Stk. 4

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Page 1 of 1

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5. Proj./Prog./Dept./Div.:	**6. Cog. Engr.:**	**7. Purchase Order No.:**
Tank 241-SY-102/Waste Management/PPC/AS	Ruth A. Esch	N/A

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1	WHC-SD-WM-DP-159	N/A	0	60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-SY-102, Grab Samples 2SY-95-1 and 2SY-95-2	Q	2	1	1

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
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17. SIGNATURE/DISTRIBUTION
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2	1	Cog. Mgr. J.G. Kristofzski 12-8-95			
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		Safety			
		Env.			
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BD-7400-172-1

60-Day Waste Compatibility Safety Issue and Final Results for Tank 241-SY-102, Grab Samples 2SY-95-1 and 2SY-95-2

Ruth A. Esch
Westinghouse Hanford Company, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

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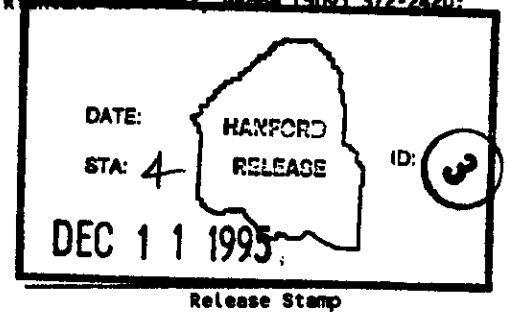
Abstract: N/A



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Hanford Company

P.O. Box 1970 Richland, WA 99352

WHC-SD-WM-DP-159, REV. 0

ANALYTICAL SERVICES

60-DAY WASTE COMPATIBILITY SAFETY ISSUE AND FINAL RESULTS FOR TANK 241-SY-102, GRAB SAMPLES 2SY-95-1 AND 2SY-95-2

Project Coordinator: RUTH E. ESCH

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

by

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Box 1970
Richland, Washington

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NARRATIVE

60 DAY WASTE COMPATIBILITY SAFETY ISSUE AND FINAL RESULTS FOR TANK 241-SY-102 GRAB SAMPLES 2SY-95-1, AND 2SY-95-2

Summary

Four grab samples (2SY-95-1, 2SY-95-2, 2SY-95-3, and 2SY-95-4) were taken from tank 241-SY-102. Samples were collected on October 20, 1995, and received by the 222-S Laboratory on October 23, 1995. Samples 2SY-95-1 and 2SY-95-2 were designated as supernate and were analyzed to support the waste compatibility safety program. Samples 2SY-95-3 and 2SY-95-4 were designated as sludge, and were given to the 222-S Process Chemistry and Statistics group for TRU solubility studies. The accuracy and precicion criteria were met for all analyses. No notifications were required based on sample results.

Appearance, OTR and Sample Breakdown

Attachment 1 is provided as a cross-reference for relating the tank farm customer ID numbers with the 222-S Laboratory LABCORE sample numbers, and the portion of the sample that was analyzed.

2SY-95-1
This sample was collected at a depth of 598 inches. Visual observation indicated that the sample was a clear yellow liquid with no solids. The dose rate was 150 mrad/hr. There was no organic layer present.

Two subsamples, approximately 20 mL each, were created for analysis of inorganic analytes and radionuclides. The remainder of the liquid was archived for possible future analysis.

2SY-95-2
This sample was collected at a depth of 623 inches. Visual observation indicated that the sample was a clear yellow liquid with no solids. The dose rate was 500 mrad/hr. There was no organic layer present.

Two subsamples, approximately 20 mL each, were created for analysis of inorganic analytes and radionuclides. The remainder of the liquid was archived for possible future analysis.

2SY-95-3 and - 4
These samples were both collected at a depth of 657 inches. This was as far down as possible before the sampler stopped dropping (probably due to solids compaction). Since these samples were collected for the TRU solubility studies only, no visual observations were made at this time, and no analytical results are reported in this document.

Analytical Results

Attachments

Two result tables are attached. Table 1 is the summary report from the Laboratory Information Management System (LABCORE).

Table 2 provides the ICP serial dilution results. The serial dilution values were obtained from the raw data. The accuracy of the ICP results was assessed using these results in addition to matrix spikes. In those instances where an analyte concentration significantly exceeds the spike added the matrix spike recovery result may not be meaningful. In these cases the serial dilution results are used to assess accuracy. The sample was analyzed both undiluted and with a 5-fold serial dilution. For acceptable performance, the relative percent difference (RPD) between the serial dilution and the undiluted results must be ≤10%.

Analytical Deviations

2SY-95-1
The parent sample, S95T003132 was subsampled for analysis. The subsamples were not filtered. Sample number S95T003139 was analyzed for inorganic analytes, and S95T003142 for radionuclides. A rerun for ammonia was performed on sample S95T003142 due to insufficient amount of S95T003139 for the rerun.

For gamma energy analysis (GEA) ^{60}Co results are given in Table 1 with the ^{137}Cs results.

Some of the analyses had the analyte detected in the blank (i.e. the blank result was at or near the detection limit for that analyte). This indicates that the samples may also have become contaminated. However, in all cases the result was below the sample detection limit and was several orders of magnitude less than the sample result. Therefore, no reruns were requested.

No analytical deviations were noted for any of the analyses.

2SY-95-2
The parent sample, S95T003133 was subsampled for analysis. The subsamples were not filtered. Sample number S95T003140 was analyzed for inorganic analytes, and S95T003143 for radionuclides.

For GEA ^{60}Co results are given in Table 1 with the ^{137}Cs results.

Some of the analyses had the analyte detected in the blank (i.e. the blank result was at or near the detection limit for that analyte). This indicates that the samples may also have become contaminated. However, in all cases the result was below the sample detection limit and was several orders of magnitude less than the sample result. Therefore, no reruns were requested.

No analytical deviations were noted for any of the analyses.

Procedures

The volume percent solids by centrifugation test was not performed on any of the samples because there were no solids present to perform the test.

The ammonia (NH_3) analysis was performed using procedure LA-631-001 Rev.B-0. There was no procedure referenced in the TSAP for this analysis.

Procedure LA-514-114 Rev. C-1 was used to perform the differential scanning calorimetry (DSC) analysis. This procedure is for DSC analysis using the Perkin Elmer instrument. Procedure LA-514-113, referenced in the TSAP, is the procedure for DSC analysis using the Mettler instrument. The two procedures are analytically equivalent. The analysis was performed on direct samples.

Procedures LA-560-112 Rev. B-0 and LA-514-114 Rev. C-1 were used to perform the thermogravimetric analysis (TGA) for percent moisture. These procedures are for TGA analysis using the Mettler and Perkin Elmer instruments, respectively. The two procedures are analytically equivalent. The analysis was performed on direct samples.

Procedure LA-548-121 Rev. D-1 was used for the GEA for ^{60}Co and ^{137}Cs. The samples were analyzed directly.

Procedure LA-220-101 Rev. D-1 was used for the analysis of ^{90}Sr. The samples were analyzed directly.

Procedure LA-505-161 Rev. B-0 was used to perform the ICP analysis for Al, Fe, and Na. This procedure is for ICP analysis using the Thermo Jarrell Ash (TJA) ICP instrument. Procedure LA-505-151, referenced in the TSAP, is the procedure for ICP analysis using the Analytical Research Laboratory (ARL) instrument. The two procedures are analytically equivalent. The samples were acidified and then analyzed directly. This acidification is denoted with a "D" in the aliquot class column (A#) in Table 1.

Procedure LA-533-105 Rev. D-1 was used to perform the IC analysis for Cl^-, F^-, PO_4^{3-}, SO_4^{2-}, NO_3^-, and NO_2^-. The analysis was performed on direct samples.

Procedure LA-212-106 Rev. A-0 was used to perform the pH analysis on the supernate sample.

Procedure LA-344-105 Rev. C-0 was used to perform the total organic carbon (TOC) analysis. The analysis was performed on direct samples.

Procedure LA-622-102 Rev. C-0 was used to perform the total inorganic carbon (TIC) analysis. The procedure referenced in the TSAP (LA-344-105) is incorrect for this analysis. All analyses were performed on direct samples.

Procedure LA-943-127 Rev. B-0 was used to perform the $^{239/240}Pu$ analysis. The procedure specified in the TSAP (LA-503-156) was superseded by the above procedure. The analysis was performed on direct samples.

Procedure LA-953-103 Rev. A-4 was used for the analysis of ^{241}Am. The samples were analyzed directly.

Procedure LA-510-112 Rev. C-3 was used to perform the specific gravity (SpG) analysis. The analysis was performed on direct samples.

Reference

WHC-SD-WM-TSAP-037, REV. 1B, "Compatibility Grab Sampling and Analysis Plan", dated October 19, 1995, Westinghouse Hanford Company, Richland, WA 99352

ATTACHMENT 1

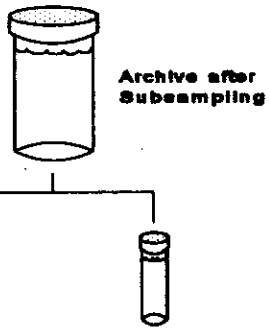
Attachment 1

SY-102 GRAB SAMPLE BREAKDOWN

598 in.

2SY-95-1

S95T003132



S95T003139

DSC
TGA
TOC
TIC
ICP: Al, Fe, Na
IC: anions
pH
OH
Sp.G
NH3

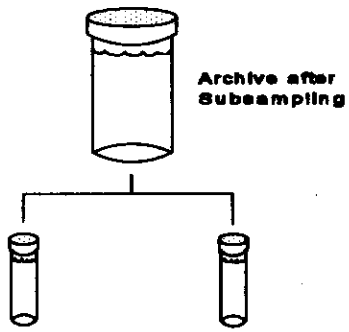
S95T003142

GEA: Cs-137
Pu-238/240
Sr-90
Am-241
NH3 - rerun

623 in.

2SY-95-2

S95T003133



S95T003140

DSC
TGA
TOC
TIC
ICP: Al, Fe, Na
IC: anions
pH
OH
Sp.G
NH3

S95T003143

GEA: Cs-137
Pu-238/240
Sr-90
Am-241

657 in.

2SY-95-3

S95T003136

For HA Best TRU Solubility

657 in.

2SY-95-4

S95T003137

For HA Best TRU Solubility

SAMPLE DATA SUMMARY

Table 1: Results for Compatibility Study
SY-102 GRAB

RISER: 1A
SEGMENT #: 2SY-95-1

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003139			Tot. Organic Carbon by Coul.	ug/mL	103.0	4.00e-01	1.00e+03	853.0	926.5	11.2	91.40	55.00	n/a
S95T003139			Tot. Inorg. Carbon by Coul.	ug/mL	96.83	1.00e-01	1.41e+03	1.44e+03	1.42e+03	2.11	97.80	17.50	n/a
S95T003139			% Water by TGA on Perkin Elmer	%	100.5	n/a	94.71	93.85	94.28	0.91	n/a	n/a	n/a
S95T003139			Specific Gravity	Sp.G.	99.10	n/a	1.020	1.030	1.025	0.98	n/a	1.00e-02	n/a
S95T003139			pH Direct	pH	100.1	n/a	12.87	12.90	12.88	0.23	n/a	1.00e-02	n/a
S95T003139			OH- by Pot. Titration	ug/mL	97.59	<42.00	2.71e+03	2.66e+03	2.68e+03	1.86	n/a	625.0	n/a
S95T003139			Ammonia by ISE-Std Additions	ug/mL	94.59	1.00e-03	I.S.	I.S.	n/a	n/a	n/a	n/a	n/a
S95T003139			DSC Exotherm on Perkin Elmer	Joules/g	95.75	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003139		D	Aluminium-ICP-Acid Dil.	ug/mL	98.33	1.30e-03	553.4	556.6	555.0	0.59	97.63	5.050	n/a
S95T003139		D	Iron-ICP-Acid Dil.	ug/mL	105.3	-1.00e-04	< 5.0500	<5.0500	n/a	n/a	103.5	5.050	n/a
S95T003139		D	Sodium-ICP-Acid Dil.	ug/mL	99.25	8.36e-03	1.67e+04	1.68e+04	1.67e+04	0.53	n/a	10.10	n/a
S95T003139			Sulfate by IC - Dionex 4000i	ug/mL	99.53	<1.32e-01	600.5	623.0	611.8	3.76	n/a	151.1	n/a
S95T003139			Phosphate by IC - Dionex 4000i	ug/mL	95.60	<2.94e-01	481.7	486.0	483.9	0.58	n/a	328.9	n/a
S95T003139			Nitrate by IC - Dionex 4000i	ug/mL	102.0	4.13e-01	1.79e+04	1.78e+04	1.79e+04	0.56	n/a	195.5	n/a
S95T003139			Nitrite by IC - Dionex 4000i	ug/mL	95.90	<1.07e-01	3.12e+03	3.03e+03	3.08e+03	2.93	n/a	118.9	n/a
S95T003139			Fluoride by IC - Dionex 4000i	ug/mL	99.32	<1.30e-02	547.9	548.0	548.0	0.00	n/a	14.44	n/a
S95T003139			Chloride by IC - Dionex 4000i	ug/mL	100.6	<1.78e-02	197.4	192.0	194.7	2.57	n/a	18.89	n/a
S95T003142			Ammonia by ISE-Std Additions	ug/mL	101.5	1.20e-01	< 5.00	5.620	n/a	n/a	n/a	5.000	n/a
S95T003142			Strontium-89/90 High Level	uCi/mL	112.2	2.07e-06	9.73e-05	9.57e-05	9.65e-05	1.66	n/a	2.35e-06	6.96E+00
S95T003142			Pu-239/240 by Ion Exchange	uCi/mL	86.72	<8.29e-06	3.30e-05	2.80e-05	3.05e-05	16.4	n/a	1.27e-05	4.95E+00
S95T003142			Cesium-137 by GEA	uCi/mL	101.6	<1.31e-07	6.860	6.930	6.895	1.02	n/a	1.31e-07	.23
S95T003142			Cobalt-60 by GEA	uCi/mL	99.53	<5.94e-08	<2.35e-04	<2.74e-4	n/a	n/a	n/a	5.94e-08	n/a
S95T003142			Am-241 by Extraction	uCi/mL	85.34	<3.22e-05	<3.15E-05	<3.61E-5	n/a	n/a	n/a	3.15e-05	1.00E+02

Table 1: Results for Compatibility Study
SY-102 GRAB

RISER: 1A
SEGMENT #: 2SY-95-2

SEGMENT PORTION: Supernate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S95T003140			Tot. Organic Carbon by Coul.	ug/mL	103.0	4.00e-01	1.46e+03	1.44e+03	1.45e+03	1.38	n/a	55.00	n/a
S95T003140			Tot. Inorg. Carbon by Coul.	ug/mL	96.83	1.00e-01	1.65e+03	1.58e+03	1.62e+03	4.33	n/a	20.00	n/a
S95T003140			% Water by TGA on Perkin Elmer	%	100.5	n/a	89.19	89.58	89.38	0.44	n/a	n/a	n/a
S95T003140			Specific Gravity	Sp.G.	99.10	n/a	1.050	1.060	1.055	0.95	n/a	1.00e-02	n/a
S95T003140			pH Direct	pH	100.1	n/a	13.04	13.08	13.06	0.31	n/a	1.00e-02	n/a
S95T003140			OH- by Pot. Titration	ug/mL	97.59	<42.00	5.64e+03	5.68e+03	5.66e+03	0.71	n/a	625.0	n/a
S95T003140			Ammonia by ISE-Std Additions	ug/mL	94.59	1.00e-03	11.80	10.00	10.90	16.5	96.30	5.000	n/a
S95T003140			DSC Exotherm on Perkin Elmer	Joules/g	95.75	n/a	0.00e+00	0.00e+00	0.00e+00	0.00	n/a	n/a	n/a
S95T003140	D		Aluminium-ICP-Acid Dil.	ug/mL	98.33	1.30e-03	1.01e+03	1.00e+03	1.00e+03	0.52	87.36	5.050	n/a
S95T003140	D		Iron-ICP-Acid Dil.	ug/mL	105.3	-1.00e-04	< 5.0500	<5.0500	n/a	n/a	102.6	5.050	n/a
S95T003140	D		Sodium-ICP-Acid Dil.	ug/mL	99.25	8.30e-03	3.02e+04	3.00e+04	3.01e+04	0.49	n/a	10.10	n/a
S95T003140			Sulfate by IC - Dionex 4000i	ug/mL	101.1	<1.30e-01	1.02e+03	1.04e+03	1.03e+03	1.94	94.87	151.1	n/a
S95T003140			Phosphate by IC - Dionex 4000i	ug/mL	93.04	<2.90e-01	904.2	909.0	906.6	0.55	91.31	328.9	n/a
S95T003140			Nitrate by IC - Dionex 4000i	ug/mL	104.6	3.90e-01	3.27e+04	3.31e+04	3.29e+04	1.22	96.31	155.5	n/a
S95T003140			Nitrite by IC - Dionex 4000i	ug/mL	98.51	<1.60e-01	9.64e+03	9.78e+03	9.71e+03	1.44	95.42	118.9	n/a
S95T003140			Fluoride by IC - Dionex 4000i	ug/mL	97.63	<1.30e-02	706.8	708.0	707.4	0.14	94.51	14.44	n/a
S95T003140			Chloride by IC - Dionex 4000i	ug/mL	107.2	<1.70e-02	742.0	747.0	744.5	0.67	96.24	18.89	n/a
S95T003143			Strontium-89/90 High Level	uCi/mL	112.2	2.07e-06	2.96e-04	3.01e-04	2.98e-04	1.68	n/a	2.33e-06	3.89E+00
S95T003143			Pu-239/240 by Ion Exchange	uCi/mL	86.72	<8.29e-06	1.26e-04	1.14e-04	1.18e-04	3.99	n/a	2.22e-05	3.40E+00
S95T003143			Cesium-137 by GEA	uCi/mL	101.6	<1.31e-07	21.60	21.60	21.60	0.00	n/a	1.31e-07	.13
S95T003143			Cobalt-60 by GEA	uCi/mL	99.53	<5.94e-08	<6.92e-04	<7.18e-4	n/a	n/a	n/a	5.94e-08	n/a
S95T003143			Am-241 by Extraction	uCi/mL	85.34	<3.22e-05	<2.72E-05	<3.02E-5	n/a	n/a	n/a	2.72e-05	5.75E+00

Table 2

ICP Serial Dilution Results for Tank 241-SY-102
Waste Compatibility Study

Sample ID	Analyte	Sample Result (µg/mL) Undiluted	Serial Dilution Result (µg/mL)	RPD
S95T003139				
(2-SY-95-1)	Al	553.4	569.4	2.9
	Fe	<5.05	<5.05	n/a
	Na	1.67E+04	1.72E+04	2.9
S95T003140				
(2-SY-95-2)	Al	1.01E+03	1.02E+03	0.9
	Fe	<5.05	<5.05	n/a
	Na	3.02E+04	3.15E+04	4.1

RPD (Relative Percent Difference) = (ABS(Sample - Serial Dilution))/[(Sample +Serial Dilution)/2] X 100

CHAIN OF CUSTODY FORMS

Westinghouse Hanford Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	Page 1 of 1

Date Turnaround: ☐ Priority ☒ Normal

Collector: Bob Paaznik	Company Contact: N/A	Telephone No.: 373-3578
Project Designation: N/A	Sampling Location: 241-SY-102	SAF No.: N/A
Ice Chest No.: N/A	Field Logbook No.: N/A	Method of Shipment: WHC TRANSPORTATION
Shipped To: 222S	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A

Possible Sample Hazards/Remarks: Radioactive

Special Handling and/or Storage: N/A

Preservative	N/A
Type of Container	G/4SS
No. of Container(s)	2
Volume	125 mL (EA)

COPY

SAMPLE ANALYSIS
2579 W 11/15
Cal #254-95-2 (1045) 254-95-3 (1046)

Sample No.	Matrix*	Date Sampled	Time Sampled					
254-95-3	SL	10/20/95	1220 M			DOSE ON CONTACT	1 R/hr	
254-95-2	L	10/20/95	1140 M			DOSE ON CONTACT	150 mR/hr	

CHAIN OF POSSESSION

Signature/Printed Name

Relinquished By / Date/Time	Received By / Date/Time
Terrie Sickels 1220 10/23/95	1225 10-23-95
1305 10-23-95	1305 10-23-95

SPECIAL INSTRUCTIONS

Seal on Sample 254-95-2 broke during Load, Replaced with 2511. 10-25-95

WHC-SD-WM-DP-159, REV. 0

*Matrix: S = Soil; SE = Sediment; SO = Solid; SL = Sludge; W = Water; O = Oil; A = Air; DS = Drum Solid; DL = Drum Liquid; T = Tissue; WI = Wipe; L = Liquid; V = Vegetation; X = Other

LABORATORY SECTION: Received By / Title / Date/Time

FINAL SAMPLE DISPOSITION: Disposal Method / Disposed By / Date/Time

DISTRIBUTION: Original - Sample; Yellow - Sampler

11.1

Westinghouse Hanford Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Page 1 of 1

Data Turnaround: ☐ Priority ☒ Normal

Collector: Bob Penzwik	Company Contact: W. N/A	Telephone No.: 373-3578
Project Designation: N/A	Sampling Location: 241-SY-102	SAF No.: N/A
Ice Chest No.: N/A	Field Logbook No.: N/A	Method of Shipment: WHC TRANSPORTATION
Shipped To: 2225	Offsite Property No.: N/A	Bill of Lading/Air Bill No.: N/A
Possible Sample Hazards/Remarks: RADIOACTIVE		
Special Handling and/or Storage: N/A		

COPY

SAMPLE ANALYSIS

Seal # SY-95-1 (1691) SY-95-4 (1048)

Sample No.	Matrix*	Date Sampled	Time Sampled	Preservation	Type of Container	No. of Container(s)	Volume	
SY-95-1	L	10/20/95	1118	N/A	Glass	2	125mL	DOE RATE ON CONTACT 30 R/hr
SY-95-4	SL	10/20/95	1235					DOE RATE ON CONTACT 1 R/hr

T1.2

CHAIN OF POSSESSION	Signature/Printed Name	Date/Time
Relinquished By	[signature]	10/23/95 1045
Received By	[signature]	10/23/95 1045
Relinquished By	[signature]	10-23-95 1143
Received By	[signature]	10-23-95 1143
Relinquished By		
Received By		
Relinquished By		
Received By		

SPECIAL INSTRUCTIONS

WHC-SD-WM-DP-159, REV. 0

Matrix*: S = Soil; SE = Sediment; SO = Solid; SW = Sludge; W = Water; O = Oil; A = Air; DS = Drum Solids; DL = Drum Liquids; T = Tissue; W = Wipe; L = Liquid; V = Vegetation; X = Other

LABORATORY SECTION: Received By | Title | Date/Time

FIELD SECTION: Disposal Method | Disposed By | Date/Time

DISTRIBUTION: Original - Sample Yellow - Sampler

SAMPLE HANDLING

LABCORE Data Entry Template for Worklist# 3020

Analyst: JdS **Instrument:** NONE **Book #** N/A

Method: LA-519-151 Rev/Mod E-2

Worklist Comment: SY-102 GRAB @BREAKDOWN. RCJ

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000172	SY-102 GRAB	1 SAMPLE	S95T003132	0		@BRKDWN1 DOSERATE	LIQUID	N/A	150		mrad/hour
95000172	SY-102 GRAB	1 SAMPLE	S95T003132	0		@BRKDWN1 APPEAR01	LIQUID	N/A	Complete		
95000172	SY-102 GRAB	1 SAMPLE	S95T003132	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	125		mL
95000172	SY-102 GRAB	2 SAMPLE	S95T003133	0		@BRKDWN1 DOSERATE	LIQUID	N/A	500		mrad/hour
95000172	SY-102 GRAB	2 SAMPLE	S95T003133	0		@BRKDWN1 APPEAR01	LIQUID	N/A	Complete		
95000172	SY-102 GRAB	2 SAMPLE	S95T003133	0		@BRKDWN1 SAMPAMT2	LIQUID	N/A	125		mL

Final page for worklist # 3020

JdS 10-25-95
Analyst Signature **Date**

RCJ 10-25-95
Analyst Signature **Date**

Sample #	Color	Clarity	Solids?	Org Layer?
S95T003132	Yellow	clear	No	No
S95T003133	Yellow	clear	No	No

Data Entry Comments:
Dose rate recorded after subsampled ~40 mL from each sample

Worklist data verified & approved by RCJ 10/25/95

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 ANALYSES

LABCORE Data Entry Template for Worklist# 3642

Analyst: ADP **Instrument:** DSC0 3 **Book #** 12N14A

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

Worklist Comment: Please run SY-102 DSCs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				DSC-03	LIQUID	28.45	27.24	N/A	Joules/g
95000172	SY-102 GRAB	2	SAMPLE	S95T003139	0		DSC-03	LIQUID	N/A	Ø		Joules/g
95000172	SY-102 GRAB	3	DUP	S95T003139	0		DSC-03	LIQUID	Ø	Ø	N/A	Joules/g
95000172	SY-102 GRAB	4	SAMPLE	S95T003140	0		DSC-03	LIQUID	N/A	Ø		Joules/g
95000172	SY-102 GRAB	5	DUP	S95T003140	0		DSC-03	LIQUID	Ø	Ø	N/A	Joules/g

Final page for worklist # 3642

BD Valenzuela for AD Purinton
Analyst Signature **Date** 11/20/95

Analyst Signature **Date** 11-20-95

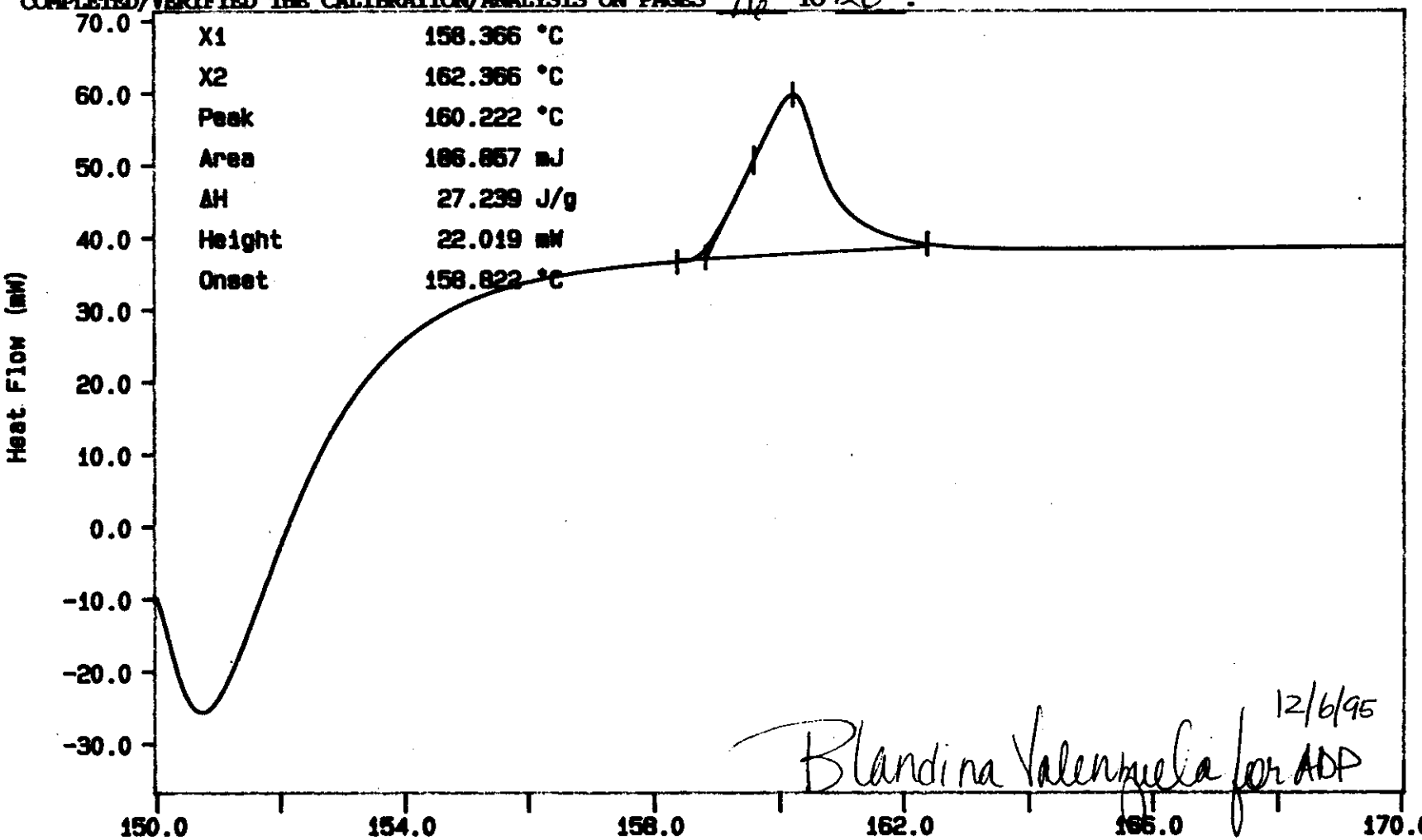
Verified by Blandina Valenzuela
11/21/95

Data Entry Comments: S95T003139 produced one endotherm at 116.3°C with a delta H of 1809.7 J/g. S95T003140 produced one endotherm at 111.4°C with a delta H of 2068.1 J/g

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

Curve 1: DSC
File info: IND111503 Wed Nov 15 16:59:33 1995
Sample Weight: 6.860 mg
12N14A Indium at 10C/min

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 16 TO 20.



16.

