
3?	3.2	3.2	131.974	130.307	4.000	0.216	2.000	2.664
4	78.8	78.8	108.997	108.988	8.000	1.350	4.000	2.237

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.935	5.755	5.753	0.002	0.02	52.50	1.2	220.1	0.991E-04
2		????		5.477			0.51	13.7		
3		????		5.409			0.01	343.		
4	Pu240	0.018	5.144	5.142	0.002	0.02	0.98	9.2	4.0	0.182E-05
	Pu239		5.147	5.142	0.005				4.0	0.182E-05
		-----					---------			
Totals:		0.953	<--valid peaks only-->				53.48			

DETECTOR CALIBRATION
Energy(MEV) = 3.780 + (0.0125)*Channel
Energy range (MeV): 3.780 TO 10.180
Efficiency = 0.2434 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	26939.0	100.000
Smoothed	26939.0	100.000
Composite fit	25924.8	96.235
Residuals	1014.2	3.765

Analyzed by: _____

```
                    Spectrum 25a2503.CNF
1 Legend:  Raw = ....  Modeled Peaks = 1,2,.., etc     Display Max.:   20172.6

4

2
3
2
... 1
.......................................................................  1
........1.......
```

Raw Data Dump for AEA Spectrum: 25a2503.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
11	0.	0.	0.	1.	0.	0.	0.	0.	0.	1.
21	0.	1.	0.	0.	0.	0.	1.	0.	0.	0.
31	1.	0.	0.	0.	0.	2.	0.	0.	0.	1.
41	0.	0.	0.	0.	0.	1.	0.	0.	1.	0.
51	0.	0.	0.	1.	0.	1.	0.	0.	1.	1.
61	1.	2.	0.	0.	0.	0.	2.	0.	1.	0.
71	0.	1.	0.	4.	0.	2.	2.	0.	4.	3.
81	1.	1.	1.	4.	2.	2.	3.	1.	1.	3.
91	1.	2.	1.	0.	3.	2.	1.	2.	1.	3.
101	5.	4.	9.	16.	23.	32.	46.	73.	130.	112.
111	35.	9.	2.	3.	2.	6.	6.	4.	14.	14.
121	3.	0.	3.	4.	9.	3.	4.	7.	10.	16.
131	26.	14.	10.	12.	15.	32.	26.	11.	3.	10.
141	5.	9.	7.	10.	24.	33.	27.	50.	56.	100.
151	197.	337.	714.	1653.	2676.	2592.	3564.	6453.	6324.	1232.
161	18.	0.	1.	0.	0.	0.	0.	0.	0.	0.
171	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
181	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
191	0.	0.	0.	0.	1.	0.	0.	0.	1.	0.
201	3.	0.	0.	0.	0.	0.	0.	0.	0.	0.
211	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
221	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.
231	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
241	2.	3.	0.	0.	0.	0.	0.	0.	0.	0.
251	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
261	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
271	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
281	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
291	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
301	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
311	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
351	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
361	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	1.	0.	0.	3.
401	1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
411	0.	0.	0.	1.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	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. 2.11

DATA REDUCTION REPORT

SAMPLE
S00T0057-DUP-PU
File ID: 26a2671.CNF

Counted on: 1/18/ 0 @21:17
Detector: AEA26
Geometry number: 1
Count time: 28804. Sec

PEAK ANALYSIS

Peak ID	Peak height Initial	Peak height Final	Peak center Initial	Peak center Final	FWHM Initial	FWHM Final	Tau Initial	Tau Final
1	4027.4	4027.4	158.332	158.332	6.000	1.451	3.000	2.209
2	20.9	20.9	136.063	135.911	10.000	2.688	5.000	0.970
3	80.5	80.5	108.985	108.970	8.000	1.483	4.000	2.800

PEAK RESULTS
Peak Error Limit: 30%

Peak ID	Isotope	AEA Frac	Peak Centroid Exp.	Obs.	Diff.	FWHM	Count Rate c/m	%err @95	d/m	Activity uCi/ea
1	Pu236	0.928	5.755	5.762	-.007	0.02	52.67	1.2	237.2	0.107E-03
	Cm243		5.779	5.762	0.017				318.4	0.143E-03
2	Am241	0.011	5.479	5.481	-.002	0.03	0.63	13.1	3.0	0.133E-05
	Pu238		5.487	5.481	0.006				3.9	0.174E-05
3	Pu240	0.018	5.144	5.145	-.001	0.02	1.02	9.2	4.5	0.203E-05
	Pu239		5.147	5.145	0.002				4.5	0.203E-05
		-----					---------			
Totals:		0.957	<--valid peaks only-->				54.32			

DETECTOR CALIBRATION
Energy(MEV) = 3.783 + (0.0125)*Channel
Energy range (MeV): 3.783 TO 10.183
Efficiency = 0.2266 CPM/DPM
(Data reduction compression factor: 1.)

TOTAL COUNT DATA:

Item	Total	% Recovery
Raw spectrum	27240.0	100.000
Smoothed	27240.0	100.000
Composite fit	26076.1	95.727
Residuals	1163.9	4.273

Analyzed by: _____
GL

Spectrum 26a2671.CNF

1 Legend: Raw = ... Modeled Peaks = 1,2,.., etc Display Max.: 19696.9

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3
2
2
2
2
.. 1
.......................................................................1
..............1.....
.
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Raw Data Dump for AEA Spectrum: 26a2671.CNF