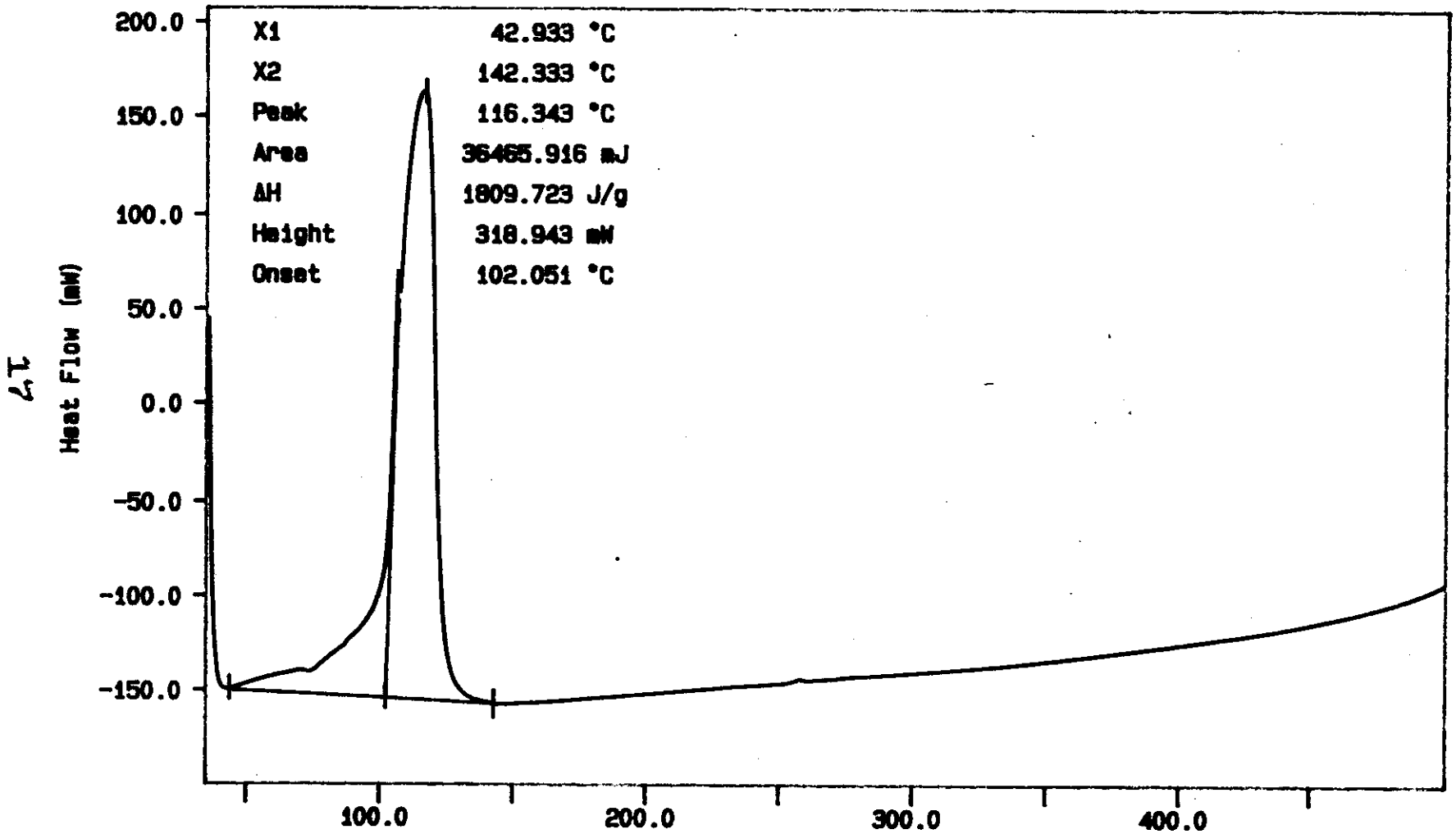
WHC-SD-WM-DP-159, REV.0

12/6/95
Blandina Valenzuela for ADP

N2, EXOTHERM DOWN
TEMP1: 150.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 170.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Nov 15 17:01:16 1995

Curve 1: DSC
File info: SAM111501 Wed Nov 15 17:51:42 1995
Sample Weight: 20.150 mg
S95T003139 SAM



17

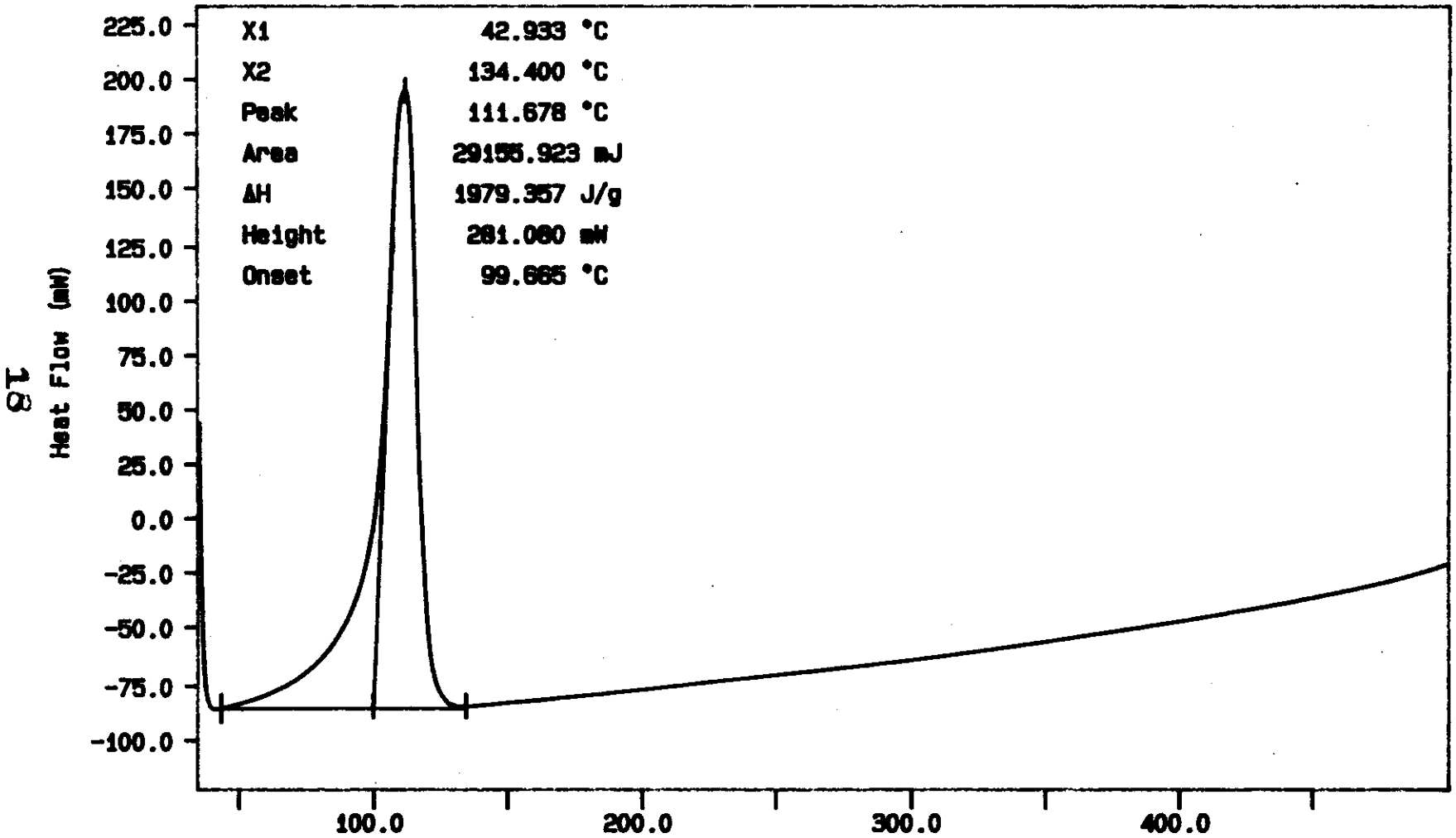
WHC-SD-WM-DP-159, REV. 0

exotherm down, N2 purge gas

TEMP1: 35.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Nov 15 17:55:12 1995

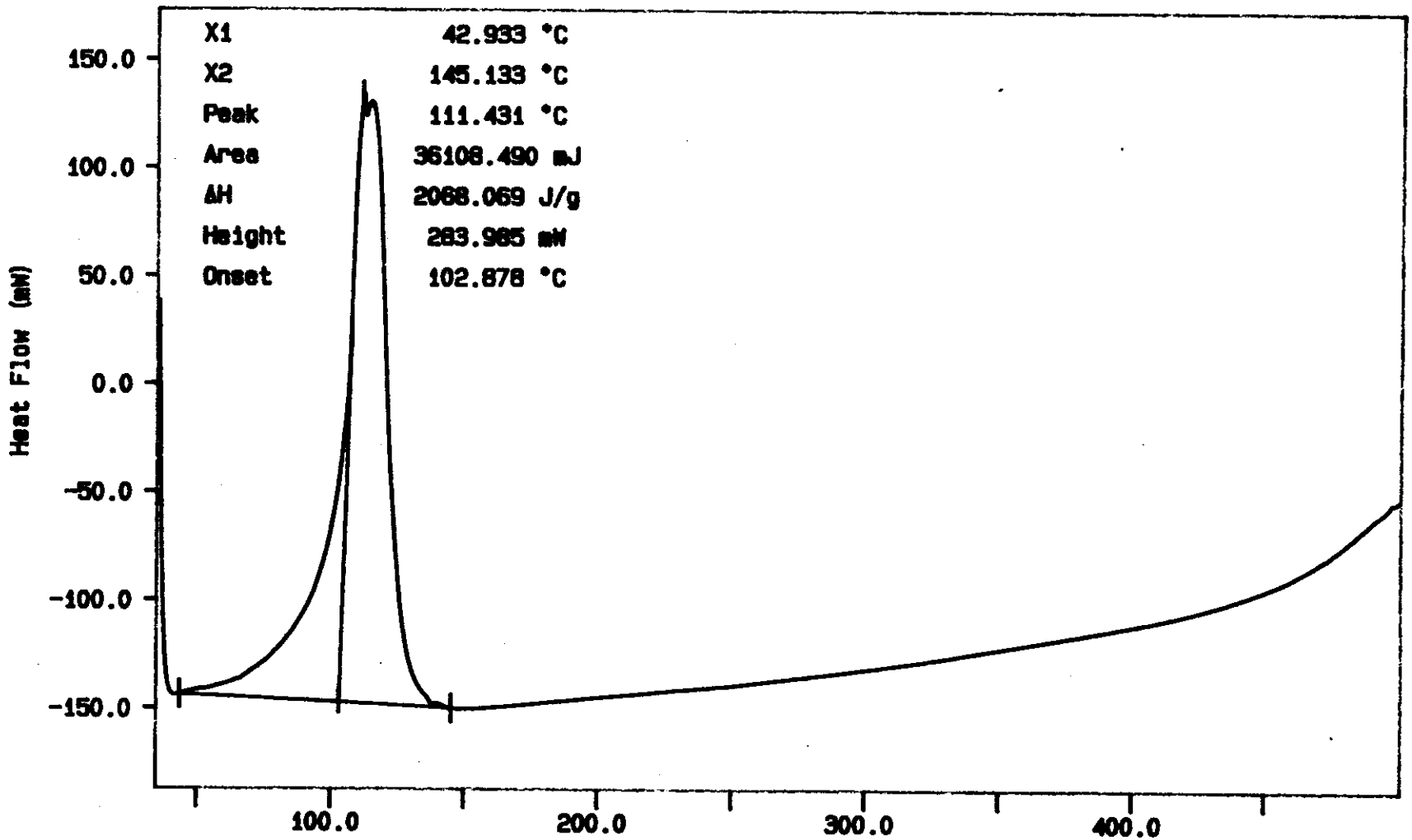
Curve 1: DSC
File info: SAN111502 Wed Nov 15 18:46:20 1995
Sample Weight: 14.730 mg
S95T003139 DUP



18

WHC-SD-WM-DP-159, REV.0

Curve 1: DSC
File info: SAM111503 Wed Nov 15 19:42:34 1995
Sample Weight: 17.460 mg
S95T003140 SAM

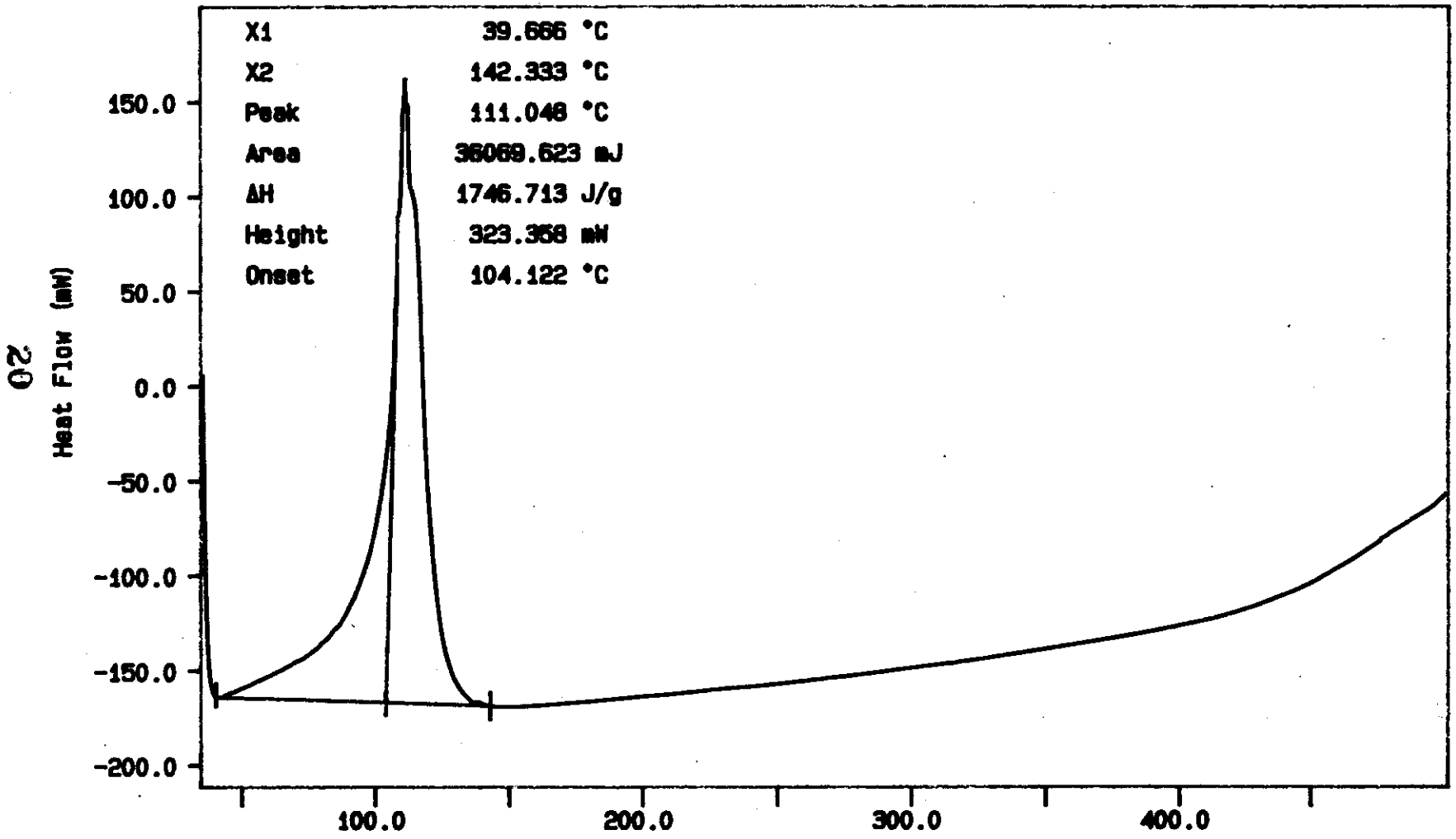


exotherm down, N2 purge gas

TIME1: 0.0 min RATE1: 10.0 C/min

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Nov 15 20:10:08 1995

Curve 1: DSC
File info: SAM111504 Wed Nov 15 21:11:28 1995
Sample Weight: 20.650 mg
S95T003140 DUP



WHC-SD-WM-DP-159, REV. 0

exotherm down, N2 purge gas

TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

AD PURINTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Nov 15 21:12:34 1995

LABCORE Data Entry Template for Worklist# 3787

Analyst: JDS **Instrument:** TGA0 3 **Book #** 65N8A

Method: LA-514-114 Rev/Mod GOC-1 11/27/95 BDV

Worklist Comment: Please run SY-102 TGAs under N2. bdv

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STD				TGA-03	LIQUID	59.74	60.32	N/A	%
95000172	SY-102 GRAB	2 SAMPLE	S95T003139	0		TGA-03	LIQUID	N/A	94.71		%
		3 STD				TGA-03	LIQUID	59.74	60.04	N/A	%
95000172	SY-102 GRAB	4 DUP	S95T003139	0		TGA-03	LIQUID	94.71	93.85	N/A	%
95000172	SY-102 GRAB	5 SAMPLE	S95T003140	0		TGA-03	LIQUID	N/A	89.19		%
95000172	SY-102 GRAB	6 DUP	S95T003140	0		TGA-03	LIQUID	89.19	89.58	N/A	%

See attached for signatures **Final page for worklist # 3787**

~~BD Valenzuela~~ for JDS 11-28-95 BDV
Analyst Signature **Date** ~~11/27/95~~

Analyst Signature **Date** 11/28/95

Verified by Blandina Valenzuela 11/30/95

Data Entry Comments:

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

LABCORE Data Entry Template for Worklist# 3153

Analyst: ADP **Instrument:** TGA0 **Book #** 65N84

Method: LA-560-112 Rev/Mod 30

Worklist Comment: Please run TGAs under N2. bdv

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				TGA-01	LIQUID			N/A	%
95000170	S-151 GRAB	2	SAMPLE	S95T003124	0		TGA-01	LIQUID	N/A			%
95000170	S-151 GRAB	3	DUP	S95T003124	0		TGA-01	LIQUID			N/A	%
95000170	S-151 GRAB	4	SAMPLE	S95T003125	0		TGA-01	LIQUID	N/A			%
95000170	S-151 GRAB	5	DUP	S95T003125	0		TGA-01	LIQUID			N/A	%
95000172	SY-102 GRAB	6	SAMPLE	S95T003139	0		TGA-01	LIQUID	N/A			%
95000172	SY-102 GRAB	7	DUP	S95T003139	0		TGA-01	LIQUID			N/A	%
95000172	SY-102 GRAB	8	SAMPLE	S95T003140	0		TGA-01	LIQUID	N/A			%
95000172	SY-102 GRAB	9	DUP	S95T003140	0		TGA-01	LIQUID			N/A	%
95000175	HERTING	10	SAMPLE	S95R000007	0		TGA-01	LIQUID	N/A			%
95000175	HERTING	11	DUP	S95R000007	0		TGA-01	LIQUID			N/A	%
95000175	HERTING	12	SAMPLE	S95R000008	0		TGA-01	LIQUID	N/A			%
95000175	HERTING	13	DUP	S95R000008	0		TGA-01	LIQUID			N/A	%

Final page for worklist # 3153

Analyst Signature **Date**

Susie M. Sutton 11.21.95
RJMcCown 11/26/95
Debra Parente

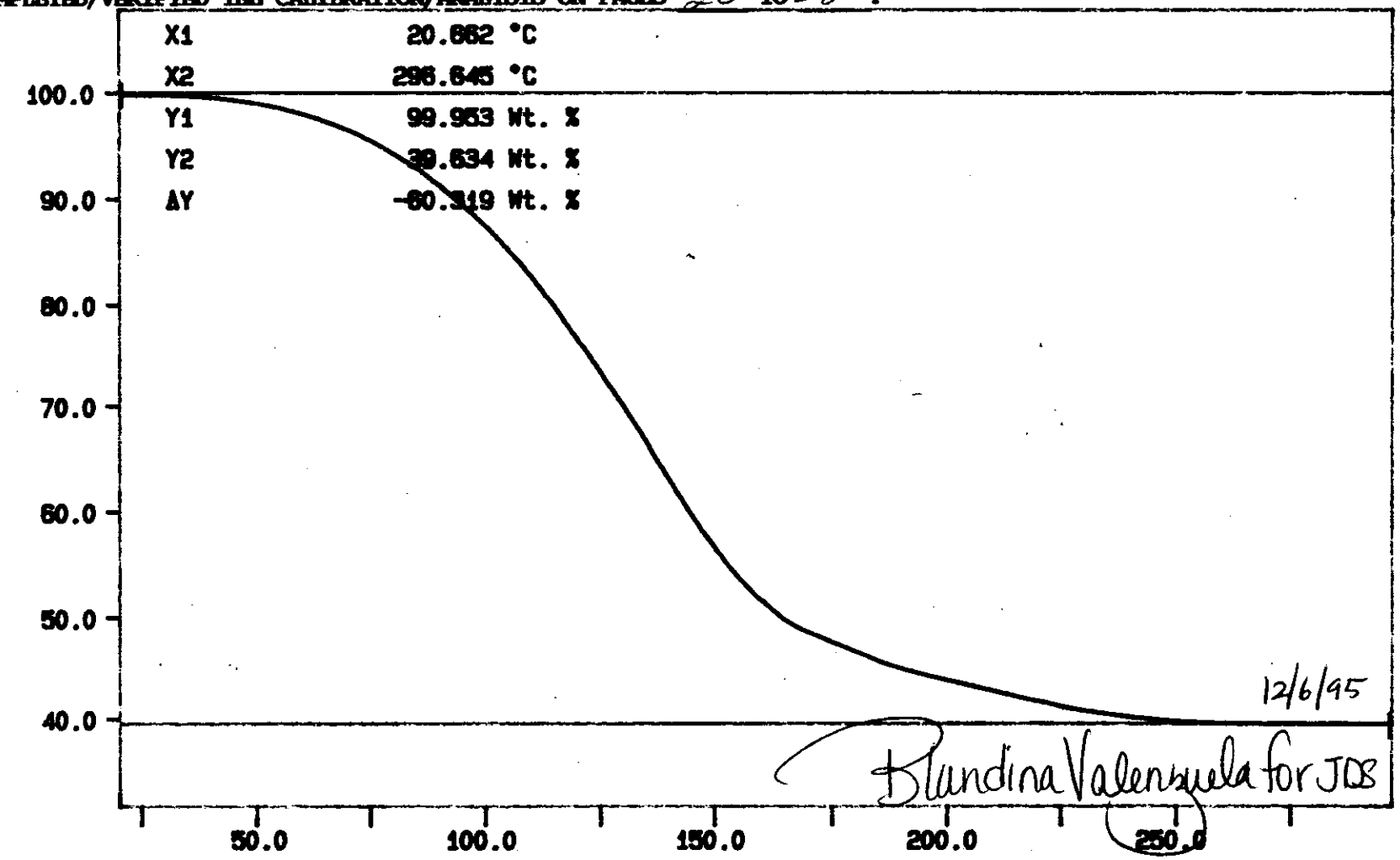
Analyst Signature **Date**

Data Entry Comments: Separated the batch to accommodate different Samples. bdv 11/27/95

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: TER112001 Mon Nov 20 07:57:23 1995
Sample Weight: 20.722 mg
85N8-A Terliq

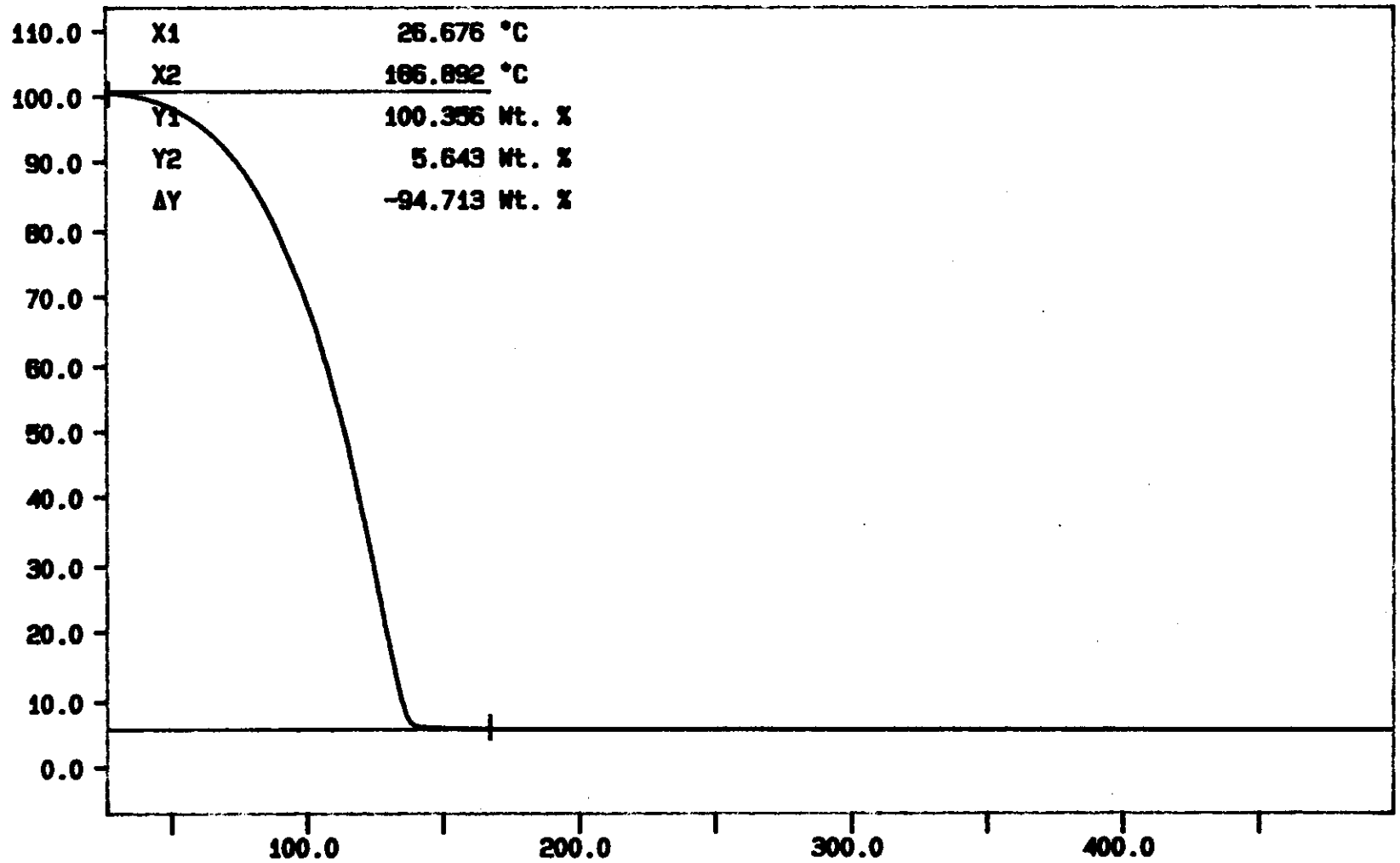
SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 23 TO 28 .



N2 10C/MIN
TEMP: 25.0 C TIME: 0.0 min RATE: 10.0 C/min
TEMP 250.0 C

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Mon Nov 27 14:53:16 1995

Curve 1: TGA
File info: SAM112101 Tue Nov 21 09:41:04 1995
Sample Weight: 10.627 mg
~~595T003125~~ JS 11/21/95
595T003139

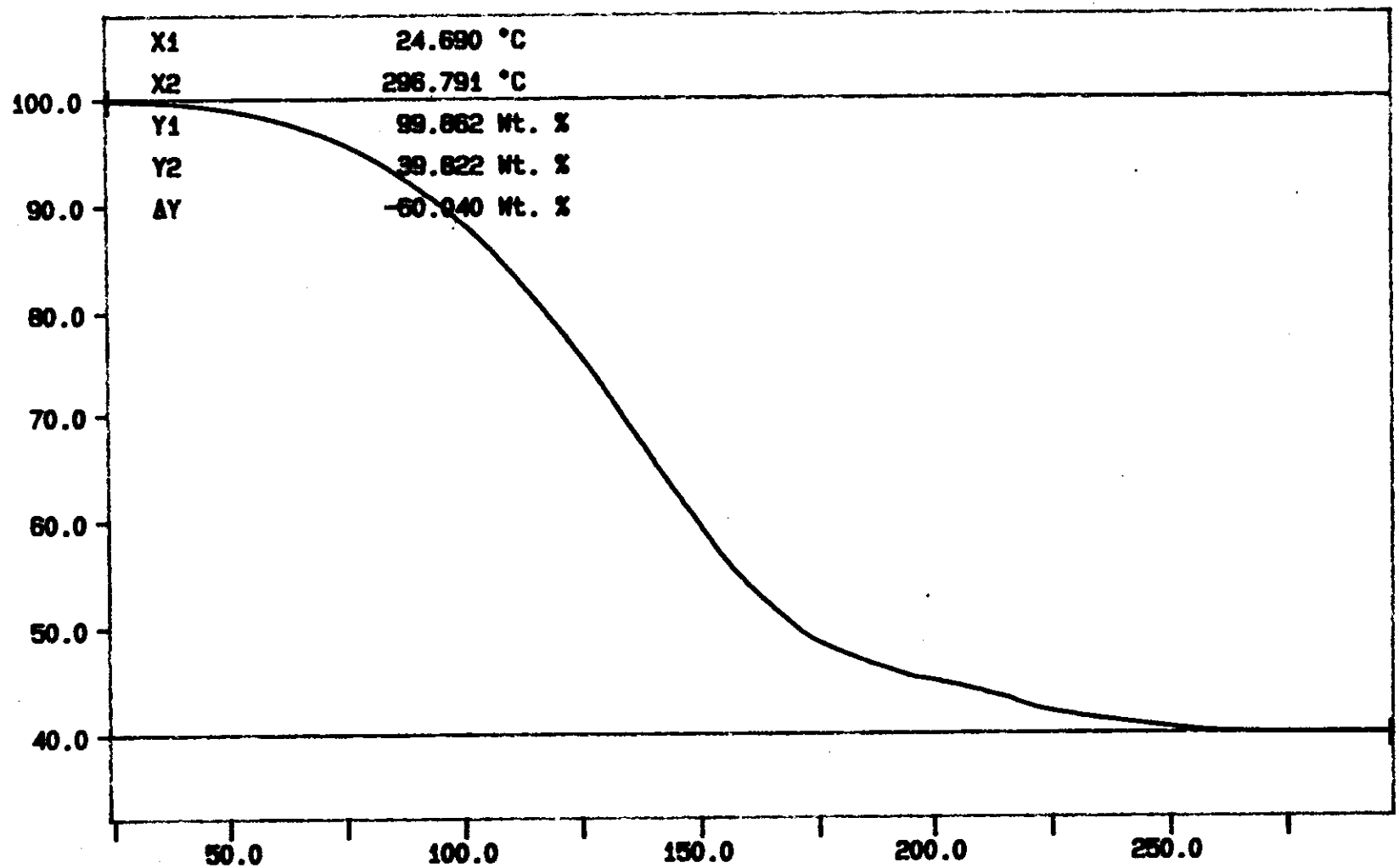


10C/MIN N2
~~TEMP: 25.0 C~~ ~~TEMP: 650.0 C~~ TIME: 0.0 min RATE: 10.0 C/min

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Nov 21 10:54:01 1995

WHC-SD-WM-DP-159, REV. 0

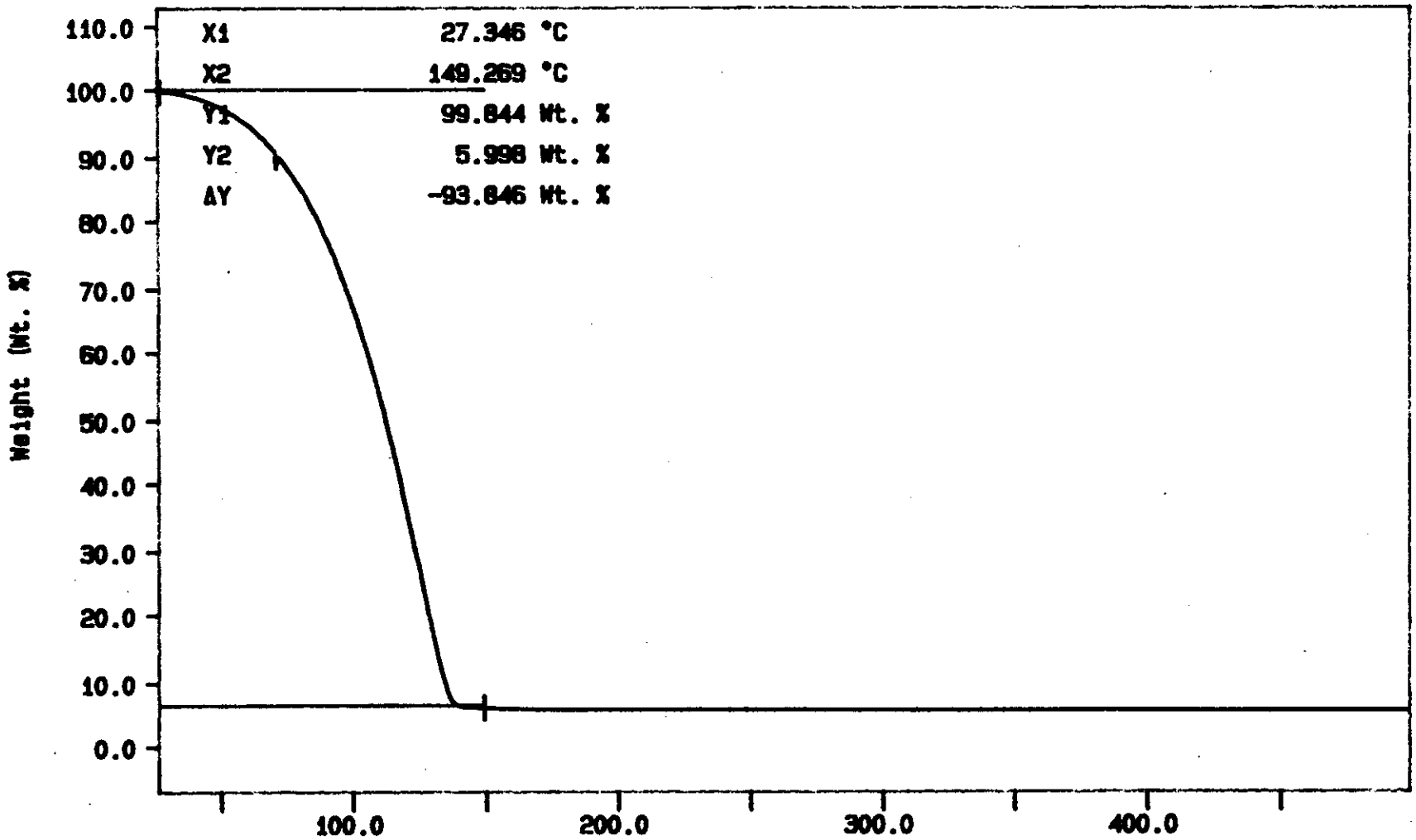
Curve 1: TGA
File info: TER112101 Tue Nov 21 07:47:10 1995
Sample Weight: 24.173 mg
65N8-A Terliq



N2 10C/MIN
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 350.0 C

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Nov 21 07:53:32 1995

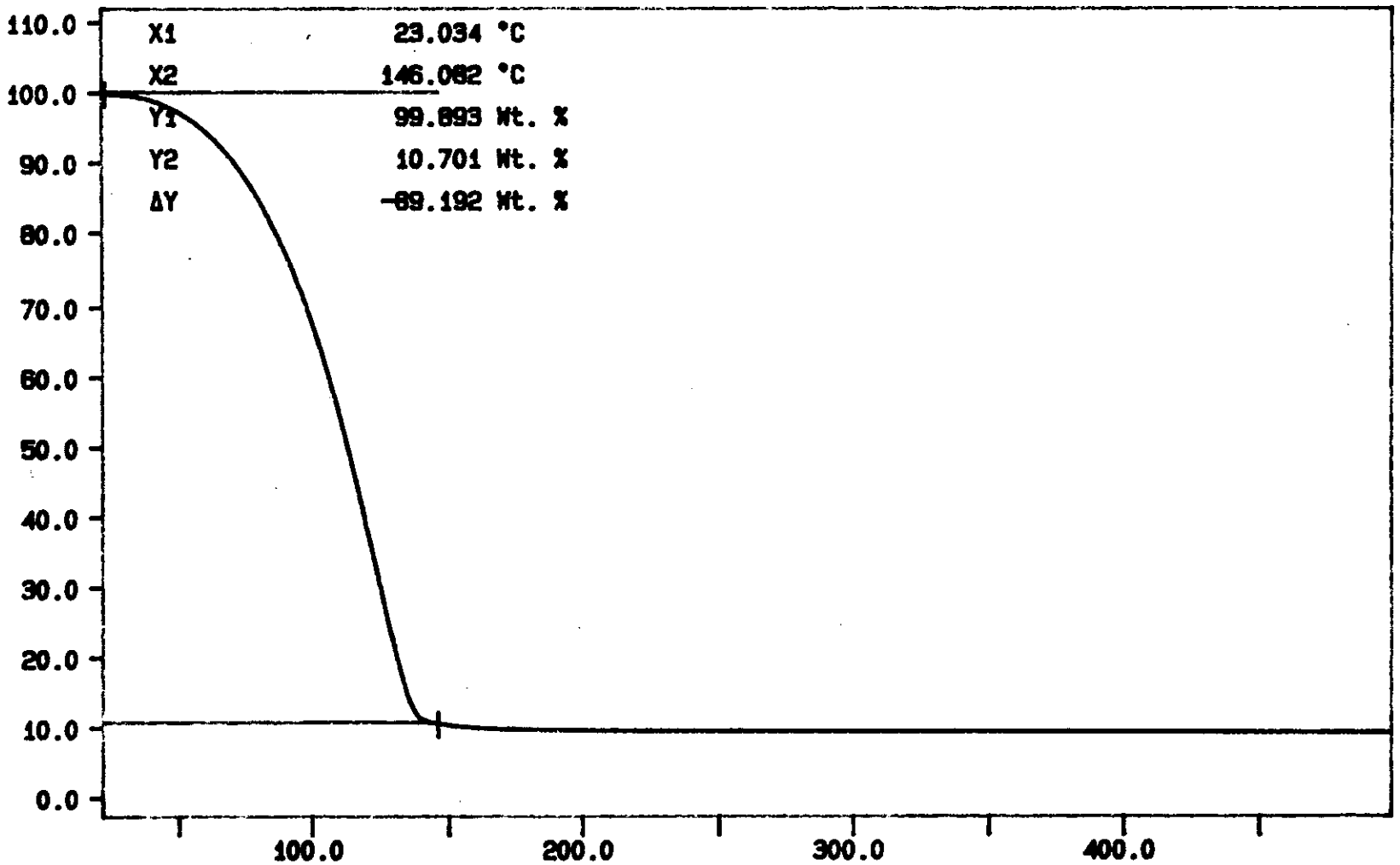
Curve 1: TGA
File info: SAM112102 Tue Nov 21 11:47:49 1995
Sample Weight: 10.801 mg
S95T003139DUP



10C/MIN N2
TIME1: 0.0 min RATE1: 10.0 C/min

JD SPELLMAN
PERKIN-ELMER
7 Series Thermal Analysis System
Tue Nov 21 12:28:44 1995

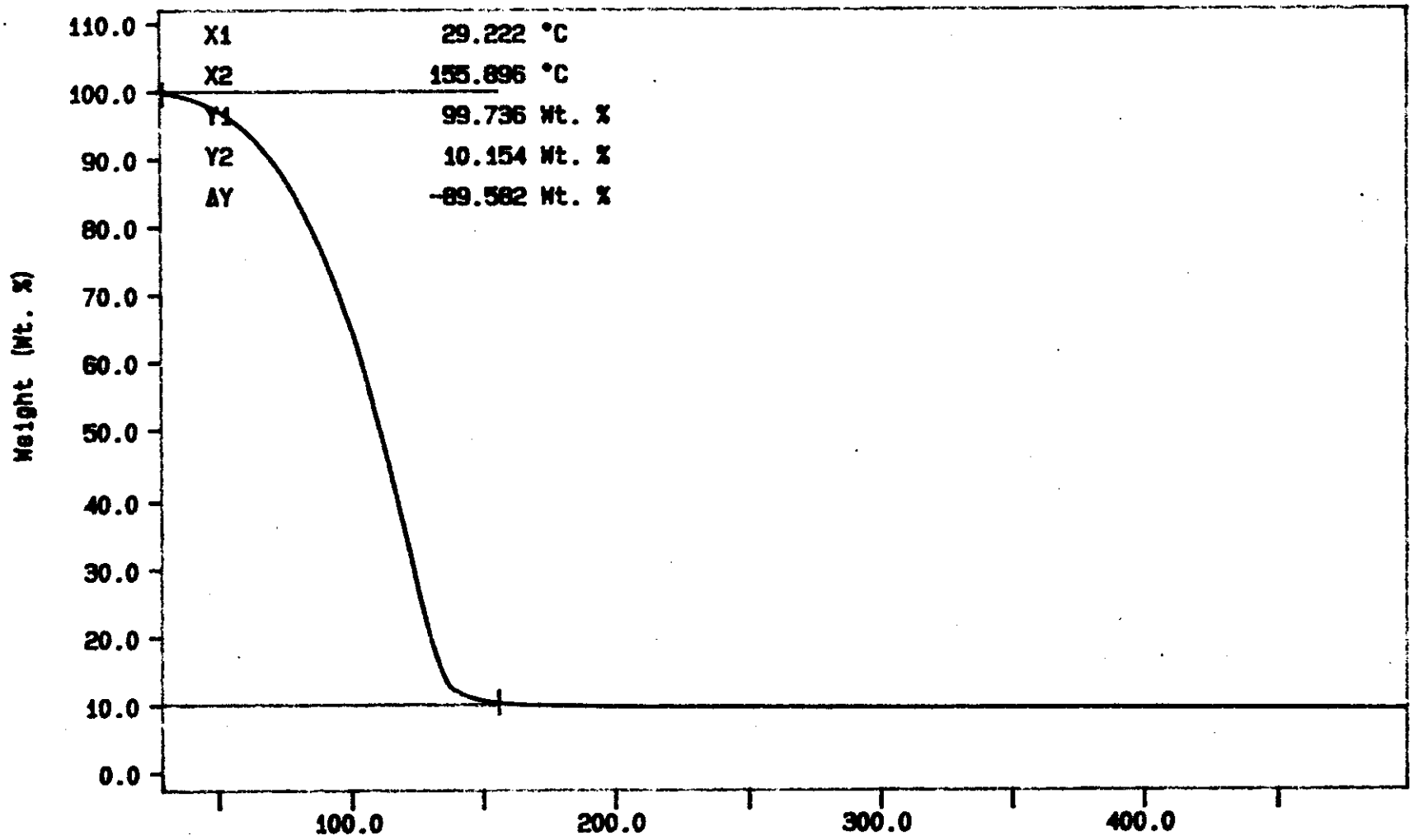
Curve 1: TGA
File info: SAM112201 Wed Nov 22 01:31:38 1995
Sample Weight: 11.062 mg
S95T003140



10C/MIN N2
TEMP1: 25.0 C TIME1: 0.0 min RATE1: 10.0 C/min
TEMP2: 600.0 C

SM FULTON
PERKIN-ELMER
7 Series Thermal Analysis System
Wed Nov 22 01:46:52 1995

Curve 1: TGA
File info: SAM112202 Wed Nov 22 02:36:36 1995
Sample Weight: 10.783 mg
S95T003140 DUP



LABCORE Data Entry Template for Worklist# 3197

Analyst: DPB **Instrument:** BA001 _____ **Book #** 134N/6-B

Method: LA-510-112 Rev/Mod C-3

Worklist Comment: ~~AY102~~ & SY102 SpG Do not run in replicate. Hea 11-1-95

S151 Hea 11-1-95

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				SPG-01	LIQUID	1.1081	1.1001	N/A	Sp.G.
95000170	S-151 GRAB	2	SAMPLE	S95T003124	0		SPG-01	LIQUID	N/A	0.9769 ~~0.9782~~		Sp.G.
95000170	S-151 GRAB	3	DUP	S95T003124	0		SPG-01	LIQUID	.9769	0.9796	N/A	Sp.G.
95000170	S-151 GRAB	4	SAMPLE	S95T003125	0		SPG-01	LIQUID	N/A	0.9762		Sp.G.
95000170	S-151 GRAB	5	DUP	S95T003125	0		SPG-01	LIQUID	0.9762	0.9836	N/A	Sp.G.
95000172	SY-102 GRAB	6	SAMPLE	S95T003139	0		SPG-01	LIQUID	N/A	1.0228		Sp.G.
95000172	SY-102 GRAB	7	DUP	S95T003139	0		SPG-01	LIQUID	1.0228	~~1.0288~~ 1.0288	N/A	Sp.G.
95000172	SY-102 GRAB	8	SAMPLE	S95T003140	0		SPG-01	LIQUID	N/A	1.0481		Sp.G.
95000172	SY-102 GRAB	9	DUP	S95T003140	0		SPG-01	LIQUID	1.0481	1.0601	N/A	Sp.G.

Rec 11/13/95

Final page for worklist # 3197

Daniel P. Bramble 11/11/95
Analyst Signature **Date**

Frank Conklin 11/12/95
Analyst Signature **Date**

STD#1 G 1.9919 g
T 1.8278
N 0.1641

3124 SAM G 2.0472
T 1.9005
N 0.1467

3124 DUP G 2.0447
T 1.8976
N 0.1471

3125 SAM G 2.0547g
T 1.9081
N 0.1466

3125 DUP G 2.0460
T 1.8983
N 0.1477

3139 SAM G 2.0809
T 1.9273
N 0.1536

3139 DUP G 2.0217g
T 1.8672
N 0.1545

3140 SAM G 2.0842
T 1.9268
N 0.1574

3140 DUP G 2.0625
T 1.9033
N 0.1592

STD#2 G 2.0001
T 1.8338
N 0.1663

Data Entry Comments: Sample size for all: 0.15017 mL

Reviewed by H. Anastos 11-13-95

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

WHC-SD-WM-DP-159, REV. 0

SPECIFIC GRAVITY : LA-510-112 (C-3)

Type		STANDARD	STANDARD
STANDARD	Gross Weight (W2)	1.9919	2.0001
Work List	Tare Weight (W1)	1.8278	1.8338
3197	Weight of Solution (W2-W1)	0.1641	0.1663
Test Code	Volume of Solution µL	150.1700	150.1700
	Specific Gravity	1.0928	1.1074
Matrix	Specific Gravity (Average)	1.1001	
LIQUID			
Sample #			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
DPB	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
11/11/95	v RESULT v		
Time	Specific Gravity Average =	1.100	

Data Entry by:	Linda Conlin	Date:	11/12/95
Approved by:	Heather Granter	Date:	11/13/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

SPECIFIC GRAVITY : LA-510-112 (C-3)

Type		SAMPLE	REPLICATE
SAMPLE	Gross Weight (W2)	2.0809	2.0217
Work List	Tare Weight (W1)	1.9273	1.8672
3197	Weight of Solution (W2-W1)	0.1536	0.1545
Test Code	Volume of Solution µL	150.1700	150.1700
	Specific Gravity	1.0228	1.0288
Matrix	Specific Gravity (Average)	1.0258	
LIQUID			
Sample #			
S95T3139			
Instrument Code	Gross Weight (W2) = Wt. of vial + cap + cotton + solution		
	Tare Weight (W1) = Wt. of vial + cap + cotton		
Analyst			
DPB	Specific Gravity = [(W2-W1) * 1000 µL/mL] / [Vol. of Solution µL * 1.000 g/mL]		
Date			
11/11/95	v RESULT v		
Time	Specific Gravity Average =	1.026	

Data Entry by:	Linda Cook	Date:	11/12/95
Approved by:	Heather Anastor	Date:	11/13/95

Form 510112L1 Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

SPECIFIC GRAVITY : LA-510-112 (C-3)

Type
SAMPLE
Work List #
3197
Test Code
Matrix
LIQUID
Sample #
S95T3140
Instrument Code
Analyst
DPB
Date
11/11/95
Time

	SAMPLE	REPLICATE
Gross Weight (W2)	2.0842	2.0625
Tare Weight (W1)	1.9268	1.9033
Weight of Solution (W2-W1)	0.1574	0.1592
Volume of Solution µL	150.1700	150.1700
Specific Gravity	1.0481	1.0601
Specific Gravity (Average)	1.0541	

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 Average =	1.054

Data Entry by:	Linda Conlin	Date:	11/12/95
Approved by:	Heather Anastos	Date:	11/13/95

LABCORE Data Entry Template for Worklist# 3525

Analyst: EAL **Instrument:** PH01 **Book #** ~~HNN16-F~~ 110N16F Hea 11-20-95

Method: LA-212-106 A-0

Worklist Comment: S151 & SY-102 pH Reruns

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1 STDPH				PH	QC	9.18	~~9.03~~ 9.19 Hea 11-20-95	N/A	
95000170	S-151 GRAB	2 SAMPLE	S95T003124	0		PH-01	LIQUID	N/A	8.66		pH
95000170	S-151 GRAB	3 DUP	S95T003124	0		PH-01	LIQUID	8.66	8.64	N/A	pH
95000170	S-151 GRAB	4 SAMPLE	S95T003125	0		PH-01	LIQUID	N/A	8.82		pH
95000170	S-151 GRAB	5 DUP	S95T003125	0		PH-01	LIQUID	8.82	8.80	N/A	pH
95000172	SY-102 GRAB	6 SAMPLE	S95T003139	0		PH-01	LIQUID	N/A	12.87		pH
95000172	SY-102 GRAB	7 DUP	S95T003139	0		PH-01	LIQUID	12.87	12.90	N/A	pH
95000172	SY-102 GRAB	8 SAMPLE	S95T003140	0		PH-01	LIQUID	N/A	13.04		pH
95000172	SY-102 GRAB	9 DUP	S95T003140	0		PH-01	LIQUID	13.04	13.08	N/A	pH

Final page for worklist # 3525

Ann Lambel 11.17.95
Analyst Signature **Date**

Amy Hamm 11-17-95
Analyst Signature **Date**

Data Entry Comments: ~~* 110N16F also calibrated in @ 9.18~~ EAL 9.19 Hea 11-20-95

Reviewed by H. Anastor 11-20-95

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# 3194

Analyst: RAW **Instrument:** PH01 WC06635 **Book #** 57N8 R's 11/07/95

Method: LA-211-102 Rev/Mod C-0

Worklist Comment: SY102 OH

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				OH-01	LIQUID	1.66e4	1.62E+4	N/A	ug/mL
		2	BLNK				OH-01	LIQUID	1	<42	N/A	ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003139	0		OH-01	LIQUID	N/A	2.71e3	6.25e2	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003139	0		OH-01	LIQUID	2.71e3	2.66e3	N/A	ug/mL
95000172	SY-102 GRAB	5	SAMPLE	S95T003140	0		OH-01	LIQUID	N/A	5.64e3	6.25e2	ug/mL
95000172	SY-102 GRAB	6	DUP	S95T003140	0		OH-01	LIQUID	5.64e3	5.68e3	N/A	ug/mL

Final page for worklist # 3194

R. WENDLAND 11-6-95
Analyst Signature **Date**

(11-9-95)
Analyst Signature **Date**

Reviewed RW Schroeder 11/12/95

Data Entry Comments: SAMPLES = .200 – 3mL (H_2O)

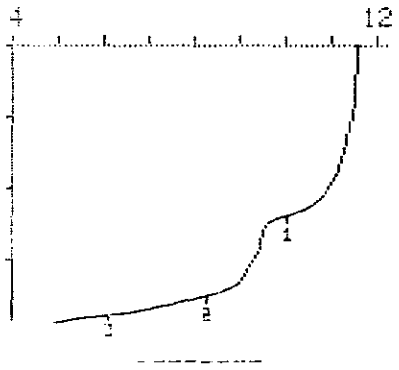
Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

```
date 95-11-96 time 14:01
GET pH          12  #  140
Id.#1            1
Id.#2       .2005
pH(init)   11.58
             V/ml          pH
EP1          .238       10.06
EP2          .350        8.28
EP3          .377        6.11
stop volt.reached
        ========
```

```
date 95-11-96 time 14:13
GET pH          12  #  140
.10ml/div       ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

Type	Sample Size (mL) SS	Std
Std	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.238
3194	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	9.54E-01
OH-01	OH in Sample in µg/mL (PPM)	1.62E+04
Matrix		
liquid		
Sample #	Detection Limit = 125µg / SS * DF	
57N8		
Instrument Code	Detection Limit (µg/mL)	2.50E+03
WC06635		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
RA Wendland		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
11/09/95		
Time		Std
	Concentration of OH in Sample (Molarity)	9.54E-01
	OH in Sample in µg/mL (PPM)	1.62E+04

Data Entry by:	RW Schneider	Date:	11/09/95
Approved by:	RW Schneider	Date:	11/9/95

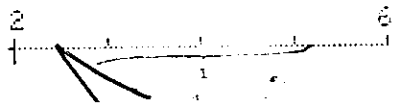
Form 211102_1 Rev. 1.3 Page 1 of 1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

```
date 95-11-06 time 14:15
GET pH          12  #  141
Id.#1              2
Id.#2        .2005
pH(init)     5.18
             V/ml          pH
EP1          .014        4.04
manual stop
         ========


date 95-11-06 time 14:16
GET pH          12  #  141
.10ml/div        ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

Type	Work List	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
Blank	3194	OH-01	liquid	BLNK	WC06635	RA Wendland	11/09/95	

	Blank
Sample Size (mL) SS	3.000
Concentration of HNO3 (Molarity)	0.2005
HNO3 Titrant at OH end-point in mL	0.000
Dilution Factor DF	1
Concentration of OH in Sample (Molarity)	0.00E+00
OH in Sample in µg/mL (PPM)	0.00E+00

Detection Limit = 125µg / SS * DF

Detection Limit (µg/mL)	4.17E+01

OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor

OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))

	Blank
Concentration of OH in Sample (Molarity)	0.00E+00
OH in Sample in µg/mL (PPM)	<42

The Result is < Detection Limit

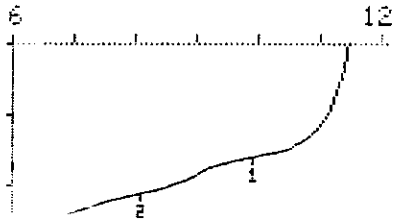
Data Entry by:	Robert W Schroeder	Date:	11/09/95
Approved by:	Robert W Schroeder	Date:	11/9/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0 2

```
date 95-11-29 time 14:27
GET pH          12  #  144
Id.#1           39
Id.#2        .2005
pH(init)    11.44
             V/ml          pH
EP1          .159        9.93
EP2          .210        8.10
manual stop
          ========
```

```
date 95-11-06 time 14:27
GET pH          12  #  144
.10ml/div       ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

Type	Work List #	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
Sample	3194	OH-01	liquid	S95T003139	WC06635	RA Wendland	11/09/95	

	Sample
Sample Size (mL) SS	0.200
Concentration of HNO3 (Molarity)	0.2005
HNO3 Titrant at OH end-point in mL	0.159
Dilution Factor DF	1
Concentration of OH in Sample (Molarity)	1.59E-01
OH in Sample in µg/mL (PPM)	2.71E+03

Detection Limit = 125µg / SS * DF

Detection Limit (µg/mL)	6.25E+02

OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor

OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))

	Sample
Concentration of OH in Sample (Molarity)	1.59E-01
OH in Sample in µg/mL (PPM)	2.71E+03

Data Entry by:	R W Schroeder	Date:	11/09/95
Approved by:	R W Schroeder	Date:	11/9/95

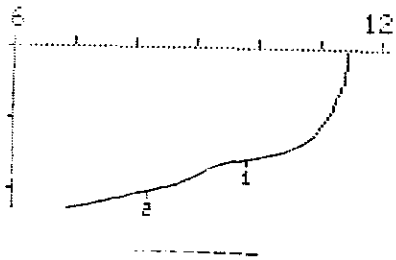
Form 211102_1 Rev. 1.3

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

```
date 95-11-06 Time 14:31
GET pH          12  #  145
Id.#1           39
Id.#2        .2005
pH(init)    11.44
             V/ml          pH
EP1          .156        9.85
EP2          .203        8.20
manual stop
         ========
```

```
date 95-11-06 time 14:32
GET pH          12  #  145
.10ml/div       dpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

Type	Work List	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
Duplicate	3194	OH-01	liquid	S95T003139	WC06635	RA Wendland	11/09/95	

	Duplicate
Sample Size (mL) SS	0.200
Concentration of HNO3 (Molarity)	0.2005
HNO3 Titrant at OH end-point in mL	0.156
Dilution Factor DF	1
Concentration of OH in Sample (Molarity)	1.56E-01
OH in Sample in µg/mL (PPM)	2.66E+03

Detection Limit = 125µg / SS * DF

	Duplicate
Detection Limit (µg/mL)	6.25E+02

OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor

OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))

	Duplicate
Concentration of OH in Sample (Molarity)	1.56E-01
OH in Sample in µg/mL (PPM)	2.66E+03

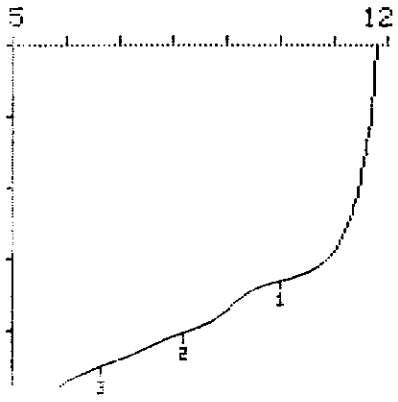
Data Entry by:	R.W. Schroeder	Date:	11/09/95
Approved by:	R.W. Schroeder	Date:	11/9/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

```
date 95-11-06 time 14:38
GET pH          12  #  146
Id.#1           40
Id.#2        .2005
pH(init)    11.78
             V/ml          pH
EP1          .331        9.98
EP2          .404        8.18
EP3          .451        6.64
manual stop
        ========
```

```
date 95-11-06 time 14:38
GET pH          12  #  146
.10ml/div       ΔpH=1/div
start V    .000 ml
```



OH (AUTO) : LA-211-102 (C-0)

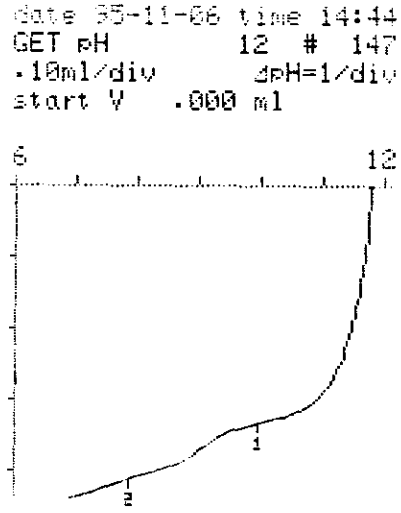
Type	Sample Size (mL) SS	Sample
Sample	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.331
3194	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	3.32E-01
OH-01	OH in Sample in µg/mL (PPM)	5.64E+03
Matrix		
liquid		
Sample #	Detection Limit = 125µg / SS * DF	
S95T003140		
Instrument Code	Detection Limit (µg/mL)	6.25E+02
WC06635		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
RA Wendland		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
11/09/95		
Time		Sample
	Concentration of OH in Sample (Molarity)	3.32E-01
	OH in Sample in µg/mL (PPM)	5.64E+03