1	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.
11	0.	1.	1.	1.	2.	1.	1.	2.	0.	2.
21	1.	1.	1.	1.	1.	1.	0.	2.	1.	0.
31	0.	1.	1.	0.	1.	1.	3.	0.	1.	0.
41	1.	2.	3.	1.	1.	1.	1.	1.	1.	2.
51	0.	1.	1.	4.	2.	0.	0.	3.	3.	1.
61	1.	4.	0.	0.	1.	0.	0.	0.	3.	3.
71	1.	2.	1.	3.	1.	1.	3.	1.	7.	3.
81	3.	4.	3.	4.	4.	1.	3.	4.	3.	2.
91	2.	1.	3.	5.	2.	2.	3.	5.	3.	0.
101	4.	1.	13.	10.	19.	37.	53.	88.	132.	102.
111	53.	8.	2.	2.	6.	7.	7.	2.	20.	11.
121	5.	5.	10.	7.	9.	6.	1.	7.	10.	14.
131	28.	10.	14.	18.	17.	27.	28.	20.	4.	10.
141	7.	10.	11.	14.	17.	18.	31.	32.	49.	95.
151	141.	254.	542.	1205.	2392.	2700.	2809.	5072.	7275.	3399.
161	169.	2.	0.	0.	0.	0.	0.	0.	0.	0.
171	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
181	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
191	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
201	1.	2.	0.	1.	0.	0.	0.	0.	0.	0.
211	0.	1.	0.	0.	0.	0.	0.	0.	0.	0.
221	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
231	0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
241	3.	1.	1.	0.	0.	0.	0.	0.	0.	0.
251	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
261	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
271	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
281	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
291	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
301	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
311	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
321	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
331	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
341	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
351	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
361	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
371	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
381	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
391	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
401	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.
411	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
421	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
431	1.	0.	0.	0.	0.	0.	0.	0.	0.	0.
441	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
451	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
461	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
471	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
481	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
491	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
511	0.	0.								

WORKBOOK PAGE: STD1

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-~~0~~ 3)) 5/2/00 LIQUID

						STD
	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	0.456
STD	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
	SAMPLE DILUTION FACTOR	DF	1.000	PU 239 AEA FRAC	(C239)	0.519
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		4681
	DIGEST DILUTION FACTOR	DDF	1.000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)	0.200
	DETECTOR NUMBER		15	PU 236 cpm		55.530
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm		0.000
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm		66.660
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME		480
	PU-236 DECAY CORR'D VALUE (dpm/mL)		2446.201	Pu 239/240 µCi/L		1.2541E-01
0	PU-238 TRACER VALUE (dpm/mL)		0.000			
	STANDARD BOOK NO		46B57			
N/A	STANDARD VALUE in µCi/mL		1.260E-04			

WL32108-STD

Decay Time = Date Counted - Tracer Preparation Date

WB26872 — 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)* 1/EFF *C236*100/Pu-236 Decay Corr'd Value * SPKV

SLH2 — Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(C236)(SS)(2220000 dpm/µCi)]

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

JFR — Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

AKL

01/19/2000	Pu 239/240 µCi/mL		1.25E-04	DETECTION LEVELS in µCi/mL
	Relative Counting Error	=	1.6%	
01/18/2000				Pu 239/240
11:00 AM				7.25E-06
SY-102 GRAB5	Pu 236 Tracer Recovery	=	100.4%	

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

STANDARD.WB1 REV 1.0 943128ML

WORKBOOK PAGE: BLANK2

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-~~0~~5)) 5/2/00 L

	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	1.001
BLNK	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.000
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2308
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cp	(Bkg)	0.200
	DETECTOR NUMBER		15	PU 236 cpm		55.670
LIQUID	EFFICIENCY FACTOR	EFF	0.2894	PU 238 cpm		0.000
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm		0.000
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.00	AEA COUNT TIME		480
	PU-238 DECAY CORR'D VALUE	(dpm/mL)	2446.20	Pu 239/240 µCi/L =	<	3.335E-01
0	PU-238 TRACER VALUE	(dpm/mL	0.00			

N/A

WL32108-BLNK

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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		< 3.34E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	100.0%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 3.34E-04	3.34E-04
Relative Counting Error	=	100.0%	Pu 238
Pu 236 Tracer Recovery	=	108.5%	3.34E-04

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

BLANK.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM3

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-~~0~~3) LAD 5/2/00 LIQUID /

							SAMPLE
	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC		(C236)	0.941
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC		(C238)	0.015
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC		(C239)	0.046
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2297
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm		(Bkg)	0.200
	DETECTOR NUMBER		16	PU 236 cpm			56.570
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm			0.910
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm			2.750
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME			480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =			5.4404E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000				

N/A

S00T000049

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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240. µCi/mL		5.44E-04	DETECTION LEVELS in µCi/mL	
Relative Counting Error	=	5.5%		
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240	
Pu 238 µCimL		< 3.55E-04	3.55E-04	
Relative Counting Error	=	9.5%	Pu 238	
Pu 236 Tracer Recovery	=	101.5%	3.55E-04	

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: DUP4

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-3) LIQUID /

	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	DUP	0.951
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)		0.013
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)		0.046
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2365
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)		0.200
	DETECTOR NUMBER		15	PU 236 cpm			54.820
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm			0.740
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm			2.650
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME			480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =			5.3832E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000				

N/A

S00T000049

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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		5.38E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	5.6%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 3.51E-04	3.51E-04
Relative Counting Error	=	10.5%	Pu 238
Pu 236 Tracer Recovery	=	105.6%	3.51E-04

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Rahyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM5

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-~~0~~3)) LIQUID /

	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	0.984
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.011
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.021
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2228
	DIGEST DILUTION FACTOR	*DDF*	1.0000	*AT COUNT TIME (MIN)*		30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)	0.200
	DETECTOR NUMBER		15	PU 236 cpm		51.940
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm		0.600
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm		1.100
20000091	*TRACER PREPARATION VALUE (dpm/mL)*		2687.000	AEA COUNT TIME		480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =	<	3.3930E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			

SAMPLE
0.984
0.011
0.021
2228
30
0.200
51.940
0.600
1.100
480
3.3930E-01

N/A

Decay Time = Date Counted - Tracer Preparation Date

S00T000054 — 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)

WB25872 — *Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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)

SLH2 — Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

JFR

AKL

01/19/2000	Pu 239/240 µCi/mL		< 3.39E-04	DETECTION LEVELS in µCi/mL
	Relative Counting Error	=	8.6%	
01/18/2000				
	NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
11:00 AM	Pu 238 µCimL		< 3.39E-04	3.39E-04
	Relative Counting Error	=	11.6%	Pu 238
SY-102 GRAB5	Pu 236 Tracer Recovery	=	103.0%	3.39E-04