Data Entry by:	RW Johnson	Date:	11/09/95
Approved by:	RW Johnson	Date:	11/9/95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

```
date 95-11-06 time 14:44
GET pH          12  #  147
Id.#1           40
Id.#2         .2005
pH(init)     11.77
              V/ml          pH
EP1           .333        9.97
EP2           .412        7.89
manual stop
        ========
```



OH (AUTO) : LA-211-102 (C-0)

Type	Sample Size (mL) SS	Duplicate
Duplicate	Concentration of HNO3 (Molarity)	0.2005
Work List	HNO3 Titrant at OH end-point in mL	0.333
3194	Dilution Factor DF	1
Test Code	Concentration of OH in Sample (Molarity)	3.34E-01
OH-01	OH in Sample in µg/mL (PPM)	5.68E+03
Matrix		
liquid		
Sample #	Detection Limit = 125µg / SS * DF	
S95T003140		
Instrument Code	Detection Limit (µg/mL)	6.25E+02
WC06635		
Analyst	OH Molarity =((mL HNO3)*(M HNO3))/Sample Size in mL*Dilution Factor	
RA Wendland		
Date	OH in µg/mL = (OH MOLARITY)*(17.0g/mole)*((1000000µg/g)/(1000mL/L))	
11/09/95		
Time		Duplicate
	Concentration of OH in Sample (Molarity)	3.34E-01
	OH in Sample in µg/mL (PPM)	5.68E+03

Data Entry by:	RW Schroeder	Date:	11/09/95
Approved by:	RW Schroeder	Date:	11/9/95

LABCORE Data Entry Template for Worklist# 4083

Analyst: eal **Instrument:** NH301 **Book #** 122N16-E

Method: LA-631-001 Rev/Mod B-O

Worklist Comment: SY-102 NH3

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				NH3-01	LIQUID	1	~~.0100~~ .0010 RHtech	N/A	ug/mL
		2	STD				NH3-01	LIQUID	3.88 E2	3.67 E2 I.S.	N/A RWS 12/7/95	ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003139	0		NH3-01	LIQUID	N/A	~~3.00~~ E1	< 5.00	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003139	0		NH3-01	LIQUID	~~3.00~~ E1 RWS 12/7/95	~~7.28~~ I.S. RWS 12/7/95	N/A	ug/mL
95000172	SY-102 GRAB	5	SAMPLE	S95T003140	0		NH3-01	LIQUID	N/A	1.18 E1	< 5.00	ug/mL
95000172	SY-102 GRAB	6	DUP	S95T003140	0		NH3-01	LIQUID	1.18 E1	1.00 E1	N/A	ug/mL
95000172	SY-102 GRAB	7	SPK	S95T003140	0		NH3-01	LIQUID	100	96.26	N/A	ug/mL
		8	STD				NH3-01	LIQUID	3.88 E2	3.92 E2	N/A	ug/mL

Final page for worklist # 4083

Analyst Signature **Date**

See original sheet for signatures RHTech 12/6/95

RHTech 12/7/95
Analyst Signature **Date**

Reviewed RW Schaeffer 12/7/95

Data entry comments:

Sample S95T003139 was run in duplicate with poor results due to tech. error in standard additions on one. The sample was used in process and thus we reported I.S. in order to not have to reject results and enter I.S. on another worklist. The results to be rejected are 3.00 E1 and 7.28 E0 mg/mL. The retest will be on ~~same~~ daughter sample S95T003142. RWS 12/7/95

Data Entry Comments:

~~The result for the sample S95T003139 is incorrect and will be rerun. RWS 12/06/95.~~ RWS 12/7/95

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# 4083

Analyst: ZAL **Instrument:** NH301 **Book #** 122N16E

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

Worklist Comment: SY-102 NH3

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				NH3-01	LIQUID	1	1.01 E-3	N/A	ug/mL
		2	STD				NH3-01	LIQUID	3.68 E2	3.67 E02 3.00 E1	N/A	ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003139	0		NH3-01	LIQUID	N/A	~~3+39~~ ptbook	< 5.00	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003139	0		NH3-01	LIQUID	3.00 E1	7.28	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003139	0		NH3-01	LIQUID			N/A	ug/mL
95000172	SY-102 GRAB	6	SAMPLE	S95T003140	0		NH3-01	LIQUID	N/A	1.18 E1	< 5.00	ug/mL
95000172	SY-102 GRAB	7	DUP	S95T003140	0		NH3-01	LIQUID	1.18 E1	1.00 E1	N/A	ug/mL
		8	STD				NH3-01	LIQUID	3.68 E2	3.92 E2	N/A	ug/mL

ptbook 12/6/95

Final page for worklist # Rabbit 4083

Ann Lambert 12-06-95
Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments: Sample # S95T003139 did not have enough sample to program spike. Spike was performed on sample S95T003140. (ZAL)

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.

NH3 by ISE: LA-631-001 (A-0) SAL B-0

WORKLIST #	ANALYST SIGNATURE	ANALYSIS DATE	ANALYSIS TIME	INSTRUMENT CODE
4083	ALambel	12.5.95	22:12	SN-TR28A

☐ SAMPLE ☐ STANDARD ☐ DUPLICATE ☐ PREP BLANK ☒ SPIKE ☒ REAGENT BLANK

SAMPLE # = STD # =

SAMPLE VOL. ADDED (mL) to 25mL VOL. FLASK 25 ml
CONC. OF STANDARD REAGENT ADDED 1000
SPIKE VOLUME (mL) N/A

* ATTACH 1 PAGE PRINT OUT PER SAMPLE

☒ SAMPLE ☐ STANDARD ☐ DUPLICATE ☐ PREP BLANK ☐ SPIKE ☐ REAGENT BLANK

SAMPLE # = 595T003139 STD # =

SAMPLE VOL. ADDED (mL) to 25mL VOL. FLASK 1ml
CONC. OF STANDARD REAGENT ADDED 1000
SPIKE VOLUME (mL) N/A

* ATTACH 1 PAGE PRINT OUT PER SAMPLE

☒ SAMPLE ☐ STANDARD ☐ DUPLICATE ☐ PREP BLANK ☐ SPIKE ☐ REAGENT BLANK

SAMPLE # = 595T003140 STD # =

SAMPLE VOL. ADDED (mL) to 25mL VOL. FLASK 1ml
CONC. OF STANDARD REAGENT ADDED 1000
SPIKE VOLUME (mL) N/A

* ATTACH 1 PAGE PRINT OUT PER SAMPLE

☐ SAMPLE ☒ STANDARD ☐ DUPLICATE ☐ PREP BLANK ☐ SPIKE ☐ REAGENT BLANK

SAMPLE # = STD # =

SAMPLE VOL. ADDED (mL) to 25mL VOL. FLASK 1ml
CONC. OF STANDARD REAGENT ADDED 1000
SPIKE VOLUME (mL) N/A

* ATTACH 1 PAGE PRINT OUT PER SAMPLE

☒ SAMPLE ☐ STANDARD ☐ DUPLICATE ☐ PREP BLANK ☐ SPIKE ☐ REAGENT BLANK

SAMPLE # = STD # = 122N16-E

SAMPLE VOL. ADDED (mL) to 25mL VOL. FLASK 1ml
CONC. OF STANDARD REAGENT ADDED 1000
SPIKE VOLUME (mL) N/A

* ATTACH 1 PAGE PRINT OUT PER SAMPLE

☒ SAMPLE ☐ STANDARD ☐ DUPLICATE ☐ PREP BLANK ☐ SPIKE ☐ REAGENT BLANK

SAMPLE # = 595T003139Dup STD # =

SAMPLE VOL. ADDED (mL) to 25mL VOL. FLASK 1ml
CONC. OF STANDARD REAGENT ADDED 1000
SPIKE VOLUME (mL) N/A

* ATTACH 1 PAGE PRINT OUT PER SAMPLE

☒ SAMPLE ☐ STANDARD ☐ DUPLICATE ☐ PREP BLANK ☐ SPIKE ☐ REAGENT BLANK

SAMPLE # = 595T003140Dup STD # =

SAMPLE VOL. ADDED (mL) to 25mL VOL. FLASK 1ml
CONC. OF STANDARD REAGENT ADDED 1000
SPIKE VOLUME (mL) N/A

* ATTACH 1 PAGE PRINT OUT PER SAMPLE

☐ SAMPLE ☐ STANDARD ☐ DUPLICATE ☐ PREP BLANK ☒ SPIKE ☒ REAGENT BLANK

SAMPLE # = 595T003139 40 mL Spike STD # =

SAMPLE VOL. ADDED (mL) to 25mL VOL. FLASK 1ml + .250ml spike
CONC. OF STANDARD REAGENT ADDED 1000
SPIKE VOLUME (mL) .250ml

* ATTACH 1 PAGE PRINT OUT PER SAMPLE

```
ENTERED

EMF= 96.3 mV AT 22:32, 12-05-95

EMF= 34.4 mV AT 22:53, 12-05-95

EMF= 34.2 mV AT 22:53, 12-05-95

EMF= 34.1 mV AT 22:54, 12-05-95
ENTERED

STD CONCN= 1000 AT 22:55, 12-05-95
ENTERED

STD VOL= .25000 AT 22:55, 12-05-95
ENTERED

EMF= 71.3 mV AT 22:56, 12-05-95

EMF= 71.2 mV AT 22:56, 12-05-95
ENTERED

STD VOL= 2.5000 AT 22:58, 12-05-95
ENTERED

EMF= 32.7 mV AT 22:59, 12-05-95

EMF= 32.5 mV AT 22:59, 12-05-95
ENTERED

1:NH3 SLOPE=-58.5 mV/DEC
 AT 22:59, 12-05-95

1:NH3 CONCN= 14.7

DOUBLE KNOWN ADDITION SELECTED
 AT 22:59, 12-05-95
```

Standard
122N16-E
1ml

BEST AVAILABLE COPY

$$\frac{14.7 - 1.01^{-3}}{4.00^{2}\ 25} = \frac{3.67^{02}}{5.88^{-1}\ 3.67^{2}}$$

```
DOUBLE KNOWN ADDITION SELECTED
 AT 22:12, 12-05-95

SAMPLE VOL= 25.000 AT 22:22, 12-05-95
ENTERED

EMF= 348.2 mV AT 22:23, 12-05-95

EMF= 347.3 mV AT 22:23, 12-05-95

EMF= 346.7 mV AT 22:24, 12-05-95

EMF= 346.2 mV AT 22:24, 12-05-95

EMF= 345.8 mV AT 22:25, 12-05-95

EMF= 345.3 mV AT 22:25, 12-05-95

EMF= 344.7 mV AT 22:26, 12-05-95

EMF= 344.0 mV AT 22:27, 12-05-95

EMF= 343.7 mV AT 22:27, 12-05-95

EMF= 343.4 mV AT 22:27, 12-05-95

EMF= 343.2 mV AT 22:28, 12-05-95

EMF= 342.8 mV AT 22:28, 12-05-95

EMF= 342.7 mV AT 22:28, 12-05-95
ENTERED

STD CONCN= 1000 AT 22:33, 12-05-95
ENTERED

STD VOL= .25000 AT 22:34, 12-05-95
ENTERED

EMF= 99.3 mV AT 22:37, 12-05-95

EMF= 99.0 mV AT 22:37, 12-05-95
ENTERED

STD VOL= 2.5000 AT 22:40, 12-05-95
ENTERED

EMF= 37.7 mV AT 22:44, 12-05-95

EMF= 37.5 mV AT 22:45, 12-05-95

EMF= 37.9 mV AT 22:45, 12-05-95
ENTERED

1:NH3 SLOPE=-61.1 mV/DEC
 AT 22:45, 12-05-95

1:NH3 CONCN= .00101

DOUBLE KNOWN ADDITION SELECTED
 AT 22:45, 12-05-95
```

Blank
25ml

SAMPLE VOL= 25.000 AT 23:15, 12-05-95
ENTERED

EMF= 139.1 mV AT 23:15, 12-05-95

EMF= 139.2 mV AT 23:16, 12-05-95

EMF= 139.1 mV AT 23:16, 12-05-95

EMF= 138.9 mV AT 23:17, 12-05-95

EMF= 138.8 mV AT 23:18, 12-05-95

EMF= 138.7 mV AT 23:18, 12-05-95

EMF= 138.7 mV AT 23:19, 12-05-95
ENTERED

STD CONCN= 1000 AT 23:19, 12-05-95
ENTERED

STD VOL= .25000 AT 23:19, 12-05-95
ENTERED

EMF= 83.5 mV AT 23:21, 12-05-95

EMF= 83.3 mV AT 23:21, 12-05-95

EMF= 83.2 mV AT 23:22, 12-05-95

EMF= 83.0 mV AT 23:22, 12-05-95

EMF= 83.0 mV AT 23:23, 12-05-95

EMF= 83.1 mV AT 23:23, 12-05-95
ENTERED

3139
Sample
1 ml

```
STD VOL= 2.5000 AT 23:23, 12-05-95
ENTERED

EMF= 83.0 mV AT 23:23, 12-05-95

ERROR-STD OR BAD ELECTRODE

EMF= 83.1 mV AT 23:23, 12-05-95

ERROR-STD OR BAD ELECTRODE

EMF= 82.9 mV AT 23:24, 12-05-95

EMF= 82.8 mV AT 23:25, 12-05-95

ERROR-STD OR BAD ELECTRODE

ERROR-STD OR BAD ELECTRODE

EMF= 28.2 mV AT 23:27, 12-05-95

EMF= 28.1 mV AT 23:28, 12-05-95
ENTERED

1:NH3 SLOPE=-57.5 mV/DEC
 AT 23:28, 12-05-95

1:NH3 CONLN= 1.20

DOUBLE KNOWN ADDITION SELECTED
 AT 23:28, 12-05-95
```

3139
Sample
1ml

$$\frac{1.20 - 1.01^{E-3}}{4.00^{E-2}} \qquad 3.00^{E1}$$

SAMPLE VOL= 25.000 AT 23:55, 12-05-95
ENTERED

EMF= 169.1 mV AT 00:00, 12-06-95

EMF= 169.6 mV AT 00:01, 12-06-95

EMF= 169.6 mV AT 00:01, 12-06-95
ENTERED

STD CONCN= 1000 AT 00:02, 12-06-95
ENTERED

STD VOL= .25000 AT 00:02, 12-06-95
ENTERED

EMF= 79.4 mV AT 00:03, 12-06-95

EMF= 79.2 mV AT 00:03, 12-06-95

EMF= 79.3 mV AT 00:03, 12-06-95
ENTERED

STD VOL= 2.5000 AT 00:04, 12-06-95
ENTERED

EMF= 21.5 mV AT 00:04, 12-06-95

EMF= 21.3 mV AT 00:05, 12-06-95

EMF= 21.4 mV AT 00:06, 12-06-95
ENTERED

NH3 SLOPE= 58.5 mV (F
AT 00:06, 12-06-95

NH3 CONCN= .292

DOUBLE KNOWN ADDITION SELECTED
AT 00:06, 12-06-95

3139 Dup

1ml

$\frac{.292 - .0010}{4.00^{E-2}}$ 7.28

Sample exhausted spike performed on sample 3140.

EAL
12/07/95

```
SAMPLE VOL= 25.000 AT 00:17, 12-06-95
ENTERED

EMF= 155.5 mV AT 00:22, 12-06-95

EMF= 156.2 mV AT 00:22, 12-06-95

EMF= 156.5 mV AT 00:23, 12-06-95
ENTERED

STD CONCN= 1000 AT 00:23, 12-06-95
ENTERED

STD VOL= .25000 AT 00:23, 12-06-95
ENTERED

EMF= 78.0 mV AT 00:24, 12-06-95

EMF= 77.8 mV AT 00:25, 12-06-95

EMF= 77.7 mV AT 00:25, 12-06-95

EMF= 77.8 mV AT 00:26, 12-06-95

EMF= 77.8 mV AT 00:27, 12-06-95

EMF= 77.9 mV AT 00:27, 12-06-95

EMF= 77.9 mV AT 00:27, 12-06-95
ENTERED

STD VOL= 2.5000 AT 00:28, 12-06-95
ENTERED

EMF= 20.1 mV AT 00:29, 12-06-95

EMF= 20.1 mV AT 00:29, 12-06-95

EMF= 20.1 mV AT 00:31, 12-06-95

EMF= 20.3 mV AT 00:31, 12-06-95
ENTERED

1:NH3 SLOPE=-58.6 mV/DEC
 AT 00:31, 12-06-95

1:NH3 CONCN= .474
```

S95T003140 IFAL sample 0

$$\frac{.474 - .0010}{4.00^{E-2}} \; 1.18^{E1}$$

BEST AVAILABLE COPY

```
DOUBLE KNOWN ADDITION SELECTED
 AT 00:31, 12-06-95

SAMPLE VOL= 25.000 AT 00:31, 12-06-95
ENTERED

EMF= 10.2 mV AT 00:31, 12-06-95

EMF= 157.8 mV AT 00:38, 12-06-95

EMF= 158.2 mV AT 00:39, 12-06-95

EMF= 158.5 mV AT 00:40, 12-06-95

EMF= 158.7 mV AT 00:40, 12-06-95

EMF= 158.9 mV AT 00:40, 12-06-95

EMF= 159.1 mV AT 00:41, 12-06-95

EMF= 159.1 mV AT 00:41, 12-06-95
ENTERED

STD CONCN= 1000 AT 00:42, 12-06-95
ENTERED

STD VOL= .25000 AT 00:42, 12-06-95
ENTERED

EMF= 77.5 mV AT 00:44, 12-06-95

EMF= 77.3 mV AT 00:44, 12-06-95

EMF= 77.3 mV AT 00:45, 12-06-95

EMF= 77.3 mV AT 00:45, 12-06-95
ENTERED

STD VOL= 2.5000 AT 00:46, 12-06-95
ENTERED

EMF= 20.0 mV AT 00:47, 12-06-95

EMF= 19.9 mV AT 00:47, 12-06-95

EMF= 19.9 mV AT 00:48, 12-06-95

EMF= 20.0 mV AT 00:49, 12-06-95

EMF= 20.0 mV AT 00:50, 12-06-95

EMF= 20.1 mV AT 00:50, 12-06-95
ENTERED

1:NH3 SLOPE=-58.1 mV/DEC
 AT 00:50, 12-06-95
```

~~EMF= 10.2 mV AT 00:31, 12-06-95~~ reading from previous sample → STL

S95T003140 Dup

$$\frac{.402 - .0010}{4.00 \times 10^{-2}} \times 1.00^{E\,1}$$

BEST AVAILABLE COPY

```
1:NH3 CONCN= .402

DOUBLE KNOWN ADDITION SELECTED
 AT 00:50, 12-06-95

SAMPLE VOL= 25.000 AT 00:52, 12-06-95
ENTERED

EMF= 100.0 mV AT 00:54, 12-06-95

EMF= 100.2 mV AT 00:54, 12-06-95

EMF= 100.4 mV AT 00:54, 12-06-95

EMF= 100.8 mV AT 00:55, 12-06-95

EMF= 100.9 mV AT 00:55, 12-06-95

EMF= 101.1 mV AT 00:56, 12-06-95

EMF= 101.2 mV AT 00:56, 12-06-95

EMF= 101.3 mV AT 00:57, 12-06-95

EMF= 101.4 mV AT 00:57, 12-06-95
ENTERED

STD CONCN= 1000 AT 00:57, 12-06-95
ENTERED

STD VOL= .25000 AT 00:58, 12-06-95
ENTERED

EMF= 69.2 mV AT 00:59, 12-06-95

EMF= 69.1 mV AT 00:59, 12-06-95

EMF= 69.1 mV AT 01:00, 12-06-95
```

595T00 3140 Spike
1ml Sample
.250 ul spike #122NI

```
EMF= 69.3 mV AT 01:01, 12-06-95

EMF= 69.4 mV AT 01:02, 12-06-95

EMF= 69.5 mV AT 01:02, 12-06-95

EMF= 69.6 mV AT 01:03, 12-06-95

EMF= 69.7 mV AT 01:04, 12-06-95

EMF= 69.8 mV AT 01:04, 12-06-95

EMF= 69.9 mV AT 01:05, 12-06-95

EMF= 70.0 mV AT 01:05, 12-06-95
ENTERED

STD VOL= 2.5000 AT 01:06, 12-06-95
ENTERED

EMF= 18.3 mV AT 01:07, 12-06-95

EMF= 18.4 mV AT 01:08, 12-06-95

EMF= 18.2 mV AT 01:09, 12-06-95
ENTERED

1:NH3 SLOPE=-60.0 mV/DEC
 AT 01:09, 12-06-95

1:NH3 CONCN= 4.21
```

S95T00 3140 Spike
1ml sample
.250 µl spike #122N16

$\frac{4.21 - 0.474 - .0010}{4.00} \rightarrow 9.34^{E1} \times 100 = 3.74^{E2}$

$\frac{3.74^{E2}}{3.88^{E2}} = 96.26\%$

```
DOUBLE KNOWN ADDITION SELECTED
 AT 01:36, 12-06-95

SAMPLE VOL= 25.000 AT 01:38, 12-06-95
ENTERED

EMF= 69.2 mV AT 01:39, 12-06-95

EMF= 69.2 mV AT 01:39, 12-06-95
ENTERED
STD CONCN= 1000 AT 01:40, 12-06-95
ENTERED
 STD VOL= .25000 AT 01:40, 12-06-95
 ENTERED

 EMF= 57.1 mV AT 01:40, 12-06-95

 EMF= 56.9 mV AT 01:41, 12-06-95
 ENTERED

 STD VOL= 2.5000 AT 01:42, 12-06-95
 ENTERED

 EMF= 18.9 mV AT 01:43, 12-06-95

 EMF= 18.9 mV AT 01:43, 12-06-95
 ENTERED

 1:NH3 SLOPE=-58.6 mV/DEC
  AT 01:43, 12-06-95

 1:NH3 CONCN= 15.7
```

FINAL STD
122N16E

$$\frac{15.7 - .0010}{4.00^{E-2}} \quad 3.92^{E2}$$

LABCORE Data Entry Template for Worklist# 4150

Analyst: NJB **Instrument:** NH301 **Book #** 122N16-E

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

Worklist Comment: NH3 SY-102 RUSH

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				NH3-01	LIQUID	1	1.29e-1	N/A	ug/mL
		2	STD				NH3-01	LIQUID	3.88e2	3.94e2	N/A	ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003142	0		NH3-01	LIQUID	N/A	<5.00 eo	5.00 eo	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003142	0		NH3-01	LIQUID	<5.00 eo	5.62 eo	N/A	ug/mL
		5	STD				NH3-01	LIQUID	3.88e2	3.94e2	N/A	ug/mL

Final page for worklist # 4150

NJB Sutton 12-7-95
Analyst Signature **Date**

[signature] 12/7/95
Analyst Signature **Date**

Reviewed RW Schroeder
12/7/95

Data Entry Comments: This is the reanalysis for sample S95T003139.
RWS 12/7/95

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.

DOUBLE KNOWN ADDITION SELECTED
AT 08:06, 12-07-95

SAMPLE VOL= 25.000 AT 08:06, 12-07-95
ENTERED

EMF= 65.6 mV AT 08:06, 12-07-95

EMF= 65.7 mV AT 08:07, 12-07-95

EMF= 65.9 mV AT 08:07, 12-07-95

EMF= 66.0 mV AT 08:07, 12-07-95

EMF= 66.1 mV AT 08:08, 12-07-95

EMF= 66.2 mV AT 08:08, 12-07-95

EMF= 66.3 mV AT 08:09, 12-07-95

EMF= 66.4 mV AT 08:10, 12-07-95

EMF= 66.4 mV AT 08:10, 12-07-95
ENTERED

STD CONCN= 1000 AT 08:10, 12-07-95
ENTERED

STD VOL= .25000 AT 08:10, 12-07-95
ENTERED

EMF= 66.4 mV AT 08:10, 12-07-95

EMF= 54.2 mV AT 08:11, 12-07-95

EMF= 54.1 mV AT 08:12, 12-07-95

EMF= 54.1 mV AT 08:12, 12-07-95

EMF= 54.1 mV AT 08:13, 12-07-95

EMF= 54.2 mV AT 08:13, 12-07-95

EMF= 54.2 mV AT 08:14, 12-07-95

EMF= 54.2 mV AT 08:15, 12-07-95

EMF= 54.2 mV AT 08:15, 12-07-95

BEST AVAILABLE COPY

Starting Std
Std Vol = 1.0 ml
Total Vol = 25 ml

starting std
continued

EMF= 54.2 mV AT 08:15, 12-07-95
ENTERED

STD VOL= 2.5000 AT 08:16, 12-07-95
ENTERED

EMF= 16.4 mV AT 08:17, 12-07-95

EMF= 16.3 mV AT 08:17, 12-07-95

EMF= 16.2 mV AT 08:17, 12-07-95
ENTERED

1:NH3 SLOPE=-58.9 mV/DEC
AT 08:17, 12-07-95

1:NH3 CONCN= 15.9 - 0.129 x 25 = 394 / 388 x 100 = 101.6% rec

DOUBLE KNOWN ADDITION SELECTED
AT 07:48, 12-07-95

SAMPLE VOL= 25.000 AT 07:48, 12-07-95
ENTERED

EMF= 185.7 mV AT 07:54, 12-07-95

EMF= 185.4 mV AT 07:54, 12-07-95
ENTERED

STD CONCN= 1000 AT 07:54, 12-07-95
ENTERED

STD VOL= .250000 AT 07:55, 12-07-95
ENTERED

EMF= 90.7 mV AT 07:56, 12-07-95

EMF= 90.7 mV AT 07:57, 12-07-95
ENTERED

STD VOL= 2.50000 AT 07:57, 12-07-95
ENTERED

EMF= 25.6 mV AT 07:58, 12-07-95

EMF= 25.3 mV AT 08:00, 12-07-95

EMF= 25.2 mV AT 08:02, 12-07-95

EMF= 25.1 mV AT 08:03, 12-07-95
ENTERED

1:NH3 SLOPE=-58.6 mV/DEC
AT 08:03, 12-07-95

1:NH3 CONCN= .179

WHC-SD-WM-DP-159, REV. 0

Blank

```
DOUBLE KNOWN ADDITION SELECTED
 AT 09:31, 12-07-95

SAMPLE VOL= 25.000 AT 09:31, 12-07-95
ENTERED

EMF= 296.2 mV AT 09:32, 12-07-95



EMF= 165.5 mV AT 09:46, 12-07-95
ENTERED

STD CONCN= 1000 AT 09:46, 12-07-95
ENTERED

STD VOL= .25000 AT 09:46, 12-07-95
ENTERED

EMF= 78.5 mV AT 09:48, 12-07-95

EMF= 78.4 mV AT 09:49, 12-07-95

EMF= 78.4 mV AT 09:49, 12-07-95
ENTERED

STD VOL= 2.5000 AT 09:49, 12-07-95
ENTERED

EMF= 22.9 mV AT 09:49, 12-07-95

EMF= 22.8 mV AT 09:50, 12-07-95
ENTERED

1:NH3 SLOPE=-56.2 mV/DEC
 AT 09:50, 12-07-95

1:NH3 CONCN= .287
```

S9570031 42

Sample Vol = 1.0 ml

Tst Vol = 25 ml

.129 x 25 = 3.95 ug/ml

D.L = < 5.0 ug/mL

```
DOUBLE KNOWN ADDITION SELECTED
 AT 09:55, 12-07-95

SAMPLE VOL= 25.000 AT 09:55, 12-07-95
ENTERED

EMF= 154.5 mV AT 09:59, 12-07-95

EMF= 159.3 mV AT 10:01, 12-07-95

EMF= 161.8 mV AT 10:02, 12-07-95

EMF= 162.3 mV AT 10:03, 12-07-95

EMF= 162.7 mV AT 10:03, 12-07-95

EMF= 162.8 mV AT 10:04, 12-07-95

EMF= 162.8 mV AT 10:04, 12-07-95
ENTERED

STD CONCN= 1000 AT 10:04, 12-07-95
ENTERED

STD VOL= .25000 AT 10:04, 12-07-95
ENTERED

EMF= 77.0 mV AT 10:06, 12-07-95

EMF= 76.9 mV AT 10:06, 12-07-95
ENTERED

STD VOL= 2.5000 AT 10:06, 12-07-95
ENTERED

EMF= 19.1 mV AT 10:07, 12-07-95

EMF= 19.0 mV AT 10:08, 12-07-95

EMF= 18.9 mV AT 10:08, 12-07-95
ENTERED

1:NH3 SLOPE=-58.8 mV/DEC
 AT 10:08, 12-07-95

1:NH3 CONCN= .354
```

S95T003142 Dup

Sample Vol: 1.0 ml

Total vol = 25 ml

$-.129 \times 25 = 5.62$ mg/mL

```
DOUBLE KNOWN ADDITION SELECTED
 AT 10:12, 12-07-95

SAMPLE VOL= 25.000 AT 10:12, 12-07-95
ENTERED

EMF= 64.8 mV AT 10:13, 12-07-95

EMF= 64.9 mV AT 10:13, 12-07-95

EMF= 64.9 mV AT 10:13, 12-07-95
ENTERED

STD CONCN= 1000 AT 10:13, 12-07-95
ENTERED

STD VOL= .25000 AT 10:14, 12-07-95
ENTERED

EMF= 52.6 mV AT 10:14, 12-07-95

EMF= 52.6 mV AT 10:15, 12-07-95

EMF= 52.6 mV AT 10:15, 12-07-95
ENTERED

STD VOL= 2.5000 AT 10:15, 12-07-95
ENTERED

EMF= 14.3 mV AT 10:16, 12-07-95

EMF= 14.3 mV AT 10:17, 12-07-95
ENTERED

1:NH3 SLOPE=-59.4 mV/DEC
 AT 10:17, 12-07-95

1:NH3 CONCN= 15.9
```

ending Std

Std Vol = 1.0 ml

BEST AVAILABLE COPY

$15.9 - 0.129 \times 25 = 394/388 \times 100 = 101.6\%$ recovery

LABCORE Completed Worklist Report for Worklist# 3048

Analyst: kgh **Instrument:** IC01 **Book#** 109N91E
95-000172

Method: LA-533-105 Rev/Mod D-1

Worklist Comment: SY-102 IC. JMF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB		0	@IC-QC	F	QC	1	<1.30e-2		ug/mL
1	CCB		0	@IC-QC	CL	QC	1	<1.70e-2		ug/mL
1	CCB		0	@IC-QC	NO2	QC	1	<1.07e-1		ug/mL
1	CCB		0	@IC-QC	BR	QC	1	<1.26e-1		ug/mL
1	CCB		0	@IC-QC	NO3	QC	1	4.13e-01	0.410	ug/mL
1	CCB		0	@IC-QC	PO4	QC	1	<2.96e-1		ug/mL
1	CCB		0	@IC-QC	SO4	QC	1	<1.36e-1		ug/mL
1	CCB		0	@IC-QC	OXALATE2	QC	1	<1.05e-1		ug/mL
2	CCV		0	@IC-QC	F	QC	59	5.86e+01	99.320	% Recovery
2	CCV		0	@IC-QC	CL	QC	79	7.95e+01	100.630	% Recovery
2	CCV		0	@IC-QC	NO2	QC	536	5.14e+02	95.900	% Recovery
2	CCV		0	@IC-QC	BR	QC	575	5.79e+02	100.700	% Recovery
2	CCV		0	@IC-QC	NO3	QC	614	6.26e+02	101.950	% Recovery
2	CCV		0	@IC-QC	PO4	QC	546	5.22e+02	95.600	% Recovery
2	CCV		0	@IC-QC	SO4	QC	631	6.28e+02	99.520	% Recovery
2	CCV		0	@IC-QC	OXALATE2	QC	526	5.60e+02	106.460	% Recovery
3	SAMPLE	S95T003139	0	@IC-01	F-02	LIQUID	N/A	5.479e+02	14.440	ug/mL
3	SAMPLE	S95T003139	0	@IC-01	CL-02	LIQUID	N/A	1.974e+02	18.890	ug/mL
3	SAMPLE	S95T003139	0	@IC-01	NO2-02	LIQUID	N/A	3.124e+03	118.900	ug/mL
3	SAMPLE	S95T003139	0	@IC-01	NO3-02	LIQUID	N/A	1.792e+04	155.500	ug/mL
3	SAMPLE	S95T003139	0	@IC-01	PO4-02	LIQUID	N/A	6.817e+02	328.900	ug/mL
3	SAMPLE	S95T003139	0	@IC-01	SO4-02	LIQUID	N/A	6.005e+02	151.100	ug/mL
4	DUP	S95T003139	0	@IC-01	F-02	LIQUID	5.48e+02	5.48e+02	0.000	RPD
4	DUP	S95T003139	0	@IC-01	CL-02	LIQUID	1.97e+02	1.92e+02	2.570	RPD
4	DUP	S95T003139	0	@IC-01	NO2-02	LIQUID	3.12e+03	3.03e+03	2.930	RPD
4	DUP	S95T003139	0	@IC-01	NO3-02	LIQUID	1.79e+04	1.78e+04	0.560	RPD
4	DUP	S95T003139	0	@IC-01	PO4-02	LIQUID	6.82e+02	6.86e+02	0.580	RPD
4	DUP	S95T003139	0	@IC-01	SO4-02	LIQUID	6.00e+02	6.23e+02	3.760	RPD

Final page for worklist# 3048

Analyst Signature **Date** **Analyst Signature** **Date**

James M. Luge 12/5/95
Reviewer Signature **Date**

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

LABCORE Data Entry Template for Worklist# 3048

Analyst: KGH **Instrument:** IC01 IC01 **Book #** ICWJ9E

Method: LA-533-105 Rev/Mod D-1

Worklist Comment: SY-102 IC. JMF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------		MATRIX	ACTUAL	FOUND	DL	UNIT
		1	CCB				@IC-QC	F	QC			N/A	ug/mL
		1	CCB				@IC-QC	CL	QC			N/A	ug/mL
		1	CCB				@IC-QC	NO2	QC			N/A	ug/mL
		1	CCB				@IC-QC	BR	QC			N/A	ug/mL
		1	CCB				@IC-QC	NO3	QC			N/A	ug/mL
		1	CCB				@IC-QC	PO4	QC			N/A	ug/mL
		1	CCB				@IC-QC	SO4	QC			N/A	ug/mL
		1	CCB				@IC-QC	OXALATE2	QC			N/A	ug/mL
		2	CCV				@IC-QC	F	QC			N/A	ug/mL
		2	CCV				@IC-QC	CL	QC			N/A	ug/mL
		2	CCV				@IC-QC	NO2	QC			N/A	ug/mL
		2	CCV				@IC-QC	BR	QC			N/A	ug/mL
		2	CCV				@IC-QC	NO3	QC			N/A	ug/mL
		2	CCV				@IC-QC	PO4	QC			N/A	ug/mL
		2	CCV				@IC-QC	SO4	QC			N/A	ug/mL
		2	CCV				@IC-QC	OXALATE2	QC			N/A	ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003139	0		@IC-01	F-02	LIQUID	N/A			ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003139	0		@IC-01	CL-02	LIQUID	N/A			ug/mL

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# 3048

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000172	SY-102 GRAB	3 SAMPLE	S95T003139	0		@IC-01 NO2-02	LIQUID	N/A			ug/mL
95000172	SY-102 GRAB	3 SAMPLE	S95T003139	0		@IC-01 NO3-02	LIQUID	N/A			ug/mL
95000172	SY-102 GRAB	3 SAMPLE	S95T003139	0		@IC-01 PO4-02	LIQUID	N/A			ug/mL
95000172	SY-102 GRAB	3 SAMPLE	S95T003139	0		@IC-01 SO4-02	LIQUID	N/A			ug/mL
95000172	SY-102 GRAB	4 DUP	S95T003139	0		@IC-01 F-02	LIQUID			N/A	ug/mL
95000172	SY-102 GRAB	4 DUP	S95T003139	0		@IC-01 CL-02	LIQUID			N/A	ug/mL
95000172	SY-102 GRAB	4 DUP	S95T003139	0		@IC-01 NO2-02	LIQUID			N/A	ug/mL
95000172	SY-102 GRAB	4 DUP	S95T003139	0		@IC-01 BR-02	LIQUID			N/A	ug/mL
95000172	SY-102 GRAB	4 DUP	S95T003139	0		@IC-01 NO3-02	LIQUID			N/A	ug/mL
95000172	SY-102 GRAB	4 DUP	S95T003139	0		@IC-01 PO4-02	LIQUID			N/A	ug/mL
95000172	SY-102 GRAB	4 DUP	S95T003139	0		@IC-01 SO4-02	LIQUID			N/A	ug/mL
95000172	SY-102 GRAB	4 DUP	S95T003139	0		@IC-01 OXALATE2	LIQUID			N/A	ug/mL

Final page for worklist # 3048

11-22-95

Analyst Signature **Date**

Analyst Signature **Date**

Verified & Instrument Upload 11/22/95

Data Entry Comments:

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

WESTINGHOUSE HANFORD COMPANY
222-S LABORATORY
INORGANIC ANALYTICAL BATCH AND SUMMARY SHEET

ANION ANALYSIS ON DIONEX

SAMPLE #:	S95T003139		
TEST CODE:	@IC01	ANALYST:	KG HIGBEE
INSTRUMENT:	IC01	ANALYSIS DATE:	11/21/95
WORK LIST #:	3048	SAMPLE POINT:	HERTING
BATCH ID:	N/A	SAMPLE PREP:	DIRECT

Result Units µg/mL	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate	Bromide	Oxalate
109N9-E	99.2%	100.6%	95.9%	101.9%	95.6%	99.5%	100.7%	106.4%
S95T003139	5.48E+02	1.97E+02	3.12E+03	1.79E+04	6.82E+02	6.01E+02	<139.99	<116.66
S95T003139	5.48E+02	1.92E+02	3.03E+03	1.78E+04	6.86E+02	6.23E+02	<139.99	<116.66
Duplicate 1 RPD	0.1%	3.0%	2.9%	0.6%	0.6%	3.6%	N/A	N/A
	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00
	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00
Duplicate 2 RPD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NARRATIVE: **Analyst Comments:**

Chemist Comments:

Form Completed By:	Sharon L. Hahn	Date:	11-22-95
Chemist Approval:	Jane M. Hoyt	Date:	11/22/95

LAB LEADER INFO	
Method:	LA-533-105
Matrix:	LIQUID
Test Code:	@IC01
Work List #:	3048
Batch #:	N/A
Result Units	
(µg/g or µg/mL):	µg/mL
Spike Book Number:	109N9-E
Enter Spike Sample # (1-4):	0
Prepared By:	SL HOLDEN
Prepared Date:	11/22/95
Chemist:	JANN FRYE
Analyst:	KG HIGBEE
Analysis Date:	11/21/95
Time Complete:	02:51 PM
Instrument Code:	IC01
Rerun:	0
Sample Prep:	DIRECT
Sample Point:	HERTING
Sample Type	
STANDARD	109N9-E
SAMPLE 1	S95T003139
DUPLICATE 1	S95T003139
SAMPLE 2	
DUPLICATE 2	
SAMPLE 3	
DUPLICATE 3	
SAMPLE 4	
DUPLICATE 4	
SPIKE	
SPIKE DUPLICATE	

PRINT

TECH INFO	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate	Bromide	Oxalate
Blank Data (µg/mL)	<.013	<.017	<.170	<.140	<.296	<.135	<.125	<.105
Standard Data (µg/mL)	58.55	79.495	513.958	525.608	522.174	527.609	579.945	559.606
Sample 1 Data (µg/mL)	5.48E+02	1.97E+02	3.12E+03	1.79E+04	6.82E+02	6.01E+02	<.125	<.105
Sample 1 Dilution Factor	1111	1111	1111	1111	1111	1111	1111	1111
Sample 1 Prep DF	1	1	1	1	1	1	1	1
Duplicate 1 Data (µg/mL)	5.48E+02	1.92E+02	3.03E+03	1.78E+04	6.86E+02	6.23E+02	<.125	<.105
Duplicate 1 Dilution Factor	1111	1111	1111	1111	1111	1111	1111	1111
Duplicate 1 Prep DF	1	1	1	1	1	1	1	1
Sample 2 Data (µg/mL)								
Sample 2 Dilution Factor								
Sample 2 Prep DF								
Duplicate 2 Data (µg/mL)								
Duplicate 2 Dilution Factor								
Duplicate 2 Prep DF								
Sample 3 Data (µg/mL)								
Sample 3 Dilution Factor								
Sample 3 Prep DF								
Duplicate 3 Data (µg/mL)								
Duplicate 3 Dilution Factor								
Duplicate 3 Prep DF								
Sample 4 Data (µg/mL)								
Sample 4 Dilution Factor								
Sample 4 Prep DF								
Duplicate 4 Data (µg/mL)								
Duplicate 4 Dilution Factor								
Duplicate 4 Prep DF								
Spike + Sample (µg/mL)								
Spike + Dup (µg/mL)								
Spike Volume (mL)	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01	1.00E-01
Total Volume (mL)	10.10	10.10	10.10	10.10	10.10	10.10	10.10	10.10
Std. Conc. (µg/mL)	59	79	536	614	548	631	575	526
Detection Limit	0.013	0.017	0.170	0.140	0.296	0.135	0.125	0.105
Matrix Detection Limit 1	1.44E+01	1.89E+01	1.89E+02	1.56E+02	3.29E+02	1.51E+02	1.40E+02	1.17E+02
Matrix Detection Limit 2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Matrix Detection Limit 3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Matrix Detection Limit 4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Spike Recovery = [((Spike+Sample)-(Sample)*(Total Volume))/((Spike Vol.)*(Spike Std.)*(Sample DF))]*100%
Note: (For spike recovery when the sample conc. is less than detection limit you do NOT subtract sample conc.)
Duplicate Relative % Difference = ((Sample - Duplicate) / ((Sample + Duplicate) / 2) * 100%)
Less than Values are Calculated from the Detection Limit*Dilution Factor

v RESULTS v	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate	Bromide	Oxalate
Standard % Recovery	99.2%	100.6%	95.9%	101.8%	95.6%	99.5%	100.7%	106.4%
Sample 1 in µg/mL	5.48E+02	1.97E+02	3.12E+03	1.79E+04	6.82E+02	6.01E+02	<139.99	<116.66
Duplicate 1 in µg/mL	5.48E+02	1.92E+02	3.03E+03	1.78E+04	6.86E+02	6.23E+02	<139.99	<116.66
Duplicate 1 RPD	0.1%	3.0%	2.9%	0.6%	0.6%	3.6%	N/A	N/A
Sample 2 in µg/mL	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00
Duplicate 2 in µg/mL	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00	<0.00
Duplicate 2 RPD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Data Entry by: SL Holden Date: 11/22/95
Approved by: James Frye Date: 11/22/95

Form DIONEX.WB1 Rev. 1.3

Sample Name: STD109N9-E Date: 11/21/1995 11:52:04
Data File : C:\DX\DATA\95112101.D12
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 12 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

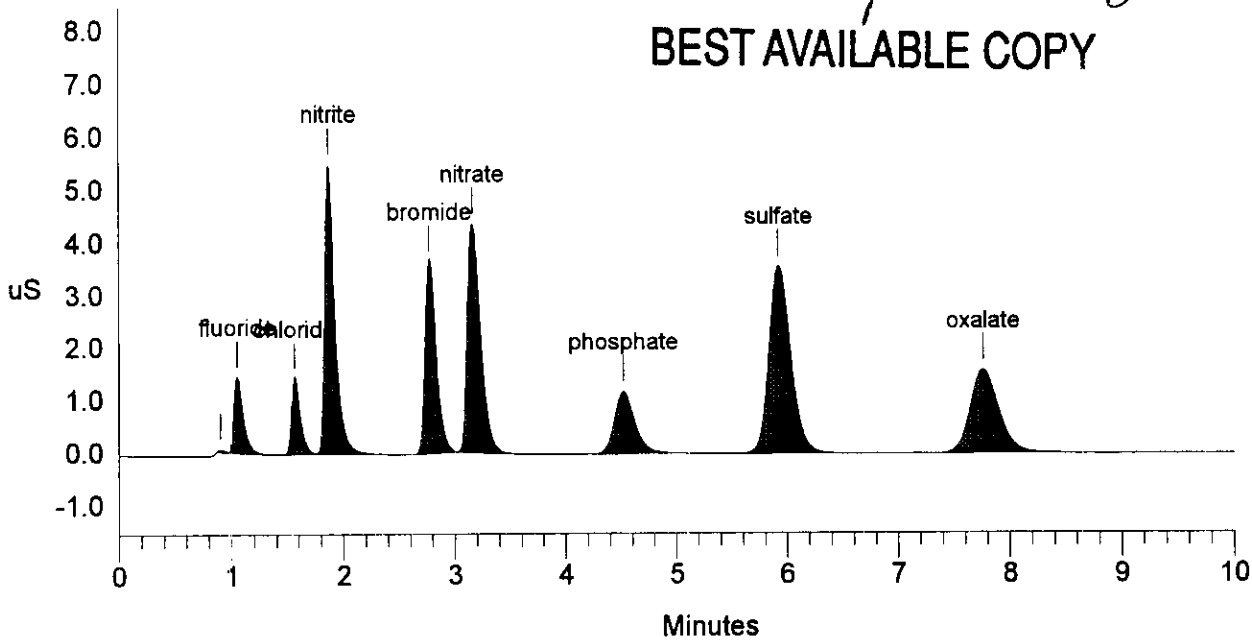
Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	49	210	2	
2	1.05	fluoride	58.550	1439	8091	2	0.96
3	1.56	chloride	79.495	1423	7746	1	-0.64
4	1.87	nitrite	513.858	5493	33751	1	-2.60
5	2.77	bromide	578.945	3658	25502	1	-1.42
6	3.16	nitrate	625.608	4357	35728	1	-2.47
7	4.52	phosphate	522.174	1180	14698	1	-5.64
8	5.92	sulfate	627.609	3577	48078	1	-2.79
9	7.76	oxalate	559.606	1584	27694	1	-7.18
		Totals	3565.845	22761	201496		

Joann Lugo 12/5/95 for R. G. Higbee

File: 95112101.D12 Sample: STD109N9-E



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 66 TO 69.

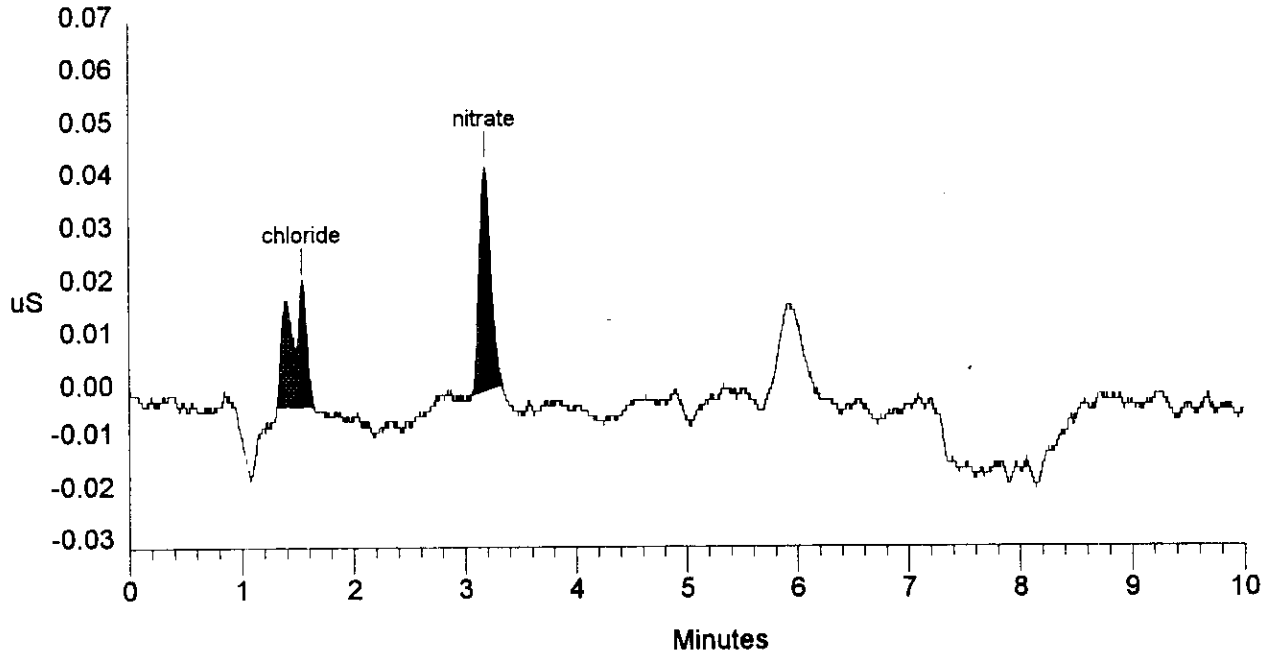
```
Sample Name: BLANK                                Date: 11/21/1995 11:19:42
Data File  : C:\DX\DATA\95112101.D10
Method     : C:\DX\METHOD\KIT.MET
ACI Address: 1  System: 1  Inject#: 10                      Detector:CDM-1
Analyst    :                Column: AG4A/AS4A anion column/SRS
```

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	1.54	chloride	0.006	23	259	1	-1.91
2	3.18	nitrate	0.369	42	304	1	-1.85
		Totals	0.375	65	563		

File: 95112101.D10 Sample: BLANK



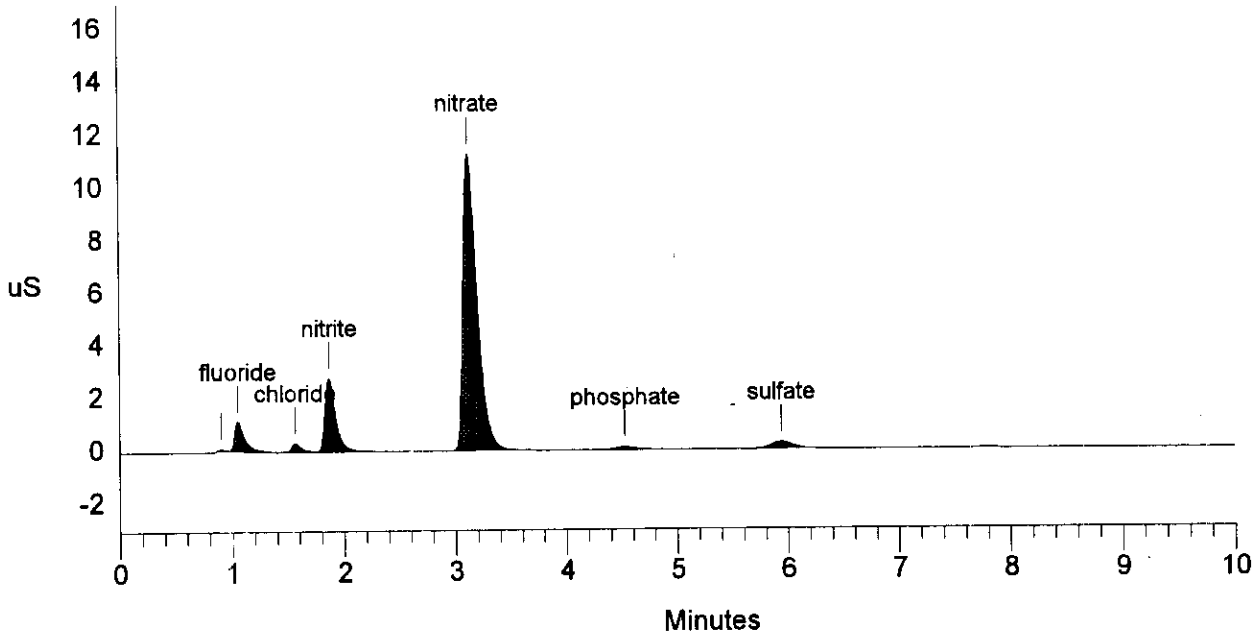
Sample Name: S95T003139SAM Date: 11/21/1995 14:31:24
Data File : C:\DX\DATA\95112101.D15
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 15 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	55	247	2	
2	1.05	fluoride ✓	547.867	1114	6832	2	0.96
3	1.56	chloride ✓	197.395	336	1891	1	-0.64
4	1.87	nitrite ✓	3124.202	2778	17934	1	-2.60
5	3.12	nitrate ✓	17923.012	11273	98347	1	-3.70
6	4.53	phosphate ✓	681.720	105	1264	1	-5.43
7	5.94	sulfate ✓	600.522	252	3315	1	-2.46
		Totals	23074.718	15914	129829		

File: 95112101.D15 Sample: S95T003139SAM



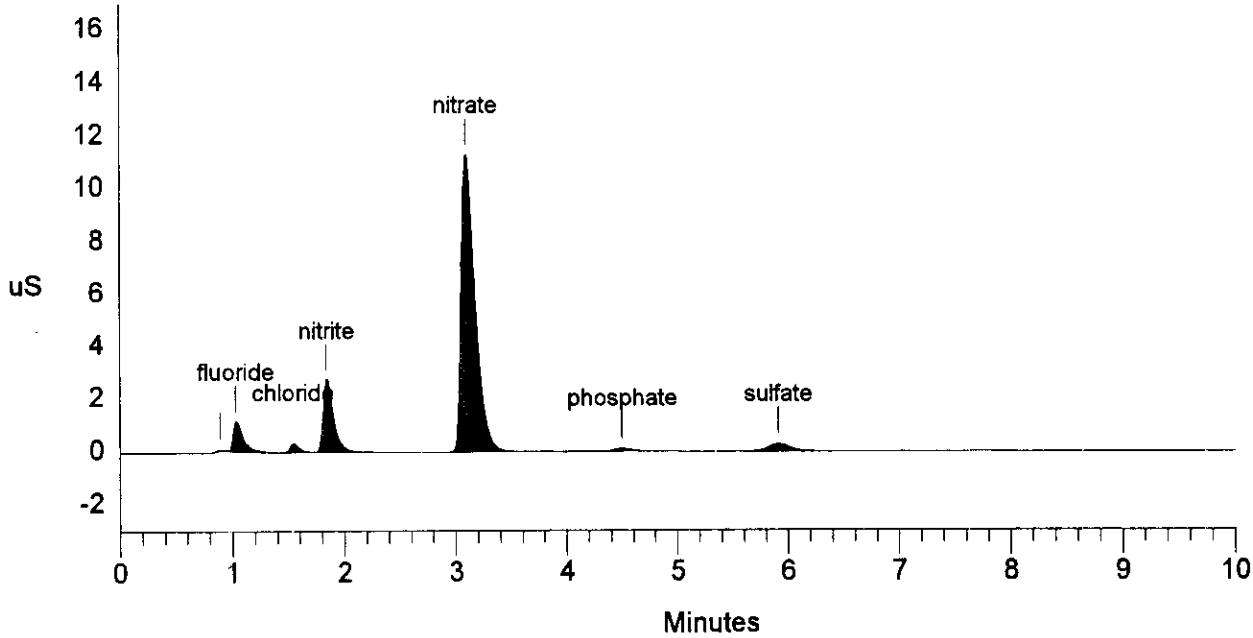
Sample Name: S95T003139DUP Date: 11/21/1995 14:51:47
Data File : C:\DX\DATA\95112101.D16
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 16 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	59	265	2	
2	1.03	fluoride	548.223	1093	6836	2	-0.96
3	1.54	chloride	191.639	340	1842	1	-1.91
4	1.84	nitrite	3033.450	2712	17367	1	-4.17
5	3.09	nitrate	17821.079	11265	97756	1	-4.63
6	4.50	phosphate	686.075	105	1276	1	-6.05
7	5.91	sulfate	622.660	258	3470	1	-2.96
		Totals	22903.126	15832	128811		

File: 95112101.D16 Sample: S95T003139DUP



LABCORE Completed Worklist Report for Worklist# 3733

Analyst: kgh **Instrument:** IC01 **Book#** 109W9E

Method: LA-533-105 Rev/Mod D-1 95000172

Worklist Comment: SY-102 IC. JMF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	CCB			0	@IC-QC F	QC	1	<1.30e-2		ug/mL
1	CCB			0	@IC-QC CL	QC	1	<1.70e-2		ug/mL
1	CCB			0	@IC-QC NO2	QC	1	<1.07e-1		ug/mL
1	CCB			0	@IC-QC BR	QC	1	<1.26e-1		ug/mL
1	CCB			0	@IC-QC NO3	QC	1	3.99e-01	0.400	ug/mL
1	CCB			0	@IC-QC PO4	QC	1	<2.96e-1		ug/mL
1	CCB			0	@IC-QC SO4	QC	1	<1.36e-1		ug/mL
1	CCB			0	@IC-QC OXALATE2	QC	1	<1.05e-1		ug/mL
2	CCV			0	@IC-QC F	QC	59	5.76e+01	97.630	% Recovery
2	CCV			0	@IC-QC CL	QC	79	8.47e+01	107.220	% Recovery
2	CCV			0	@IC-QC NO2	QC	536	5.28e+02	98.510	% Recovery
2	CCV			0	@IC-QC BR	QC	575	5.92e+02	102.960	% Recovery
2	CCV			0	@IC-QC NO3	QC	614	6.42e+02	104.560	% Recovery
2	CCV			0	@IC-QC PO4	QC	546	5.08e+02	93.040	% Recovery
2	CCV			0	@IC-QC SO4	QC	631	6.38e+02	101.110	% Recovery
2	CCV			0	@IC-QC OXALATE2	QC	526	5.51e+02	104.750	% Recovery
3	SAMPLE	S95T003140		0	@IC-01 F-02	LIQUID	N/A	7.068e+02	14.440	ug/mL
3	SAMPLE	S95T003140		0	@IC-01 CL-02	LIQUID	N/A	7.420e+02	18.890	ug/mL
3	SAMPLE	S95T003140		0	@IC-01 NO2-02	LIQUID	N/A	9.642e+03	118.900	ug/mL
3	SAMPLE	S95T003140		0	@IC-01 NO3-02	LIQUID	N/A	3.273e+04	155.500	ug/mL
3	SAMPLE	S95T003140		0	@IC-01 PO4-02	LIQUID	N/A	9.042e+02	328.900	ug/mL
3	SAMPLE	S95T003140		0	@IC-01 SO4-02	LIQUID	N/A	1.023e+03	151.100	ug/mL
4	DUP	S95T003140		0	@IC-01 F-02	LIQUID	7.07e+02	7.08e+02	0.140	RPD
4	DUP	S95T003140		0	@IC-01 CL-02	LIQUID	7.42e+02	7.47e+02	0.670	RPD
4	DUP	S95T003140		0	@IC-01 NO2-02	LIQUID	9.64e+03	9.78e+03	1.440	RPD
4	DUP	S95T003140		0	@IC-01 NO3-02	LIQUID	3.27e+04	3.31e+04	1.220	RPD
4	DUP	S95T003140		0	@IC-01 PO4-02	LIQUID	9.04e+02	9.09e+02	0.550	RPD
4	DUP	S95T003140		0	@IC-01 SO4-02	LIQUID	1.02e+03	1.04e+03	1.940	RPD
5	SPK	S95T003140		0	@IC-01 F-02	LIQUID	59	55.759	94.510	% Recovery
5	SPK	S95T003140		0	@IC-01 CL-02	LIQUID	79	76.030	96.240	% Recovery
5	SPK	S95T003140		0	@IC-01 NO2-02	LIQUID	536	500.738	93.420	% Recovery
5	SPK	S95T003140		0	@IC-01 NO3-02	LIQUID	614	591.347	96.310	% Recovery
5	SPK	S95T003140		0	@IC-01 PO4-02	LIQUID	546	498.542	91.310	% Recovery
5	SPK	S95T003140		0	@IC-01 SO4-02	LIQUID	631	598.620	94.870	% Recovery