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: DUP6

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-3) LIQUID / DUP

	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	0.973
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.022
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2145
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)	0.200
	DETECTOR NUMBER		15	PU 236 cpm		54.480
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm		0.000
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm		1.260
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME		480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =	<	3.5015E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			
N/A						

Decay Time = Date Counted - Tracer Preparation Date

S00T000054

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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		< 3.50E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	8.1%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240 3.50E-04
Pu 238 µCimL		< 3.50E-04	
Relative Counting Error	=	100.0%	Pu 238 3.50E-04
Pu 236 Tracer Recovery	=	98.0%	

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM7

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

	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	0.973
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.019
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2031
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)	0.200
	DETECTOR NUMBER		15	PU 236 cpm		50.880
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm		0.000
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm		0.980
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME		480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =	<	3.6986E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			

N/A

S00T000055

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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		< 3.70E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	9.1%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 3.70E-04	3.70E-04
Relative Counting Error	=	100.0%	Pu 238
Pu 236 Tracer Recovery	=	92.8%	3.70E-04

Analyst:	AKL	Date:	19-Jan-2000
Signature of Chemist:	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: DUP8

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-~~0~~ 3)

LIQUID /

							DUP
	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)		0.974
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)		0.011
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)		0.019
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2280
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)		0.200
	DETECTOR NUMBER		15	PU 236 cpm			58.120
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm			0.680
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm			1.130
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME			480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =		<	3.4279E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000				
N/A							

Decay Time = Date Counted - Tracer Preparation Date

S00T000055

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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		< 3.43E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	8.5%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 3.43E-04	3.43E-04
Relative Counting Error	=	10.9%	Pu 238
Pu 236 Tracer Recovery	=	104.3%	3.43E-04

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM9

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-~~0~~ 3) LIQUID / SAMPLE

	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	0.979
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.022
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2117
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)	0.200
	DETECTOR NUMBER		15	PU 236 cpm		51.970
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm		0.000
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm		1.190
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME		480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =	<	3.5046E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			
N/A						

Decay Time = Date Counted - Tracer Preparation Date

S00T000056 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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		< 3.50E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	8.3%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 3.50E-04	3.50E-04
Relative Counting Error	=	100.0%	Pu 238
Pu 236 Tracer Recovery	=	97.3%	3.50E-04

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19Jan00

SAMPLE.WB1 REV 1.0 943128ML

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-~~01~~ 5) LIQUID /

							DUP
	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)		0.982
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)		0.000
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)		0.021
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS			2259
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)			30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)		0.200
	DETECTOR NUMBER		15	PU 236 cpm			53.530
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm			0.000
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm			1.130
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME			480
	PU-236 DECAY CORR'D VALUE (dpm/mL)		2446.201	Pu 239/240 µCi/L =		<	3.3999E-01
0	PU-238 TRACER VALUE (dpm/mL)		0.000				

N/A

Decay Time = Date Counted - Tracer Preparation Date

S00T000056 — 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)

WB25572 — Pu 239/240 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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)

SLH2 — Pu 238 µCi/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

JFR

AKL

01/19/2000	Pu 239/240 µCi/mL		< 3.40E-04	DETECTION LEVELS in µCi/mL
	Relative Counting Error	=	8.5%	
01/18/2000				
	NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
11:00 AM	Pu 238 µCimL		< 3.40E-04	3.40E-04
	Relative Counting Error	=	100.0%	Pu 238
SY-102 GRAB5	Pu 236 Tracer Recovery	=	104.2%	3.40E-04

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: SAM11

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B~~0~~3)) LAD Shiod LIQUID / SAMPLE

	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	0.935
SAMPLE	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.000
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.018
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2216
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)	0.200
	DETECTOR NUMBER		15	PU 236 cpm		52.500
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm		0.000
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm		0.980
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME		480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =	<	3.6701E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			

N/A

S00T000057

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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		< 3.67E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	9.1%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240 3.67E-04
Pu 238 µCimL		< 3.67E-04	
Relative Counting Error	=	100.0%	Pu 238 3.67E-04
Pu 236 Tracer Recovery	=	97.3%	

Analyst:	AKL	Date:	19-Jan-2000
Signature of Chemist: John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

WORKBOOK PAGE: DUP12

Pu 238 and 239/240 : LA-943-128 (VOID) or LA-953-104(B-~~0~~3)) LIQUID / DUP

	DATE COUNTED		JAN-18-2000	PU 236 AEA FRAC	(C236)	0.928
DUP	SAMPLE VOLUME in mL	SS	1.000	PU 238 AEA FRAC	(C238)	0.011
	SAMPLE DILUTION FACTOR	DF	101.000	PU 239 AEA FRAC	(C239)	0.018
32108	TRACER VOLUME in mL	SPKV	0.100	TOTAL AT COUNTS		2167
	DIGEST DILUTION FACTOR	DDF	1.0000	AT COUNT TIME (MIN)		30
@PU23902	TRACER BOOK NO		18B59	BACKGROUND in cpm	(Bkg)	0.200
	DETECTOR NUMBER		15	PU 236 cpm		52.670
LIQUID	EFFICIENCY FACTOR	EFF	0.289	PU 238 cpm		0.630
	TRACER PREPARATION DATE		08/30/99	PU 239 cpm		1.020
20000091	TRACER PREPARATION VALUE (dpm/mL)		2687.000	AEA COUNT TIME		480
	PU-236 DECAY CORR'D VALUE	(dpm/mL)	2446.201	Pu 239/240 µCi/L =	<	3.8102E-01
0	PU-238 TRACER VALUE	(dpm/mL)	0.000			

N/A

Decay Time = Date Counted - Tracer Preparation Date

S00T000057

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 µCi/L = (C239)(Pu 236 Decay Corr'd Value)(SPKV)(1000mL/L)(DF)(DDF) / [(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/L = [(Pu 238 dpm)(DF)(DDF)(1000mL/L)] / [(Pu-236 Tracer Recovery /100)(2220000 dpm/µCi)(D g/L)(SS)]

Relative Counting Error = Square Root of [(1/(Pu 236 cpm * min)) + (1 / (Pu 238 or 239/240 cpm * min))] * 1.96 * 100

Pu 239/240 µCi/mL		< 3.81E-04	DETECTION LEVELS in µCi/mL
Relative Counting Error	=	8.9%	
NOTE: Pu 238 Result is a LESS THAN Value.			Pu 239/240
Pu 238 µCimL		< 3.81E-04	3.81E-04
Relative Counting Error	=	11.3%	Pu 238
Pu 236 Tracer Recovery	=	94.4%	3.81E-04

Analyst:		AKL	Date:	19-Jan-2000
Signature of Chemist:	John Relyea	JFR	Date:	19 Jan 00

SAMPLE.WB1 REV 1.0 943128ML

OPPORTUNISTIC ANALYTES

APPENDIX A

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Tank 241-SY-102 - Opportunistic Analysis Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-5

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000048		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000048		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000048		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-5	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S00T000049		D	Silver-ICP-Acid Dil.	ug/mL	96.20	<1.00e-2	6.170	6.260	6.215	1.45	n/a	6.010	n/a
S00T000049		D	Arsenic-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000049		D	Boron-ICP-Acid Dil.	ug/mL	102.2	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000049		D	Barium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000049		D	Beryllium-ICP-Acid Dil.	ug/mL	97.80	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	n/a	3.010	n/a
S00T000049		D	Bismuth-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000049		D	Calcium-ICP-Acid Dil.	ug/mL	103.8	<1.00e-1	1.02e+02	92.00	97.00	10.3	n/a	60.10	n/a
S00T000049		D	Cadmium-ICP-Acid Dil.	ug/mL	100.6	<5.00e-3	4.650	4.550	4.600	2.17	n/a	3.010	n/a
S00T000049		D	Cerium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000049		D	Cobalt-ICP-Acid Dil.	ug/mL	101.0	<2.00e-2	< 12.00	<1.20e1	n/a	n/a	n/a	12.00	n/a
S00T000049		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000049		D	Potassium-ICP-Acid Dil.	ug/mL	104.8	<5.00e-1	1.57e+03	1.50e+03	1.54e+03	4.56	n/a	301.0	n/a
S00T000049		D	Lanthanum-ICP-Acid Dil.	ug/mL	101.6	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000049		D	Lithium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000049		D	Magnesium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000049		D	Molybdenum-ICP-Acid Dil.	ug/mL	99.80	<5.00e-2	38.30	37.60	37.95	1.84	n/a	30.10	n/a
S00T000049		D	Sodium-ICP-Acid Dil.	ug/mL	103.0	<1.00e-1	1.04e+05	1.03e+05	1.04e+05	0.97	n/a	60.10	n/a
S00T000049		D	Neodymium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000049		D	Phosphorus-ICP-Acid Dil.	ug/mL	102.2	<2.00e-1	1.35e+03	1.35e+03	1.35e+03	0.00	n/a	120.0	n/a
S00T000049		D	Lead-ICP-Acid Dil.	ug/mL	98.80	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000049		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-1	1.52e+03	1.50e+03	1.51e+03	1.32	n/a	60.10	n/a
S00T000049		D	Antimony-ICP-Acid Dil.	ug/mL	100.0	<6.00e-2	< 36.10	<3.61e1	n/a	n/a	n/a	36.10	n/a
S00T000049		D	Selenium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000049		D	Silicon-ICP-Acid Dil.	ug/mL	102.4	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000049		D	Samarium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000049		D	Strontium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000049		D	Titanium-ICP-Acid Dil.	ug/mL	101.6	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000049		D	Thallium-ICP-Acid Dil.	ug/mL	99.20	<2.00e-1	<1.20e+02	<1.20e2	n/a	n/a	n/a	120.0	n/a
S00T000049		D	Uranium-ICP-Acid Dil.	ug/mL	98.90	<5.00e-1	<3.01e+02	<3.01e2	n/a	n/a	n/a	301.0	n/a
S00T000049		D	Vanadium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000049		D	Zinc-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000049		D	Zirconium-ICP-Acid Dil.	ug/mL	101.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000049			Bromide by Ion Chromatograph	ug/mL	99.68	<1.25e-1	<5.18e+02	<5.18e2	n/a	n/a	n/a	517.6	n/a
S00T000049			Niobium-94 by GEA	uCi/mL	n/a	<8.19e-4	<4.07e-03	<4.27e-3	n/a	n/a	n/a	4.07e-03	n/a
S00T000049			Ru/Rh-106 by GEA	uCi/mL	n/a	<1.49e-2	<6.62e-01	<6.64e-1	n/a	n/a	n/a	6.62e-01	n/a
S00T000049			Cesium-134 by GEA	uCi/mL	n/a	<7.32e-4	<3.33e-02	<3.34e-2	n/a	n/a	n/a	3.33e-02	n/a
S00T000049			Ce/Pr-144 by GEA	uCi/mL	n/a	<7.02e-3	<4.98e-01	<5.00e-1	n/a	n/a	n/a	4.98e-01	n/a
S00T000049			Radium-226 by GEA	uCi/mL	n/a	<1.23e-2	<9.01e-01	<9.04e-1	n/a	n/a	n/a	9.01e-01	n/a

Tank 241-SY-102 - Opportunistic Analysis Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-6