Final page for worklist# 3733

Analyst Signature **Date**

Analyst Signature **Date**

Jan Fuge 12/4/95

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

LABCORE Completed Worklist Report for Worklist# 3733

Analyst: K G H **Instrument:** IC01 **Book#** 109N9E

Method: LA-533-105 Rev/Mod D-1 95000172

Worklist Comment: SY-102 IC. JMF

Seq	Type	Sample#	R	A	Test		Matrix	Actual	Found	DL or Yield	Unit
3	SAMPLE	S95T003140	0		@IC-01	F-02	LIQUID	N/A	7.068e+02	14.440	ug/mL
3	SAMPLE	S95T003140	0		@IC-01	CL-02	LIQUID	N/A	7.420e+02	18.890	ug/mL
3	SAMPLE	S95T003140	0		@IC-01	NO2-02	LIQUID	N/A	9.642e+03	118.900	ug/mL
3	SAMPLE	S95T003140	0		@IC-01	NO3-02	LIQUID	N/A	3.273e+04	155.500	ug/mL
3	SAMPLE	S95T003140	0		@IC-01	PO4-02	LIQUID	N/A	9.042e+02	328.900	ug/mL
3	SAMPLE	S95T003140	0		@IC-01	SO4-02	LIQUID	N/A	1.023e+03	151.100	ug/mL
4	DUP	S95T003140	0		@IC-01	F-02	LIQUID	7.07e+02	7.08e+02	0.140	RPD
4	DUP	S95T003140	0		@IC-01	CL-02	LIQUID	7.42e+02	7.47e+02	0.670	RPD
4	DUP	S95T003140	0		@IC-01	NO2-02	LIQUID	9.64e+03	9.78e+03	1.440	RPD
4	DUP	S95T003140	0		@IC-01	NO3-02	LIQUID	3.27e+04	3.31e+04	1.220	RPD
4	DUP	S95T003140	0		@IC-01	PO4-02	LIQUID	9.04e+02	9.09e+02	0.550	RPD
4	DUP	S95T003140	0		@IC-01	SO4-02	LIQUID	1.02e+03	1.04e+03	1.940	RPD
5	SPK	S95T003140	0		@IC-01	F-02	LIQUID	59	55.759	94.510	% Recovery
5	SPK	S95T003140	0		@IC-01	CL-02	LIQUID	79	76.030	96.240	% Recovery
5	SPK	S95T003140	0		@IC-01	NO2-02	LIQUID	536	500.738	93.420	% Recovery
5	SPK	S95T003140	0		@IC-01	NO3-02	LIQUID	614	591.347	96.310	% Recovery
5	SPK	S95T003140	0		@IC-01	PO4-02	LIQUID	546	498.542	91.310	% Recovery
5	SPK	S95T003140	0		@IC-01	SO4-02	LIQUID	631	598.620	94.870	% Recovery

Final page for worklist# 3733

Analyst Signature Date

Analyst Signature Date

David M. Fuge 11/29/95
Reviewer Signature Date

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

LABCORE Data Entry Template for Worklist# 3733

Analyst: KLH **Instrument:** IC01 IC01 **Book #** LQW-E

Method: LA-533-105 Rev/Mod D1

Worklist Comment: SY-102 IC. JMF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	CCB				@IC-QC F	QC	1	<0.013 ~~<0.013~~ SR	N/A	ug/mL
		1	CCB				@IC-QC CL	QC	1	<.017	N/A	ug/mL
		1	CCB				@IC-QC NO2	QC	1	<.107	N/A	ug/mL
		1	CCB				@IC-QC BR	QC	1	<.126	N/A	ug/mL
		1	CCB				@IC-QC NO3	QC	1	<.140	N/A	ug/mL
		1	CCB				@IC-QC PO4	QC	1	<.296	N/A	ug/mL
		1	CCB				@IC-QC SO4	QC	1	<.136	N/A	ug/mL
		1	CCB				@IC-QC OXALATE2	QC	1	<.105	N/A	ug/mL
		2	CCV				@IC-QC F	QC		57.6	N/A	ug/mL
		2	CCV				@IC-QC CL	QC		84.698	N/A	ug/mL
		2	CCV				@IC-QC NO2	QC		528.22	N/A	ug/mL
		2	CCV				@IC-QC BR	QC		592.48	N/A	ug/mL
		2	CCV				@IC-QC NO3	QC		642.08	N/A	ug/mL
		2	CCV				@IC-QC PO4	QC		507.55	N/A	ug/mL
		2	CCV				@IC-QC SO4	QC		637.60	N/A	ug/mL
		2	CCV				@IC-QC OXALATE2	QC		551.369	N/A	ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003140	0		@IC-01 F-02	LIQUID	N/A	706.78		ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003140	0		@IC-01 CL-02	LIQUID	N/A	74202		ug/mL

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# 3733

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
95000172	SY-102 GRAB	3	SAMPLE	S95T003140	0		@IC-01 NO2-02	LIQUID	N/A	9642.04		ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003140	0		@IC-01 NO3-02	LIQUID	N/A	32726.83		ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003140	0		@IC-01 PO4-02	LIQUID	N/A	904.23		ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003140	0		@IC-01 SO4-02	LIQUID	N/A	1023.33		ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003140	0		@IC-01 F-02	LIQUID	706.78	707.60	N/A	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003140	0		@IC-01 CL-02	LIQUID	742.02	745.58	N/A	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003140	0		@IC-01 NO2-02	LIQUID	9642.04	9783.67	N/A	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003140	0		@IC-01 BR-02	LIQUID		~~33093.92~~ SP.	N/A	12/8/95 ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003140	0		@IC-01 NO3-02	LIQUID	32726.83	33093.92	N/A	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003140	0		@IC-01 PO4-02	LIQUID	904.23	908.73	N/A	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003140	0		@IC-01 SO4-02	LIQUID	1023.33	1041.24	N/A	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003140	0		@IC-01 OXALATE2	LIQUID		334.89	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003140	0		@IC-01 F-02	LIQUID		1268.73	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003140	0		@IC-01 CL-02	LIQUID		1511.75	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003140	0		@IC-01 NO2-02	LIQUID		14695.25	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003140	0		@IC-01 BR-02	LIQUID		5395.89	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003140	0		@IC-01 NO3-02	LIQUID		38684.38	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003140	0		@IC-01 PO4-02	LIQUID		5943.79	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003140	0		@IC-01 SO4-02	LIQUID		7067.63	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003140	0		@IC-01 OXALATE2	LIQUID		5685.63	N/A	ug/mL

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# 3733

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

Final page for worklist # 3733

Analyst Signature Date

Analyst Signature Date

Electronically uploaded 11/29/95 JM Ley

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.

A-0010-IC DATA FILE/WORKLIST RESOLUTION 29-Nov-95

Worklist#: 3733

	Seq	Type	Sample #
=>	1	CCB	
=>	2	CCV	
=>	3	SAMPLE	S95T003140
=>	4	DUP	S95T003140
=>	5	SPK	S95T003140

Data File: 3733NOV.CSV

Seq#	Data File	Sample Name	Dilution
1	95112221.d01	BLANK	1.00
2	95112221.d02	109N9-ESTD	101.00
	95112221.d03	S95T003140SAM	10201.00
3	95112221.d04	S95T003140SAM	1111.00
4	95112221.d05	S95T003140DUP	1111.00
5	95112221.d06	S95T003140SPK	1111.00

Save(F4) Abort(Shift-F3) ListFiles(Shift-F1) UploadFile(F8)

Sample Name: BLANK Date: 11/23/1995 11:04:20
Data File : C:\DX\DATA\95112221.D01
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 1 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

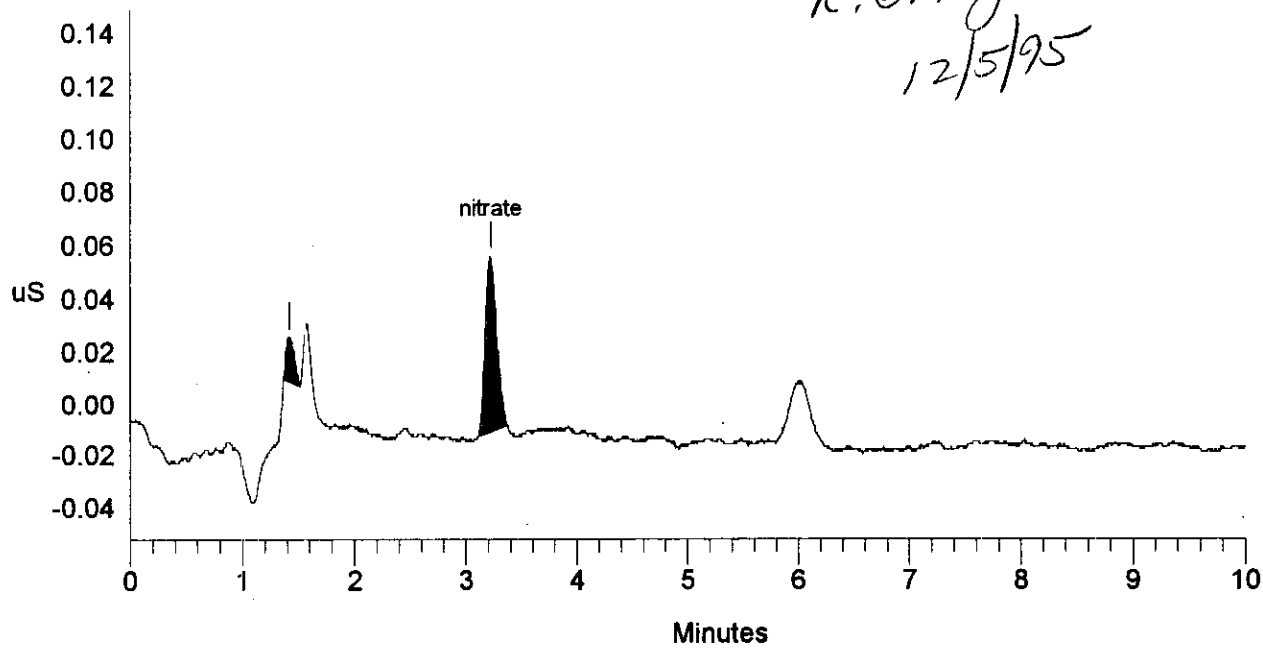
Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
2	3.23	nitrate	0.399	65	480	1	-0.31
		Totals	0.399	65	480		

Janice Lyerla for K.G. Higbee 12/5/95

File: 95112221.D01 Sample: BLANK



SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 76 TO 80.

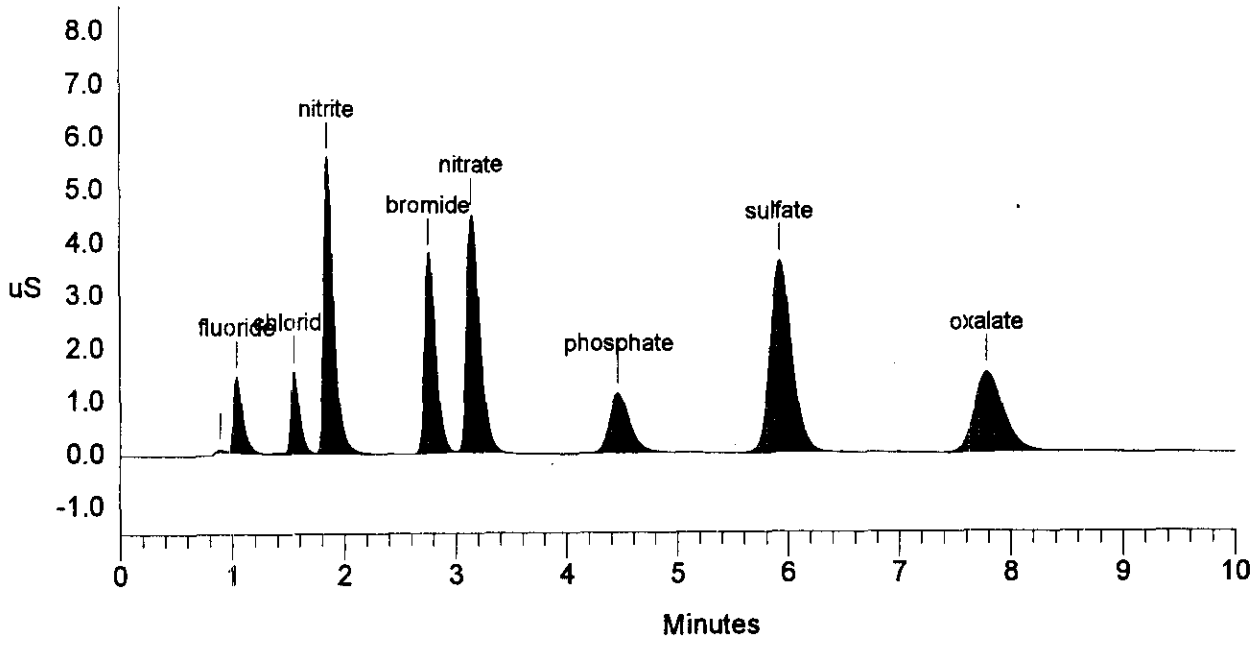
Sample Name:	109N9-ESTD
Data File :	C:\DX\DATA\95112221.D02
Method :	C:\DX\METHOD\KIT.MET
ACI Address:	1 System: 1 Inject#: 2
Analyst :	
Date:	11/23/1995 11:51:31
Detector:	CDM-1
Column:	AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	101	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.89		0.000	50	208	2	
2	1.04	fluoride	57.600	1419	7954	2	0.00
3	1.55	chloride	84.698	1529	8246	1	-1.27
4	1.85	nitrite	528.222	5576	34742	1	-3.65
5	2.76	bromide	592.481	3752	26134	1	-1.78
6	3.15	nitrate	642.076	4504	36732	1	-2.78
7	4.47	phosphate	507.552	1136	14265	1	-6.68
8	5.93	sulfate	637.599	3631	48871	1	-2.63
9	7.79	oxalate	551.369	1521	27268	1	-6.82
		Totals	3601.597	23119	204419		

File: 95112221.D02 Sample: 109N9-ESTD



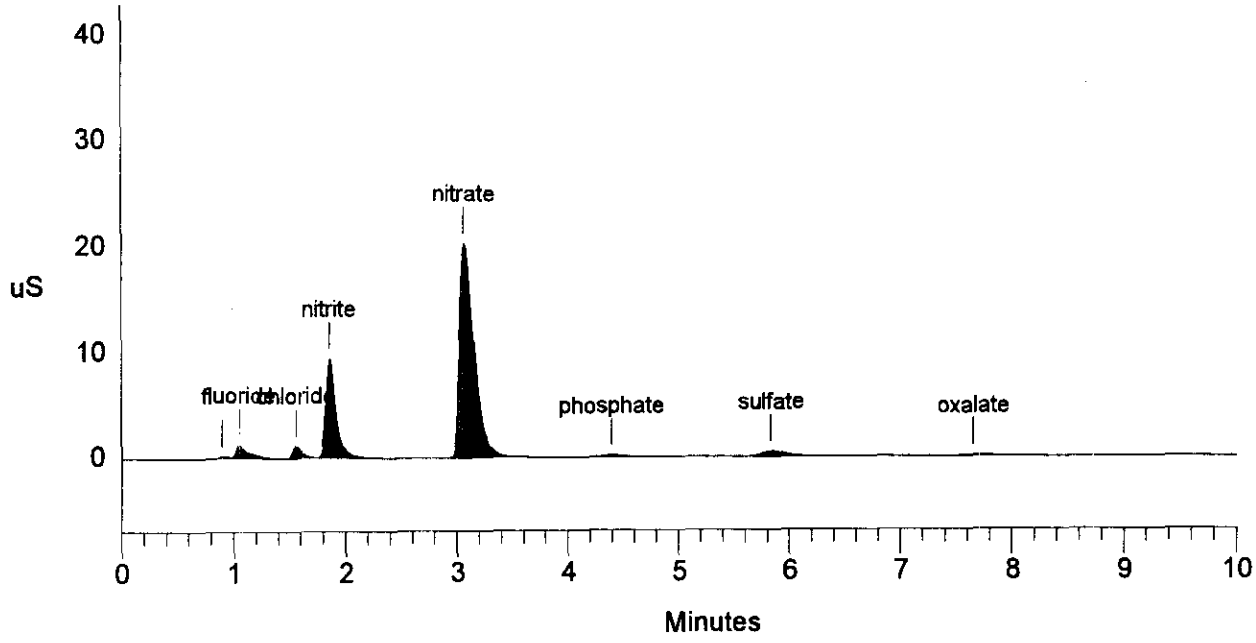
Sample Name: S95T003140SAM Date: 11/23/1995 14:41:20
Data File : C:\DX\DATA\95112221.D04
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 4 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	78	372	2	
2	1.05	fluoride	706.781	1212	8914	2	0.96
3	1.56	chloride	742.020	1188	6592	1	-0.64
4	1.86	nitrite	9642.039	9448	58862	1	-3.12
5	3.07	nitrate	32726.828	20283	187261	1	-5.25
6	4.40	phosphate	904.225	150	1847	1	-8.14
7	5.84	sulfate	1023.326	472	6274	1	-4.11
8	7.66	oxalate	335.066	40	564	1	-8.37
		Totals	46080.284	32871	270685		

File: 95112221.D04 Sample: S95T003140SAM



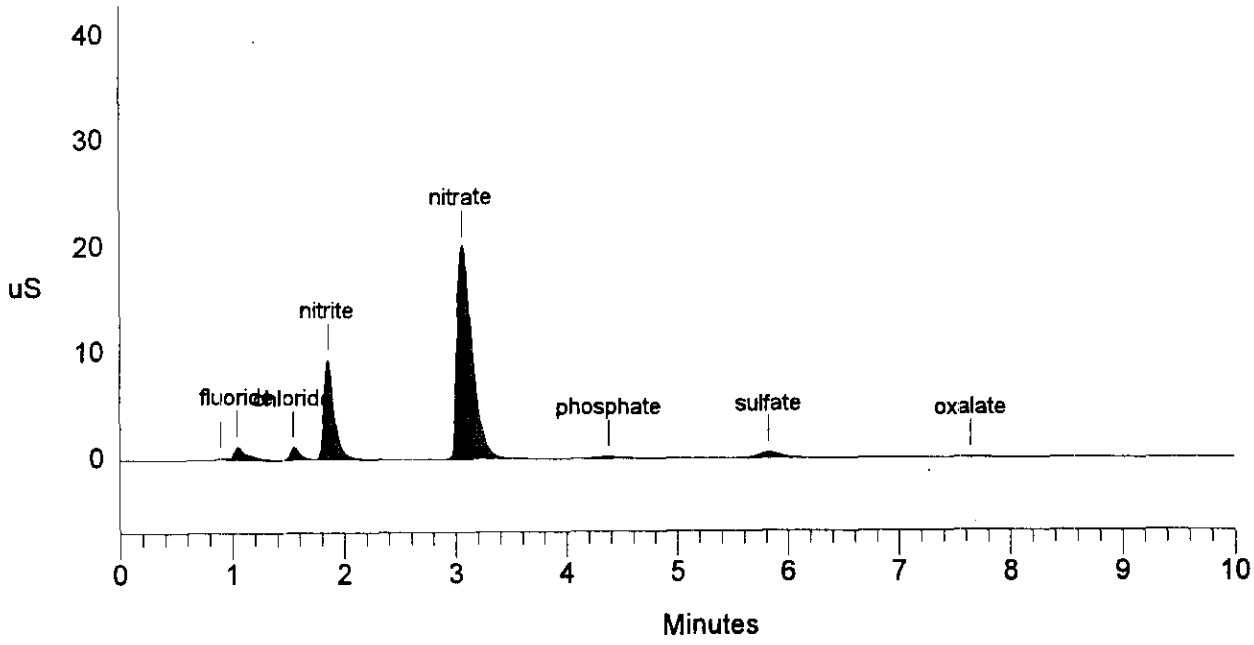
Sample Name: S95T003140DUP Date: 11/23/1995 15:00:39
Data File : C:\DX\DATA\95112221.D05
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 5 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.90		0.000	86	391	2	
2	1.05	fluoride	707.605	1201	8925	2	0.96
3	1.55	chloride	745.584	1178	6623	1	-1.27
4	1.86	nitrite	9783.674	9472	59757	1	-3.12
5	3.06	nitrate	33093.919	20142	189547	1	-5.56
6	4.39	phosphate	908.727	151	1859	1	-8.35
7	5.83	sulfate	1041.237	482	6400	1	-4.27
8	7.65	oxalate	334.892	40	563	1	-8.49
		Totals	46615.639	32753	274063		

File: 95112221.D05 Sample: S95T003140DUP



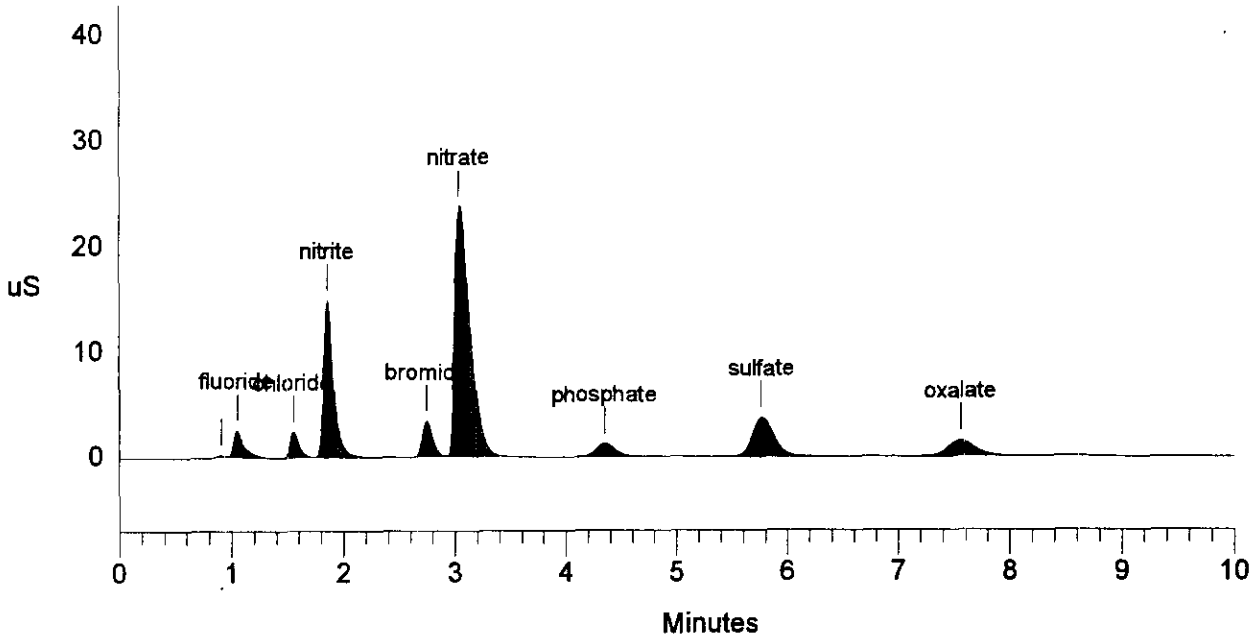
Sample Name: S95T003140SPK Date: 11/23/1995 15:24:09
Data File : C:\DX\DATA\95112221.D06
Method : C:\DX\METHOD\KIT.MET
ACI Address: 1 System: 1 Inject#: 6 Detector:CDM-1
Analyst : Column: AG4A/AS4A anion column/SRS

Calibration	Volume	Dilution	Points	Rate	Start	Stop	Area Reject
External	1	1111	3000	5Hz	0.00	10.00	200

********** Peak Report: All Peaks **********

Pk. Num	Ret Time	Component Name	Concentration ug/ml	Height	Area	Bl. Code	%Delta
1	0.91		0.000	121	512	2	
2	1.05	fluoride	1268.733	2527	16358	2	0.96
3	1.55	chloride	1511.751	2417	13361	1	-1.27
4	1.86	nitrite	14695.254	14892	90938	1	-3.12
5	2.75	bromide	5395.892	3352	21386	1	-2.14
6	3.04	nitrate	38684.378	23710	224898	1	-6.17
7	4.35	phosphate	5943.786	1229	15236	1	-9.19
8	5.77	sulfate	7067.632	3722	49261	1	-5.25
9	7.56	oxalate	5685.634	1486	25483	1	-9.57
		Totals	80253.059	53455	457433		

File: 95112221.D06 Sample: S95T003140SPK



FILE # 095030S.TXT

LABCORE Data Entry Template for Worklist# 3039

Analyst: B. Goecke **Instrument:** ~~ICP01~~ ICP02 10-30-95 **Book#** 98348.3

Method: LA-505-~~151~~ 161 Rev/Mod B-0

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	ICSA				@ICP-QC	QC		
4	ICSAB				@ICP-QC	QC		
5	SAMPLE	S95T003139	0	D	@ICP-D01	LIQUID	95000172	SY-102 GRAB
	Analytes Requested: AL-D-01 , FE-D-01 , NA-D-01							
6	DUP	S95T003139	0	D	@ICP-D01	LIQUID		
7	SPK	S95T003139	0	D	@ICP-D01	LIQUID		
8	CCV				@ICP-QC	QC		
9	CCB				@ICP-QC	QC		
10	SAMPLE	S95T003140	0	D	@ICP-D01	LIQUID	95000172	SY-102 GRAB
	Analytes Requested: AL-D-01 , FE-D-01 , NA-D-01							
11	DUP	S95T003140	0	D	@ICP-D01	LIQUID		
12	SPK	S95T003140	0	D	@ICP-D01	LIQUID		
13	ICSA				@ICP-QC	QC		
14	ICSAB				@ICP-QC	QC		
15	CCV				@ICP-QC	QC		
16	CCB				@ICP-QC	QC		

ug/ml

	S95T003139				S95T003140		
	Samp.	Dup.	Ser. Dil		Samp	Dup.	Ser. Dil
Data Entry Comments: Al	553.4	556.6	569.4	Al	1008	1023	1019
Fe	ND	ND	ND	Fe	ND	ND	ND
Na	16680	16760	17190	Na	30190	30040	31470

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

10/30/95

LABCORE Data Entry Template for Worklist# 3039

S Type	Sample#	R	A	Test	Matrix	Group#	Project

Final page for worklist # 3039

Analyst Signature [signature] Date 10-30-95

Reviewed by:
Analyst Signature [signature] Date 10/30/95

		D.F.
SSSTO03139-C	.1mL-10mL-2mL-8mL	505
SSSTO03139	.1mL-10mL	101
SSSTO03139-D	.1mL-10mL	101
SSSTO03139-A	.1mL-2mL-8mL	101
SSSTO03140-C	.1mL-10mL-2mL-8mL	505
SSSTO03140	.1mL-10mL	101
SSSTO03140-D	.1mL-10mL	101
SSSTO03140-A	.1mL-2mL-8mL	101

Data Entry Comments:

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

Analysis Report Summary Mon 10-30-95 10:34:38 AM page 1

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICV	951030B	ICP2	10/30/95	09:30	BJG	Q	CONC
2	ICB	951030B	ICP2	10/30/95	09:37	BJG	Q	CONC
3	ICSA	951030B	ICP2	10/30/95	09:40	BJG	Q	CONC
4	ICSAB	951030B	ICP2	10/30/95	09:43	BJG	Q	CONC
5	S95T003139_L	951030B	ICP2	10/30/95	09:48	BJG	S	CONC
6	S95T003139	951030B	ICP2	10/30/95	09:51	BJG	S	CONC
7	S95T003139_D	951030B	ICP2	10/30/95	09:54	BJG	S	CONC
8	S95T003139_A	951030B	ICP2	10/30/95	09:58	BJG	S	CONC
9	CCV	951030B	ICP2	10/30/95	10:01	BJG	Q	CONC
10	CCB	951030B	ICP2	10/30/95	10:04	BJG	Q	CONC
11	S95T003140_L	951030B	ICP2	10/30/95	10:07	BJG	S	CONC
12	S95T003140	951030B	ICP2	10/30/95	10:10	BJG	S	CONC
13	S95T003140_D	951030B	ICP2	10/30/95	10:14	BJG	S	CONC
14	S95T003140_A	951030B	ICP2	10/30/95	10:17	BJG	S	CONC
15	ICSA	951030B	ICP2	10/30/95	10:20	BJG	Q	CONC
16	ICSAB	951030B	ICP2	10/30/95	10:23	BJG	Q	CONC
17	CCV_1	951030B	ICP2	10/30/95	10:27	BJG	Q	CONC
18	CCB_1	951030B	ICP2	10/30/95	10:30	BJG	Q	CONC

WHC-SD-WM-DP-159, REV. 0

10-30-95
54-102
S95T003139,40
1mL-10mL

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 83 TO 86.