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000050		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000050		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000050		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-5	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S00T000054		D	Silver-ICP-Acid Dil.	ug/mL	96.20	<1.00e-2	8.430	7.000	7.715	18.5	n/a	6.010	n/a
S00T000054		D	Arsenic-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Boron-ICP-Acid Dil.	ug/mL	102.2	<5.00e-2	39.10	36.90	38.00	5.79	n/a	30.10	n/a
S00T000054		D	Barium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000054		D	Beryllium-ICP-Acid Dil.	ug/mL	97.80	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	n/a	3.010	n/a
S00T000054		D	Bismuth-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Calcium-ICP-Acid Dil.	ug/mL	103.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Cadmium-ICP-Acid Dil.	ug/mL	100.6	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	n/a	3.010	n/a
S00T000054		D	Cerium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Cobalt-ICP-Acid Dil.	ug/mL	101.0	<2.00e-2	< 12.00	<1.20e1	n/a	n/a	n/a	12.00	n/a
S00T000054		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000054		D	Potassium-ICP-Acid Dil.	ug/mL	104.8	<5.00e-1	2.05e+03	1.96e+03	2.00e+03	4.49	n/a	301.0	n/a
S00T000054		D	Lanthanum-ICP-Acid Dil.	ug/mL	101.6	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000054		D	Lithium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000054		D	Magnesium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Molybdenum-ICP-Acid Dil.	ug/mL	99.80	<5.00e-2	54.20	54.20	54.20	0.00	n/a	30.10	n/a
S00T000054		D	Sodium-ICP-Acid Dil.	ug/mL	103.0	<1.00e-1	1.28e+05	1.30e+05	1.29e+05	1.55	n/a	60.10	n/a
S00T000054		D	Neodymium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Phosphorus-ICP-Acid Dil.	ug/mL	102.2	<2.00e-1	1.48e+03	1.50e+03	1.49e+03	1.34	n/a	120.0	n/a
S00T000054		D	Lead-ICP-Acid Dil.	ug/mL	98.80	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-1	1.22e+03	1.22e+03	1.22e+03	0.00	n/a	60.10	n/a
S00T000054		D	Antimony-ICP-Acid Dil.	ug/mL	100.0	<6.00e-2	< 36.10	<3.61e1	n/a	n/a	n/a	36.10	n/a
S00T000054		D	Selenium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Silicon-ICP-Acid Dil.	ug/mL	102.4	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000054		D	Samarium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000054		D	Strontium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000054		D	Titanium-ICP-Acid Dil.	ug/mL	101.6	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000054		D	Thallium-ICP-Acid Dil.	ug/mL	99.20	<2.00e-1	<1.20e+02	<1.20e2	n/a	n/a	n/a	120.0	n/a
S00T000054		D	Uranium-ICP-Acid Dil.	ug/mL	98.90	<5.00e-1	<3.01e+02	<3.01e2	n/a	n/a	n/a	301.0	n/a
S00T000054		D	Vanadium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000054		D	Zinc-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000054		D	Zirconium-ICP-Acid Dil.	ug/mL	101.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000054			Bromide by Ion Chromatograph	ug/mL	99.68	<1.25e-1	<5.18e+02	<5.18e2	n/a	n/a	n/a	517.6	n/a
S00T000054			Niobium-94 by GEA	uCi/mL	n/a	<8.19e-4	<4.46e-03	<4.57e-3	n/a	n/a	n/a	4.46e-03	n/a
S00T000054			Ru/Rh-106 by GEA	uCi/mL	n/a	<1.49e-2	<7.63e-01	<7.62e-1	n/a	n/a	n/a	7.63e-01	n/a
S00T000054			Cesium-134 by GEA	uCi/mL	n/a	<7.32e-4	<3.78e-02	<3.81e-2	n/a	n/a	n/a	3.78e-02	n/a
S00T000054			Ce/Pr-144 by GEA	uCi/mL	n/a	<7.02e-3	<5.66e-01	<5.67e-1	n/a	n/a	n/a	5.66e-01	n/a
S00T000054			Radium-226 by GEA	uCi/mL	n/a	<1.23e-2	< 1.026	<1.03e0	n/a	n/a	n/a	1.026	n/a

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Tank 241-SY-102 - Opportunistic Analysis Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-7

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000051		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000051		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000051		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-5	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S00T000055		D	Silver-ICP-Acid Dil.	ug/mL	96.20	<1.00e-2	8.050	8.350	8.200	3.66	91.70	6.010	n/a
S00T000055		D	Arsenic-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	99.30	60.10	n/a
S00T000055		D	Boron-ICP-Acid Dil.	ug/mL	102.2	<5.00e-2	41.70	41.50	41.60	0.48	102.0	30.10	n/a
S00T000055		D	Barium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	94.50	30.10	n/a
S00T000055		D	Beryllium-ICP-Acid Dil.	ug/mL	97.80	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	96.80	3.010	n/a
S00T000055		D	Bismuth-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	99.50	60.10	n/a
S00T000055		D	Calcium-ICP-Acid Dil.	ug/mL	103.8	<1.00e-1	94.30	68.80	81.55	31.3	96.50	60.10	n/a
S00T000055		D	Cadmium-ICP-Acid Dil.	ug/mL	100.6	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	101.0	3.010	n/a
S00T000055		D	Cerium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	98.20	60.10	n/a
S00T000055		D	Cobalt-ICP-Acid Dil.	ug/mL	101.0	<2.00e-2	< 12.00	<1.20e1	n/a	n/a	101.0	12.00	n/a
S00T000055		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	99.80	6.010	n/a
S00T000055		D	Potassium-ICP-Acid Dil.	ug/mL	104.8	<5.00e-1	1.86e+03	1.86e+03	1.86e+03	0.00	106.0	301.0	n/a
S00T000055		D	Lanthanum-ICP-Acid Dil.	ug/mL	101.6	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	101.0	30.10	n/a
S00T000055		D	Lithium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	95.90	6.010	n/a
S00T000055		D	Magnesium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	97.40	60.10	n/a
S00T000055		D	Molybdenum-ICP-Acid Dil.	ug/mL	99.80	<5.00e-2	56.20	54.60	55.40	2.89	99.70	30.10	n/a
S00T000055		D	Sodium-ICP-Acid Dil.	ug/mL	103.0	<1.00e-1	1.30e+05	1.30e+05	1.30e+05	0.00	105.0	60.10	n/a
S00T000055		D	Neodymium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	99.60	60.10	n/a
S00T000055		D	Phosphorus-ICP-Acid Dil.	ug/mL	102.2	<2.00e-1	1.52e+03	1.49e+03	1.50e+03	1.99	101.0	120.0	n/a
S00T000055		D	Lead-ICP-Acid Dil.	ug/mL	98.80	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	101.0	60.10	n/a
S00T000055		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-1	1.22e+03	1.21e+03	1.22e+03	0.82	95.80	60.10	n/a
S00T000055		D	Antimony-ICP-Acid Dil.	ug/mL	100.0	<6.00e-2	< 36.10	<3.61e1	n/a	n/a	102.0	36.10	n/a
S00T000055		D	Selenium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	104.0	60.10	n/a
S00T000055		D	Silicon-ICP-Acid Dil.	ug/mL	102.4	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	107.0	30.10	n/a
S00T000055		D	Samarium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	101.0	60.10	n/a
S00T000055		D	Strontium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	96.30	6.010	n/a
S00T000055		D	Titanium-ICP-Acid Dil.	ug/mL	101.6	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	101.0	6.010	n/a
S00T000055		D	Thallium-ICP-Acid Dil.	ug/mL	99.20	<2.00e-1	<1.20e+02	<1.20e2	n/a	n/a	95.50	120.0	n/a
S00T000055		D	Uranium-ICP-Acid Dil.	ug/mL	98.90	<5.00e-1	<3.01e+02	<3.01e2	n/a	n/a	100.0	301.0	n/a
S00T000055		D	Vanadium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	101.0	30.10	n/a
S00T000055		D	Zinc-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	100.0	6.010	n/a
S00T000055		D	Zirconium-ICP-Acid Dil.	ug/mL	101.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	102.0	6.010	n/a
S00T000055			Bromide by Ion Chromatograph	ug/mL	99.68	<1.25e-1	<6.44e+02	<6.44e2	n/a	n/a	98.72	643.9	n/a
S00T000055			Niobium-94 by GEA	uCi/mL	n/a	<8.19e-4	<4.33e-03	<4.36e-3	n/a	n/a	n/a	4.33e-03	n/a
S00T000055			Ru/Rh-106 by GEA	uCi/mL	n/a	<1.49e-2	<7.71e-01	<7.63e-1	n/a	n/a	n/a	7.71e-01	n/a
S00T000055			Cesium-134 by GEA	uCi/mL	n/a	<7.32e-4	<3.85e-02	<3.83e-2	n/a	n/a	n/a	3.85e-02	n/a
S00T000055			Ce/Pr-144 by GEA	uCi/mL	n/a	<7.02e-3	<5.75e-01	<5.68e-1	n/a	n/a	n/a	5.75e-01	n/a
S00T000055			Radium-226 by GEA	uCi/mL	n/a	<1.23e-2	< 1.042	<1.03e0	n/a	n/a	n/a	1.042	n/a

Tank 241-SY-102 - Opportunistic Analysis Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-8

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000052		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000052		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000052		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-5	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S00T000056		D	Silver-ICP-Acid Dil.	ug/mL	96.20	<1.00e-2	8.830	7.060	7.945	22.3	n/a	6.010	n/a
S00T000056		D	Arsenic-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Boron-ICP-Acid Dil.	ug/mL	102.2	<5.00e-2	42.00	40.70	41.35	3.14	n/a	30.10	n/a
S00T000056		D	Barium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000056		D	Beryllium-ICP-Acid Dil.	ug/mL	97.80	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	n/a	3.010	n/a
S00T000056		D	Bismuth-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Calcium-ICP-Acid Dil.	ug/mL	103.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Cadmium-ICP-Acid Dil.	ug/mL	100.6	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	n/a	3.010	n/a
S00T000056		D	Cerium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Cobalt-ICP-Acid Dil.	ug/mL	101.0	<2.00e-2	< 12.00	<1.20e1	n/a	n/a	n/a	12.00	n/a
S00T000056		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000056		D	Potassium-ICP-Acid Dil.	ug/mL	104.8	<5.00e-1	2.01e+03	1.76e+03	1.88e+03	13.3	n/a	301.0	n/a
S00T000056		D	Lanthanum-ICP-Acid Dil.	ug/mL	101.6	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000056		D	Lithium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000056		D	Magnesium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Molybdenum-ICP-Acid Dil.	ug/mL	99.80	<5.00e-2	55.40	54.80	55.10	1.09	n/a	30.10	n/a
S00T000056		D	Sodium-ICP-Acid Dil.	ug/mL	103.0	<1.00e-1	1.28e+05	1.28e+05	1.28e+05	0.00	n/a	60.10	n/a
S00T000056		D	Neodymium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Phosphorus-ICP-Acid Dil.	ug/mL	102.2	<2.00e-1	9.77e+02	980.0	978.5	0.31	n/a	120.0	n/a
S00T000056		D	Lead-ICP-Acid Dil.	ug/mL	98.80	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-1	1.22e+03	1.24e+03	1.23e+03	1.63	n/a	60.10	n/a
S00T000056		D	Antimony-ICP-Acid Dil.	ug/mL	100.0	<6.00e-2	< 36.10	<3.61e1	n/a	n/a	n/a	36.10	n/a
S00T000056		D	Selenium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Silicon-ICP-Acid Dil.	ug/mL	102.4	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000056		D	Samarium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000056		D	Strontium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000056		D	Titanium-ICP-Acid Dil.	ug/mL	101.6	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000056		D	Thallium-ICP-Acid Dil.	ug/mL	99.20	<2.00e-1	<1.20e+02	<1.20e2	n/a	n/a	n/a	120.0	n/a
S00T000056		D	Uranium-ICP-Acid Dil.	ug/mL	98.90	<5.00e-1	<3.01e+02	<3.01e2	n/a	n/a	n/a	301.0	n/a
S00T000056		D	Vanadium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000056		D	Zinc-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000056		D	Zirconium-ICP-Acid Dil.	ug/mL	101.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000056			Bromide by Ion Chromatograph	ug/mL	99.68	<1.25e-1	<6.44e+02	<6.44e2	n/a	n/a	n/a	643.9	n/a
S00T000056			Niobium-94 by GEA	uCi/mL	n/a	<8.19e-4	<4.75e-03	<4.49e-3	n/a	n/a	n/a	4.75e-03	n/a
S00T000056			Ru/Rh-106 by GEA	uCi/mL	n/a	<1.49e-2	<7.72e-01	<7.64e-1	n/a	n/a	n/a	7.72e-01	n/a
S00T000056			Cesium-134 by GEA	uCi/mL	n/a	<7.32e-4	<3.84e-02	<3.81e-2	n/a	n/a	n/a	3.84e-02	n/a
S00T000056			Ce/Pr-144 by GEA	uCi/mL	n/a	<7.02e-3	<5.73e-01	<5.69e-1	n/a	n/a	n/a	5.73e-01	n/a
S00T000056			Radium-226 by GEA	uCi/mL	n/a	<1.23e-2	< 1.038	<1.03e0	n/a	n/a	n/a	1.038	n/a