#	Sample Name	Ag	Al	As	B	Ba	Be
1	ICV	5.134	4.916	5.315	5.075	5.083	5.328
2	ICB	.0011	.0013	-.0152	.0013	.0001	-.0001
3	ICSA	-.0124	237.6	.0190	-.0003	.0031	.0001
4	ICSAB	.9596	236.9	.0166	.0041	.4691	.4840
5	S95T003139_L	.3683	569.4	-5.087	3.634	-.0072	.0686
6	S95T003139	.1512	553.4	-.6129	2.948	.0049	.0061
7	S95T003139_D	.1266	556.6	-2.278	2.820	.0055	.0025
8	S95T003139_A	99.28	652.0	108.7	103.1	98.81	105.5
9	CCV	5.135	4.902	5.349	5.080	5.096	5.351
10	CCB	.0026	.0125	-.0034	.0055	.0001	.0001
11	S95T003140_L	1.683	1019.	-7.316	8.326	-.0115	.0514
12	S95T003140	.5663	1008.	-4.065	7.514	.0121	.0275
13	S95T003140_D	.6374	1003.	-3.648	7.557	.0077	.0201
14	S95T003140_A	96.45	1096.	101.7	106.9	98.67	104.1
15	ICSA	-.0072	239.8	-.0061	.0005	.0034	.0002
16	ICSAB	.9698	240.0	.0042	-.0010	.4781	.4909
17	CCV_1	5.184	4.919	5.380	5.089	5.135	5.382
18	CCB_1	.0015	.0068	-.0129	.0042	.0002	.0002

#	Sample Name	Bi	Ca	Cd	Ce	Co	Cr
1	ICV	5.247	5.455	5.298	5.226	5.269	5.331
2	ICB	.0334	.0052	.0002	.0121	.0005	-.0005
3	ICSA	.0125	259.4	.0017	.0198	.0019	-.0033
4	ICSAB	.0013	262.5	.9777	.0217	.4815	.4834
5	S95T003139_L	-12.36	2.652	-.0376	3.947	.3680	94.07
6	S95T003139	4.167	1.768	.3185	.4224	-.0190	91.75
7	S95T003139_D	2.409	1.833	.3142	.5978	.0520	92.46
8	S95T003139_A	106.1	113.2	105.9	104.0	105.1	199.6
9	CCV	5.260	Q5.583	5.331	5.238	5.292	5.359
10	CCB	.0024	.0041	.0006	.0092	-.0012	-.0007
11	S95T003140_L	10.80	5.061	8.555	8.846	.4777	93.09
12	S95T003140	.9530	5.265	7.636	.7375	.1682	93.08
13	S95T003140_D	1.821	4.986	7.588	1.317	.0505	92.48
14	S95T003140_A	105.0	112.5	110.7	103.4	102.5	196.9
15	ICSA	.0122	263.6	.0016	.0309	.0023	-.0035
16	ICSAB	-.0069	266.8	.9804	.0262	.4829	.4869
17	CCV_1	5.318	Q5.706	5.389	5.261	5.348	5.422
18	CCB_1	.0040	.0035	-.0013	.0075	.0017	-.0006

#	Sample Name	Cu	Eu	Fe	K	La	Li
1	ICV	5.141	.0086	5.263	5.014	5.148	4.929
2	ICB	.0005	.0017	-.0001	.2825	.0022	.0014
3	ICSA	-.0081	-.0332	94.11	.2950	-.0023	.0036
4	ICSAB	.4717	-.0352	94.61	.3865	-.0011	.9373
5	S95T003139_L	.0432	.6933	-.2835	3538.	.5471	.5556
6	S95T003139	.0585	.0979	.1000	3366.	.1413	.1012
7	S95T003139_D	.1571	.0918	.0834	3393.	.1444	.1569
8	S95T003139_A	100.9	.2818	104.6	3472.	101.9	96.04
9	CCV	5.127	.0088	5.293	5.138	5.154	4.912

#	Sample Name	Cu	Eu	Fe	K	La	Li
10	CCB	.0006	.0005	.0004	.1889	.0022	.0004
11	S95T003140_L	1.338	.3047	.9012	3172.	1.236	.3239
12	S95T003140	1.093	.0727	.7358	2988.	.1306	.1200
13	S95T003140_D	1.151	.0408	.6434	2986.	.2096	.1012
14	S95T003140_A	101.5	.2004	103.6	3066.	101.6	96.56
15	ICSA	-.0073	-.0397	95.08	.3007	-.0007	.0033
16	ICSAB	.4798	-.0404	95.77	.2954	-.0004	.9524
17	CCV_1	5.140	.0093	5.341	5.276	5.187	4.871
18	CCB_1	.0001	.0016	-.0003	.2401	.0017	.0016

#	Sample Name	Mg	Mn	Mo	Na	Nd	Ni
1	ICV	4.994	5.146	5.271	4.962	5.170	5.258
2	ICB	.0066	.0005	.0010	.0083	.0033	-.0021
3	ICSA	245.3	-.0062	-.0129	190.5	.0085	-.0234
4	ICSAB	244.9	.4568	-.0133	189.5	.0078	.9248
5	S95T003139_L	-2.527	.2116	2.195	17190.	-.3200	-3.102
6	S95T003139	-.6676	.0360	1.829	16680.	-.0061	-.0951
7	S95T003139_D	-.1999	.0233	1.701	16760.	.0495	.3323
8	S95T003139_A	97.21	100.0	107.4	16690.	102.1	105.6
9	CCV	4.995	5.167	5.272	4.929	5.164	5.279
10	CCB	-.0017	.0005	-.0013	.0014	.0008	-.0041
11	S95T003140_L	1.646	.1606	8.697	31470.	1.055	2.634
12	S95T003140	-.0862	.0354	8.275	30190.	-.0201	1.548
13	S95T003140_D	-.2336	.0162	8.004	30040.	.1362	1.480
14	S95T003140_A	96.46	98.17	111.6	30020.	102.1	103.2
15	ICSA	247.5	-.0062	-.0116	192.1	.0077	-.0117
16	ICSAB	247.2	.4616	-.0152	192.2	.0093	.9413
17	CCV_1	5.013	5.221	5.325	4.938	5.180	5.339
18	CCB_1	-.0030	.0009	.0002	.0151	.0005	-.0087

#	Sample Name	P	Pb	S	Sb	Se	Si
1	ICV	5.446	5.325	5.135	4.955	5.106	4.976
2	ICB	.0022	.0136	.0111	.0027	.0207	.0068
3	ICSA	.0307	.0636	.0339	.0194	.0057	.0172
4	ICSAB	.0261	1.070	.0524	.0089	.0122	.0185
5	S95T003139_L	225.5	1.939	196.3	2.901	18.89	14.55
6	S95T003139	220.7	.3464	189.4	.5773	7.570	11.95
7	S95T003139_D	223.4	1.341	191.1	-.1233	7.709	11.97
8	S95T003139_A	333.8	107.3	290.9	98.95	116.5	111.8
9	CCV	5.385	5.359	5.097	4.982	5.119	4.982
10	CCB	-.0030	.0069	.0032	.0085	.0270	.0054
11	S95T003140_L	227.2	4.878	346.6	3.308	16.49	15.94
12	S95T003140	310.9	1.920	350.0	-.0726	6.140	14.75
13	S95T003140_D	314.8	1.396	347.2	1.036	6.979	14.23
14	S95T003140_A	418.0	105.6	442.0	98.42	114.0	113.2
15	ICSA	.0125	.0727	.0255	.0059	.0184	.0153
16	ICSAB	.0066	1.072	.0558	.0217	.0134	.0175
17	CCV_1	5.443	5.415	5.122	5.020	5.132	5.016
18	CCB_1	-.0035	.0091	.0131	.0024	.0390	.0098

#	Sample Name	Sm	Sr	Th	Ti	Tl	U
1	ICV	4.976	5.060	.0319	5.006	5.006	9.606
2	ICB	.0181	.0002	.0051	.0008	.0122	.0654
3	ICSA	.0048	-.0038	-.0104	.0020	.0297	.0205
4	ICSAB	.0075	-.0045	-.0009	.0020	-.0093	-.0026
5	S95T003139_L	6.789	.0976	.2889	.0921	-1.693	42.13
6	S95T003139_	1.018	.0225	-.6570	.0499	.1234	20.25
7	S95T003139_D	1.396	.0224	-.5134	.0505	-.3892	21.45
8	S95T003139_A	99.31	99.84	.5218	99.56	102.0	212.2
9	CCV	4.987	5.059	.0443	5.025	5.080	9.604
10	CCB	.0071	.0001	.0088	.0002	.0061	.0304
11	S95T003140_L	3.890	.0582	4.152	.3159	2.307	28.64
12	S95T003140_	1.182	.0510	.1651	.0551	-.2047	17.20
13	S95T003140_D	.5578	.0467	.0042	.0521	.0842	20.14
14	S95T003140_A	98.72	99.42	1.121	98.66	98.27	208.9
15	ICSA	.0010	-.0036	.0005	.0024	.0285	-.0072
16	ICSAB	.0027	-.0048	.0057	.0025	.0516	-.0377
17	CCV_1	5.010	5.091	.0502	5.051	5.111	9.651
18	CCB_1	.0181	.0003	.0006	.0002	.0010	.0668

#	Sample Name	V	Y	Zn	Zr
1	ICV	5.153	.0104	5.231	5.088
2	ICB	.0044	.0010	-.0007	.0023
3	ICSA	.0029	.0189	.0007	.0018
4	ICSAB	.4743	.0204	.9862	.0014
5	S95T003139_L	1.550	.3384	2.209	1.080
6	S95T003139_	.2722	.0627	1.984	.2063
7	S95T003139_D	.3187	.0542	1.962	.1938
8	S95T003139_A	102.8	.2819	106.1	101.0
9	CCV	5.168	.0107	5.247	5.103
10	CCB	.0022	.0004	.0006	.0010
11	S95T003140_L	1.230	.2253	3.246	.4952
12	S95T003140_	.3159	.0402	3.294	.1961
13	S95T003140_D	.2462	.0310	2.934	.1503
14	S95T003140_A	101.3	.2358	106.2	100.2
15	ICSA	.0027	.0188	.0015	-.0003
16	ICSAB	.4795	.0204	.9955	-.0009
17	CCV_1	5.214	.0110	5.291	5.143
18	CCB_1	.0042	.0009	-.0003	.0030

SP
10/30/95

OUTPUT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	3039	1			ICV	AG				5.1342		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
2	3039	1			ICV	AL				4.9165		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
3	3039	1			ICV	AS				5.3153		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
4	3039	1			ICV	B				5.0752		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
5	3039	1			ICV	BA				5.0833		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
6	3039	1			ICV	BE				5.3279		1.0000	10/30/95	09:30	big	0.005	@ICP-QC
7	3039	1			ICV	BI				5.2473		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
8	3039	1			ICV	CA				5.4547		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
9	3039	1			ICV	CD				5.2984		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
10	3039	1			ICV	CE				5.2257		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
11	3039	1			ICV	CO				5.2687		1.0000	10/30/95	09:30	big	0.02	@ICP-QC
12	3039	1			ICV	CR				5.3310		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
13	3039	1			ICV	CU				5.1410		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
14	3039	1			ICV	EU				0.0086		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
15	3039	1			ICV	FE				5.2831		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
16	3039	1			ICV	K				5.0139		1.0000	10/30/95	09:30	big	0.3	@ICP-QC
17	3039	1			ICV	LA				5.1476		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
18	3039	1			ICV	LI				4.9287		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
19	3039	1			ICV	MG				4.9939		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
20	3039	1			ICV	MN				5.1462		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
21	3039	1			ICV	MO				5.2708		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
22	3039	1			ICV	NA				4.9824		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
23	3039	1			ICV	ND				5.1697		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
24	3039	1			ICV	NI				5.2585		1.0000	10/30/95	09:30	big	0.02	@ICP-QC
25	3039	1			ICV	P				5.4458		1.0000	10/30/95	09:30	big	0.2	@ICP-QC
26	3039	1			ICV	PB				5.3253		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
27	3039	1			ICV	S				5.1348		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
28	3039	1			ICV	SB				4.9551		1.0000	10/30/95	09:30	big	0.2	@ICP-QC
29	3039	1			ICV	SE				5.1055		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
30	3039	1			ICV	SI				4.9759		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
31	3039	1			ICV	SM				4.9763		1.0000	10/30/95	09:30	big	0.1	@ICP-QC
32	3039	1			ICV	SR				5.0597		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
33	3039	1			ICV	TH				0.0319		1.0000	10/30/95	09:30	big	0	@ICP-QC
34	3039	1			ICV	TI				5.0060		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
35	3039	1			ICV	TL				5.0058		1.0000	10/30/95	09:30	big	0.2	@ICP-QC
36	3039	1			ICV	U				9.6059		1.0000	10/30/95	09:30	big	0.4	@ICP-QC
37	3039	1			ICV	V				5.1531		1.0000	10/30/95	09:30	big	0.05	@ICP-QC
38	3039	1			ICV	Y				0.0104		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
39	3039	1			ICV	ZN				5.2310		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
40	3039	1			ICV	ZR				5.0885		1.0000	10/30/95	09:30	big	0.01	@ICP-QC
41	3039	2			ICB	AG				0.0011		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
42	3039	2			ICB	AL				0.0013		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
43	3039	2			ICB	AS				-0.0152		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
44	3039	2			ICB	B				0.0013		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
45	3039	2			ICB	BA				0.0001		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
46	3039	2			ICB	BE				-0.0001		1.0000	10/30/95	09:37	big	0.005	@ICP-QC
47	3039	2			ICB	BI				0.0334		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
48	3039	2			ICB	CA				0.0052		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
49	3039	2			ICB	CD				0.0002		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
50	3039	2			ICB	CE				0.0121		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
51	3039	2			ICB	CO				0.0005		1.0000	10/30/95	09:37	big	0.02	@ICP-QC
52	3039	2			ICB	CR				-0.0005		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
53	3039	2			ICB	CU				0.0005		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
54	3039	2			ICB	EU				0.0017		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
55	3039	2			ICB	FE				-0.0001		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
56	3039	2			ICB	K				0.2825		1.0000	10/30/95	09:37	big	0.3	@ICP-QC
57	3039	2			ICB	LA				0.0022		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
58	3039	2			ICB	LI				0.0014		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
59	3039	2			ICB	MG				0.0066		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
60	3039	2			ICB	MN				0.0005		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
61	3039	2			ICB	MO				0.0010		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
62	3039	2			ICB	NA				0.0083		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
63	3039	2			ICB	ND				0.0033		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
64	3039	2			ICB	NI				-0.0021		1.0000	10/30/95	09:37	big	0.02	@ICP-QC
65	3039	2			ICB	P				0.0022		1.0000	10/30/95	09:37	big	0.2	@ICP-QC
66	3039	2			ICB	PB				0.0136		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
67	3039	2			ICB	S				0.0111		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
68	3039	2			ICB	SB				0.0027		1.0000	10/30/95	09:37	big	0.2	@ICP-QC
69	3039	2			ICB	SE				0.0207		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
70	3039	2			ICB	SI				0.0068		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
71	3039	2			ICB	SM				0.0181		1.0000	10/30/95	09:37	big	0.1	@ICP-QC
72	3039	2			ICB	SR				0.0002		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
73	3039	2			ICB	TH				0.0051		1.0000	10/30/95	09:37	big	0	@ICP-QC
74	3039	2			ICB	TI				0.0008		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
75	3039	2			ICB	TL				0.0122		1.0000	10/30/95	09:37	big	0.2	@ICP-QC
76	3039	2			ICB	U				0.0654		1.0000	10/30/95	09:37	big	0.4	@ICP-QC
77	3039	2			ICB	V				0.0044		1.0000	10/30/95	09:37	big	0.05	@ICP-QC
78	3039	2			ICB	Y				0.0010		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
79	3039	2			ICB	ZN				-0.0007		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
80	3039	2			ICB	ZR				0.0023		1.0000	10/30/95	09:37	big	0.01	@ICP-QC
81	3039	3			ICSA	AG				-0.0124		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
82	3039	3			ICSA	AL				237.6129		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
83	3039	3			ICSA	AS				0.0190		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
84	3039	3			ICSA	B				-0.0003		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
85	3039	3			ICSA	BA				0.0031		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
86	3039	3			ICSA	BE				0.0001		1.0000	10/30/95	09:40	big	0.005	@ICP-QC
87	3039	3			ICSA	BI				0.0125		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
88	3039	3			ICSA	CA				259.3959		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
89	3039	3			ICSA	CD				0.0017		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
90	3039	3			ICSA	CE				0.0198		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
91	3039	3			ICSA	CO				0.0019		1.0000	10/30/95	09:40	big	0.02	@ICP-QC
92	3039	3			ICSA	CR				-0.0033		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
93	3039	3			ICSA	CU				-0.0081		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
94	3039	3			ICSA	EU				-0.0332		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
95	3039	3			ICSA	FE				94.1131		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
96	3039	3			ICSA	K				0.2950		1.0000	10/30/95	09:40	big	0.3	@ICP-QC
97	3039	3			ICSA	LA				-0.0023		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
98	3039	3			ICSA	LI				0.0036		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
99	3039	3			ICSA	MG				245.2970		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
100	3039	3			ICSA	MN				-0.0082		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
101	3039	3			ICSA	MO				-0.0129		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
102	3039	3			ICSA	NA				190.5236		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
103	3039	3			ICSA	ND				0.0085		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
104	3039	3			ICSA	NI				-0.0234		1.0000	10/30/95	09:40	big	0.02	@ICP-QC
105	3039	3			ICSA	P				0.0307		1.0000	10/30/95	09:40	big	0.2	@ICP-QC
106	3039	3			ICSA	PB				0.0636		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
107	3039	3			ICSA	S				0.0339		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
108	3039	3			ICSA	SB				0.0194		1.0000	10/30/95	09:40	big	0.2	@ICP-QC
109	3039	3			ICSA	SE				0.0057		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
110	3039	3			ICSA	SI				0.0172		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
111	3039	3			ICSA	SM				0.0048		1.0000	10/30/95	09:40	big	0.1	@ICP-QC
112	3039	3			ICSA	SR				-0.0038		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
113	3039	3			ICSA	TH				-0.0104		1.0000	10/30/95	09:40	big	0	@ICP-QC
114	3039	3			ICSA	TI				0.0020		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
115	3039	3			ICSA	TL				0.0297		1.0000	10/30/95	09:40	big	0.2	@ICP-QC
116	3039	3			ICSA	U				0.0205		1.0000	10/30/95	09:40	big	0.4	@ICP-QC
117	3039	3			ICSA	V				0.0029		1.0000	10/30/95	09:40	big	0.05	@ICP-QC
118	3039	3			ICSA	Y				0.0189		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
119	3039	3			ICSA	ZN				0.0007		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
120	3039	3			ICSA	ZR				0.0018		1.0000	10/30/95	09:40	big	0.01	@ICP-QC
121	3039	4			ICSAB	AG				0.9598		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
122	3039	4			ICSAB	AL				236.9467		1.0000	10/30/95	09:43	big	0.05	@ICP-QC

OUTPUT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
123	3039	4			ICSAB	AS				0.0166		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
124	3039	4			ICSAB	B				0.0041		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
125	3039	4			ICSAB	BA				0.4691		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
126	3039	4			ICSAB	BE				0.4840		1.0000	10/30/95	09:43	big	0.005	@ICP-QC
127	3039	4			ICSAB	BI				0.0012		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
128	3039	4			ICSAB	CA				262.5411		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
129	3039	4			ICSAB	CD				0.9777		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
130	3039	4			ICSAB	CE				0.0217		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
131	3039	4			ICSAB	CO				0.4815		1.0000	10/30/95	09:43	big	0.02	@ICP-QC
132	3039	4			ICSAB	CR				0.4834		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
133	3039	4			ICSAB	CU				0.4717		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
134	3039	4			ICSAB	EU				-0.0352		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
135	3039	4			ICSAB	FE				94.6092		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
136	3039	4			ICSAB	K				0.3865		1.0000	10/30/95	09:43	big	0.3	@ICP-QC
137	3039	4			ICSAB	LA				-0.0011		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
138	3039	4			ICSAB	LI				0.9373		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
139	3039	4			ICSAB	MG				244.9445		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
140	3039	4			ICSAB	MN				0.4568		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
141	3039	4			ICSAB	MO				-0.0133		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
142	3039	4			ICSAB	NA				189.4808		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
143	3039	4			ICSAB	ND				0.0078		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
144	3039	4			ICSAB	NI				0.9248		1.0000	10/30/95	09:43	big	0.02	@ICP-QC
145	3039	4			ICSAB	P				0.0261		1.0000	10/30/95	09:43	big	0.2	@ICP-QC
146	3039	4			ICSAB	PB				1.0702		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
147	3039	4			ICSAB	S				0.0524		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
148	3039	4			ICSAB	SB				0.0089		1.0000	10/30/95	09:43	big	0.2	@ICP-QC
149	3039	4			ICSAB	SE				0.0122		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
150	3039	4			ICSAB	SI				0.0185		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
151	3039	4			ICSAB	SM				0.0075		1.0000	10/30/95	09:43	big	0.1	@ICP-QC
152	3039	4			ICSAB	SR				-0.0045		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
153	3039	4			ICSAB	TH				-0.0009		1.0000	10/30/95	09:43	big	0	@ICP-QC
154	3039	4			ICSAB	TI				0.0020		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
155	3039	4			ICSAB	TL				-0.0093		1.0000	10/30/95	09:43	big	0.2	@ICP-QC
156	3039	4			ICSAB	U				-0.0026		1.0000	10/30/95	09:43	big	0.4	@ICP-QC
157	3039	4			ICSAB	V				0.4743		1.0000	10/30/95	09:43	big	0.05	@ICP-QC
158	3039	4			ICSAB	Y				0.0204		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
159	3039	4			ICSAB	ZN				0.9862		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
160	3039	4			ICSAB	ZR				0.0014		1.0000	10/30/95	09:43	big	0.01	@ICP-QC
161	3039	5	S95T003139			AL-D-01				553.3576		101.0000	10/30/95	09:51	big	0.05	@ICP-D01
162	3039	5	S95T003139			FE-D-01			<	5.0500		101.0000	10/30/95	09:51	big	0.05	@ICP-D01
163	3039	5	S95T003139			NA-D-01				16675.6641		101.0000	10/30/95	09:51	big	0.1	@ICP-D01
164	3039	6	S95T003139		DUP	AL-D-01		553.3576		556.6431		101.0000	10/30/95	09:54	big	0.05	@ICP-D01
165	3039	6	S95T003139		DUP	FE-D-01		<5.0500		<5.0500		101.0000	10/30/95	09:54	big	0.05	@ICP-D01
166	3039	6	S95T003139		DUP	NA-D-01		16675.6641		16764.7910		101.0000	10/30/95	09:54	big	0.1	@ICP-D01
167	3039	7	S95T003139_A		SPK	AL-D-01			101	98.6082		101.0000	10/30/95	09:58	big	0.05	@ICP-D01
168	3039	7	S95T003139_A		SPK	FE-D-01			101	104.5543		101.0000	10/30/95	09:58	big	0.05	@ICP-D01
169	3039	7	S95T003139_A		SPK	NA-D-01		n/a		n/a		101.0000	10/30/95	09:58	big	0.1	@ICP-D01
170	3039	8			CCV	AG				5.1352		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
171	3039	8			CCV	AL				4.9022		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
172	3039	8			CCV	AS				5.3487		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
173	3039	8			CCV	B				5.0799		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
174	3039	8			CCV	BA				5.0958		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
175	3039	8			CCV	BE				5.3510		1.0000	10/30/95	10:01	big	0.005	@ICP-QC
176	3039	8			CCV	BI				5.2596		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
177	3039	8			CCV	CA				5.5831		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
178	3039	8			CCV	CD				5.3305		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
179	3039	8			CCV	CE				5.2380		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
180	3039	8			CCV	CO				5.2924		1.0000	10/30/95	10:01	big	0.02	@ICP-QC
181	3039	8			CCV	CR				5.3594		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
182	3039	8			CCV	CU				5.1270		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
183	3039	8			CCV	EU				0.0088		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
184	3039	8			CCV	FE				5.2929		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
185	3039	8			CCV	K				5.1383		1.0000	10/30/95	10:01	big	0.3	@ICP-QC
186	3039	8			CCV	LA				5.1543		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
187	3039	8			CCV	LI				4.9122		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
188	3039	8			CCV	MG				4.9948		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
189	3039	8			CCV	MN				5.1671		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
190	3039	8			CCV	MO				5.2722		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
191	3039	8			CCV	NA				4.9294		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
192	3039	8			CCV	ND				5.1639		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
193	3039	8			CCV	NI				5.2790		1.0000	10/30/95	10:01	big	0.02	@ICP-QC
194	3039	8			CCV	P				5.3855		1.0000	10/30/95	10:01	big	0.2	@ICP-QC
195	3039	8			CCV	PB				5.3591		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
196	3039	8			CCV	S				5.0970		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
197	3039	8			CCV	SB				4.9822		1.0000	10/30/95	10:01	big	0.2	@ICP-QC
198	3039	8			CCV	SE				5.1193		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
199	3039	8			CCV	SI				4.9817		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
200	3039	8			CCV	SM				4.9872		1.0000	10/30/95	10:01	big	0.1	@ICP-QC
201	3039	8			CCV	SR				5.0595		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
202	3039	8			CCV	TH				0.0443		1.0000	10/30/95	10:01	big	0	@ICP-QC
203	3039	8			CCV	TI				5.0251		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
204	3039	8			CCV	TL				5.0797		1.0000	10/30/95	10:01	big	0.2	@ICP-QC
205	3039	8			CCV	U				9.8043		1.0000	10/30/95	10:01	big	0.4	@ICP-QC
206	3039	8			CCV	V				5.1879		1.0000	10/30/95	10:01	big	0.05	@ICP-QC
207	3039	8			CCV	Y				0.0107		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
208	3039	8			CCV	ZN				5.2471		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
209	3039	8			CCV	ZR				5.1030		1.0000	10/30/95	10:01	big	0.01	@ICP-QC
210	3039	9			CCB	AG				0.0026		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
211	3039	9			CCB	AL				0.0125		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
212	3039	9			CCB	AS				-0.0034		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
213	3039	9			CCB	B				0.0055		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
214	3039	9			CCB	BA				0.0001		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
215	3039	9			CCB	BE				0.0001		1.0000	10/30/95	10:04	big	0.005	@ICP-QC
216	3039	9			CCB	BI				0.0094		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
217	3039	9			CCB	CA				0.0041		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
218	3039	9			CCB	CD				0.0006		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
219	3039	9			CCB	CE				0.0092		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
220	3039	9			CCB	CO				-0.0012		1.0000	10/30/95	10:04	big	0.02	@ICP-QC
221	3039	9			CCB	CR				-0.0007		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
222	3039	9			CCB	CU				0.0008		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
223	3039	9			CCB	EU				0.0005		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
224	3039	9			CCB	FE				0.0004		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
225	3039	9			CCB	K				0.1889		1.0000	10/30/95	10:04	big	0.3	@ICP-QC
226	3039	9			CCB	LA				0.0022		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
227	3039	9			CCB	LI				0.0004		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
228	3039	9			CCB	MG				-0.0017		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
229	3039	9			CCB	MN				0.0005		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
230	3039	9			CCB	MO				-0.0013		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
231	3039	9			CCB	NA				0.0014		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
232	3039	9			CCB	ND				0.0008		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
233	3039	9			CCB	NI				-0.0041		1.0000	10/30/95	10:04	big	0.02	@ICP-QC
234	3039	9			CCB	P				-0.0030		1.0000	10/30/95	10:04	big	0.2	@ICP-QC
235	3039	9			CCB	PB				0.0069		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
236	3039	9			CCB	S				0.0032		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
237	3039	9			CCB	SB				0.0085		1.0000	10/30/95	10:04	big	0.2	@ICP-QC
238	3039	9			CCB	SE				0.0270		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
239	3039	9			CCB	SI				0.0054		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
240	3039	9			CCB	SM				0.0071		1.0000	10/30/95	10:04	big	0.1	@ICP-QC
241	3039	9			CCB	SR				0.0001		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
242	3039	9			CCB	TH				0.0088		1.0000	10/30/95	10:04	big	0	@ICP-QC
243	3039	9			CCB	TI				0.0002		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
244	3039	9			CCB	TL				0.0061		1.0000	10/30/95	10:04	big	0.2	@ICP-QC