Tank 241-SY-102 - Opportunistic Analysis Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-8,-9

SEGMENT PORTION: Centrifuged Solids (Grab Sample)

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000154		I	Silver -ICP-H2O Dig/Acid	ug/g	100.4	<1.00e-2	< 12.20	<1.25e1	n/a	n/a	96.20	12.20	n/a
S00T000154		I	Arsenic -ICP-H2O Dig/Acid	ug/g	103.0	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	102.0	122.0	n/a
S00T000154		I	Boron -ICP-H2O Dig/Acid	ug/g	101.2	<5.00e-2	67.00	68.00	67.50	1.48	102.0	61.20	n/a
S00T000154		I	Barium -ICP-H2O Dig/Acid	ug/g	98.20	<5.00e-2	< 61.20	<6.24e1	n/a	n/a	94.60	61.20	n/a
S00T000154		I	Beryllium -ICP-H2O Dig/Acid	ug/g	99.20	<5.00e-3	< 6.120	<6.24e0	n/a	n/a	96.20	6.120	n/a
S00T000154		I	Bismuth -ICP-H2O Dig/Acid	ug/g	100.6	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	97.80	122.0	n/a
S00T000154		I	Calcium -ICP-H2O Dig/Acid	ug/g	98.40	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	104.0	122.0	n/a
S00T000154		I	Cadmium -ICP-H2O Dig/Acid	ug/g	101.6	<5.00e-3	< 6.120	<6.24e0	n/a	n/a	101.0	6.120	n/a
S00T000154		I	Cerium -ICP-H2O Dig/Acid	ug/g	100.2	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	98.50	122.0	n/a
S00T000154		I	Cobalt -ICP-H2O Dig/Acid	ug/g	101.0	<2.00e-2	< 24.50	<2.50e1	n/a	n/a	102.0	24.50	n/a
S00T000154		I	Copper -ICP-H2O Dig/Acid	ug/g	100.4	<1.00e-2	< 12.20	<1.25e1	n/a	n/a	99.50	12.20	n/a
S00T000154		I	Potassium -ICP-H2O Dig/Acid	ug/g	101.2	<5.00e-1	<6.12e+03	<6.24e3	n/a	n/a	108.0	6.12e+03	n/a
S00T000154		I	Lanthanum -ICP-H2O Dig/Acid	ug/g	100.0	<5.00e-2	< 61.20	<6.24e1	n/a	n/a	99.70	61.20	n/a
S00T000154		I	Lithium -ICP-H2O Dig/Acid	ug/g	103.0	<1.00e-2	< 12.20	<1.25e1	n/a	n/a	97.80	12.20	n/a
S00T000154		I	Magnesium -ICP-H2O Dig/Acid	ug/g	102.2	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	100.0	122.0	n/a
S00T000154		I	Molybdenum -ICP-H2O Dig/Acid	ug/g	100.8	<5.00e-2	< 61.20	<6.24e1	n/a	n/a	104.0	61.20	n/a
S00T000154		I	Sodium -ICP-H2O Dig/Acid	ug/g	103.0	<1.00e-1	1.23e+05	1.32e+05	1.28e+05	7.06	109.0	1.22e+03	n/a
S00T000154		I	Neodymium -ICP-H2O Dig/Acid	ug/g	101.0	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	99.20	122.0	n/a
S00T000154		I	Phosphorus -ICP-H2O Dig/Acid	ug/g	102.0	<2.00e-1	3.85e+03	3.88e+03	3.86e+03	0.78	99.00	2.45e+03	n/a
S00T000154		I	Lead -ICP-H2O Dig/Acid	ug/g	101.2	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	99.00	122.0	n/a
S00T000154		I	Sulfur -ICP-H2O Dig/Acid	ug/g	94.20	<1.00e-1	1.04e+03	1.01e+03	1.02e+03	2.93	89.60	122.0	n/a
S00T000154		I	Antimony -ICP-H2O Dig/Acid	ug/g	100.4	<6.00e-2	< 73.40	<7.49e1	n/a	n/a	101.0	73.40	n/a
S00T000154		I	Selenium -ICP-H2O Dig/Acid	ug/g	102.4	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	102.0	122.0	n/a
S00T000154		I	Silicon -ICP-H2O Dig/Acid	ug/g	102.2	<5.00e-2	71.70	74.20	72.95	3.43	105.0	61.20	n/a
S00T000154		I	Samarium -ICP-H2O Dig/Acid	ug/g	99.60	<1.00e-1	<1.22e+02	<1.25e2	n/a	n/a	100.0	122.0	n/a
S00T000154		I	Strontium -ICP-H2O Dig/Acid	ug/g	99.20	<1.00e-2	< 12.20	<1.25e1	n/a	n/a	96.80	12.20	n/a
S00T000154		I	Titanium-ICP-H2O Dig/Acid	ug/g	100.6	<1.00e-2	< 12.20	<1.25e1	n/a	n/a	101.0	12.20	n/a
S00T000154		I	Thallium -ICP-H2O Dig/Acid	ug/g	100.6	<2.00e-1	<2.45e+02	<2.50e2	n/a	n/a	100.0	245.0	n/a
S00T000154		I	Uranium -ICP-H2O Dig/Acid	ug/g	101.0	<5.00e-1	<6.12e+02	<6.24e2	n/a	n/a	100.0	612.0	n/a
S00T000154		I	Vanadium -ICP-H2O Dig/Acid	ug/g	101.0	<5.00e-2	< 61.20	<6.24e1	n/a	n/a	102.0	61.20	n/a
S00T000154		I	Zinc -ICP-H2O Dig/Acid	ug/g	102.0	<1.00e-2	< 12.20	<1.25e1	n/a	n/a	102.0	12.20	n/a
S00T000154		I	Zirconium -ICP-H2O Dig/Acid	ug/g	101.6	<1.00e-2	< 12.20	<1.25e1	n/a	n/a	102.0	12.20	n/a
S00T000154		W	Bromide by Ion Chromatograph	ug/g	97.74	<1.25e-1	<5.61e+02	<5.72e2	n/a	n/a	102.5	560.8	n/a