OUTPUT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
245	3039	9			CCB	U				0.0304		1.0000	10/30/95	10:04	big	0.4	@ICP-QC
246	3039	9			CCB	V				0.0022		1.0000	10/30/95	10:04	big	0.05	@ICP-QC
247	3039	9			CCB	Y				0.0004		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
248	3039	9			CCB	ZN				0.0006		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
249	3039	9			CCB	ZR				0.0010		1.0000	10/30/95	10:04	big	0.01	@ICP-QC
250	3039	10	S95T003140			AL-D-01				1007.7419		101.0000	10/30/95	10:10	big	0.05	@ICP-D01
251	3039	10	S95T003140			FE-D-01			<	5.0500		101.0000	10/30/95	10:10	big	0.05	@ICP-D01
252	3039	10	S95T003140			NA-D-01				30187.4609		101.0000	10/30/95	10:10	big	0.1	@ICP-D01
253	3039	11	S95T003140		DUP	AL-D-01		1007.7419		1002.5808		101.0000	10/30/95	10:14	big	0.05	@ICP-D01
254	3039	11	S95T003140		DUP	FE-D-01		<5.0500		<5.0500		101.0000	10/30/95	10:14	big	0.05	@ICP-D01
255	3039	11	S95T003140		DUP	NA-D-01		30187.4609		30040.7441		101.0000	10/30/95	10:14	big	0.1	@ICP-D01
256	3039	12	S95T003140_A		SPK	AL-D-01			101	88.2290		101.0000	10/30/95	10:17	big	0.05	@ICP-D01
257	3039	12	S95T003140_A		SPK	FE-D-01			101	103.6264		101.0000	10/30/95	10:17	big	0.05	@ICP-D01
258	3039	12	S95T003140_A		SPK	NA-D-01		n/a		n/a		101.0000	10/30/95	10:17	big	0.1	@ICP-D01
259	3039	13			ICSA	AG				-0.0072		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
260	3039	13			ICSA	AL				239.7640		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
261	3039	13			ICSA	AS				-0.0061		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
262	3039	13			ICSA	B				0.0005		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
263	3039	13			ICSA	BA				0.0034		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
264	3039	13			ICSA	BE				0.0002		1.0000	10/30/95	10:20	big	0.005	@ICP-QC
265	3039	13			ICSA	BI				0.0122		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
266	3039	13			ICSA	CA				263.5554		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
267	3039	13			ICSA	CD				0.0018		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
268	3039	13			ICSA	CE				0.0309		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
269	3039	13			ICSA	CO				0.0023		1.0000	10/30/95	10:20	big	0.02	@ICP-QC
270	3039	13			ICSA	CR				-0.0035		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
271	3039	13			ICSA	CU				-0.0073		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
272	3039	13			ICSA	EU				-0.0397		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
273	3039	13			ICSA	FE				95.0781		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
274	3039	13			ICSA	K				0.3007		1.0000	10/30/95	10:20	big	0.3	@ICP-QC
275	3039	13			ICSA	LA				-0.0007		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
276	3039	13			ICSA	LI				0.0033		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
277	3039	13			ICSA	MG				247.4644		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
278	3039	13			ICSA	MN				-0.0062		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
279	3039	13			ICSA	MO				-0.0116		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
280	3039	13			ICSA	NA				192.1451		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
281	3039	13			ICSA	ND				0.0077		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
282	3039	13			ICSA	NI				-0.0117		1.0000	10/30/95	10:20	big	0.02	@ICP-QC
283	3039	13			ICSA	P				0.0125		1.0000	10/30/95	10:20	big	0.2	@ICP-QC
284	3039	13			ICSA	PB				0.0727		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
285	3039	13			ICSA	S				0.0255		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
286	3039	13			ICSA	SB				0.0059		1.0000	10/30/95	10:20	big	0.2	@ICP-QC
287	3039	13			ICSA	SE				0.0184		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
288	3039	13			ICSA	SI				0.0153		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
289	3039	13			ICSA	SM				0.0010		1.0000	10/30/95	10:20	big	0.1	@ICP-QC
290	3039	13			ICSA	SR				-0.0036		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
291	3039	13			ICSA	TH				0.0005		1.0000	10/30/95	10:20	big	0	@ICP-QC
292	3039	13			ICSA	TI				0.0024		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
293	3039	13			ICSA	TL				0.0285		1.0000	10/30/95	10:20	big	0.2	@ICP-QC
294	3039	13			ICSA	U				-0.0072		1.0000	10/30/95	10:20	big	0.4	@ICP-QC
295	3039	13			ICSA	V				0.0027		1.0000	10/30/95	10:20	big	0.05	@ICP-QC
296	3039	13			ICSA	Y				0.0188		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
297	3039	13			ICSA	ZN				0.0015		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
298	3039	13			ICSA	ZR				-0.0003		1.0000	10/30/95	10:20	big	0.01	@ICP-QC
299	3039	14			ICSAB	AG				0.9698		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
300	3039	14			ICSAB	AL				240.0439		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
301	3039	14			ICSAB	AS				0.0042		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
302	3039	14			ICSAB	B				-0.0010		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
303	3039	14			ICSAB	BA				0.4781		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
304	3039	14			ICSAB	BE				0.4909		1.0000	10/30/95	10:23	big	0.005	@ICP-QC
305	3039	14			ICSAB	BI				-0.0069		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
306	3039	14			ICSAB	CA				266.8096		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
307	3039	14			ICSAB	CD				0.9804		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
308	3039	14			ICSAB	CE				0.0262		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
309	3039	14			ICSAB	CO				0.4829		1.0000	10/30/95	10:23	big	0.02	@ICP-QC
310	3039	14			ICSAB	CR				0.4869		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
311	3039	14			ICSAB	CU				0.4798		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
312	3039	14			ICSAB	EU				-0.0404		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
313	3039	14			ICSAB	FE				95.7667		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
314	3039	14			ICSAB	K				0.2954		1.0000	10/30/95	10:23	big	0.3	@ICP-QC
315	3039	14			ICSAB	LA				-0.0004		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
316	3039	14			ICSAB	LI				0.9524		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
317	3039	14			ICSAB	MG				247.7194		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
318	3039	14			ICSAB	MN				0.4616		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
319	3039	14			ICSAB	MO				-0.0152		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
320	3039	14			ICSAB	NA				192.1653		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
321	3039	14			ICSAB	ND				0.0093		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
322	3039	14			ICSAB	NI				0.9413		1.0000	10/30/95	10:23	big	0.02	@ICP-QC
323	3039	14			ICSAB	P				0.0066		1.0000	10/30/95	10:23	big	0.2	@ICP-QC
324	3039	14			ICSAB	PB				1.0717		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
325	3039	14			ICSAB	S				0.0558		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
326	3039	14			ICSAB	SB				0.0217		1.0000	10/30/95	10:23	big	0.2	@ICP-QC
327	3039	14			ICSAB	SE				0.0134		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
328	3039	14			ICSAB	SI				0.0175		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
329	3039	14			ICSAB	SM				0.0027		1.0000	10/30/95	10:23	big	0.1	@ICP-QC
330	3039	14			ICSAB	SR				-0.0048		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
331	3039	14			ICSAB	TH				0.0057		1.0000	10/30/95	10:23	big	0	@ICP-QC
332	3039	14			ICSAB	TI				0.0025		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
333	3039	14			ICSAB	TL				0.0516		1.0000	10/30/95	10:23	big	0.2	@ICP-QC
334	3039	14			ICSAB	U				-0.0377		1.0000	10/30/95	10:23	big	0.4	@ICP-QC
335	3039	14			ICSAB	V				0.4795		1.0000	10/30/95	10:23	big	0.05	@ICP-QC
336	3039	14			ICSAB	Y				0.0204		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
337	3039	14			ICSAB	ZN				0.9955		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
338	3039	14			ICSAB	ZR				-0.0009		1.0000	10/30/95	10:23	big	0.01	@ICP-QC
339	3039	15			CCV	AG				5.1841		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
340	3039	15			CCV	AL				4.9191		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
341	3039	15			CCV	AS				5.3797		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
342	3039	15			CCV	B				5.0895		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
343	3039	15			CCV	BA				5.1353		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
344	3039	15			CCV	BE				5.3815		1.0000	10/30/95	10:27	big	0.005	@ICP-QC
345	3039	15			CCV	BI				5.3181		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
346	3039	15			CCV	CA				5.7064		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
347	3039	15			CCV	CD				5.3887		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
348	3039	15			CCV	CE				5.2608		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
349	3039	15			CCV	CO				5.3482		1.0000	10/30/95	10:27	big	0.02	@ICP-QC
350	3039	15			CCV	CR				5.4217		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
351	3039	15			CCV	CU				5.1403		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
352	3039	15			CCV	EU				0.0093		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
353	3039	15			CCV	FE				5.3408		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
354	3039	15			CCV	K				5.2782		1.0000	10/30/95	10:27	big	0.3	@ICP-QC
355	3039	15			CCV	LA				5.1869		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
356	3039	15			CCV	LI				4.8714		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
357	3039	15			CCV	MG				5.0117		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
358	3039	15			CCV	MN				5.2207		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
359	3039	15			CCV	MO				5.3246		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
360	3039	15			CCV	NA				4.9376		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
361	3039	15			CCV	ND				5.1796		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
362	3039	15			CCV	NI				5.3386		1.0000	10/30/95	10:27	big	0.02	@ICP-QC
363	3039	15			CCV	P				5.4428		1.0000	10/30/95	10:27	big	0.2	@ICP-QC
364	3039	15			CCV	PB				5.4150		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
365	3039	15			CCV	S				5.1215		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
366	3039	15			CCV	SB				5.0198		1.0000	10/30/95	10:27	big	0.2	@ICP-QC

OUTPUT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
367	3039	15			CCV	SE				5.1325		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
368	3039	15			CCV	SI				5.0155		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
369	3039	15			CCV	SM				5.0095		1.0000	10/30/95	10:27	big	0.1	@ICP-QC
370	3039	15			CCV	SR				5.0914		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
371	3039	15			CCV	TH				0.0502		1.0000	10/30/95	10:27	big	0	@ICP-QC
372	3039	15			CCV	TI				5.0508		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
373	3039	15			CCV	TL				5.1106		1.0000	10/30/95	10:27	big	0.2	@ICP-QC
374	3039	15			CCV	U				9.6508		1.0000	10/30/95	10:27	big	0.4	@ICP-QC
375	3039	15			CCV	V				5.2144		1.0000	10/30/95	10:27	big	0.05	@ICP-QC
376	3039	15			CCV	Y				0.0110		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
377	3039	15			CCV	ZN				5.2911		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
378	3039	15			CCV	ZR				5.1429		1.0000	10/30/95	10:27	big	0.01	@ICP-QC
379	3039	16			CCB	AG				0.0015		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
380	3039	16			CCB	AL				0.0068		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
381	3039	16			CCB	AS				-0.0129		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
382	3039	16			CCB	B				0.0042		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
383	3039	16			CCB	BA				0.0002		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
384	3039	16			CCB	BE				0.0002		1.0000	10/30/95	10:30	big	0.005	@ICP-QC
385	3039	16			CCB	BI				0.0040		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
386	3039	16			CCB	CA				0.0035		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
387	3039	16			CCB	CD				-0.0013		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
388	3039	16			CCB	CE				0.0075		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
389	3039	16			CCB	CO				0.0017		1.0000	10/30/95	10:30	big	0.02	@ICP-QC
390	3039	16			CCB	CR				-0.0008		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
391	3039	16			CCB	CU				0.0002		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
392	3039	16			CCB	EU				0.0016		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
393	3039	16			CCB	FE				-0.0003		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
394	3039	16			CCB	K				0.2401		1.0000	10/30/95	10:30	big	0.3	@ICP-QC
395	3039	16			CCB	LA				0.0017		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
396	3039	16			CCB	LI				0.0016		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
397	3039	16			CCB	MG				-0.0050		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
398	3039	16			CCB	MN				0.0009		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
399	3039	16			CCB	MO				0.0002		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
400	3039	16			CCB	NA				0.0151		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
401	3039	16			CCB	ND				0.0005		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
402	3039	16			CCB	NI				-0.0087		1.0000	10/30/95	10:30	big	0.02	@ICP-QC
403	3039	16			CCB	P				-0.0035		1.0000	10/30/95	10:30	big	0.2	@ICP-QC
404	3039	16			CCB	PB				0.0091		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
405	3039	16			CCB	S				0.0131		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
406	3039	16			CCB	SB				0.0024		1.0000	10/30/95	10:30	big	0.2	@ICP-QC
407	3039	16			CCB	SE				0.0390		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
408	3039	16			CCB	SI				0.0098		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
409	3039	16			CCB	SM				0.0181		1.0000	10/30/95	10:30	big	0.1	@ICP-QC
410	3039	16			CCB	SR				0.0003		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
411	3039	16			CCB	TH				0.0008		1.0000	10/30/95	10:30	big	0	@ICP-QC
412	3039	16			CCB	TI				0.0002		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
413	3039	16			CCB	TL				0.0010		1.0000	10/30/95	10:30	big	0.2	@ICP-QC
414	3039	16			CCB	U				0.0668		1.0000	10/30/95	10:30	big	0.4	@ICP-QC
415	3039	16			CCB	V				0.0042		1.0000	10/30/95	10:30	big	0.05	@ICP-QC
416	3039	16			CCB	Y				0.0009		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
417	3039	16			CCB	ZN				-0.0003		1.0000	10/30/95	10:30	big	0.01	@ICP-QC
418	3039	16			CCB	ZR				0.0030		1.0000	10/30/95	10:30	big	0.01	@ICP-QC

WHC-SD-WM-DP-159, REV. 0

SD
10/30/95

worklistrpt Version 2.1 05/15/95
10/26/95 16:12

LABCORE Data Entry Template for Worklist# 3052

Analyst: RAW **Instrument:** TOC01 WB39937 **Book #** 16N12-C
SPK 11N12-G

Method: LA-344-105 Rev/Mod C-0 RAW 12/1/95

Worklist Comment: TOC combustion SY-102

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	TEST	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				TOC-01	LIQUID	1 3.00e3	RBlnk 3.6	<5.00e0 Hea 11-14-95 0.4	ug/mL
		2	STD				TOC-01	LIQUID	2.99 3Hea 11-14-95	3.09 e3	N/A	ug/mL
95000172	SY-102 GRAB	3	SAMPLE	S95T003139	0		TOC-01	LIQUID	N/A 1.00e3	1.00 e3 Hea 11-14-95	5.50 e1	ug/mL
95000172	SY-102 GRAB	4	DUP	S95T003139	0		TOC-01	LIQUID	100 1.00e2 Hea 11-14-95	8.53 e2	N/A	ug/mL
95000172	SY-102 GRAB	5	SPK	S95T003139	0		TOC-01	LIQUID	100	91.4	N/A	ug/mL
95000172	SY-102 GRAB	6	SAMPLE	S95T003140	0		TOC-01	LIQUID	N/A	1.46 e3	5.50 e1	ug/mL
95000172	SY-102 GRAB	7	DUP	S95T003140	0		TOC-01	LIQUID	1.46 e3	1.44 e3	N/A	ug/mL

Final page for worklist # 3052

R WENDLAND 11-9/95
Analyst Signature **Date**

Analyst Signature 11-14-95 **Date**

The reported blank result is $|\text{blank} - \text{base reading}| = |1.4 - 1.799978| = 0.4 \frac{\mu g}{mL}$

120E 12/4/95

Data Entry Comments: SAMPLES — .200 — 2mL
SPK .200(DIL) — .200(11N12-G)
Reviewed by H. Anastor 11-14-95

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

WHC-SD-WM-DP-159, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			BLANK
Sample Volume in mL	(SS)		0.200
H2SO4 Volume in mL	(VR)		0.200
Volume Injected in mL	(VI)		0.200
Dilution Factor	(DF)		1
Digest Dilution Factor	(DDF)		1
µg of Carbon in Sample	(C1)		1.4
µg of Carbon in Blank	(C2)		1.8
g of Carbon/L	=	<	5.00E-03

Type	Work List	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
BLANK	3052	TOC-01	LIQUID	BLNK	WB39937	R. WENDLAND	11/09/95	11:22 AM

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \mu g\ C * DF * DDF}{VI}$

NOTE: Reported Result is Below Detection Level.

µg Carbon/mL =	< 5.00E+00	DETECTION LEVEL in µg/mL
		5.00E+00

Data Entry by: RHS Date: 11/13/95

Approved by: D. Arakawa Date: 11-14-95

Form 344105_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

Type	Work List	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
STANDARD	3052	TOC-01	LIQUID	16N12-C	WB39937	R. WENDLAND	11/09/95	11:22 AM

		STANDARD
Sample Volume in mL (SS)		0.200
H2SO4 Volume in mL (VR)		2.000
Volume Injected in mL (VI)		0.200
Dilution Factor (DF)		11
Digest Dilution Factor (DDF)		1
µg of Carbon in Sample (C1)		58
µg of Carbon in Blank (C2)		1.8
g of Carbon/L	=	3.09E+00

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	3.09E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	RLS	Date:	11/13/95
Approved by:	H Anastos	Date:	11-14-95

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PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			SAMPLE
Type	Sample Volume in mL	(SS)	0.200
SAMPLE	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
3052	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	20
Matrix	µg of Carbon in Blank	(C2)	1.8
LIQUID	g of Carbon/L	=	1.00E+00
Sample #			
S95T003139			
Instrument Code			
WB39937			
Analyst			
R. WENDLAND			
Date			
11/09/95			
Time			
11:22 AM			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	1.00E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	RJS	Date:	11/13/95
Approved by:	H. Anastos	Date:	11-14-95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

Type	Work List	Test Code	Matrix	Sample #	Instrument Code	Analyst	Date	Time
SAMPLE/DUP	3052	TOC-01	LIQUID	S95T003139	WB39937	R. WENDLAND	11/09/95	11:22 AM

		SAMPLE/DUP
Sample Volume in mL (SS)		0.200
H2SO4 Volume in mL (VR)		2.000
Volume Injected in mL (VI)		0.200
Dilution Factor (DF)		11
Digest Dilution Factor (DDF)		1
µg of Carbon in Sample (C1)		17.3
µg of Carbon in Blank (C2)		1.8
g of Carbon/L	=	8.53E-01

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	8.53E+02	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	RJS	Date:	11/13/95
Approved by:	H. Anasta	Date:	11-14-95

Form 344105_C Rev. 1.1

PLACE ANALYTICAL CARD IN BOX BELOW-DO NOT WRITE IN SPACE

TOC: LA-344-105 SPIKED SAMPLE

Type	>>>>>> Sample Vial Data <<<<<<		>>>>> Spiked Vial Data <<<<<	SPIKE
SPIKE	Sample Volume in mL	0.200	Sample Size in mL (SS)	0.200
Work List	H2SO4 Volume in mL	2.000	Spike Volume in mL	0.200
3052	Volume Injected in mL	0.200	H2SO4 Volume in mL	0.000
Test Code	µg of Carbon in Sample	20	Volume Injected in mL	0.200
TOC-01	µg of Carbon in Blank	1.8	Sample Pre-Spike Dil. Factor (PDF)	11
Matrix			Spike Value (µg/ml)	748
LIQUID			µg C in Sample + Spike	79.3
Sample #			µg C in Blank	1.8
S95T003139				
Instrument Code				
WB39937				
Analyst				
R. WENDLAND				
Date				
11/09/95				
Time				
11:22 AM				

PERCENT SPIKE REC = $\frac{\text{µg Carbon Recovered from Spike} * 100}{\text{µg Carbon in Spike}}$

WHERE : µg Carbon Recovered from Spike =

[(µgC in sample + spike - µgC in blank) * (Spike Correction Factor)]

- [(µgC sample - µgC blank) * (Sample Correction Factor) * (Sample Size Correction Factor) * (PDF)]

Spike Correction Factor = $\frac{\text{Total volume in spiked sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Correction Factor = $\frac{\text{Total volume in sample vial (mL)}}{\text{Volume injected (mL)}}$

Sample Size Correction Factor = $\frac{\text{Sample size in (mL) in spiked vial}}{\text{Sample size (mL) in sample}}$

Sample Pre-Spike Dilution Factor = $\frac{1}{\text{Dilution of Sample Before Added to Spike Vial}}$

WHERE : µg Carbon in Spike = Spike Value (µg/mL) * Spike Volume (mL)

Percent Spike Recovery 91.4%

Data Entry by: RH Date: 13-Nov-95

Approved by: H. Arasteh Date: 11-14-95

Form X Rev. 1.1

{/ system;exit}yes~

{/ print;block}~
{/ print;printtofit}

Control Log

Date/Initials	Description of Change
6/2/94 MLB	VERBAGE ADDED FOR CLARIFICATION, REV. 1.1
5/10/95 MLB	FONTS CHANGED IN B41,42,43, NO CALCULATIONS EFFECTED.
10/19/95 RLR	Added print range to cell A100 (for ACE-2), REV 1.1
10/31/95 RLR	Shaded unprotected cells light yellow, REV 1.1

WHC-SD-WM-DP-159, REV. 0

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			SAMPLE
Type	Sample Volume in mL	(SS)	0.200
SAMPLE	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
3052	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	28.4
Matrix	µg of Carbon in Blank	(C2)	1.8
LIQUID	g of Carbon/L	=	1.46E+00
Sample #			
S95T003140			
Instrument Code			
WB39937			
Analyst			
R. WENDLAND			
Date			
11/09/95			
Time			
11:22 AM			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	1.46E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	RFJ	Date:	11/13/95
Approved by:	H. Anastor	Date:	11-14-95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

Type
SAMPLE/DUP
Work List
3052
Test Code
TOC-01
Matrix
LIQUID
Sample #
S95T003140
Instrument Code
WB39937
Analyst
R. WENDLAND
Date
11/09/95
Time
11:22 AM

		SAMPLE/DUP
Sample Volume in mL	(SS)	0.200
H2SO4 Volume in mL	(VR)	2.000
Volume Injected in mL	(VI)	0.200
Dilution Factor	(DF)	11
Digest Dilution Factor	(DDF)	1
µg of Carbon in Sample	(C1)	27.9
µg of Carbon in Blank	(C2)	1.8
g of Carbon/L	=	1.44E+00

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	1.44E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	RLS	Date:	11/13/95
Approved by:	H. Anastor	Date:	11-14-95

PLACE ANALYTICAL CARD IN BOX BELOW OR ATTACH TRAVELER

WHC-SD-WM-DP-159, REV. 0

TOC : LA-344-105 (C-0) LIQUIDS

			STANDARD
Type	Sample Volume in mL	(SS)	0.200
STANDARD	H2SO4 Volume in mL	(VR)	2.000
Work List	Volume Injected in mL	(VI)	0.200
3052	Dilution Factor	(DF)	11
Test Code	Digest Dilution Factor	(DDF)	1
TOC-01	µg of Carbon in Sample	(C1)	58.4
Matrix	µg of Carbon in Blank	(C2)	1.8
LIQUID	g of Carbon/L	=	3.11E+00
Sample #			
16N12-C			
Instrument Code			
WB39937			
Analyst			
R. WENDLAND			
Date			
11/09/95			
Time			
11:22 AM			

g of Carbon/L = $\frac{(C1-C2) * DF * DDF}{VI * 1000}$

µg of Carbon/mL = g of Carbon/L * 1000000 µg/g / 1000 mL/L

Detection Level (µg/mL) = $\frac{1 \text{ µg C} * DF * DDF}{VI}$

µg Carbon/mL =	3.11E+03	DETECTION LEVEL in µg/mL
		5.50E+01

Data Entry by:	RS	Date:	11/13/95
Approved by:	H. Anderson	Date:	11-14-95

Form 344105_C Rev. 1.1

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

RWS 11/13/95

Sample: ~~BLK~~ Base Date: 11/09/95 Time: 11:22:56

Sample Size = 200 uL
Dil Factor = 1
Blank ID # = BLK
Blank Value = N/A

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	Analysis Time	Coulometer	% Difference ==
1	0.51	0.00	0.00
2	1.01	0.40	100.00
3	1.51	0.60	33.33
4	2.01	0.90	33.33
5	2.51	1.00	10.00
6	3.01	1.20	16.67
7	3.51	1.30	7.69
8	4.01	1.50	13.33
9	4.50	1.60	6.25
10	5.00	1.80	11.11

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 100 TO 108.

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

Sample Run By: RW 11-09-95
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: ~~BASE~~ Blank RWS 11/13/95 Date: 11/09/95 Time: 11:29:05

Sample Size	= 200 uL	Analyst :	RA WENDLAND
Dil Factor	= 1	Min Readings	= 10
Blank ID #	= BLK	Max Readings	= 10
Blank Value	= .3596619 ug/minute C	% Difference	= 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.20	50.00
3	1.51	0.40	50.00
4	2.01	0.50	20.00
5	2.51	0.70	28.57
6	3.01	0.80	12.50
7	3.51	0.90	11.11
8	4.01	1.10	18.18
9	4.50	1.20	8.33
10	5.00	1.40	14.29

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

SAMPLE RESULTS:
(1.4 - 1.799978)(1)/(200) = < 5.00 E-3 g/L Carbon
(1.4 - 1.799978)(1)/(200)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING- PERCENT DIFFERENCE EXCEEDS 10 PERCENT >>>>

Sample Run By: _____
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD Date: 11/09/95 Time: 11:34:37

Sample Size	= 200 uL	Analyst :	RA WENDLAND
Dil Factor	= 11	Min Readings	= 10
Blank ID #	= BLK	Max Readings	= 10
Blank Value	= .3596619 ug/minute C	% Difference	= 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.10	0.00
2	1.01	19.60	99.49
3	1.51	48.90	59.92
4	2.01	54.90	10.93
5	2.51	56.50	2.83
6	3.01	57.10	1.05
7	3.51	57.40	0.52
8	4.01	57.60	0.35
9	4.51	57.80	0.35
10	5.00	58.00	0.34

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

SAMPLE RESULTS:
(58 - 1.799978)(11)/(200) = +3.09E+00 g/L Carbon
(58 - 1.799978)(11)/(200)(12) = +2.58E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 39 Date: 11/09/95 Time: 11:57:31

Sample Size = 200 uL Analyst : RA WENDLAND
Dil Factor = 11 Min Readings = 10
Blank ID # = BLK Max Readings = 10
Blank Value = .3596619 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	13.60	91.91
3	1.50	16.00	15.00
4	2.00	17.30	7.51
5	2.51	18.10	4.42
6	3.01	18.70	3.21
7	3.51	19.10	2.09
8	4.00	19.40	1.55
9	4.50	19.70	1.52
10	5.00	20.00	1.50

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

SAMPLE RESULTS:
(20 - 1.799605)(11)/(200) = +1.00E+00 g/L Carbon
(20 - 1.799605)(11)/(200)(12) = +8.34E-02 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 39 Date: 11/09/95 Time: 12:03:42

Sample Size = 200 uL Analyst : RA WENDLAND
Dil Factor = 11 Min Readings = 10
Blank ID # = BLK Max Readings = 10
Blank Value = .3596619 ug/minute C % Difference = 10

== Reading	Analysis Time	Coulometer	% Difference ==
1	0.51	3.10	0.00
2	1.01	12.30	74.80
3	1.51	13.90	11.51
4	2.01	15.00	7.33
5	2.51	15.50	3.23
6	3.01	16.00	3.13
7	3.51	16.50	3.03
8	4.01	16.80	1.79
9	4.51	17.00	1.18
10	5.01	17.30	1.73

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

SAMPLE RESULTS:
(17.3 - 1.800351)(11)/(200) = +8.52E-01 g/L Carbon
(17.3 - 1.800351)(11)/(200)(12) = +7.10E-02 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 39 SPK Date: 11/09/95 Time: 11:51:46

Sample Size = 200 uL Analyst : RA WENDLAND
Dil Factor = 11 Min Readings = 10
Blank ID # = BLK Max Readings = 10
Blank Value = .3596619 ug/minute C % Difference = 10

== Reading	Analysis Time	Coulometer	% Difference ==
1	0.51	0.30	0.00
2	1.01	28.80	98.96
3	1.51	64.00	55.00
4	2.01	72.30	11.48
5	2.51	75.60	4.37
6	3.01	77.00	1.82
7	3.51	77.90	1.16
8	4.01	78.50	0.76
9	4.50	79.00	0.63
10	5.00	79.30	0.38

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

SAMPLE RESULTS:
(79.3 - 1.8)(11)/(200) = +4.26E+00 g/L Carbon
(79.3 - 1.8)(11)/(200)(12) = +3.55E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 40 Date: 11/09/95 Time: 12:10:10

Sample Size = 200 uL
Dil Factor = 11
Blank ID # = BLK
Blank Value = .3596619 ug/minute C

Analyst : RA WENDLAND
Min Readings = 10
Max Readings = 10
% Difference = 10

== Reading	Analysis Time	Coulometer	% Difference ==
1	0.51	1.10	0.00
2	1.01	19.50	94.36
3	1.51	23.20	15.95
4	2.01	24.80	6.45
5	2.50	25.90	4.25
6	3.01	26.70	3.00
7	3.51	27.30	2.20
8	4.01	27.70	1.44
9	4.50	28.10	1.42
10	5.00	28.40	1.06

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

SAMPLE RESULTS:
(28.4 - 1.799956)(11)/(200) = +1.46E+00 g/L Carbon
(28.4 - 1.799956)(11)/(200)(12) = +1.22E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 40D Date: 11/09/95 Time: 12:16:00

Sample Size = 200 uL Analyst : RA WENDLAND
Dil Factor = 11 Min Readings = 10
Blank ID # = BLK Max Readings = 10
Blank Value = .3596619 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.80	0.00
2	1.01	18.50	90.27
3	1.51	22.50	17.78
4	2.01	24.30	7.41
5	2.50	25.30	3.95
6	3.01	26.10	3.07
7	3.51	26.70	2.25
8	4.00	27.20	1.84
9	4.50	27.60	1.45
10	5.00	27.90	1.08

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

SAMPLE RESULTS:
(27.9 - 1.799912)(11)/(200) = +1.44E+00 g/L Carbon
(27.9 - 1.799912)(11)/(200)(12) = +1.20E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000

@^

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: STD Date: 11/09/95 Time: 12:30:06

Sample Size = 200 uL Analyst : RA WENDLAND
Dil Factor = 11 Min Readings = 10
Blank ID # = BLK Max Readings = 10
Blank Value = .3596619 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	32.10	99.07
3	1.51	46.70	31.26
4	2.00	51.10	8.61
5	2.50	53.60	4.66
6	3.00	55.30	3.07
7	3.51	56.50	2.12
8	4.00	57.30	1.40
9	4.50	57.90	1.04
10	5.00	58.40	0.86

BLANK VALUE = 1.8 micrograms carbon
BLANK FACTOR = 1.8 / 5.0047 = +3.6E-01 ug/min Carbon

SAMPLE RESULTS:
(58.4 - 1.799978)(11)/(200) = +3.11E+00 g/L Carbon
(58.4 - 1.799978)(11)/(200)(12) = +2.59E-01 Molar Carbon

Sample Run By: _____
RA WENDLAND 00000