Tank 241-SY-102 - Opportunistic Analysis Report for Project
SY-102 GRAB5

CORE NUMBER: n/a
SEGMENT #: 2SY-99-9

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S00T000053		D	Uranium-233 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000053		D	Uranium-234 by ICP/MS Acid Add	ug/mL	n/a	<1.20e-5	<2.44e-01	<2.44e-1	n/a	n/a	n/a	2.44e-01	n/a
S00T000053		D	Uranium-236 by ICP/MS Acid Add	ug/mL	n/a	<1.60e-5	<3.25e-01	<3.25e-1	n/a	n/a	n/a	3.25e-01	n/a
S00T000057		D	Silver-ICP-Acid Dil.	ug/mL	96.20	<1.00e-2	8.930	8.360	8.645	6.59	n/a	6.010	n/a
S00T000057		D	Arsenic-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Boron-ICP-Acid Dil.	ug/mL	102.2	<5.00e-2	42.70	40.60	41.65	5.04	n/a	30.10	n/a
S00T000057		D	Barium-ICP-Acid Dil.	ug/mL	98.00	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000057		D	Beryllium-ICP-Acid Dil.	ug/mL	97.80	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	n/a	3.010	n/a
S00T000057		D	Bismuth-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Calcium-ICP-Acid Dil.	ug/mL	103.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Cadmium-ICP-Acid Dil.	ug/mL	100.6	<5.00e-3	< 3.010	<3.01e0	n/a	n/a	n/a	3.010	n/a
S00T000057		D	Cerium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Cobalt-ICP-Acid Dil.	ug/mL	101.0	<2.00e-2	< 12.00	<1.20e1	n/a	n/a	n/a	12.00	n/a
S00T000057		D	Copper-ICP-Acid Dil.	ug/mL	100.8	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000057		D	Potassium-ICP-Acid Dil.	ug/mL	104.8	<5.00e-1	1.96e+03	1.81e+03	1.88e+03	7.96	n/a	301.0	n/a
S00T000057		D	Lanthanum-ICP-Acid Dil.	ug/mL	101.6	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000057		D	Lithium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000057		D	Magnesium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Molybdenum-ICP-Acid Dil.	ug/mL	99.80	<5.00e-2	57.40	56.20	56.80	2.11	n/a	30.10	n/a
S00T000057		D	Sodium-ICP-Acid Dil.	ug/mL	103.0	<1.00e-1	1.33e+05	1.32e+05	1.33e+05	0.75	n/a	60.10	n/a
S00T000057		D	Neodymium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Phosphorus-ICP-Acid Dil.	ug/mL	102.2	<2.00e-1	8.99e+02	880.0	889.5	2.14	n/a	120.0	n/a
S00T000057		D	Lead-ICP-Acid Dil.	ug/mL	98.80	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Sulfur-ICP-Acid Dil.	ug/mL	97.80	<1.00e-1	1.23e+03	1.22e+03	1.22e+03	0.82	n/a	60.10	n/a
S00T000057		D	Antimony-ICP-Acid Dil.	ug/mL	100.0	<6.00e-2	< 36.10	<3.61e1	n/a	n/a	n/a	36.10	n/a
S00T000057		D	Selenium-ICP-Acid Dil.	ug/mL	98.60	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Silicon-ICP-Acid Dil.	ug/mL	102.4	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000057		D	Samarium-ICP-Acid Dil.	ug/mL	101.0	<1.00e-1	< 60.10	<6.01e1	n/a	n/a	n/a	60.10	n/a
S00T000057		D	Strontium-ICP-Acid Dil.	ug/mL	97.60	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000057		D	Titanium-ICP-Acid Dil.	ug/mL	101.6	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000057		D	Thallium-ICP-Acid Dil.	ug/mL	99.20	<2.00e-1	<1.20e+02	<1.20e2	n/a	n/a	n/a	120.0	n/a
S00T000057		D	Uranium-ICP-Acid Dil.	ug/mL	98.90	<5.00e-1	<3.01e+02	<3.01e2	n/a	n/a	n/a	301.0	n/a
S00T000057		D	Vanadium-ICP-Acid Dil.	ug/mL	101.0	<5.00e-2	< 30.10	<3.01e1	n/a	n/a	n/a	30.10	n/a
S00T000057		D	Zinc-ICP-Acid Dil.	ug/mL	100.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000057		D	Zirconium-ICP-Acid Dil.	ug/mL	101.2	<1.00e-2	< 6.010	<6.01e0	n/a	n/a	n/a	6.010	n/a
S00T000057			Bromide by Ion Chromatograph	ug/mL	99.68	<1.25e-1	<5.18e+02	<5.18e2	n/a	n/a	n/a	517.6	n/a
S00T000057			Niobium-94 by GEA	uCi/mL	n/a	<8.19e-4	<4.55e-03	<4.49e-3	n/a	n/a	n/a	4.55e-03	n/a
S00T000057			Ru/Rh-106 by GEA	uCi/mL	n/a	<1.49e-2	<7.59e-01	<7.68e-1	n/a	n/a	n/a	7.59e-01	n/a
S00T000057			Cesium-134 by GEA	uCi/mL	n/a	<7.32e-4	<3.84e-02	<3.85e-2	n/a	n/a	n/a	3.84e-02	n/a
S00T000057			Ce/Pr-144 by GEA	uCi/mL	n/a	<7.02e-3	<5.72e-01	<5.71e-1	n/a	n/a	n/a	5.72e-01	n/a
S00T000057			Radium-226 by GEA	uCi/mL	n/a	<1.23e-2	< 1.033	<1.03e0	n/a	n/a	n/a	1.033	n/a

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